



# Managing the Configuration with Snapshots

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## About Configuration Management and Snapshots

You can back up and restore your system configuration by exporting and importing configuration archives (snapshots) to and from a local controller-managed folder. By exporting snapshots before and after making configuration changes, you have the ability to roll back configuration changes that were applied between two snapshots.

You can also upload and download the snapshot files to and from a remote server.

Each snapshot action (export, import, rollback, upload, and download) is performed by creating a policy for the action and then triggering the action as a job. Export actions can also be scheduled to run at a future time or periodically. Import, export, and rollback jobs cannot run in parallel. If a job is already running, triggering a new job will fail.

## Exporting a Snapshot

### Before you begin

If you want to export snapshots according to a schedule, configure a scheduler before configuring the export policy.

### SUMMARY STEPS

1. **configure**
2. **[no] snapshot export** *policy-name*
3. **format** {xml | json}
4. (Optional) **[no] schedule** *schedule-name*
5. (Optional) **[no] target** [infra | fabric | *tenant-name*]

6. (Optional) **[no] remote path** *remote-path-name*
7. **end**
8. **trigger snapshot export** *policy-name*

## DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>configure</b> <b>Example:</b> apicl# <b>configure</b>	Enters global configuration mode.
<b>Step 2</b>	<b>[no] snapshot export</b> <i>policy-name</i> <b>Example:</b> apicl(config)# <b>snapshot export myExportPolicy</b>	Creates a policy for exporting snapshots.
<b>Step 3</b>	<b>format {xml   json}</b> <b>Example:</b> apicl(config-export)# <b>format json</b>	Specifies the data format for the exported configuration file. The default is
<b>Step 4</b>	(Optional) <b>[no] schedule</b> <i>schedule-name</i> <b>Example:</b> apicl(config-export)# <b>schedule EveryEightHours</b>	Specifies an existing scheduler for exporting snapshots.
<b>Step 5</b>	(Optional) <b>[no] target [infra   fabric   tenant-name]</b> <b>Example:</b> apicl(config-export)# <b>target tenantExampleCorp</b>	Assigns the target of the export, which can be fabric, infra, a specific tenant, or none. If no target is specified, all configuration information is exported. The default is no target.
<b>Step 6</b>	(Optional) <b>[no] remote path</b> <i>remote-path-name</i> <b>Example:</b> apicl(config-export)# <b>remote path myBackupServer</b>	Specifies the name of a configured remote path to which the file will be sent. If no remote path is specified, the file is exported locally to a folder in the controller. The default is no remote path.
<b>Step 7</b>	<b>end</b> <b>Example:</b> apicl(config-export)# <b>end</b>	Returns to EXEC mode.
<b>Step 8</b>	Required: <b>trigger snapshot export</b> <i>policy-name</i> <b>Example:</b> apicl# <b>trigger snapshot export myExportPolicy</b>	Executes the snapshot export task. If the export policy is configured with a scheduler, this step is unnecessary unless you want an immediate export.

### Examples

This example shows how to configure the periodic export of a JSON-format snapshot file for a specific tenant configuration.

```
apicl# configure
```

```

apic1(config)# snapshot export myExportPolicy
apic1(config-export)# format json
apic1(config-export)# target tenantExampleCorp
apic1(config-export)# schedule EveryEightHours

```

## Importing a Snapshot

### SUMMARY STEPS

1. **configure**
2. **[no] snapshot import** *policy-name*
3. **file** *filename*
4. **action** {merge | replace}
5. **[no] mode** {atomic | best-effort}
6. (Optional) **[no] remote path** *remote-path-name*
7. **end**
8. **trigger snapshot import** *policy-name*

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>configure</b>  <b>Example:</b> apic1# <b>configure</b>	Enters global configuration mode.
<b>Step 2</b>	<b>[no] snapshot import</b> <i>policy-name</i>  <b>Example:</b> apic1(config)# <b>snapshot import myImportPolicy</b>	Creates a policy for importing snapshots.
<b>Step 3</b>	<b>file</b> <i>filename</i>  <b>Example:</b> apic1(config-import)# <b>file</b> <b>ce2_DailyAutoBackup-2015-11-21T01-00-17.tar.gz</b>	Specifies the name of the file to be imported.
<b>Step 4</b>	<b>action</b> {merge   replace}  <b>Example:</b> apic1(config-import)# <b>action replace</b>	Specifies whether the imported configuration settings will be merged with the current settings or whether the imported configuration will completely replace the current configuration.
<b>Step 5</b>	<b>[no] mode</b> {atomic   best-effort}  <b>Example:</b> apic1(config-import)# <b>mode atomic</b>	Specifies how the import process handles configuration errors when applying the imported settings. The best-effort import mode allows skipping individual configuration errors in the archive, while atomic mode cancels the import upon any configuration error.

