Welcome

Application Signals

API Version 2024-04-15

Application Signals: Welcome

Table of Contents

Welcome

Use CloudWatch Application Signals for comprehensive observability of your cloud-based applications. It enables real-time service health dashboards and helps you track long-term performance trends against your business goals. The application-centric view provides you with unified visibility across your applications, services, and dependencies, so you can proactively monitor and efficiently triage any issues that may arise, ensuring optimal customer experience.

Application Signals provides the following benefits:

- Automatically collect metrics and traces from your applications, and display key metrics such as call volume, availability, latency, faults, and errors.
- Create and monitor service level objectives (SLOs).
- See a map of your application topology that Application Signals automatically discovers, that gives you a visual representation of your applications, dependencies, and their connectivity.

Application Signals works with CloudWatch RUM, CloudWatch Synthetics canaries, and AWS Service Catalog AppRegistry, to display your client pages, Synthetics canaries, and application names within dashboards and maps.

This document was last published on May 22, 2026.

Actions

The following actions are supported:

- BatchGetServiceLevelObjectiveBudgetReport
- BatchUpdateExclusionWindows
- CreateServiceLevelObjective
- DeleteGroupingConfiguration
- DeleteServiceLevelObjective
- GetService
- GetServiceLevelObjective
- ListAuditFindings
- ListEntityEvents
- ListGroupingAttributeDefinitions
- ListServiceDependencies
- ListServiceDependents
- ListServiceLevelObjectiveExclusionWindows
- ListServiceLevelObjectives
- ListServiceOperations
- ListServices
- ListServiceStates
- ListTagsForResource
- PutGroupingConfiguration
- StartDiscovery
- TagResource
- UntagResource
- UpdateServiceLevelObjective

BatchGetServiceLevelObjectiveBudgetReport

Use this operation to retrieve one or more *service level objective (SLO) budget reports*.

An *error budget* is the amount of time or requests in an unhealthy state that your service can accumulate during an interval before your overall SLO budget health is breached and the SLO is considered to be unmet. For example, an SLO with a threshold of 99.95% and a monthly interval translates to an error budget of 21.9 minutes of downtime in a 30-day month.

Budget reports include a health indicator, the attainment value, and remaining budget.

For more information about SLO error budgets, see SLO concepts.

Request Syntax

```
POST /budget-report HTTP/1.1
Content-type: application/json

{
   "SloIds": [ "string" ],
   "Timestamp": number
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

SloIds

An array containing the IDs of the service level objectives that you want to include in the report.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 50 items.

Required: Yes

Timestamp

The date and time that you want the report to be for. It is expressed as the number of milliseconds since Jan 1, 1970 00:00:00 UTC.

Type: Timestamp

Required: Yes

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
   "Errors": [
      {
         "Arn": "string",
         "ErrorCode": "string",
         "ErrorMessage": "string",
         "Name": "string"
      }
   ],
   "Reports": [
      {
         "Arn": "string",
         "Attainment": number,
         "BudgetRequestsRemaining": number,
         "BudgetSecondsRemaining": number,
         "BudgetStatus": "string",
         "EvaluationType": "string",
         "Goal": {
            "AttainmentGoal": number,
            "Interval": { ... },
            "WarningThreshold": number
         },
         "Name": "string",
         "RequestBasedSli": {
            "ComparisonOperator": "string",
            "MetricThreshold": number,
            "RequestBasedSliMetric": {
               "DependencyConfig": {
                  "DependencyKeyAttributes": {
```

```
                  "string" : "string"
               },
               "DependencyOperationName": "string"
            },
            "KeyAttributes": {
               "string" : "string"
            },
            "MetricSource": {
               "MetricSourceAttributes": {
                  "string" : "string"
               },
               "MetricSourceKeyAttributes": {
                  "string" : "string"
               }
            },
            "MetricType": "string",
            "MonitoredRequestCountMetric": { ... },
            "OperationName": "string",
            "TotalRequestCountMetric": [
               {
                  "AccountId": "string",
                  "Expression": "string",
                  "Id": "string",
                  "Label": "string",
                  "MetricStat": {
                     "Metric": {
                        "Dimensions": [
                           {
                              "Name": "string",
                              "Value": "string"
                           }
                        ],
                        "MetricName": "string",
                        "Namespace": "string"
                     },
                     "Period": number,
                     "Stat": "string",
                     "Unit": "string"
                  },
                  "Period": number,
                  "ReturnData": boolean
               }
            ]
         }
```

```
      },
      "Sli": {
         "ComparisonOperator": "string",
         "MetricThreshold": number,
         "SliMetric": {
            "DependencyConfig": {
               "DependencyKeyAttributes": {
                  "string" : "string"
               },
               "DependencyOperationName": "string"
            },
            "KeyAttributes": {
               "string" : "string"
            },
            "MetricDataQueries": [
               {
                  "AccountId": "string",
                  "Expression": "string",
                  "Id": "string",
                  "Label": "string",
                  "MetricStat": {
                     "Metric": {
                        "Dimensions": [
                           {
                              "Name": "string",
                              "Value": "string"
                           }
                        ],
                        "MetricName": "string",
                        "Namespace": "string"
                     },
                     "Period": number,
                     "Stat": "string",
                     "Unit": "string"
                  },
                  "Period": number,
                  "ReturnData": boolean
               }
            ],
            "MetricSource": {
               "MetricSourceAttributes": {
                  "string" : "string"
               },
               "MetricSourceKeyAttributes": {
```

```
                    "string" : "string"
                }
            },
            "MetricType": "string",
            "OperationName": "string"
        }
      },
      "TotalBudgetRequests": number,
      "TotalBudgetSeconds": number
    }
  ],
  "Timestamp": number
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

Errors

An array of structures, where each structure includes an error indicating that one of the requests in the array was not valid.

Type: Array of ServiceLevelObjectiveBudgetReportError objects

Array Members: Minimum number of 0 items. Maximum number of 50 items.

Reports

An array of structures, where each structure is one budget report.

Type: Array of ServiceLevelObjectiveBudgetReport objects

Array Members: Minimum number of 0 items. Maximum number of 50 items.

Timestamp

The date and time that the report is for. It is expressed as the number of milliseconds since Jan 1, 1970 00:00:00 UTC.

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Error Types.

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

BatchUpdateExclusionWindows

Add or remove time window exclusions for one or more Service Level Objectives (SLOs).

Request Syntax

```
PATCH /exclusion-windows HTTP/1.1
Content-type: application/json

{
   "AddExclusionWindows": [
      {
         "Reason": "string",
         "RecurrenceRule": {
            "Expression": "string"
         },
         "StartTime": number,
         "Window": {
            "Duration": number,
            "DurationUnit": "string"
         }
      }
   ],
   "RemoveExclusionWindows": [
      {
         "Reason": "string",
         "RecurrenceRule": {
            "Expression": "string"
         },
         "StartTime": number,
         "Window": {
            "Duration": number,
            "DurationUnit": "string"
         }
      }
   ],
   "SloIds": [ "string" ]
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

AddExclusionWindows

A list of exclusion windows to add to the specified SLOs. You can add up to 10 exclusion windows per SLO.

Type: Array of ExclusionWindow objects

Array Members: Minimum number of 0 items. Maximum number of 10 items.

Required: No

RemoveExclusionWindows

A list of exclusion windows to remove from the specified SLOs. The window configuration must match an existing exclusion window.

Type: Array of ExclusionWindow objects

Array Members: Minimum number of 0 items. Maximum number of 10 items.

Required: No

SloIds

The list of SLO IDs to add or remove exclusion windows from.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 50 items.

Required: Yes

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
```

```
   "Errors": [
      {
         "ErrorCode": "string",
         "ErrorMessage": "string",
         "SloId": "string"
      }
   ],
   "SloIds": [ "string" ]
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

Errors

A list of errors that occurred while processing the request.

Type: Array of BatchUpdateExclusionWindowsError objects

Array Members: Minimum number of 0 items. Maximum number of 10 items.

SloIds

The list of SLO IDs that were successfully processed.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 50 items.

Errors

For information about the errors that are common to all actions, see Common Error Types.

ResourceNotFoundException

Resource not found.

ResourceId

Can't find the resource id.

ResourceType

The resource type is not valid.

HTTP Status Code: 404

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

CreateServiceLevelObjective

Creates a service level objective (SLO), which can help you ensure that your critical business operations are meeting customer expectations. Use SLOs to set and track specific target levels for the reliability and availability of your applications and services. SLOs use service level indicators (SLIs) to calculate whether the application is performing at the level that you want.

Create an SLO to set a target for a service or operation's availability or latency. CloudWatch measures this target frequently you can find whether it has been breached.

The target performance quality that is defined for an SLO is the *attainment goal*.

You can set SLO targets for your applications that are discovered by Application Signals, using critical metrics such as latency and availability. You can also set SLOs against any CloudWatch metric or math expression that produces a time series.

> **Note**
>
> You can't create an SLO for a service operation that was discovered by Application Signals until after that operation has reported standard metrics to Application Signals.

When you create an SLO, you specify whether it is a *period-based SLO* or a *request-based SLO*. Each type of SLO has a different way of evaluating your application's performance against its attainment goal.

- A *period-based SLO* uses defined *periods* of time within a specified total time interval. For each period of time, Application Signals determines whether the application met its goal. The attainment rate is calculated as the `number of good periods/number of total periods`.

  For example, for a period-based SLO, meeting an attainment goal of 99.9% means that within your interval, your application must meet its performance goal during at least 99.9% of the time periods.
- A *request-based SLO* doesn't use pre-defined periods of time. Instead, the SLO measures `number of good requests/number of total requests` during the interval. At any time, you can find the ratio of good requests to total requests for the interval up to the time stamp that you specify, and measure that ratio against the goal set in your SLO.

After you have created an SLO, you can retrieve error budget reports for it. An *error budget* is the amount of time or amount of requests that your application can be non-compliant with the SLO's goal, and still have your application meet the goal.

- For a period-based SLO, the error budget starts at a number defined by the highest number of periods that can fail to meet the threshold, while still meeting the overall goal. The *remaining error budget* decreases with every failed period that is recorded. The error budget within one interval can never increase.

  For example, an SLO with a threshold that 99.95% of requests must be completed under 2000ms every month translates to an error budget of 21.9 minutes of downtime per month.
- For a request-based SLO, the remaining error budget is dynamic and can increase or decrease, depending on the ratio of good requests to total requests.

For more information about SLOs, see Service level objectives (SLOs).

When you perform a `CreateServiceLevelObjective` operation, Application Signals creates the *AWSServiceRoleForCloudWatchApplicationSignals* service-linked role, if it doesn't already exist in your account. This service- linked role has the following permissions:

- `xray:GetServiceGraph`
- `logs:StartQuery`
- `logs:GetQueryResults`
- `cloudwatch:GetMetricData`
- `cloudwatch:ListMetrics`
- `tag:GetResources`
- `autoscaling:DescribeAutoScalingGroups`

Request Syntax

```
POST /slo HTTP/1.1
Content-type: application/json

{
   "BurnRateConfigurations": [
      {
         "LookBackWindowMinutes": number
```

```
      }
   ],
   "CreateRecommendedSlo": boolean,
   "Description": "string",
   "Goal": {
      "AttainmentGoal": number,
      "Interval": { ... },
      "WarningThreshold": number
   },
   "Name": "string",
   "RequestBasedSliConfig": {
      "ComparisonOperator": "string",
      "MetricThreshold": number,
      "RequestBasedSliMetricConfig": {
         "DependencyConfig": {
            "DependencyKeyAttributes": {
               "string" : "string"
            },
            "DependencyOperationName": "string"
         },
         "KeyAttributes": {
            "string" : "string"
         },
         "MetricName": "string",
         "MetricSource": {
            "MetricSourceAttributes": {
               "string" : "string"
            },
            "MetricSourceKeyAttributes": {
               "string" : "string"
            }
         },
         "MetricType": "string",
         "MonitoredRequestCountMetric": { ... },
         "OperationName": "string",
         "TotalRequestCountMetric": [
            {
               "AccountId": "string",
               "Expression": "string",
               "Id": "string",
               "Label": "string",
               "MetricStat": {
                  "Metric": {
                     "Dimensions": [
```

```
                        {
                           "Name": "string",
                           "Value": "string"
                        }
                     ],
                     "MetricName": "string",
                     "Namespace": "string"
                  },
                  "Period": number,
                  "Stat": "string",
                  "Unit": "string"
               },
               "Period": number,
               "ReturnData": boolean
            }
         ]
      }
   },
   "SliConfig": {
      "ComparisonOperator": "string",
      "MetricThreshold": number,
      "SliMetricConfig": {
         "DependencyConfig": {
            "DependencyKeyAttributes": {
               "string" : "string"
            },
            "DependencyOperationName": "string"
         },
         "KeyAttributes": {
            "string" : "string"
         },
         "MetricDataQueries": [
            {
               "AccountId": "string",
               "Expression": "string",
               "Id": "string",
               "Label": "string",
               "MetricStat": {
                  "Metric": {
                     "Dimensions": [
                        {
                           "Name": "string",
                           "Value": "string"
                        }
```

```
                    ],
                    "MetricName": "string",
                    "Namespace": "string"
                 },
                 "Period": number,
                 "Stat": "string",
                 "Unit": "string"
              },
              "Period": number,
              "ReturnData": boolean
           }
        ],
        "MetricName": "string",
        "MetricSource": {
           "MetricSourceAttributes": {
              "string" : "string"
           },
           "MetricSourceKeyAttributes": {
              "string" : "string"
           }
        },
        "MetricType": "string",
        "OperationName": "string",
        "PeriodSeconds": number,
        "Statistic": "string"
     }
  },
  "Tags": [
     {
        "Key": "string",
        "Value": "string"
     }
  ]
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

BurnRateConfigurations

Use this array to create *burn rates* for this SLO. Each burn rate is a metric that indicates how fast the service is consuming the error budget, relative to the attainment goal of the SLO.

Type: Array of BurnRateConfiguration objects

Array Members: Minimum number of 0 items. Maximum number of 10 items.

Required: No

CreateRecommendedSlo

Set this to `true` to create a recommended SLO out of the box. When set to `true`, you don't need to specify the `MetricThreshold` or `ComparisonOperator` in the `SliConfig` or `RequestBasedSliConfig`. The default value is `false`.

This is supported for SLOs on a service, service operation, or a dependency.

Type: Boolean

Required: No

Description

An optional description for this SLO.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: No

Goal

This structure contains the attributes that determine the goal of the SLO.

Type: Goal object

Required: No

Name

A name for this SLO.

Type: String

Pattern: `[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]`

Required: Yes

RequestBasedSliConfig

If this SLO is a request-based SLO, this structure defines the information about what performance metric this SLO will monitor.

You can't specify both `RequestBasedSliConfig` and `SliConfig` in the same operation.

Type: RequestBasedServiceLevelIndicatorConfig object

Required: No

SliConfig

If this SLO is a period-based SLO, this structure defines the information about what performance metric this SLO will monitor.

You can't specify both `RequestBasedSliConfig` and `SliConfig` in the same operation.

Type: ServiceLevelIndicatorConfig object

Required: No

Tags

A list of key-value pairs to associate with the SLO. You can associate as many as 50 tags with an SLO. To be able to associate tags with the SLO when you create the SLO, you must have the `cloudwatch:TagResource` permission.

Tags can help you organize and categorize your resources. You can also use them to scope user permissions by granting a user permission to access or change only resources with certain tag values.

Type: Array of Tag objects

Array Members: Minimum number of 0 items. Maximum number of 200 items.

Required: No

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
   "Slo": {
      "Arn": "string",
      "BurnRateConfigurations": [
         {
            "LookBackWindowMinutes": number
         }
      ],
      "CreatedTime": number,
      "Description": "string",
      "EvaluationType": "string",
      "Goal": {
         "AttainmentGoal": number,
         "Interval": { ... },
         "WarningThreshold": number
      },
      "LastUpdatedTime": number,
      "MetricSourceType": "string",
      "Name": "string",
      "RequestBasedSli": {
         "ComparisonOperator": "string",
         "MetricThreshold": number,
         "RequestBasedSliMetric": {
            "DependencyConfig": {
               "DependencyKeyAttributes": {
                  "string" : "string"
               },
               "DependencyOperationName": "string"
            },
            "KeyAttributes": {
               "string" : "string"
            },
            "MetricSource": {
               "MetricSourceAttributes": {
                  "string" : "string"
               },
               "MetricSourceKeyAttributes": {
                  "string" : "string"
```

```
            }
         },
         "MetricType": "string",
         "MonitoredRequestCountMetric": { ... },
         "OperationName": "string",
         "TotalRequestCountMetric": [
            {
               "AccountId": "string",
               "Expression": "string",
               "Id": "string",
               "Label": "string",
               "MetricStat": {
                  "Metric": {
                     "Dimensions": [
                        {
                           "Name": "string",
                           "Value": "string"
                        }
                     ],
                     "MetricName": "string",
                     "Namespace": "string"
                  },
                  "Period": number,
                  "Stat": "string",
                  "Unit": "string"
               },
               "Period": number,
               "ReturnData": boolean
            }
         ]
      }
   },
   "Sli": {
      "ComparisonOperator": "string",
      "MetricThreshold": number,
      "SliMetric": {
         "DependencyConfig": {
            "DependencyKeyAttributes": {
               "string" : "string"
            },
            "DependencyOperationName": "string"
         },
         "KeyAttributes": {
            "string" : "string"
```

```
            },
            "MetricDataQueries": [
               {
                  "AccountId": "string",
                  "Expression": "string",
                  "Id": "string",
                  "Label": "string",
                  "MetricStat": {
                     "Metric": {
                        "Dimensions": [
                           {
                              "Name": "string",
                              "Value": "string"
                           }
                        ],
                        "MetricName": "string",
                        "Namespace": "string"
                     },
                     "Period": number,
                     "Stat": "string",
                     "Unit": "string"
                  },
                  "Period": number,
                  "ReturnData": boolean
               }
            ],
            "MetricSource": {
               "MetricSourceAttributes": {
                  "string" : "string"
               },
               "MetricSourceKeyAttributes": {
                  "string" : "string"
               }
            },
            "MetricType": "string",
            "OperationName": "string"
         }
      }
   }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

Slo

A structure that contains information about the SLO that you just created.

Type: ServiceLevelObjective object

Errors

For information about the errors that are common to all actions, see Common Error Types.

AccessDeniedException

You don't have sufficient permissions to perform this action.

HTTP Status Code: 403

ConflictException

This operation attempted to create a resource that already exists.

HTTP Status Code: 409

ServiceQuotaExceededException

This request exceeds a service quota.

HTTP Status Code: 402

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

DeleteGroupingConfiguration

Deletes the grouping configuration for this account. This removes all custom grouping attribute definitions that were previously configured.

Request Syntax

