# Rollback

A rollback allows you to take a snapshot, or user checkpoint, of the Cisco NX-OS configuration and then reapply that configuration to your device at any point without having to reload the device. A rollback allows any authorized administrator to apply this checkpoint configuration without requiring expert knowledge of the features configured in the checkpoint.


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## Overview

Cisco NX-OS automatically creates system checkpoints. You can use either a user or system checkpoint to perform a rollback.

You can create a checkpoint copy of the current running configuration at any time. Cisco NX-OS saves this checkpoint as an ASCII file which you can use to roll back the running configuration to the checkpoint configuration at a future time. You can create multiple checkpoints to save different versions of your running configuration.

When you roll back the running configuration, you can trigger the following rollback types:

- atomic—Implement a rollback only if no errors occur.
- best-effort—Implement a rollback and skip any errors.
- stop-at-first-failure—Implement a rollback that stops if an error occurs.

The default rollback type is atomic.

When you are ready to roll back to a checkpoint configuration, you can view the changes that will be applied to your current running configuration before committing to the rollback operation. If an error occurs during the rollback operation, you can choose to cancel the operation, or ignore the error and proceed with the rollback. If you cancel the operation, Cisco NX-OS provides a list of changes already applied before the error occurred. You need to clean up these changes manually.

### Supported Features

- High Availability -

  Whenever a checkpoint is created using the checkpoint or checkpoint checkpoint_name commands, the checkpoint is synchronized to the standby unit.

  A rollback remembers the states of the checkpoint operation, so if the checkpoint operation is interrupted and the system is left in an inconsistent state, a rollback can complete the checkpoint operation (synchronize the checkpoint with the standby unit) before proceeding with the rollback operation.

  Your checkpoint files are still available after a process restart or supervisor switchover. Even if there is an interruption during the process restart or supervisor switchover, the checkpoint will complete successfully before proceeding with the operation. In a supervisor switchover, the checkpoint is completed on the new active unit.

  If a process restart or supervisor switchover occurs during a rollback operation, after the restart or switchover completes, the rollback will resume from its previous state and complete successfully.

- Virtualization -

  Cisco NX-OS creates a checkpoint of the running configuration. You can create different checkpoint copies.

### Automatically Generated System Checkpoints

The Cisco NX-OS software automatically generates system checkpoints to help you avoid a loss of configuration information. System checkpoints are generated by the following events:

- Disabling an enabled feature with the **no feature** command
- Removing an instance of a Layer 3 protocol, such as with the **no router bgp** command or the **no ip pim sparse-mode** command
- License expiration of a feature

If one of these events causes system configuration changes, the feature software creates a system checkpoint that you can use to roll back to the previous system configuration. The system generated checkpoint filenames begin with “system-” and include the feature name. For example, the first time that you disable the EIGRP feature, the system creates the checkpoint named system-fm-__inst_1__eigrp.

### Default Settings

This table lists the default settings for rollback parameters.

| Parameters | Default |
|---|---|
| Rollback type | Atomic |

# Prerequisites for Rollbacks

- To configure rollback, you must have network-admin user privileges.

- After you run **reload ascii**, run **copy running-config startup-config** before you create a checkpoint, even if the running and startup configurations appear identical. Also run **copy running-config startup-config** after **write erase** and **reload** before you create a checkpoint.

# Guidelines and Limitations

- Only one user can perform a checkpoint, rollback, or copy the running configuration to the startup configuration at the same time.
- After the system executes the **write erase** and **reload** command, checkpoints are deleted. You can use the **clear checkpoint database** command to clear out all checkpoint files.
- Although a rollback is not supported for checkpoints across software versions, users can perform a rollback at their own discretion and can use the best-effort mode to recover from errors.
- When checkpoints are created on bootflash, differences with the running-system configuration cannot be performed before performing the rollback, and the system reports “No Changes.”
- Checkpoints created using the **checkpoint** and **checkpoint** *checkpoint_name* commands are present upon a switchover.
- Checkpoints are present upon reload unless a **write-erase** command is issued before a reload.
- A rollback to files on bootflash is supported only on files that are created using the **checkpoint** *checkpoint_name* command and not on any other type of ASCII file.
- Rollback is not supported in the context of auto configurations. Checkpoints do not store auto configurations. Therefore, after a rollback is performed, the corresponding auto configurations will not be present.
- Multiple port VLAN mappings configured on an interface during a rollback operation cause the rollback feature to fail.

