Chapter 4

Updating Software Images and Configuration Files

This chapter describes how to copy and save configuration files and software image files.

Downloading and Uploading a Software Image on a TFTP Server

For easy software image management, the HP 9308M, 9304M, and 6308M-SX routing switches and the 6208M-SX switch support the download and upload of software images between the flash modules on the devices and a Trivial File Transfer Protocol (TFTP) server on the network.

The management module on each device contains two flash memory modules:

- ***Primary flash*** – The default local storage device for system image files and configuration files.
- ***Secondary flash*** – A second flash storage device. You can use the secondary flash to store redundant images for additional booting reliability or to preserve one software image while testing out another one.

Only one flash device is active at a time. By default, the primary image will become active upon reload.

You can update the software contained on a flash module using TFTP to copy the update image from a TFTP server onto the flash module. In addition, you can copy software images and configuration files from a flash module to a TFTP server.

NOTE: The HP devices are TFTP clients but not TFTP servers. You must perform the TFTP transaction from the device. You cannot "put" a file onto the device using the interface of your TFTP server.

NOTE: The TFTP client on the devices supports 8.3 file names. If you try to copy a file with more than eight characters and up to three characters in the extension, the interface reports that the file was not found on the TFTP server.

USING THE CLI

To initiate transfers of software images to and from a TFTP server from the CLI, enter one of the following commands from the User (Privileged) level:

- **copy flash tftp*…*** – Use this command to upload a copy of the software image to a TFTP server.
- **copy tftp flash*…*** – Use this command to download a copy of the software image from a TFTP server into the device's flash.

USING THE WEB MANAGEMENT INTERFACE

To initiate transfers of software images to and from a TFTP server from the Web management interface:

1. Select the TFTP Image link. The panel shown in Figure 4.1 will appear.
2. Enter the address of the TFTP server.
3. Specify the origin or destination of the system image code for system flash.
4. Select the Copy from Server button to save the image to system flash or the Save to Server button to save the image from system flash to the server.

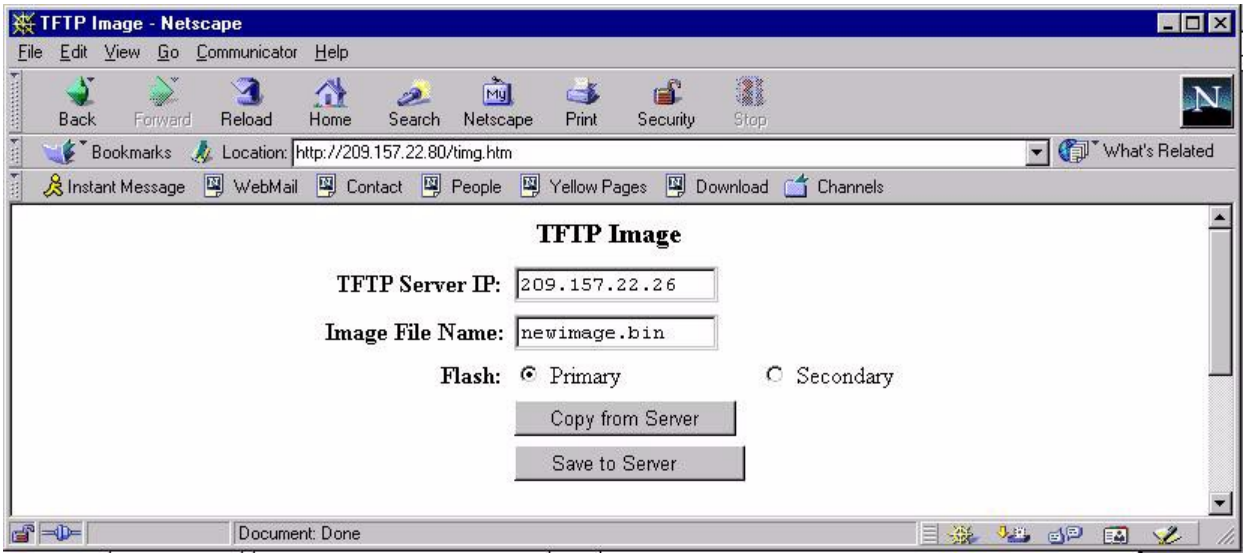

Figure 4.1 TFTP transfer screen for software images

Executable Boot Command

You can use boot commands to immediately initiate software boots from a software image stored in primary or secondary flash on a routing switch or from a BootP or TFTP server. You can test new versions of code on a routing switch or choose the preferred boot source from the console boot prompt without requiring a system reset.