```
DELETE /grouping-configuration HTTP/1.1
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see Common Error Types.

AccessDeniedException

You don't have sufficient permissions to perform this action.

HTTP Status Code: 403

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

DeleteServiceLevelObjective

Deletes the specified service level objective.

Request Syntax

```
DELETE /slo/Id HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

Id

The ARN or name of the service level objective to delete.

Pattern: `[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]$|^arn:(aws|aws-us-gov):application-signals:[^:]*:[^:]*:slo/[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]`

Required: Yes

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see Common Error Types.

ResourceNotFoundException

Resource not found.

ResourceId

Can't find the resource id.

ResourceType

The resource type is not valid.

HTTP Status Code: 404

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

GetService

Returns information about a service discovered by Application Signals.

Request Syntax

```
POST /service?EndTime=EndTime&StartTime=StartTime HTTP/1.1
Content-type: application/json

{
   "KeyAttributes": {
      "string" : "string"
   }
}
```

URI Request Parameters

The request uses the following URI parameters.

EndTime

The end of the time period to retrieve information about. When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: 1698778057

Your requested start time will be rounded to the nearest hour.

Required: Yes

StartTime

The start of the time period to retrieve information about. When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: 1698778057

Your requested start time will be rounded to the nearest hour.

Required: Yes

Request Body

The request accepts the following data in JSON format.

KeyAttributes

Use this field to specify which service you want to retrieve information for. You must specify at least the `Type`, `Name`, and `Environment` attributes.

This is a string-to-string map. It can include the following fields.

- `Type` designates the type of object this is.
- `ResourceType` specifies the type of the resource. This field is used only when the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Name` specifies the name of the object. This is used only if the value of the `Type` field is `Service`, `RemoteService`, or `AWS::Service`.
- `Identifier` identifies the resource objects of this resource. This is used only if the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Environment` specifies the location where this object is hosted, or what it belongs to.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: Yes

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
   "EndTime": number,
   "LogGroupReferences": [
      {
         "string" : "string"
      }
   ],
```

```
   "Service": {
      "AttributeMaps": [
         {
            "string" : "string"
         }
      ],
      "KeyAttributes": {
         "string" : "string"
      },
      "LogGroupReferences": [
         {
            "string" : "string"
         }
      ],
      "MetricReferences": [
         {
            "AccountId": "string",
            "Dimensions": [
               {
                  "Name": "string",
                  "Value": "string"
               }
            ],
            "MetricName": "string",
            "MetricType": "string",
            "Namespace": "string"
         }
      ],
      "ServiceGroups": [
         {
            "GroupIdentifier": "string",
            "GroupName": "string",
            "GroupSource": "string",
            "GroupValue": "string"
         }
      ]
   },
   "StartTime": number
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

EndTime

The end time of the data included in the response. In a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: `1698778057`.

This displays the time that Application Signals used for the request. It might not match your request exactly, because it was rounded to the nearest hour.

Type: Timestamp

LogGroupReferences

An array of string-to-string maps that each contain information about one log group associated with this service. Each string-to-string map includes the following fields:

- `"Type": "AWS::Resource"`
- `"ResourceType": "AWS::Logs::LogGroup"`
- `"Identifier": "`*`name-of-log-group`*`"`

Type: Array of string to string maps

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Service

A structure containing information about the service.

Type: Service object

StartTime

The start time of the data included in the response. In a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: `1698778057`.

This displays the time that Application Signals used for the request. It might not match your request exactly, because it was rounded to the nearest hour.

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Error Types.

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

GetServiceLevelObjective

Returns information about one SLO created in the account.

Request Syntax

```
GET /slo/Id HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

Id

The ARN or name of the SLO that you want to retrieve information about. You can find the ARNs of SLOs by using the ListServiceLevelObjectives operation.

Pattern: `[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]$|^arn:(aws|aws-us-gov):application-signals:[^:]*:[^:]*:slo/[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]`

Required: Yes

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
   "Slo": {
      "Arn": "string",
      "BurnRateConfigurations": [
         {
            "LookBackWindowMinutes": number
         }
      ],
      "CreatedTime": number,
```

```
      "Description": "string",
      "EvaluationType": "string",
      "Goal": {
         "AttainmentGoal": number,
         "Interval": { ... },
         "WarningThreshold": number
      },
      "LastUpdatedTime": number,
      "MetricSourceType": "string",
      "Name": "string",
      "RequestBasedSli": {
         "ComparisonOperator": "string",
         "MetricThreshold": number,
         "RequestBasedSliMetric": {
            "DependencyConfig": {
               "DependencyKeyAttributes": {
                  "string" : "string"
               },
               "DependencyOperationName": "string"
            },
            "KeyAttributes": {
               "string" : "string"
            },
            "MetricSource": {
               "MetricSourceAttributes": {
                  "string" : "string"
               },
               "MetricSourceKeyAttributes": {
                  "string" : "string"
               }
            },
            "MetricType": "string",
            "MonitoredRequestCountMetric": { ... },
            "OperationName": "string",
            "TotalRequestCountMetric": [
               {
                  "AccountId": "string",
                  "Expression": "string",
                  "Id": "string",
                  "Label": "string",
                  "MetricStat": {
                     "Metric": {
                        "Dimensions": [
                           {
```

```
                            "Name": "string",
                            "Value": "string"
                        }
                     ],
                     "MetricName": "string",
                     "Namespace": "string"
                  },
                  "Period": number,
                  "Stat": "string",
                  "Unit": "string"
               },
               "Period": number,
               "ReturnData": boolean
            }
         ]
      }
   },
   "Sli": {
      "ComparisonOperator": "string",
      "MetricThreshold": number,
      "SliMetric": {
         "DependencyConfig": {
            "DependencyKeyAttributes": {
               "string" : "string"
            },
            "DependencyOperationName": "string"
         },
         "KeyAttributes": {
            "string" : "string"
         },
         "MetricDataQueries": [
            {
               "AccountId": "string",
               "Expression": "string",
               "Id": "string",
               "Label": "string",
               "MetricStat": {
                  "Metric": {
                     "Dimensions": [
                        {
                           "Name": "string",
                           "Value": "string"
                        }
                     ],
```

```
                        "MetricName": "string",
                        "Namespace": "string"
                     },
                     "Period": number,
                     "Stat": "string",
                     "Unit": "string"
                  },
                  "Period": number,
                  "ReturnData": boolean
               }
            ],
            "MetricSource": {
               "MetricSourceAttributes": {
                  "string" : "string"
               },
               "MetricSourceKeyAttributes": {
                  "string" : "string"
               }
            },
            "MetricType": "string",
            "OperationName": "string"
         }
      }
   }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

Slo

A structure containing the information about the SLO.

Type: ServiceLevelObjective object

Errors

For information about the errors that are common to all actions, see Common Error Types.

ResourceNotFoundException

Resource not found.

ResourceId

Can't find the resource id.

ResourceType

The resource type is not valid.

HTTP Status Code: 404

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ListAuditFindings

Returns a list of audit findings that provide automated analysis of service behavior and root cause analysis. These findings help identify the most significant observations about your services, including performance issues, anomalies, and potential problems. The findings are generated using heuristic algorithms based on established troubleshooting patterns.

Request Syntax

```
POST /auditFindings?EndTime=EndTime&StartTime=StartTime HTTP/1.1
Content-type: application/json

{
   "Auditors": [ "string" ],
   "AuditTargets": [
      {
         "Data": { ... },
         "Type": "string"
      }
   ],
   "DetailLevel": "string",
   "MaxResults": number,
   "NextToken": "string"
}
```

URI Request Parameters

The request uses the following URI parameters.

EndTime

The end of the time period to retrieve audit findings for. When used in a raw HTTP Query API, it is formatted as epoch time in seconds. For example, 1698778057

Required: Yes

StartTime

The start of the time period to retrieve audit findings for. When used in a raw HTTP Query API, it is formatted as epoch time in seconds. For example, 1698778057

Required: Yes

Request Body

The request accepts the following data in JSON format.

Auditors

A list of auditor names to filter the findings by. Only findings generated by the specified auditors will be returned.

The following auditors are available for configuration:

- `slo` - SloAuditor: Identifies SLO violations and detects breached thresholds during the Assessment phase.
- `operation_metric` - OperationMetricAuditor: Detects anomalies in service operation metrics from Application Signals RED metrics during the Assessment phase

> **Note**
>
> Anomaly detection is not supported for sparse metrics (those missing more than 80% of datapoints within the given time period).

- `service_quota` - ServiceQuotaAuditor: Monitors resource utilization against service quotas during the Assessment phase
- `trace` - TraceAuditor: Performs deep-dive analysis of distributed traces, correlating traces with breached SLOs or abnormal RED metrics during the Analysis phase
- `dependency_metric` - CriticalPathAuditor: Analyzes service dependency impacts and maps dependency relationships from Application Signals RED metrics during the Analysis phase
- `top_contributor` - TopContributorAuditor: Identifies infrastructure-level contributors to issues by analyzing EMF logs of Application Signals RED metrics during the Analysis phase
- `log` - LogAuditor: Extracts insights from application logs, categorizing error types and ranking severity by frequency during the Analysis phase
- `change_indicator` - ChangeIndicatorAuditor: Detects change events (deployments, configuration changes) that occurred within 10 minutes before and during a detected anomaly, and surfaces them as findings with deployment timestamps in the Analysis phase. When changes are detected, the `top_contributor` auditor skips its analysis to avoid redundancy.

> **Note**
>
> `InitAuditor` and `Summarizer` auditors are not configurable as they are automatically triggered during the audit process.

Type: Array of strings

Required: No

AuditTargets

A list of audit targets to filter the findings by. You can specify services, SLOs, or service operations to limit the audit findings to specific entities.

Type: Array of AuditTarget objects

Array Members: Minimum number of 1 item. Maximum number of 10 items.

Required: Yes

DetailLevel

The level of details of the audit findings. Supported values: `BRIEF`, `DETAILED`.

Type: String

Valid Values: `BRIEF | DETAILED`

Required: No

MaxResults

The maximum number of audit findings to return in one operation. If you omit this parameter, the default of 10 is used.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 10.

Required: No

NextToken

Include this value, if it was returned by the previous operation, to get the next set of audit findings.

Type: String

Required: No

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
   "AuditFindings": [
      {
         "AuditorResults": [
            {
               "Auditor": "string",
               "Data": {
                  "string" : "string"
               },
               "Description": "string",
               "Severity": "string"
            }
         ],
         "DependencyGraph": {
            "Edges": [
               {
                  "ConnectionType": "string",
                  "DestinationNodeId": "string",
                  "Duration": number,
                  "SourceNodeId": "string"
               }
            ],
            "Nodes": [
               {
                  "Duration": number,
                  "KeyAttributes": {
                     "string" : "string"
                  },
                  "Name": "string",
                  "NodeId": "string",
                  "Operation": "string",
                  "Status": "string",
                  "Type": "string"
               }
```

```
            ]
         },
         "KeyAttributes": {
            "string" : "string"
         },
         "MetricGraph": {
            "EndTime": number,
            "MetricDataQueries": [
               {
                  "AccountId": "string",
                  "Expression": "string",
                  "Id": "string",
                  "Label": "string",
                  "MetricStat": {
                     "Metric": {
                        "Dimensions": [
                           {
                              "Name": "string",
                              "Value": "string"
                           }
                        ],
                        "MetricName": "string",
                        "Namespace": "string"
                     },
                     "Period": number,
                     "Stat": "string",
                     "Unit": "string"
                  },
                  "Period": number,
                  "ReturnData": boolean
               }
            ],
            "StartTime": number
         },
         "Operation": "string",
         "Type": "string"
      }
   ],
   "EndTime": number,
   "NextToken": "string",
   "StartTime": number
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

AuditFindings

An array of structures, where each structure contains information about one audit finding, including the auditor results, severity, and associated metric and dependency graphs.

Type: Array of AuditFinding objects

Array Members: Minimum number of 0 items. Maximum number of 10 items.

EndTime

The end of the time period that the returned audit findings apply to. When used in a raw HTTP Query API, it is formatted as epoch time in seconds. For example, `1698778057`

Type: Timestamp

NextToken

Include this value in your next use of this API to get the next set of audit findings.

