System Image, Microcode Image, and Configuration File Load Commands

This chapter describes the function and displays the syntax of each command used to load and copy system images, microcode images, and configuration files. For more information about defaults and usage guidelines, see the corresponding chapter of the *Router Products Command Reference* publication.

async-bootp *tag* [**:***hostname*] *data*
no async-bootp

To configure extended BOOTP requests for asynchronous interfaces as defined in RFC 1084, use the **async-bootp** global configuration command. Use the **no** form of this command to restore the default.

tag	Item being requested; expressed as filename, integer, or IP dotted-decimal address. See this command in the *Router Products Command Reference* publication for a table of supported values.
:*hostname*	(Optional) This entry applies only to the host specified. The argument *:hostname* accepts both an IP address and a logical host name.
data	List of IP addresses entered in dotted-decimal notation or as logical host names, a number, or a quoted string.

boot
boot *filename* [*ip-address*]
boot flash [*filename*]
boot flash [*device***:**]*partition-number***:**[*filename*]
boot flash [*device***:***filename*] (Cisco 7000 series only)
boot *device***:**[*filename*] (Cisco 7500 series only)

To boot the router manually, use the **boot** ROM monitor command.

filename	When used in conjunction with the *ip-address* argument, the *filename* argument is the name of the system image file to boot from a network server. The filename is case sensitive. (Optional) When used in conjunction with the flash keyword, the *filename* argument is the name of the system image file to boot from Flash memory. On all platforms except the Cisco 7000 series and Cisco 7500 series, the system obtains the image file from internal Flash memory. On the Cisco 7000 series and Cisco 7500 series, the *device***:** argument specifies the Flash memory device from which to obtain the system image. See the *device***:** argument later in this table for valid device values. The filename is case sensitive. Without *filename*, the first valid file in Flash memory is loaded.
ip-address	(Optional) IP address of the TFTP server on which the system image resides. If omitted, this value defaults to the IP broadcast address of 255.255.255.255.
flash	(Optional) Boots the router from Flash memory.

*device***:** (Optional on all platforms except the Cisco 7500 series) On all platforms except the Cisco 7000 series and Cisco 7500 series, the only valid value is **flash**. The colon (:) is required.

On the Cisco 7000 series and Cisco 7500 series, valid devices are as follows:

- **flash**. This device is the internal Flash memory in the Cisco 7000 series.
- **bootflash**. This device is the internal Flash memory in the Cisco 7500 series.
- **slot0**. This device is the Personal Computer Memory Card International Association (PCMCIA) slot on the Cisco 7000 series Route Processor (RP) card or the first PCMCIA slot on the Cisco 7500 series Route Switch Processor (RSP) card.
- **slot1**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.

The colon (:) is required.

*partition-number***.** Boots the router from Flash memory with the optional filename of the image you want loaded from the specified Flash partition. If you do not specify a filename, the first valid file in the specified partition of Flash memory is loaded.

boot bootldr *device***:** *filename*
no boot bootldr

On a Cisco 7000 series or Cisco 7500 series, to specify a Flash device and filename containing the rxboot image that ROM uses for booting, use the **boot bootldr** global configuration command. Use the **no** form of the command to remove this rxboot image specification.

*device***:**	Device containing the rxboot image that ROM uses. The colon (:) is required. Valid values are as follows: • **flash**. This device is the internal Flash memory in the Cisco 7000 series. • **bootflash**. This device is the internal Flash memory in the Cisco 7500 series. • **slot0**. This device is the PCMCIA slot on the Cisco 7000 series Route Processor (RP) card or the first PCMCIA slot on the Cisco 7500 series Route Switch Processor (RSP) card. • **slot1**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.
filename	Name of the rxboot image file. The maximum filename length is 63 characters.

[**no**] **boot bootstrap flash** [*filename*]
[**no**] **boot bootstrap mop** *filename* [*mac-address*] [*interface*]
[**no**] **boot bootstrap** [**tftp**] *filename* [*ip-address*]

To configure the filename that is used to boot a secondary bootstrap image, use the **boot bootstrap** global configuration command. Use the **no** form of this command to disable booting from a secondary bootstrap image.

flash	Indicates that the router will be booted from Flash memory.
filename	(Optional with **flash**.) Name of the system image to boot from a network server. If you omit the filename when booting from Flash, the router uses the first system image stored in Flash memory.

mop	Indicates that the router will be booted from a system image stored on a DEC MOP server.
mac-address	(Optional) MAC address of the MOP server on which the file resides. If the MAC address argument is not included, a broadcast message is sent to all MOP boot servers. The first MOP server to indicate that it has the file will be the server from which the router gets the boot image.
interface	(Optional) Interface out which the router should send MOP requests to reach the MOP server. The interface options are **async**, **dialer**, **Ethernet**, **loopback**, **null**, **serial**, and **tunnel**. If the interface argument is not specified, a request will be sent on all interfaces that have MOP enabled, and the interface from which the first response is received will be used to load the software.
tftp	(Optional) Indicates that the router will be booted from a system image stored on a TFTP server.
ip-address	(Optional) IP address of the TFTP server on which the system image resides. If omitted, this value defaults to the IP broadcast address of 255.255.255.255.

boot buffersize *bytes*
no boot buffersize

To modify the buffer size used to load configuration files, use the **boot buffersize** global configuration command. Use the **no** form of this command to return to the default setting.

bytes	Specifies the size of the buffer to be used. There is no minimum or maximum buffer size.

boot config *device***:***filename*
no boot config

On a Cisco 7000 series or Cisco 7500 series, to specify the device and filename of the configuration file from which the router configures itself during initialization (startup), use the **boot config** global configuration command. Use the **no** form of the command to remove this specification.

