# Guidance for Deploying VDI for Subsurface Oil and Gas on AWS

VDI and data migration to Amazon FSX on NetApp

This architecture diagram illustrates a secure migration and virtualization solution for geoscience and geophysics applications, moving subsurface data from on-premises storage to Amazon FSx for NetApp ONTAP via AWS DataSync, enabling users to access graphics-intensive applications through managed virtual desktop infrastructure.
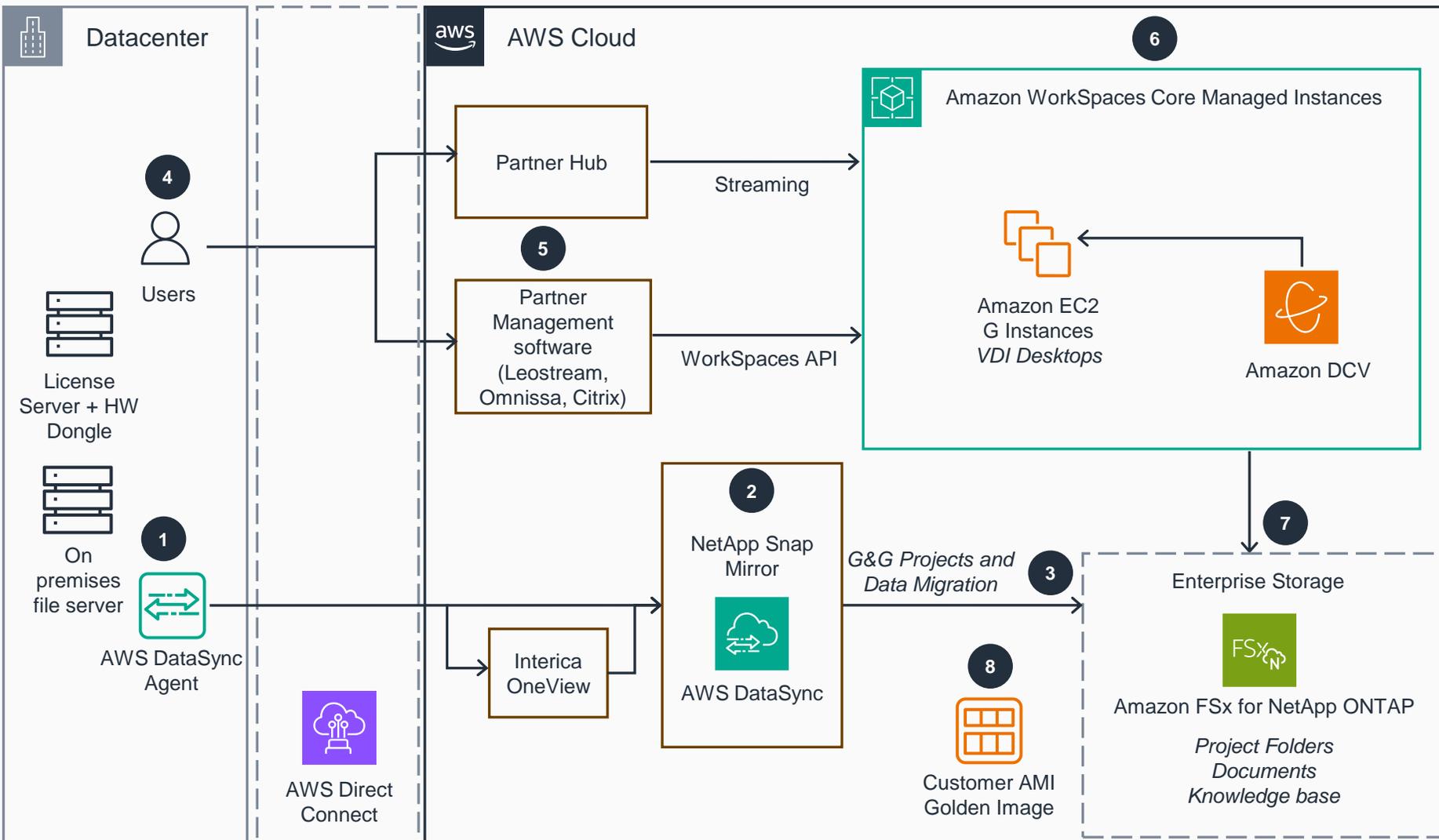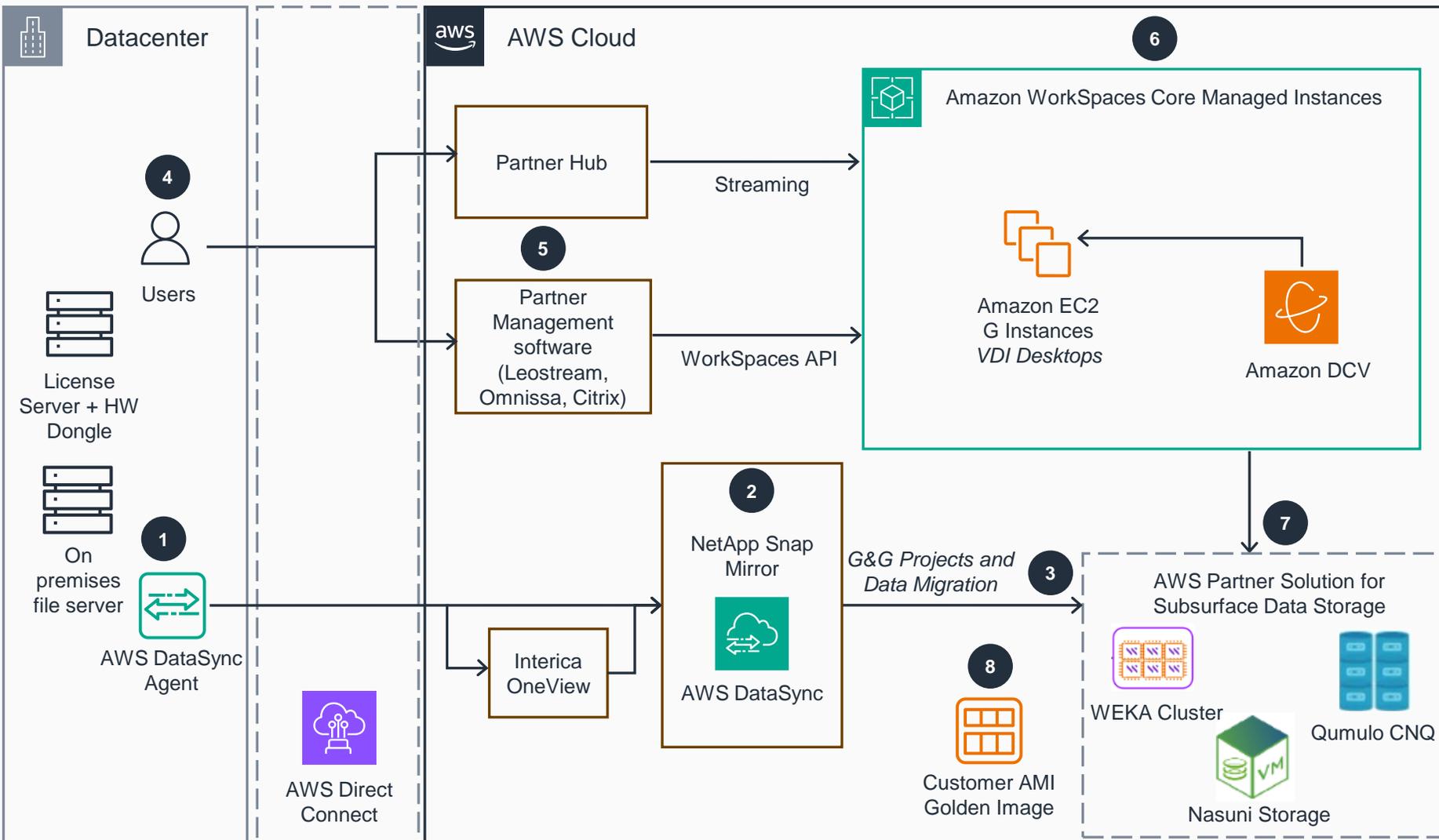

