



Working with Configuration Files

This chapter contains the following sections:

- [About Configuration Files, page 1](#)
- [Licensing Requirements for Configuration Files, page 2](#)
- [Managing Configuration Files, page 2](#)
- [Verifying the Device Configuration, page 12](#)
- [Examples of Working with Configuration Files, page 12](#)
- [Additional References for Configuration Files, page 13](#)

About Configuration Files

Configuration files contain the Cisco NX-OS software commands used to configure the features on a Cisco NX-OS device. Commands are parsed (translated and executed) by the Cisco NX-OS software when the system is booted (from the startup-config file) or when you enter commands at the CLI in a configuration mode.

To change the startup configuration file, you can either save the running-configuration file to the startup configuration using the **copy running-config startup-config** command or copy a configuration file from a file server to the startup configuration.

Types of Configuration Files

The Cisco NX-OS software has two types of configuration files, running configuration and startup configuration. The device uses the startup configuration (startup-config) during device startup to configure the software features. The running configuration (running-config) contains the current changes that you make to the startup-configuration file. The two configuration files can be different. You might want to change the device configuration for a short time period rather than permanently. In this case, you would change the running configuration by using commands in global configuration mode but not save the changes to the startup configuration.

To change the running configuration, use the **configure terminal** command to enter global configuration mode. As you use the Cisco NX-OS configuration modes, commands generally are executed immediately

and are saved to the running configuration file either immediately after you enter them or when you exit a configuration mode.

To change the startup-configuration file, you can either save the running configuration file to the startup configuration or download a configuration file from a file server to the startup configuration.

Related Topics

[Saving the Running Configuration to the Startup Configuration, on page 2](#)

[Downloading the Startup Configuration From a Remote Server, on page 4](#)

Licensing Requirements for Configuration Files

The following table shows the licensing requirements for this feature:

Product	License Requirement
Cisco NX-OS	Configuration files require no license. Any feature not included in a license package is bundled with the nx-os image and is provided at no extra charge to you. For a complete explanation of the Cisco NX-OS licensing scheme, see the <i>Cisco NX-OS Licensing Guide</i> .

Managing Configuration Files

This section describes how to manage configuration files.

Saving the Running Configuration to the Startup Configuration

You can save the running configuration to the startup configuration to save your changes for the next time you that reload the device.

Procedure

	Command or Action	Purpose
Step 1	show running-config Example: switch# show running-config	(Optional) Displays the running configuration.
Step 2	copy running-config startup-config Example: switch# copy running-config startup-config	Copies the running configuration to the startup configuration.

Copying a Configuration File to a Remote Server

You can copy a configuration file stored in the internal memory to a remote server as a backup or to use for configuring other Cisco NX-OS devices.

Procedure

	Command or Action	Purpose
Step 1	copy running-config <i>scheme://server[/url /]filename</i> Example: <pre>switch# copy running-config tftp://10.10.1.1/sw1-run-config.bak</pre>	Copies the running-configuration file to a remote server. For the <i>scheme</i> argument, you can enter tftp: , ftp: , scp: , or sftp: . The <i>server</i> argument is the address or name of the remote server, and the <i>url</i> argument is the path to the source file on the remote server. The <i>server</i> , <i>url</i> , and <i>filename</i> arguments are case sensitive.
Step 2	copy startup-config <i>scheme://server[/url /]filename</i> Example: <pre>switch# copy startup-config tftp://10.10.1.1/sw1-start-config.bak</pre>	Copies the startup-configuration file to a remote server. For the <i>scheme</i> argument, you can enter tftp: , ftp: , scp: , or sftp: . The <i>server</i> argument is the address or name of the remote server, and the <i>url</i> argument is the path to the source file on the remote server. The <i>server</i> , <i>url</i> , and <i>filename</i> arguments are case sensitive.

This example shows how to copy the configuration file to a remote server:

```
switch# copy running-config
tftp://10.10.1.1/sw1-run-config.bak
switch# copy startup-config
tftp://10.10.1.1/sw1-start-config.bak
```

Downloading the Running Configuration From a Remote Server

You can configure your Cisco NX-OS device by using configuration files that you created on another Cisco NX-OS device and uploaded to a remote server. You then download the file from the remote server to your device using TFTP, FTP, Secure Copy (SCP), or Secure Shell FTP (SFTP) to the running configuration.

