



Architecture Diagrams

Aerospace Virtual Desktop Infrastructure (VDI) and High Performance Computing (HPC) on AWS



Aerospace Virtual Desktop Infrastructure (VDI) and High Performance Computing (HPC) on AWS: Architecture Diagrams

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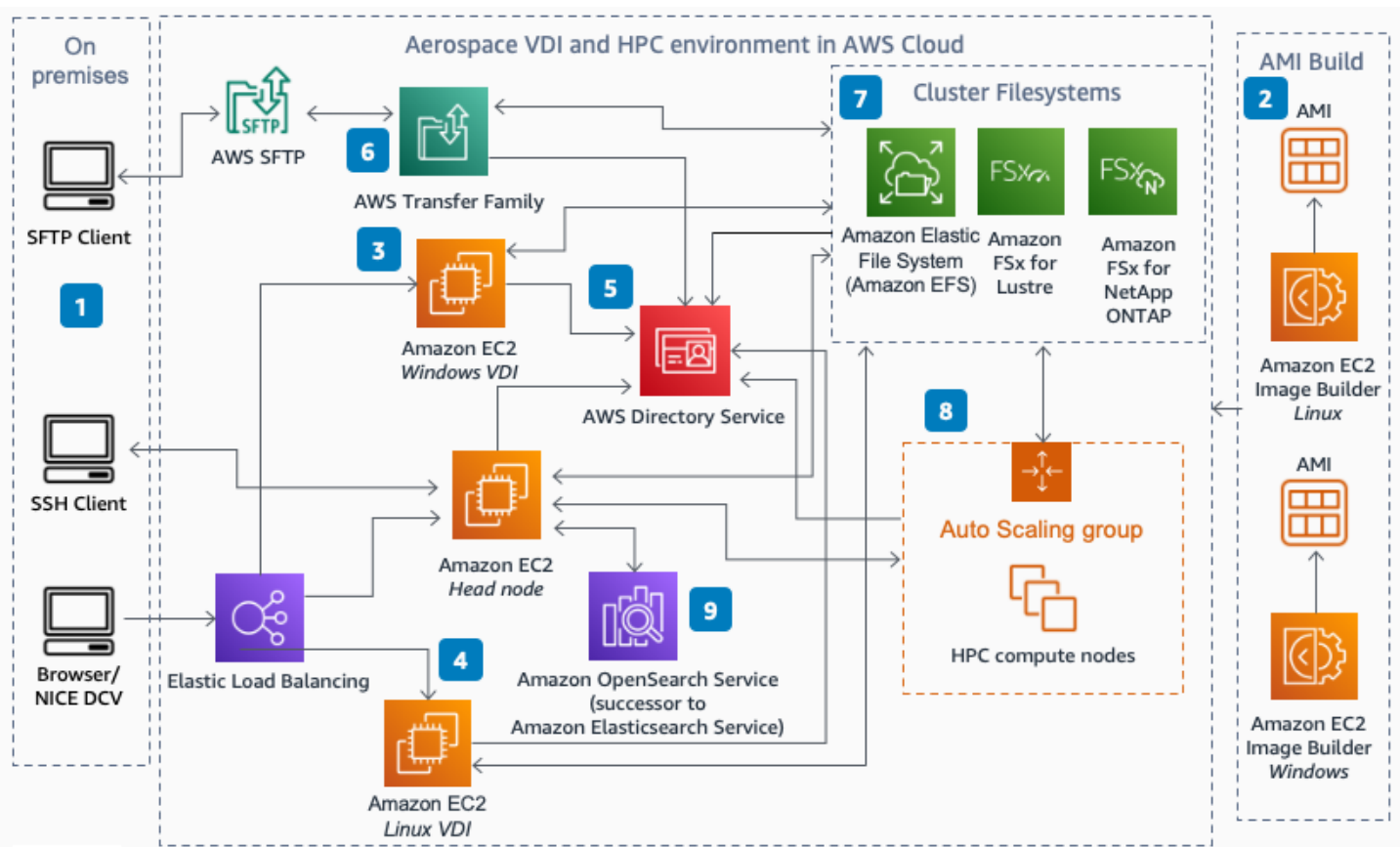
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Aerospace Virtual Desktop Infrastructure (VDI) and High Performance Computing (HPC) on AWS

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This architectural diagram shows the process for running computer-aided engineering (CAE) computations and visualizations in the cloud with desktop access.

Aerospace VDI and HPC on AWS Diagram



1. The user starts virtual desktop (VD) sessions, starts and monitors high performance computing (HPC) jobs using a web interface or application programming interface (API), accesses VD sessions with NICE DCV client, and shares data with the VD and HPC environment using SFTP.
2. The AMI Build environment produces AMIs with specialized software for VDI and HPC environment.
3. NICE DCV session to Windows VDI.

4. NICE DCV session to Linux VDI.
5. Directory Service is used for the centralized user management. The cluster head node, Linux and Windows VDIs, HPC compute nodes join the Active Directory domain.
6. AWS Transfer for SFTP is used to share data between on-premises and the cluster.
7. Amazon EFSAmazon FSx for NetApp ONTAP is used for storing of cluster applications and for sharing data with on-premises. Amazon FSx for NetApp ONTAP stores user data which needs to be easily accessible from Windows and Linux VDIs. Amazon FSx for Lustre is used by HPC nodes during computations.
8. Amazon EC2 is used for HPC compute nodes. The cluster's Head node spawns and stops the compute nodes using auto scaling groups.
9. Amazon OpenSearch Service stores HPC job and hosts information.

You can use the [Scale-Out Computing on AWS](#) solution as a foundation for implementation of the environment.

Further reading

For additional information, refer to

- [AWS Architecture Icons](#)
- [AWS Architecture Center](#)
- [AWS Well-Architected](#)

Diagram history

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