

Architecture Diagrams

Cross-Account Amazon EC2 Status Monitoring for HPC Clusters



Cross-Account Amazon EC2 Status Monitoring for HPC Clusters : Architecture Diagrams

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Table of Contents

Home	•••••
Cross-Account Amazon EC2 Status Monitoring for HPC Clusters Diagram	2
Download editable diagram	
Create a free AWS account	
Further reading	3
Diagram history	

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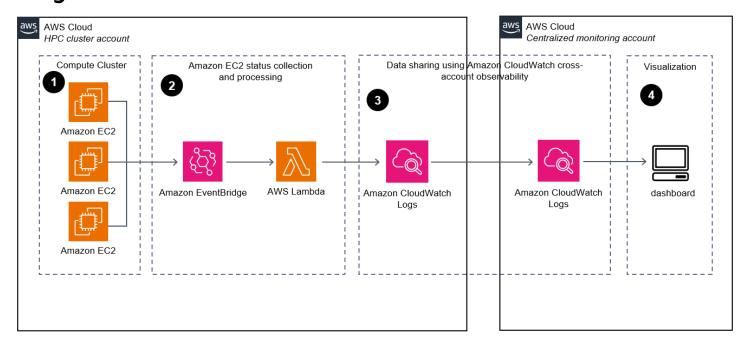
This reference architecture demonstrates how to build a mechanism to monitor <u>Amazon Elastic</u> <u>Compute Cloud</u> (Amazon EC2) state changes for high performance computing (HPC) clusters across multiple AWS accounts. It includes a dashboard to help monitor the cluster status as well as each individual Amazon EC2 instance's status.

The following two use cases might use this architecture:

- A customer organization has many separate divisions using separate AWS accounts deploying elastic Amazon EC2-based HPC clusters. A central IT admin group wants to monitor these resources in real time from a single centralized source to better manage workflows and to be aware of current resource use.
- A third-party partner is managing HPC deployments in a customer account, but wants to help
 the customer meter usage, create budgets, send notifications, and improve overall visibility into
 their HPC use. The customers don't want to share all logs and activities within an account with
 the partner, only the relevant HPC resources.

1

Cross-Account Amazon EC2 Status Monitoring for HPC Clusters Diagram



- 1. In this diagram, there are two types of AWS accounts:
 - HPC cluster account(s) These accounts are where the Amazon EC2 instance-based HPC compute clusters are deployed.
 - **Centralized monitoring account** This is a centralized account where one or more HPC cluster accounts sends cluster notification statuses.

These are **Amazon EC2** instances to be monitored. When the <u>instance state changes</u> (start, stop, terminate), it sends the status of related events to **Amazon EventBridge**.

- 2. **EventBridge** events are filtered by an <u>Amazon EC2 tag</u>, and only those matching the tag string are passed to the monitoring account in the form of a **Amazon CloudWatch** log. You need to have an **Amazon EC2** tag attached (by default, the *HPC* tag) in order to be monitored. This limits the volume and type account activity being shared with the centralized monitoring account.
- 3. Once events are logged in <u>Amazon CloudWatch Logs</u> in the HPC cluster account, it shares these logs with the centralized monitoring account by enabling the <u>cross-account observability</u> feature in <u>Amazon CloudWatch</u>.
- 4. Monitor the latest cluster status in the **CloudWatch** dashboard. A dashboard is preconfigured and deployed into the centralized monitoring account as a part of the deployment.

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Further reading

For additional information, refer to

- AWS Architecture Icons
- **AWS Architecture Center**
- **AWS Well-Architected**

Diagram history

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Change	Description	Date
Initial publication	Reference architecture	February 22, 2024
	diagram first published.	



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