Get started

SnapCenter Plug-in for VMware vSphere 4.4

NetApp
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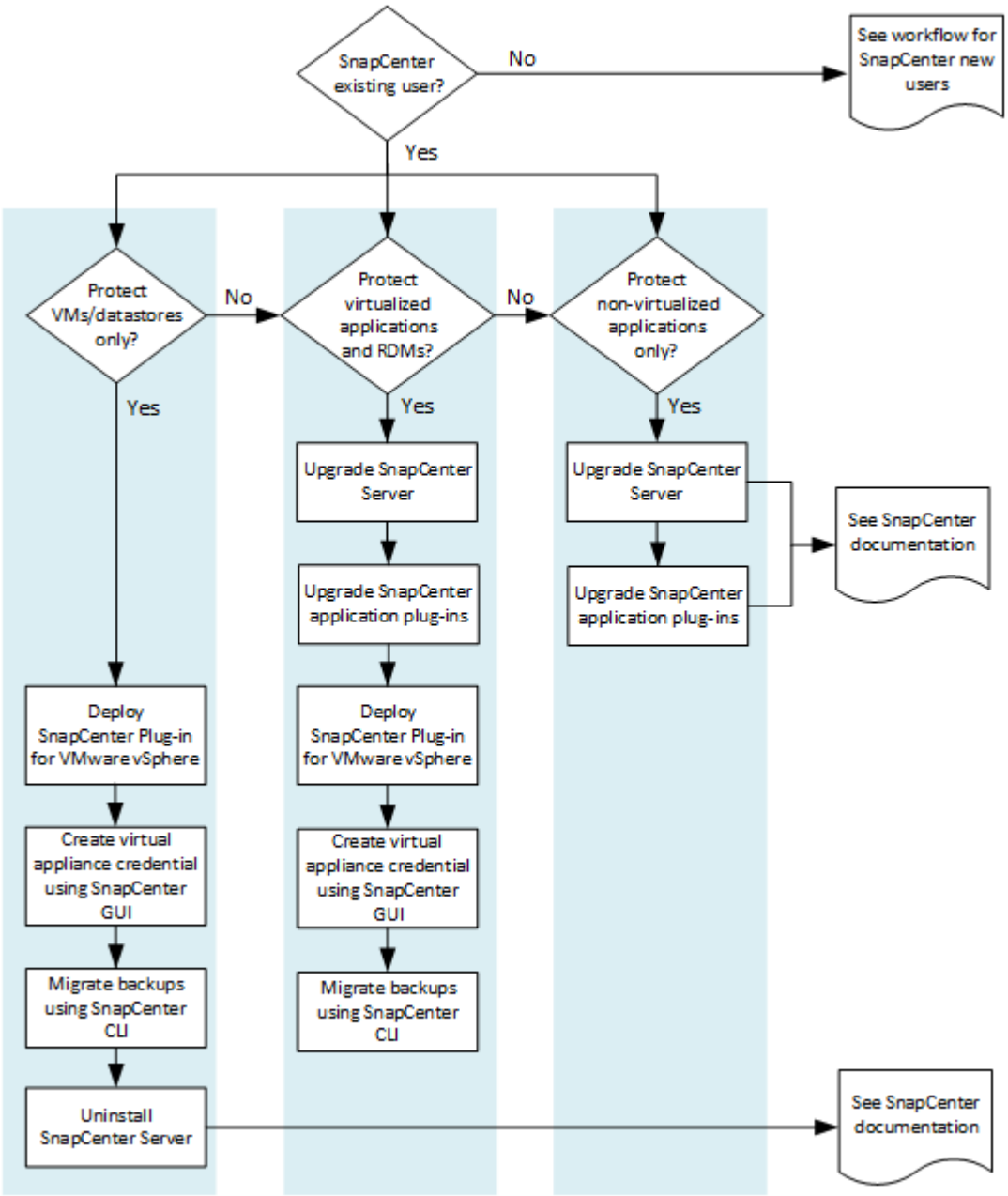
Deployment Overview

To use SnapCenter features to protect VMs, datastores, and application-consistent databases on virtualized machines, you must deploy SnapCenter Plug-in for VMware vSphere.