Type: String

StartTime

The start of the time period that the returned audit findings apply to. When used in a raw HTTP Query API, it is formatted as epoch time in seconds. For example, `1698778057`

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Error Types.

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ListEntityEvents

Returns a list of change events for a specific entity, such as deployments, configuration changes, or other state-changing activities. This operation helps track the history of changes that may have affected service performance.

Request Syntax

```
POST /events?MaxResults=MaxResults&NextToken=NextToken HTTP/1.1
Content-type: application/json

{
   "EndTime": number,
   "Entity": {
      "string" : "string"
   },
   "StartTime": number
}
```

URI Request Parameters

The request uses the following URI parameters.

MaxResults

The maximum number of change events to return in one operation. If you omit this parameter, the default of 50 is used.

Valid Range: Minimum value of 1. Maximum value of 250.

NextToken

Include this value, if it was returned by the previous operation, to get the next set of change events.

Request Body

The request accepts the following data in JSON format.

EndTime

The end of the time period to retrieve change events for. When used in a raw HTTP Query API, it is formatted as epoch time in seconds. For example: `1698778057`

Type: Timestamp

Required: Yes

Entity

The entity for which to retrieve change events. This specifies the service, resource, or other entity whose event history you want to examine.

This is a string-to-string map. It can include the following fields.

- `Type` designates the type of object this is.
- `ResourceType` specifies the type of the resource. This field is used only when the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Name` specifies the name of the object. This is used only if the value of the `Type` field is `Service`, `RemoteService`, or `AWS::Service`.
- `Identifier` identifies the resource objects of this resource. This is used only if the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Environment` specifies the location where this object is hosted, or what it belongs to.
- `AwsAccountId` specifies the account where this object is in.

Below is an example of a service.

```
{ "Type": "Service", "Name": "visits-service", "Environment":
"petclinic-test" }
```

Below is an example of a resource.

```
{ "Type": "AWS::Resource", "ResourceType": "AWS::DynamoDB::Table",
"Identifier": "Customers" }
```

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: Yes

StartTime

The start of the time period to retrieve change events for. When used in a raw HTTP Query API, it is formatted as epoch time in seconds. For example: 1698778057

Type: Timestamp

Required: Yes

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
   "ChangeEvents": [
      {
         "AccountId": "string",
         "ChangeEventType": "string",
         "Entity": {
            "string" : "string"
         },
         "EventId": "string",
         "EventName": "string",
         "Region": "string",
         "Timestamp": number,
         "UserName": "string"
      }
   ],
   "EndTime": number,
   "NextToken": "string",
   "StartTime": number
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

ChangeEvents

An array of structures, where each structure contains information about one change event that occurred for the specified entity during the requested time period.

Type: Array of ChangeEvent objects

Array Members: Minimum number of 0 items. Maximum number of 250 items.

EndTime

The end of the time period that the returned change events apply to. When used in a raw HTTP Query API, it is formatted as epoch time in seconds. For example: 1698778057

Type: Timestamp

NextToken

Include this value in your next use of this API to get the next set of change events.

Type: String

StartTime

The start of the time period that the returned change events apply to. When used in a raw HTTP Query API, it is formatted as epoch time in seconds. For example: 1698778057

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Error Types.

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ListGroupingAttributeDefinitions

Returns the current grouping configuration for this account, including all custom grouping attribute definitions that have been configured. These definitions determine how services are logically grouped based on telemetry attributes, AWS tags, or predefined mappings.

Request Syntax

```
POST /grouping-attribute-definitions?
AwsAccountId=AwsAccountId&IncludeLinkedAccounts=IncludeLinkedAccounts&NextToken=NextToken
 HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

AwsAccountId

The AWS account ID to retrieve grouping attribute definitions for. Use this when accessing grouping configurations from a different account in cross-account monitoring scenarios.

Pattern: `[0-9]{12}`

IncludeLinkedAccounts

If you are using this operation in a monitoring account, specify `true` to include grouping attributes from source accounts in the returned data.

NextToken

Include this value, if it was returned by the previous operation, to get the next set of grouping attribute definitions.

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
Content-type: application/json
```

```
{
   "GroupingAttributeDefinitions": [
      {
         "DefaultGroupingValue": "string",
         "GroupingName": "string",
         "GroupingSourceKeys": [ "string" ]
      }
   ],
   "NextToken": "string",
   "UpdatedAt": number
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

GroupingAttributeDefinitions

An array of structures, where each structure contains information about one grouping attribute definition, including the grouping name, source keys, and default values.

Type: Array of GroupingAttributeDefinition objects

NextToken

Include this value in your next use of this API to get the next set of grouping attribute definitions.

Type: String

UpdatedAt

The timestamp when the grouping configuration was last updated. When used in a raw HTTP Query API, it is formatted as epoch time in seconds.

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Error Types.

AccessDeniedException

You don't have sufficient permissions to perform this action.

HTTP Status Code: 403

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ListServiceDependencies

Returns a list of service dependencies of the service that you specify. A dependency is an infrastructure component that an operation of this service connects with. Dependencies can include AWS services, AWS resources, and third-party services.

Request Syntax

```
POST /service-dependencies?
EndTime=EndTime&MaxResults=MaxResults&NextToken=NextToken&StartTime=StartTime HTTP/1.1
Content-type: application/json

{
   "KeyAttributes": {
      "string" : "string"
   }
}
```

URI Request Parameters

The request uses the following URI parameters.

EndTime

The end of the time period to retrieve information about. When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: 1698778057

Your requested end time will be rounded to the nearest hour.

Required: Yes

MaxResults

The maximum number of results to return in one operation. If you omit this parameter, the default of 50 is used.

Valid Range: Minimum value of 1. Maximum value of 100.

NextToken

Include this value, if it was returned by the previous operation, to get the next set of service dependencies.

StartTime

The start of the time period to retrieve information about. When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: `1698778057`

Your requested start time will be rounded to the nearest hour.

Required: Yes

Request Body

The request accepts the following data in JSON format.

KeyAttributes

Use this field to specify which service you want to retrieve information for. You must specify at least the `Type`, `Name`, and `Environment` attributes.

This is a string-to-string map. It can include the following fields.

- `Type` designates the type of object this is.
- `ResourceType` specifies the type of the resource. This field is used only when the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Name` specifies the name of the object. This is used only if the value of the `Type` field is `Service`, `RemoteService`, or `AWS::Service`.
- `Identifier` identifies the resource objects of this resource. This is used only if the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Environment` specifies the location where this object is hosted, or what it belongs to.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: Yes

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
   "EndTime": number,
   "NextToken": "string",
   "ServiceDependencies": [
      {
         "DependencyKeyAttributes": {
            "string" : "string"
         },
         "DependencyOperationName": "string",
         "MetricReferences": [
            {
               "AccountId": "string",
               "Dimensions": [
                  {
                     "Name": "string",
                     "Value": "string"
                  }
               ],
               "MetricName": "string",
               "MetricType": "string",
               "Namespace": "string"
            }
         ],
         "OperationName": "string"
      }
   ],
   "StartTime": number
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

EndTime

The end of the time period that the returned information applies to. When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: 1698778057

This displays the time that Application Signals used for the request. It might not match your request exactly, because it was rounded to the nearest hour.

Type: Timestamp

NextToken

Include this value in your next use of this API to get next set of service dependencies.

Type: String

ServiceDependencies

An array, where each object in the array contains information about one of the dependencies of this service.

Type: Array of ServiceDependency objects

Array Members: Minimum number of 0 items. Maximum number of 100 items.

StartTime

The start of the time period that the returned information applies to. When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: 1698778057

This displays the time that Application Signals used for the request. It might not match your request exactly, because it was rounded to the nearest hour.

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Error Types.

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ListServiceDependents

Returns the list of dependents that invoked the specified service during the provided time range. Dependents include other services, CloudWatch Synthetics canaries, and clients that are instrumented with CloudWatch RUM app monitors.

Request Syntax

```
POST /service-dependents?
EndTime=EndTime&MaxResults=MaxResults&NextToken=NextToken&StartTime=StartTime HTTP/1.1
Content-type: application/json

{
   "KeyAttributes": {
      "string" : "string"
   }
}
```

URI Request Parameters

The request uses the following URI parameters.

EndTime

The end of the time period to retrieve information about. When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: 1698778057

Your requested start time will be rounded to the nearest hour.

Required: Yes

MaxResults

The maximum number of results to return in one operation. If you omit this parameter, the default of 50 is used.

Valid Range: Minimum value of 1. Maximum value of 100.

NextToken

Include this value, if it was returned by the previous operation, to get the next set of service dependents.

StartTime

The start of the time period to retrieve information about. When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: `1698778057`

Your requested start time will be rounded to the nearest hour.

Required: Yes

Request Body

The request accepts the following data in JSON format.

KeyAttributes

Use this field to specify which service you want to retrieve information for. You must specify at least the `Type`, `Name`, and `Environment` attributes.

This is a string-to-string map. It can include the following fields.

- `Type` designates the type of object this is.
- `ResourceType` specifies the type of the resource. This field is used only when the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Name` specifies the name of the object. This is used only if the value of the `Type` field is `Service`, `RemoteService`, or `AWS::Service`.
- `Identifier` identifies the resource objects of this resource. This is used only if the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Environment` specifies the location where this object is hosted, or what it belongs to.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: Yes

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
   "EndTime": number,
   "NextToken": "string",
   "ServiceDependents": [
      {
         "DependentKeyAttributes": {
            "string" : "string"
         },
         "DependentOperationName": "string",
         "MetricReferences": [
            {
               "AccountId": "string",
               "Dimensions": [
                  {
                     "Name": "string",
                     "Value": "string"
                  }
               ],
               "MetricName": "string",
               "MetricType": "string",
               "Namespace": "string"
            }
         ],
         "OperationName": "string"
      }
   ],
   "StartTime": number
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

EndTime

The end of the time period that the returned information applies to. When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: 1698778057

This displays the time that Application Signals used for the request. It might not match your request exactly, because it was rounded to the nearest hour.

Type: Timestamp

NextToken

Include this value in your next use of this API to get next set of service dependents.

Type: String

ServiceDependents

An array, where each object in the array contains information about one of the dependents of this service.

Type: Array of ServiceDependent objects

Array Members: Minimum number of 0 items. Maximum number of 100 items.

StartTime

The start of the time period that the returned information applies to. When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: 1698778057

This displays the time that Application Signals used for the request. It might not match your request exactly, because it was rounded to the nearest hour.

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Error Types.

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ListServiceLevelObjectiveExclusionWindows

Retrieves all exclusion windows configured for a specific SLO.

Request Syntax

```
GET /slo/Id/exclusion-windows?MaxResults=MaxResults&NextToken=NextToken HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

Id

The ID of the SLO to list exclusion windows for.

Pattern: `[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]$|^arn:(aws|aws-us-gov):application-signals:[^:]*:[^:]*:slo/[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]`

Required: Yes

MaxResults

The maximum number of results to return in one operation. If you omit this parameter, the default of 50 is used.

Valid Range: Minimum value of 1. Maximum value of 10.

NextToken

Include this value, if it was returned by the previous operation, to get the next set of service level objectives.

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
```

```
Content-type: application/json

{
   "ExclusionWindows": [
      {
         "Reason": "string",
         "RecurrenceRule": {
            "Expression": "string"
         },
         "StartTime": number,
         "Window": {
            "Duration": number,
            "DurationUnit": "string"
         }
      }
   ],
   "NextToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

ExclusionWindows

A list of exclusion windows configured for the SLO.

Type: Array of ExclusionWindow objects

Array Members: Minimum number of 0 items. Maximum number of 10 items.

NextToken

Include this value, if it was returned by the previous operation, to get the next set of service level objectives.

Type: String

Errors

For information about the errors that are common to all actions, see Common Error Types.

ResourceNotFoundException

Resource not found.

ResourceId

Can't find the resource id.

ResourceType

The resource type is not valid.

HTTP Status Code: 404

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ListServiceLevelObjectives

Returns a list of SLOs created in this account.

Request Syntax

```
POST /slos?
IncludeLinkedAccounts=IncludeLinkedAccounts&MaxResults=MaxResults&NextToken=NextToken&Operation
 HTTP/1.1
Content-type: application/json

{
   "DependencyConfig": {
      "DependencyKeyAttributes": {
         "string" : "string"
      },
      "DependencyOperationName": "string"
   },
   "KeyAttributes": {
      "string" : "string"
   },
   "MetricSource": {
      "MetricSourceAttributes": {
         "string" : "string"
      },
      "MetricSourceKeyAttributes": {
         "string" : "string"
      }
   },
   "MetricSourceTypes": [ "string" ]
}
```

URI Request Parameters

The request uses the following URI parameters.

IncludeLinkedAccounts

If you are using this operation in a monitoring account, specify `true` to include SLO from source accounts in the returned data.

When you are monitoring an account, you can use AWS account ID in `KeyAttribute` filter for service source account and `SloOwnerawsaccountID` for SLO source account with `IncludeLinkedAccounts` to filter the returned data to only a single source account.

MaxResults

The maximum number of results to return in one operation. If you omit this parameter, the default of 50 is used.

Valid Range: Minimum value of 1. Maximum value of 50.

NextToken

Include this value, if it was returned by the previous operation, to get the next set of service level objectives.

OperationName

The name of the operation that this SLO is associated with.

Length Constraints: Minimum length of 1. Maximum length of 255.

SloOwnerAwsAccountId

SLO's AWS account ID.

Pattern: `[0-9]{12}`

Request Body

The request accepts the following data in JSON format.

DependencyConfig

Identifies the dependency using the `DependencyKeyAttributes` and `DependencyOperationName`.

Type: DependencyConfig object

Required: No

KeyAttributes

You can use this optional field to specify which services you want to retrieve SLO information for.

This is a string-to-string map. It can include the following fields.

- `Type` designates the type of object this is.
- `ResourceType` specifies the type of the resource. This field is used only when the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Name` specifies the name of the object. This is used only if the value of the `Type` field is `Service`, `RemoteService`, or `AWS::Service`.
- `Identifier` identifies the resource objects of this resource. This is used only if the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Environment` specifies the location where this object is hosted, or what it belongs to.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: No

MetricSource

Identifies the metric source to filter SLOs by.

Type: MetricSource object

Required: No

MetricSourceTypes

Use this optional field to only include SLOs with the specified metric source types in the output. Supported types are:

- Service operation
- Service dependency
- Service
- CloudWatch metric
- AppMonitor

- Canary

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 3 items.

Valid Values: `ServiceOperation | CloudWatchMetric | ServiceDependency | AppMonitor | Canary | Service`

Required: No

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
   "NextToken": "string",
   "SloSummaries": [
      {
         "Arn": "string",
         "CreatedTime": number,
         "DependencyConfig": {
            "DependencyKeyAttributes": {
               "string" : "string"
            },
            "DependencyOperationName": "string"
         },
         "EvaluationType": "string",
         "KeyAttributes": {
            "string" : "string"
         },
         "MetricSource": {
            "MetricSourceAttributes": {
               "string" : "string"
            },
            "MetricSourceKeyAttributes": {
               "string" : "string"
            }
         },
         "MetricSourceType": "string",
         "Name": "string",
         "OperationName": "string"
```

```
        }
    ]
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

NextToken

Include this value in your next use of this API to get next set of service level objectives.

Type: String

SloSummaries

An array of structures, where each structure contains information about one SLO.

Type: Array of ServiceLevelObjectiveSummary objects

Errors

For information about the errors that are common to all actions, see Common Error Types.

