NetApp

Prepare to install the SnapCenter Plug-in for Microsoft SQL Server

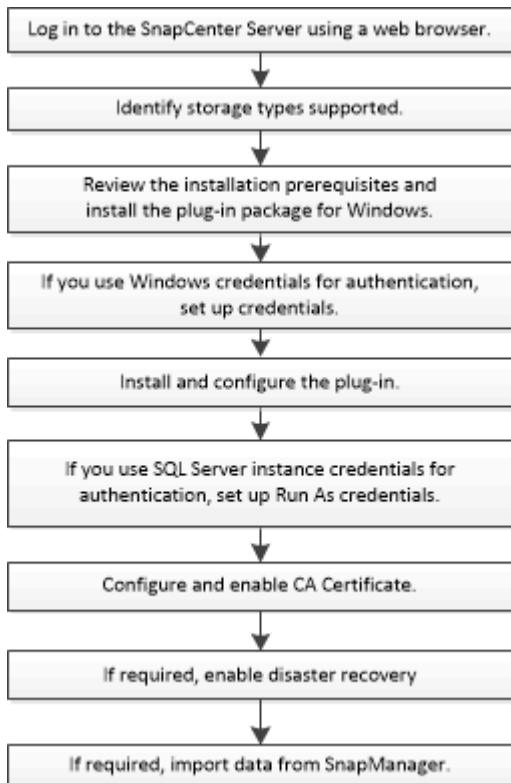## SnapCenter Software 4.6

NetApp
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Prepare to install the SnapCenter Plug-in for Microsoft SQL Server

Installation workflow for SnapCenter Plug-in for Microsoft SQL Server

You should install and set up the SnapCenter Plug-in for Microsoft SQL Server if you want to protect SQL Server databases.

Prerequisites to add hosts and install SnapCenter Plug-in for Microsoft SQL Server

Before you add a host and install the plug-ins packages, you must complete all the requirements.

- If you are using iSCSI, the iSCSI service must be running.
- You must have a user with local administrator privileges with local login permissions on the remote host.
- If you manage cluster nodes in SnapCenter, you must have a user with administrative privileges to all the nodes in the cluster.
- You must have a user with sysadmin permissions on the SQL Server.

  SnapCenter Plug-in for Microsoft SQL Server uses Microsoft VDI Framework, which requires sysadmin access.

  Microsoft Support Article 2926557: SQL Server VDI backup and restore operations require Sysadmin

- When installing a plug-in on a Windows host, if you specify a credential that is not built-in or if the user belongs to a local workgroup user, you must disable UAC on the host.

- If SnapManager for Microsoft SQL Server is installed, you must have stopped or disabled the service and schedules.

  If you plan to import backup or clone jobs into SnapCenter, do not uninstall SnapManager for Microsoft SQL Server.

- The host must be resolvable to the fully qualified domain name (FQDN) from the server.

  If the hosts file is modified to make it resolvable and if both the short name and the FQDN are specified in the hosts file, create an entry in the SnapCenter hosts file in the following format: <ip_address> <host_fqdn> <host_name>

Set up credentials for the SnapCenter Plug-ins Package for Windows

SnapCenter uses credentials to authenticate users for SnapCenter operations. You should create credentials for installing SnapCenter plug-ins and additional credentials for performing data protection operations on databases or Windows file systems.

What you will need

- You must set up Windows credentials before installing plug-ins.
- You must set up the credentials with administrator privileges, including administrator rights on the remote host.
- SQL authentication on Windows hosts

  You must set up SQL credentials after installing plug-ins.

  If you are deploying SnapCenter Plug-in for Microsoft SQL Server, you must set up SQL credentials after installing plug-ins. Set up a credential for a user with SQL Server sysadmin permissions.

  The SQL authentication method authenticates against a SQL Server instance. This means that a SQL Server instance must be discovered in SnapCenter. Therefore, before adding a SQL credential, you must add a host, install plug-in packages, and refresh resources. You need SQL Server authentication for performing operations such as scheduling or discovering resources.

Steps

1. In the left navigation pane, click **Settings**.
2. In the Settings page, click **Credential**.
3. Click **New**.
4. In the Credential page, specify the information required for configuring credentials:

For this field…	Do this…
Credential name	Enter a name for the credential.

User name/Password	Enter the user name and password that are to be used for authentication.
	