Existing SnapCenter users must use a different deployment workflow from new SnapCenter users.

Deployment workflow for existing users

If you are a SnapCenter user and have SnapCenter backups, then use the following workflow to get started.



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 four tables.

Host requirements

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

- You must deploy the SnapCenter VMware plug-in as a Linux VM.

  The SnapCenter VMware plug-in 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 VMware plug-in on the vCenter Server.

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

- You must not deploy the SnapCenter VMware plug-in 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 VMware plug-in 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 VMware plug-in.
  - Each instance of the SnapCenter VMware plug-in 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 VMware plug-in on six hosts and each vCenter Server must be paired with a unique instance of the SnapCenter VMware plug-in.

- The SnapCenter VMware plug-in 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 VMware plug-in limitations, see the 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	To perform application-based protection over VMware SnapCenter Standard To perform protection of VMware VMs and datastores only SnapRestore: used for restore operations FlexClone: used for mount and attach operations
Secondary destinations	To perform application-based protection over VMware SnapCenter Standard: used for failover operations To perform protection of VMware VMs and datastores only FlexClone: used for mount and attach operations

Software support

Item	Supported versions
vCenter vSphere	HTML5 client: 6.5U2d/U3, 6.7x, 7.0, 7.0U1 Flex client is not supported.
ESXi	5.5, 6.0 or later
IP addresses	IPv4, IPv6
Java	8
.Net Core	2.1
SnapCenter Plug-in for VMware vSphere MySQL database	MySQL 8.0.16
VMware TLS	1.2

Item	Supported versions
TLS on the SnapCenter Server	TLSv1.1 and later The SnapCenter Server uses this to communicate with the SnapCenter VMware plug-in for application over VMDK data protection operations.

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

Space and sizing requirements

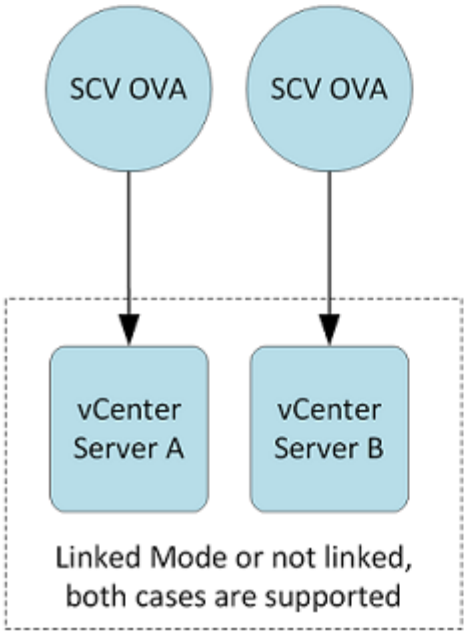
Item	Requirements
Operating system	Linux
Minimum CPU count	4 cores
Minimum RAM	Minimum: 12 GB Recommended: 16 GB
Minimum hard drive space for the SnapCenter Plug-in for VMware vSphere, logs, and MySQL database	100 GB