*device***:** Device containing the configuration file. The colon (:) is required. Valid devices are as follows:

- **flash**. This device is the internal Flash memory in the Cisco 7000 series.
- **bootflash**. This device is the internal Flash memory in the Cisco 7500 series.
- **nvram**. The device is the router's nonvolatile random-access memory (NVRAM). If you specify NVRAM, omit the filename. The colon (:) is required.
- **slot0**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card.
- **slot1**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.

The default device is **nvram:**.

filename Name of the configuration file. The configuration file must be an ASCII file. The maximum filename length is 63 characters.

[**no**] **boot host mop** *filename* [*mac-address*] [*interface*]
[**no**] **boot host** [**tftp** | **rcp**] *filename* [*ip-address*]

To change the default name of the host configuration filename from which you want to load configuration commands, use the **boot host** global configuration command. Use the **no** form of this command to restore the host configuration filename to the default.

mop	Indicates that the router will be configured from a configuration file stored on a Digital MOP server.
tftp	(Optional) Indicates that the router will be configured from a configuration file stored on a TFTP server.
rcp	(Optional) Indicates that the router will be configured from a configuration file stored on a rcp server.
filename	Name of the file from which you want to load configuration commands.
ip-address	(Optional) IP address of the TFTP server on which the file resides. If omitted, this value defaults to the IP broadcast address of 255.255.255.255.
mac-address	(Optional) MAC address of the MOP server on which the file resides. If the MAC address argument is not included, a broadcast message is sent to all MOP boot servers. The first MOP server to indicate that it has the file is the server from which the router gets the boot image.
interface	(Optional) Interface out which the router should send MOP requests to reach the MOP server. The interface options are **async**, **dialer**, **ethernet**, **serial**, and **tunnel**. If the interface argument is not specified, a request is sent on all interfaces that have MOP enabled, and the interface out which the first response is received is used to load the software.

[**no**] **boot network mop** *filename* [*mac-address*] [*interface*]
[**no**] **boot network** [**tftp** | **rcp**] *filename* [*ip-address*]

To change the default name of the network configuration file from which you want to load configuration commands, use the **boot network** global configuration command. Use the **no** form of this command to restore the network configuration filename to the default.

mop	Configures the router to download the configuration file from a network server using the Digital Maintenance Operation Protocol (MOP) protocol.
filename	Name of the file from which you want to load configuration commands. The default filename is *network-config*.
mac-address	(Optional) If **mop** is specified, the MAC address of the network server on which the file resides. If the MAC address argument is not included, a broadcast message is sent to all MOP boot servers. The first server to indicate that it has the file will be the server from which the router gets the boot image.
interface	(Optional) If **mop** is specified, the interface out which the router should send MOP requests to reach the server. The interface options are **async**, **dialer**, **ethernet**, **serial**, and **tunnel**. If the interface argument is not specified, a request will be sent on all interfaces that have MOP enabled, and the interface from which the first response is received will be used to load the software.
tftp	(Optional) Configures the router to download the configuration file from a network server using TFTP. If omitted and **rcp** is not specified, defaults to **tftp**.
rcp	(Optional) Configures the router to download the configuration file from a network server using rcp. If omitted, defaults to **tftp**.

ip-address (Optional) If **rcp** or **tftp** is specified, the IP address of the network server on which the compressed image file resides. If the IP address is omitted, this value defaults to the IP broadcast address of 255.255.255.255.

[**no**] **boot system flash** [*device***:**][*partition-number***:**][*filename*]
[**no**] **boot system mop** *filename* [*mac-address*] [*interface*]
[**no**] **boot system rom**
[**no**] **boot system** [**rcp** | **tftp**] *filename* [*ip-address*]

no boot system

To specify the system image that the router loads at startup, use one of the listed **boot system** global configuration commands. Use a **no** form of this command to remove the startup system image specification.

flash On all platforms except the Cisco 7000 series and Cisco 7500 series, this keyword boots the router from internal Flash memory. If you omit all arguments that follow this keyword, the system searches internal Flash for the first bootable image.

On the Cisco 7000 series and Cisco 7500 series, this keyword boots the router from a Flash device, as specified by the *device:* argument. On the Cisco 7000 series, when you omit all arguments that follow this keyword, the system searches internal Flash and then the PCMCIA slots (starting with slot 0) for the first bootable image. On the Cisco 7500 series, when you omit all arguments that follow this keyword, the system searches the PCMCIA slot 0 for the first bootable image.

device: (Optional) Device containing the system image to load at startup. The colon (:) is required. Valid devices are as follows:

- **flash**. This device is the internal Flash memory. Optionally, use this device on all platforms except the Cisco 7500 series. The **flash** option is the only valid device option for all platforms except the Cisco 7000 series and the Cisco 7500 series. For the Cisco 7000 series, this device is the default if you do not specify a device.
- **bootflash**. This device is the internal Flash memory in the Cisco 7500 series.
- **slot0**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card. For the Cisco 7500 series, this device is the default if you do not specify a device.
- **slot1**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.

