



Architecture diagrams for manufacturing

Siemens NX on Amazon WorkSpaces Applications



Siemens NX on Amazon WorkSpaces Applications: Architecture diagrams for manufacturing

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Siemens NX on Amazon WorkSpaces Applications

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With these architectures, you can stream Siemens NX securely through [Amazon WorkSpaces Applications](#) hosted in AWS Cloud. Three deployment options address different storage, identity, and latency requirements.

The following diagrams describe the architecture:

- [EBS shared folders](#) — Use Amazon EBS volumes as shared folders for Siemens NX users.
- [Teamcenter with FSx](#) — Connect to Siemens Teamcenter with Amazon FSx storage.
- [Multi-Region deployment](#) — Minimize latency with cross-Region storage replication.

Further reading

For additional information, see the following resources:

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

Diagram history

To be notified about updates to this reference architecture diagram, subscribe to the RSS feed.

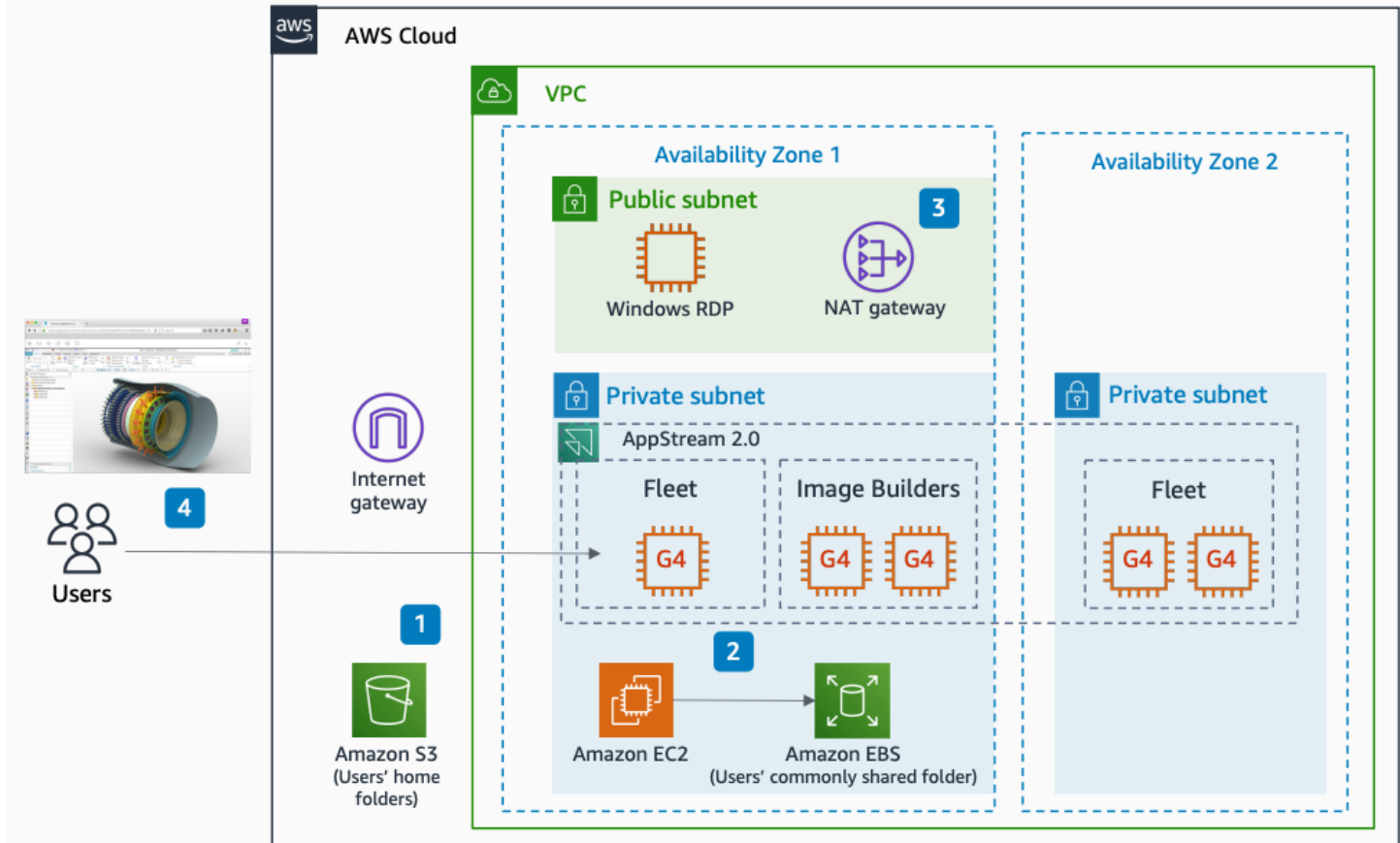
Change	Description	Date
Initial publication	Reference architecture diagram first published.	January 1, 2021

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Siemens NX with Amazon EBS shared folders

With this architecture, you can securely access Siemens NX hosted in AWS Cloud by using an [Amazon Elastic Block Store](#) (Amazon EBS) volume for shared folders. This architecture uses [Amazon WorkSpaces Applications](#), [Amazon Elastic Compute Cloud](#) (Amazon EC2), and [Amazon S3](#).

