NetApp

Restore Exchange resources
SnapCenter Software 4.8

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Restore workflow

You can use SnapCenter to restore Exchange databases by restoring one or more backups to your active file system.

The following workflow shows the sequence in which you must perform the Exchange database restore operations:

You can also use PowerShell cmdlets manually or in scripts to perform backup and restore operations. For detailed information about PowerShell cmdlets, use the SnapCenter cmdlet help or see SnapCenter Software Cmdlet Reference Guide.

Requirements for restoring an Exchange database

Before you restore an Exchange Server database from a SnapCenter Plug-in for Microsoft Exchange Server backup, you must ensure that several requirements are met.

> ⓘ   To use the restore functionality completely, you must upgrade both SnapCenter Server and SnapCenter Plug-in for Exchange database to 4.6.

- The Exchange Server must be online and running before you can restore a database.
- The databases must exist on the Exchange Server.

  > ⓘ   Restoring deleted databases is not supported.

- SnapCenter schedules for the database must be suspended.
- The SnapCenter Server and the SnapCenter Plug-in for Microsoft Exchange Server host must be connected to the primary and secondary storage that contains the backups you want to restore.

Restore Exchange databases

You can use SnapCenter to restore backed-up Exchange databases.

What you will need

- You must have backed up the resource groups, database, or Database Availability Groups (DAGs).

- When Exchange database is migrated to another location, restore operation does not work for old backups.
- If you are replicating Snapshot copies to a mirror or vault, the SnapCenter administrator must have assigned you the SVMs for both the source volumes and destination volumes.
- In a DAG, if an active database copy is on a non-NetApp storage and you want to restore from the passive database copy backup that is on a NetApp storage, make the passive copy (NetApp storage) as active copy, refresh the resources and perform the restore operation.

  Run the `Move-ActiveMailboxDatabase` command to make the passive database copy as active database copy.

  The Microsoft documentation contains information about this command.

About this task

- When restore operation is performed on a database, the database is mounted back on the same host and no new volume is created.
- DAG-level backups must be restored from individual databases.
- Full disk restore is not supported when files other than Exchange database (.edb) file exist.

  Plug-in for Exchange does not perform a full restore on a disk if the disk contains Exchange files such as those used for replication. When a full restore might impact Exchange functionality, Plug-in for Exchange performs a single file restore operation.

- Plug-in for Exchange cannot restore BitLocker encrypted drives.
- The SCRIPTS_PATH is defined using the PredefinedWindowsScriptsDirectory key located in the SMCoreServiceHost.exe.Config file of the plug-in host.

  If needed, you can change this path and restart SMcore service. It is recommended that you use the default path for security.

  The value of the key can be displayed from swagger through the API: API /4.7/configsettings

  You can use the GET API to display the value of the key. SET API is not supported.

Steps

1. On the left navigation pane, click **Resources** in the upper left corner of the Resource page.
2. Select the Exchange Server plug-in from the drop-down list.
3. In the Resources page, select **Database** from the View list.
4. Select the database from the list.
5.
   From the Manage Copies view, select **Backups**, from the Primary Backups table, and then click ↰ .
6. In the Options page, select one of the following log backup options:

Option	Description
All log backups	Choose **All log backups** to perform up-to-the-minute backup restore operation to restore all of the available log backups after the full backup.

Option	Description
By log backups until	Choose **By log backups until** to perform a point-in-time restore operation, which restores the database based on log backups until the selected log.
	ⓘ The number of logs displayed in the drop-down list are based on UTM. For example, if full backup retention is 5 and UTM retention is 3, the number of log backups available are 5 but in the drop-down only 3 logs will be listed to perform restore operation.
By specific date until	Choose **By specific date until** to specify the date and time up to which transaction logs are applied to the restored database. This point-in-time restore operation restores transaction log entries that were recorded until the last backup on the specified date and time.
None	Choose **None** when you need to restore only the full backup without any log backups.

You can perform one of the following actions:

- **Recover and mount database after restore** - This option is selected by default.
- **Do not verify the integrity of transaction logs in the backup before restore** - By default, SnapCenter verifies the integrity of transaction logs in a backup before performing a restore operation.

  Best Practice: You should not select this option.

7. In the Script page, enter the path and the arguments of the prescript or postscript that should be run before or after the restore operation, respectively.

   Restore prescript arguments include $Database and $ServerInstance.

   Restore postscript arguments include $Database, $ServerInstance, $BackupName, $LogDirectory, and $TargetServerInstance.

   You can run a script to update SNMP traps, automate alerts, send logs, and so on.