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ListServiceOperations

Returns a list of the *operations* of this service that have been discovered by Application Signals. Only the operations that were invoked during the specified time range are returned.

Request Syntax

```
POST /service-operations?
EndTime=EndTime&MaxResults=MaxResults&NextToken=NextToken&StartTime=StartTime HTTP/1.1
Content-type: application/json

{
   "KeyAttributes": {
      "string" : "string"
   }
}
```

URI Request Parameters

The request uses the following URI parameters.

EndTime

The end of the time period to retrieve information about. When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: 1698778057

Your requested end time will be rounded to the nearest hour.

Required: Yes

MaxResults

The maximum number of results to return in one operation. If you omit this parameter, the default of 50 is used.

Valid Range: Minimum value of 1. Maximum value of 100.

NextToken

Include this value, if it was returned by the previous operation, to get the next set of service operations.

StartTime

The start of the time period to retrieve information about. When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: `1698778057`

Your requested start time will be rounded to the nearest hour.

Required: Yes

Request Body

The request accepts the following data in JSON format.

KeyAttributes

Use this field to specify which service you want to retrieve information for. You must specify at least the `Type`, `Name`, and `Environment` attributes.

This is a string-to-string map. It can include the following fields.

- `Type` designates the type of object this is.
- `ResourceType` specifies the type of the resource. This field is used only when the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Name` specifies the name of the object. This is used only if the value of the `Type` field is `Service`, `RemoteService`, or `AWS::Service`.
- `Identifier` identifies the resource objects of this resource. This is used only if the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Environment` specifies the location where this object is hosted, or what it belongs to.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: Yes

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
   "EndTime": number,
   "NextToken": "string",
   "ServiceOperations": [
      {
         "MetricReferences": [
            {
               "AccountId": "string",
               "Dimensions": [
                  {
                     "Name": "string",
                     "Value": "string"
                  }
               ],
               "MetricName": "string",
               "MetricType": "string",
               "Namespace": "string"
            }
         ],
         "Name": "string"
      }
   ],
   "StartTime": number
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

EndTime

The end of the time period that the returned information applies to. When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: 1698778057

This displays the time that Application Signals used for the request. It might not match your request exactly, because it was rounded to the nearest hour.

Type: Timestamp

NextToken

Include this value in your next use of this API to get next set of service operations.

Type: String

ServiceOperations

An array of structures that each contain information about one operation of this service.

Type: Array of ServiceOperation objects

Array Members: Minimum number of 0 items. Maximum number of 100 items.

StartTime

The start of the time period that the returned information applies to. When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: 1698778057

This displays the time that Application Signals used for the request. It might not match your request exactly, because it was rounded to the nearest hour.

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Error Types.

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ListServices

Returns a list of services that have been discovered by Application Signals. A service represents a minimum logical and transactional unit that completes a business function. Services are discovered through Application Signals instrumentation.

Request Syntax

```
GET /services?
AwsAccountId=AwsAccountId&EndTime=EndTime&IncludeLinkedAccounts=IncludeLinkedAccounts&MaxResult
 HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

AwsAccountId

AWS Account ID.

Pattern: `[0-9]{12}`

EndTime

The end of the time period to retrieve information about. When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: 1698778057

Your requested start time will be rounded to the nearest hour.

Required: Yes

IncludeLinkedAccounts

If you are using this operation in a monitoring account, specify `true` to include services from source accounts in the returned data.

MaxResults

The maximum number of results to return in one operation. If you omit this parameter, the default of 50 is used.

Valid Range: Minimum value of 1. Maximum value of 100.

NextToken

Include this value, if it was returned by the previous operation, to get the next set of services.

StartTime

The start of the time period to retrieve information about. When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: 1698778057

Your requested start time will be rounded to the nearest hour.

Required: Yes

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
   "EndTime": number,
   "NextToken": "string",
   "ServiceSummaries": [
      {
         "AttributeMaps": [
            {
               "string" : "string"
            }
         ],
         "KeyAttributes": {
            "string" : "string"
         },
         "MetricReferences": [
            {
               "AccountId": "string",
               "Dimensions": [
                  {
                     "Name": "string",
                     "Value": "string"
                  }
```

```
                ],
                "MetricName": "string",
                "MetricType": "string",
                "Namespace": "string"
            }
         ],
         "ServiceGroups": [
            {
                "GroupIdentifier": "string",
                "GroupName": "string",
                "GroupSource": "string",
                "GroupValue": "string"
            }
         ]
      }
   ],
   "StartTime": number
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

EndTime

The end of the time period that the returned information applies to. When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: 1698778057

This displays the time that Application Signals used for the request. It might not match your request exactly, because it was rounded to the nearest hour.

Type: Timestamp

NextToken

Include this value in your next use of this API to get next set of services.

Type: String

ServiceSummaries

An array of structures, where each structure contains some information about a service. To get complete information about a service, use GetService.

Type: Array of ServiceSummary objects

StartTime

The start of the time period that the returned information applies to. When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: `1698778057`

This displays the time that Application Signals used for the request. It might not match your request exactly, because it was rounded to the nearest hour.

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Error Types.

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ListServiceStates

Returns information about the last deployment and other change states of services. This API provides visibility into recent changes that may have affected service performance, helping with troubleshooting and change correlation.

Request Syntax

```
POST /service/states HTTP/1.1
Content-type: application/json

{
   "AttributeFilters": [
      {
         "AttributeFilterName": "string",
         "AttributeFilterValues": [ "string" ]
      }
   ],
   "AwsAccountId": "string",
   "EndTime": number,
   "IncludeLinkedAccounts": boolean,
   "MaxResults": number,
   "NextToken": "string",
   "StartTime": number
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

AttributeFilters

A list of attribute filters to narrow down the services. You can filter by platform, environment, or other service attributes.

Type: Array of AttributeFilter objects

Array Members: Minimum number of 0 items. Maximum number of 20 items.

Required: No

AwsAccountId

The AWS account ID to filter service states by. Use this to limit results to services from a specific account.

Type: String

Pattern: `[0-9]{12}`

Required: No

EndTime

The end of the time period to retrieve service state information for. When used in a raw HTTP Query API, it is formatted as epoch time in seconds. For example, `1698778057`.

Type: Timestamp

Required: Yes

IncludeLinkedAccounts

If you are using this operation in a monitoring account, specify `true` to include service states from source accounts in the returned data.

Type: Boolean

Required: No

MaxResults

The maximum number of service states to return in one operation. If you omit this parameter, the default of 20 is used.

Type: Integer

Valid Range: Maximum value of 250.

Required: No

NextToken

Include this value, if it was returned by the previous operation, to get the next set of service states.

Type: String

Required: No

StartTime

The start of the time period to retrieve service state information for. When used in a raw HTTP Query API, it is formatted as epoch time in seconds. For example, 1698778057.

Type: Timestamp

Required: Yes

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
   "EndTime": number,
   "NextToken": "string",
   "ServiceStates": [
      {
         "AttributeFilters": [
            {
               "AttributeFilterName": "string",
               "AttributeFilterValues": [ "string" ]
            }
         ],
         "LatestChangeEvents": [
            {
               "AccountId": "string",
               "ChangeEventType": "string",
               "Entity": {
                  "string" : "string"
               },
               "EventId": "string",
               "EventName": "string",
               "Region": "string",
               "Timestamp": number,
               "UserName": "string"
            }
         ],
         "Service": {
            "string" : "string"
```

```
            }
        }
    ],
    "StartTime": number
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

EndTime

The end of the time period that the returned information applies to. When used in a raw HTTP Query API, it is formatted as epoch time in seconds. For example, 1698778057.

Type: Timestamp

NextToken

Include this value in your next use of this API to get the next set of service states.

Type: String

ServiceStates

An array of structures, where each structure contains information about the state of one service, including its latest change events such as deployments.

Type: Array of ServiceState objects

Array Members: Minimum number of 0 items. Maximum number of 250 items.

StartTime

The start of the time period that the returned information applies to. When used in a raw HTTP Query API, it is formatted as epoch time in seconds. For example, 1698778057.

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Error Types.

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ListTagsForResource

Displays the tags associated with a CloudWatch resource. Tags can be assigned to service level objectives.

Request Syntax

```
GET /tags?ResourceArn=ResourceArn HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

ResourceArn

The Amazon Resource Name (ARN) of the CloudWatch resource that you want to view tags for.

The ARN format of an Application Signals SLO is `arn:aws:cloudwatch:`*`Region`*`:`*`account-id`*`:slo:`*`slo-name`*

For more information about ARN format, see Resource Types Defined by Amazon CloudWatch in the *Amazon Web Services General Reference*.

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: Yes

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
   "Tags": [
      {
```

```
            "Key": "string",
            "Value": "string"
        }
    ]
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

Tags

The list of tag keys and values associated with the resource you specified.

Type: Array of Tag objects

Array Members: Minimum number of 0 items. Maximum number of 200 items.

Errors

For information about the errors that are common to all actions, see Common Error Types.

ResourceNotFoundException

Resource not found.

ResourceId

Can't find the resource id.

ResourceType

The resource type is not valid.

HTTP Status Code: 404

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

PutGroupingConfiguration

Creates or updates the grouping configuration for this account. This operation allows you to define custom grouping attributes that determine how services are logically grouped based on telemetry attributes, AWS tags, or predefined mappings. These grouping attributes can then be used to organize and filter services in the Application Signals console and APIs.

Request Syntax

```
PUT /grouping-configuration HTTP/1.1
Content-type: application/json

{
   "GroupingAttributeDefinitions": [
      {
         "DefaultGroupingValue": "string",
         "GroupingName": "string",
         "GroupingSourceKeys": [ "string" ]
      }
   ]
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

GroupingAttributeDefinitions

An array of grouping attribute definitions that specify how services should be grouped. Each definition includes a friendly name, source keys to derive the grouping value from, and an optional default value.

Type: Array of GroupingAttributeDefinition objects

Required: Yes

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
   "GroupingConfiguration": {
      "GroupingAttributeDefinitions": [
         {
            "DefaultGroupingValue": "string",
            "GroupingName": "string",
            "GroupingSourceKeys": [ "string" ]
         }
      ],
      "UpdatedAt": number
   }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

GroupingConfiguration

A structure containing the updated grouping configuration, including all grouping attribute definitions and the timestamp when it was last updated.

Type: GroupingConfiguration object

Errors

For information about the errors that are common to all actions, see Common Error Types.

AccessDeniedException

You don't have sufficient permissions to perform this action.

HTTP Status Code: 403

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

StartDiscovery

Enables this AWS account to be able to use CloudWatch Application Signals by creating the *AWSServiceRoleForCloudWatchApplicationSignals* service-linked role. This service- linked role has the following permissions:

- `xray:GetServiceGraph`
- `logs:StartQuery`
- `logs:GetQueryResults`
- `cloudwatch:GetMetricData`
- `cloudwatch:ListMetrics`
- `tag:GetResources`
- `autoscaling:DescribeAutoScalingGroups`

A service-linked CloudTrail event channel is created to process CloudTrail events and return change event information. This includes last deployment time, userName, eventName, and other event metadata.

After completing this step, you still need to instrument your Java and Python applications to send data to Application Signals. For more information, see Enabling Application Signals.

Request Syntax

```
POST /start-discovery HTTP/1.1
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see Common Error Types.

AccessDeniedException

You don't have sufficient permissions to perform this action.

HTTP Status Code: 403

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

TagResource

Assigns one or more tags (key-value pairs) to the specified CloudWatch resource, such as a service level objective.

Tags can help you organize and categorize your resources. You can also use them to scope user permissions by granting a user permission to access or change only resources with certain tag values.

Tags don't have any semantic meaning to AWS and are interpreted strictly as strings of characters.

You can use the `TagResource` action with an alarm that already has tags. If you specify a new tag key for the alarm, this tag is appended to the list of tags associated with the alarm. If you specify a tag key that is already associated with the alarm, the new tag value that you specify replaces the previous value for that tag.

You can associate as many as 50 tags with a CloudWatch resource.

Request Syntax

```
POST /tag-resource HTTP/1.1
Content-type: application/json

{
   "ResourceArn": "string",
   "Tags": [
      {
         "Key": "string",
         "Value": "string"
      }
   ]
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

ResourceArn

The Amazon Resource Name (ARN) of the CloudWatch resource that you want to set tags for.

The ARN format of an Application Signals SLO is `arn:aws:cloudwatch:`*`Region`*`:`*`account-id`*`:slo:`*`slo-name`*

For more information about ARN format, see Resource Types Defined by Amazon CloudWatch in the *Amazon Web Services General Reference*.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: Yes

Tags

The list of key-value pairs to associate with the alarm.

Type: Array of Tag objects

Array Members: Minimum number of 0 items. Maximum number of 200 items.

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see Common Error Types.

ResourceNotFoundException

Resource not found.

ResourceId

Can't find the resource id.

ResourceType

The resource type is not valid.

HTTP Status Code: 404

ServiceQuotaExceededException

This request exceeds a service quota.

HTTP Status Code: 402

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

UntagResource

Removes one or more tags from the specified resource.

Request Syntax

```
POST /untag-resource HTTP/1.1
Content-type: application/json

{
   "ResourceArn": "string",
   "TagKeys": [ "string" ]
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

ResourceArn

The Amazon Resource Name (ARN) of the CloudWatch resource that you want to delete tags from.

The ARN format of an Application Signals SLO is `arn:aws:cloudwatch:`*`Region`*`:`*`account-id`*`:slo:`*`slo-name`*

For more information about ARN format, see Resource Types Defined by Amazon CloudWatch in the *Amazon Web Services General Reference*.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: Yes

TagKeys

The list of tag keys to remove from the resource.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 200 items.

Length Constraints: Minimum length of 1. Maximum length of 128.

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see Common Error Types.

ResourceNotFoundException

Resource not found.

ResourceId

Can't find the resource id.

ResourceType

The resource type is not valid.

HTTP Status Code: 404

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

UpdateServiceLevelObjective

Updates an existing service level objective (SLO). If you omit parameters, the previous values of those parameters are retained.

You cannot change from a period-based SLO to a request-based SLO, or change from a request-based SLO to a period-based SLO.

Request Syntax

```
PATCH /slo/Id HTTP/1.1
Content-type: application/json

{
   "BurnRateConfigurations": [
      {
         "LookBackWindowMinutes": number
      }
   ],
   "Description": "string",
   "Goal": {
      "AttainmentGoal": number,
      "Interval": { ... },
      "WarningThreshold": number
   },
   "RequestBasedSliConfig": {
      "ComparisonOperator": "string",
      "MetricThreshold": number,
      "RequestBasedSliMetricConfig": {
         "DependencyConfig": {
            "DependencyKeyAttributes": {
               "string" : "string"
            },
            "DependencyOperationName": "string"
         },
         "KeyAttributes": {
            "string" : "string"
         },
         "MetricName": "string",
         "MetricSource": {
            "MetricSourceAttributes": {
               "string" : "string"
            },
```

```
            "MetricSourceKeyAttributes": {
               "string" : "string"
            }
         },
         "MetricType": "string",
         "MonitoredRequestCountMetric": { ... },
         "OperationName": "string",
         "TotalRequestCountMetric": [
            {
               "AccountId": "string",
               "Expression": "string",
               "Id": "string",
               "Label": "string",
               "MetricStat": {
                  "Metric": {
                     "Dimensions": [
                        {
                           "Name": "string",
                           "Value": "string"
                        }
                     ],
                     "MetricName": "string",
                     "Namespace": "string"
                  },
                  "Period": number,
                  "Stat": "string",
                  "Unit": "string"
               },
               "Period": number,
               "ReturnData": boolean
            }
         ]
      }
   },
   "SliConfig": {
      "ComparisonOperator": "string",
      "MetricThreshold": number,
      "SliMetricConfig": {
         "DependencyConfig": {
            "DependencyKeyAttributes": {
               "string" : "string"
            },
            "DependencyOperationName": "string"
         },
```