*partition-number***.** (Optional) Number of the Flash memory partition that boots the router with the image specified by the optional *filename* argument. If you do not specify a filename, the router loads the first valid file in the specified partition of Flash memory. This argument is not used with the Cisco 7000 series and the Cisco 7500 series.

filename (Optional when used with **boot system flash**.) Name of the system image to load at startup. It is case sensitive. If you do not specify a filename, the router loads the first valid file in the specified Flash device, the specified partition of Flash memory, or the default Flash device if you also omit the *device***:** argument.

mop Boots the router from a system image stored on a Digital MOP server. Do not use this keyword with the Cisco 7500 series.

mac-address	(Optional) Media Access Control (MAC) address of the MOP server containing the specified system image file. If you do not include the MAC address argument, the router sends a broadcast message to all MOP boot servers. The first MOP server to indicate that it has the specified file will be the server from which the router gets the boot image.
interface	(Optional) Interface the router uses to send out MOP requests to the MOP server. The interface options are **async**, **dialer**, **ethernet**, **serial**, and **tunnel**. If you do not specify the interface argument, the router sends a request out on all interfaces that have MOP enabled. The interface that receives the first response is the interface the router uses to load the software.
rom	Boots the router from ROM. Do not use this keyword with the Cisco 7500 series.
rcp	(Optional) Boots the router from a system image stored on a network server using rcp. If you omit this keyword, the transport mechanism defaults to **tftp**.
tftp	(Optional) Boots the router from a system image stored on a TFTP server. This is the default when you do not specify any keyword (**flash**, **mop**, **rom**, **tftp**, or **rcp**).
ip-address	(Optional) IP address of the TFTP server containing the system image file. If omitted, this value defaults to the IP broadcast address of 255.255.255.255.

cd [*device***:**]

To set the default Flash device for the system, use the **cd** EXEC command.

*device***:** (Optional) Default device. The colon (:) is required. Valid devices are as follows:

- **flash**. This device is the internal Flash memory in the Cisco 7000 series. For the Cisco 7000 series, this device is the initial default device and the default device when you omit the *device***:** argument.
- **bootflash**. This device is the internal Flash memory in the Cisco 7500 series.
- **slot0**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card. For the Cisco 7500 series, this device is the initial default device and the default device when you omit the *device***:** argument.
- **slot1**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.

config-register *value*

To change the router configuration register settings, use the **config-register** global configuration command.

value Hexadecimal or decimal value that represents the 16-bit configuration register value you want to use the next time the router is restarted. The value range is from 0x0 to 0xFFFF (0 to 65535 in decimal). The default is 0x101 for the router models without Flash memory; default is 0x10F for router models with Flash memory.

configure {**terminal** | **memory** | **network**}

To enter global configuration mode, use the **configure** privileged EXEC command. You must be in global configuration mode to enter global configuration commands.

terminal	Executes configuration commands from the terminal.
memory	For all platforms except the Cisco 7000 series and the Cisco 7500 series, executes the commands stored in NVRAM. For the Cisco 7000 series and the Cisco 7500 series, executes the configuration specified by the CONFIG_FILE environment variable. When the CONFIG_FILE environment variable does not exist or is null (such as at first-time startup), the router uses the NVRAM configuration (if valid).
network	The **copy rcp running-config** or **copy tftp running-config** command replaces the **configure network** command. If you use rcp, see the **copy rcp** command for more information on **copy rcp running-config**. If you use TFTP, see the **copy tftp** command for more information on **copy tftp running-config**.

configure overwrite-network

The **copy rcp startup-config** or **copy tftp startup-config** command replaces the **configure overwrite-network** command. If you use rcp, see the **copy rcp** command for more information on **copy rcp startup-config**. If you use TFTP, see the **copy tftp** command for more information on **copy tftp startup-config**.

continue

To return to the EXEC mode from ROM monitor mode, use the **continue** ROM monitor command.

copy *file_id* {**running-config** | **startup-config** | *file_id*} (Cisco 7000 series and Cisco 7500 series only)

On the Cisco 7000 series or the Cisco 7500 series, to copy any file from a Flash device or NVRAM to another destination, use **copy** EXEC command.

file_id — Specifies a *device***:***filename* as the source or destination of the copy operation. The *device* is optional; but when it is used, the colon (:) is required. Valid devices are as follows:

- **flash:**. This device is the internal Flash memory on the Cisco 7000 series.
- **bootflash:**. This device is the internal Flash memory in the Cisco 7500 series.
- **slot0:**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card.
- **slot1:**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.
- **nvram**:. This device is the router's NVRAM. If you specify NVRAM, omit the filename.

The *filename* is the name of the source or destination file. You must always provide a source filename. You can omit the destination filename, in which case the system uses the source filename. Wildcards are not permitted. The maximum filename length is 63 characters.

running-config — Specifies the currently running configuration as the destination of the copy operation.

startup-config — Specifies the configuration used for initialization as the destination of the copy operation. (Note that the CONFIG_FILE environment variable specifies the startup configuration on a Cisco 7000 series and a Cisco 7500 series.)

copy bootflash {**rcp** | **tftp**}

To copy a bootstrap image from Flash memory to a network server on the Cisco 4500 series, use the **copy bootflash** EXEC command.

rcp	Specifies a copy operation to a network server using rcp.
tftp	Specifies a TFTP server as the destination of the copy operation.

copy flash {**rcp** | **tftp**}
copy flash {**rcp** | **tftp** | *file_id*} (Cisco 7000 series and Cisco 7500 series only)

To copy a file from Flash memory to another destination, use one of the listed **copy flash** EXEC commands.

rcp	Specifies a copy operation to a network server using rcp.
tftp	Specifies a TFTP server as the destination of the copy operation.

file_id Specifies a *device***:***filename* as the destination of the copy operation. The *device* argument is optional; but when it is used, the colon (:) is required. Valid devices are as follows:

- **flash:**. This device is the internal Flash memory on the Cisco 7000 series.
- **bootflash:**. This device is the internal Flash memory in the Cisco 7500 series.
- **slot0:**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card.
- **slot1:**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.
- **nvram:**. This device is the router's NVRAM. If you specify NVRAM, omit the filename. The colon (:) is required.