   ⓘ The prescripts or postscripts path should not include drives or shares. The path should be relative to the SCRIPTS_PATH.

8. In the Notification page, from the **Email preference** drop-down list, select the scenarios in which you want to send the emails.

   You must also specify the sender and receiver email addresses, and the subject of the email.

9. Review the summary, and then click **Finish**.

10. You can view the status of the restore job by expanding the Activity panel at the bottom of the page.

   You should monitor the restore process by using the **Monitor** > **Jobs** page.

When you restore an active database from a backup, the passive database might go into suspended or failed state if there is a lag between the replica and the active database.

The state change can occur when the active database's log chain forks and begins a new branch which breaks replication. Exchange Server attempts to fix the replica, but if it is unable to do so, after restore, you should create a fresh backup, and then reseed the replica.

Granular recovery of mails and mailbox

Single Mailbox Recovery (SMBR) software allows you to restore and recover mails or mailbox instead of the complete Exchange Database.

Restoring complete database just to recover a single mail will consume lot of time and resource. SMBR helps in quickly recovering the mails by creating clone copy of the Snapshot and then using Microsoft API's to mount the mailbox in SMBR. For information on how to use SMBR, see SMBR Administration Guide.

Find more information

- SMBR licenses
- SMBR documentation library
- How to restore from secondary storage in SMBR with SnapCenter
- Recovering Microsoft Exchange Mail From SnapVault Using SMBR

# Restore an Exchange Server database from secondary storage

You can restore a backed up Exchange Server database from secondary storage (mirror or vault).

You must have replicated the Snapshot copies from primary storage to a secondary storage.

Steps

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

2. In the Resources page, select **Database** or **Resource Group** from the **View** drop-down list.

3. Select the database or the resource group.

   The database or resource group topology page is displayed.

4. In the Manage Copies section, select **Backups** from the secondary storage system (mirror or vault).

5. Select the backup from the list, and then click ⬑ .

6. In the Location page, choose the destination volume for restoring the selected resource.

7. Complete the Restore wizard, review the summary, and then click **Finish**.

Restore Exchange resources using PowerShell cmdlets

Restoring an Exchange database includes initiating a connection session with the SnapCenter Server, listing the backups and retrieving backup information, and restoring a backup.

You must have prepared the PowerShell environment to execute the PowerShell cmdlets.

Steps

1. Initiate a connection session with the SnapCenter Server for a specified user by using the `Open-SmConnection` cmdlet.

   ```
   Open-smconnection  -SMSbaseurl  https://snapctr.demo.netapp.com:8146/
   ```

2. Retrieve the information about the one or more backups that you want to restore by using the `Get-SmBackup` cmdlet.

   This example displays information about all available backups:

   ```
   PS C:\> Get-SmBackup

   BackupId                        BackupName                      BackupTime
   BackupType
   --------                        ----------                      ----------
   ----------
   341                             ResourceGroup_36304978_UTM... 12/8/2017
   4:13:24 PM          Full Backup
   342                             ResourceGroup_36304978_UTM... 12/8/2017
   4:16:23 PM          Full Backup
   355                             ResourceGroup_06140588_UTM... 12/8/2017
   6:32:36 PM          Log Backup
   356                             ResourceGroup_06140588_UTM... 12/8/2017
   6:36:20 PM          Full Backup
   ```

3. Restore data from the backup by using the `Restore-SmBackup` cmdlet.

   This example restores an up-to-the-minute backup:

   ```
   C:\PS> Restore-SmBackup -PluginCode SCE -AppObjectId 'sce-w2k12-
   exch.sceqa.com\sce-w2k12-exch_DB_2' -BackupId 341 -IsRecoverMount:$true
   ```

This example restores a point-in-time backup:

```
C:\ PS> Restore-SmBackup -PluginCode SCE -AppObjectId 'sce-w2k12-
exch.sceqa.com\sce-w2k12-exch_DB_2' -BackupId 341 -IsRecoverMount:$true
-LogRestoreType ByTransactionLogs -LogCount 2
```

This example restores a backup on secondary storage to primary story:

```
C:\ PS> Restore-SmBackup -PluginCode 'SCE' -AppObjectId 'DB2' -BackupId
81 -IsRecoverMount:$true -Confirm:$false
-archive @{Primary="paw_vs:vol1";Secondary="paw_vs:vol1_mirror"}
-logrestoretype All
```

The `-archive` parameter enables you to specify the primary and secondary volumes you want to use for the restore.

The `-IsRecoverMount:$true` parameter enables you to mount the database after the restore.

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.

Reseed a passive Exchange node replica

If you need to reseed a replica copy, for instance when a copy is corrupt, you can reseed to the latest backup using the reseed feature in SnapCenter.