NOTE: If you are upgrading boot code (as opposed to flash code, which is system software), it is very important that you verify a successful TFTP transfer of boot code *before* you reset the system. If the boot code is not transferred successfully but you try to reset the system, the system will not have the boot code with which to successfully boot.

By default, the routing switch first attempts to boot from the image stored in its primary flash, then its secondary flash, and then from a TFTP server. You can modify this booting sequence at the global CONFIG level of the CLI using the **boot system …** command.

USING THE CLI

To initiate an immediate boot from the CLI, enter one of the **boot system…** commands as described in “EXEC Commands – Privileged Level” on page B-41.

USING THE WEB MANAGEMENT INTERFACE

To initiate an immediate boot:

1. Select the Boot Sequence link from the menu in the frame on the left side of the chassis window. (This link is not available from the System configuration sheet.)
2. Select one of the following locations from which to boot:
   - primary flash
   - secondary flash
   - TFTP server
   - BootP server
3. If you are booting from a server, enter the IP address of the server and file name of the flash image file.
4. Select the Add button after all entries are complete. The next time the system is rebooted, it uses the boot sequence you specified.

Loading and Saving Configuration Files

For easy configuration management, the HP 9308M, 9304M, and 6308M-SX routing switches and the 6208M-SX switch support both the download and upload of configuration files between the switch or routing switch and a TFTP server on the network.

NOTE: The boot flash must have release 2.0 or later boot code installed for a TFTP download of the configuration file to the system flash to be active without a system reset. To determine the system's boot code versions, enter the **show version** or **show flash** command.

You can upload either the startup configuration file or the running configuration file to the TFTP server for backup and use in booting the system.

- ***Startup configuration file*** – This file contains the configuration information that is currently saved in flash. To display this file, enter the **show configuration** command at any CLI prompt.
- ***Running configuration file*** – This file contains the configuration active in the system RAM but not yet saved to flash. These changes could represent a short-term requirement or general configuration change. To display this file, enter the **show running-config** or **write terminal** command at any CLI prompt.

Each device can have one startup configuration file and one running configuration file. The startup configuration file is shared by both flash modules. The running configuration file resides in DRAM.

Replacing the Startup Configuration with the Running Configuration

After you make configuration changes to the active system, you can save those changes by writing them to flash memory. When you write configuration changes to flash memory, you replace the startup configuration with the running configuration.

USING THE CLI

To replace the startup configuration with the running configuration, enter the following command at any Enable or CONFIG command prompt:

```
HP9300# write memory
```

USING THE WEB MANAGEMENT INTERFACE

To replace the startup configuration with the running configuration, select the Save To Flash link from the System configuration sheet.

Replacing the Running Configuration with the Startup Configuration

If you want to back out of the changes you have made to the running configuration and return to the startup configuration, use one of the following methods.

USING THE CLI

To replace the startup configuration with the running configuration, enter the following command at the Privileged EXEC level of the CLI:

```
HP9300# reload
```

USING THE WEB MANAGEMENT INTERFACE

To replace the startup configuration with the running configuration, select the Reload link from the System configuration sheet.

Copying a Configuration File to or from a TFTP Server

To copy the startup-config or running-config file to or from a TFTP server, use one of the following methods.

NOTE: You can name the configuration file when you copy it to a TFTP server. However, when you copy a configuration file from the server to a device, the file is always copied as "startup-config" or "running-config", depending on which type of file you saved to the server.

USING THE CLI

To initiate transfers of configuration files to or from a TFTP server using the CLI, enter one of the following commands:

- **copy startup-config tftp** – Use this command to upload a copy of the startup configuration file from the switch or routing switch to a TFTP server.
- **copy running-config tftp** – Use this command to upload a copy of the running configuration file from the switch or routing switch to a TFTP server.
- **copy tftp startup-config** – Use this command to download a copy of the startup configuration file from a TFTP server to a switch or routing switch.