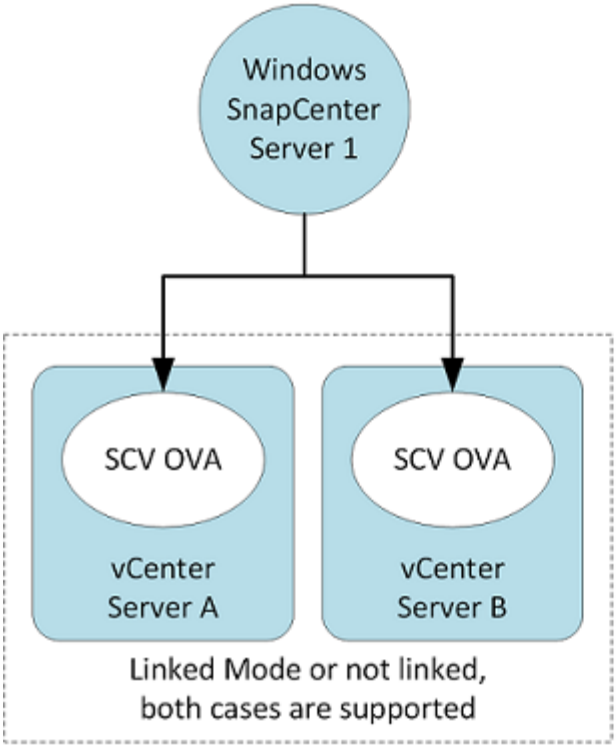
Connection and port requirements

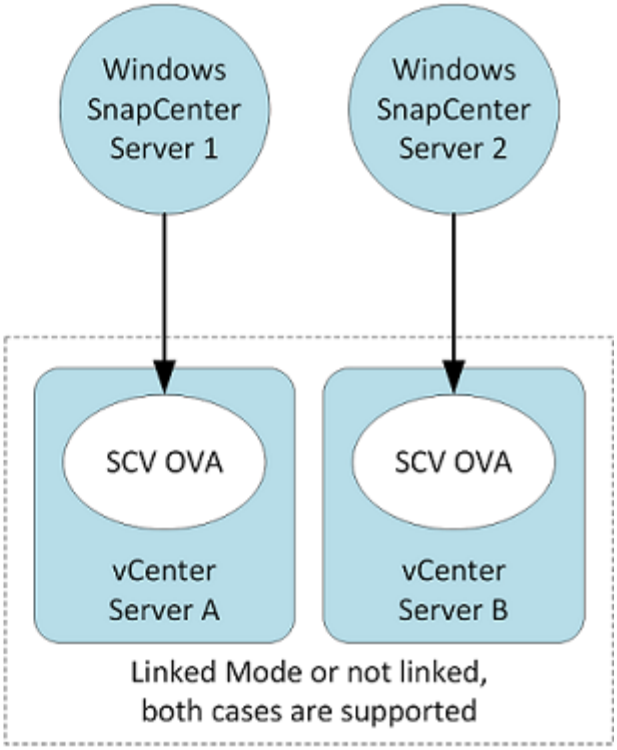
Type of port	Preconfigured port
SnapCenter Plug-in for VMware vSphere port	8144 (HTTPS), bidirectional The port is used for communications from the VMware vSphere web client and from the SnapCenter Server. 8080 bidirectional This port is used to manage the virtual appliance. Note: You cannot modify the port configuration.
VMware vSphere vCenter Server port	443 (HTTPS), bidirectional The port is used for communication between the SnapCenter Plug-in for VMware vSphere and vCenter.

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
Upgrade or remove the SnapCenter Plug-in for VMware vSphere	Extension * Update extension * Unregister extension

To do this operation…	You must have these vCenter privileges…
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

The 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.

Download the SnapCenter Plug-in for VMware vSphere OVA (Open Virtual Appliance)

You can download the `.ova` file for SnapCenter Plug-in for VMware vSphere from the NetApp Support Site.

The `.ova` file includes a set of microservices for VM and datastore data protection, which are performed by the SnapCenter VMware plug-in. When the deployment is complete, all components are installed on a Linux VM in your environment.

Steps

1. Log in to the NetApp Support Site (https://mysupport.netapp.com/products/index.html).
2. From the list of products, select **SnapCenter Plug-in for VMware vSphere**, then click the **DOWNLOAD LATEST RELEASE** button.
3. Download the SnapCenter Plug-in for VMware vSphere `.ova` file to any location.

Deploy SnapCenter Plug-in for VMware vSphere

To use SnapCenter features to protect VMs, datastores, and application-consistent databases on virtualized machines, you must deploy SnapCenter Plug-in for VMware vSphere.

Before you begin

- You must have read the deployment requirements.

  The deployment wizard does not verify the space requirement. If you do not have enough space on the host, the deployment might look successful, but the virtual appliance will not boot up.

- You must be running a supported version of vCenter Server.
- You must have configured and set up your vCenter Server environment.