The *filename* argument is the name of the destination file. You must always provide a source filename. You can omit the destination filename, in which case the system uses the source filename. Wildcards are not permitted. The maximum filename length is 63 characters.

copy mop bootflash (Cisco 4500 series only)
copy mop flash

To copy a file from a MOP server to the router, use one of the listed **copy mop** EXEC commands.

bootflash Specifies to copy a bootstrap image from a MOP server to internal Flash memory on a Cisco 4500 series.

flash Specifies internal Flash memory as the destination of the copy operation.

copy rcp bootflash (Cisco 4500 series only)
copy rcp {**flash** | **running-config** | **startup-config**}
copy rcp {**flash** | **running-config** | **startup-config** | *file_id*} (Cisco 7000 series and Cisco 7500 series only)

To copy a file from a network server to the router or to another destination using rcp, use one of the listed **copy rcp** EXEC commands. The **copy rcp running-config** command replaces the **configure network** command. The **copy rcp startup-config** command replaces the **configure overwrite-network** command.

bootflash	Specifies to copy a bootstrap image from a network server to Flash memory on a Cisco 4500 series using rcp.
flash	Specifies internal Flash memory as the destination of the copy operation. The Cisco 7500 series cannot use this keyword; all other platforms can.
running-config	Specifies the currently running configuration as the destination of the copy operation.
startup-config	Specifies the configuration used for initialization as the destination of the copy operation.

file_id Specifies a *device***:***filename* as the destination of the copy operation. The *device* argument is optional; but when it is used, the colon (:) is required. Valid devices are as follows:

- **flash:**. This device is the internal Flash memory on the Cisco 7000 series.
- **bootflash:**. This device is the internal Flash memory in the Cisco 7500 series.
- **slot0:**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card.
- **slot1:**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.
- **nvram:**. This device is the router's NVRAM. If you specify NVRAM, omit the filename. The colon (:) is required. The Cisco 7000 series cannot use this keyword.

The *filename* argument is the name of the destination file. You must always provide a source filename. You can omit the destination filename, in which case the system uses the source filename. Wildcards are not permitted. The maximum filename length is 63 characters.

copy running-config {**rcp** | **startup-config** | **tftp**}
copy running-config {**rcp** | **startup-config** | **tftp** | *file_id*} (Cisco 7000 series and Cisco 7500 series only)

To copy the router's running configuration file to another destination, use one of the listed **copy running-config** EXEC commands. The **copy running-config startup-config** command replaces the **write memory** command. The **copy running-config rcp** or **copy running-config tftp** command replaces the **write network** command.

rcp Specifies a copy operation to a network server using rcp.

startup-config Specifies the configuration used for initialization as the destination of the copy operation. The Cisco 4500 series cannot use this keyword.

tftp Specifies a TFTP server as the destination of the copy operation.

file_id Specifies a *device***:***filename* as the destination of the copy operation. The *device* argument is optional; but when it is used, the colon (:) is required. Valid devices are as follows:

- **flash:**. This device is the internal Flash memory on the Cisco 7000 series.
- **bootflash:**. This device is the internal Flash memory in the Cisco 7500 series.
- **slot0:**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card.
- **slot1:**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.
- **nvram:**. This device is the router's NVRAM. If you specify NVRAM, omit the filename. The colon (:) is required. The Cisco 7000 series cannot use this keyword.

The *filename* argument is the name of the destination file. You must always provide a source filename. You can omit the destination filename, in which case the system uses the source filename. Wildcards are not permitted. The maximum filename length is 63 characters.

copy startup-config {**rcp** | **running-config** | **tftp**}
copy startup-config {**rcp** | **running-config** | **tftp** | *file_id*} (Cisco 7000 series and Cisco 7500 series only)

To copy the router's startup configuration file to another destination, use one of the listed **copy startup-config** EXEC commands.

rcp	Specifies a copy operation to a network server using rcp.
running-config	Specifies the currently running configuration as the destination of the copy operation.
tftp	Specifies a TFTP server as the destination of the copy operation.
file_id	Specifies a *device***:***filename* as the destination of the copy operation. The *device* argument is optional; but when it is used, the colon (:) is required. Valid devices are as follows: • **flash:**. This device is the internal Flash memory on the Cisco 7000 series. • **bootflash:**. This device is the internal Flash memory in the Cisco 7500 series. • **slot0:**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card. • **slot1:**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card. • **nvram:**. This device is the router's NVRAM. If you specify NVRAM, omit the filename. The colon (:) is required. The Cisco 7000 series cannot use this keyword. The *filename* argument is the name of the destination file. You must always provide a source filename. You can omit the destination filename, in which case the system uses the source filename. Wildcards are not permitted. The maximum filename length is 63 characters.