USING THE WEB MANAGEMENT INTERFACE

To initiate transfers of configuration files to and from a TFTP server using the Web management interface:

1. Select the TFTP Image link. The panel shown in Figure 4.2 will appear.
2. Enter the IP address of the TFTP server.
3. Enter the configuration file name.
4. Select the appropriate Copy or Save button to initiate the transfer.

NOTE: While TFTP transfers are in process, a red bar labeled 'processing' is displayed on the screen. When the TFTP transfer is actively transferring image or configuration data, a green bar labeled 'loading' is displayed. When a successful transfer is complete, the message “TFTP transfer complete” is displayed.

If a problem with the transfer occurs, one of the error codes listed in “Diagnostic Error Codes and Remedies for TFTP Transfers” on page 4-5 is displayed.

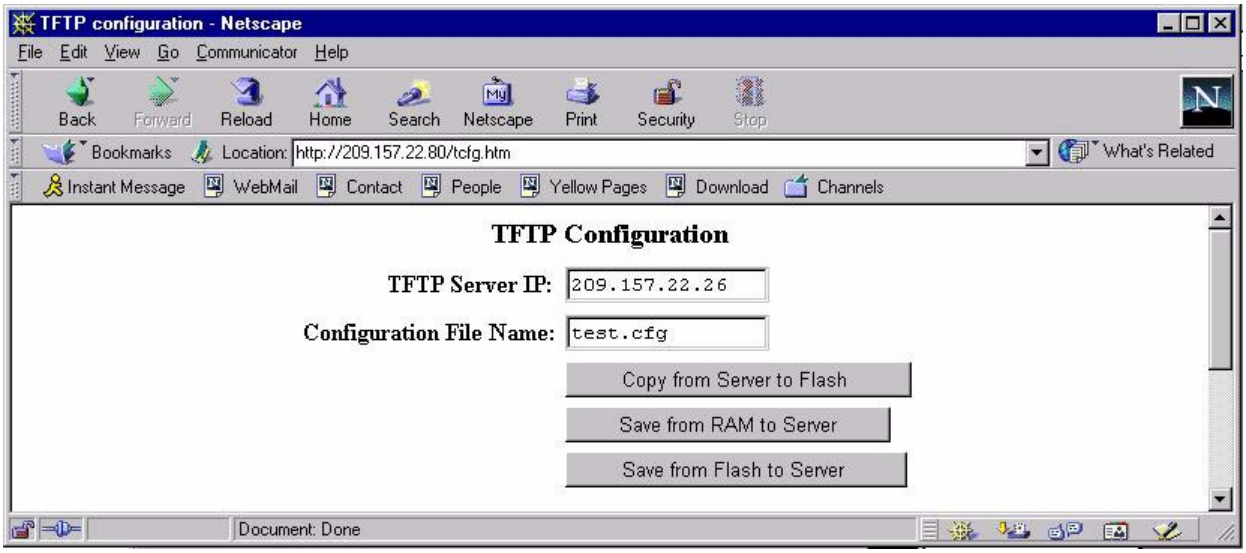

Figure 4.2 TFTP transfer screen for software configuration files

Diagnostic Error Codes and Remedies for TFTP Transfers

If an error occurs with a TFTP transfer to or from an HP device, one of the following error codes is displayed.

Error code	Message	Explanation and action
1	Flash read preparation failed.	A flash error occurred during the download. Retry the download. If it fails again, contact customer support.
2	Flash read failed.	
3	Flash write preparation failed.	
4	Flash write failed.	
5	TFTP session timeout.	TFTP failed because of a time out. Check IP connectivity and make sure the TFTP server is running.
6	TFTP out of buffer space.	The file is larger than the amount of room on the device or TFTP server. If you are copying an image file to flash, first copy the other image to your TFTP server, then delete it from flash. (Use the **erase flash...** CLI command at the Privileged EXEC level to erase the image in the flash.) If you are copying a configuration file to flash, edit the file to remove unneeded information, then try again.