Before You Begin

Ensure that the configuration file that you want to download is in the correct directory on the remote server.

Ensure that the permissions on the file are set correctly. Permissions on the file should be set to world-read.

Ensure that your device has a route to the remote server. Your device and the remote server must be in the same subnetwork if you do not have a router or a default gateway to route traffic between subnets.

Check connectivity to the remote server using the **ping** or **ping6** command.

Procedure

	Command or Action	Purpose
Step 1	copy <i>scheme</i>://<i>server</i>[/<i>url</i>]/<i>filename</i> running-config Example: <pre>switch# copy tftp://10.10.1.1/my-config running-config</pre>	Downloads the running-configuration file from a remote server. For the <i>scheme</i> argument, you can enter tftp: , ftp: , scp: , or sftp: . The <i>server</i> argument is the address or name of the remote server, and the <i>url</i> argument is the path to the source file on the remote server. The <i>server</i> , <i>url</i> , and <i>filename</i> arguments are case sensitive.
Step 2	show running-config Example: <pre>switch# show running-config</pre>	(Optional) Displays the running configuration.
Step 3	copy running-config startup-config Example: <pre>switch# copy running-config startup-config</pre>	(Optional) Copies the running configuration to the startup configuration.
Step 4	show startup-config Example: <pre>switch# show startup-config</pre>	(Optional) Displays the startup configuration.

Related Topics
[Copying Files](#)

Downloading the Startup Configuration From a Remote Server

You can configure your Cisco NX-OS device by using configuration files that you created on another Cisco NX-OS device and uploaded to a remote server. You then download the file from the remote server to your device using TFTP, FTP, Secure Copy (SCP), or Secure Shell FTP (SFTP) to the startup configuration.

**Caution**

This procedure disrupts all traffic on the Cisco NX-OS device.

Before You Begin

Log in to a session on the console port.

Ensure that the configuration file that you want to download is in the correct directory on the remote server.

Ensure that the permissions on the file are set correctly. Permissions on the file should be set to world-read.

Ensure that your device has a route to the remote server. Your device and the remote server must be in the same subnetwork if you do not have a router or a default gateway to route traffic between subnets.

Check connectivity to the remote server using the **ping** or **ping6** command.

Procedure

	Command or Action	Purpose
Step 1	write erase Example: <pre>switch# write erase</pre>	Erases the startup configuration file.
Step 2	reload Example: <pre>switch# reload This command will reboot the system. (y/n)? [n] y ... Enter the password for "admin": <password> Confirm the password for "admin": <password> ... Would you like to enter the basic configuration dialog (yes/no): n switch#</pre>	Reloads the Cisco NX-OS device. Note Do not use the setup utility to configure the device.
Step 3	copy <i>scheme</i>://server/[url /]filename running-config Example: <pre>switch# copy tftp://10.10.1.1/my-config running-config</pre>	Downloads the running configuration file from a remote server. For the <i>scheme</i> argument, you can enter tftp: , ftp: , scp: , or sftp: . The <i>server</i> argument is the address or name of the remote server, and the <i>url</i> argument is the path to the source file on the remote server. The <i>server</i> , <i>url</i> , and <i>filename</i> arguments are case sensitive.
Step 4	copy running-config startup-config Example: <pre>switch# copy running-config startup-config</pre>	Saves the running configuration file to the startup configuration file.
Step 5	show startup-config Example: <pre>switch# show startup-config</pre>	(Optional) Displays the running configuration.

Related Topics

[Copying Files](#)

Copying Configuration Files to an External Flash Memory Device

You can copy configuration files to an external flash memory device as a backup for later use.

Before You Begin

Insert the external Flash memory device into the active supervisor module.

Procedure

	Command or Action	Purpose
Step 1	dir {usb1: usb2:}[directory/] Example: switch# dir usb1:	(Optional) Displays the files on the external flash memory device.
Step 2	copy running-config {usb1: usb2:}[directory/]filename Example: switch# copy running-config usb1:dsn-running-config.cfg	Copies the running configuration to an external flash memory device. The <i>filename</i> argument is case sensitive.
Step 3	copy startup-config {usb1: usb2:}[directory/]filename Example: switch# copy startup-config usb1:dsn-startup-config.cfg	Copies the startup configuration to an external flash memory device. The <i>filename</i> argument is case sensitive.

