



Creating a backup and restore configuration

Snap Creator Framework

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Creating a backup and restore configuration

You specify most of the information you need for backup and restore operations in a configuration file. The configuration file is the input for Snap Creator backup and restore operations.

You can create as many configuration files as you need, but you can specify only a single configuration file as input for an operation. You can use either the Snap Creator GUI or the Snap Creator CLI to create configuration files.



This guide shows how to use the GUI to create configuration files. For information on how to use the CLI, see the [Snap Creator Framework 4.1.2 Administration Guide](#).

You organize configuration files in Snap Creator profiles. Profiles and configuration files reside in the `\engine\configs` subdirectory in the Snap Creator installation directory:

- On UNIX hosts, the directory to which the installation file was extracted
- On Windows hosts, `C:\Program Files\NetApp\Snap_Creator_Framework\scServer4.1.x`, by default

Related information

[Logging in to the Snap Creator GUI](#) [Creating a configuration file](#) [Adding commands to the backup and restore configuration](#) [Cleaning up archived copies of Domino transaction logs](#) [Backing up the changeinfo directory](#)

Logging into the Snap Creator GUI

You use a web browser to log in to the Snap Creator GUI. Check with your administrator for the Snap Creator Server IP address, port, and login credentials.

1. Enter the following URL in your web browser: `https://server_name:port`, where:
 - `server_name` is the name or IP address of the Snap Creator Server
 - `port` is the port for the Snap Creator Server (8443, by default)
2. Enter the login credentials for the Snap Creator Server.

The Snap Creator GUI is displayed in the browser. If you are launching the GUI for the first time, a welcome message appears on screen. Click **OK** to dismiss the message.

Creating a configuration file

Before you can back up IBM Domino databases, you need to create a configuration file. The configuration file is the input for Snap Creator backup and restore operations.

Only alphanumeric and underscore characters are allowed in configuration and profile names. Names cannot start with a number.



Many sites use a profile-wide or site-wide global configuration file to apply storage system or VMware credential information to backup and restore configurations. For details about how to create a global configuration file, see the [Snap Creator Framework 4.1.2 Administration Guide](#).

1. In the Profiles and Configurations pane, click **Add Profile**.
2. In the New Profile dialog box, enter the name of the profile, and then click **OK**.

Creating a new profile automatically launches the Snap Creator Framework Configuration wizard. To add a new configuration to an existing profile, right-click the profile, and then select **New Configuration**.

Throughout the Configuration wizard, click **Next** to advance to the next page and click **Back** to return to the previous page.

3. On the Configuration page, enter the name of the configuration, and then specify whether you want to enable password encryption.

Password encryption is enabled by default to prevent passwords from being displayed in clear text in the configuration file.



Hover over a field in the wizard to display a tool tip.

4. On the Plug-in Type page, select **Application plug-in**.
5. On the Application Plug-ins page, select **IBM Domino**.
6. On the Plug-in parameters page, specify IBM Domino backup configuration details:



The examples in the following table are for UNIX environments. You can view examples of the settings for Windows in the screenshot that follows the table.

GUI parameter	CLI parameter	Description
Domino Data Directory	DOMINO_DATA_PATH	The path to the Domino data directory. For example, /Domino/data.
notes.ini Path	DOMINO_INI_PATH	The path to the notes.ini file. For example, /Domino/data/notes.ini.
Change info Directory	DOMINO_CHANGE_INFO_PATH	The path to changeinfo files. For example, /changeinfo. Important: Make sure that you store changeinfo files on a volume other than the Domino data volume.

