



Guest Connected storage for GCVE

NetApp Solutions

NetApp
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NetApp Storage Options for GCP

GCP supports guest connected NetApp storage with Cloud Volumes ONTAP (CVO) or Cloud Volumes Service (CVS).

Cloud Volumes ONTAP (CVO)

Cloud volumes ONTAP, or CVO, is the industry-leading cloud data management solution built on NetApp's ONTAP storage software, available natively on Amazon Web Services (AWS), Microsoft Azure and Google Cloud Platform (GCP).

It is a software-defined version of ONTAP that consumes cloud-native storage, allowing you to have the same storage software in the cloud and on-premises, reducing the need to retrain your IT staff in all-new methods to manage your data.

CVO gives customers the ability to seamlessly move data from the edge, to the data center, to the cloud and back, bringing your hybrid cloud together — all managed with a single-pane management console, NetApp Cloud Manager.

By design, CVO delivers extreme performance and advanced data management capabilities to satisfy even your most demanding applications in the cloud

Cloud Volumes ONTAP (CVO) as guest connected storage

Deploy Cloud Volumes ONTAP in Google Cloud (Do It Yourself)

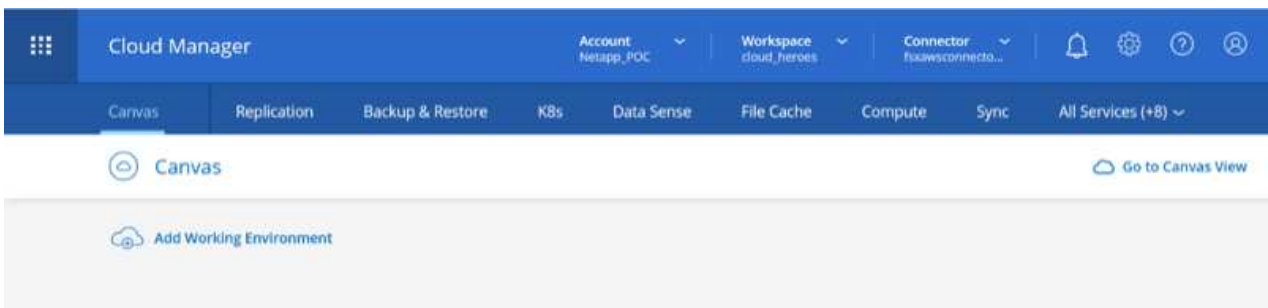
Cloud Volumes ONTAP shares and LUNs can be mounted from VMs that are created in the GCVE private cloud environment. The volumes can also be mounted on the Linux client and on Windows client and LUNS can be accessed on Linux or Windows clients as block devices when mounted over iSCSI because Cloud Volumes ONTAP supports iSCSI, SMB, and NFS protocols. Cloud Volumes ONTAP volumes can be set up in a few simple steps.

To replicate volumes from an on-premises environment to the cloud for disaster recovery or migration purposes, establish network connectivity to Google Cloud, either using a site-to-site VPN or Cloud Interconnect. Replicating data from on-premises to Cloud Volumes ONTAP is outside the scope of this document. To replicate data between on-premises and Cloud Volumes ONTAP systems, see [xref:./ehc/gcp/Setting up data replication between systems](#).

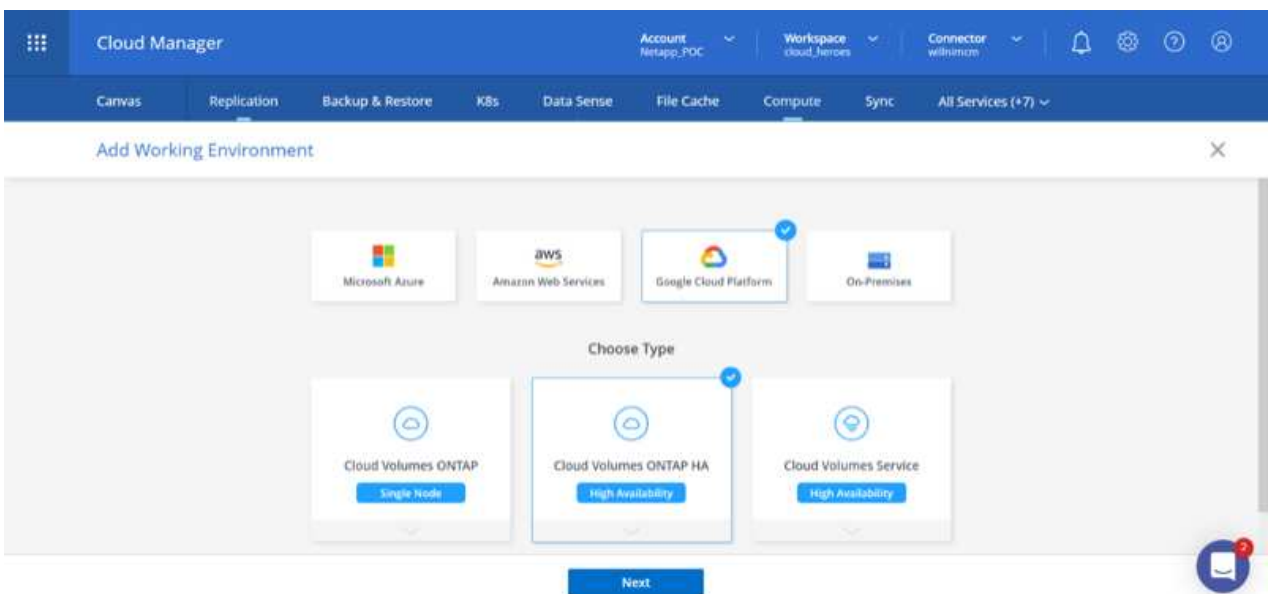


Use [Cloud Volumes ONTAP sizer](#) to accurately size the Cloud Volumes ONTAP instances. Also monitor on-premises performance to use as inputs in the Cloud Volumes ONTAP sizer.

1. Log in to NetApp Cloud Central—the Fabric View screen is displayed. Locate the Cloud Volumes ONTAP tab and select Go to Cloud Manager. After you are logged in, the Canvas screen is displayed.



2. On the Cloud Manager Canvas tab, click Add a Working Environment and then select Google Cloud Platform as the cloud and the type of the system configuration. Then, click Next.



3. Provide the details of the environment to be created including the environment name and admin

credentials. After you are done, click Continue.

Create a New Working Environment

Details and Credentials

↑ Previous Step

CV-Performance-Testing
Google Cloud Project

HCLMainBillingAccountSubs...
Marketplace Subscription

Edit Project

Details

Credentials

Working Environment Name (Cluster Name)
cvogcveval

User Name
admin

Service Account ☐

Password

Notice

A Google Cloud service account is required to use two features: backing up data using Backup

Confirm Password

Continue

4. Select or deselect the add-on services for Cloud Volumes ONTAP deployment, including Data Sense & Compliance or Backup to Cloud. Then, click Continue.

HINT: A verification pop-up message will be displayed when deactivating add-on services. Add-on services can be added/removed after CVO deployment, consider to deselect them if not needed from the beginning to avoid costs.