	• Domain administrator
	
	  Specify the domain administrator on the system on which you are installing the SnapCenter plug-in. Valid formats for the Username field are:
	
	    ◦ `NetBIOS\UserName`
	
	    ◦ `Domain FQDN\UserName`
	
	• Local administrator (for workgroups only)
	
	  For systems that belong to a workgroup, specify the built-in local administrator on the system on which you are installing the SnapCenter plug-in. You can specify a local user account that belongs to the local administrators group if the user account has elevated privileges or the User Access control feature is disabled on the host system. The valid format for the Username field is: `UserName`
	
	  Do not use double quotes (") or backtick (`) in the passwords. You should not use the less than (<) and exclamation (!) symbols together in passwords. For example, lessthan<!10, lessthan10<!, backtick`12.

Authentication Mode	Select the authentication mode that you want to use. If you select the SQL authentication mode, you must also specify the SQL server instance and the host where the SQL instance is located.

5. Click **OK**.

After you finish setting up the credentials, you might want to assign credential maintenance to a user or group of users in the User and Access page.

Configure credentials for an individual SQL Server resource

You can configure credentials to perform data protection jobs on individual SQL Server resource for each user. While you can configure the credentials globally, you might want to do this only for a particular resource.

About this task

- If you are using Windows credentials for authentication, you must set up your credential before installing plug-ins.

  However, if you are using an SQL Server instance for authentication, you must add the credential after installing plug-ins.

- If you have enabled SQL authentication while setting up the credentials, the discovered instance or database is shown with a red color padlock icon.

  If the padlock icon appears, you must specify the instance or database credentials to successfully add the instance or database to a resource group.

- You must assign the credential to a role-based access control (RBAC) user without sysadmin access when the following conditions are met:

  - The credential is assigned to an SQL instance.

  - The SQL instance or host is assigned to an RBAC user.

    The user must have both the resource group and backup privileges

Steps

1. In the left navigation pane, click **Settings**.
2. In the Settings page, click **Credential**.
3. To add a new credential, click **New**.
4. In the Credential page, configure the credentials:

For this field…	Do this…
Credential name	Enter a name for the credentials.

For this field…	Do this…

Username	Enter the user name used for SQL Server authentication.
	
	• Domain administrator or any member of the administrator group Specify the domain administrator or any member of the administrator group on the system on which you are installing the SnapCenter plug-in. Valid formats for the **Username** field are:
	
	  ◦ *NetBIOS\UserName*
	
	  ◦ *Domain FQDN\UserName*
	
	• Local administrator (for workgroups only) For systems that belong to a workgroup, specify the built-in local administrator on the system on which you are installing the SnapCenter plug-in. You can specify a local user account that belongs to the local administrators group if the user account has elevated privileges or the User Access control feature is disabled on the host system. The valid format for the **Username** field is: *UserName*

Password	Enter the password used for authentication.
Authentication mode	Select the SQL Server authentication mode. You can also choose Windows authentication if the Windows user has sysadmin privileges on the SQL server.
Host	Select the host.
SQL Server Instance	Select the SQL Server instance.

5. Click **OK** to add the credential.

6. In the left navigation pane, click **Resources**.

7. In the Resources page, select **Instance** from the **View** list.

   a. Click 🔽, and then select the host name to filter the instances.

   b. Click 🔽 to close the filter pane.

8. In the Instance Protect page, protect the instance, and if required, click **Configure Credentials**.

   If the user who is logged in to the SnapCenter Server does not have access to SnapCenter Plugin for Microsoft SQL Server, then the user has to configure the credentials.

   > ⓘ The credential option does not apply to databases and availability groups.

9. Click **Refresh Resources**.

Configure gMSA on Windows Server 2012 or later

Windows Server 2012 or later enables you to create a group Managed Service Account (gMSA) that provides automated service account password management from a managed domain account.

What you will need

- You should have a Windows Server 2012 or later domain controller.
- You should have a Windows Server 2012 or later host, which is a member of the domain.

Steps

1. Create a KDS root key to generate unique passwords for each object in your gMSA.

2. For each domain, run the following command from the Windows domain controller: Add-KDSRootKey -EffectiveImmediately

3. Create and configure your gMSA:

   a. Create a user group account in the following format:

   ```
   domainName\accountName$
   ```

   b. Add computer objects to the group.

   c. Use the user group you just created to create the gMSA.