What you will need

- You must be using SnapCenter Server 4.1 or later, and Plug-in for Exchange 4.1 or later.

  Reseeding a replica is not supported in SnapCenter versions earlier than 4.1.

- You must have created a backup of the database you want to reseed.

Best Practice: To avoid lagging between nodes, we recommend that you either create a new backup before you perform a reseed operation, or choose the host with the latest backup.

Steps

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

2. In the Resources page, select the appropriate option from the View list:

Option	Description
To reseed a single database	Select **Database** from the View list.

Option	Description
To reseed databases in a DAG	Select **Database Availability Group** from the View list.

3. Select the resource you want to reseed.

4. In the Manage Copies page, click **Reseed**.

5. From the list of unhealthy databases copies in the Reseed wizard, select the one you want to reseed, and then click **Next**.

6. In the Host window, select the host with the backup from which you want to reseed, and then click **Next**.

7. In the Notification page, from the **Email preference** drop-down list, select the scenarios in which you want to send the emails.

   You must also specify the sender and receiver email addresses, and the subject of the email.

8. Review the summary, and then click **Finish**.

9. You can view the status of the job by expanding the Activity panel at the bottom of the page.

   > ⓘ Reseed operation is not supported if the passive database copy resides on non-NetApp storage.

Reseed a replica using PowerShell cmdlets for Exchange database

You can use PowerShell cmdlets to restore an unhealthy replica by using either the most recent copy on the same host or the most recent copy from an alternate host.

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. Initiate a connection session with the SnapCenter Server for a specified user by using the `Open-SmConnection` cmdlet.

   ```
   Open-smconnection  -SMSbaseurl  https:\\snapctr.demo.netapp.com:8146/
   ```

2. Reseed the database by using the `reseed-SmDagReplicaCopy` cmdlet.

   This example reseeds the failed copy of the database called execdb on the host "mva-rx200.netapp.com" using the latest backup on that host.

   ```
   reseed-SmDagReplicaCopy -ReplicaHost "mva-rx200.netapp.com" -Database
   execdb
   ```

This example reseeds the failed copy of the database called execdb using the latest backup of the database (production/copy) on an alternate host "mva-rx201.netapp.com."

```
reseed-SmDagReplicaCopy -ReplicaHost "mva-rx200.netapp.com" -Database
execdb -BackupHost "mva-rx201.netapp.com"
```

Monitor restore operations

You can monitor the progress of different SnapCenter restore operations by using the Jobs page. You might want to check the progress of an operation to determine when it is complete or if there is an issue.

About this task

Post-restore states describe the conditions of the resource after a restore operation and any further restore actions that you can take.

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
- ⊘ Canceled

Steps

1. In the left navigation pane, click **Monitor**.
2. In the Monitor page, click **Jobs**.
3. In the Jobs page, perform the following steps:
   a. Click 🔽 to filter the list so that only restore operations are listed.
   b. Specify the start and end dates.
   c. From the **Type** drop-down list, select **Restore**.
   d. From the **Status** drop-down list, select the restore status.
   e. Click **Apply** to view the operations that have been completed successfully.
4. Select the restore job, and then click **Details** to view the job details.
5. In the Job Details page, click **View logs**.

   The **View logs** button displays the detailed logs for the selected operation.

> **ⓘ** After the volume based restore operation, the backup metadata is deleted from the SnapCenter repository but the backup catalog entries remain in SAP HANA catalog. Though the restore job status displays ✓ , you should click on job details to see the warning sign of some of the child tasks. Click on the warning sign and delete the indicated backup catalog entries.

Cancel restore operations for Exchange database

You can cancel restore jobs that are queued.

You should be logged in as the SnapCenter Admin or job owner to cancel restore operations.

About this task

- You can cancel a queued restore operation from either the **Monitor** page or the **Activity** pane.
- You cannot cancel a running restore operation.
- You can use the SnapCenter GUI, PowerShell cmdlets, or CLI commands to cancel the queued restore operations.
- The **Cancel Job** button is disabled for restore operations that cannot be canceled.
- If you selected **All members of this role can see and operate on other members objects** in Users\Groups page while creating a role, you can cancel the queued restore operations of other members while using that role.

Step

Perform one of the following actions:

From the…	Action
Monitor page	a. In the left navigation pane, click **Monitor** > **Jobs**. b. Select the job and click **Cancel Job**.
Activity pane	a. After initiating the restore operation, click 🔼 on the Activity pane to view the five most recent operations. b. Select the operation. c. In the Job Details page, click **Cancel Job**.