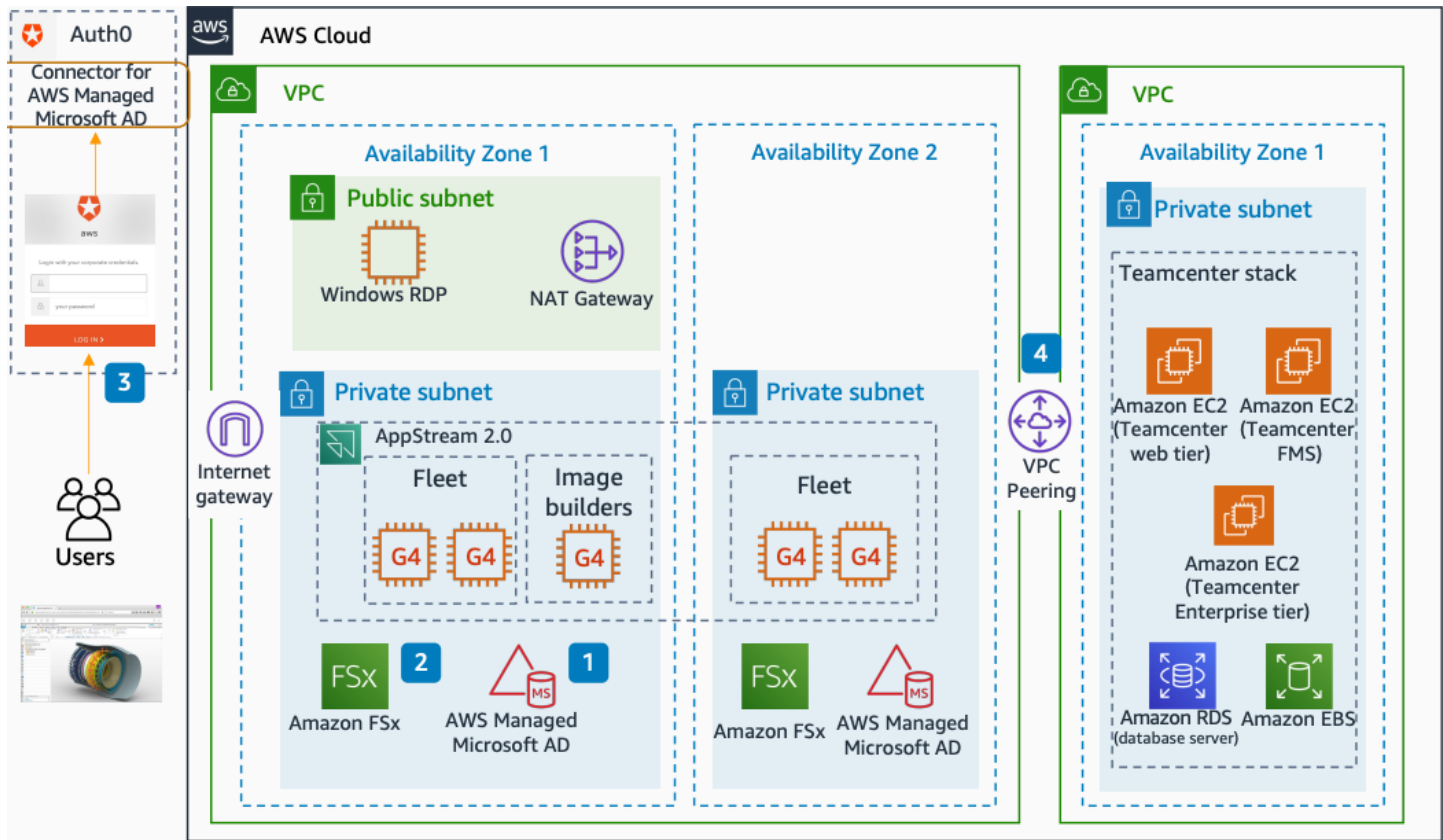


The following steps describe the architecture:

1. When setting up the WorkSpaces Applications image builder, you can select the Amazon S3 folder as the user home folder to persist application settings, user data, and files.
2. An Amazon EC2 instance hosts the Amazon EBS volume. The instance acts as a server message block (SMB) share to serve its Amazon EBS volume as a shared folder for all WorkSpaces Applications users.
3. The Windows Remote Desktop Protocol (RDP) instance acts as a jump server to connect to the Amazon EC2 instance on a private subnet.
4. Users connect to their streaming instances through a web browser or the WorkSpaces Applications Windows client.

Siemens NX connected to Siemens Teamcenter

With this architecture, you can use [Amazon FSx](#) as a storage option for Siemens NX streamed through [Amazon WorkSpaces Applications](#). This architecture uses [AWS Directory Service](#) for Microsoft Active Directory and connects to Siemens Teamcenter.