Create a New Working Environment

Services

↑ Previous Step

Data Sense & Compliance

☒

▼

Backup to Cloud

☐

▼

WARNING:By turning off Backup to Cloud, future data recovery will not be possible in case of data corruption or loss

Continue

5. Select a location, choose a firewall policy, and select the checkbox to confirm network connectivity to Google Cloud storage.

3

↑ Previous Step Location

GCP Region

europe-west3

GCP Zone

europe-west3-c

☒ I have verified connectivity between the target VPC and Google Cloud storage.

Connectivity

VPC

cloud-volumes-vpc

Subnet

10.0.6.0/24

Firewall Policy

☒ Generated firewall policy ☐ Use existing firewall policy

Continue

6. Select the license option: Pay-As-You-Go or BYOL for using existing license. In this example, Freemium option is used. Then, click on Continue.

↑ Previous Step Cloud Volumes ONTAP Charging Methods

[Learn more about our charging methods](#)☐ Pay-As-You-Go by the hour☐ Bring your own license☒ Freemium (Up to 500GB)

NetApp Support Site Account

[Learn more about NetApp Support Site \(NSS\) accounts](#)

NetApp Support Site Account

mchad

To add a new NetApp Support Site account, go to the Support - NSS Management tab.

Continue

7. Select between several preconfigured packages available based on the type of workload that will be deployed on the VMs running on VMware cloud on AWS SDDC.

HINT: Hover your mouse over the tiles for details or customize CVO components and ONTAP version by clicking on Change Configuration.

Select a preconfigured Cloud Volumes ONTAP system that best matches your needs, or create your own configuration.
Preconfigured settings can be modified at a later time.

[Change Configuration](#)


POC and small workloads
Up to 500GB of storage



**Database and application data
production workloads**



Cost effective DR
Up to 500GB of storage



**Highest performance production
workloads**

[Continue](#)

8. On the Review & Approve page, review and confirm the selections. To create the Cloud Volumes ONTAP instance, click Go.

Previous Step
cvogcveval
GCP | europe-west3

[Show API request](#)

This Cloud Volumes ONTAP instance will be registered with NetApp support under the NS5 Account mchad.

☒ I understand that Cloud Manager will allocate the appropriate GCP resources to comply with my above requirements. [More information >](#)

[Overview](#)
[Networking](#)
[Storage](#)

Storage System: Cloud Volumes ONTAP

Cloud Volumes ONTAP runs on: n2-standard-4

License Type: Cloud Volumes ONTAP Freemium

Encryption: Google Cloud Managed

Capacity Limit: 500GB

Write Speed: Normal

[Go](#)

9. After Cloud Volumes ONTAP is provisioned, it is listed in the working environments on the Canvas page.

Cloud Manager

Account: NetApp_POC | Workspace: cloud_heroes | Connector: winnemo

Canvas | Replication | Backup & Restore | K8s | Data Sense | File Cache | Compute | Sync | All Services (+7)

[Go to Tabular View](#)

[Add Working Environment](#)

Working Environments

- 1 Cloud Volumes ONTAP
43.05 GiB Provisioned Capacity
- 1 FSx for ONTAP (High-Availability)
0 B Provisioned Capacity
- 1 Azure NetApp Files
9.71 TiB Provisioned Capacity

Canvas

cvogcve01
Cloud Volumes ONTAP
Freemium

DatacenterDude
Azure NetApp Files
31 Volumes 9.71 TiB Capacity

Additional configurations for SMB volumes

1. After the working environment is ready, make sure the CIFS server is configured with the appropriate DNS and Active Directory configuration parameters. This step is required before you can create the SMB volume.

HINT: Click on the Menu Icon (°), select Advanced to display more options and select CIFS setup.

The screenshot shows the 'Create a CIFS server' configuration page. At the top, there's a navigation bar with 'Volumes' and 'Replications' tabs. Below the navigation bar, there's a 'Create a CIFS server' button and a '+ Advanced' link. The configuration fields are as follows:

Field	Value
DNS Primary IP Address	192.168.0.16
DNS Secondary IP Address (Optional)	Example: 127.0.0.1
Active Directory Domain to join	nimgcveval.com
Credentials authorized to join the domain	administrator

At the bottom, there are 'Save' and 'Cancel' buttons.

2. Creating the SMB volume is an easy process. At Canvas, double-click the Cloud Volumes ONTAP working environment to create and manage volumes and click on the Create Volume option. Choose the appropriate size and cloud manager chooses the containing aggregate or use advanced allocation mechanism to place on a specific aggregate. For this demo, CIFS/SMB is selected as the protocol.

The screenshot shows the 'Volume Details, Protection & Protocol' configuration page. It has two main sections: 'Details & Protection' and 'Protocol'.

Details & Protection:

Field	Value
Volume Name:	cvogcvesmbvol01
Size (GB):	10
Snapshot Policy:	default

Protocol:

The 'Protocol' section has three tabs: 'NFS', 'CIFS', and 'iSCSI'. The 'CIFS' tab is selected.

Field	Value
Share name:	cvogcvesmbvol01_share
Permissions:	Full Control
Users / Groups:	Everyone;

At the bottom, there is a 'Continue' button.

3. After the volume is provisioned, it will be available under the Volumes pane. Because a CIFS share is provisioned, give your users or groups permission to the files and folders and verify that those users can access the share and create a file. This step is not required if the volume is replicated from an on-premises environment because the file and folder permissions are all retained as part of SnapMirror replication.

HINT: Click on the volume menu (°) to display its options.


cvogcvesmbvol01
ONLINE

INFO

Disk Type	PD-SSD
Tiering Policy	None

CAPACITY

10 GB
Allocated

1.84 MB
Disk Used

- After the volume is created, use the mount command to display the volume connection instructions, then connect to the share from the VMs on Google Cloud VMware Engine.


cvogcve01

Volumes
Replications


Mount Volume cvogcvesmbvol01

Go to your machine and enter this command

```
\\10.0.6.251\cvogcvesmbvol01_share
```

Copy

- Copy the following path and use the Map Network Drive option to mount the volume on the VM running on the Google Cloud VMware Engine.

Specify the drive letter for the connection and the folder that you want to connect to:

Drive:

Folder:

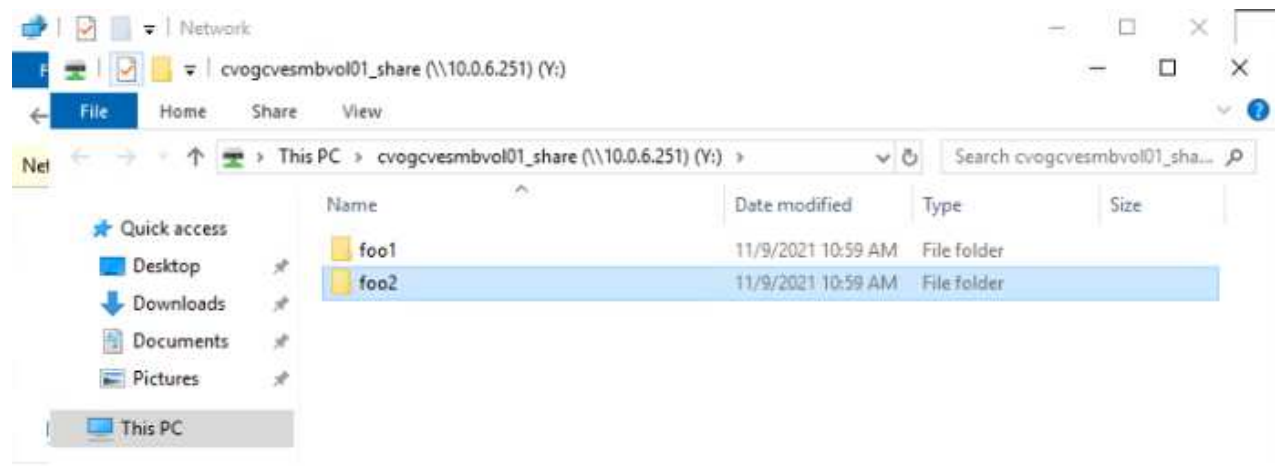
Example: \\server\share

☒ Reconnect at sign-in

☐ Connect using different credentials

[Connect to a Web site that you can use to store your documents and pictures.](#)

Once mapped, it can be easily accessed, and the NTFS permissions can be set accordingly.



