SnapCenter® Software 1.1

SnapManager Migration Guide

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Contents

Migrating from SnapManager to SnapCenter

You can use the SnapCenter migration feature to migrate from SnapManager for Microsoft SQL Server and SnapManager for Oracle to SnapCenter.

Note: SnapCenter does not support Data ONTAP running in 7-Mode. You can use the 7-Mode Transition Tool to migrate data and configurations stored on a system running in 7-Mode to a clustered Data ONTAP system.

Related information

[NetApp Documentation: 7-Mode Transition Tool](#)

Migrating from SnapManager for Microsoft SQL Server to SnapCenter

If you are coming to SnapCenter from NetApp SnapManager for Microsoft SQL Server, you can use the migration feature to move your existing backup jobs to SnapCenter. After you migrate these jobs, you can run them in SnapCenter the same way you run jobs created with a SnapCenter plug-in.

Migration interrogates the metadata for SnapManager for Microsoft SQL Server backup jobs and translates it into a form understandable by SnapCenter. SnapCentergenerates datasets for the database resources identified in the jobs and attaches policies to the datasets based on the job schedule, retention criteria, replication settings, and so on.

Related information

[SnapCenter Software 1.1 Installation and Setup Guide](#)

What the migration feature does

The migration feature analyzes SnapManager job metadata on the host to determine which databases to include in the proposed datasets for the host, and which policies to attach to each dataset. If the host is a member of a Windows cluster, the migration feature analyzes the metadata on each node in the cluster to determine the datasets.

After migration, you can modify the policies for a dataset, attach another policy to the dataset, or detach a policy from the dataset. You can use a policy proposed by the migration tool or a policy you have already defined in SnapCenter.

If you back up a pair of heavily used databases every hour, for example, and a lightly used database on the same host once a day, migration will propose two datasets: one for the heavily used databases, the other for the lightly used database. It will then attach a policy with an hourly schedule to the heavily used dataset and a policy with a daily schedule to the lightly used dataset.

In the following illustration, assume that "HUDB" refers to the heavily used databases and "LUDB" refers to the lightly used database. The migration feature will create the following datasets and policies:
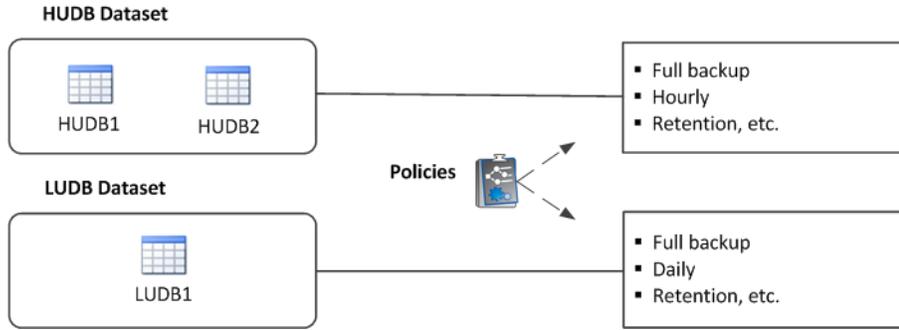
For each host or Windows cluster, migration automatically proposes as many datasets and policies as needed. Snapshot copies on the storage system are not affected.

What gets migrated

Both backup and verification metadata are migrated. The following SnapManager for Microsoft SQL Server 7.x job properties are migrated, where relevant to the job type:

- Job schedule
- Snapshot copy retention policy
- Snapshot copy replication settings
- Backup type (full backup, transaction log backup, copy-only backup)
- Availability Group settings

These properties are captured in the policies attached to the proposed datasets. You need to evaluate the policies to determine whether they are appropriate for the resources defined in the dataset.

   Note: The migration feature also migrates on-demand backups.

Snapshot copies for the backup jobs you want to migrate must exist in NetApp storage. Ordinarily, the migration feature does not migrate backup jobs for databases that no longer exist on the host, with one exception: If the SQL Server instance that owns the database still exists, the job metadata is migrated. This means that you can restore the database if necessary from Snapshot copies in storage.