GUI parameter	CLI parameter	Description
Backup Type	DOMINO_DATABASE_TYPE	<p>The database files to be backed up. Select a value from the GUI drop-down, or specify the corresponding number in the CLI command:</p> <ul style="list-style-type: none"> • Everything (recommended) (CLI = 0) • *.box files (CLI= 1) • *.nsf, *.nsg, and *.nsh files (CLI = 2) • *.ntf files (CLI = 3)
IBM Domino installation directory	LOTUS	<p>The path to the directory where Domino binary files are installed. In Linux, for example, /opt/ibm/domino (assuming the default installation path). In Windows, the parent of the Domino Shared Objects directory.</p> <p>Note: This is not the path to IBM Notes, formerly Lotus Notes.</p>
Path to Domino shared objects	Notes_ExecDirectory	<p>The path that contains Domino shared object files (.so or .dll). For example, /opt/ibm/domino/notes/latest/linux.</p>
Data Restore Directory	DOMINO_PATH RESTORE_DATA_PATH	<p>For volume restores (assuming you are restoring to the same location from which you took the backup), the Domino data directory path. For single-file restores (NFS only), a location on the same volume as the Domino Data Directory. For example, /Domino/data/restore.</p>

GUI parameter	CLI parameter	Description
Validate Domino Data Directory	VALIDATE_ DOMINO_DATA_ PATH	<p>If the Domino environment has multiple mount points, some mount points might be on NetApp storage, while others might not be. Select a value from the GUI drop-down, or specify the corresponding value in the CLI command:</p> <ul style="list-style-type: none"> • Yes backs up files on the Domino data directory path only. • No backs up all files in the Domino environment regardless of their location on disk.

The following example shows how you might complete the fields in a Windows environment:

Domino Data Directory:	<input type="text" value="F:\Domino\data"/>
notes.ini Path:	<input type="text" value="C:\Lotus\Domino\notes.ini"/>
Change info Directory:	<input type="text" value="I:\changeinfo"/>
Backup Type:	<input type="text" value="Everything"/> ▼
IBM Domino installation directory:	<input type="text" value="C:\Lotus"/>
Path to Domino shared objects:	<input type="text" value="C:\Lotus\Domino"/>
Data Restore Directory:	<input type="text" value="F:\Domino\data"/>
Validate Domino Data Directory:	<input type="text" value="Yes"/> ▼

7. On the Agent Configuration page, specify Snap Creator Agent connection information:

For this field...	Do this...
IP/DNS	Enter the IP address or DNS host name of the Snap Creator Agent host.
Port	If you are not using the default port for the Snap Creator Agent (9090), enter the port number.
Timeout (secs)	Leave the default.

8. When you are satisfied with your entries, click **Test agent connection** to verify the connection to the Agent.



If the Agent is not responding, verify the Agent details and confirm that host name resolution is working correctly.

- On the Storage Connection settings page, specify connection information for the Storage Virtual Machine (SVM, formerly known as Vserver) on the primary storage system:

For this field...	Do this...
Transport	Select the transport protocol for communications with the SVM: HTTP or HTTPS.
Controller/Vserver Port	If you are not using the default port for the SVM (80 for HTTP, 443 for HTTPS), enter the port number.

Note: For information about how to use an OnCommand proxy, see the [Snap Creator Framework 4.1.2 Administration Guide](#).

- On the Controller/Vserver Credentials page, specify the credentials for the SVM on the primary storage system:

For this field...	Do this...
Controller/Vserver IP or Name	Enter the IP address or DNS host name of the SVM host.
Controller/Vserver User	Enter the user name for the SVM host.
Controller/Vserver Password	Enter the password for the SVM host.

Important: If you are planning to replicate Snapshot copies to a SnapMirror or SnapVault destination, the name of the SVM you enter in this step must match exactly the name of the SVM you used when you created the SnapMirror or SnapVault relationship. If you specified a fully qualified domain name when you created the relationship, you must specify a fully qualified domain name in this step, regardless of whether SnapCreator can find the SVM with the information you provide. Case is significant.

You can use the `snapmirror show -destination-path destination_SVM:destination_volume` where `destination_SVM_name` is the name of the SVM on the destination system and `destination_volume` is the volume. For more information about creating SnapMirror and SnapVault relationships, see [SnapMirror and SnapVault setup](#).

When you click **Next**, the Controller/Vserver Volumes window is displayed.

- In the Controller/Vserver Volumes window, specify the volumes to be backed up by dragging and dropping from the list of available volumes in the left pane to the list of volumes to be backed up in the right pane, and then click **Save**.

The specified volumes are displayed on the Controller/Vserver Credentials page.