Error code	Message	Explanation and action
7	TFTP busy, only one TFTP session can be active.	Another TFTP transfer is active on another CLI session or Web management session. Wait, then retry the transfer.
8	File type check failed.	You accidentally attempted to copy the incorrect image code into the system. For example, you might have tried to copy a chassis image into a fixed-port device. Retry the transfer using the correct image.
16	TFTP remote - general error.	The TFTP configuration has an error. The specific error message describes the error. Correct the error, then retry the transfer.
17	TFTP remote - no such file.	
18	TFTP remote - access violation.	
19	TFTP remote - disk full.	
20	TFTP remote - illegal operation.	
21	TFTP remote - unknown transfer ID.	
22	TFTP remote - file already exists.	
23	TFTP remote - no such user.	

Saving or Erasing Image and Configuration Files

You can save modified configuration files to the permanent startup configuration file or erase software images or configuration files.

USING THE CLI

- **erase flash primary** erases the image stored in primary flash of the system.
- **erase flash secondary** erases the image stored in secondary flash of the system.
- **erase startup-config** erases the configuration stored in the startup configuration file; however, the running configuration remains intact until system reboot.
- **write memory** saves the running configuration file into the startup configuration file.

NOTE: All of these commands are at the privileged level of the CLI. See “Command Line Interface Commands” on page B-1.

USING THE WEB MANAGEMENT INTERFACE

You cannot delete image or configuration files using the Web management interface.

Scheduling a System Reload

In addition to reloading the system manually, you can configure the HP device to reload itself at a specific time or after a specific amount of time has passed.

NOTE: The scheduled reload feature requires the system clock. You can use a Simple Network Time Protocol (SNTP) server to set the clock or you can set the device clock manually. See “Specifying a Simple Network Time Protocol (SNTP) Server” on page 8-11 or “Setting the System Clock” on page 8-13.

Reloading at a Specific Time

To schedule a system reload for a specific time, use one of the following methods.

USING THE CLI

To schedule a system reload from the primary flash module for 6:00:00 AM, January 19, 1999, enter the following command at the global CONFIG level of the CLI:

```
HP9300# reload at 06:00:00 01-19-99
```

syntax: **reload <at hh:mm:ss mm-dd-yy> [primary | secondary]**

<hh>:<mm>:<ss> is the hours, minutes, and seconds.

<mm>:<dd>:<yy> is the month, day, and year.

primary | secondary specifies whether the reload is to occur from the primary code flash module or the secondary code flash module. The default is **primary**.

USING THE WEB MANAGEMENT INTERFACE

You cannot schedule a system reload using the Web management interface.

Reloading after a Specific Amount of Time

To schedule a system reload to occur after a specific amount of time has passed on the system clock, use one of the following methods.

USING THE CLI

To schedule a system reload from the secondary flash one day and 12 hours later, enter the following command at the global CONFIG level of the CLI:

```
HP9300# reload after 01:12:00 secondary
```

syntax: **reload <after dd:hh:mm> [primary | secondary]**

<dd> is the number of days.

<hh> is the number of hours.

<mm> is the number of minutes.

primary | secondary specifies whether the reload is to occur from the primary code flash module or the secondary code flash module.

USING THE WEB MANAGEMENT INTERFACE

You cannot schedule a system reload using the Web management interface.

Displaying the Amount of Time Remaining Before a Scheduled Reload

To display how much time is remaining before a scheduled system reload takes place, use one of the following methods.

USING THE CLI

To display how much time is remaining before a scheduled system reload, enter the following command from any level of the CLI:

```
HP9300# show reload
```

USING THE WEB MANAGEMENT INTERFACE

You cannot display information about a scheduled reload using the Web management interface.

Canceling a Scheduled Reload

To cancel a scheduled reload, use one of the following methods.

USING THE CLI

To cancel a scheduled system reload using the CLI, enter the following command at the global CONFIG level:

```
HP9300# reload cancel
```

USING THE WEB MANAGEMENT INTERFACE

You cannot cancel a scheduled reload using the Web management interface.