```
        "KeyAttributes": {
           "string" : "string"
        },
        "MetricDataQueries": [
           {
              "AccountId": "string",
              "Expression": "string",
              "Id": "string",
              "Label": "string",
              "MetricStat": {
                 "Metric": {
                    "Dimensions": [
                       {
                          "Name": "string",
                          "Value": "string"
                       }
                    ],
                    "MetricName": "string",
                    "Namespace": "string"
                 },
                 "Period": number,
                 "Stat": "string",
                 "Unit": "string"
              },
              "Period": number,
              "ReturnData": boolean
           }
        ],
        "MetricName": "string",
        "MetricSource": {
           "MetricSourceAttributes": {
              "string" : "string"
           },
           "MetricSourceKeyAttributes": {
              "string" : "string"
           }
        },
        "MetricType": "string",
        "OperationName": "string",
        "PeriodSeconds": number,
        "Statistic": "string"
     }
  }
```

```
}
```

URI Request Parameters

The request uses the following URI parameters.

Id

The Amazon Resource Name (ARN) or name of the service level objective that you want to update.

Pattern: `[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]$|^arn:(aws|aws-us-gov):application-signals:[^:]*:[^:]*:slo/[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]`

Required: Yes

Request Body

The request accepts the following data in JSON format.

BurnRateConfigurations

Use this array to create *burn rates* for this SLO. Each burn rate is a metric that indicates how fast the service is consuming the error budget, relative to the attainment goal of the SLO.

Type: Array of BurnRateConfiguration objects

Array Members: Minimum number of 0 items. Maximum number of 10 items.

Required: No

Description

An optional description for the SLO.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: No

Goal

A structure that contains the attributes that determine the goal of the SLO. This includes the time period for evaluation and the attainment threshold.

Type: Goal object

Required: No

RequestBasedSliConfig

If this SLO is a request-based SLO, this structure defines the information about what performance metric this SLO will monitor.

You can't specify both `SliConfig` and `RequestBasedSliConfig` in the same operation.

Type: RequestBasedServiceLevelIndicatorConfig object

Required: No

SliConfig

If this SLO is a period-based SLO, this structure defines the information about what performance metric this SLO will monitor.

Type: ServiceLevelIndicatorConfig object

Required: No

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
   "Slo": {
      "Arn": "string",
      "BurnRateConfigurations": [
         {
            "LookBackWindowMinutes": number
         }
      ],
      "CreatedTime": number,
      "Description": "string",
```

```
      "EvaluationType": "string",
      "Goal": {
         "AttainmentGoal": number,
         "Interval": { ... },
         "WarningThreshold": number
      },
      "LastUpdatedTime": number,
      "MetricSourceType": "string",
      "Name": "string",
      "RequestBasedSli": {
         "ComparisonOperator": "string",
         "MetricThreshold": number,
         "RequestBasedSliMetric": {
            "DependencyConfig": {
               "DependencyKeyAttributes": {
                  "string" : "string"
               },
               "DependencyOperationName": "string"
            },
            "KeyAttributes": {
               "string" : "string"
            },
            "MetricSource": {
               "MetricSourceAttributes": {
                  "string" : "string"
               },
               "MetricSourceKeyAttributes": {
                  "string" : "string"
               }
            },
            "MetricType": "string",
            "MonitoredRequestCountMetric": { ... },
            "OperationName": "string",
            "TotalRequestCountMetric": [
               {
                  "AccountId": "string",
                  "Expression": "string",
                  "Id": "string",
                  "Label": "string",
                  "MetricStat": {
                     "Metric": {
                        "Dimensions": [
                           {
                              "Name": "string",
```

```
                            "Value": "string"
                         }
                      ],
                      "MetricName": "string",
                      "Namespace": "string"
                   },
                   "Period": number,
                   "Stat": "string",
                   "Unit": "string"
                },
                "Period": number,
                "ReturnData": boolean
             }
          ]
       }
    },
    "Sli": {
       "ComparisonOperator": "string",
       "MetricThreshold": number,
       "SliMetric": {
          "DependencyConfig": {
             "DependencyKeyAttributes": {
                "string" : "string"
             },
             "DependencyOperationName": "string"
          },
          "KeyAttributes": {
             "string" : "string"
          },
          "MetricDataQueries": [
             {
                "AccountId": "string",
                "Expression": "string",
                "Id": "string",
                "Label": "string",
                "MetricStat": {
                   "Metric": {
                      "Dimensions": [
                         {
                            "Name": "string",
                            "Value": "string"
                         }
                      ],
                      "MetricName": "string",
```

```
                        "Namespace": "string"
                     },
                     "Period": number,
                     "Stat": "string",
                     "Unit": "string"
                  },
                  "Period": number,
                  "ReturnData": boolean
               }
            ],
            "MetricSource": {
               "MetricSourceAttributes": {
                  "string" : "string"
               },
               "MetricSourceKeyAttributes": {
                  "string" : "string"
               }
            },
            "MetricType": "string",
            "OperationName": "string"
         }
      }
   }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

Slo

A structure that contains information about the SLO that you just updated.

Type: ServiceLevelObjective object

Errors

For information about the errors that are common to all actions, see Common Error Types.

ResourceNotFoundException

Resource not found.

ResourceId

Can't find the resource id.

ResourceType

The resource type is not valid.

HTTP Status Code: 404

ThrottlingException

The request was throttled because of quota limits.

HTTP Status Code: 429

ValidationException

The resource is not valid.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

Data Types

The Amazon CloudWatch Application Signals API contains several data types that various actions use. This section describes each data type in detail.

> **Note**
>
> The order of each element in a data type structure is not guaranteed. Applications should not assume a particular order.

The following data types are supported:

- AttributeFilter
- AuditFinding
- AuditorResult
- AuditTarget
- AuditTargetEntity
- BatchUpdateExclusionWindowsError
- BurnRateConfiguration
- CalendarInterval
- CanaryEntity
- ChangeEvent
- DependencyConfig
- DependencyGraph
- Dimension
- Edge
- ExclusionWindow
- Goal
- GroupingAttributeDefinition
- GroupingConfiguration
- Interval
- Metric

- MetricDataQuery
- MetricGraph
- MetricReference
- MetricSource
- MetricStat
- MonitoredRequestCountMetricDataQueries
- Node
- RecurrenceRule
- RequestBasedServiceLevelIndicator
- RequestBasedServiceLevelIndicatorConfig
- RequestBasedServiceLevelIndicatorMetric
- RequestBasedServiceLevelIndicatorMetricConfig
- RollingInterval
- Service
- ServiceDependency
- ServiceDependent
- ServiceEntity
- ServiceGroup
- ServiceLevelIndicator
- ServiceLevelIndicatorConfig
- ServiceLevelIndicatorMetric
- ServiceLevelIndicatorMetricConfig
- ServiceLevelObjective
- ServiceLevelObjectiveBudgetReport
- ServiceLevelObjectiveBudgetReportError
- ServiceLevelObjectiveEntity
- ServiceLevelObjectiveSummary
- ServiceOperation
- ServiceOperationEntity
- ServiceState

- ServiceSummary
- Tag
- Window

AttributeFilter

A structure that defines a filter for narrowing down results based on specific attribute values. This can be used to filter services by platform, environment, or other service characteristics.

Contents

AttributeFilterName

The name of the attribute to filter by, such as `Platform`, `Environment`, or `BusinessUnit`.

Type: String

Pattern: `[A-Za-z0-9 :/-]+`

Required: Yes

AttributeFilterValues

An array of values to match for the specified attribute. Services that have any of these values for the attribute will be included in the results.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 20 items.

Pattern: `[A-Za-z0-9 :/-]+`

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

AuditFinding

A structure that contains information about an audit finding, which represents an automated analysis result about service behavior, performance issues, or potential problems identified through heuristic algorithms.

Contents

KeyAttributes

The key attributes that identify the service or entity this audit finding relates to. This is a string-to-string map that includes fields like Type, Name, and Environment.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: Yes

AuditorResults

An array of auditor results that contain the specific findings, descriptions, and severity levels identified by different auditing algorithms.

Type: Array of AuditorResult objects

Array Members: Minimum number of 0 items. Maximum number of 5 items.

Required: No

DependencyGraph

A structure containing nodes and edges that represent the dependency relationships relevant to this audit finding, helping to understand the context and potential impact.

Type: DependencyGraph object

Required: No

MetricGraph

A structure containing metric data queries and time range information that provides context for the audit finding through relevant performance metrics.

Type: MetricGraph object

Required: No

Operation

The name of the operation associated with this audit finding, if the finding is specific to a particular service operation.

Type: String

Required: No

Type

The type of audit finding.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

AuditorResult

A structure that contains the result of an automated audit analysis, including the auditor name, description of findings, additional data, and severity level.

Contents

Auditor

The name of the auditor algorithm that generated this result.

Type: String

Required: No

Data

This is a string-to-string map. It contains additional data about the result of an automated audit analysis.

Type: String to string map

Required: No

Description

A detailed description of the audit finding, explaining what was observed and potential implications.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10240.

Required: No

Severity

The severity level of this audit finding, indicating the importance and potential impact of the issue.

Type: String

Valid Values: `CRITICAL | HIGH | MEDIUM | LOW | NONE`

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

AuditTarget

A structure that specifies the target entity for audit analysis, such as a `service`, SLO, `service_operation`, or `canary`.

Contents

Data

The specific data identifying the audit target entity.

Type: AuditTargetEntity object

Note: This object is a Union. Only one member of this object can be specified or returned.

Required: Yes

Type

The type of entity being audited, such as `service`, SLO, `service_operation`, or `canary`.

Type: String

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

AuditTargetEntity

A union structure that contains the specific entity information for different types of audit targets.

Contents

> **Important**
>
> This data type is a UNION, so only one of the following members can be specified when used or returned.

Canary

Canary entity information when the audit target is a CloudWatch Synthetics canary.

Type: CanaryEntity object

Required: No

Service

Service entity information when the audit target is a service.

Type: ServiceEntity object

Required: No

ServiceOperation

Service operation entity information when the audit target is a specific service operation.

Type: ServiceOperationEntity object

Required: No

Slo

SLO entity information when the audit target is a service level objective.

Type: ServiceLevelObjectiveEntity object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

BatchUpdateExclusionWindowsError

An array of structures, where each structure includes an error indicating that one of the requests in the array was not valid.

Contents

ErrorCode

The error code.

Type: String

Required: Yes

ErrorMessage

The error message.

Type: String

Required: Yes

SloId

The SLO ID in the error.

Type: String

Pattern: `[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]$|^arn:(aws|aws-us-gov):application-signals:[^:]*:[^:]*:slo/[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]`

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

BurnRateConfiguration

This object defines the length of the look-back window used to calculate one burn rate metric for this SLO. The burn rate measures how fast the service is consuming the error budget, relative to the attainment goal of the SLO. A burn rate of exactly 1 indicates that the SLO goal will be met exactly.

For example, if you specify 60 as the number of minutes in the look-back window, the burn rate is calculated as the following:

burn rate = error rate over the look-back window / (100% - attainment goal percentage)

For more information about burn rates, see Calculate burn rates.

Contents

LookBackWindowMinutes

The number of minutes to use as the look-back window.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 10080.

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

CalendarInterval

If the interval for this service level objective is a calendar interval, this structure contains the interval specifications.

Contents

Duration

Specifies the duration of each calendar interval. For example, if `Duration` is `1` and `DurationUnit` is `MONTH`, each interval is one month, aligned with the calendar.

Type: Integer

Valid Range: Minimum value of 1.

Required: Yes

DurationUnit

Specifies the calendar interval unit.

Type: String

Valid Values: `MINUTE | HOUR | DAY | MONTH`

Required: Yes

StartTime

The date and time when you want the first interval to start. Be sure to choose a time that configures the intervals the way that you want. For example, if you want weekly intervals starting on Mondays at 6 a.m., be sure to specify a start time that is a Monday at 6 a.m.

When used in a raw HTTP Query API, it is formatted as be epoch time in seconds. For example: `1698778057`

As soon as one calendar interval ends, another automatically begins.

Type: Timestamp

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

CanaryEntity

A structure that contains identifying information for a CloudWatch Synthetics canary entity used in audit targeting.

Contents

CanaryName

The name of the CloudWatch Synthetics canary.

Type: String

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ChangeEvent

A structure that contains information about a change event that occurred for a service, such as a deployment or configuration change.

Contents

AccountId

The AWS account ID where this change event occurred.

Type: String

Pattern: `[0-9]{12}`

Required: Yes

ChangeEventType

The type of change event that occurred, such as `DEPLOYMENT`.

Type: String

Valid Values: `DEPLOYMENT | CONFIGURATION`

Required: Yes

Entity

The entity (service or resource) that was affected by this change event, including its key attributes.

This is a string-to-string map. It can include the following fields.

- `Type` designates the type of object this is.
- `ResourceType` specifies the type of the resource. This field is used only when the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Name` specifies the name of the object. This is used only if the value of the `Type` field is `Service`, `RemoteService`, or `AWS::Service`.
- `Identifier` identifies the resource objects of this resource. This is used only if the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Environment` specifies the location where this object is hosted, or what it belongs to.

- `AwsAccountId` specifies the account where this object is in.

Below is an example of a service.

```
{ "Type": "Service", "Name": "visits-service", "Environment":
"petclinic-test" }
```

Below is an example of a resource.