   For example,

   ```
   New-ADServiceAccount -name <ServiceAccountName> -DNSHostName <fqdn>
   -PrincipalsAllowedToRetrieveManagedPassword <group>
   -ServicePrincipalNames <SPN1,SPN2,…>
   ```

   d. Run `Get-ADServiceAccount` command to verify the service account.

4. Configure the gMSA on your hosts:

   a. Enable the Active Directory module for Windows PowerShell on the host where you want to use the gMSA account.

   To do this, run the following command from PowerShell:

```
PS C:\> Get-WindowsFeature AD-Domain-Services


Display Name                              Name               Install
State
------------                              ----
-------------
[ ] Active Directory Domain Services   AD-Domain-Services  Available


PS C:\> Install-WindowsFeature AD-DOMAIN-SERVICES


Success Restart Needed Exit Code       Feature Result
------- -------------- ---------       --------------
True    No             Success         {Active Directory Domain
Services, Active ...
WARNING: Windows automatic updating is not enabled. To ensure that
your newly-installed role or feature is
automatically updated, turn on Windows Update.
```

    b. Restart your host.

    c. Install the gMSA on your host by running the following command from the PowerShell command prompt: `Install-AdServiceAccount <gMSA>`

    d. Verify your gMSA account by running the following command: `Test-AdServiceAccount <gMSA>`

5. Assign the administrative privileges to the configured gMSA on the host.

6. Add the Windows host by specifying the configured gMSA account in the SnapCenter Server.

    SnapCenter Server will install the selected plug-ins on the host and the specified gMSA will be used as the service log on account during the plug-in installation.

Install SnapCenter Plug-in for Microsoft SQL Server

Add hosts and install the SnapCenter Plug-ins Package for Windows

You must use the SnapCenter **Add Host** page to add hosts and install the plug-ins package. The plug-ins are automatically installed on the remote hosts.

What you will need

- You must be a user that is assigned to a role that has the plug-in install and uninstall permissions, such as the SnapCenter Admin role.

- When installing a plug-in on a Windows host, if you specify a credential that is not built-in, you should disable UAC on the host.

- You should ensure that the message queueing service is in running state.

- If you are using group Managed Service Account (gMSA), you should configure gMSA with administrative

privileges.

Configure group Managed Service Account on Windows Server 2012 or later for SQL

About this task

You cannot add a SnapCenter Server as a plug-in host to another SnapCenter Server.

You can add a host and install the plug-in packages either for an individual host or for a cluster. If you are installing the plug-ins on a cluster or Windows Server Failover Clustering (WSFC), the plug-ins are installed on all of the nodes of the cluster.

For information on managing hosts, see Manage hosts.

Steps

1. In the left navigation pane, click **Hosts**.
2. Verify that the **Managed Hosts** tab is selected at the top.
3. Click **Add**.
4. In the Hosts page do the following:

For this field…	Do this…
Host Type	Select Windows as the host type. The SnapCenter Server adds the host, and then installs the Plug-in for Windows if the plug-in is not already installed on the host. If you select the Microsoft SQL Server option on the Plug-ins page, the SnapCenter Server installs the Plug-in for SQL Server.
Host name	Enter the fully qualified domain name (FQDN) or the IP address of the host. IP address is supported for untrusted domain hosts only if it resolves to the FQDN. SnapCenter depends on the proper configuration of the DNS. Therefore, the best practice is to enter the FQDN. You can enter the IP addresses or FQDN of one of the following: • Stand-alone host • WSFC If you are adding a host by using SnapCenter and the host is part of a subdomain, you must provide the FQDN.

For this field…	Do this…
Credentials	Select the credential name that you created or create new credentials. The credential must have administrative rights on the remote host. For details, see the information about creating credentials.
	You can view details about the credentials by positioning your cursor over the credential name that you specified.
	(i) The credentials authentication mode is determined by the host type that you specify in the Add Host wizard.