Connect the LUN on Cloud Volumes ONTAP to a host

To connect the cloud volumes ONTAP LUN to a host, complete the following steps:

1. On the Canvas page, double-click the Cloud Volumes ONTAP working environment to create and manage volumes.
2. Click Add Volume > New Volume and select iSCSI and click Create Initiator Group. Click Continue.

Create new volume in cvogcve01

Volume Details, Protection & Protocol

Details & Protection

Volume Name: cvogcvescilun01 Size (GB): 10

Snapshot Policy: default

Default Policy

Protocol

NFS CIFS **iSCSI**

What about LUNs?

Initiator Group

Map Existing Initiator Groups Create Initiator Group

Initiator Group: WinIG

Operating System Type: Windows

Continue

VMware Cloud - ntap-fsr-demo X vSphere - vmcdc01 - Summary X vmcdc01 X NetApp Cloud Manager X

Getting Started EC2 Management Con... New Tab

vmcdc01

Server Manager • Dashboard

WELCOME TO SERVER M...

QUICK START

ROLES AND SERVER GRO...

AD DS

Management

Events

Services

Performance

BRK results

3. After the volume is provisioned, select the volume menu (°), and then click Target iQN. To copy the iSCSI Qualified Name (iQN), click Copy. Set up an iSCSI connection from the host to the LUN.

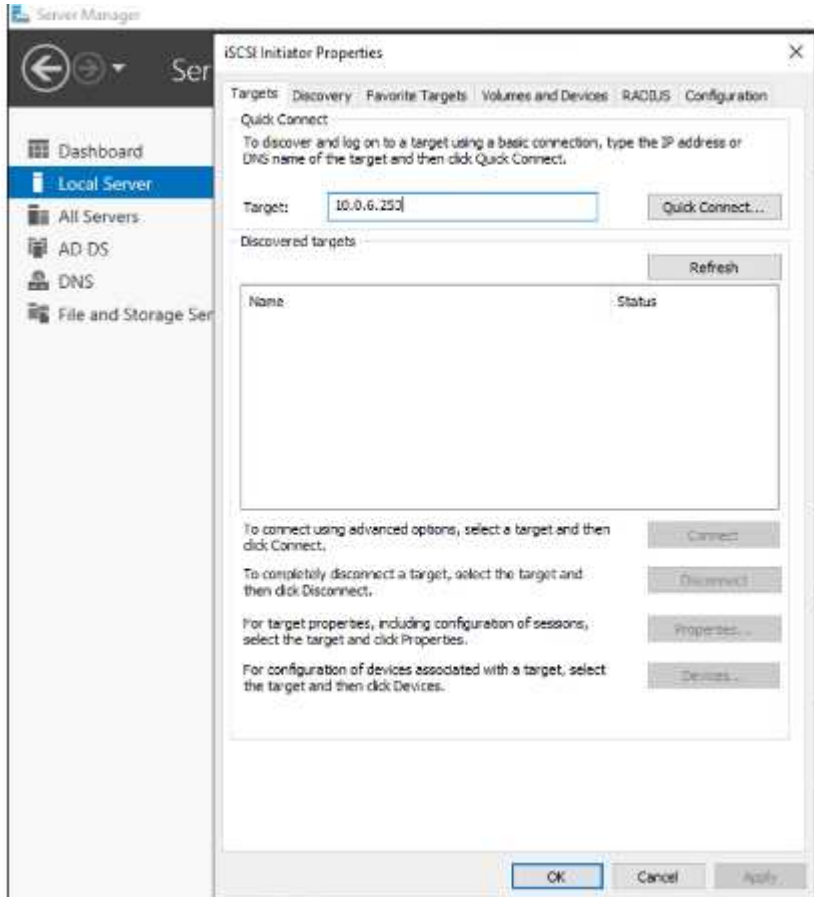
To accomplish the same for the host residing on Google Cloud VMware Engine:

- a. RDP to the VM hosted on Google Cloud VMware Engine.
- b. Open the iSCSI Initiator Properties dialog box: Server Manager > Dashboard > Tools > iSCSI Initiator.
- c. From the Discovery tab, click Discover Portal or Add Portal and then enter the IP address of the iSCSI target port.

- d. From the Targets tab, select the target discovered and then click Log on or Connect.
- e. Select Enable multipath, and then select Automatically Restore This Connection When the Computer Starts or Add This Connection to the List of Favorite Targets. Click Advanced.