	Command or Action	Purpose
<b>Step 6</b>	(Optional) <b>[no] remote path</b> <i>remote-path-name</i> <b>Example:</b> apicl(config-import)# <b>remote path</b> myBackupServer	Specifies the name of a configured remote path from which the file will be imported. If no remote path is specified, the file is imported locally from a folder in the controller. The default is no remote path.
<b>Step 7</b>	<b>end</b> <b>Example:</b> apicl(config-import)# <b>end</b>	Returns to EXEC mode.
<b>Step 8</b>	Required: <b>trigger snapshot import</b> <i>policy-name</i> <b>Example:</b> apicl# <b>trigger snapshot import</b> myImportPolicy	Executes the snapshot import task.

### Examples

This example shows how to configure and execute the importing of a snapshot file to replace the current configuration.

```
apicl# show snapshot files
File      : ce2_DailyAutoBackup-2015-11-21T01-00-17.tar.gz
Created   : 2015-11-21T01:00:21.167+00:00
Root      :
Size      : 22926

apicl# configure
apicl(config)# snapshot import myImportPolicy
apicl(config-import)# file ce2_DailyAutoBackup-2015-11-21T01-00-17.tar.gz
apicl(config-import)# action replace
apicl(config-import)# mode atomic
apicl(config-import)# end
apicl# trigger snapshot import myImportPolicy
```

## Rollback Configuration Using Snapshots

The rollback feature provides an "undo" function that reverts changes made between one snapshot archive and a later snapshot archive. Only locally stored snapshot files are supported for rollback. You can optionally enable the preview mode to generate and view a rollback before implementing it.

### SUMMARY STEPS

1. **configure**
2. **[no] snapshot rollback** *policy-name*
3. **first-file** *filename*
4. **second-file** *filename*
5. **[no] preview**
6. **end**

## 7. trigger snapshot rollback *policy-name*

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<b>configure</b> <b>Example:</b> apic1# <b>configure</b>	Enters global configuration mode.
Step 2	<b>[no] snapshot rollback <i>policy-name</i></b> <b>Example:</b> apic1(config)# <b>snapshot rollback myRollbackPolicy</b>	Creates a policy for rollback using snapshots.
Step 3	<b>first-file <i>filename</i></b> <b>Example:</b> apic1(config-rollback)# <b>first-file</b> <b>ce2_DailyAutoBackup-2015-11-21T01-00-17.tar.gz</b>	Specifies the name of the earlier file.
Step 4	<b>second-file <i>filename</i></b> <b>Example:</b> apic1(config-rollback)# <b>second-file</b> <b>ce2_DailyAutoBackup-2015-11-21T09-00-21.tar.gz</b>	Specifies the name of the later file.
Step 5	<b>[no] preview</b> <b>Example:</b> apic1(config-rollback)# <b>preview</b>	(Optional) Specifies that the rollback changes are generated and previewed but not applied. When preview mode is enabled, no changes to the configuration are made. After previewing rollback changes, use the <b>no preview</b> command to exit preview mode and enable the rollback to be applied when you reenter the <b>trigger snapshot rollback</b> commands.
Step 6	<b>end</b> <b>Example:</b> apic1(config-rollback)# <b>end</b>	Returns to EXEC mode.
Step 7	Required: <b>trigger snapshot rollback <i>policy-name</i></b> <b>Example:</b> apic1# <b>trigger snapshot rollback myRollbackPolicy</b>	Executes the snapshot rollback task.