5. In the **Select Plug-ins to Install** section, select the plug-ins to install.

6. Click **More Options**.

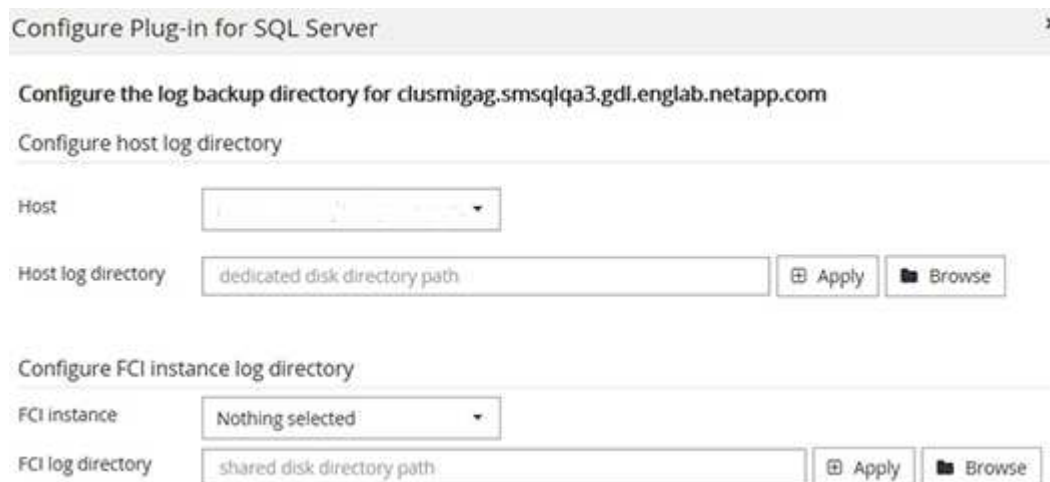| For this field…	Do this…
Port	Either retain the default port number or specify the port number. The default port number is 8145. If the SnapCenter Server was installed on a custom port, that port number will be displayed as the default port.
	(i) If you manually installed the plug-ins and specified a custom port, you must specify the same port. Otherwise, the operation fails.
Installation Path	The default path is C:\Program Files\NetApp\SnapCenter. You can optionally customize the path.
Add all hosts in the cluster	Select this check box to add all of the cluster nodes in a WSFC or a SQL Availability Group. You should add all the cluster nodes by selecting the appropriate cluster check box in the GUI if you want to manage and identify multiple available SQL Availability Groups within a cluster.
Skip preinstall checks	Select this check box if you already installed the plug-ins manually and you do not want to validate whether the host meets the requirements for installing the plug-in.

For this field…	Do this…
Use group Managed Service Account (gMSA) to run the plug-in services	Select this check box if you want to use group Managed Service Account (gMSA) to run the plug-in services. Provide the gMSA name in the following format: domainName\accountName$. (i) If the host is added with gMSA and if the gMSA has login and sys admin privileges, the gMSA will be used to connect to the SQL instance.

7. Click **Submit**.

8. For SQL Plug-in, select the host to configure the log directory.

   a. Click **Configure log directory** and in the Configure host log directory page, click **Browse** and complete the following steps:

   Only NetApp LUNs (drives) are listed for selection. SnapCenter backs up and replicates the host log directory as part of the backup operation.

   Configure Plug-in for SQL Server   ×

   Configure the log backup directory for clusmigag.smsqlqa3.gdl.englab.netapp.com

   Configure host log directory

   Host   [▼]

   Host log directory   [dedicated disk directory path   ]   ⊕ Apply   📁 Browse

   Configure FCI instance log directory

   FCI instance   [Nothing selected   ▼]

   FCI log directory   [shared disk directory path   ]   ⊕ Apply   📁 Browse

   i. Select the drive letter or mount point on the host where the host log will be stored.

   ii. Choose a subdirectory, if required.

   iii. Click **Save**.

9. Click **Submit**.

   If you have not selected the **Skip prechecks** check box, the host is validated to verify whether it meets the requirements for installing the plug-in. The disk space, RAM, PowerShell version, .NET version, location (for Windows plug-ins), and Java version (for Linux plug-ins) are validated against the minimum requirements. If the minimum requirements are not met, appropriate error or warning messages are displayed.

   If the error is related to disk space or RAM, you can update the web.config file located at C:\Program Files\NetApp\SnapCenter WebApp to modify the default values. If the error is related to other parameters, you must fix the issue.

> **ⓘ** In an HA setup, if you are updating web.config file, you must update the file on both nodes.

10. Monitor the installation progress.

Install SnapCenter Plug-in for Microsoft SQL Server on multiple remote hosts by using cmdlets

You can install the SnapCenter Plug-in for Microsoft SQL Server on multiple hosts simultaneously by using the Install-SmHostPackage PowerShell cmdlet.

What you will need

You must have logged in to SnapCenter as a domain user with local administrator rights on each host on which you want to install the plug-in package.

