



CHAPTER 7

Working with Configuration Files

This chapter describes how to work with configuration files on the Cisco NX-OS device.

This chapter includes the following sections:

- [Information About Configuration Files, page 7-1](#)
- [Licensing Requirements for Configuration Files, page 7-2](#)
- [Managing Configuration Files, page 7-2](#)
- [Verifying the Device Configuration, page 7-12](#)
- [Examples of Working With Configuration Files, page 7-12](#)
- [Additional References, page 7-13](#)

Information 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 (see the [“Copying a Configuration File to a Remote Server” section on page 7-3](#)).

This section includes the following topics:

- [Types of Configuration Files, page 7-1](#)
- [Virtualization Support, page 7-2](#)

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 may 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.

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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. For information about configuration modes, see [Chapter 3, “Understanding the CLI.”](#)

To change the startup-configuration file, you can either save the running configuration file to the startup configuration (see the [“Saving the Running Configuration to the Startup Configuration”](#) section on [page 7-3](#)) or download a configuration file from a file server to the startup configuration (see the [“Downloading the Startup Configuration From a Remote Server”](#) section on [page 7-5](#)).

Virtualization Support

Except for removing the configuration for a missing module, the configuration file operations are local to the virtual device context (VDC). You can remove the missing module configuration only from the default VDC. For more information on VDCs, see the *Cisco Nexus 7000 Series NX-OS Virtual Device Context Configuration Guide, Release 4.0*.

Licensing Requirements for Configuration Files

The following table shows the licensing requirements for this feature:

Product	License Requirement
NX-OS	Configuration files require no license. Any feature not included in a license package is bundled with the Cisco NX-OS system images and is provided at no extra charge to you. For a complete explanation of the NX-OS licensing scheme, see the <i>Cisco Nexus 7000 Series NX-OS Licensing Guide, Release 4.0</i> .

Managing Configuration Files

This section describes how to manage configuration files and includes the following topics:

- [Saving the Running Configuration to the Startup Configuration, page 7-3](#)
- [Copying a Configuration File to a Remote Server, page 7-3](#)
- [Downloading the Running Configuration From a Remote Server, page 7-4](#)
- [Downloading the Startup Configuration From a Remote Server, page 7-5](#)
- [Copying Configuration Files to an External Flash Memory Device, page 7-6](#)
- [Copying the Running Configuration From an External Flash Memory Device, page 7-7](#)
- [Copying the Startup Configuration From an External Flash Memory Device, page 7-8](#)
- [Copying Configuration Files to an Internal File System, page 7-8](#)
- [Rolling Back to a Previous Configuration, page 7-9](#)
- [Removing the Configuration for a Missing Module, page 7-10](#)
- [Erasing Device Configurations, page 7-11](#)

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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.



Caution

When multiple user sessions are updating the running configuration simultaneously, updates to the running configuration entered while saving the running configuration to the startup configuration might not appear in startup configuration.

For information on saving the running configuration for all VDCs on the physical device, see the *Cisco Nexus 7000 Series NX-OS Virtual Device Context Configuration Guide, Release 4.0*.

SUMMARY STEPS

1. `show running-config`
2. `copy running-startup-config`

DETAILED STEPS

	Command	Purpose
Step 1	<code>show running-config</code> Example: switch# show running-config	(Optional) Displays the running configuration.
Step 2	<code>copy running-config startup-config</code> 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 NX-OS devices.

SUMMARY STEPS

1. `copy running-config scheme://server/[url]/filename`
`copy startup-config scheme://server/[url]/filename`

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DETAILED STEPS

	Command	Purpose
Step 1	copy running-config <i>scheme://server/[url/]filename</i> Example: switch# copy running-config tftp://10.10.1.1/sw1-run-config.bak	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.
	copy startup-config <i>scheme://server/[url/]filename</i> Example: switch# copy startup-config tftp://10.10.1.1/sw1-start-config.bak	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.

Downloading the Running Configuration From a Remote Server

You can configure your 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. For more information on copying files, see the [“Copying Files” section on page 6-9](#).