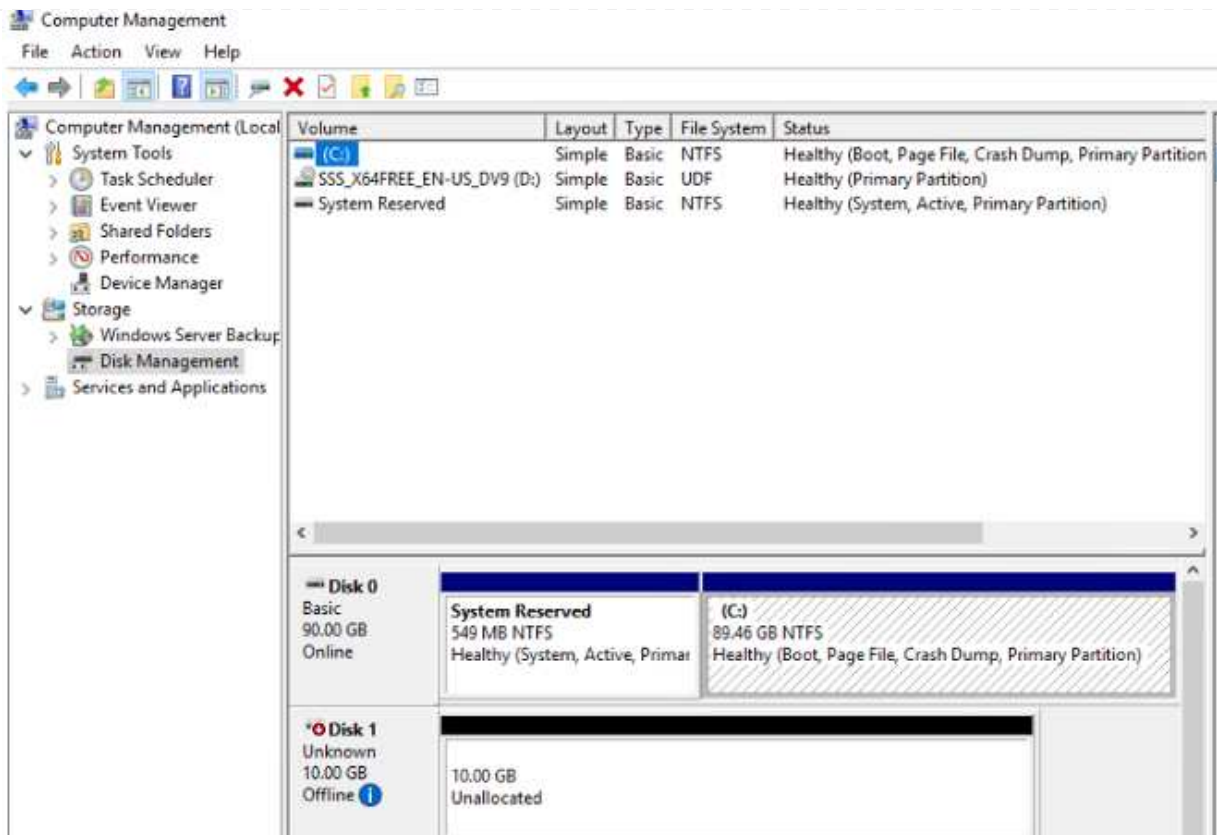


The Windows host must have an iSCSI connection to each node in the cluster. The native DSM selects the best paths to use.



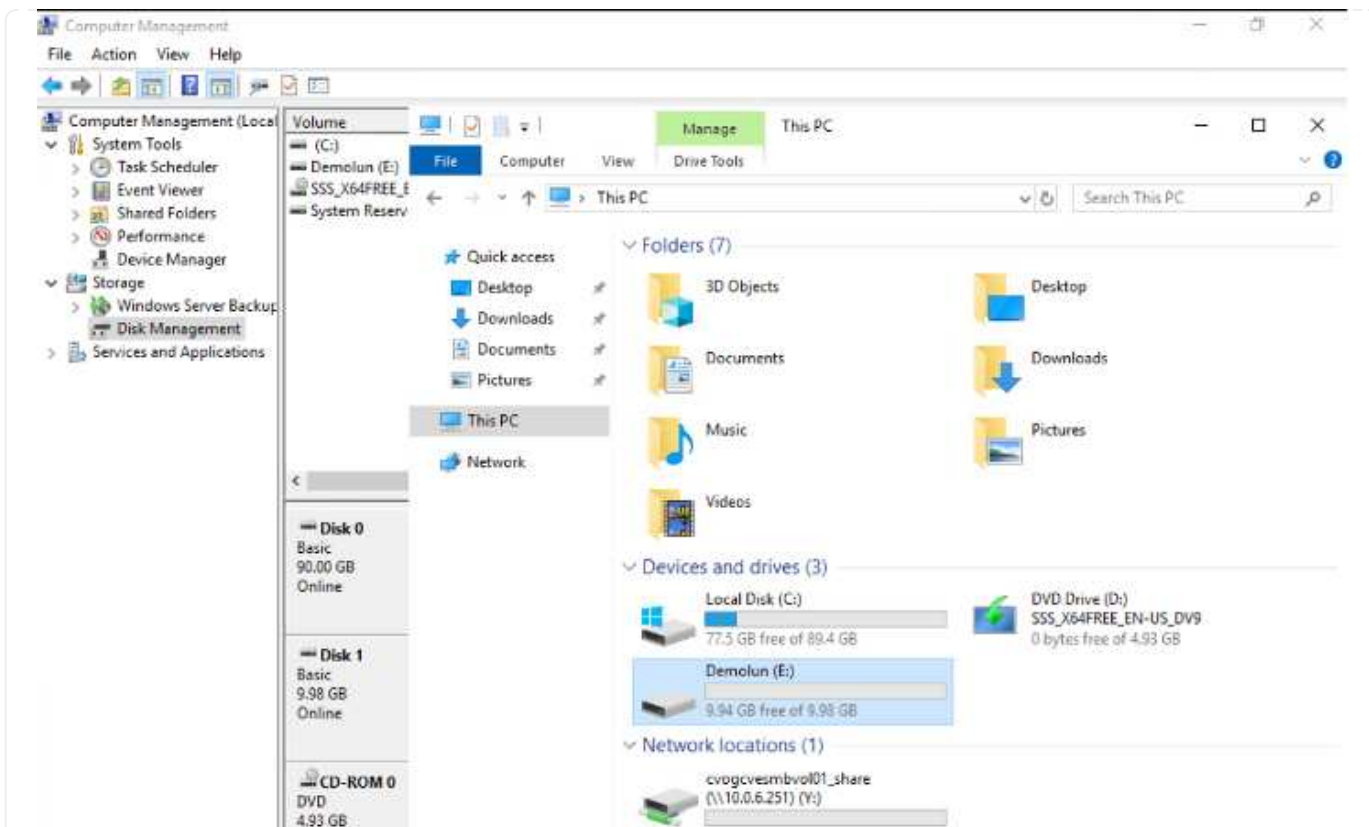
LUNs on storage virtual machine (SVM) appear as disks to the Windows host. Any new disks that are added are not automatically discovered by the host. Trigger a manual rescan to discover the disks by completing the following steps:

1. Open the Windows Computer Management utility: Start > Administrative Tools > Computer Management.
2. Expand the Storage node in the navigation tree.
3. Click Disk Management.
4. Click Action > Rescan Disks.



When a new LUN is first accessed by the Windows host, it has no partition or file system. Initialize the LUN; and optionally, format the LUN with a file system by completing the following steps:

5. Start Windows Disk Management.
6. Right-click the LUN, and then select the required disk or partition type.
7. Follow the instructions in the wizard. In this example, drive F: is mounted.