Steps

1. Launch PowerShell.

2. On the SnapCenter Server host, establish a session using the Open-SmConnection cmdlet, and then enter your credentials.

3. Install the SnapCenter Plug-in for Microsoft SQL Server on multiple remote hosts using the Install-SmHostPackage cmdlet and the required parameters.

   The information regarding the parameters that can be used with the cmdlet and their descriptions can be obtained by running *Get-Help command_name*. Alternatively, you can also refer to the SnapCenter Software Cmdlet Reference Guide.

   You can use the -skipprecheck option when you have already installed the plug-ins manually and you do not want to validate whether the host meets the requirements for installing the plug-in.

4. Enter your credentials for remote installation.

Install the SnapCenter Plug-in for Microsoft SQL Server silently from the command line

You should install SnapCenter Plug-in for Microsoft SQL Server from within the SnapCenter user interface. However, if you cannot for some reason, you can run the Plug-in for SQL Server installation program unattended in silent mode from the Windows command line.

What you will need

- You must delete the earlier version of SnapCenter Plug-in for Microsoft SQL Server before installing.

  For more information, see How to Install a SnapCenter Plug-In manually and directly from the Plug-In Host.

Steps

1. Validate whether C:\temp folder exists on the plug-in host and the logged in user has full access to it.

2. Download the Plug-in for SQL Server software from C:\ProgramData\NetApp\SnapCenter\Package Repository.

This path is accessible from the host where the SnapCenter Server is installed.

3. Copy the installation file to the host on which you want to install the plug-in.

4. From a Windows command prompt on the local host, navigate to the directory to which you saved the plug-in installation files.

5. Install the Plug-in for SQL Server software:

```
"snapcenter_windows_host_plugin.exe"/silent /debuglog"Debug_Log_Path"
/log"Log_Path" BI_SNAPCENTER_PORT=Num
SUITE_INSTALLDIR="Install_Directory_Path"
BI_SERVICEACCOUNT=domain\\administrator BI_SERVICEPWD=password
ISFeatureInstall=SCW,SCSQL
```

Replace the placeholder values with your data

- Debug_Log_Path is the name and location of the suite installer log file.
- Log_Path is the location of the installation logs of the plug-in components (SCW, SCSQL, and SMCore).
- Num is the port on which SnapCenter communicates with SMCore
- Install_Directory_Path is the host plug-in package installation directory.
- domain\administrator is the SnapCenter Plug-in for Microsoft Windows web service account.
- password is the password for the SnapCenter Plug-in for Microsoft Windows web service account.
  ```
  "snapcenter_windows_host_plugin.exe"/silent
  /debuglog"C:\HPPW_SCSQL_Install.log" /log"C:\" BI_SNAPCENTER_PORT=8145
  SUITE_INSTALLDIR="C:\Program Files\NetApp\SnapCenter"
  BI_SERVICEACCOUNT=domain\administrator BI_SERVICEPWD=password
  ISFeatureInstall=SCW,SCSQL
  ```

> (i) All the parameters passed during the installation of Plug-in for SQL Server are case sensitive.

6. Monitor the Windows task scheduler, the main installation log file C:\Installdebug.log, and the additional installation files in C:\Temp.

7. Monitor the %temp% directory to verify that the msiexe.exe installers are installing the software without errors.

> (i) The installation of Plug-in for SQL Server registers the plug-in on the host and not on the SnapCenter Server. You can register the plug-in on the SnapCenter Server by adding the host using the SnapCenter GUI or PowerShell cmdlet. After the host is added, the plug-in is automatically discovered.

Monitor the status of installing Plug-in for SQL Server

You can monitor the progress of SnapCenter plug-in package installation by using the Jobs page. You might want to check the progress of installation to determine when it is complete or if there is an issue.

About this task

The following icons appear on the Jobs page and indicate the state of the operation:

- In progress
- Completed successfully
- Failed
- Completed with warnings or could not start due to warnings
- Queued

Steps

1. In the left navigation pane, click **Monitor**.
2. In the Monitor page, click **Jobs**.
3. In the Jobs page, to filter the list so that only plug-in installation operations are listed, do the following:
   a. Click **Filter**.
   b. Optional: Specify the start and end date.
   c. From the Type drop-down menu, select **Plug-in installation**.
   d. From the Status drop-down menu, select the installation status.
   e. Click **Apply**.
4. Select the installation job and click **Details** to view the job details.
5. In the Job Details page, click **View logs**.