### Checkpoint Filename Guidelines

**Note** To configure rollback, you must have network-admin user privileges.

- You can create up to ten checkpoint copies.
- Your checkpoint filenames must be 80 characters or less.
- You cannot start a checkpoint filename with the word *system* .
- You can start a checkpoint filename with the word *auto* .
- You can name a checkpoint file *summary* or any abbreviation of the word *summary* .
- Checkpoint names must be unique. You cannot overwrite previously saved checkpoints with the same name.

# Configuration

### Verify Configuration

**Note** Be aware that the Cisco NX-OS commands may differ from the Cisco IOS commands.

To display the rollback configuration information, perform one of the following tasks:

| Command | Purpose |
|---|---|
| **show checkpoint** *name* [**all**] | Displays the contents of the checkpoint name. |
| **show checkpoint all** [**user** \| **system**] | Displays the contents of all checkpoints. You can limit the displayed checkpoints to user or system generated checkpoints. |
| **show checkpoint summary** [**user** \| **system**] | Displays a list of all checkpoints. You can limit the displayed checkpoints to user or system generated checkpoints. |
| **show diff rollback-patch** {**checkpoint** *src-cp-name* \| **running-config** \| **startup-config** \| **file** *source-file*} {**checkpoint** *dest-cp-name* \| **running-config** \| **startup-config** \| **file** *dest-file*} | Displays the differences between the source and destination checkpoint selections. |
| **show rollback log** [**exec** \| **verify**] | Displays the contents of the rollback log. |

Use the **clear checkpoint database** command to delete all checkpoint files.

### Configuration Example

This example shows how to create a checkpoint file and then implements a best-effort rollback to a user checkpoint name:

```
checkpoint stable
rollback running-config checkpoint stable best-effort
```

# Create Checkpoint

You can create up to ten checkpoints of your configuration.

### Procedure

**Step 1** Create a checkpoint of the running configuration to either a user checkpoint name or a file using the command [ **no** ] **checkpoint** {[ *cp-name* ] [ **description** *descr* ] | **file** *file-name* }

**Example:**

```
switch# checkpoint stable
```

The checkpoint name can be any alphanumeric string up to 80 characters but cannot contain spaces. If you do not provide a name, Cisco NX-OS sets the checkpoint name to user-checkpoint- *number* where *number* is from 1 to 10.

The description can contain up to 80 alphanumeric characters, including spaces.

You can use the **no** form of the **checkpoint** command to remove a checkpoint name. Use the **delete** command to remove a checkpoint file.

**Step 2** Display the contents of the checkpoint name using the command **show checkpoint** *cp-name* [ **all** ]

**Example:**

```
switch# show checkpoint stable
```

This is an optional step.

# Implement Rollback

You can implement a rollback to a checkpoint name or file. Before you implement a rollback, you can view the differences between source and destination checkpoints that reference current or saved configurations.

**Note** If you make a configuration change during an atomic rollback, the rollback will fail.

**Procedure**

**Step 1** Display the differences between the source and destination checkpoint selections using the command **show diff rollback-patch** { **checkpoint** *src-cp-name* | **running-config** | **startup-config** | **file** *source-file* } { **checkpoint** *dest-cp-name* | **running-config** | **startup-config** | **file** *dest-file* }

**Example:**

```
switch# show diff rollback-patch checkpoint stable running-config
```

**Step 2** Create a rollback to the specified checkpoint name or file using the command **rollback running-config** { **checkpoint** *cp-name* | **file** *cp-file* } [ **atomic** | **best-effort** | **stop-at-first-failure** ]

**Example:**

```
switch# rollback running-config checkpoint stable
```

You can implement the following rollback types:

- **atomic** —Implement a rollback only if no errors occur.
- **best-effort** —Implement a rollback and skip any errors.
- **stop-at-first-failure** —Implement a rollback that stops if an error occurs.

The default is atomic.

This example shows how to implement a rollback to a user checkpoint name.

# Additional References

Configuration files - *Cisco Nexus 9000 Series NX-OS Fundamentals Configuration Guide*