On the Linux clients, ensure the iSCSI daemon is running. Once the LUNs are provisioned, refer to the detailed guidance on iSCSI configuration with Ubuntu as an example here. To verify, run `lsblk` cmd from the shell.

```
nityaz@nububu1:~$ lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
loop0       7:0      0  55.4M  1 loop /snap/core18/2128
loop1       7:1      0  219M   1 loop /snap/gnome-3-34-1804/72
loop2       7:2      0   65.1M  1 loop /snap/gtk-common-themes/1515
loop3       7:3      0    51M   1 loop /snap/snapd/547
loop4       7:4      0   32.3M  1 loop /snap/snapd/12704
loop5       7:5      0   32.5M  1 loop /snap/snapd/13640
loop6       7:6      0   55.5M  1 loop /snap/core18/2246
loop7       7:7      0     4K   1 loop /snap/bare/5
loop8       7:8      0   65.2M  1 loop /snap/gtk-common-themes/1519
sda         8:0      0    16G   0 disk
├─sda1      8:1      0   512M   0 part /boot/efi
├─sda2      8:2      0     1K   0 part
└─sda5      8:5      0   15.5G  0 part /
sdb         8:16     0     1G   0 disk
```

```

niyaz@nimubu01:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            1.9G   0    1.9G   0% /dev
tmpfs           394M  1.5M  392M   1% /run
/dev/sda5       16G   7.6G   6.9G  53% /
tmpfs           2.0G   0    2.0G   0% /dev/shm
tmpfs           5.0M   0    5.0M   0% /run/lock
tmpfs           2.0G   0    2.0G   0% /sys/fs/cgroup
/dev/loop1      219M  219M   0 100% /snap/gnome-3-34-1804/72
/dev/loop2      66M   66M   0 100% /snap/gtk-common-themes/1515
/dev/loop3      51M   51M   0 100% /snap/snap-store/547
/dev/loop6      56M   56M   0 100% /snap/core18/2128
/dev/loop4      33M   33M   0 100% /snap/snapd/12704
/dev/sda1       511M  4.0K  511M   1% /boot/efi
tmpfs           394M  64K  394M   1% /run/user/1000
/dev/loop5      33M   33M   0 100% /snap/snapd/13640
/dev/loop6      56M   56M   0 100% /snap/core18/2246
/dev/loop7     128K  128K   0 100% /snap/bare/5
/dev/loop8      66M   66M   0 100% /snap/gtk-common-themes/1519
/dev/sdb        976M  2.6M  987M   1% /mnt

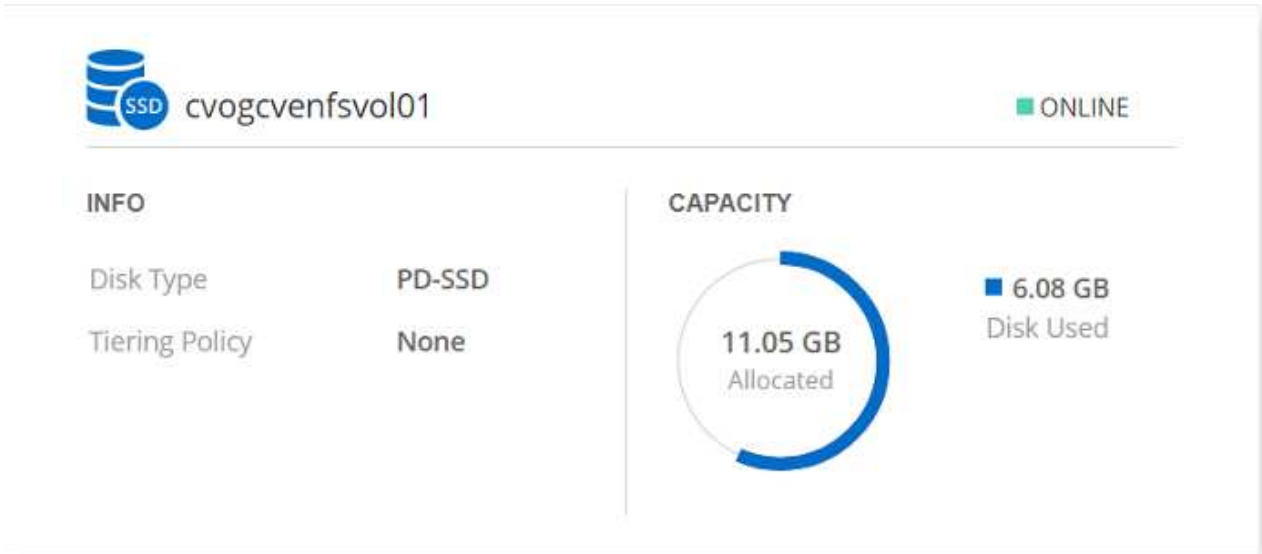
```


Mount Cloud Volumes ONTAP NFS volume on Linux client

To mount the Cloud Volumes ONTAP (DIY) file system from VMs within Google Cloud VMware Engine, follow the below steps:

Provision the volume following the below steps

1. In the Volumes tab, click Create New Volume.
2. On the Create New Volume page, select a volume type:



3. In the Volumes tab, place your mouse cursor over the volume, select the menu icon (°), and then click Mount Command.



Go to your Linux machine and enter this mount command

```
mount 10.0.6.251:/cvogcvenfsvol01 <dest_dir>
```



4. Click Copy.
5. Connect to the designated Linux instance.
6. Open a terminal on the instance using secure shell (SSH) and log in with the appropriate credentials.
7. Make a directory for the volume's mount point with the following command.

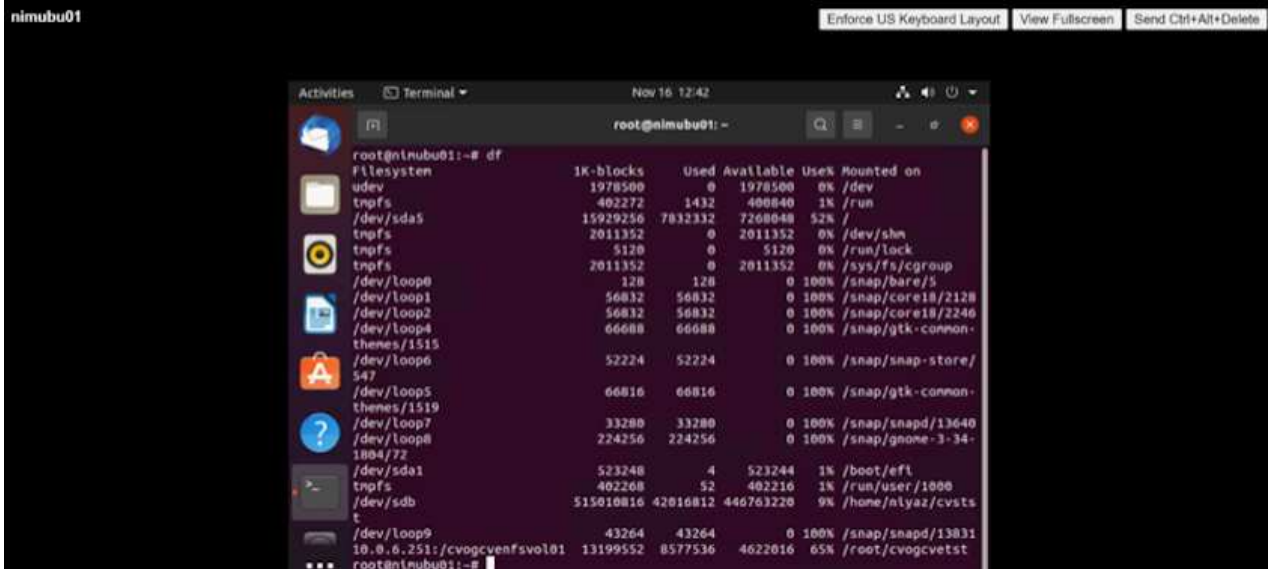

```
$ sudo mkdir /cvogcvetst
```

```
root@nimubu01:~# sudo mkdir cvogcvetst
```

8. Mount the Cloud Volumes ONTAP NFS volume to the directory that is created in the previous step.

```
sudo mount 10.0.6.251:/cvogcvenfsvol01 /cvogcvetst
```

```
root@nimubu01:~# sudo mount -t nfs 10.0.6.251:/cvogcvenfsvol01 cvogcvetst
```



Cloud Volumes Service (CVS)

Cloud Volumes Services (CVS) is a complete portfolio of data services to deliver advanced cloud solutions. Cloud Volumes Services supports multiple file access protocols for major cloud providers (NFS and SMB support).

Other benefits and features include: data protection and restore with Snapshot; special features to replicate, sync and migrate data destinations on-prem or in the cloud; and consistent high performance at the level of a dedicated flash storage system.