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 NX-OS device has a route to the remote server. The NX-OS device and the remote server must be in the same subnet 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.

SUMMARY STEPS

1. **copy *scheme://server/[url/]filename* running-config**
2. **show running-config**
3. **copy running-config startup-config**
4. **show startup-config**

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DETAILED STEPS

	Command	Purpose
Step 1	<pre>copy scheme://server/[url/] filename running-config</pre> <p>Example: switch# copy tftp://10.10.1.1/my-config running-config</p>	<p>Downloads the running-configuration file from a remote server.</p> <p>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.</p> <p>The <i>server</i>, <i>url</i>, and <i>filename</i> arguments are case sensitive.</p>
Step 2	<pre>show running-config</pre> <p>Example: switch# show running-config</p>	(Optional) Displays the running configuration.
Step 3	<pre>copy running-config startup-config</pre> <p>Example: switch# copy running-config startup-config</p>	(Optional) Copies the running configuration to the startup configuration.
Step 4	<pre>show startup-config</pre> <p>Example: switch# show startup-config</p>	(Optional) Displays the startup configuration.

Downloading the Startup Configuration From a Remote Server

You can configure your 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. For more information on copying files, see the “[Copying Files](#)” section on page 6-9.

BEFORE YOU BEGIN

Ensure that the configuration file you that 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 NX-OS device has a route to the remote server. The NX-OS 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.

SUMMARY STEPS

1. `copy scheme://server/[url/]filename startup-config`
2. `show startup-config`

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DETAILED STEPS

	Command	Purpose
Step 1	<pre>copy scheme://server/[url/]filename startup-config</pre> <p>Example: switch# copy tftp://10.10.1.1/my-config startup-config</p>	<p>Downloads the running-configuration file from a remote server.</p> <p>For the <i>scheme</i> argument, you can enter is 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.</p> <p>The <i>server</i>, <i>url</i>, and <i>filename</i> arguments are case sensitive.</p>
Step 2	<pre>show startup-config</pre> <p>Example: switch# show startup-config</p>	(Optional) Displays the running configuration.

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.

SUMMARY STEPS

1. `dir {slot0: | usb1: | usb2:}[directory/]`
2. `copy running-config {slot0: | usb1: | usb2:}[directory/]filename`
`copy startup-config {slot0: | usb1: | usb2:}[directory/]filename`

DETAILED STEPS

	Command	Purpose
Step 1	<pre>dir {slot0: usb1: usb2:}[directory/]</pre>	(Optional) Displays the files on the external Flash memory device.
Step 2	<pre>copy running-config {slot0: usb1: usb2:}[directory/]filename</pre> <p>Example: switch# copy running-config slot0:dsn-running-config.cfg</p>	Copies the running configuration to an external Flash memory device. The <i>filename</i> argument is case sensitive.
Step 3	<pre>copy startup-config {slot0: usb1: usb2:}[directory/]filename</pre> <p>Example: switch# copy startup-config slot0:dsn-startup-config.cfg</p>	Copies the startup configuration to an external Flash memory device. The <i>filename</i> argument is case sensitive.

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Copying the Running Configuration From an External Flash Memory Device

You can configure your NX-OS device by copying configuration files created on another Cisco NX-OS device and saved to an external Flash memory device. For more information on copying files, see the “Copying Files” section on page 6-9.

BEFORE YOU BEGIN

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

SUMMARY STEPS

1. **dir {slot0: | usb1: | usb2:}[directory/]**
2. **copy {slot0: | usb1: | usb2:}[directory/]filename running-config**
3. **show running-config**
4. **copy running-config startup-config**
5. **show startup-config**

DETAILED STEPS

	Command	Purpose
Step 1	dir {slot0: usb1: usb2:}[directory/]	(Optional) Displays the files on the external Flash memory device.
Step 2	copy {slot0: usb1: usb2:}[directory/]filename running-config Example: switch# copy slot0: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.

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Copying the Startup Configuration From an External Flash Memory Device

You can recover the startup configuration on your NX-OS device by downloading a new startup configuration file saved on an external Flash memory device. For more information on copying files, see the “Copying Files” section on page 6-9.