- You must have set up an ESXi host for the SnapCenter VMware plug-in VM.
- You must have downloaded the SnapCenter Plug-in for VMware vSphere .ova file.
- You must have the login credentials for your vCenter Server instance.
- You must have logged out of and closed all browser sessions of vSphere Web Client and deleted the browser cache to avoid any browser cache issue during the deployment of the SnapCenter VMware plug-in.
- You must have enabled Transport Layer Security (TLS) in vCenter. Refer to the VMware documentation.
- You can deploy the SnapCenter VMware plug-in in the same vCenter as the virtual appliance for VSC 7.x and later.
- If you plan to perform backups in vCenters other than the one in which the SnapCenter VMware plug-in is deployed, then the ESXi server, the SnapCenter VMware plug-in, and each vCenter must be synchronized to the same time.

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

Steps

1. In your browser, navigate to VMware vSphere vCenter.

   For IPv6 HTML web clients, you must use either Chrome or Firefox.

2. On the VMware screen, click **vSphere Web Client (HTML5)**.
3. Log in to the **VMware vCenter Single Sign-On** page.
4. On the Navigator pane, right-click any inventory object that is a valid parent object of a virtual machine, such as a datacenter, folder, cluster, or host, and select **Deploy OVF Template** to start the VMware deploy wizard.
5. On the **Select an OVF template** page, specify the location of the `.ova` file (as shown in the following table) and click **Next**.

If you downloaded the `.ova` file to…	**Do this…**
An internet location	Enter the URL. Supported URL sources are HTTP and HTTPS.
A local file	Click **Choose Files** and navigate to the .ova file.

6. On the **Select a name and folder** page, enter a unique name for the VM or vApp, and select a deployment location, and then click **Next**.

   This step specifies where to import the `.ova` file into vCenter. The default name for the VM is the same as the name of the selected `.ova` file. If you change the default name, choose a name that is unique within each vCenter Server VM folder.

   The default deployment location for the VM is the inventory object where you started the wizard.

7. On the **Select a resource** page, select the resource where you want to run the deployed VM template, and click **Next**.

8. On the **Review details** page, verify the `.ova` template details and click **Next**.
9. On the **License agreements** page, select the checkbox for **I accept all license agreements**.
10. On the **Select storage** page, define where and how to store the files for the deployed OVF template.
    a. Select the disk format for the VMDKs.
    b. Select a VM Storage Policy.

       This option is available only if storage policies are enabled on the destination resource.

    c. Select a datastore to store the deployed OVA template.

       The configuration file and virtual disk files are stored on the datastore.

       Select a datastore large enough to accommodate the virtual machine or vApp and all associated virtual disk files.
11. On the **Select networks** page, select a source network, and map it to a destination network, and then click **Next**.

    The Source Network column lists all networks that are defined in the OVA template.

    SnapCenter Plug-in for VMware vSphere supports one network interface. If you need multiple network adapters, you must set that up manually. See the KB article: How to set up multiple network adapters.

    On the **Customize template** page, do the following:

    a. In **Register to existing vCenter**, enter the vCenter virtual appliance credentials.
    b. In **Create SnapCenter Plug-in for VMware vSphere credentials**, enter the credentials.

       Make a note of the username and password that you specify. You need to use these credentials if you want to modify the SnapCenter VMware plug-in configuration later.

    c. In **Setup Network Properties**, enter the network information.

       Select the IPv4 or IPv6 fields, or both, if appropriate. If you are using both IPv4 and IPv6, then you need to specify the Primary DNS for only one of them.

    d. In **Setup Date and Time**, select the time zone where the vCenter is located.
12. On the **Ready to complete** page, review the page and click **Finish**.

    All hosts must be configured with IP addresses (FQDN hostnames are not supported). The deploy operation does not validate your input before deploying.

    You can view the progress of the deployment from the Recent Tasks window while you wait for the OVF import and deployment tasks to finish.

    When the SnapCenter VMware plug-in is successfully deployed, it is deployed as a Linux VM, registered with vCenter, and a VMware vSphere web client is installed.
13. Navigate to the VM where the SnapCenter VMware plug-in was deployed, then click the **Summary** tab, and then click the **Power On** box to start the virtual appliance.
14. While the SnapCenter VMware plug-in is powering on, right-click the deployed SnapCenter VMware plug-in and then click **Install VMware** tools.