copy tftp bootflash (Cisco 4500 series only)
copy tftp {**flash** | **running-config** | **startup-config**}
copy tftp {**flash** | **running-config** | **startup-config** | *file_id*} (Cisco 7000 series and Cisco 7500 series only)

To copy a file from a TFTP server to the router or to another destination, use one of the listed **copy tftp** EXEC commands. The **copy tftp running-config** command replaces the **configure network** command. The **copy tftp startup-config** command replaces the **configure overwrite-network** command.

bootflash	Specifies to copy a bootstrap image from a TFTP server to internal Flash memory on a Cisco 4500 series.
flash	Specifies internal Flash memory as the destination of the copy operation. The Cisco 7500 series cannot use this keyword; all other platforms can.
running-config	Specifies the currently running configuration as the destination of the copy operation.
startup-config	Specifies the configuration used for initialization as the destination of the copy operation.

file_id

Specifies a *device***:***filename* as the destination of the copy operation. The *device* argument is optional; but when it is used, the colon (:) is required. Valid devices are as follows:

- **flash:**. This device is the internal Flash memory on the Cisco 7000 series.
- **bootflash:**. This device is the internal Flash memory in the Cisco 7500 series.
- **slot0:**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card.
- **slot1:**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.
- **nvram:**. This device is the router's NVRAM. If you specify NVRAM, omit the filename. The colon (:) is required.

The *filename* argument is the name of the destination file. You must always provide a source filename. You can omit the destination filename, in which case the system uses the source filename. Wildcards are not permitted. The maximum filename length is 63 characters.

copy verify

The **verify** or **verify flash** command replaces this command. Refer to the descriptions of the **verify** and **verify flash** commands for more information.

copy verify bootflash

The **verify bootflash** command replaces this command. Refer to the description of the **verify bootflash** command for more information.

delete [*device***:**]*filename*

To delete any file on a Flash memory device of a Cisco 7000 series or Cisco 7500 series, use the **delete** EXEC command.

*device***:**	(Optional) Device containing the file to be deleted. The colon (:) is required. Valid devices are as follows: • **flash**. This device is the internal Flash memory in the Cisco 7000 series. This device is the initial default device. Otherwise, the default device is that specified by the **cd** command. • **bootflash**. This device is the internal Flash memory in the Cisco 7500 series. • **slot0**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card. For the Cisco 7500 series, this device is the initial default device. Otherwise, the default device is that specified by the **cd** command. • **slot1**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.
filename	Name of the file to be deleted. The maximum filename length is 63 characters.

dir [**/all** | **/deleted** | **/long**] [*device***:**][*filename*]

To display a list of files on a Flash memory device of a Cisco 7000 series or Cisco 7500 series, use the **dir** EXEC command.

/all	(Optional) Lists deleted files, undeleted files, and files with errors.
/deleted	(Optional) Lists only the deleted files.
/long	(Optional) Lists only valid files. Valid files are those that are undeleted and without errors.

*device***:** (Optional) Device containing the file(s) to list. The colon (:) is required. Valid devices are as follows:

- **flash**. This device is the internal Flash memory in the Cisco 7000 series. This device is the initial default device. Otherwise, the default device is that specified by the **cd** command.
- **bootflash**. This device is the internal Flash memory in the Cisco 7500 series.
- **slot0**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card. For the Cisco 7500 series, this device is the initial default device. Otherwise, the default device is that specified by the **cd** command.
- **slot1**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.

filename (Optional) Name of the file(s) to display on a specified device. The files can be of any type. You can use wildcards in the filename. A wildcard character (*) matches all patterns. Strings after a wildcard are ignored.

erase startup-config
erase [*device***:**]*filename* (Cisco 7000 series and Cisco 7500 series only)

To erase a saved configuration, use one of the listed **erase** EXEC commands. The **erase startup-config** command replaces the **write erase** command.

startup-config	On all platforms except the Cisco 7000 and the Cisco 7500 series, erases the startup configuration in NVRAM. On the Cisco 7000 series and the Cisco 7500 series, erases or deletes the configuration pointed to by the CONFIG_FILE environment variable.
*device***:**	(Optional) Device containing the file to delete. The colon (:) is required. Valid devices are as follows: • **flash**. This device is the internal Flash memory in the Cisco 7000 series. This device is the initial default device. Otherwise, the default device is that specified by the **cd** command. • **bootflash**. This device is the internal Flash memory in the Cisco 7500 series. • **slot0**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card. For the Cisco 7500 series, this device is the initial default device. Otherwise, the default device is that specified by the **cd** command. • **slot1**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.
filename	Name of the file to delete. The files can be of any type. This command does not support wildcards in the filename.

erase bootflash

To erase the boot image in Flash memory on the Cisco 4500, use the **erase bootflash** EXEC command.

erase flash

To erase internal Flash memory, use the **erase flash** EXEC command. This command replaces the **copy erase flash** command.

format [**spare** *spare-number*] *device1***:** [[*device2***:**][*monlib-filename*]]

To format Flash memory on a Cisco 7000 series or Cisco 7500 series, use the **format** EXEC command.

spare	(Optional) Reserves spare sectors as specified by the *spare-number* argument when formatting a device.
spare-number	(Optional) Number of the spare sectors to reserve on formatted device. Valid values are 0 to 16. The default value is zero.
*device1***:**	Device to format. The colon (:) is required. Valid devices are as follows: • **bootflash**. This device is the internal Flash memory in the Cisco 7500 series. • **slot0**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card. • **slot1**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.

