



Restoring databases

Snap Creator Framework

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Table of Contents

- Restoring databases 1
 - Understanding SnapMirror and SnapVault restore operations..... 1
 - Understanding destination directories 1
 - Where to run a restore 1
 - Performing a volume restore 2
 - Performing a single-file restore 3
 - Performing a single-file restore in a SAN environment 5

Restoring databases

The IBM Domino plug-in restores database files from the Snapshot copy of the volume on which the database is stored. When the Snapshot restore is complete, the plug-in applies any changes recorded in the changeinfo directory.

Understanding SnapMirror and SnapVault restore operations

You cannot use Snap Creator to restore a SnapMirror copy of the data. If you want to restore a mirror copy, you need to break the mirror first, then manually restore the data. For more information, see the [ONTAP 9 Volume Disaster Recovery Express Guide](#).

Only point-in-time volume restores are available when you restore a SnapVault copy from secondary storage. You cannot perform an up-to-the-minute volume restore or a single-file restore. You can work around this limitation by first restoring from secondary storage to primary storage. From primary storage, you can then perform an up-to-the-minute volume restore or a single-file restore as needed.

Understanding destination directories

Volume restores and single-file restores typically have different destination directories. You specify the destination directory in the Data Restore Directory parameter in the backup and restore configuration file (see step [task_using_the_gui_to_create_a_configuration_file.md#STEP_E6C507729B3647FD8B2E8D0818F22D3B](#)):

- For a volume restore, you need to set Data Restore Directory to the Domino data directory.
- For a single-file restore, you need to set Data Restore Directory to a subdirectory on the Domino data volume.

This means that if you alternate restore types, you need to modify Data Restore Directory to point to the correct setting for each restore type. Otherwise, change information will not be applied correctly, and the data will be inconsistent with the database state you want to restore to. Of course, you can create different configurations for volume and single-file restores if you prefer.

Where to run a restore

With one exception, you can use either the Snap Creator GUI or the Snap Creator CLI to restore databases. For single-file restores in a SAN environment, you must use the CLI, as described in [Performing a single-file restore in a SAN environment](#).



This guide shows how to use the CLI only for single-file restores in a SAN environment. Otherwise, it shows how to use the GUI to restore databases. For information on how to use the CLI, see the [Snap Creator Framework 4.1.2 Administration Guide](#).

Related information

[Performing a volume restore](#) [Performing a single-file restore](#) [Performing a single-file restore in a SAN environment](#)

Performing a volume restore

You can use the IBM Domino plug-in to perform point-in-time, up-to-the-minute, or selectable up-to-the-minute volume restores for all major storage types.

Make sure to:

- Set the Data Restore Directory in the configuration file to the Domino data directory.
- Stop the Domino server.

Volume restore options are as follows:

Restore type	Description
Volume restore (point-in-time)	Restores the entire volume to its state at the time of the Snapshot copy.
Volume restore (up-to-the-minute)	Restores the entire volume to its state at the time of the Snapshot copy, then plays forward Domino transaction logs to the most recent copy.
Volume restore (selectable up-to-the-minute)	Restores the entire volume to its state at the time of the Snapshot copy, then plays forward Domino transaction logs to a specified time.



For up-to-the-minute and selectable point-in-time restores, Domino transaction logging must be enabled.

Transaction logs can only be played forward. Selecting a time before the Snapshot copy was created causes a restore error.

1. In the Profiles and Configurations pane, select the configuration file and click **Actions > Restore**.

Selecting **Restore** automatically launches the Snap Creator Framework Restore wizard. Throughout the Restore wizard, click **Next** to advance to the next page. Click **Back** to return to the previous page.



If you are restoring from a SnapVault copy, you are prompted to restore from primary or secondary storage. Your selection depends on how you are handling the limitation described in [Restoring databases](#).

2. On the Restore details page, specify the restore details:

For this field...	Do this...
Controller/Vserver name	Select the SVM on the storage system you want to restore from.
Restore volume name	Select the volume you want to restore from.

For this field...	Do this...
Policy	Select the policy for the backup you want to restore from.
Snap Creator Snapshot Copies/All Snapshot Copies	Leave the default.
Restore Snapshot copy name	Select the Snapshot copy you want to restore from.
Restore type	Select Volume Restore .

3. On the following page, specify the volume restore type:

For this field...	Do this...
Restore Type	Click the volume restore type. If you choose Selectable up the minute , new fields are displayed where you can specify the date and time to which you want to play forward Domino transaction logs. Click Ignore Validation if the time on the Snap Creator Server does not match the time on the storage controller.
Disable Replication	Select this box to set a new Domino replica ID for restored database files.

- Review the summary and click **Finish**.
- In the Volume Restore dialog, click **OK**.

Snap Creator starts the restore job. Job information is displayed in the Console pane.

Restart the Domino server when the restore operation is complete.

Performing a single-file restore

You can use the IBM Domino plug-in to perform point-in-time, up-to-the-minute, or selectable up-to-the-minute single-file restores for databases in NFS environments.

You must set the Data Restore Directory parameter in the configuration file to the correct subdirectory on the Domino data volume.



