Requirements for deploying SCV

SnapCenter Plug-in for VMware vSphere

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Table of Contents

Requirements for deploying SCV . . . 1
- Deployment planning and requirements . . . 1
  - Host requirements . . . 1
  - License requirements . . . 2
  - Software support . . . 2
  - Space and sizing requirements . . . 3
  - Connection and port requirements . . . 3
  - Configurations supported . . . 4
  - RBAC privileges required . . . 5
  - AutoSupport . . . 6
- ONTAP privileges required . . . 6
  - Minimum ONTAP privileges required . . . 6
  - Additional ONTAP information . . . 9
- Minimum vCenter privileges required . . . 10
  - Required privileges for vCenter Admin role . . . 10
  - Required privileges specific to SnapCenter Plug-in for VMware vCenter . . . 11

Requirements for deploying SCV

Deployment planning and requirements

You should be aware of the deployment requirements before you deploy the virtual appliance. The deployment requirements are listed in the following tables.

Host requirements

Before you begin deployment of SnapCenter Plug-in for VMware vSphere (SCV), you should be familiar with the host requirements.

- SnapCenter Plug-in for VMware vSphere is deployed as a Linux VM regardless of whether you use the plug-in to protect data on Windows systems or Linux systems.
- You should deploy the SnapCenter Plug-in for VMware vSphere on the vCenter Server.

  Backup schedules are executed in the time zone in which the SnapCenter Plug-in for VMware vSphere is deployed. vCenter reports data in the time zone in which the vCenter is located. Therefore, if the SnapCenter Plug-in for VMware vSphere and vCenter are in different time zones, data in the SnapCenter Plug-in for VMware vSphere Dashboard might not be the same as the data in the reports.

- You must not deploy the SnapCenter Plug-in for VMware vSphere in a folder that has a name with special characters.

  The folder name should not contain the following special characters: $!@#%^&()_+{}';.,*?"<>|

- You must deploy and register a separate, unique instance of the SnapCenter Plug-in for VMware vSphere for each vCenter Server.
  - Each vCenter Server, whether or not it is in Linked Mode, must be paired with a separate instance of the SnapCenter Plug-in for VMware vSphere.
  - Each instance of the SnapCenter Plug-in for VMware vSphere must be deployed as a separate Linux VM.

    For example, if you want to perform backups from six different instances of the vCenter Server, then you must deploy the SnapCenter Plug-in for VMware vSphere on six hosts and each vCenter Server must be paired with a unique instance of the SnapCenter Plug-in for VMware vSphere.

- To protect vVol VMs (VMs on VMware vVol datastores), you must first deploy ONTAP tools for VMware vSphere. ONTAP tools provisions and configures storage for vVols on ONTAP and on the VMware web client.

  For more information, refer to the ONTAP tools for VMware vSphere documentation. Additionally, refer to NetApp Interoperability Matrix Tool for latest information about the supported versions on ONTAP tools.

- SnapCenter Plug-in for VMware vSphere provides limited support of shared PCI or PCIe devices (for example, NVIDIA Grid GPU) due to a limitation of the virtual machines in supporting Storage vMotion. For more information, see the vendor's document Deployment Guide for VMware.
  - What is supported:

    Creating resource groups

Creating backups without VM consistency

Restoring a complete VM when all the VMDKs are on an NFS datastore and the plug-in does not need to use Storage vMotion

Attaching and detaching VMDKs

Mounting and unmounting datastores

Guest file restores

- What is not supported:

Creating backups with VM consistency

Restoring a complete VM when one or more VMDKs are on a VMFS datastore.

- For a detailed list of the SnapCenter Plug-in for VMware vSphere limitations, refer to SnapCenter Plug-in for VMware vSphere Release Notes.

License requirements

You must provide licenses for…	License requirement
ONTAP	One of these: SnapMirror or SnapVault (for secondary data protection regardless of the type of relationship)
Additional products	vSphere Standard, Enterprise, or Enterprise Plus A vSphere license is required to perform restore operations, which use Storage vMotion. vSphere Essentials or Essentials Plus licenses do not include Storage vMotion.
Primary destinations	SnapCenter Standard: required to perform application-based protection over VMware SnapRestore: required to perform restore operations for VMware VMs and datastores only FlexClone: used for mount and attach operations on VMware VMs and datastores only
Secondary destinations	SnapCenter Standard: used for failover operations for application-based protection over VMware FlexClone: used for mount and attach operations on VMware VMs and datastores only

Software support

Item	Supported versions
vCenter vSphere	7.0U1 and above.
ESXi Server	7.0U1 and above.
IP addresses	IPv4, IPv6
VMware TLS	1.2, 1.3

Item	Supported versions
TLS on the SnapCenter Server	1.2, 1.3 The SnapCenter Server uses this to communicate with the SnapCenter Plug-in for VMware vSphere for application over VMDK data protection operations.
VMware application vStorage API for Array Integration (VAAI)	SnapCenter Plug-in for VMware vSphere uses this to improve performance for restore operations. It also improves performance in NFS environments.
ONTAP tools for VMware	SnapCenter Plug-in for VMware vSphere uses this to manage vVol datastores (VMware virtual volumes). For supported versions, refer to NetApp Interoperability Matrix Tool.