Even if the SQL Server instance no longer exists, the migration feature warns you to that effect. You can then reconfigure the SQL Server instance and restore the databases it owns from Snapshot copies in storage.

What does not get migrated

SnapCenter does not migrate the following:

- Clone metadata
  You cannot use migrated job metadata to determine the status of a clone split.
- Users, roles, and permissions
  You must specify users, roles, and permissions explicitly for the SnapManager for Microsoft SQL Server.
- SnapManager for Microsoft SQL Server registry entries.

What you need to know before performing migration

SnapCenter supports migration from SnapManager for Microsoft SQL Server 7.0 or later. Both the SnapCenter Plug-in for Microsoft SQL Server and SnapManager for Microsoft SQL Server 7.x must be installed on the host. For Windows cluster support, both the plug-in and 7.x product must be installed on each node in the cluster.

   Note: You can use the SnapCenter Plug-in for Microsoft SQL Server to restore databases from Snapshot copies created in clustered Data ONTAP with SnapManager for Microsoft SQL Server.

For more information, see the *SnapCenter Software 1.1 Data Protection Guide for Microsoft SQL Server*.

After you install the SnapCenter Plug-in for Microsoft SQL Server, you cannot use SnapManager for Microsoft SQL Server 7.x to manage the backups.

Important: You should export SnapManager for Microsoft SQL Server configuration information to a control file before installing the SnapCenter Plug-in for Microsoft SQL Server. That allows you to quickly reconfigure SnapManager for Microsoft SQL Server 7.x in case you need to back out of a migration.

Migration does not support the following:

- Databases stored on NetApp systems running clustered Data ONTAP 8.2.1 or earlier
- Databases stored on NetApp systems running Data ONTAP operating in 7-Mode

    Note: You can use the 7-Mode Transition Tool to migrate data and configurations stored on a system running in 7-Mode to a clustered Data ONTAP system. For more information, see *NetApp Documentation: 7-Mode Transition Tool*.

- Databases using VMDK datastores
- Databases using NAS storage
- Databases running on 32-bit operating systems
- Databases running in SQL Server 2005 or earlier
- System databases
- Federated databases
- SQL Express

    Note: Migration is an "all or nothing" process. If any of the databases on the host or Windows cluster are not supported by the migration feature, none are supported.

Installation sequence

If you are planning to use the migration feature, perform the following steps in the order shown to install the SnapCenter Plug-in for Microsoft SQL Server:

1. Export SnapManager for Microsoft SQL Server 7.x configuration information to a control file.

2. Disable all SnapManager for Microsoft SQL Server 7.x backup jobs.

    Note: Do not delete the backup jobs or migration will fail.

3. Stop the SnapManager for Microsoft SQL Server 7.x service.

4. Uninstall SnapDrive for Windows 7.x.

    Note: Do not uninstall SnapManager for Microsoft SQL Server 7.x. SnapManager for Microsoft SQL Server 7.x must be installed on the host or migration will fail.

5. Install the SnapCenter Plug-in for Microsoft Windows. For more information, see the *SnapCenter Software 1.1 Installation and Setup Guide*.

6. Install the SnapCenter Plug-in for Microsoft SQL Server. For more information, see the *SnapCenter Software 1.1 Installation and Setup Guide*.

Related information

SnapCenter Software 1.1 Installation and Setup Guide
SnapDrive 7.1 for Windows Installation Guide
SnapManager 7.2 for Microsoft SQL Server Installation and Setup Guide For Clustered Data ONTAP

Migration workflow

You use the SnapCenter Migration wizard to perform a migration. After migration is complete, you can modify the policies for a dataset, attach another policy to the dataset, or detach a policy from the dataset.