You do not have to stop the Domino server for a single-file restore.

Single-file restore options are as follows:

Restore type	Description
Single-file restore (point-in-time)	Restores a single file to its state at the time of the Snapshot copy (NFS only).
Single-file restore (up-to-the-minute)	Restores a single file to its state at the time of the Snapshot copy, then plays forward Domino transaction logs to the most recent copy (NFS only).
Single-file restore (selectable up-to-the-minute)	Restores a single file to its state at the time of the Snapshot copy, then plays forward Domino transaction logs to a specified time (NFS only).



For up-to-the-minute and selectable point-in-time restores, Domino transaction logging must be enabled.

Transaction logs can only be played forward. Selecting a time before the Snapshot copy was created causes a restore error.

1. In the Profiles and Configurations pane, select the configuration file, and then click **Actions > Restore**.

Selecting **Restore** automatically launches the Snap Creator Framework Restore wizard. Throughout the Restore wizard, click **Next** to advance to the next page and click **Back** to return to the previous page.



If you are restoring from a SnapVault copy, you are prompted to restore from primary or secondary storage. Your selection depends on how you are handling the limitation described in [concept_domino_database_restore_overview.md#GUID-4D864E27-DE54-43BF-9B9F-EF2F240F65D9](#).

2. On the Restore details page, specify the restore details:

For this field...	Do this...
Controller/Vserver name	Select the SVM on the storage system you want to restore from.
Restore volume name	Select the volume you want to restore from.
Policy	Select the policy for the backup you want to restore from.
Snap Creator Snapshot Copies/All Snapshot Copies	Leave the default.
Restore Snapshot copy name	Select the Snapshot copy you want to restore from.
Restore type	Select Single File Restore .

3. On the following page, select the file you want to restore.

The file is displayed with its full path name in the **Source path** field.



Copy the path name to your clipboard for later use.

4. On the following page, select the directory to which you want to restore the file.

The name of the parent subdirectory for the file must be identical to the name of the parent subdirectory in the source path. If, for example, the source path is /domino/data/mail/user1.nsf, the restore path is /domino/data/restore/mail/user1.nsf.

The directory is displayed with its full path name in the **Destination path** field.

5. On the following page, specify the single-file restore type:

For this field...	Do this...
Restore Type	Click the single-file restore type. If you choose Selectable up the minute , new fields are displayed where you can specify the date and time to which you want to play forward Domino transaction logs. Click Ignore Validation if the time on the Snap Creator Server does not match the time on the storage controller.
Disable Replication	Select this box to set a new Domino replica ID for the restored database file.

6. Review the summary, and then click **Finish**.
7. In the Single File Restore dialog, click **OK**.

Snap Creator starts the restore job. Job information is displayed in the Console pane.

Performing a single-file restore in a SAN environment

For single-file restores in a SAN environment, you can use SnapDrive to mount the Snapshot copy on the Snap Creator Agent host. You can then copy the file you want to restore to the Data Restore Directory and use a Snap Creator custom action to complete restore processing.

Related information

[Using SnapDrive to mount a Snapshot copy](#)

[Copying the file to the Data Restore Directory](#)

[Using a Snap Creator custom action to complete restore processing](#)

[Disconnecting the Snapshot Copy](#)

Using SnapDrive to mount a Snapshot copy

You can use SnapDrive to mount the Snapshot copy for the file you want to restore. You can then manually copy the file to the Data Restore Directory.

The following procedure shows how to use SnapDrive for Windows to mount a Snapshot copy on a Windows Server 2008 host. SnapDrive for Windows and the Snap Creator Agent must be running on the host.

1. In Server Manager, click **Storage > SnapDrive > physical_server_name > Disks**.
2. In the Disk Identification pane, navigate to the Snapshot copy that contains the copy of the file you want to restore and choose **Connect Disk** in the right-click menu.

The Connect Disk wizard opens.

Throughout the Connect Disk wizard, click **Next** to advance to the next page. Click **Back** to return to the previous page.



Make a note of the name of the Snapshot copy. You will need the name when you copy the file to the Data Restore Directory.