Configure CA Certificate

Generate CA Certificate CSR file

You can generate a Certificate Signing Request (CSR) and import the certificate that can be obtained from a Certificate Authority (CA) using the generated CSR. The certificate will have a private key associated with it.

CSR is a block of encoded text that is given to an authorized certificate vendor to procure the signed CA certificate.

For information to generate a CSR, see How to generate CA Certificate CSR file.

> ⓘ If you own the CA certificate for your domain (*.domain.company.com) or your system (machine1.domain.company.com), you can skip generating the CA Certificate CSR file. You can deploy the existing CA certificate with SnapCenter.

For cluster configurations, the cluster name (virtual cluster FQDN), and the respective host names should be mentioned in the CA certificate. The certificate can be updated by filling the Subject Alternative Name (SAN) field before procuring the certificate. For a wild card certificate (*.domain.company.com), the certificate will contain all the hostnames of the domain implicitly.

Import CA certificates

You must import the CA certificates to the SnapCenter Server and the Windows host plug-ins using the Microsoft management console (MMC).

Steps

1. Go to the Microsoft management console (MMC), and then click **File** > **Add/Remove Snapin**.

2. In the Add or Remove Snap-ins window, select **Certificates** and then click **Add**.

3. In the Certificates snap-in window, select the **Computer account** option, and then click **Finish**.

4. Click **Console Root** > **Certificates – Local Computer** > **Trusted Root Certification Authorities** > **Certificates**.

5. Right-click on the folder "Trusted Root Certification Authorities", and then select **All Tasks** > **Import** to start the import wizard.

6. Complete the wizard, as follows:

In this wizard window…	Do the following…
Import Private Key	Select the option **Yes**, import the private key, and then click **Next**.
Import File Format	Make no changes; click **Next**.
Security	Specify the new password to be used for the exported certificate, and then click **Next**.
Completing the Certificate Import Wizard	Review the summary, and then click **Finish** to start the import.

> (i) Importing certificate should be bundled with the private key (supported formats are: *.pfx, *.p12, *.p7b).

7. Repeat Step 5 for the "Personal" folder.

Get the CA certificate thumbprint

A certificate thumbprint is a hexadecimal string that identifies a certificate. A thumbprint is calculated from the content of the certificate using a thumbprint algorithm.

Steps

1. Perform the following on the GUI:

   a. Double-click the certificate.

   b. In the Certificate dialog box, click the **Details** tab.

   c. Scroll through the list of fields and click **Thumbprint**.

   d. Copy the hexadecimal characters from the box.

   e. Remove the spaces between the hexadecimal numbers.

      For example, if the thumbprint is: "a9 09 50 2d d8 2a e4 14 33 e6 f8 38 86 b0 0d 42 77 a3 2a 7b", after removing the spaces, it will be: "a909502dd82ae41433e6f83886b00d4277a32a7b".

2. Perform the following from PowerShell:

   a. Run the following command to list the thumbprint of the installed certificate and identify the recently installed certificate by the subject name.

> *Get-ChildItem -Path Cert:\LocalMachine\My*

   b. Copy the thumbprint.

Configure CA certificate with Windows host plug-in services

You should configure the CA certificate with Windows host plug-in services to activate the installed digital certificate.

Perform the following steps on the SnapCenter Server and all the plug-in hosts where CA certificates are already deployed.

Steps

1. Remove the existing certificate binding with SMCore default port 8145, by running the following command:

   > `netsh http delete sslcert ipport=0.0.0.0:_<SMCore Port>`

   For example:

   ```
   > netsh http delete sslcert ipport=0.0.0.0:8145
   ```

2. Bind the newly installed certificate with the Windows host plug-in services, by running the following commands:

   > `$cert = "`*`<certificate thumbprint>`*`"`

   > `$guid = [guid]::NewGuid().ToString("B")`

   > `netsh http add sslcert ipport=0.0.0.0:` *`<SMCore Port>`* `certhash=$cert appid="$guid"`

   For example:

   ```
   > $cert = "a909502dd82ae41433e6f83886b00d4277a32a7b"
   > $guid = [guid]::NewGuid().ToString("B")
   > netsh http add sslcert ipport=0.0.0.0:8145 certhash=$cert
   appid="$guid"
   ```

Enable CA Certificates for plug-ins

You should configure the CA certificates and deploy the CA certificates in the SnapCenter Server and the corresponding plug-in hosts. You should enable the CA certificate validation for the plug-ins.