Related Topics

[Copying Files](#)

Copying the Running Configuration from an External Flash Memory Device

You can configure your device by copying configuration files created on another Cisco NX-OS device and saved to an external flash memory device.

Before You Begin

Insert the external flash memory device into the active supervisor module.

Procedure

	Command or Action	Purpose
Step 1	dir {usb1: usb2:}[<i>directory/</i>] Example: switch# dir usb1:	(Optional) Displays the files on the external flash memory device.
Step 2	copy {usb1: usb2:}[<i>directory/</i>] <i>filename</i> running-config Example: switch# copy usb1:dsn-config.cfg running-config	Copies the running configuration from an external flash memory device. The <i>filename</i> argument is case sensitive.
Step 3	show running-config Example: switch# show running-config	(Optional) Displays the running configuration.
Step 4	copy running-config startup-config Example: switch# copy running-config startup-config	(Optional) Copies the running configuration to the startup configuration.
Step 5	show startup-config Example: switch# show startup-config	(Optional) Displays the startup configuration.

Related Topics

[Copying Files](#)

Copying the Startup Configuration From an External Flash Memory Device

You can recover the startup configuration on your device by downloading a new startup configuration file saved on an external flash memory device.

Before You Begin

Insert the external flash memory device into the active supervisor module.

Procedure

	Command or Action	Purpose
Step 1	dir {usb1: usb2:}[directory/] Example: switch# dir usb1:	(Optional) Displays the files on the external flash memory device.
Step 2	copy {usb1: usb2:}[directory /]filename startup-config Example: switch# copy usb1:dsn-config.cfg startup-config	Copies the startup configuration from an external flash memory device. The <i>filename</i> argument is case sensitive.
Step 3	show startup-config Example: switch# show startup-config	(Optional) Displays the startup configuration.

Related Topics[Copying Files](#)

Copying Configuration Files to an Internal File System

You can copy configuration files to the internal memory as a backup for later use.

Procedure

	Command or Action	Purpose
Step 1	copy running-config [filesystem:][directory/] [directory/]filename Example: switch# copy running-config bootflash:sw1-run-config.bak	Copies the running-configuration file to internal memory. The <i>filesystem</i> , <i>directory</i> , and <i>filename</i> arguments are case sensitive.
Step 2	copy startup-config [filesystem:][directory/] [directory/]filename Example: switch# copy startup-config bootflash:sw1-start-config.bak	Copies the startup-configuration file to internal memory. The <i>filesystem</i> , <i>directory</i> , and <i>filename</i> arguments are case sensitive.

Related Topics[Copying Files](#)

Rolling Back to a Previous Configuration

Problems, such as memory corruption, can occur that make it necessary for you to recover your configuration from a backed up version.

**Note**

Each time that you enter a **copy running-config startup-config** command, a binary file is created and the ASCII file is updated. A valid binary configuration file reduces the overall boot time significantly. A binary file cannot be uploaded, but its contents can be used to overwrite the existing startup configuration. The **write erase** command clears the binary file.

Procedure

	Command or Action	Purpose
Step 1	write erase Example: switch# write erase	Clears the current configuration of the switch.
Step 2	reload Example: switch# reload	Restarts the device. You will be prompted to provide an nx-os image file for the device to boot and run.
Step 3	copy configuration-file running-configuration Example: switch# copy bootflash:start-config.bak running-configuration	Copies a previously saved configuration file to the running configuration. Note The <i>configuration-file</i> filename argument is case sensitive.
Step 4	copy running-config startup-config Example: switch# copy running-config startup-config	Copies the running configuration to the start-up configuration.

Removing the Configuration for a Missing Module

When you remove an I/O module from the chassis, you can also remove the configuration for that module from the running configuration.

**Note**

You can only remove the configuration for an empty slot in the chassis.

Before You Begin

Remove the I/O module from the chassis.

Procedure

	Command or Action	Purpose
Step 1	show hardware Example: switch# show hardware	(Optional) Displays the installed hardware for the device.
Step 2	purge module <i>slot</i> running-config Example: switch# purge module 3 running-config	Removes the configuration for a missing module from the running configuration.
Step 3	copy running-config startup-config Example: switch# copy running-config startup-config	(Optional) Copies the running configuration to the startup configuration.