```
{ "Type": "AWS::Resource", "ResourceType": "AWS::DynamoDB::Table",
"Identifier": "Customers" }
```

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: Yes

EventId

A unique identifier for this change event. For CloudTrail-based events, this is the CloudTrail event id. For other events, this will be `Unknown`.

Type: String

Required: Yes

Region

The AWS region where this change event occurred.

Type: String

Required: Yes

Timestamp

The timestamp when this change event occurred. When used in a raw HTTP Query API, it is formatted as epoch time in seconds.

Type: Timestamp

Required: Yes

EventName

The name or description of this change event.

Type: String

Required: No

UserName

The name of the user who initiated this change event, if available.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

DependencyConfig

Identifies the dependency using the `DependencyKeyAttributes` and `DependencyOperationName`.

When creating a service dependency SLO, you must specify the `KeyAttributes` of the service, and the `DependencyConfig` for the dependency. You can specify the `OperationName` of the service, from which it calls the dependency. Alternatively, you can exclude `OperationName` and the SLO will monitor all of the service's operations that call the dependency.

Contents

DependencyKeyAttributes

This is a string-to-string map. It can include the following fields.

- `Type` designates the type of object this is.
- `ResourceType` specifies the type of the resource. This field is used only when the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Name` specifies the name of the object. This is used only if the value of the `Type` field is `Service`, `RemoteService`, or `AWS::Service`.
- `Identifier` identifies the resource objects of this resource. This is used only if the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Environment` specifies the location where this object is hosted, or what it belongs to.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: Yes

DependencyOperationName

The name of the called operation in the dependency.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

DependencyGraph

A structure that represents the dependency relationships relevant to an audit finding, containing nodes and edges that show how services and resources are connected.

Contents

Edges

An array of edges representing the connections and relationships between the nodes in the dependency graph.

Type: Array of Edge objects

Required: No

Nodes

An array of nodes representing the services, resources, or other entities in the dependency graph.

Type: Array of Node objects

Array Members: Minimum number of 0 items. Maximum number of 4 items.

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

Dimension

A dimension is a name/value pair that is part of the identity of a metric. Because dimensions are part of the unique identifier for a metric, whenever you add a unique name/value pair to one of your metrics, you are creating a new variation of that metric. For example, many Amazon EC2 metrics publish `InstanceId` as a dimension name, and the actual instance ID as the value for that dimension.

You can assign up to 30 dimensions to a metric.

Contents

Name

The name of the dimension. Dimension names must contain only ASCII characters, must include at least one non-whitespace character, and cannot start with a colon (`:`). ASCII control characters are not supported as part of dimension names.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: Yes

Value

The value of the dimension. Dimension values must contain only ASCII characters and must include at least one non-whitespace character. ASCII control characters are not supported as part of dimension values.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

Edge

A structure that represents a connection between two nodes in a dependency graph, showing the relationship and characteristics of the connection.

Contents

ConnectionType

The type of connection between the nodes, indicating the nature of the relationship.

Type: String

Valid Values: `INDIRECT | DIRECT`

Required: No

DestinationNodeId

The identifier of the destination node in this edge connection.

Type: String

Required: No

Duration

The duration or latency associated with this connection, if applicable.

Type: Double

Required: No

SourceNodeId

The identifier of the source node in this edge connection.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ExclusionWindow

The core SLO time window exclusion object that includes Window, StartTime, RecurrenceRule, and Reason.

Contents

Window

The SLO time window exclusion .

Type: Window object

Required: Yes

Reason

A description explaining why this time period should be excluded from SLO calculations.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: No

RecurrenceRule

The recurrence rule for the SLO time window exclusion. Supports both cron and rate expressions.

Type: RecurrenceRule object

Required: No

StartTime

The start of the SLO time window exclusion. Defaults to current time if not specified.

Type: Timestamp

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

Goal

This structure contains the attributes that determine the goal of an SLO. This includes the time period for evaluation and the attainment threshold.

Contents

AttainmentGoal

The threshold that determines if the goal is being met.

If this is a period-based SLO, the attainment goal is the percentage of good periods that meet the threshold requirements to the total periods within the interval. For example, an attainment goal of 99.9% means that within your interval, you are targeting 99.9% of the periods to be in healthy state.

If this is a request-based SLO, the attainment goal is the percentage of requests that must be successful to meet the attainment goal.

If you omit this parameter, 99 is used to represent 99% as the attainment goal.

Type: Double

Required: No

Interval

The time period used to evaluate the SLO. It can be either a calendar interval or rolling interval.

If you omit this parameter, a rolling interval of 7 days is used.

Type: Interval object

Note: This object is a Union. Only one member of this object can be specified or returned.

Required: No

WarningThreshold

The percentage of remaining budget over total budget that you want to get warnings for. If you omit this parameter, the default of 50.0 is used.

Type: Double

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

GroupingAttributeDefinition

A structure that defines how services should be grouped based on specific attributes. This includes the friendly name for the grouping, the source keys to derive values from, and an optional default value.

Contents

GroupingName

The friendly name for this grouping attribute, such as `BusinessUnit` or `Environment`. This name is used to identify the grouping in the console and APIs.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 128.

Pattern: `[a-zA-Z0-9\s+\-=\._:/@]*`

Required: Yes

DefaultGroupingValue

The default value to use for this grouping attribute when no value can be derived from the source keys. This ensures all services have a grouping value even if the source data is missing.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 128.

Pattern: `[a-zA-Z0-9\s+\-=\._:/@]*`

Required: No

GroupingSourceKeys

An array of source keys used to derive the grouping attribute value from telemetry data, AWS tags, or other sources. For example, ["business_unit", "team"] would look for values in those fields.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 128.

Pattern: `[a-zA-Z0-9\s+\-=\._:/@]*`

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

GroupingConfiguration

A structure that contains the complete grouping configuration for an account, including all defined grouping attributes and metadata about when it was last updated.

Contents

GroupingAttributeDefinitions

An array of grouping attribute definitions that specify how services should be grouped based on various attributes and source keys.

Type: Array of GroupingAttributeDefinition objects

Required: Yes

UpdatedAt

The timestamp when this grouping configuration was last updated. When used in a raw HTTP Query API, it is formatted as epoch time in seconds.

Type: Timestamp

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

Interval

The time period used to evaluate the SLO. It can be either a calendar interval or rolling interval.

Contents

> **Important**
>
> This data type is a UNION, so only one of the following members can be specified when used or returned.

CalendarInterval

If the interval is a calendar interval, this structure contains the interval specifications.

Type: CalendarInterval object

Required: No

RollingInterval

If the interval is a rolling interval, this structure contains the interval specifications.

Type: RollingInterval object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

Metric

This structure defines the metric used for a service level indicator, including the metric name, namespace, and dimensions

Contents

Dimensions

An array of one or more dimensions to use to define the metric that you want to use. For more information, see Dimensions.

Type: Array of Dimension objects

Array Members: Minimum number of 0 items. Maximum number of 30 items.

Required: No

MetricName

The name of the metric to use.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: No

Namespace

The namespace of the metric. For more information, see Namespaces.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `.*[^:].*`

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

MetricDataQuery

Use this structure to define a metric or metric math expression that you want to use as for a service level objective.

Each `MetricDataQuery` in the `MetricDataQueries` array specifies either a metric to retrieve, or a metric math expression to be performed on retrieved metrics. A single `MetricDataQueries` array can include as many as 20 `MetricDataQuery` structures in the array. The 20 structures can include as many as 10 structures that contain a `MetricStat` parameter to retrieve a metric, and as many as 10 structures that contain the `Expression` parameter to perform a math expression. Of those `Expression` structures, exactly one must have true as the value for `ReturnData`. The result of this expression used for the SLO.

For more information about metric math expressions, see CloudWatchUse metric math.

Within each `MetricDataQuery` object, you must specify either `Expression` or `MetricStat` but not both.

Contents

Id

A short name used to tie this object to the results in the response. This `Id` must be unique within a `MetricDataQueries` array. If you are performing math expressions on this set of data, this name represents that data and can serve as a variable in the metric math expression. The valid characters are letters, numbers, and underscore. The first character must be a lowercase letter.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: Yes

AccountId

The ID of the account where this metric is located. If you are performing this operation in a monitoring account, use this to specify which source account to retrieve this metric from.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: No

Expression

This field can contain a metric math expression to be performed on the other metrics that you are retrieving within this `MetricDataQueries` structure.

A math expression can use the `Id` of the other metrics or queries to refer to those metrics, and can also use the `Id` of other expressions to use the result of those expressions. For more information about metric math expressions, see Metric Math Syntax and Functions in the *Amazon CloudWatch User Guide*.

Within each `MetricDataQuery` object, you must specify either `Expression` or `MetricStat` but not both.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2048.

Required: No

Label

A human-readable label for this metric or expression. This is especially useful if this is an expression, so that you know what the value represents. If the metric or expression is shown in a CloudWatch dashboard widget, the label is shown. If `Label` is omitted, CloudWatch generates a default.

You can put dynamic expressions into a label, so that it is more descriptive. For more information, see Using Dynamic Labels.

Type: String

Required: No

MetricStat

A metric to be used directly for the SLO, or to be used in the math expression that will be used for the SLO.

Within one `MetricDataQuery` object, you must specify either `Expression` or `MetricStat` but not both.

Type: MetricStat object

Required: No

Period

The granularity, in seconds, of the returned data points for this metric. For metrics with regular resolution, a period can be as short as one minute (60 seconds) and must be a multiple of 60. For high-resolution metrics that are collected at intervals of less than one minute, the period can be 1, 5, 10, 30, 60, or any multiple of 60. High-resolution metrics are those metrics stored by a `PutMetricData` call that includes a `StorageResolution` of 1 second.

If the `StartTime` parameter specifies a time stamp that is greater than 3 hours ago, you must specify the period as follows or no data points in that time range is returned:

- Start time between 3 hours and 15 days ago - Use a multiple of 60 seconds (1 minute).
- Start time between 15 and 63 days ago - Use a multiple of 300 seconds (5 minutes).
- Start time greater than 63 days ago - Use a multiple of 3600 seconds (1 hour).

Type: Integer

Valid Range: Minimum value of 1.

Required: No

ReturnData

Use this only if you are using a metric math expression for the SLO. Specify `true` for `ReturnData` for only the one expression result to use as the alarm. For all other metrics and expressions in the same `CreateServiceLevelObjective` operation, specify `ReturnData` as `false`.

Type: Boolean

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

MetricGraph

A structure that contains metric data queries and time range information that provides context for audit findings through relevant performance metrics.

Contents

EndTime

The end time for the metric data included in this graph. When used in a raw HTTP Query API, it is formatted as epoch time in seconds.

Type: Timestamp

Required: No

MetricDataQueries

An array of metric data queries that define the metrics to be retrieved and analyzed as part of the audit finding context.

Type: Array of MetricDataQuery objects

Required: No

StartTime

The start time for the metric data included in this graph. When used in a raw HTTP Query API, it is formatted as epoch time in seconds.

Type: Timestamp

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

MetricReference

This structure contains information about one CloudWatch metric associated with this entity discovered by Application Signals.

Contents

MetricName

The name of the metric.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: Yes

MetricType

Used to display the appropriate statistics in the CloudWatch console.

Type: String

Pattern: `[A-Za-z0-9 -]+`

Required: Yes

Namespace

The namespace of the metric. For more information, see CloudWatchNamespaces.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `.*[^:].*`

Required: Yes

AccountId

AWS account ID.

Type: String

Pattern: `[0-9]{12}`

Required: No

Dimensions

An array of one or more dimensions that further define the metric. For more information, see CloudWatchDimensions.

Type: Array of Dimension objects

Array Members: Minimum number of 0 items. Maximum number of 30 items.

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

MetricSource

Identifies the metric source for SLOs on resources other than Application Signals services.

Contents

MetricSourceKeyAttributes

Key attributes that identify the metric source.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: Yes

MetricSourceAttributes

Additional attributes for the metric source.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

MetricStat

This structure defines the metric to be used as the service level indicator, along with the statistics, period, and unit.

Contents

Metric

The metric to use as the service level indicator, including the metric name, namespace, and dimensions.

Type: Metric object

Required: Yes

Period

The granularity, in seconds, to be used for the metric. For metrics with regular resolution, a period can be as short as one minute (60 seconds) and must be a multiple of 60. For high-resolution metrics that are collected at intervals of less than one minute, the period can be 1, 5, 10, 30, 60, or any multiple of 60. High-resolution metrics are those metrics stored by a `PutMetricData` call that includes a `StorageResolution` of 1 second.

Type: Integer

Valid Range: Minimum value of 1.

Required: Yes

Stat

The statistic to use for comparison to the threshold. It can be any CloudWatch statistic or extended statistic. For more information about statistics, see CloudWatch statistics definitions.

Type: String

Required: Yes

Unit

If you omit `Unit` then all data that was collected with any unit is returned, along with the corresponding units that were specified when the data was reported to CloudWatch. If you

specify a unit, the operation returns only data that was collected with that unit specified. If you specify a unit that does not match the data collected, the results of the operation are null. CloudWatch does not perform unit conversions.

Type: String

Valid Values: `Microseconds | Milliseconds | Seconds | Bytes | Kilobytes | Megabytes | Gigabytes | Terabytes | Bits | Kilobits | Megabits | Gigabits | Terabits | Percent | Count | Bytes/Second | Kilobytes/Second | Megabytes/Second | Gigabytes/Second | Terabytes/Second | Bits/Second | Kilobits/Second | Megabits/Second | Gigabits/Second | Terabits/Second | Count/Second | None`

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

MonitoredRequestCountMetricDataQueries

This structure defines the metric that is used as the "good request" or "bad request" value for a request-based SLO. This value observed for the metric defined in `TotalRequestCountMetric` is divided by the number found for `MonitoredRequestCountMetric` to determine the percentage of successful requests that this SLO tracks.

Contents

> **Important**
>
> This data type is a UNION, so only one of the following members can be specified when used or returned.

BadCountMetric

If you want to count "bad requests" to determine the percentage of successful requests for this request-based SLO, specify the metric to use as "bad requests" in this structure.

Type: Array of MetricDataQuery objects

Required: No

GoodCountMetric

If you want to count "good requests" to determine the percentage of successful requests for this request-based SLO, specify the metric to use as "good requests" in this structure.

Type: Array of MetricDataQuery objects

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

Node

A structure that represents a node in a dependency graph, containing information about a service, resource, or other entity and its characteristics.

Contents

KeyAttributes

The key attributes that identify this node, including Type, Name, and Environment information.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: Yes

Name

The name of the entity represented by this node.

Type: String

Required: Yes

NodeId

A unique identifier for this node within the dependency graph.

Type: String

Required: Yes

Duration

The duration or processing time associated with this node, if applicable.

Type: Double

Required: No

Operation

The operation associated with this node, if applicable.

Type: String

Required: No

Status

The status of the entity represented by this node.

Type: String

Required: No

Type

The type of entity represented by this node, such as `Service` or `Resource`.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

RecurrenceRule

The recurrence rule for the SLO time window exclusion .

Contents

Expression

A cron or rate expression that specifies the schedule for the exclusion window.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

RequestBasedServiceLevelIndicator

This structure contains information about the performance metric that a request-based SLO monitors.

Contents

RequestBasedSliMetric

A structure that contains information about the metric that the SLO monitors.

Type: RequestBasedServiceLevelIndicatorMetric object

Required: Yes

ComparisonOperator

The arithmetic operation used when comparing the specified metric to the threshold.

Type: String

Valid Values: `GreaterThanOrEqualTo | GreaterThan | LessThan | LessThanOrEqualTo`

Required: No

MetricThreshold

This value is the threshold that the observed metric values of the SLI metric are compared to.

Type: Double

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

RequestBasedServiceLevelIndicatorConfig

This structure specifies the information about the service and the performance metric that a request-based SLO is to monitor.

Contents

RequestBasedSliMetricConfig