If you plan to back up the changeinfo directory, you must configure the volume containing the directory as a metadata volume, as described in [Backing up the changeinfo directory](#). This option tells the IBM Domino plug-in to create a Snapshot copy of the changeinfo volume *after* creating the Snapshot copy for database files.

12. On the Controller/Vserver Credentials page, click **Add** if you want to specify SVM details and volumes to be backed up for another primary storage system.
13. On the Snapshot details page, specify Snapshot configuration information:

For this field...	Do this...
Snapshot Copy Name	Enter the name of the Snapshot copy. Tip: Click Allow Duplicate Snapshot Copy Name if you want to reuse Snapshot copy names across configuration files.
Snapshot Copy Label	Enter descriptive text for the Snapshot copy.
Policy Type	Click Use Policy , and then select the built-in backup policies you want to make available for this configuration. After you select a policy, click in the Retention cell to specify how many Snapshot copies with that policy type you want to retain. Note: For information about how to use policy objects, see the Snap Creator Framework 4.1.2 Administration Guide .
Prevent Snapshot Copy Deletion	Specify Yes only if you do not want Snap Creator to automatically delete Snapshot copies that exceed the number of copies to be retained. Note: Specifying Yes might cause you to exceed the number of supported Snapshot copies per volume.
Policy Retention Age	Specify the number of days you want to retain Snapshot copies that exceed the number of copies to be retained. You can specify a retention age per policy type by entering policy type:age, for example, daily:15.
Naming Convention	Leave the default.

The configuration specified in the following example performs a daily backup and retains four Snapshot copies:

Snapshot copy Name:

Snapshot copy Label:

Policy Type: Use Policy Use Policy Object

Snapshot copy Policies		
Enable Policy	Policy Name	Retention
<input type="checkbox"/>	hourly	0
<input checked="" type="checkbox"/>	daily	4
<input type="checkbox"/>	weekly	0
<input type="checkbox"/>	monthly	0

Prevent Snapshot copy Deletion:

Policy Retention Age:

Naming Convention: Recent Timestamp

- On the Snapshot details continued page, set **Ignore Application Errors** to Yes if you want to force the backup operation to proceed even if one or more databases are in an inconsistent or corrupted state.

You should ignore the remaining fields.



A Domino environment might consist of hundreds or thousands of databases. If even a single database is in an inconsistent or corrupted state, the backup will fail. Enabling **Ignore Application Errors** allows the backup to continue.

- On the Data Protection page, specify whether you want to perform optional Snapshot copy replication to secondary storage:
 - Click **SnapMirror** to mirror Snapshot copies.

The policy for mirrored Snapshot copies is the same as the policy for primary Snapshot copies.
 - Click **SnapVault** to archive Snapshot copies.
 - Specify the policy for archived Snapshot copies.
 - The instructions are in the following step [13](#).
 - In **SnapVault wait time**, enter the number of minutes you want Snap Creator to wait for the SnapVault operation to complete.
 - You need to have set up SnapMirror and SnapVault relationships before performing replication to secondary storage. For more information, see [SnapMirror and SnapVault setup](#).
- On the Data Protection Volumes page, click **Add**, and then select the SVM for the primary storage system.

When you click **Next**, the Data Protection Volume Selection window is displayed.

17. In the Data Protection Volume Selection window, specify the source volumes to be replicated by dragging and dropping from the list of available volumes in the left pane to the list of volumes in the SnapMirror and/or SnapVault areas in the right pane, and then click **Save**.

The specified volumes are displayed on the Data Protection Volumes page.

18. On the Data Protection Volumes page, click **Add** if you want to specify SVM details and volumes to be replicated for another primary storage system.
19. On the Data protection relationships page, specify the credentials for the SVM on the SnapMirror and/or SnapVault destination systems.
20. If you prefer to use NetAppOnCommand Unified Manager APIs instead of Data ONTAP APIs for Snapshot copies and SnapMirror/SnapVault updates, complete the fields on the DFM/OnCommand Settings page:
 - a. Click **Operations Manager Console Alert** if you want to receive Unified Manager alerts, and then enter the required connection information for the Unified Manager virtual machine.
 - b. Click **NetApp Management Console data protection capability** if you are using the NetApp Management Console data protection feature for 7-Mode SnapVault replication, and then enter the required connection information for the Unified Manager virtual machine.
21. Review the summary, and then click **Finish**.

