



AWS Reference Architecture Diagram

# High Performance Computing on AWS



# High Performance Computing on AWS: AWS Reference Architecture Diagram

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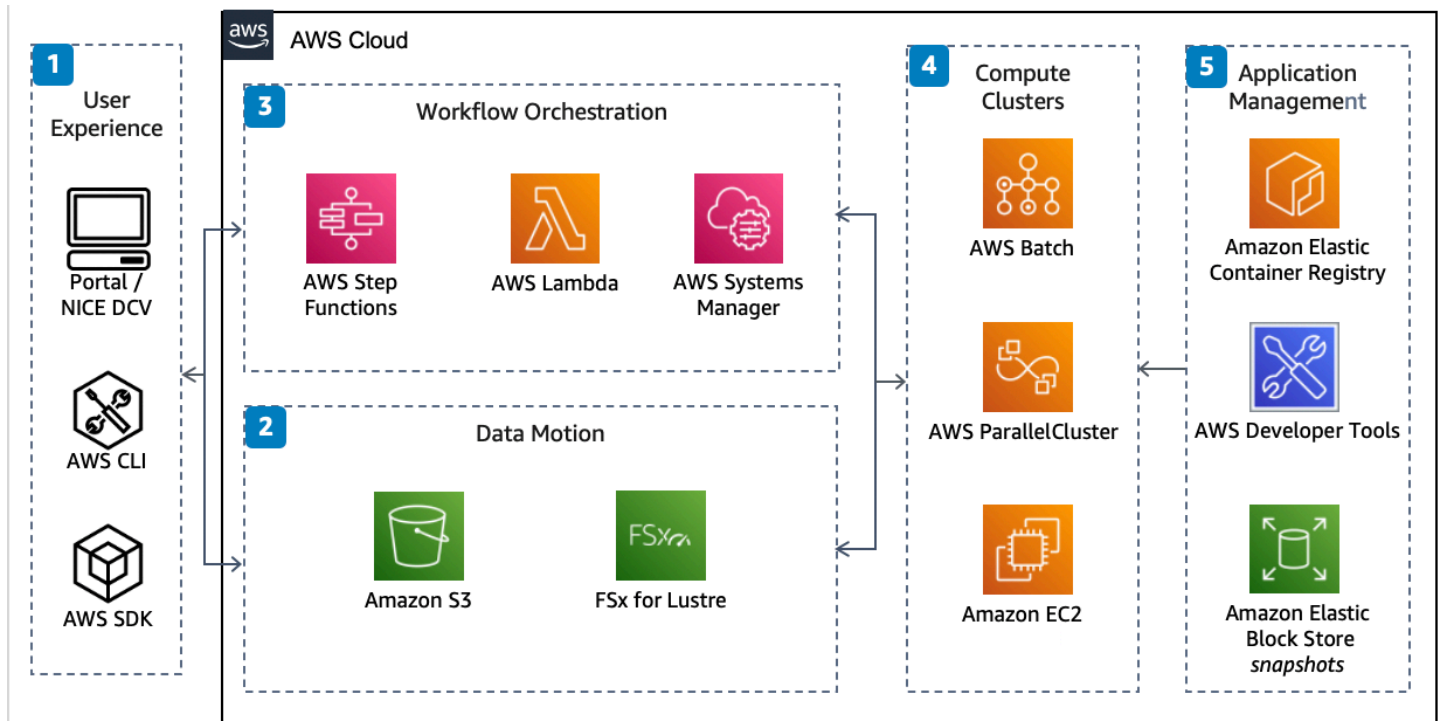
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# High Performance Computing on AWS

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This architecture enables you to deploy and burst a suite of high performance computing (HPC) cases to the cloud directly from the desktop.

## High Performance Computing on AWS



1. Users deploy HPC cases with one of the AWS SDKs or the **AWS Command Line Interface (AWS CLI)**. Users can interface directly with the cluster through NICE DCV.
2. Data is staged both to and from AWS with **Amazon Simple Storage Service (Amazon S3)**. **Amazon S3** offers low-cost, reliable storage while interfacing directly to **Amazon FSx for Lustre** for a fully managed, high-performance storage.
3. Serverless services manage case workflow. **AWS Step Functions** provides workflow management and orchestrates other services, such as serverless compute with **AWS Lambda**. **AWS Systems Manager** can be used for operational management of compute clusters.
4. **AWS ParallelCluster**, **AWS Batch**, and custom-made clusters lie at the core of the HPC infrastructure, each with access to high-performance **Amazon Elastic Compute Cloud (Amazon EC2)** instances connected by a high performance network with an optional Elastic Fabric

Adapter. Cost optimization with Amazon EC2 is achieved with payment-model choice and environment right sizing

5. Manage applications with a consistent, versioned, and repeatable framework. AWS Developer Tools accelerate software development. Installed software can be stored in containers or snapshots, depending on the compute cluster.

## Download editable diagram

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## Further reading

For additional information, refer to

- [AWS Architecture Icons](#)
- [AWS Architecture Center](#)
- [AWS Well-Architected](#)
- [High Performance Computing Lens — AWS Well-Architected Framework](#)

## Diagram history

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Change	Description	Date
<a href="#">Initial publication</a>	Reference architecture diagram first published.	September 1, 2021

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