For the latest information about supported versions, refer to NetApp Interoperability Matrix Tool.

Requirements for NVMe over TCP and NVMe over FC protocols

The minimum software requirements for NVMe over TCP and NVMe over FC protocol support are:

- vCenter vSphere 7.0U3
- ESXi 7.0U3
- ONTAP 9.10.1

Space and sizing requirements

Item	Requirements
Operating system	Linux
Minimum CPU count	4 cores
Minimum RAM	Minimum: 12 GB Recommended: 16 GB
Minimum hard drive space for the SnapCenter Plug-in for VMware vSphere, logs, and MySQL database	100 GB

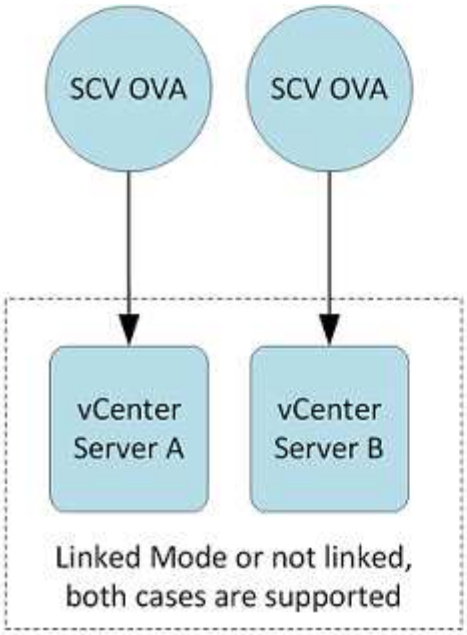
Connection and port requirements

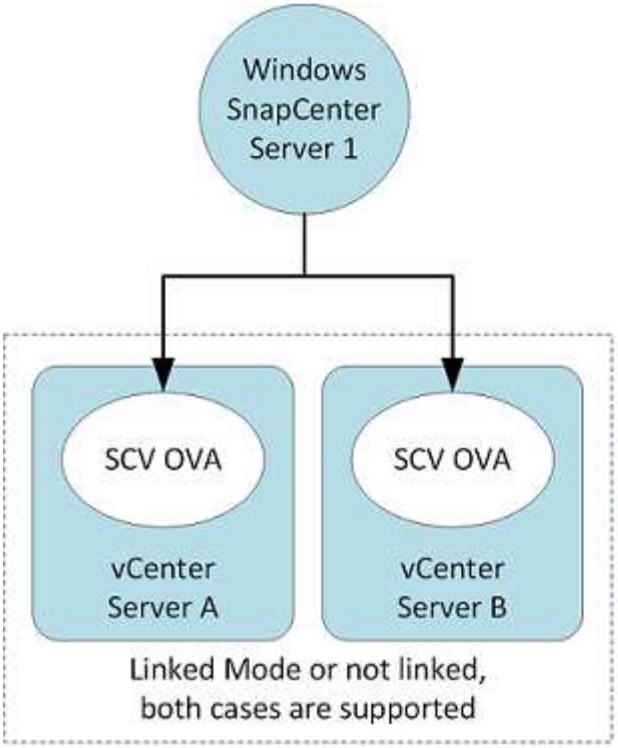
Type of port	Preconfigured port
VMware ESXi Server port	443 (HTTPS), bidirectional The Guest File Restore feature uses this port.