Snap Creator lists the configuration file below the specified profile in the Profiles and Configurations pane. You can edit the configuration by selecting the configuration file and clicking the appropriate tab in the Configuration Content pane. You can rename the configuration by clicking **Rename** in the right-click menu. You can delete the configuration by clicking **Delete** in the right-click menu.

Adding commands to the backup and restore configuration

Occasionally, a backup or restore operation might need to run a command that is not available in Snap Creator. On Window hosts using FC or iSCSI, for example, you might prefer to use SnapDrive commands for backups instead of native Snap Creator commands, to ensure file system consistency at the OS level.

Where to run supplemental commands

By default, supplemental commands run on the Snap Creator Agent. You can run a supplemental command on the Server by prepending the command with the text `SERVER`, followed by a colon (:). For example, `SERVER:C:\myscript.bat`.

If you want to run a supplemental command on the Agent, you must explicitly permit the command to be executed by including it in the `allowed_commands.config` file on the Agent. There is no requirement to allow supplemental commands on the Server.

Where to add supplemental commands

You can use either the Snap Creator GUI or the Snap Creator CLI to add commands to your backup and restore configuration.



This guide shows how to use the GUI to add commands. For information on how to use the CLI, see the [Snap Creator Framework 4.1.2 Administration Guide](#).

Related information

Allowing supplemental commands on the Snap Creator Agent

If you want to run a supplemental command on the Snap Creator Agent, you must explicitly permit the command to be executed by including it in the `allowed_commands.config` file on the Agent.

`allowed_commands.config` is located in the `etc` subdirectory of the Snap Creator Agent installation directory. For example:

- On UNIX hosts, `/install/path/scAgent4.1.x/etc/allowed_commands.config`
- On Windows hosts, `C:\Program Files\NetApp\Snap_Creator_Framework\scAgent4.1.x\etc\allowed_commands.config`

To allow supplemental commands on the Agent, open `allowed_commands.config` in an editor. Enter each command on its own line, exactly as you would enter the command at a command prompt. Case is significant. Make sure to specify the fully qualified pathname. Enclose the pathname in quotation marks if it contains spaces. For example:

```
"C:\Program Files\NetApp\SnapDrive\sdcli.exe"  
myscript.bat
```

Restart the Agent for the changes to take effect.



For security reasons, you should not use a wildcard entry (*) to allow all commands.

Adding supplemental commands to the configuration

You can add supplemental commands to your configuration after you create the configuration file. You can run the commands on the Snap Creator Server or Agent.

To run a supplemental command on the Agent, you should already have added the command to the `allowed_commands.config` file on the Agent.

By default, supplemental commands run on the Agent. You can run a supplemental command on the Server by prepending the command with the text `SERVER`, followed by a colon (:). For example, `SERVER:C:\myscript.bat`. There is no requirement to allow the command on the Server.

You can use either the Snap Creator GUI or the Snap Creator CLI to add commands to your backup and restore configuration.



This guide shows how to use the GUI to add commands. For information on how to use the CLI, see the [Snap Creator Framework 4.1.2 Administration Guide](#).

1. In the Profiles and Configurations pane, select the configuration file and click the **Commands** tab.

The following command types are available:

Command type	Description
Application Quiesce	For non-plug-in use only. Ignore this command type.
Application Un-Quiesce	For non-plug-in use only. Ignore this command type.
Pre Exit	Use this type to run commands that tell Snap Creator what to do after a fatal error.
Snapshot Copy Create	Use this type to run your own Snapshot copy create commands.



Only a subset of the supported commands are available in the GUI. For information on the APP, ARCHIVE, MOUNT/UNMOUNT, and POST commands, see the [Snap Creator Framework 4.1.2 Administration Guide](#).

2. On the **Commands** tab, scroll to the section for the command type you want to use and click **Add**.
3. Type over the text **Add Command Here** to enter the command.