Use this structure to specify the metric to be used for the SLO.

Type: RequestBasedServiceLevelIndicatorMetricConfig object

Required: Yes

ComparisonOperator

The arithmetic operation to use when comparing the specified metric to the threshold. This parameter is required if this SLO is tracking the `Latency` metric.

Type: String

Valid Values: `GreaterThanOrEqualTo | GreaterThan | LessThan | LessThanOrEqualTo`

Required: No

MetricThreshold

The value that the SLI metric is compared to. This parameter is required if this SLO is tracking the `Latency` metric.

Type: Double

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

RequestBasedServiceLevelIndicatorMetric

This structure contains the information about the metric that is used for a request-based SLO.

Contents

MonitoredRequestCountMetric

This structure defines the metric that is used as the "good request" or "bad request" value for a request-based SLO. This value observed for the metric defined in `TotalRequestCountMetric` is divided by the number found for `MonitoredRequestCountMetric` to determine the percentage of successful requests that this SLO tracks.

Type: MonitoredRequestCountMetricDataQueries object

Note: This object is a Union. Only one member of this object can be specified or returned.

Required: Yes

TotalRequestCountMetric

This structure defines the metric that is used as the "total requests" number for a request-based SLO. The number observed for this metric is divided by the number of "good requests" or "bad requests" that is observed for the metric defined in `MonitoredRequestCountMetric`.

Type: Array of MetricDataQuery objects

Required: Yes

DependencyConfig

Identifies the dependency using the `DependencyKeyAttributes` and `DependencyOperationName`.

Type: DependencyConfig object

Required: No

KeyAttributes

This is a string-to-string map that contains information about the type of object that this SLO is related to. It can include the following fields.

- `Type` designates the type of object that this SLO is related to.

- `ResourceType` specifies the type of the resource. This field is used only when the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Name` specifies the name of the object. This is used only if the value of the `Type` field is `Service`, `RemoteService`, or `AWS::Service`.
- `Identifier` identifies the resource objects of this resource. This is used only if the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Environment` specifies the location where this object is hosted, or what it belongs to.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: No

MetricSource

Identifies the metric source for SLOs on resources other than Application Signals services.

Type: MetricSource object

Required: No

MetricType

If the SLO monitors either the `LATENCY` or `AVAILABILITY` metric that Application Signals collects, this field displays which of those metrics is used.

Type: String

Valid Values: `LATENCY | AVAILABILITY`

Required: No

OperationName

If the SLO monitors a specific operation of the service, this field displays that operation name.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

RequestBasedServiceLevelIndicatorMetricConfig

Use this structure to specify the information for the metric that a period-based SLO will monitor.

Contents

DependencyConfig

Identifies the dependency using the `DependencyKeyAttributes` and `DependencyOperationName`.

Type: DependencyConfig object

Required: No

KeyAttributes

If this SLO is related to a metric collected by Application Signals, you must use this field to specify which service the SLO metric is related to. To do so, you must specify at least the `Type`, `Name`, and `Environment` attributes.

This is a string-to-string map. It can include the following fields.

- `Type` designates the type of object this is.
- `ResourceType` specifies the type of the resource. This field is used only when the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Name` specifies the name of the object. This is used only if the value of the `Type` field is `Service`, `RemoteService`, or `AWS::Service`.
- `Identifier` identifies the resource objects of this resource. This is used only if the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Environment` specifies the location where this object is hosted, or what it belongs to.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: No

MetricName

The name of the metric for SLOs on resources other than Application Signals services.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: No

MetricSource

Identifies the metric source for SLOs on resources other than Application Signals services.

Type: MetricSource object

Required: No

MetricType

If the SLO is to monitor either the `LATENCY` or `AVAILABILITY` metric that Application Signals collects, use this field to specify which of those metrics is used.

Type: String

Valid Values: `LATENCY | AVAILABILITY`

Required: No

MonitoredRequestCountMetric

Use this structure to define the metric that you want to use as the "good request" or "bad request" value for a request-based SLO. This value observed for the metric defined in `TotalRequestCountMetric` will be divided by the number found for `MonitoredRequestCountMetric` to determine the percentage of successful requests that this SLO tracks.

Type: MonitoredRequestCountMetricDataQueries object

Note: This object is a Union. Only one member of this object can be specified or returned.

Required: No

OperationName

If the SLO is to monitor a specific operation of the service, use this field to specify the name of that operation.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: No

TotalRequestCountMetric

Use this structure to define the metric that you want to use as the "total requests" number for a request-based SLO. This result will be divided by the "good request" or "bad request" value defined in `MonitoredRequestCountMetric`.

Type: Array of MetricDataQuery objects

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

RollingInterval

If the interval for this SLO is a rolling interval, this structure contains the interval specifications.

Contents

Duration

Specifies the duration of each rolling interval. For example, if `Duration` is 7 and `DurationUnit` is `DAY`, each rolling interval is seven days.

Type: Integer

Valid Range: Minimum value of 1.

Required: Yes

DurationUnit

Specifies the rolling interval unit.

Type: String

Valid Values: `MINUTE | HOUR | DAY | MONTH`

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

Service

This structure contains information about one of your services that was discovered by Application Signals.

Contents

KeyAttributes

This is a string-to-string map. It can include the following fields.

- `Type` designates the type of object this is.
- `ResourceType` specifies the type of the resource. This field is used only when the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Name` specifies the name of the object. This is used only if the value of the `Type` field is `Service`, `RemoteService`, or `AWS::Service`.
- `Identifier` identifies the resource objects of this resource. This is used only if the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Environment` specifies the location where this object is hosted, or what it belongs to.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: Yes

MetricReferences

An array of structures that each contain information about one metric associated with this service.

Type: Array of MetricReference objects

Required: Yes

AttributeMaps

This structure contains one or more string-to-string maps that help identify this service. It can include *platform attributes*, *application attributes*, and *telemetry attributes*.

Platform attributes contain information the service's platform.

- `PlatformType` defines the hosted-in platform.
- `EKS.Cluster` is the name of the Amazon EKS cluster.
- `K8s.Cluster` is the name of the self-hosted Kubernetes cluster.
- `K8s.Namespace` is the name of the Kubernetes namespace in either Amazon EKS or Kubernetes clusters.
- `K8s.Workload` is the name of the Kubernetes workload in either Amazon EKS or Kubernetes clusters.
- `K8s.Node` is the name of the Kubernetes node in either Amazon EKS or Kubernetes clusters.
- `K8s.Pod` is the name of the Kubernetes pod in either Amazon EKS or Kubernetes clusters.
- `EC2.AutoScalingGroup` is the name of the Amazon EC2 Auto Scaling group.
- `EC2.InstanceId` is the ID of the Amazon EC2 instance.
- `Host` is the name of the host, for all platform types.

Application attributes contain information about the application.

- `AWS.Application` is the application's name in AWS Service Catalog AppRegistry.
- `AWS.Application.ARN` is the application's ARN in AWS Service Catalog AppRegistry.

Telemetry attributes contain telemetry information.

- `Telemetry.SDK` is the fingerprint of the OpenTelemetry SDK version for instrumented services.
- `Telemetry.Agent` is the fingerprint of the agent used to collect and send telemetry data.
- `Telemetry.Source` Specifies the point of application where the telemetry was collected or specifies what was used for the source of telemetry data.

Type: Array of string to string maps

Required: No

LogGroupReferences

An array of string-to-string maps that each contain information about one log group associated with this service. Each string-to-string map includes the following fields:

- `"Type": "AWS::Resource"`
- `"ResourceType": "AWS::Logs::LogGroup"`
- `"Identifier": "name-of-log-group"`

Type: Array of string to string maps

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: No

ServiceGroups

An array of service groups that this service belongs to, based on the configured grouping attributes.

Type: Array of ServiceGroup objects

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ServiceDependency

This structure contains information about one dependency of this service.

Contents

DependencyKeyAttributes

This is a string-to-string map. It can include the following fields.

- `Type` designates the type of object this is.
- `ResourceType` specifies the type of the resource. This field is used only when the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Name` specifies the name of the object. This is used only if the value of the `Type` field is `Service`, `RemoteService`, or `AWS::Service`.
- `Identifier` identifies the resource objects of this resource. This is used only if the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Environment` specifies the location where this object is hosted, or what it belongs to.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: Yes

DependencyOperationName

The name of the called operation in the dependency.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: Yes

MetricReferences

An array of structures that each contain information about one metric associated with this service dependency that was discovered by Application Signals.

Type: Array of MetricReference objects

Required: Yes

OperationName

The name of the operation in this service that calls the dependency.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ServiceDependent

This structure contains information about a service dependent that was discovered by Application Signals. A dependent is an entity that invoked the specified service during the provided time range. Dependents include other services, CloudWatch Synthetics canaries, and clients that are instrumented with CloudWatch RUM app monitors.

Contents

DependentKeyAttributes

This is a string-to-string map. It can include the following fields.

- `Type` designates the type of object this is.
- `ResourceType` specifies the type of the resource. This field is used only when the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Name` specifies the name of the object. This is used only if the value of the `Type` field is `Service`, `RemoteService`, or `AWS::Service`.
- `Identifier` identifies the resource objects of this resource. This is used only if the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Environment` specifies the location where this object is hosted, or what it belongs to.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: Yes

MetricReferences

An array of structures that each contain information about one metric associated with this service dependent that was discovered by Application Signals.

Type: Array of MetricReference objects

Required: Yes

DependentOperationName

If the dependent invoker was a service that invoked it from an operation, the name of that dependent operation is displayed here.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: No

OperationName

If the invoked entity is an operation on an entity, the name of that dependent operation is displayed here.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ServiceEntity

A structure that contains identifying information for a service entity.

Contents

AwsAccountId

The AWS account ID where the service is located. Provide this value only for cross-account access.

Type: String

Required: No

Environment

The environment where the service is deployed.

Type: String

Required: No

Name

The name of the service.

Type: String

Required: No

Type

The type of the service entity.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ServiceGroup

A structure that represents a logical grouping of services based on shared attributes such as business unit, environment, or entry point.

Contents

GroupIdentifier

A unique identifier for this grouping attribute value, used for filtering and API operations.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: Yes

GroupName

The name of the grouping attribute, such as `BusinessUnit` or `Environment`.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: Yes

GroupSource

The source of the grouping attribute, such as `TAG`, `OTEL`, or `DEFAULT`.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: Yes

GroupValue

The value of the grouping attribute for this service, such as `Payments` or `Production`.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ServiceLevelIndicator

This structure contains information about the performance metric that a period-based SLO monitors.

Contents

ComparisonOperator

The arithmetic operation used when comparing the specified metric to the threshold.

Type: String

Valid Values: `GreaterThanOrEqualTo | GreaterThan | LessThan | LessThanOrEqualTo`

Required: Yes

MetricThreshold

The value that the SLI metric is compared to.

Type: Double

Required: Yes

SliMetric

A structure that contains information about the metric that the SLO monitors.

Type: ServiceLevelIndicatorMetric object

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ServiceLevelIndicatorConfig

This structure specifies the information about the service and the performance metric that a period-based SLO is to monitor.

Contents

SliMetricConfig

Use this structure to specify the metric to be used for the SLO.

Type: ServiceLevelIndicatorMetricConfig object

Required: Yes

ComparisonOperator

The arithmetic operation to use when comparing the specified metric to the threshold.

This is not required if `CreateRecommendedSlo` is set to `true`.

Type: String

Valid Values: `GreaterThanOrEqualTo | GreaterThan | LessThan | LessThanOrEqualTo`

Required: No

MetricThreshold

This parameter is used only when a request-based SLO tracks the `Latency` metric. Specify the threshold value that the observed `Latency` metric values are to be compared to.

This is not required if `CreateRecommendedSlo` is set to `true`.

Type: Double

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ServiceLevelIndicatorMetric

This structure contains the information about the metric that is used for a period-based SLO.

Contents

MetricDataQueries

If this SLO monitors a CloudWatch metric or the result of a CloudWatch metric math expression, this structure includes the information about that metric or expression.

Type: Array of MetricDataQuery objects

Required: Yes

DependencyConfig

Identifies the dependency using the `DependencyKeyAttributes` and `DependencyOperationName`.

Type: DependencyConfig object

Required: No

KeyAttributes

This is a string-to-string map that contains information about the type of object that this SLO is related to. It can include the following fields.

- `Type` designates the type of object that this SLO is related to.
- `ResourceType` specifies the type of the resource. This field is used only when the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Name` specifies the name of the object. This is used only if the value of the `Type` field is `Service`, `RemoteService`, or `AWS::Service`.
- `Identifier` identifies the resource objects of this resource. This is used only if the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Environment` specifies the location where this object is hosted, or what it belongs to.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: No

MetricSource

Identifies the metric source for SLOs on resources other than Application Signals services.

Type: MetricSource object

Required: No

MetricType

If the SLO monitors either the `LATENCY` or `AVAILABILITY` metric that Application Signals collects, this field displays which of those metrics is used.

Type: String

Valid Values: `LATENCY | AVAILABILITY`

Required: No

OperationName

If the SLO monitors a specific operation of the service, this field displays that operation name.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

ServiceLevelIndicatorMetricConfig

Use this structure to specify the information for the metric that a period-based SLO will monitor.

Contents

DependencyConfig

Identifies the dependency using the `DependencyKeyAttributes` and `DependencyOperationName`.

Type: DependencyConfig object

Required: No

KeyAttributes

If this SLO is related to a metric collected by Application Signals, you must use this field to specify which service the SLO metric is related to. To do so, you must specify at least the `Type`, `Name`, and `Environment` attributes.

This is a string-to-string map. It can include the following fields.

- `Type` designates the type of object this is.
- `ResourceType` specifies the type of the resource. This field is used only when the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Name` specifies the name of the object. This is used only if the value of the `Type` field is `Service`, `RemoteService`, or `AWS::Service`.
- `Identifier` identifies the resource objects of this resource. This is used only if the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Environment` specifies the location where this object is hosted, or what it belongs to.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: No

MetricDataQueries

If this SLO monitors a CloudWatch metric or the result of a CloudWatch metric math expression, use this structure to specify that metric or expression.

Type: Array of MetricDataQuery objects

Required: No

MetricName

The name of the CloudWatch metric to use for the SLO, when using a custom metric rather than Application Signals standard metrics.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: No

MetricSource

Identifies the metric source for SLOs on resources other than Application Signals services.

Type: MetricSource object

Required: No

MetricType

If the SLO is to monitor either the `LATENCY` or `AVAILABILITY` metric that Application Signals collects, use this field to specify which of those metrics is used.

Type: String

Valid Values: `LATENCY | AVAILABILITY`

Required: No

OperationName

If the SLO is to monitor a specific operation of the service, use this field to specify the name of that operation.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: No

PeriodSeconds

The number of seconds to use as the period for SLO evaluation. Your application's performance is compared to the SLI during each period. For each period, the application is determined to have either achieved or not achieved the necessary performance.

Type: Integer

Valid Range: Minimum value of 60. Maximum value of 900.

Required: No

Statistic

The statistic to use for comparison to the threshold. It can be any CloudWatch statistic or extended statistic. For more information about statistics, see CloudWatch statistics definitions.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 20.

Pattern: `[a-zA-Z0-9.]+`

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ServiceLevelObjective

A structure containing information about one service level objective (SLO) that has been created in Application Signals. Creating SLOs can help you ensure your services are performing to the level that you expect. SLOs help you set and track a specific target level for the reliability and availability of your applications and services. Each SLO uses a service level indicator (SLI), which is a key performance metric, to calculate how much underperformance can be tolerated before the goal that you set for the SLO is not achieved.

Contents

Arn

The ARN of this SLO.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2048.