*device2***:** (Optional) Device containing the monlib file to use for formatting *device1*. The colon (:) is required. Valid devices are as follows:

- **bootflash**. This device is the internal Flash memory in the Cisco 7500 series.
- **slot0**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card. For the Cisco 7500 series, this device is the initial default device.
- **slot1**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.

monlib-filename (Optional) Name of the ROM monitor library file (monlib file) to use for formatting *device1*. The default monlib file is the one bundled with the system software.

[**no**] **ip rarp-server** *ip-address*

Use the **ip rarp-server** interface configuration command to allow the router to act as a Reverse Address Resolution Protocol (RARP) server. Use the **no** form of this command to restore the interface to the default of no RARP server support.

ip-address IP address that is to be provided in the source protocol address field of the RARP response packet. Normally, this is set to whatever address you configure as the primary address for the interface.

[**no**] **ip rcmd domain-lookup**

Use the **ip rcmd domain-lookup** global configuration command to enable Domain Name System (DNS) security for rcp and rsh. To bypass DNS security for rcp and rsh, use the **no** form of this command.

[**no**] **ip rcmd rcp-enable**

To configure the router to allow remote users to copy files to and from the router, use the **ip rcmd rcp-enable** global configuration command. Use the **no** form of this command to disable a router that is enabled for rcp.

[**no**] **ip rcmd remote-host** *local-username*
{*ip-address* | *host*}*remote-username* [**enable**]

To allow remote users to execute commands on the router using rsh or rcp, use the **ip rcmd remote-host** global configuration command to create an entry for the remote user in a local authentication database. Use the **no** form of this command to remove an entry for a remote user from the local authentication database.

local-username	Name of the user on the local router. You can specify the router host name as the username. This name needs to be communicated to the network administrator or the user on the remote system. To be allowed to remotely execute commands on the router, the remote user must specify this value correctly.
ip-address	IP address of the remote host from which the local router will accept remotely executed commands. Either the IP address or the host name is required.
host	Name of the remote host from which the local router will accept remotely executed commands. Either the host name or the IP address is required.
remote-username	Name of the user on the remote host from which the router will accept remotely executed commands.
enable	(Optional) Enables the remote user to execute privileged EXEC commands using rsh. This keyword does not apply to rcp.

[**no**] **ip rcmd remote-username** *username*

To configure the remote username to be used when requesting a remote copy using rcp, use the **ip rcmd remote-username** global configuration command. To remove the remote username form the configuration, use the **no** form of this command.

username	Name of the remote user on the server. This name is used for rcp copy requests. All files and images to be copied are searched for or written relative to the directory of the remote user's account.

[**no**] **ip rcmd rsh-enable**

To configure the router to allow remote users to execute commands on the router using rsh, use the **ip rcmd rsh-enable** global configuration command. Use the **no** form of this command to disable a router that is enabled for rsh.

microcode *interface* [**flash** | **rom** | **system**] [**flash** *filename*]
no microcode *interface* [**flash** | **rom**] [**flash** *filename*]
[**no**] **microcode** *interface* [**flash** *file_id* | **rom** | **system**] (Cisco 7500 series only)

To specify the location of the microcode you want to download from Flash memory into the writable control store (WCS) on a Cisco 7000 series or Cisco 7500 series, use the **microcode** interface configuration command.

interface	One of the following interface processor names: **aip, fip**, **fsip, hip, mip, trip**, **eip**, or **sp**.
flash	(Optional) If the **flash** keyword is specified, a *filename* argument is required, unless you are using the **no microcode** *interface* **flash** command.

rom	(Optional) If the **rom** keyword is specified, no further arguments are necessary. For example, the command **microcode fip rom** specifies that all FDDI Interface Processors (FIPs) should be loaded from their onboard ROM microcode. This onboard ROM microcode is not the same as the eight ROMs on the RP that contain the system image.
system	(Optional) If **system** is specified, the router loads the microcode from the microcode bundled into the system image you are running for that interface type.
filename	(Optional) Filename of the microcode in Flash memory that you want to download. This argument is only used with the **flash** keyword. If you use the **flash** keyword, the name of the microcode file in Flash is required unless the command is **no microcode** *interface* **flash**. (This command results in the same default condition as the command **microcode** *interface* **rom**, which indicates that the card should be loaded from its onboard ROM microcode.)
file_id	Specifies a *device***:***filename* of the microcode file to download. The colon (:) is required. Valid devices are as follows: • **bootflash:**. This device is the internal Flash memory in the Cisco 7500 series. • **slot0:**. This device is the first PCMCIA slot on the Cisco 7500 series RSP card. • **slot1:**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card. The *filename* is the name of the microcode file.

microcode reload

To signal to the Cisco 7000 series router that all microcode configuration commands have been entered and the processor cards should be reloaded, use the **microcode reload** interface configuration command.