Cloud Volumes Service (CVS) as guest connected storage

Configure Cloud Volumes Service with VMware Engine

Cloud Volumes Service shares can be mounted from VMs that are created in the VMware Engine environment. The volumes can also be mounted on the Linux client and mapped on the Windows client because Cloud Volumes Service supports SMB and NFS protocols. Cloud Volumes Service volumes can be set up in simple steps.

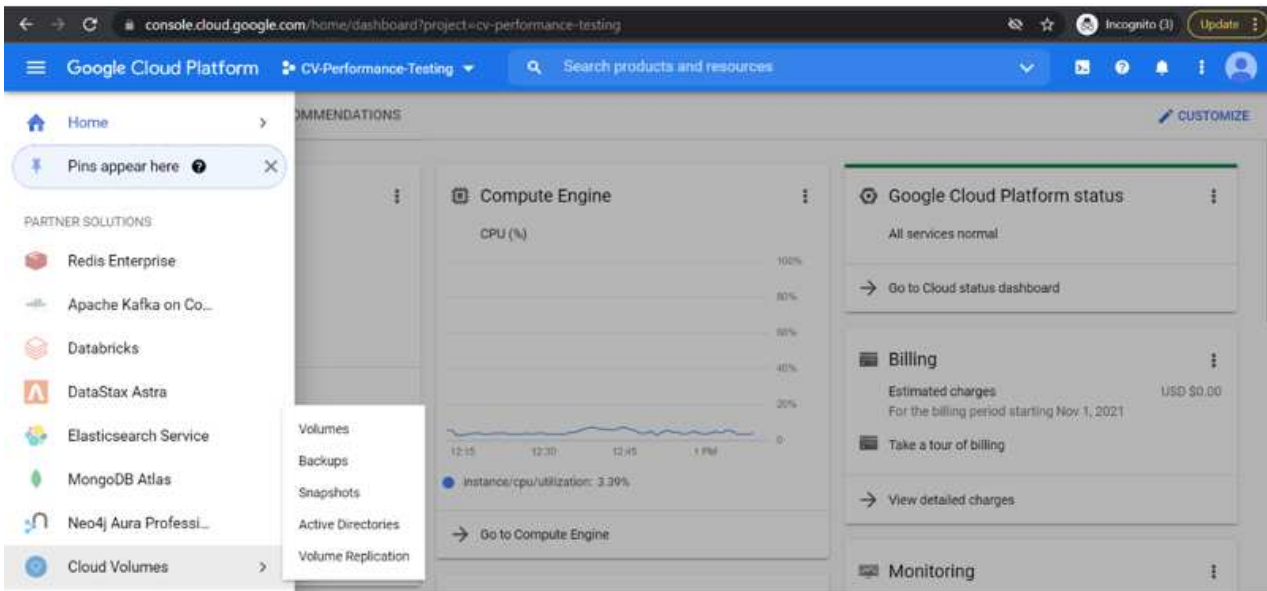
Cloud Volume Service and Google Cloud VMware Engine private cloud must be in the same region.

To purchase, enable and configure NetApp Cloud Volumes Service for Google Cloud from the Google Cloud Marketplace, follow this detailed [guide](#).

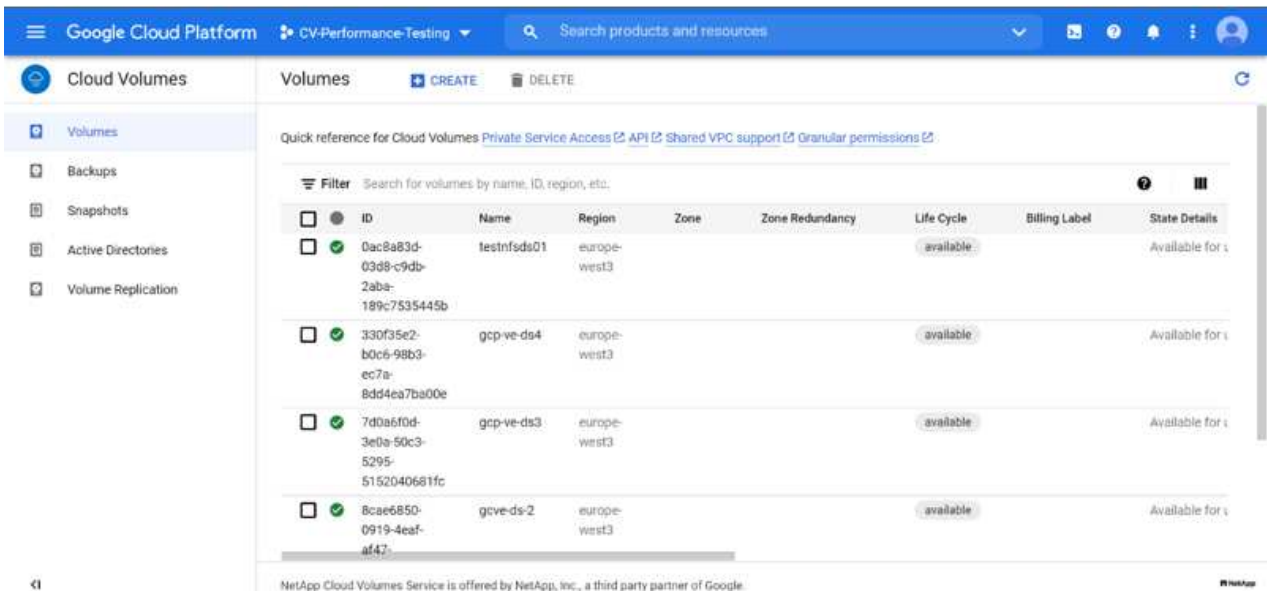
Create a CVS NFS volume to GCVE private cloud

To create and mount NFS volumes, complete the following steps:

1. Access Cloud Volumes from Partner Solutions within the Google cloud console.



2. In the Cloud Volumes Console, go to the Volumes page and click Create.




3. On the Create File System page, specify the volume name and billing labels as required for chargeback mechanisms.

Cloud Volumes	← Create File System
<ul style="list-style-type: none"> Volumes Backups Snapshots Active Directories Volume Replication 	<p>Volume Name</p> <p>Name *</p> <input type="text" value="nimCVNFSvol01"/> <p>A human readable name used for display purposes.</p> <p>Billing Labels</p> <p>Label your volumes for billing reports, queries. Supported with CVS-Performance service type; can be set with CVS service type but not available for billing at this time.</p> <p>+ ADD LABEL</p>


4. Select the appropriate service. For GCVE, choose CVS-Performance and desired service level for improved latency and higher performance based on the application workload requirements.