The following shows the migration workflow:
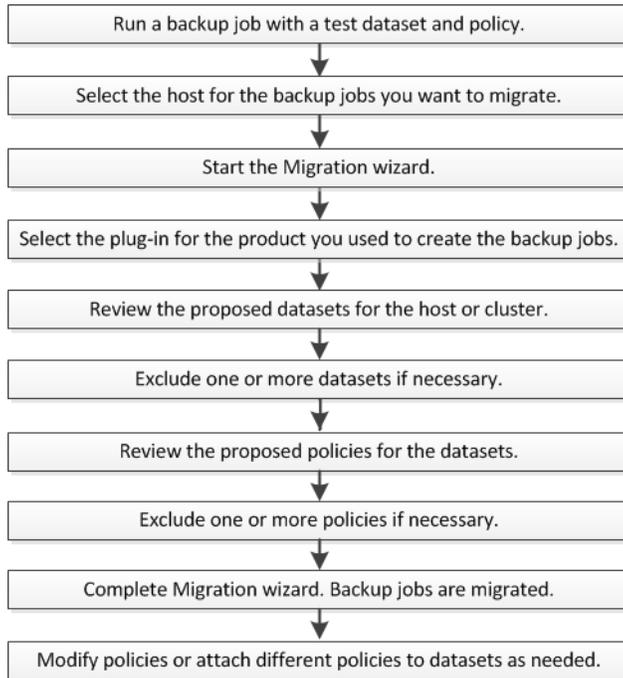
Performing a migration

When you perform a migration, SnapCenter interrogates SnapManager job metadata on the host to determine which database resources to include in the datasets for the host and which policies to attach to each dataset. If the host is a member of a Windows cluster, the migration feature interrogates the metadata on each node in the cluster to determine the datasets.

Before you begin

- You must have created SVM connections to clustered Data ONTAP controllers.
- You must have created a Windows Run As account for the migration task.
- Both the SnapCenter Plug-in for Microsoft SQL Server and SnapManager for Microsoft SQL Server 7.x must have been installed on the 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 and discovered the resources available for backup on the host or cluster.
- You must have configured the log backup folder for the SnapCenter Plug-in for Microsoft SQL Server.
- Snapshot copies for the backup jobs you want to migrate must exist in NetApp storage.
- It is a best practice to run a backup job with a test dataset and policy before performing a migration.
- Back up the SnapManager for Microsoft SQL Server SnapInfo folder.

For more information on SnapCenter installation and configuration tasks, see the *SnapCenter Software 1.1 Installation and Setup Guide*. For more information on SnapManager for Microsoft SQL Server installation and configuration tasks, see the *SnapManager 7.2 for Microsoft SQL Server Installation and Setup Guide For Clustered Data ONTAP*.

> **Important:** You should export SnapManager for Microsoft SQL Server 7.x configuration information to a control file before installing the SnapCenter Plug-in for Microsoft SQL Server. That allows you to quickly reconfigure SnapManager for Microsoft SQL Server 7.x in case you need to back out of a migration.

Steps

1. On the SnapCenter **Hosts** page, select the host for the backups you want to migrate.

   > **Tip:** For Windows cluster support, select the cluster.

2. Click the **Migrate Plug-in** button.

   The Migration wizard opens.

3. On the **Plug-in** page, select the SnapCenter Plug-in for Microsoft SQL Server from the **Plug-in** drop-down list and the Run As account from the **Run As** drop-down list .

4. On the **Migration status** page, the Migration wizard lists the migration status of the selected host.

   If the host is a member of a Windows cluster, the wizard lists the migration status of each host in the cluster.

   The Status field indicates the migration status:

   - `Ready to migrate` means that you can start migration.
   - `Unsupported` means that one or more unsupported databases are running on the host. The databases may be stored on a Data ONTAP system operating in 7-Mode, for example.
   - `Complete` means that backups on the host have already been migrated.

   > **Note:** Do not click **Next** until all hosts have a `Ready to migrate` status.

   > Migration is an "all or nothing" process. If any of the databases on the host or Windows cluster are not supported by the migration feature, none are supported. If the wizard detects an unsupported database on any host in a cluster, you must correct the problem before proceeding with migration.

5. On the **Datasets** page, click a proposed dataset to view:

   - The databases that the dataset includes in the **Resources** tab.
   - The policies attached to the dataset in the **Policies** tab. Expand a policy to view its details.

     > **Note:** Policies may already have been defined in SnapCenter.