[**no**] **mop device-code** {**cisco** | **ds200**}

To identify the type of device sending MOP sysid messages and request program messages, use the **mop device-code** global configuration command. Use the **no** form of this command to set the identity to the default value.

cisco	Denotes a Cisco device code.
ds200	Denotes a DECserver 200 device code.

mop retransmit-timer *seconds*
no mop retransmit-timer

To configure the length of time the router waits before retransmitting boot requests to a MOP server, use the **mop retransmit-timer** global configuration command. Use the **no** form of this command to reinstate the default value.

seconds	Sets the length of time, in seconds, that the router waits before retransmitting a message. The value is a number from 1 to 20.

mop retries *count*
no mop retries

To configure the number of times a router will retransmit boot requests to a MOP server, use the **mop retries** global configuration command. Use the **no** form of this command to reinstate the default value.

count	Indicates the number of times a router will retransmit a MOP boot request. The value is a number from 3 to 24.

o
o/r

To list the value of the boot field (bits 0-3) in the configuration register, use the ROM monitor **o** command. To reset the value of the boot field so that the router boots from ROM, use the ROM monitor **o/r** command.

partition flash *partitions* [*size1 size2*]
no partition flash

To separate Flash memory into two partitions, use the **partition flash** global configuration command. Use the **no** form of this command to undo partitioning, and restore Flash memory to one partition.

partitions	Number of partitions in Flash memory. Can be 1 or 2.
size1	(Optional) Size of the first partition in megabytes.
size2	(Optional) Size of the second partition in megabytes.

pwd

To show the current setting of the **cd** command on a Cisco 7000 series or Cisco 7500 series, use the **pwd** EXEC command.

reload

To reload the operating system, use the **reload** EXEC command.

rsh {*ip-address* | *host*} [**/user** *username*] *remote-command*

To execute a command remotely on a remote rsh host, use the **rsh** EXEC command.

ip-address	IP address of the remote host on which to execute the rsh command. Either the IP address or the host name is required.
host	Name of the remote host on which to execute the command. Either the host name or the IP address is required.

/**user** *username*	(Optional) Remote username. If you do not specify a remote username, the router software uses the configured remote username, if one exists. Otherwise, the router software uses the username associated with the current TTY, if it is a valid name. If this name is invalid, the router software uses the host name as the username.
remote-command	Command to be executed remotely. This is a required parameter. Unlike UNIX, the router software does not default to a remote login. Instead, the router provides Telnet and connect services.

[no] service compress-config

To compress configuration files on the Cisco 7000 series, Cisco 4000, Cisco 3000, and AGS+ routers, which have NVRAM, use the **service compress-config** global configuration command. To disable compression, use the **no** form of this command.

[no] service config

To enable autoloading of configuration files from a network server, use the **service config** global configuration command. Use the **no** form of this command to restore the default.

show async-bootp

To display the extended BOOTP request parameters that have been configured for asynchronous interfaces, use the **show async-bootp** privileged EXEC command.

show boot

To display the contents of the BOOT environment variable, the name of the configuration file pointed to by the CONFIG_FILE environment variable, and the contents of the BOOTLDR environment variable on a Cisco 7000 series or Cisco 7500 series, use the **show boot** EXEC command.

show bootflash

To verify boot Flash memory, use the **show bootflash** EXEC command.

show configuration

The **show startup-config** command replaces this command. Refer to the description of the **show startup-config** command for more information.

show file [*device***:**] *filename*

To display the configuration stored in a specified file on a Cisco 7000 series and Cisco 7500 series, use the **show file** EXEC command.

*device***:** (Optional) Device containing the configuration file. The colon (:) is required. Valid devices are as follows:

- **flash**. This device is the internal Flash memory in the Cisco 7000 series. This device is the initial default device.
- **bootflash**. This device is the internal Flash memory in the Cisco 7500 series.
- **nvram**. The device is the router's NVRAM. If you specify NVRAM, omit the filename. The colon (:) is required.
- **slot0**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card. For the Cisco 7500 series, this device is the initial default device.
- **slot1**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.

If you omit the *device***:** argument, the system uses the default device specified by the **cd** command.

filename Name of the file. The file can be of any type. The maximum filename length is 63 characters.

show flash [**all** | **chips** | **detailed** | **err** | **partition** *number* [**all** | **chips** | **detailed** | **err**] | **summary**]
show flash [**all** | **chips** | **filesys**] [*device***:**] (Cisco 7000 series PCMCIA slot and Cisco 7500 series only)

To display the layout and contents of Flash memory, use one of the listed **show flash** EXEC commands.

all (Optional) On all platforms except the Cisco 7000 series PCMCIA slot and the Cisco 7500 series, **all** shows complete information about Flash memory, including information about the individual ROM devices in Flash memory and the names and sizes of all system image files stored in Flash memory, including those that are invalidated.

On the Cisco 7000 series PCMCIA slot and the Cisco 7500 series, **all** shows the following information:

- The same information as that displayed by the **dir** command when you use the **/all** and **/long** keywords together
- The same information as that displayed by the **filesys** keyword
- The same information as that displayed by the **chips** keyword

chips (Optional) Shows information per partition and per chip, including which bank the chip is in plus its code, size, and name.

detailed (Optional) Shows detailed file directory information per partition, including file length, address, name, Flash checksum, computer checksum, bytes used, bytes available, total bytes, and bytes of system Flash memory.

err (Optional) Shows write or erase failures in the form of number of retries.

partition *number*	(Optional) Shows output for the specified partition number. If you specify the **partition** keyword, you must specify a partition number. You can use this keyword only when Flash memory has multiple partitions.
summary	(Optional) Shows summary information per partition, including the partition size, bank size, state, and method by which files can be copied into a particular partition. You can use this keyword only when Flash memory has multiple partitions.
filesys	(Optional) Shows the Device Info Block, the Status Info, and the Usage Info.
*device***:**	(Optional) Specifies the device about which to show Flash information. The device is optional; but when it is used, the colon (:) is required. When it is omitted, the default device is that specified by the **cd** command. Valid devices are as follows: • **bootflash**. This device is the internal Flash memory in the Cisco 7500 series. • **slot0**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card. • **slot1**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.