### Examples

This example shows how to configure and execute a rollback without previewing it first.

```
apic1# show snapshot files
File      : ce2_DailyAutoBackup-2015-11-21T01-00-17.tar.gz
Created   : 2015-11-21T01:00:21.167+00:00
Root      :
Size      : 22926
```

```

File      : ce2_DailyAutoBackup-2015-11-21T09-00-21.tar.gz
Created   : 2015-11-21T09:00:24.025+00:00
Root      :
Size      : 23588

apicl# configure
apicl(config)# snapshot rollback myRollbackPolicy
apicl(config-rollback)# first-file ce2_DailyAutoBackup-2015-11-21T01-00-17.tar.gz
apicl(config-rollback)# second-file ce2_DailyAutoBackup-2015-11-21T09-00-21.tar.gz
apicl(config-rollback)# end
apicl# trigger snapshot rollback myRollbackPolicy

```

## Uploading or Downloading a Snapshot File to a Remote Path

You can upload snapshot archive files from local storage to a remote path. You can also download snapshot archive files from the remote path.

### Before you begin

You must configure a remote path to receive the file. See [Configuring a Remote Path for File Export](#).

### SUMMARY STEPS

1. **configure**
2. **[no] snapshot {upload | download} policy-name remote-path-name**
3. **remote path remote-path-name**
4. **file filename**
5. **end**
6. **trigger snapshot {upload | download} policy-name**

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>configure</b>  <b>Example:</b> apicl# <b>configure</b>	Enters global configuration mode.
<b>Step 2</b>	<b>[no] snapshot {upload   download} policy-name remote-path-name</b>  <b>Example:</b> apicl(config)# <b>snapshot upload myUpPolicy</b>	Creates a policy for uploading or downloading snapshot files with a remote path.
<b>Step 3</b>	<b>remote path remote-path-name</b>  <b>Example:</b> apicl(config-upload)# <b>remote path myBackupServer</b>	Specifies the name of a configured remote path to which the snapshot file will be sent.

	Command or Action	Purpose
Step 4	<b>file</b> <i>filename</i> <b>Example:</b> <pre>apic1(config-upload)# file ce2_DailyAutoBackup-2015-11-21T01-00-17.tar.gz</pre>	Specifies the name of the snapshot file to be sent.
Step 5	<b>end</b> <b>Example:</b> <pre>apic1(config-upload)# end</pre>	Returns to EXEC mode.
Step 6	<b>trigger snapshot {upload   download} policy-name</b> <b>Example:</b> <pre>apic1# trigger snapshot upload myUpPolicy</pre>	Executes the snapshot upload or download task.

### Examples

This example shows how to configure and execute the uploading of a snapshot file to a remote path.

```
apic1# show snapshot files
File      : ce2_DailyAutoBackup-2015-11-21T01-00-17.tar.gz
Created   : 2015-11-21T01:00:21.167+00:00
Root      :
Size      : 22926

apic1# configure
apic1(config)# snapshot upload myUpPolicy
apic1(config-upload)# remote path myBackupServer
apic1(config-upload)# file ce2_DailyAutoBackup-2015-11-21T01-00-17.tar.gz
apic1(config-upload)# end
apic1# trigger snapshot upload myUpPolicy
```

## Managing Snapshot Files and Jobs

The following commands are available for managing snapshot files and jobs.

Command	Description
<b>clear snapshot file</b> <i>filename</i>	Removes a snapshot file from the local storage.
<b>clear snapshot job</b> <i>job-name</i>	Removes a snapshot job from the history.
<b>show snapshot files</b>	Displays the snapshot files in local storage.
<b>show snapshot jobs</b>	Displays recent snapshot tasks.
<b>show snapshot active jobs</b>	Displays currently-active snapshot tasks.

## Examples

This example shows how to display snapshot files and the snapshot job history.

```
apicl# show snapshot files
File      : ce2_DailyAutoBackup-2015-11-21T01-00-17.tar.gz
Created   : 2015-11-21T01:00:21.167+00:00
Root      :
Size      : 22926

File      : ce2_DailyAutoBackup-2015-11-21T09-00-21.tar.gz
Created   : 2015-11-21T09:00:24.025+00:00
Root      :
Size      : 23588

apicl# show snapshot jobs
Type      : export
Run       : 2015-11-21T01-00-17
State     : success
Details   : Success
File Name : ce2_DailyAutoBackup-2015-11-21T01-00-17.tar.gz

Type      : export
Run       : 2015-11-21T09-00-21
State     : success
Details   : Success
File Name : ce2_DailyAutoBackup-2015-11-21T09-00-21.tar.gz

Type      : rollback
Run       : 2015-11-22T00-25-06
State     : running
Details   :
File Name : not applicable

apicl# clear snapshot job 2015-11-22T00-25-06
```