In this field...	Do this...
Name	Click the cell for the dataset or policy name to edit the name.
Description	Click the cell for the dataset or policy description to edit the description.
Run As	Click the Run As cell to specify the Run As account for the dataset.
Include	Click the include cell for a dataset or policy to include it in or exclude it from migration.

> **Note:** You cannot edit the databases in the **Resources** tab. To edit the databases after migration, select the dataset on the **Datasets** page and click **Modify**.

6. On the **Summary** page, review the items to be migrated, then click **Next**.

   The new datasets are listed on the **Datasets** page. The new policies are listed on the **Policies** page.

7. If you want to edit a dataset after migration, select the dataset on the **Datasets** page, then click **Modify** to edit the dataset details.

8. If you want to edit a policy after migration, select the policy on the **Policies** page, then click **Modify** to edit the policy details.

Backing out of a migration

You should export SnapManager for Microsoft SQL Server configuration information to a control file before installing the SnapCenter Plug-in for Microsoft SQL Server. That enables you to quickly reconfigure SnapManager for Microsoft SQL Server 7.x in case you need to back out of a migration.

You must perform the following steps in the order shown to back out of a migration:

1. Uninstall the SnapCenter Plug-in for Microsoft SQL Server.

2. Uninstall the SnapCenter Plug-in for Microsoft Windows.

3. Uninstall the SnapCenter Server, deleting the SnapCenter database.

4. Delete the SQL and Windows jobs created on the host by the migration process.

5. Delete the log backup folder for the SnapCenter Plug-in for Microsoft SQL Server.

6. Restore the SnapManager for Microsoft SQL Server `SnapInfo` folder from the location you backed it up to before migration.

7. Reinstall SnapDrive for Windows 7.x.

8. Restart the SnapManager for Microsoft SQL Server 7.x service.

9. Import SnapManager for Microsoft SQL Server 7.x configuration information from the control file you created before installing the SnapCenter Plug-in for Microsoft SQL Server.

Related information

SnapCenter Software 1.1 Installation and Setup Guide
SnapDrive 7.1 for Windows Installation Guide
SnapManager 7.2 for Microsoft SQL Server Installation and Setup Guide For Clustered Data ONTAP

Troubleshooting migration

You should be aware of some common migration problems and workarounds.

Migration fails

Migration can fail under the following conditions:

- SQL Express is installed on the host or cluster.
  Uninstall SQL Express.

- The log backup directory for the SnapCenter Plug-in for Microsoft SQL Server is not configured.
  Configure the log backup directory.

- Databases and owning SQL Server instance no longer exist on the host.
  Reconfigure the SQL Server instance.

Not all backup metadata is migrated

Backup metadata that does not correspond to a valid Snapshot copy on the storage system at the time of migration is logged but skipped.

Make sure that a valid Snapshot copy exists for all backup metadata you plan to migrate.

Migrating from SnapManager for Oracle to SnapCenter

You can run the migration tool from command-line interface (Linux host CLI) to create policies and datasets in SnapCenter. The policies and datasets correspond to the profiles and operations performed using those profiles in SnapManager for Oracle.

The migration tool interacts with the SnapManager for Oracle repository database and for the database that you want to migrate, retrieves all the profiles, schedules, and operations performed using the profiles. The migration tool creates a SnapCenter backup policy for each unique operation and each schedule attached to a profile. It also creates a dataset for each target database.

You can run the migration tool by executing the `sc-migrate` script located at `/opt/NetApp/snapcenter/spl/bin`. When you install the SnapCenter Plug-ins Package for Linux on the database host that you want to migrate, the `sc-migrate` script is copied to `/opt/NetApp/snapcenter/spl/bin`.

Note: Migration from SnapManager for Oracle to SnapCenter is not supported from SnapCenter user interface (UI).

Related information

[SnapCenter Software 1.1 Installation and Setup Guide](#)

Configurations supported for migration

Before you migrate from SnapManager for Oracle to SnapCenter, you must be aware of the supported configurations.