show flh-log

To view the system console output generated during the Flash load helper operation, use the **show flh-log** privileged EXEC command.

show microcode

To show the microcode bundled into a Cisco 7000 series system, use the **show microcode** EXEC command.

show running-config

To display the configuration information currently running on the terminal, use the **show running-config** EXEC command. This command replaces the **write terminal** command.

show startup-config

To display the contents of NVRAM (if present and valid) or to show the configuration file pointed to by the CONFIG_FILE environment variable, use the **show startup-config** EXEC command. This command replaces **show configuration** command.

show version

Use the **show version** EXEC command to display the configuration of the system hardware, the software version, the names and sources of configuration files, and the boot images.

squeeze *device***:**

To permanently delete Flash files on a Cisco 7000 series or Cisco 7500 series, use the **squeeze** EXEC command.

*device***:** Flash device from which to permanently delete files. The colon (:) is required. Valid devices are as follows:

- **bootflash**. This device is the internal Flash memory in the Cisco 7500 series.
- **slot0**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card.
- **slot1**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.

tftp-server flash [*partition-number***:**]*filename1* [**alias** *filename2*] [*access-list-number*]
tftp-server rom alias *filename1* [*access-list-number*]
no tftp-server {**flash** [*partition-number***:**]*filename1* | **rom alias** *filename2*}
[**no**] **tftp-server flash** *device***:***filename* (Cisco 7000 series and Cisco 7500 series only)

To specify that the router operate as a TFTP server or to specify that a Flash device on a Cisco 7000 series or Cisco 7500 series operate as a TFTP server, use one of the listed **tftp-server** global configuration commands. This command replaces the **tftp-server system** command. To remove a previously defined filename, use the **no tftp-server** command with the appropriate filename.

flash	Specifies TFTP service of a file in Flash memory.
rom	Specifies TFTP service of a file in ROM.
filename1	Name of a file in Flash or in ROM that the TFTP server uses in answering TFTP Read Requests.
alias	Specifies an alternate name for the file that the TFTP server uses in answering TFTP Read Requests.
filename2	Alternate name of the file that the TFTP server uses in answering TFTP Read Requests. A client of the TFTP server can use this alternate name in its Read Requests.
access-list-number	(Optional) Basic IP access-list number. Valid values are 0 to 99.
*partition-number***:**	(Optional) Specifies TFTP service of a file in the specified partition of Flash memory. If the partition number is not specified, the file in the first partition is used.

*device***:** Specifies TFTP service of a file on a Flash memory device in the Cisco 7000 series or Cisco 7500 series. The colon (:) is required. Valid devices are as follows:

- **flash**. This device is the internal Flash memory on the Cisco 7000 series.
- **bootflash**. This device is the internal Flash memory in the Cisco 7500 series.
- **slot0**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card.
- **slot1**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.

filename Name of the file on a Flash memory device that the TFTP server uses in answering a TFTP Read Request. Use this argument only with the Cisco 7000 series or Cisco 7500 series.

undelete *index* [*device***:**]

To recover a deleted file on a specified device of a Cisco 7000 series or Cisco 7500 series, use the **undelete** EXEC command.

index Number that indexes the file in the **dir** command output.

*device***:** (Optional) Device to contain the recovered configuration file. The colon (:) is required. Valid devices are as follows:

- **bootflash**. This device is the internal Flash memory in the Cisco 7500 series.
- **slot0**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card.
- **slot1**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.

The default device is the one specified by the **cd** command.

verify [*device***:**] *filename*

On the Cisco 7000 series or the Cisco 7500 series, to verify the checksum of a file on a Flash device, use the **verify** EXEC command. This command replaces the **copy verify** and **copy verify flash** commands.

*device***:** (Optional) Device containing the file whose checksum is being verified. The colon (:) is required. Valid devices are as follows:

- **flash**. This device is the internal Flash memory in the Cisco 7000 series.
- **bootflash**. This device is the internal Flash memory in the Cisco 7500 series.
- **slot0**. This device is the PCMCIA slot on the Cisco 7000 series RP card or the first PCMCIA slot on the Cisco 7500 series RSP card.
- **slot1**. This device is the second PCMCIA slot on the Cisco 7500 series RSP card.

When you omit this argument, the system verifies the checksum of the specified file on the current working device.

filename	Name of a file on the specified Flash device. The file can be of any type. The maximum filename length is 63 characters.

verify bootflash

To verify the checksum of a boot image in Flash memory on the Cisco 4500, use the **verify bootflash** EXEC command. This command replaces the **copy verify bootflash** command.

verify flash

To verify the checksum of Flash memory, use the **verify flash** EXEC command. This command replaces the **copy verify** and **copy verify flash** commands.

write erase

The **erase startup-config** command replaces this command. Refer to the description of the **erase** command for more information on **erase startup-config**.

write memory

The **copy running-config startup-config** command replaces this command. Refer to the description of the **copy running-config** command for more information on **copy running-config startup-config**.

write network

The **copy running-config rcp** or **copy running-config tftp** command replaces this command. Refer to the description of the **copy running-config** command for more information on **copy running-config rcp** or **copy running-config tftp**.

write terminal

The **show running-config** command replaces this command. Refer to the description of **show running-config** for more information.