What you will need

- You can enable or disable the CA certificates using the run *Set-SmCertificateSettings* cmdlet.
- You can display the certificate status for the plug-ins using the *Get-SmCertificateSettings*.

The information regarding the parameters that can be used with the cmdlet and their descriptions can be obtained by running *Get-Help command_name*. Alternatively, you can also refer to the SnapCenter Software Cmdlet Reference Guide.

Steps

1. In the left navigation pane, click **Hosts**.

2. In the Hosts page, click **Managed Hosts**.

3. Select single or multiple plug-in hosts.

4. Click **More options**.

5. Select **Enable Certificate Validation**.

After you finish

The Managed Hosts tab host displays a padlock and the color of the padlock indicates the status of the connection between SnapCenter Server and the plug-in host.

- 🔓 indicates that the CA certificate is neither enabled nor assigned to the plug-in host.

- 🔒 indicates that the CA certificate is successfully validated.

- 🔒 indicates that the CA certificate could not be validated.

- 🔒 indicates that the connection information could not be retrieved.

> ℹ️ When the status is yellow or green, the data protection operations completes successfully.

Configure Disaster recovery

Disaster recovery of SnapCenter Plug-in for SQL Server

When the SnapCenter Plug-in for SQL Server is down, switch to a different SQL host and recover the data by performing few steps.

What you will need

- The secondary host should have the same operating system, application, and host name as the primary host.

- Push the SnapCenter Plug-in for SQL Server to an alternative host using **Add host** or **Modify host** page.

  Manage hosts

Steps

1. Select the host from the **Hosts** page to modify and install the SnapCenter Plug-in for SQL Server.

2. (Optional) Replace the SnapCenter Plug-in for SQL Server configuration files from disaster recovery (DR) backup to the new machine.

3. Import Windows and SQL schedules from the SnapCenter Plug-in for SQL Server folder from the DR backup.

For more information, see the Disaster Recovery APIs video.

Storage disaster recovery (DR) for SnapCenter Plug-in for SQL Server

You can recover the SnapCenter Plug-in for SQL Server storage by enabling the DR Mode for Storage in the Global Settings page.

What you will need

- Ensure that the plug-ins are in maintenance mode.
- Break the SnapMirror/SnapVault relationship. Breaking SnapMirror relationships
- Attach the LUN from secondary to the host machine with same drive letter.
- Ensure that all the disks are connected using the same drive letters that were used prior to DR.
- Restart MSSQL server service.
- Ensure that the SQL resources are back online.

About this task

Disaster recovery (DR) is not supported on VMDK and RDM configurations.

Steps

1. In the Settings page, navigate to **Settings** > **Global Settings** > **Disaster Recovery**.
2. Select **Enable Disaster Recovery**.
3. Click **Apply**.
4. Verify whether the DR job is enabled or not by clicking **Monitor** > **Jobs**.

After you finish

- If new databases are created after the failover, the databases will be in non-DR mode.

  The new databases will continue to operate like they did before the failover.

- The new backups that were created in DR mode will be listed under SnapMirror or SnapVault (secondary) in the Topology page.

  An "i" icon is displayed next to the new backups to indicate that these backups were created during DR mode.

- You can delete the SnapCenter Plug-in for SQL Server backups that were created during failover either by using the UI or the following cmdlet: `Remove-SmBackup`

- After failover, if you want some of the resources to be in non-DR mode, use the following cmdlet: `Remove-SmResourceDRMode`

  For more information refer to the SnapCenter Software Cmdlet Reference Guide.

- SnapCenter Server will manage the individual storage resources(SQL databases) that are in DR or non-DR mode but not the resource group with storage resources that are in DR mode or non-DR mode.

Failback from SnapCenter Plug-in for SQL Server secondary storage to primary storage

After the SnapCenter Plug-in for SQL Server primary storage is back online, you should failback to the primary storage.

What you will need

- Place the SnapCenter Plug-in for SQL Server in **Maintenance** mode from the Managed Hosts page.

- Disconnect the secondary storage from the host and connect from the primary storage.

- To failback to the primary storage, ensure that the relationship direction remains the same as it was before the failover by performing the reverse resync operation.

  To retain the roles of primary and secondary storage after the reverse resync operation, perform the reverse resync operation once again.