Pattern: `arn:(aws|aws-us-gov):application-signals:[^:]*:[^:]*:slo/[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]`

Required: Yes

CreatedTime

The date and time that this SLO was created. When used in a raw HTTP Query API, it is formatted as `yyyy-MM-dd'T'HH:mm:ss`. For example, `2019-07-01T23:59:59`.

Type: Timestamp

Required: Yes

Goal

This structure contains the attributes that determine the goal of an SLO. This includes the time period for evaluation and the attainment threshold.

Type: Goal object

Required: Yes

LastUpdatedTime

The time that this SLO was most recently updated. When used in a raw HTTP Query API, it is formatted as `yyyy-MM-dd'T'HH:mm:ss`. For example, `2019-07-01T23:59:59`.

Type: Timestamp

Required: Yes

Name

The name of this SLO.

Type: String

Pattern: `[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]`

Required: Yes

BurnRateConfigurations

Each object in this array defines the length of the look-back window used to calculate one burn rate metric for this SLO. The burn rate measures how fast the service is consuming the error budget, relative to the attainment goal of the SLO.

Type: Array of BurnRateConfiguration objects

Array Members: Minimum number of 0 items. Maximum number of 10 items.

Required: No

Description

The description that you created for this SLO.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: No

EvaluationType

Displays whether this is a period-based SLO or a request-based SLO.

Type: String

Valid Values: `PeriodBased | RequestBased`

Required: No

MetricSourceType

Displays the SLI metric source type for this SLO. Supported types are:

- Service operation
- Service dependency
- Service
- CloudWatch metric
- AppMonitor
- Canary

Type: String

Valid Values: `ServiceOperation | CloudWatchMetric | ServiceDependency | AppMonitor | Canary | Service`

Required: No

RequestBasedSli

A structure containing information about the performance metric that this SLO monitors, if this is a request-based SLO.

Type: RequestBasedServiceLevelIndicator object

Required: No

Sli

A structure containing information about the performance metric that this SLO monitors, if this is a period-based SLO.

Type: ServiceLevelIndicator object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ServiceLevelObjectiveBudgetReport

A structure containing an SLO budget report that you have requested.

Contents

Arn

The ARN of the SLO that this report is for.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2048.

Pattern: `arn:(aws|aws-us-gov):application-signals:[^:]*:[^:]*:slo/[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]`

Required: Yes

BudgetStatus

The status of this SLO, as it relates to the error budget for the entire time interval.

- `OK` means that the SLO had remaining budget above the warning threshold, as of the time that you specified in `TimeStamp`.
- `WARNING` means that the SLO's remaining budget was below the warning threshold, as of the time that you specified in `TimeStamp`.
- `BREACHED` means that the SLO's budget was exhausted, as of the time that you specified in `TimeStamp`.
- `INSUFFICIENT_DATA` means that the specified start and end times were before the SLO was created, or that attainment data is missing.

Type: String

Valid Values: `OK | WARNING | BREACHED | INSUFFICIENT_DATA`

Required: Yes

Name

The name of the SLO that this report is for.

Type: String

Pattern: `[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]`

Required: Yes

Attainment

A number between 0 and 100 that represents the success percentage of your application compared to the goal set by the SLO.

If this is a period-based SLO, the number is the percentage of time periods that the service has attained the SLO's attainment goal, as of the time of the request.

If this is a request-based SLO, the number is the number of successful requests divided by the number of total requests, multiplied by 100, during the time range that you specified in your request.

Type: Double

Required: No

BudgetRequestsRemaining

This field is displayed only for request-based SLOs. It displays the number of failed requests that can be tolerated before any more successful requests occur, and still have the application meet its SLO goal.

This number can go up and down between different reports, based on both how many successful requests and how many failed requests occur in that time.

Type: Integer

Required: No

BudgetSecondsRemaining

The budget amount remaining before the SLO status becomes `BREACHING`, at the time specified in the `Timestemp` parameter of the request. If this value is negative, then the SLO is already in `BREACHING` status.

This field is included only if the SLO is a period-based SLO.

Type: Integer

Required: No

EvaluationType

Displays whether this budget report is for a period-based SLO or a request-based SLO.

Type: String

Valid Values: `PeriodBased | RequestBased`

Required: No

Goal

This structure contains the attributes that determine the goal of an SLO. This includes the time period for evaluation and the attainment threshold.

Type: Goal object

Required: No

RequestBasedSli

This structure contains information about the performance metric that a request-based SLO monitors.

Type: RequestBasedServiceLevelIndicator object

Required: No

Sli

A structure that contains information about the performance metric that this SLO monitors.

Type: ServiceLevelIndicator object

Required: No

TotalBudgetRequests

This field is displayed only for request-based SLOs. It displays the total number of failed requests that can be tolerated during the time range between the start of the interval and the time stamp supplied in the budget report request. It is based on the total number of requests that occurred, and the percentage specified in the attainment goal. If the number of failed requests matches this number or is higher, then this SLO is currently breaching.

This number can go up and down between reports with different time stamps, based on both how many total requests occur.

Type: Integer

Required: No

TotalBudgetSeconds

The total number of seconds in the error budget for the interval. This field is included only if the SLO is a period-based SLO.

Type: Integer

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ServiceLevelObjectiveBudgetReportError

A structure containing information about one error that occurred during a BatchGetServiceLevelObjectiveBudgetReport operation.

Contents

Arn

The ARN of the SLO that this error is related to.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2048.

Pattern: `arn:(aws|aws-us-gov):application-signals:[^:]*:[^:]*:slo/[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]`

Required: Yes

ErrorCode

The error code for this error.

Type: String

Required: Yes

ErrorMessage

The message for this error.

Type: String

Required: Yes

Name

The name of the SLO that this error is related to.

Type: String

Pattern: `[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]`

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ServiceLevelObjectiveEntity

A structure that contains identifying information for a service level objective entity.

Contents

SloArn

The ARN of the service level objective. The SLO must be provided with ARN for cross-account access.

Type: String

Required: No

SloName

The name of the service level objective.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ServiceLevelObjectiveSummary

A structure that contains information about one service level objective (SLO) created in Application Signals.

Contents

Arn

The ARN of this service level objective.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2048.

Pattern: `arn:(aws|aws-us-gov):application-signals:[^:]*:[^:]*:slo/[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]`

Required: Yes

Name

The name of the service level objective.

Type: String

Pattern: `[0-9A-Za-z][-._0-9A-Za-z ]{0,126}[0-9A-Za-z]`

Required: Yes

CreatedTime

The date and time that this service level objective was created. It is expressed as the number of milliseconds since Jan 1, 1970 00:00:00 UTC.

Type: Timestamp

Required: No

DependencyConfig

Identifies the dependency using the `DependencyKeyAttributes` and `DependencyOperationName`.

Type: DependencyConfig object

Required: No

EvaluationType

Displays whether this is a period-based SLO or a request-based SLO.

Type: String

Valid Values: `PeriodBased | RequestBased`

Required: No

KeyAttributes

This is a string-to-string map. It can include the following fields.

- `Type` designates the type of object this service level objective is for.
- `ResourceType` specifies the type of the resource. This field is used only when the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Name` specifies the name of the object. This is used only if the value of the `Type` field is `Service`, `RemoteService`, or `AWS::Service`.
- `Identifier` identifies the resource objects of this resource. This is used only if the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Environment` specifies the location where this object is hosted, or what it belongs to.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: No

MetricSource

Identifies the metric source for SLOs on resources other than Application Signals services.

Type: MetricSource object

Required: No

MetricSourceType

Displays the SLI metric source type for this SLO. Supported types are:

- Service operation
- Service dependency
- Service
- CloudWatch metric
- AppMonitor
- Canary

Type: String

Valid Values: `ServiceOperation | CloudWatchMetric | ServiceDependency | AppMonitor | Canary | Service`

Required: No

OperationName

If this service level objective is specific to a single operation, this field displays the name of that operation.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ServiceOperation

This structure contains information about an operation discovered by Application Signals. An operation is a specific function performed by a service that was discovered by Application Signals, and is often an API that is called by an upstream dependent.

Contents

MetricReferences

An array of structures that each contain information about one metric associated with this service operation that was discovered by Application Signals.

Type: Array of MetricReference objects

Required: Yes

Name

The name of the operation, discovered by Application Signals.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ServiceOperationEntity

A structure that contains identifying information for a service operation entity.

Contents

MetricType

The type of metric associated with this service operation.

Type: String

Required: No

Operation

The name of the operation.

Type: String

Required: No

Service

The service entity that contains this operation.

Type: ServiceEntity object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ServiceState

A structure that contains information about the current state of a service, including its latest change events such as deployments and other state-changing activities.

Contents

LatestChangeEvents

An array containing the most recent change events for this service, such as deployments, with information about when they occurred and who initiated them.

Type: Array of ChangeEvent objects

Array Members: Fixed number of 1 item.

Required: Yes

Service

The key attributes that identify this service, including Type, Name, and Environment information.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: Yes

AttributeFilters

The attribute filters that were applied when retrieving this service state information.

Type: Array of AttributeFilter objects

Array Members: Minimum number of 0 items. Maximum number of 20 items.

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ServiceSummary

This structure contains information about one of your services that was discovered by Application Signals

Contents

KeyAttributes

This is a string-to-string map that help identify the objects discovered by Application Signals. It can include the following fields.

- `Type` designates the type of object this is.
- `ResourceType` specifies the type of the resource. This field is used only when the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Name` specifies the name of the object. This is used only if the value of the `Type` field is `Service`, `RemoteService`, or `AWS::Service`.
- `Identifier` identifies the resource objects of this resource. This is used only if the value of the `Type` field is `Resource` or `AWS::Resource`.
- `Environment` specifies the location where this object is hosted, or what it belongs to.

Type: String to string map

Map Entries: Maximum number of 4 items.

Key Pattern: `[a-zA-Z]{1,50}`

Value Length Constraints: Minimum length of 1. Maximum length of 1024.

Value Pattern: `[ -~]*[!-~]+[ -~]*`

Required: Yes

MetricReferences

An array of structures that each contain information about one metric associated with this service.

Type: Array of MetricReference objects

Required: Yes

AttributeMaps

This structure contains one or more string-to-string maps that help identify this service. It can include *platform attributes*, *application attributes*, and *telemetry attributes*.

Platform attributes contain information the service's platform.

- `PlatformType` defines the hosted-in platform.
- `EKS.Cluster` is the name of the Amazon EKS cluster.
- `K8s.Cluster` is the name of the self-hosted Kubernetes cluster.
- `K8s.Namespace` is the name of the Kubernetes namespace in either Amazon EKS or Kubernetes clusters.
- `K8s.Workload` is the name of the Kubernetes workload in either Amazon EKS or Kubernetes clusters.
- `K8s.Node` is the name of the Kubernetes node in either Amazon EKS or Kubernetes clusters.
- `K8s.Pod` is the name of the Kubernetes pod in either Amazon EKS or Kubernetes clusters.
- `EC2.AutoScalingGroup` is the name of the Amazon EC2 Auto Scaling group.
- `EC2.InstanceId` is the ID of the Amazon EC2 instance.
- `Host` is the name of the host, for all platform types.

Application attributes contain information about the application.

- `AWS.Application` is the application's name in AWS Service Catalog AppRegistry.
- `AWS.Application.ARN` is the application's ARN in AWS Service Catalog AppRegistry.

Telemetry attributes contain telemetry information.

- `Telemetry.SDK` is the fingerprint of the OpenTelemetry SDK version for instrumented services.
- `Telemetry.Agent` is the fingerprint of the agent used to collect and send telemetry data.
- `Telemetry.Source` Specifies the point of application where the telemetry was collected or specifies what was used for the source of telemetry data.

Type: Array of string to string maps

Required: No

ServiceGroups

An array of service groups that this service belongs to, based on the configured grouping attributes.

Type: Array of ServiceGroup objects

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

Tag

A key-value pair associated with a resource. Tags can help you organize and categorize your resources.

Contents

Key

A string that you can use to assign a value. The combination of tag keys and values can help you organize and categorize your resources.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 128.

Required: Yes

Value

The value for the specified tag key.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

Window

The object that defines the time length of an exclusion window.

Contents

Duration

The number of time units for the exclusion window length.

Type: Integer

Valid Range: Minimum value of 1.

Required: Yes

DurationUnit

The unit of time for the exclusion window duration. Valid values: MINUTE, HOUR, DAY, MONTH.

Type: String

Valid Values: `MINUTE | HOUR | DAY | MONTH`

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

Common Parameters

The following list contains the parameters that all actions use for signing Signature Version 4 requests with a query string. Any action-specific parameters are listed in the topic for that action. For more information about Signature Version 4, see Signing AWS API requests in the *IAM User Guide*.

X-Amz-Algorithm

The hash algorithm that you used to create the request signature.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Valid Values: `AWS4-HMAC-SHA256`

Required: Conditional

X-Amz-Credential

The credential scope value, which is a string that includes your access key, the date, the region you are targeting, the service you are requesting, and a termination string ("aws4_request"). The value is expressed in the following format: *access_key*/*YYYYMMDD*/*region*/*service*/aws4_request.

For more information, see Create a signed AWS API request in the *IAM User Guide*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

X-Amz-Date

The date that is used to create the signature. The format must be ISO 8601 basic format (YYYYMMDD'T'HHMMSS'Z'). For example, the following date time is a valid X-Amz-Date value: `20120325T120000Z`.

Condition: X-Amz-Date is optional for all requests; it can be used to override the date used for signing requests. If the Date header is specified in the ISO 8601 basic format, X-Amz-Date is not required. When X-Amz-Date is used, it always overrides the value of the Date header. For more information, see Elements of an AWS API request signature in the *IAM User Guide*.

Type: string

Required: Conditional

X-Amz-Security-Token

The temporary security token that was obtained through a call to AWS Security Token Service (AWS STS). For a list of services that support temporary security credentials from AWS STS, see AWS services that work with IAM in the *IAM User Guide*.

Condition: If you're using temporary security credentials from AWS STS, you must include the security token.

Type: string

Required: Conditional

X-Amz-Signature

Specifies the hex-encoded signature that was calculated from the string to sign and the derived signing key.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

X-Amz-SignedHeaders

Specifies all the HTTP headers that were included as part of the canonical request. For more information about specifying signed headers, see Create a signed AWS API request in the *IAM User Guide*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

Common Error Types

This section lists common error types that this AWS service may return. Not all services return all error types listed here. For errors specific to an API action for this service, see the topic for that API action.

AccessDeniedException

You don't have permission to perform this action. Verify that your IAM policy includes the required permissions.

HTTP Status Code: 403

ExpiredTokenException

The security token included in the request has expired. Request a new security token and try again.

HTTP Status Code: 403

IncompleteSignature

The request signature doesn't conform to AWS standards. Verify that you're using valid AWS credentials and that your request is properly formatted. If you're using an SDK, ensure it's up to date.

HTTP Status Code: 403

InternalFailure

The request can't be processed right now because of an internal server issue. Try again later. If the problem persists, contact AWS Support.

HTTP Status Code: 500

MalformedHttpRequestException

The request body can't be processed. This typically happens when the request body can't be decompressed using the specified content encoding algorithm. Verify that the content encoding header matches the compression format used.

HTTP Status Code: 400

NotAuthorized

You don't have permissions to perform this action. Verify that your IAM policy includes the required permissions.

HTTP Status Code: 401

OptInRequired

Your AWS account needs a subscription for this service. Verify that you've enabled the service in your account.

HTTP Status Code: 403

RequestAbortedException

The request was aborted before a response could be returned. This typically happens when the client closes the connection.

HTTP Status Code: 400

RequestEntityTooLargeException

The request entity is too large. Reduce the size of the request body and try again.

HTTP Status Code: 413

RequestTimeoutException

The request timed out. The server didn't receive the complete request within the expected time frame. Try again.

HTTP Status Code: 408

ServiceUnavailable

The service is temporarily unavailable. Try again later.

HTTP Status Code: 503

ThrottlingException

Your request rate is too high. The AWS SDKs automatically retry requests that receive this exception. Reduce the frequency of requests.

HTTP Status Code: 400

UnknownOperationException

The action or operation isn't recognized. Verify that the action name is spelled correctly and that it's supported by the API version you're using.

HTTP Status Code: 404

UnrecognizedClientException

The X.509 certificate or AWS access key ID you provided doesn't exist in our records. Verify that you're using valid credentials and that they haven't expired.

HTTP Status Code: 403

ValidationError

The input doesn't meet the required format or constraints. Check that all required parameters are included and that values are valid.

HTTP Status Code: 400