Erasing a Configuration

You can erase the configuration on your device to return to the factory defaults.

You can erase the following configuration files saved in the persistent memory on the device:

- Startup
- Boot
- Debug

The **write erase** command erases the entire startup configuration, except for the following:

- Boot variable definitions
- The IPv4 configuration on the mgmt0 interface, including the following:
 - Address
 - Subnet mask
 - Route address in the management VRF

To remove the boot variable definitions and the IPv4 configuration on the mgmt0 interface, use the **write erase boot** command.

**Note**

After you enter the **write erase** command, you must reload the ASCII configuration twice to apply the breakout configuration.

Procedure

	Command or Action	Purpose
Step 1	write erase [boot debug] Example: <pre>switch# write erase Warning: This command will erase the startup-configuration. Do you wish to proceed anyway? (y/n) [n] y</pre>	<p>Erases configurations in persistent memory. The default action erases the startup configuration.</p> <p>The boot option erases the boot variable definitions and the IPv4 configuration on the mgmt0 interface.</p> <p>The debug option erases the debugging configuration.</p> <p>Note The running-configuration file is not affected by this command.</p>

Clearing Inactive Configurations

You can clear inactive QoS and/or ACL configurations.

Procedure

	Command or Action	Purpose
Step 1	show running-config type inactive-if-config Example: <pre># show running-config ipqos inactive-if-config</pre>	<p>(Optional)</p> <p>Displays any inactive access control list (ACL) or quality of service (QoS) configurations.</p> <p>The values for the <i>type</i> argument are aclmgr and ipqos.</p> <ul style="list-style-type: none"> • aclmgr—Displays any inactive configurations for aclmgr. • ipqos—Displays any inactive configurations for qosmgr.
Step 2	clear inactive-config policy Example: <pre># clear inactive-config qos clear qos inactive config Inactive if config for QoS manager is saved at/bootflash/qos_inactive_if_config.cfg for vdc default you can see the log file @ show inactive-if-config log</pre>	<p>Clears inactive configurations.</p> <p>The values for the <i>policy</i> argument are qos and acl.</p> <p>The following describes the values:</p> <ul style="list-style-type: none"> • qos—Clears inactive QoS configurations. • acl—Clears inactive ACL configurations. • acl qos—Clears inactive ACL configurations and inactive QoS configurations.

	Command or Action	Purpose
Step 3	show inactive-if-config log Example: # show inactive-if-config log	(Optional) Displays the commands that were used to clear the inactive configurations.

Verifying the Device Configuration

To verify the configuration after bootstrapping the device using POAP, use one of the following commands:

Command	Purpose
show running-config	Displays the running configuration.
show startup-config	Displays the startup configuration.

Examples of Working with Configuration Files

This section includes examples of working with configuration files.

Copying Configuration Files

This example shows how to overwrite the contents of an existing configuration in NVRAM:

```
switch# copy nvram:snapshot-config nvram:startup-config
Warning: this command is going to overwrite your current startup-config.
Do you wish to continue? {y/n} [y] y
```

This example shows how to copy a running configuration to the bootflash: file system:

```
switch# copy system:running-config bootflash:my-config
```

Backing Up Configuration Files

This example shows how to back up the startup configuration to the bootflash: file system (ASCII file):

```
switch# copy startup-config bootflash:my-config
```

This example shows how to back up the startup configuration to the TFTP server (ASCII file):

```
switch# copy startup-config tftp://172.16.10.100/my-config
```

This example shows how to back up the running configuration to the bootflash: file system (ASCII file):

```
switch# copy running-config bootflash:my-config
```

Rolling Back to a Previous Configuration

To roll back your configuration to a snapshot copy of a previously saved configuration, you need to perform the following steps:

- 1 Clear the current running image with the **write erase** command.
- 2 Restart the device with the **reload** command.
- 3 Copy the previously saved configuration file to the running configuration with the **copy configuration-file running-configuration** command.
- 4 Copy the running configuration to the start-up configuration with the **copy running-config startup-config** command.

Additional References for Configuration Files

This section includes additional information related to managing configuration files.

Related Documents for Configuration Files

Related Topic	Document Title
Licensing	<i>Cisco NX-OS Licensing Guide</i>