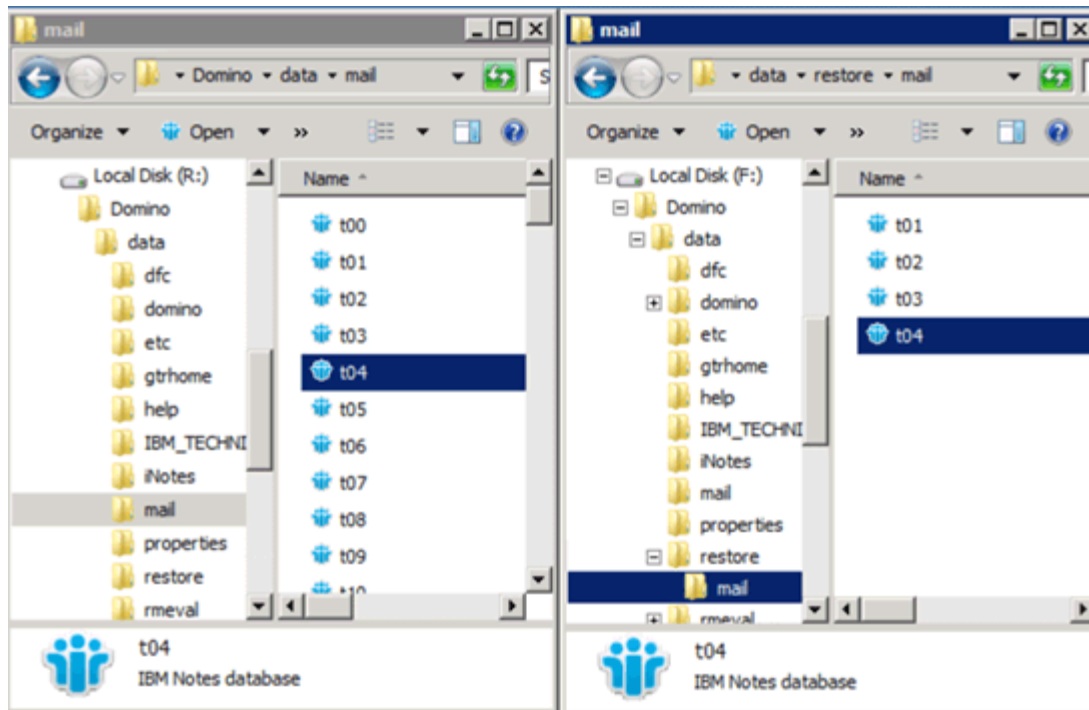
3. On the Provide a Storage System Name, Lun Path and Name page, optionally enter descriptive text for the LUN.
4. On the Select a LUN Type page, leave the default.
5. On the Select LUN Properties page, select the drive letter or mount point for the Snapshot copy.
6. On the iSCSI initiator/FC host bus adapter (HBA) page, select the iSCSI initiator or FC host bus adapter (HBA).
7. On the Management Type page, select the management type you want to use to map to the LUN: automatic or manual.
8. Click **Finish** to mount the Snapshot copy to the specified mount point.

Copying the file to the Data Restore Directory

After you have mounted the Snapshot copy for the file you want to restore, you can copy the file to the Data Restore Directory specified in the backup and restore configuration file.

1. Copy the file to be restored from the mounted Snapshot copy.
2. Paste the file in the Data Restore Directory specified in the backup and restore configuration file.

The following example shows how you might copy the database file t04.nsf from the Snapshot copy mounted on the R: drive to the Data Restore Directory specified in the configuration file.



Using a Snap Creator custom action to complete restore processing

You can use a Snap Creator custom action to complete processing of restores originated outside of Snap Creator.

You can perform this action in the Snap Creator CLI only.

1. In the Snap Creator CLI, enter the following command: `snapcreator.exe ---action custom --server server --port port --user user --passwd password --profile profile --config config --params snapname=snapshot_name datapath=datapath restoretype=u2m | su2m restoretime="MM/DD/YYYY HH:MM:SS" disablereplication=Y|N`

where

- server is the host name or IP address of the Snap Creator Server.
- port is the port number where the Snap Creator Server is running.
- user is the name of the Snap Creator user.
- password is the Snap Creator user's password.



You can omit the `--passwd` option if you do not want to type the password in clear text. Snap Creator will prompt for the password when you execute the command

- profile is the name of the Snap Creator profile.
- config is the name of the Snap Creator configuration file.
- snapshot_name is the name of the Snapshot copy from which you want to restore the file.
- datapath is the pathname of the directory to which you want to restore the file.
- restoretype is the type of restore to be performed:

- u2m performs an up-to-the-minute restore.
- su2m performs a selectable up-to-the-minute restore. Specify the date and time to which you want to play forward Domino transaction logs in MM/DD/YYYY HH:MM:SS format in the --restoretime option. For example, 01/23/2014 12:45:00.
- disablereplication disables Domino replication:
 - Enter N (default) to allow Domino replication. The plug-in uses an existing Domino replica ID for the restored database file.



An alternative method to allow Domino replication is to leave this parameter out of the command.

- Enter Y to disable Domino replication. The plug-in sets a new Domino replica ID for the restored database file. NOTE: Appending --verbose to the command will show additional information about the restore operation. Otherwise, you are immediately returned to the command prompt when the command finishes executing.

```

snapcreator.exe --action custom --server Tampico --port 8443
--user admin --profile Domino --config Nantes
--params snapname=Nantes-Test_Policy_20140123121459
datapath=F:\Domino\data\restore\mail\t04.nsf
restoretype=su2m restoretime="01/23/2014 12:45:00"
disablereplication=y

```

Disconnecting the Snapshot Copy

You need to disconnect the mounted Snapshot copy when the restore operation is complete.

The following procedure shows how to disconnect a mounted Snapshot copy on a Windows Server 2008 host. SnapDrive for Windows and the Snap Creator Agent must be running on the host.

1. In Server Manager, click **Storage > SnapDrive > physical_server_name > Disks**.
2. In the Disk Identification pane, select the mounted disk and click **Disconnect Disk** in the right-click menu.
3. In the Disconnect Disk dialog, click **Yes**.

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