The VMware Tools is installed on the VM where the SnapCenter VMware plug-in is deployed. For more information on installing VMware Tools, see the VMware documentation.

The deployment might take a few minutes to complete. A successful deployment is indicated when the SnapCenter VMware plug-in is powered on, the VMware tools are installed, and the screen prompts you to log in to the SnapCenter VMware plug-in.

The screen displays the IP address where the SnapCenter VMware plug-in is deployed. Make a note of that location. You need to log in to the SnapCenter VMware plug-in management GUI if you want to make changes to the SnapCenter VMware plug-in configuration.

15. Log in to the SnapCenter VMware plug-in management GUI using the IP address displayed on the deployment screen and the credentials that you provided in the deployment wizard, then verify on the Dashboard that the SnapCenter VMware plug-in is successfully connected to vCenter and is enabled.

    Use the format `https://<appliance-IP-address>:8080` to access the management GUI.

    By default, the maintenance console username is set to “maint” and the password is set to “admin123”.

After you finish

You should complete the required post deployment operations.

Post deployment required operations and issues

After deploying SnapCenter Plug-in for VMware vSphere, you should complete the required operations.

- If you are a new SnapCenter user, you must add storage VMs to SnapCenter before you can perform any data protection operations. When adding storage VMs, specify the management LIF. You can also add a cluster and specify the cluster management LIF. For information about adding storage, see Adding storage.
- If you are an existing SnapCenter user, you must migrate your existing SnapCenter VM and datastore backups and metadata. For information about migrating, see Migration overview.

Your deployment might encounter the following issues:

- After deploying the virtual appliance, the **Backup Jobs** tab on the Dashboard might not load in the following scenarios:
  - You are running IPv4 and have two IP addresses for the SnapCenter VMware vSphere host. As a result, the job request is sent to an IP address that is not recognized by the SnapCenter Server. To prevent this issue, add the IP address that you want to use, as follows:
    a. Navigate to the location where the SnapCenter VMware plug-in is deployed: `/opt/netapp/scvservice/standalone_aegis/etc`
    b. Open the file network- interface.properties.
    c. In the `network.interface=10.10.10.10` field, add the IP address that you want to use.
  - You have two NICs.
- After deploying the SnapCenter VMware plug-in, the MOB entry in vCenter for SnapCenter Plug-in for VMware vSphere might still show the old version number. This can occur when other jobs are running in the vCenter. vCenter will eventually update the entry.
- After a deployment, or after an upgrade on a VM where Virtual Storage Console for VMware vSphere