Configuration	Supported version
Host operating system	• Red Hat Enterprise Linux (RHEL) 6.6, 6.7, 7.0, and 7.1 • Oracle Linux 6.5, 6.6, and 7.0 • SUSE Linux Enterprise Server (SLES)11 SP3
Oracle database	Oracle 11g (11.2.0.2 or later) and Oracle 12c (12.1.0.2 or later)
Data ONTAP	Clustered Data ONTAP 8.2.2 or later
SnapManager for Oracle	3.4
SnapDrive for UNIX	5.3

[NetApp Interoperability Matrix Tool](#)

What gets migrated from SnapManager for Oracle to SnapCenter

You can migrate profiles, schedules, and operations performed using the profiles.

From SnapManager for Oracle	To SnapCenter
Profiles without any operations and schedules	A policy is created with default backup type as online and backup scope as full.
Profiles with one or more operations	Multiple policies are created based on a unique combination of a profile and operations performed using that profile.
	The policies created in SnapCenter contain the archive log pruning and retention details retrieved from the profile and corresponding operations.
Schedule attached to a profile	A policy is created just for the schedule.
Database	A dataset is created for each database that is migrated.
	In a Real Application Clusters (RAC) setup, the node on which you run the migration tool becomes the preferred node after migration and the dataset is created for that node.

When SnapManager for Oracle profiles, schedules, and operations performed using the profiles are migrated to SnapCenter different parameters values are also migrated.

SnapManager for Oracle parameter and values	SnapCenter parameter and values	Notes
Backup Scope • Full • Data • Log	Backup Scope • Full • Data • Log	
Backup Mode • Auto • Online • Offline	Backup Type • Online • Offline Shutdown	If the backup mode is Auto, then the migration tool checks the database state when the operation was performed, and appropriately sets the backup type as Online or Offline shutdown.
Retention • Days • Counts	Retention • Days	SnapManager for Oracle use both Days and Counts to set the retention. In SnapCenter, there is either Days OR Counts. So, the retention is set with respect to days as the days gets preference over counts in SnapManager for Oracle.

SnapManager for Oracle parameter and values	SnapCenter parameter and values	Notes
Pruning for Schedules • All • SCN • Date • Logs created before hours, days, weeks, and months	Pruning for Schedules • All • Logs created before hours and days	SnapCenter does not support pruning based on SCN, Date, weeks, and months.
Notification • Emails sent only for successful operations • Emails sent only for failed operations • Emails sent for both success and failed operations	Notification • Always • On failure • Always	After migrating to SnapCenter, the subject of the email is left empty for you to configure.

What does not get migrated from SnapManager for Oracle to SnapCenter

You cannot migrate the following from SnapManager for Oracle to SnapCenter:

• Backup metadata

• Partial backups

• Raw device mapping (RDM) and Virtual Storage Console (VSC) related backups

• Roles or any credentials available in SnapManager for Oracle repository

• Verification, restore, and clone operations

• Pruning for operations

• Replication details specified in the SnapManager for Oracle profile
  After migrating, you must manually edit the corresponding policy created in SnapCenter to include the replication details.

Preparing to migrate from SnapManager for Oracle to SnapCenter

Before you migrate from SnapManager for Oracle to SnapCenter, you must perform certain tasks to complete the migration successfully.

Steps

1. Identify the database that you want to migrate.

2. Add the database host and install SnapCenter Plug-ins Package for Linux.

3. Set up the connections for the Storage Virtual Machines (SVMs) used by the databases on the host.

4. Ensure that the database to be migrated is discovered and displayed in the **Inventory** page of the SnapCenter UI.

When you want to run the migration tool, the database must be accessible, else the dataset creation fails.

If the database has credentials configured, you must create a corresponding RunAs credential in SnapCenter, assign the RunAs to the database, and then re-run discovery of the database. If the database is residing on Automatic Storage Management (ASM), you must create RunAs credential for the ASM instance, and assign the RunAs to the database.

5. Ensure that the user running the migration tool has sufficient privileges to run SnapManager for Oracle CLI commands (such as command to suspend schedule).

6. Ensure that fully qualified domain name (FQDN) of the database host is displayed when you run `hostname -f`.

   If FQDN is not displayed, you must modify `/etc/hosts` to specify the FQDN of the host.