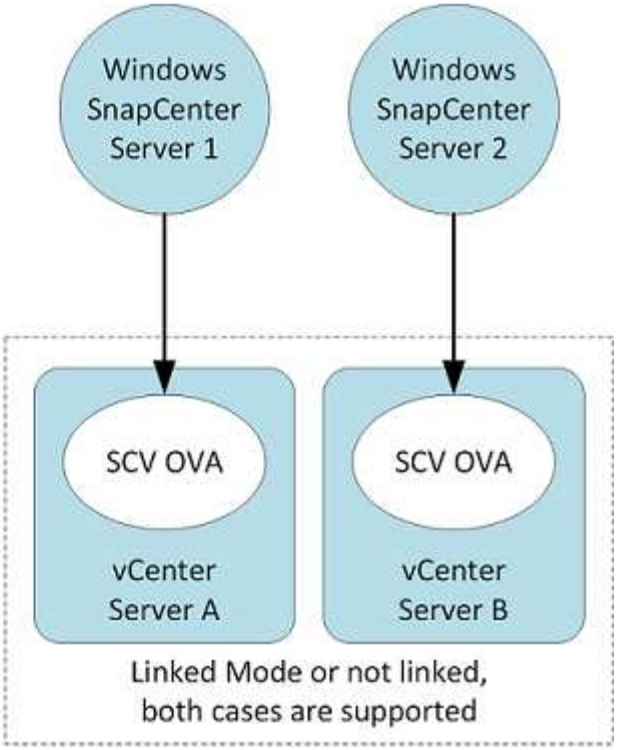
Type of port	Preconfigured port
SnapCenter Plug-in for VMware vSphere port	8144 (HTTPS), bidirectional The port is used for communications from the VMware vSphere client and from the SnapCenter Server. 8080 bidirectional This port is used to manage virtual appliances. Note: Custom port for addition of SCV host to SnapCenter is supported.
VMware vSphere vCenter Server port	You must use port 443 if you are protecting vVol VMs.
Storage cluster or storage VM port	443 (HTTPS), bidirectional 80 (HTTP), bidirectional The port is used for communication between the virtual appliance and the storage VM or the cluster that contains the storage VM.

Configurations supported

Each plug-in instance supports only one vCenter Server. vCenters in linked mode are supported. Multiple plug-in instances can support the same SnapCenter Server as shown in the following figure.







RBAC privileges required

The vCenter administrator account must have the required vCenter privileges, as listed in the following table.

To do this operation…	You must have these vCenter privileges…
Deploy and register the SnapCenter Plug-in for VMware vSphere in vCenter	Extension: Register extension

To do this operation…	You must have these vCenter privileges…
Upgrade or remove the SnapCenter Plug-in for VMware vSphere	Extension • Update extension • Unregister extension
Allow the vCenter Credential user account registered in SnapCenter to validate user access to the SnapCenter Plug-in for VMware vSphere	sessions.validate.session
Allow users to access the SnapCenter Plug-in for VMware vSphere	SCV Administrator SCV Backup SCV Guest File Restore SCV Restore SCV View The privilege must be assigned at the vCenter root.

AutoSupport

SnapCenter Plug-in for VMware vSphere provides a minimum of information for tracking its usage, including the plug-in URL. AutoSupport includes a table of installed plug-ins that is displayed by the AutoSupport viewer.

ONTAP privileges required

The minimum ONTAP privileges that are required vary according to the SnapCenter plug-ins you are using for data protection.

Beginning with SnapCenter Plug-in for VMware (SCV) 5.0, you need to add applications of type HTTP and ONTAPI as user login methods for any ONTAP users with customized role-based access to the SCV. Without access to these applications, backups will fail. You need to restart the SCV service to recognize changes to ONTAP user login methods.

Minimum ONTAP privileges required

All SnapCenter plug-ins require the following minimum privileges.

All-access commands: Minimum privileges required for ONTAP 8.3 and later.
event generate-autosupport-log
job history show job show job stop

lun lun create lun delete lun igroup add lun igroup create lun igroup delete lun igroup rename lun igroup show lun mapping add-reporting-nodes lun mapping create lun mapping delete lun mapping remove-reporting-nodes lun mapping show lun modify lun move-in-volume lun offline lun online lun persistent-reservation clear lun resize lun serial lun show
snapmirror list-destinations snapmirror policy add-rule snapmirror policy modify-rule snapmirror policy remove-rule snapmirror policy show snapmirror restore snapmirror show snapmirror show-history snapmirror update snapmirror update-ls-set
Version

volume clone create
volume clone show
volume clone split start
volume clone split stop
volume create
volume delete
volume destroy
volume file clone create
volume file show-disk-usage
volume offline
volume online
volume modify
volume qtree create
volume qtree delete
volume qtree modify
volume qtree show
volume restrict
volume show
volume snapshot create
volume snapshot delete
volume snapshot modify
volume snapshot rename
volume snapshot restore
volume snapshot restore-file
volume snapshot show
volume unmount

vserver cifs vserver cifs share create vserver cifs share delete vserver cifs shadowcopy show vserver cifs share show vserver cifs show vserver export-policy vserver export-policy create vserver export-policy delete vserver export-policy rule create vserver export-policy rule show vserver export-policy show vserver iscsi vserver iscsi connection show vserver nvme subsystem controller vserver nvme subsystem controller show vserver nvme subsystem map vserver nvme subsystem map show vserver nvme subsystem map add vserver nvme subsystem map remove vserver nvme subsystem host show vserver nvme subsystem host add vserver nvme subsystem host remove vserver nvme subsystem show vserver nvme subsystem delete vserver nvme namespace show network interface network interface failover-groups

Read-only Commands: Minimum Privileges Required for ONTAP 8.3 and Later
cluster identity show network interface show vserver vserver peer vserver show

You can ignore the *cluster identity show* cluster level command when creating a role to associate with the data vServer.