BEFORE YOU BEGIN

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

SUMMARY STEPS

1. **dir** {slot0: | usb1: | usb2:}[directory/]
2. **copy** {slot0: | usb1: | usb2:}[directory/]filename startup-config
3. **show startup-config**

DETAILED STEPS

	Command	Purpose
Step 1	dir {slot0: usb1: usb2:}[directory/]	(Optional) Displays the files on the external Flash memory device.
Step 2	copy {slot0: usb1: usb2:}[directory/]filename startup-config Example: switch# copy slot0: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.

Copying Configuration Files to an Internal File System

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

SUMMARY STEPS

1. **copy running-config** [filesystem:[directory/] | directory/]filename
copy startup-config [filesystem:[directory/] | directory/]filename

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DETAILED STEPS

	Command	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 a remote server. The <i>filesystem</i> , <i>directory</i> , and <i>filename</i> arguments are case sensitive.
	copy startup-config [filesystem:][directory/] directory/] filename Example: switch# copy startup-config bootflash:sw1-start-config.bak	Copies the startup-configuration file to a remote server. The <i>filesystem</i> , <i>directory</i> , and <i>filename</i> arguments are case sensitive.

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.

SUMMARY STEPS

1. **copy [filesystem:][directory/] | directory/]backup-filename running-config**
copy [filesystem:][directory/] | directory/]backup-filename startup-config

DETAILED STEPS

	Command	Purpose
Step 1	copy [filesystem:][directory/] directory/]backup-filename running-config Example: switch# copy bootflash:run-config.bak running-config	Copies a backed-up configuration to the running configuration. The <i>filesystem</i> , <i>directory</i> , and <i>backup-filename</i> arguments are case sensitive.
	copy [filesystem:][directory/] directory/]backup-filename startup-config Example: switch# copy bootflash:start-config.bak startup-config	Copies a backed-up configuration to the startup configuration. The <i>filesystem</i> , <i>directory</i> , and <i>backup-filename</i> arguments are case sensitive.

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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. You can only remove the configuration for a missing module from the default VDC.



Note

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

BEFORE YOU BEGIN

Ensure that you are in the default VDC.

Remove the I/O module from the chassis.

SUMMARY STEPS

1. `show hardware`
2. `purge module slot running-config`
3. `copy running-config startup-config`

DETAILED STEPS

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

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Erasing Device Configurations

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



Note

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.

SUMMARY STEPS

1. **write erase [boot | debug]**

DETAILED STEPS

	Command	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>	Erases configurations in persistent memory. The default action erases the startup configuration. The boot option erases the boot variable definitions and the IPv4 configuration on the mgmt0 interface. The debug option erases the debugging configuration. By default, the loader and debug configurations are not erased. Note The running configuration file is not affected by this command.

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Verifying the Device Configuration

To verify the device configuration, perform one of the following tasks:

Command	Purpose
<code>show running-config</code>	Displays the running configuration.
<code>show startup-config</code>	Displays the startup configuration.

Examples of Working With Configuration Files

This section includes the following topics:

- [Copying Configuration Files, page 7-12](#)
- [Backing Up Configuration Files, page 7-12](#)
- [Rolling Back to a Previous Configuration, page 7-13](#)

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 create a snapshot of the startup configuration in a predefined location on the device (binary file):

```
switch# copy startup-config nvram:snapshot-config
```

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
```

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Rolling Back to a Previous Configuration

This example shows how to roll back to a snapshot copy of a previously saved running configuration (binary file):

```
switch# copy nvram:snapshot-config startup-config
```

This example shows how to roll back to a configuration copy that was previously saved in the bootflash: file system (ASCII file):

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

Additional References

For additional information related to managing configuration files, see the following sections:

- [Related Documents, page 7-13](#)

Related Documents

Related Topic	Document Title
Licensing	<i>Cisco Nexus 7000 Series NX-OS Licensing Guide, Release 4.0</i>
Command reference	<i>Cisco Nexus 7000 Series NX-OS Fundamentals Command Reference, Release 4.0</i>

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