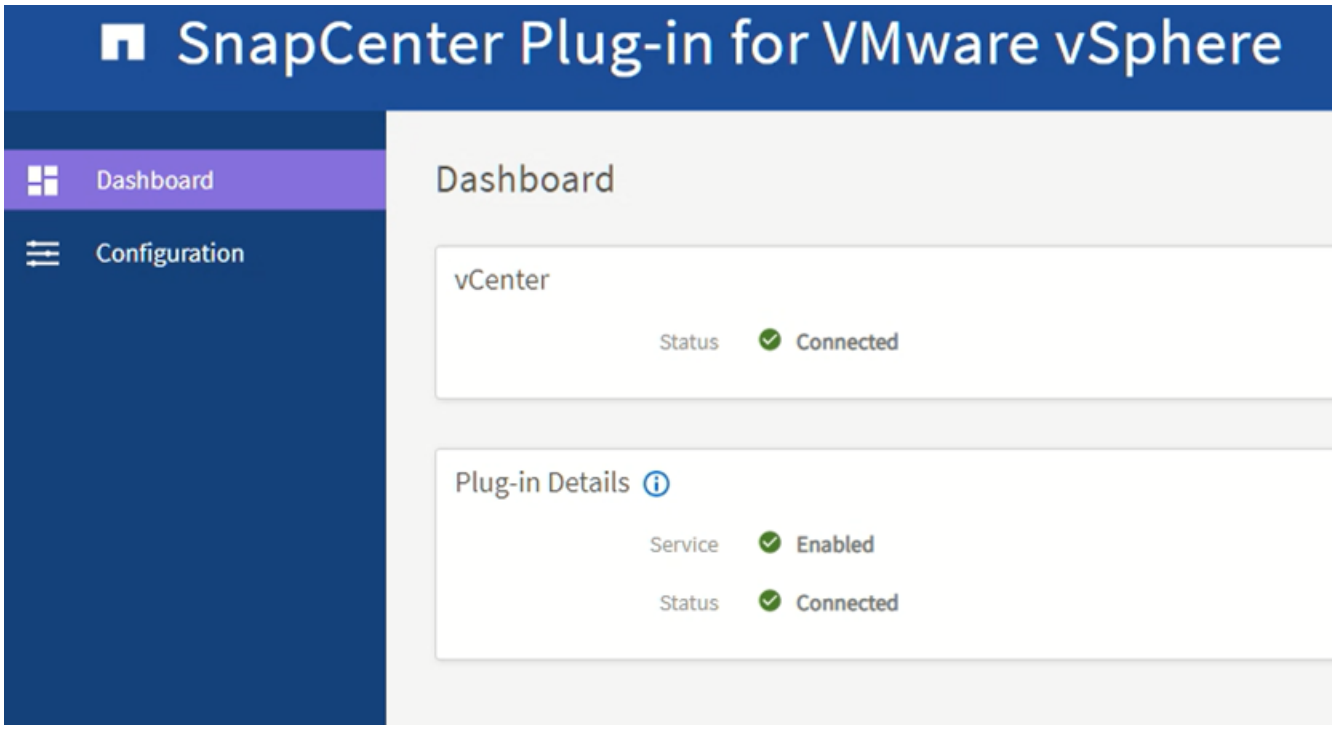
(VSC) was previously installed, the following might occur:

- Right-click menus that are documented for mount, unmount, attach, and detach operations do not appear.
- The VMware vSphere web client GUI does not match the documentation.
- The Dashboard is not displayed correctly.
- During normal use, a page display (for example, the Resource Groups page) might stall or get stuck loading.

To correct any of these issues, do the following:

1. Clear the browser cache and then check if the GUI is operating properly.

   If the problem persists, then restart the VMware vSphere web client service



2. Log in to vCenter, then click **Menu** in the toolbar, and then select **SnapCenter Plug-in for VMware vSphere**.

Manage authentication errors

If you do not use the Admin credentials, you might receive an authentication error after deploying SnapCenter Plug-in for VMware vSphere or after migrating. If you encounter an authentication error, you must restart the service.

Steps

1. Log on to the SnapCenter VMware plug-in management GUI using the format `https://<appliance-IP-address>:8080`.
2. Restart the service.

Create credentials for migrating backups

If you are a SnapCenter customer and have VM consistent or VM crash-consistent backups, or application-consistent backups of virtualized data, you must migrate those backups to SnapCenter Plug-in for VMware vSphere. Before migrating, you must add the SnapCenter VMware plug-in credentials to SnapCenter Server.

Before you begin

- You must be running SnapCenter Server 4.2 or later.
- You must have deployed and enabled SnapCenter Plug-in for VMware vSphere.

Steps

1. In the left navigation pane of the SnapCenter GUI, click **Settings**.
2. In the Settings page, click **Credentials**, and then click **New** to start the wizard.
3. Enter the credential information as listed in the following table:

For this field…	Do this…
Credential name	Enter a name for the credentials.
Username	Enter the username specified when SnapCenter Plug-in for VMware vSphere was deployed.
Password	Enter the password specified when SnapCenter Plug-in for VMware vSphere was deployed.
Authentication	Select **Linux**.

Register SnapCenter Plug-in for VMware vSphere with SnapCenter Server

If you want to perform application-over-VMDK workflows in SnapCenter (application-based protection workflows for virtualized databases and file systems), you must register SnapCenter Plug-in for VMware vSphere with the SnapCenter Server.