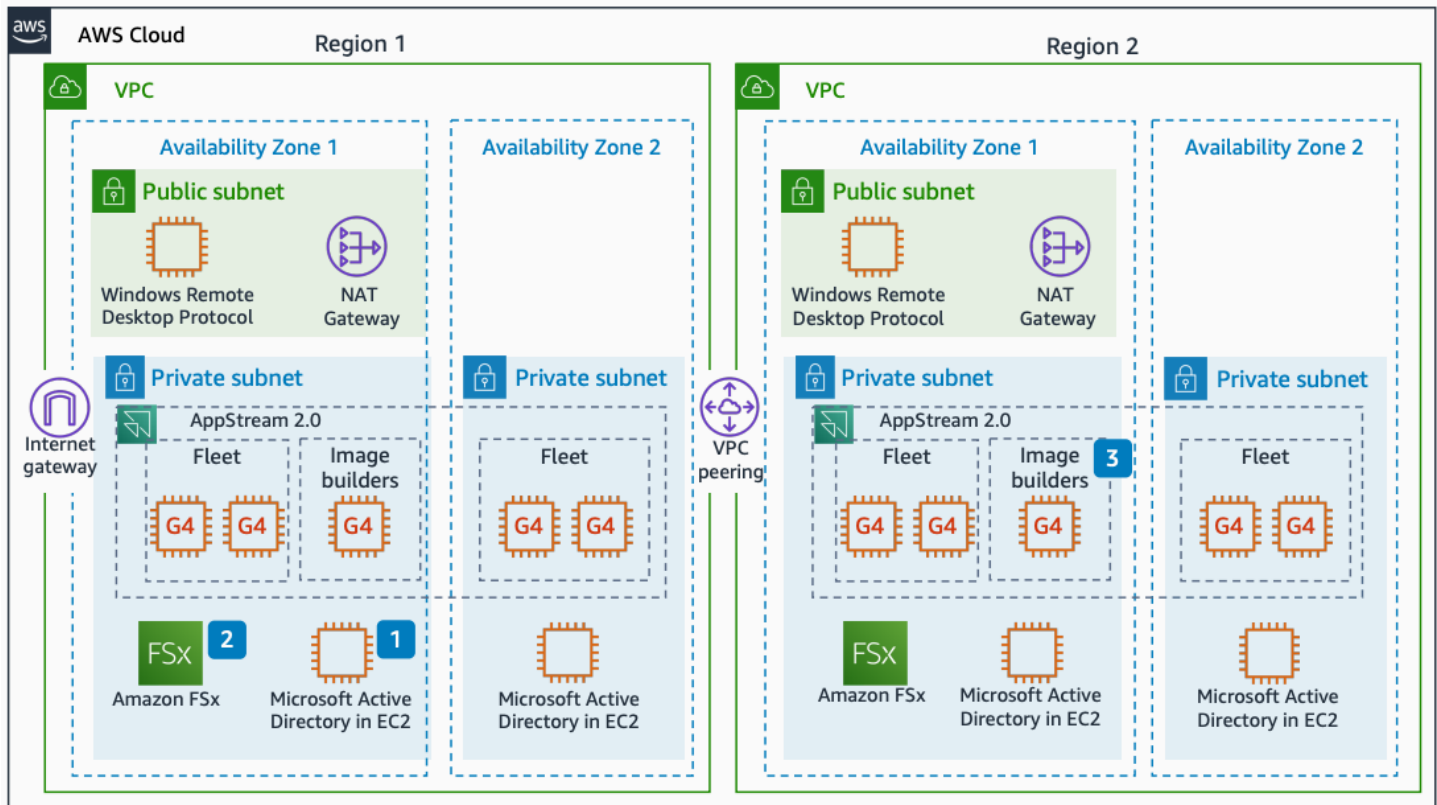


The following steps describe the architecture:

1. Directory Service for Microsoft Active Directory manages users, computers, and storage as Amazon FSx. Amazon WorkSpaces Applications can then join the domain as configured in Active Directory. Authorized users in Active Directory can access WorkSpaces Applications sessions.
2. Amazon FSx replicates across multiple Availability Zones and is accessible in an WorkSpaces Applications session. You can configure user folders and shared folders in Amazon FSx by using Active Directory Group Policy access.
3. Single sign-in is established through federation of Active Directory SAML 2.0 with Auth0.
4. Siemens NX streams through WorkSpaces Applications and communicates through the Amazon VPC peer to Siemens Teamcenter running on another VPC.

Siemens NX multi-Region deployment

With this architecture, you can minimize latency by cross-replicating storage across Regions. This deployment uses [Amazon WorkSpaces Applications](#), [Amazon Elastic Compute Cloud](#) (Amazon EC2), and [Amazon FSx](#).



The following steps describe the architecture:

1. Two pairs of Microsoft Active Directory instances on Amazon EC2 run in each Region. Each instance runs in a different Availability Zone. Active Directory instances fully replicate across Availability Zones and Regions through Active Directory sites.
2. Two Amazon FSx single-Availability-Zone file systems are created in each Region. Full bidirectional Amazon FSx data replication uses Microsoft Distributed File System Replication.
3. Amazon WorkSpaces Applications image builders are shared across multiple Regions. An administrator tunes each image to access its closest Microsoft Active Directory and Amazon FSx instances.