Cloud Volumes	← Create File System
<ul style="list-style-type: none"> Volumes Backups Snapshots Active Directories Volume Replication 	<p>Service Type</p> <p>Cloud Volumes Service is offered as two service types: CVS and CVS-Performance. Select the service type that matches your workload needs. Region availability varies by service type. Learn more</p> <p> <input type="radio"/> CVS Offers volumes created with zonal high availability. </p> <p> <input checked="" type="radio"/> CVS-Performance Offers 3 performance levels and improved latency to address higher performance application requirements. </p> <p>Volume Replication</p> <p> <input type="checkbox"/> Secondary Select to create volume as a destination target for volume replication. Applicable only to CVS-performance volumes. </p>


5. Specify the Google Cloud region for the volume and volume path (The volume path must be unique across all of cloud volumes in the project)

 Cloud Volumes	Create File System
<ul style="list-style-type: none"> Volumes Backups Snapshots Active Directories Volume Replication 	<p>Region</p> <p>Region availability varies by service type.</p> <p>Region * europe-west3</p> <p>Volume will be provisioned in the region you select.</p> <p>Volume Path * nimCVSNFSol01</p> <p>Must be unique to the project.</p>

6. Select the level of performance for the volume.

 Cloud Volumes	Create File System
<ul style="list-style-type: none"> Volumes Backups Snapshots Active Directories Volume Replication 	<p>Service Level</p> <p>Select the performance level required for your workload.</p> <p><input checked="" type="radio"/> Standard Up to 16 MiB/s per TiB</p> <p><input type="radio"/> Premium Up to 64 MiB/s per TiB</p> <p><input type="radio"/> Extreme Up to 128 MiB/s per TiB</p> <p>Snapshot</p> <p>The snapshot to create the volume from.</p>

7. Specify the size of the volume and the protocol type. In this testing, NFSv3 is used.

 Cloud Volumes	Create File System
<ul style="list-style-type: none"> Volumes Backups Snapshots Active Directories Volume Replication 	<p>Volume Details</p> <p>Allocated Capacity * 1024 GiB</p> <p>Allocated size must be between 1 TiB (1024 GiB) and 100 TiB (102400 GiB)</p> <p>Protocol Type * NFSv3</p> <p><input type="checkbox"/> Make snapshot directory (.snapshot) visible Makes .snapshot directory visible to clients. For NFSv4.1 volumes (CVS-Performance only), the directory itself will not be listed but can be accessed to list contents, etc.</p> <p><input type="checkbox"/> Enable LDAP Enables user look up from AD LDAP server for your NFS volumes</p>

8. In this step, select the VPC Network from which the volume will be accessible. Ensure VPC peering is in place.

HINT: If VPC peering has not been done, a pop-up button will be displayed to guide you through the peering commands. Open a Cloud Shell session and execute the appropriate commands to peer your VPC with Cloud Volumes Service producer. In case you decide to prepare VPC peering in beforehand, refer to these instructions.

Cloud Volumes

Volumes

Backups

Snapshots

Active Directories

Volume Replication

Create File System

Network Details

☐ Shared VPC configuration
 Provide the host project name when deploying in a shared VPC service project.

VPC Network Name *

cloud-volumes-vpc

Select the VPC Network from which the volume will be accessible. This cannot be changed later.

☐ Use Custom Address Range

Reserved Address range

netapp-addresses

9. Manage the Export policy rules by adding the appropriate rules and Select the checkbox for the corresponding NFS version.

Note: Access to NFS volumes won't be possible unless an export policy is added.

Cloud Volumes

Volumes

Backups

Snapshots

Active Directories

Volume Replication

Create File System

Export Policy

Rules

Item 1

Allowed Clients 1 *

0.0.0.0/0

Access

☒ Read & Write
☐ Read Only

Root Access

☒ On
☐ Off

Protocol Type (Select at least 1 of the below options)

Must select for Protocol type NFSv3. Optional for Protocol Type Both. Do not select for NFSv4.1
☒ Allows Matching Clients for NFSv3

10. Click Save to create the volume.

<input type="checkbox"/>	<input checked="" type="checkbox"/>	4b6ed9a9-bc6d-f3d5-5a0f-7da26aed3ed0	nimmfsdemods02	europa-west3	Available for use	CVS-Performance	Primary	Extreme	NFSv3 : 10.53.0.4/nimmfsdemods02
--------------------------	-------------------------------------	--------------------------------------	----------------	--------------	-------------------	-----------------	---------	---------	----------------------------------

Mounting NFS exports to VMs running on VMware Engine

Before preparing to mount the NFS volume, ensure the peering status of private connection is listed as Active. Once status is Active, use the mount command.

To mount an NFS volume, do the following:

1. In the Cloud Console, go to Cloud Volumes > Volumes.
2. Go to the Volumes page
3. Click the NFS volume for which you want to mount NFS exports.
4. Scroll to the right, under Show More, click Mount Instructions.

To perform the mounting process from within the guest OS of the VMware VM, follow the below steps:

1. Use SSH client and SSH to the virtual machine.
2. Install the nfs client on the instance.
 - a. On Red Hat Enterprise Linux or SuSE Linux instance:

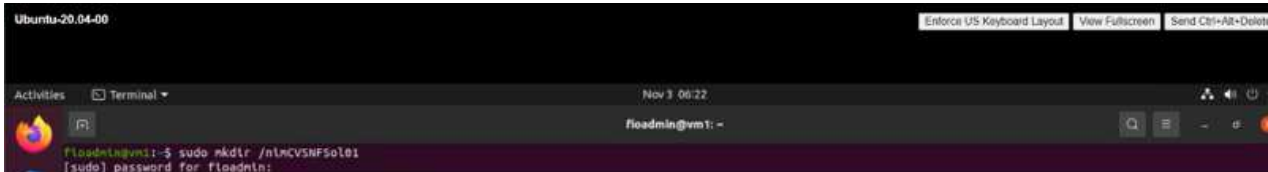
```
sudo yum install -y nfs-utils
```

- b. On an Ubuntu or Debian instance:

```
sudo apt-get install nfs-common
```

3. Create a new directory on the instance, such as "/nimCVSNFSol01":

```
sudo mkdir /nimCVSNFSol01
```



4. Mount the volume using the appropriate command. Example command from the lab is below:

```
sudo mount -t nfs -o rw,hard,rsz=65536,wsz=65536,vers=3,tcp 10.53.0.4:/nimCVSNFSol01 /nimCVSNFSol01
```

```
root@vm1:~# sudo mkdir /nimCVSNFSol01
root@vm1:~# sudo mount -t nfs -o rw,hard,rsz=65536,wsz=65536,vers=3,tcp 10.53.0.4:/nimCVSNFSol01 /nimCVSNFSol01
```



```

root@vni:~# df
Filesystem            1K-blocks    Used   Available Use% Mounted on
udev                  16409952      0   16409952   0% /dev
tmpfs                  3288328    1580    3286748   1% /run
/dev/sdb5             61145932 19231356  38778832  34% /
tmpfs                 16441628      0   16441628   0% /dev/shm
tmpfs                  5120        0      5120     0% /run/lock
tmpfs                 16441628      0   16441628   0% /sys/fs/cgroup
/dev/loop0             128         128      0 100% /snap/bare/5
/dev/loop1             56832       56832      0 100% /snap/core18/2128
/dev/loop2             66688       66688      0 100% /snap/gtk-common-themes/1515
/dev/loop4             66816       66816      0 100% /snap/gtk-common-themes/1519
/dev/loop3             52224       52224      0 100% /snap/snap-store/547
/dev/loop5             224256     224256      0 100% /snap/gnome-3-34-1804/72
/dev/sdb1             523248        4    523244   1% /boot/efi
tmpfs                  3288324      28    3288296   1% /run/user/1000
10.53.0.4:/gcve-ds-1 107374182400 1136086016 106238096384  2% /base
/dev/napper/nfsprdv1-prod01 419155968 55384972 363770996 14% /datastore1
/dev/loop8             33280       33280      0 100% /snap/snapd/13270
/dev/loop6             33280       33280      0 100% /snap/snapd/13640
/dev/loop7             56832       56832      0 100% /snap/core18/2246
10.53.0.4:/nlmCVSNFSol01 107374182400 256 107374182144 1% /nlmCVSNFSol01
root@vni:~#

```


Creating and Mounting SMB Share to VMs running on VMware Engine

For SMB volumes, make sure the Active Directory connections is configured prior to creating the SMB volume.