To use SnapDrive for Windows to create a backup, you might enter the following in the section for the Snapshot Copy Create command type:

```
"C:\Program Files\NetApp\SnapDrive\sdcli.exe" snap create -s %SNAME-
%SNAP_TYPE_%SNAP_TIME -D F G H
```

where:

- "C:\Program Files\NetApp\SnapDrive\sdcli.exe" is the default installation path for the SnapDrive CLI.
- %SNAME-%SNAP_TYPE_%SNAP_TIME specifies that the Snapshot copy name be formed from the configuration file name, the Snapshot policy (hourly, daily, or monthly), and the time and date the Snapshot copy was created.
- D is the switch and F G H are the mount points for the data to be backed up. TIP: To run the command on the Server, prepend the command with the text SERVER, followed by a colon (:).

4. When you are satisfied with your entry, press **Enter**.
5. Repeat steps [#STEP_3F9C83DD05D84075AD0277213FD67C56](#) through [#STEP_FBEDD7AE105F42138EB35315EA9FA7CC](#) to add another command.
6. Click **Save** in the Configuration Content pane to save your changes.

Cleaning up archived copies of Domino transaction logs

If you are using Domino transaction logging, the IBM Domino plug-in archives copies of Domino transaction logs to the changeinfo directory for use in up-to-the-minute restore operations. You need to enable transaction log management before Snap Creator will clean up the copies of the transaction logs you no longer need.

The Domino plug-in stores changeinfo files and archived copies of Domino transaction logs in the changeinfo

directory. The plug-in automatically cleans up .info files based on the retention policy for the configuration. It does not clean up unneeded copies of transaction logs unless you explicitly enable transaction log management in Snap Creator.

In setting up transaction log management, make sure to strike an appropriate balance between the number of archived copies of transaction logs you want to retain for up-to-the-minute restore operations and the size of the volume containing the changeinfo directory.



Do not set the Archive Log directory parameter to the path of Domino transaction logs. Doing so can damage your Domino environment.

1. In the Profiles and Configurations pane, select the configuration file and click the **Archive Log Management** tab.
2. In the **Archive Log Management** tab, specify the following values for the transaction log management settings:

Parameter	Setting	Description
Archive Log Enable	Y	Enables transaction log cleanup.
Archive Log Retention	Enter a value greater than or equal to the number of days Snapshot copies are retained.	The number of days to retain transaction logs.
Archive Log Directory	changeinfo/logs	The directory to clean up. Important: Do not specify the path of Domino transaction logs. Doing so can damage your Domino environment.
Archive Log Extension		The extension for copies of Domino transaction log files.
Archive Log Recursive Search	N	The Snap Creator plug-in puts .txn files in the logs subdirectory of the changeinfo directory, so a recursive search is not required.

3. Click **Save** in the Configuration Content pane to save your changes.

Backing up the changeinfo directory

If you plan to back up the changeinfo directory, you must configure the volume containing the directory as a metadata volume. Doing so tells the IBM Domino plug-in to create a Snapshot copy of the changeinfo volume *after* creating the Snapshot copy for database files.

You should already have identified the changeinfo volume as a volume to be backed up when you created the configuration file. For more information, see step [task using the gui to create a configuration](#).

You use the META_DATA_VOLUME parameter in the configuration file to identify the changeinfo volume as a metadata volume. The parameter is not available in the GUI.

1. Open the configuration file in a text editor.

Configuration files reside in the Snap Creator installation directory, in a subdirectory named for the profile. On a Windows host, for example, C:\Program Files\NetApp\Snap_Creator_Framework\scServer4.1.x\engine\configs\Domino\Fuji15.conf, where Domino is the name of the profile and Fuji15.conf is the name of the configuration file.

2. Enter the name of the changeinfo volume in the META_DATA_VOLUME parameter.

The changeinfo volume should already be listed in the VOLUMES parameter.

The following example shows how to configure Fuji15_DomChangeInfo as a metadata volume:

```
VOLUMES=domino_vserver:Fuji15_DomDAOS,Fuji15_DomChangeInfo,  
Fuji15_DomTxn,Fuji15_DomData  
META_DATA_VOLUME=domino_vserver:Fuji15_DomChangeInfo
```

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