  For more information see Reverse resynchronizing mirror relationships

- Restart MSSQL server service.

- Ensure that the SQL resources are back online.

Steps

1. In the Settings page, navigate to **Settings** > **Global Settings** > **Disaster Recovery**.
2. Unselect **Enable Disaster Recovery**.
3. Click **Apply**.
4. Verify whether the DR job is enabled or not by clicking **Monitor** > **Jobs**.

After you finish

- You can delete the SnapCenter Plug-in for SQL Server backups that were created during failover either by using the UI or the following cmdlet: `Remove-SmDRFailoverBackups`

Import archived backups from SnapManager for Microsoft SQL Server to SnapCenter

Import archived backups overview

Importing data from SnapManager for Microsoft SQL Server to SnapCenter enables you to continue to use your data from previous versions. You can import only those backups that were archived using SnapVault technology from SnapManager for Microsoft SQL Server to SnapCenter.

SnapCenter does not support Data ONTAP operating in 7-Mode. You can use the 7-Mode Transition Tool to migrate data and configurations that are stored on a system running Data ONTAP operating in 7-Mode to an ONTAP system.

Limitations related to the import feature

Understanding limitations before you import archived backups from SnapManager for Microsoft SQL Server to SnapCenter will help you complete the import successfully. These backups must have been archived with SnapVault technology.

- You cannot manage clones created using SnapManager for Microsoft SQL Server in SnapCenter. You must manage the clones in SnapManager for Microsoft SQL Server.
- You cannot import backups from the SnapCenter graphical user interface (GUI).
- You cannot import databases from a virtual machine with a VMDK disk.

Import archived backups

You can import only those backups that were archived using SnapVault technology from SnapManager for Microsoft SQL Server to SnapCenter from the command-line interface.

What you will need

- Both the SnapCenter Plug-in for Microsoft SQL Server and SnapManager for Microsoft SQL Server 7.x must be installed on the same host.
- For cluster support, both the plug-in and 7.x product must have been installed on each node in the cluster.
- You must have added the host or cluster to SnapCenter and discovered the resources available for backup on the host or cluster.
- You must have backed up the SnapManager for Microsoft SQL Server SnapInfo folder.

  If the import operation fails, you can retrieve the backup metadata from the SnapInfo directory.

> **Best Practice:** It is a best practice to configure the log backup folder for the SnapCenter Plug-in for Microsoft SQL Server.

For information on SnapCenter installation and configuration tasks, see the SnapCenter installation information. For information on SnapManager for Microsoft SQL Server installation and configuration tasks, see the SnapManager installation information.

After the archived backups have been imported to SnapCenter from SnapManager for Microsoft SQL Server, you can perform restore and clone operations on these backups from SnapCenter. Simultaneously, you can also continue to perform backup, restore, and clone operations using SnapManager for Microsoft SQL Server.

Steps

1. Perform the following steps to create schedules similar to SnapManager for Microsoft SQL Server schedules manually in SnapCenter:

   a. Retrieve the schedule information from SnapManager for Microsoft SQL Server by using the `Get-SmSchedule` cmdlet.

   b. Save the schedule information.

   You can use this schedule information while creating policies in SnapCenter.

c.   Disable SnapManager for Microsoft SQL Server schedules by using the `Get-SmSchedule -Hostname <hostname> -PluginCode SMSQL -DisableCurrentGenSchedule` cmdlet.

2.   Import archived backups by using the `Invoke-SmBackupMigration` cmdlet.

For example, to migrate standalone SQL host: `Invoke-SmBackupMigration -Hostname <hostname> -PluginCode SMSQL`

For example, to migrate cluster host: `Invoke-SmBackupMigration -Hostname <clustername> `-PluginCode SMSQL`

View the imported backups in SnapCenter Server

After you have imported your SnapManager for Microsoft SQL Server archived backups, you can view these backups in SnapCenter from the Topology page.

Steps

1.   In the left navigation pane, click **Resources**, and then select the appropriate plug-in from the list.

2.   Create a resource group with all the databases.

3.   Select the resource group.

4.   Protect the resource group.

5.   In the Topology page, from Manage Copies view, click backups from Vault copies.

The details of the backups are displayed.

> ⓘ   When the archived Snapshot copies are migrated and they get cleaned up from the storage as part of the secondary retention, the respective primary Snapshot copies that are created in SnapManager must be cleaned up manually.