Related information

SnapCenter Software 1.1 Installation and Setup Guide
SnapManager 3.4 for Oracle Installation and Setup Guide for UNIX for Clustered Data ONTAP
SnapCenter Software 1.1 Data Protection Guide for Oracle Databases

Performing migration from SnapManager for Oracle to SnapCenter

You can migrate SnapManager for Oracle to SnapCenter by running the migration tool from the database host that you want to migrate. Before you initiate migration, you must complete the pre-requisites to perform migrations.

About this task

The SnapCenter backup policies that are created after migration have different naming formats:

- Policies created for the profiles without any operations and schedules have the *SMOPROFILENAME_*`ONLINE_FULL_DEFAULT_MIGRATED` format.

  When no operation is performed using a profile, the corresponding policy is created with default backup type as online and backup scope as full.

- Policies created for the profiles with one or more operations have the *SMOPROFILENAME_BACKUPMODE_BACKUPSCOPE_*`MIGRATED` format.

- Policies created for the schedules attached to the profiles have the *SMOPROFILENAME_SMOSCHEDULENAME_BACKUPMODE_BACKUPSCOPE_*`MIGRATED` format.

Steps

1. Log in to the database host that you want to migrate.

2. Run the migration tool by executing the `sc-migrate` script located at `/opt/NetApp/snapcenter/spl/bin`.

3. Enter the SnapCenter Server user name and password.

   After validating the credentials, a connection is established with SnapCenter.

4. Enter the SnapManager for Oracle repository database details.

   The repository database lists the databases that are available on the host.

5. Enter the target database that you want to migrate.

   If you want to migrate all the databases on the host, enter `all`.

Result

The SnapCenter backup policies are created for profiles, schedules, and operations performed using the profiles. Datasets are also created for each target database.

After migration is completed successfully, the schedules associated with the migrated database are suspended in SnapManager for Oracle.

> **Note:** After migrating, you must not manage the migrated database or file system using both SnapManager for Oracle and SnapCenter.

Related tasks

Preparing to migrate from SnapManager for Oracle to SnapCenter on page 12

Related references

Configurations supported for migration on page 10

Backing out of migration from SnapManager for Oracle to SnapCenter

If you want to back out from a migration, either while running the migration tool or after migration is completed, you must manually delete the SnapCenter policies, RunAs accounts, and datasets that were created as part of migration.

Troubleshooting migration from SnapManager for Oracle to SnapCenter

The logs for every execution of the migration script are stored in the `/var/opt/snapcenter/spl/logs` directory with the name `spl_migration_timestamp.log`. You can refer to this log file to know what error has occurred during the migration and how to troubleshoot the issues.

Where to go next

You can find more information about different features and release-specific information for SnapCenter in the documentation available on the NetApp Support Site at *mysupport.netapp.com*.

- *SnapCenter Software 1.1 Release Notes*

  Provides important information about this release of Snap Creator Server and the SnapCenter plug-in packages, including fixed issues, known issues, cautions, limitations, and any documentation updates or corrections.

- *SnapCenter Software 1.1 Administration Guide*

  Provides information about how to administer SnapCenter, provision Windows hosts with storage, configure and maintain role-based access control (RBAC), and use the centralized reporting options.

- *SnapCenter Software 1.1 Data Protection Guide for Microsoft SQL Server*

  Describes how to use SnapCenter to perform backup, restore, clone, and verification jobs on Microsoft SQL Server databases.

- *SnapCenter Software 1.1 Data Protection Guide for Oracle Databases*

  Describes how to use SnapCenter to perform backup, restore, clone, mount, unmount, and verification jobs on Oracle databases.

- *SnapCenter Software 1.1 Windows Cmdlet Reference Guide*

  Provides reference information about the Windows PowerShell cmdlets available in SnapCenter, including a description of each cmdlet, its syntax, and examples for its use. This content is also available through the SnapCenter PowerShell cmdlet help.

- *SnapCenter Software 1.1 Linux Command Reference Guide*

  Provides reference information about the Linux commands available for Linux plug-ins, including a description of each command, its syntax, and examples for its use. This content is also available through the SnapCenter command-line interface help.

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