You can ignore the warning messages about the unsupported vServer commands.

Additional ONTAP information

- If you are running ONTAP 8.2.x:

  You must login as `vsadmin` on the storage VM to have the appropriate privileges for SnapCenter Plug-in for VMware vSphere operations.

- If you are running ONTAP 8.3 and later:

  You must login as `vsadmin` or with a role that has the minimum privileges listed in the tables above.

- You need to be the cluster admin to create and manage user roles. You can associate the users either with Cluster storage VM or with storage VM.
- You need ONTAP 9.12.1 or later versions to use SnapMirror active sync feature.
- To use TamperProof Snapshot (TPS) feature:
  - You need ONTAP 9.13.1 and later versions for SAN
  - You need ONTAP 9.12.1 and later versions for NFS
- For NVMe over TCP and NVMe over FC protocol you need ONTAP 9.10.1 and later.

Beginning with ONTAP version 9.11.1, the communication to ONTAP cluster is through REST APIs. The ONTAP user should have http application enabled. However, if there are issues found with ONTAP REST APIs, the configuration key 'FORCE_ZAPI' helps the switchover to traditional ZAPI workflow. You may need to add or update this key using the config APIS and set it to true. Refer to KB article, How to use RestAPI to edit configuration parameters in SCV for more information.

Minimum vCenter privileges required

Before you begin deployment of SnapCenter Plug-in for VMware vSphere, you should make sure you have the minimum required vCenter privileges.

Required privileges for vCenter Admin role

Datastore.AllocateSpace
Datastore.Browse
Datastore.Delete
Datastore.FileManagement
Datastore.Move
Datastore.Rename
Extension.Register
Extension.Unregister
Extension.Update
Host.Config.AdvancedConfig
Host.Config.Resources
Host.Config.Settings
Host.Config.Storage
Host.Local.CreateVM
Host.Local.DeleteVM
Host.Local.ReconfigVM
Network.Assign
Resource.ApplyRecommendation
Resource.AssignVMToPool
Resource.ColdMigrate
Resource.HotMigrate
Resource.QueryVMotion
System.Anonymous
System.Read
System.View
Task.Create
Task.Update
VirtualMachine.Config.AddExistingDisk

VirtualMachine.Config.AddNewDisk
VirtualMachine.Config.AdvancedConfig
VirtualMachine.Config.ReloadFromPath
VirtualMachine.Config.RemoveDisk
VirtualMachine.Config.Resource
VirtualMachine.GuestOperations.Execute
VirtualMachine.GuestOperations.Modify
VirtualMachine.GuestOperations.Query
VirtualMachine.Interact.PowerOff
VirtualMachine.Interact.PowerOn
VirtualMachine.Inventory.Create
VirtualMachine.Inventory.CreateFromExisting
VirtualMachine.Inventory.Delete
VirtualMachine.Inventory.Move
VirtualMachine.Inventory.Register
VirtualMachine.Inventory.Unregister
VirtualMachine.State.CreateSnapshot
VirtualMachine.State.RemoveSnapshot
VirtualMachine.State.RevertToSnapshot

Required privileges specific to SnapCenter Plug-in for VMware vCenter

Privileges	Label
netappSCV.Guest.RestoreFile	Guest File Restore
netappSCV.Recovery.MountUnMount	Mount/Unmount
netappSCV.Backup.DeleteBackupJob	Delete Resource Group/Backup
netappSCV.Configure.ConfigureStorageSystems.Delete	Remove Storage Systems
netappSCV.View	View
netappSCV.Recovery.RecoverVM	Recover VM
netappSCV.Configure.ConfigureStorageSystems.AddUpdate	Add/Modify Storage Systems
netappSCV.Backup.BackupNow	Backup Now
netappSCV.Guest.Configure	Guest Configuration
netappSCV.Configure.ConfigureSnapCenterServer	Configure SnapCenter Server
netappSCV.Backup.BackupScheduled	Create Resource Group

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