1. Subsurface projects, files, and documents reside in on premises shared file storage, accessible by all users.

2. **AWS DataSync** (or NetApp Snap Mirror) moves files and data securely over **AWS Direct Connect**. Optionally, Interica OneView migrates on the project level of each Subsurface application.

3. **Amazon FSx for NetApp ONTAP** hosts projects, files, and documents migrated from the on-premises file system.

4. Users run graphics-intensive G&G applications on virtual workstations using **Amazon DCV**, a high-performance display protocol.

5. Partner Remote Desktop Management and Access software powered by **Amazon WorkSpaces Core** enables provisioning, deployment, and management of virtual desktop infrastructure (VDI).

6. **Amazon WorkSpaces Core** provides managed VDI that integrates with third-party management solutions. It provide flexibility to run any **Amazon Elastic Compute Cloud (Amazon EC2)** instance.

7. Applications access **Amazon FSx for NetApp ONTAP** file system using the SMB or NFS protocol, depending on the operating system of the VDI workstation.

8. IT department prepares and provides Golden Image, which contains G&G applications that users need for work.

AWS Reference Architecture

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AWS Partner Solution for Subsurface Data Storage

This architecture diagram illustrates a secure migration and virtualization solution for geoscience and geophysics applications, moving subsurface data from on-premises storage to AWS Partner storage solutions via AWS DataSync, enabling users to access graphics-intensive applications through managed virtual desktop infrastructure.

1 Subsurface projects, files, and documents reside in on premises shared file storage, accessible by all users.

2 **AWS DataSync** (or NetApp Snap Mirror) moves files and data securely over **AWS Direct Connect**. Optionally, Interica OneView migrates on the project level of each Subsurface application.

3 AWS Partner Solutions such as WEKA Cluster, Nasuni Storage, and Qumulo CNQ host projects, files, and documents migrated from the on-premises file system.

4 Users run graphics-intensive G&G applications on virtual workstations using **Amazon DCV**, a high-performance display protocol.

5 Partner Remote Desktop Management and Access software powered by **Amazon WorkSpaces Core** enables provisioning, deployment, and management of virtual desktop infrastructure (VDI).

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