Active Directory connections [+ CREATE](#) [DELETE](#)

Create a Windows Active Directory connection to your existing AD server. This is a prerequisite step before creating volumes with the SMB protocol type. [Learn more](#)

Filter Search for Active Directory connections by ID, username, DNS, netBIOS, region, etc.

<input type="checkbox"/>	Username	Domain	DNS Servers	NetBIOS Prefix	OU Path	AD Server Name	KDC IP	Region	Status
<input checked="" type="checkbox"/>	administrator	nimgcveval.com	192.168.0.16	nimsmb	CN=Computers			europa-west3	In Use

Once the AD connection is in place, create the volume with the desired service level. The steps are like creating NFS volume except selecting the appropriate protocol.

1. In the Cloud Volumes Console, go to the Volumes page and click Create.
2. On the Create File System page, specify the volume name and billing labels as required for chargeback mechanisms.

← Create File System

Volume Name

Name *

nimCVSMBvol01

A human readable name used for display purposes.

Billing Label

Label your volumes for billing reports, queries.



Supported with CVS-Performance service type; can be set with CVS service type but not available for billing at this time.

[+ ADD LABEL](#)

3. Select the appropriate service. For GCVE, choose CVS-Performance and desired service level for improved latency and higher performance based on the workload requirements.

Create File System

Service Type

Cloud Volumes Service is offered as two service types: CVS and CVS-Performance. Select the service type that matches your workload needs. [Region availability](#)  varies by service type. [Learn more](#) 

☐ CVS

Offers volumes created with zonal high availability.

☒ CVS-Performance

Offers 3 performance levels and improved latency to address higher performance application requirements.

Volume Replication

☐ Secondary

Select to create volume as a destination target for volume replication. Applicable only to CVS-performance volumes.

- Specify the Google Cloud region for the volume and volume path (The volume path must be unique across all of cloud volumes in the project)

Create File System

Region

Region availability varies by service type.

Region *

europa-west3



Volume will be provisioned in the region you select.

Volume Path *

nimCVSMBvol01



Must be unique to the project.

- Select the level of performance for the volume.

← Create File System

Service Level

Select the performance level required for your workload.

- ☒ Standard
Up to 16 MiB/s per TiB
- ☐ Premium
Up to 64 MiB/s per TiB
- ☐ Extreme
Up to 128 MiB/s per TiB

Snapshot

The snapshot to create the volume from.

6. Specify the size of the volume and the protocol type. In this testing, SMB is used.

← Create File System

Volume Details

Allocated Capacity *

1024

GiB

Allocated size must be between 1 TiB (1024 GiB) and 100 TiB (102400 GiB)

Protocol Type *

SMB

- ☐ Make snapshot directory (.snapshot) visible
Makes .snapshot directory visible to clients. For NFSv4.1 volumes (CVS-Performance only), the directory itself will not be listed but can be accessed to list contents, etc.
- ☐ Enable SMB Encryption
Enable this option only if you require encryption of your SMB data traffic.
- ☐ Enable CA share support for SQL Server, FSLogix
Enable this option only for SQL Server and FSLogix workloads that require continuous availability.
- ☐ Hide SMB Share
Enable this option to make SMB shares non-browsable

7. In this step, select the VPC Network from which the volume will be accessible. Ensure VPC peering is in place.

HINT: If VPC peering has not been done, a pop-up button will be displayed to guide you through the peering commands. Open a Cloud Shell session and execute the appropriate commands to peer your VPC with Cloud Volumes Service producer. In case you decide to prepare VPC peering in

beforehand, refer to these [instructions](#).

Network Details

☐ Shared VPC configuration

Provide the host project name when deploying in a shared VPC service project.

VPC Network Name +

cloud-volumes-vpc

Select the VPC Network from which the volume will be accessible. This cannot be changed later.

☐ Use Custom Address Range

Reserved Address range

netapp-addresses

✓ SHOW SNAPSHOT POLICY

SAVE

CANCEL

8. Click Save to create the volume.

<input type="checkbox"/>		6a4552ed-7378-7302-be28-21a169374f28	nimCVSMBvol01	europa-west3	Available for use	CVS-Performance	Primary	Standard	SMB: \\nimmb-3830.nimgcveval.com\nimCVSMBvol01
--------------------------	--	--------------------------------------	---------------	--------------	-------------------	-----------------	---------	----------	--

To mount the SMB volume, do the following:

1. In the Cloud Console, go to Cloud Volumes > Volumes.
2. Go to the Volumes page
3. Click the SMB volume for which you want to map an SMB share.
4. Scroll to the right, under Show More, click Mount Instructions.

To perform the mounting process from within the Windows guest OS of the VMware VM, follow the below steps:

1. Click the Start button and then click on Computer.
2. Click Map Network Drive.
3. In the Drive list, click any available drive letter.
4. In the folder box, type:

```
\\nimmb-3830.nimgcveval.com\nimCVSMBvol01
```

Map Network Drive

What network folder would you like to map?

Specify the drive letter for the connection and the folder that you want to connect to:

Drive:

Folder:

Example: \\server\share

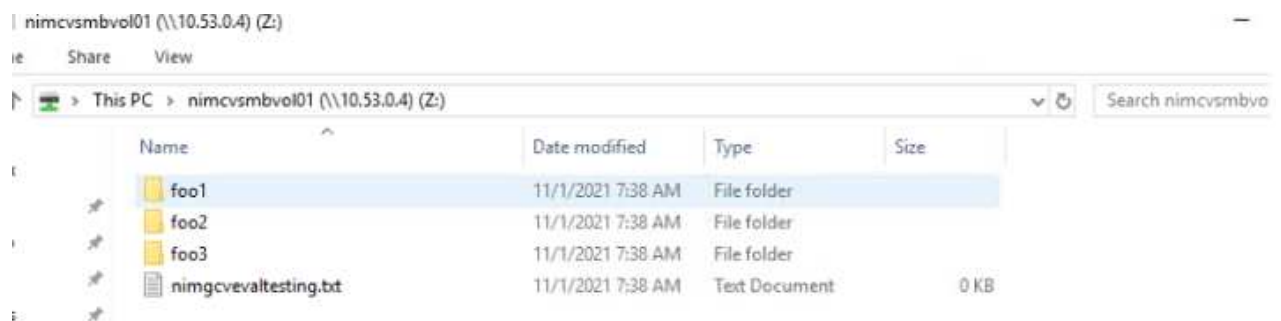
☒ Reconnect at sign-in

☐ Connect using different credentials

[Connect to a Web site that you can use to store your documents and pictures.](#)

To connect every time you log on to your computer, select the Reconnect at sign-in check box.

5. Click Finish.



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