If you are a SnapCenter user and you upgraded to SnapCenter 4.2 and migrated your application-over-VMDK backups to SnapCenter Plug-in for VMware, the migration command automatically registers the plug-in.

Before you begin

- You must be running SnapCenter Server 4.2 or later.
- You must have deployed and enabled SnapCenter Plug-in for VMware vSphere.

About this task

- You register SnapCenter Plug-in for VMware vSphere with SnapCenter Server by using the SnapCenter GUI to add a “vsphere” type host.

  Port 8144 is predefined for communication within the SnapCenter VMware plug-in.

  You can register multiple instances of SnapCenter Plug-in for VMware vSphere on the same SnapCenter Server 4.2 to support application-based data protection operations on VMs. You cannot register the same SnapCenter Plug-in for VMware vSphere on multiple SnapCenter Servers.

- For vCenters in Linked Mode, you must register the SnapCenter Plug-in for VMware vSphere for each vCenter.

Steps

1. In the SnapCenter GUI left navigation pane, click **Hosts**.
2. Verify that the **Managed Hosts** tab is selected at the top, then locate the virtual appliance host name and verify that it resolves from the SnapCenter Server.
3. Click **Add** to start the wizard.
4. On the **Add Hosts** dialog box, specify the host you want to add to the SnapCenter Server as listed in the following table:

For this field…	Do this…
Host Type	Select **vSphere** as the type of host.
Host name	Verify the IP address of the virtual appliance.
Credential	Enter the username and password for the SnapCenter VMware plug-in that was provided during the deployment.

5. Click **Submit**.

   When the VM host is successfully added, it is displayed on the Managed Hosts tab.

6. In the left navigation pane, click **Settings**, then click the **Credential** tab, and then click **Add** to add credentials for the virtual appliance.
7. Provide the credential information that was specified during the deployment of SnapCenter Plug-in for VMware vSphere.

   You must select Linux for the Authentication field.

After you finish

If the SnapCenter Plug-in for VMware vSphere credentials are modified, you must update the registration in SnapCenter Server using the SnapCenter Managed Hosts page.

Register SnapCenter Plug-in for VMware vSphere with SnapCenter Server

If you want to perform application-over-VMDK workflows in SnapCenter (application-based protection workflows for virtualized databases and file systems), you must register SnapCenter Plug-in for VMware vSphere with the SnapCenter Server.

If you are a SnapCenter user and you upgraded to SnapCenter 4.2 and migrated your application-over-VMDK backups to SnapCenter Plug-in for VMware, the migration command automatically registers the plug-in.

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For this field…	Do this…
Host Type	Select **vSphere** as the type of host.
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5. Click **Submit**.

   When the VM host is successfully added, it is displayed on the Managed Hosts tab.

6. In the left navigation pane, click **Settings**, then click the **Credential** tab, and then click **Add** to add credentials for the virtual appliance.
7. Provide the credential information that was specified during the deployment of SnapCenter Plug-in for VMware vSphere.

   You must select Linux for the Authentication field.

After you finish

If the SnapCenter Plug-in for VMware vSphere credentials are modified, you must update the registration in SnapCenter Server using the SnapCenter Managed Hosts page.

Log in to the SnapCenter VMware vSphere Web Client

When SnapCenter Plug-in for VMware vSphere is deployed, it installs a VMware vSphere web client on vCenter, which is displayed on the vCenter screen with other vSphere web clients.

Before you begin

Transport Layer Security (TLS) must be enabled in vCenter. Refer to the VMware documentation.

Steps

1. In your browser, navigate to VMware vSphere vCenter.
2. On the VMware screen, **click vSphere Client (HTML5)**.
3. Log in to the **VMware vCenter Single Sign-On** page.

   Click the **Login** button. Due to a known VMware issue, do not use the ENTER key to log in. For details, see the VMware documentation on ESXi Embedded Host Client issues.

4. On the **VMware vSphere Web Client** page, click Menu in the toolbar, and then select **SnapCenter Plug-in for VMware vSphere**.