



# Resolving Common Image Installation Problems



## Note

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The information in this document is based on Cisco IOS Release 11.2 and later releases.

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This appendix is designed to assist you with problems that may develop while you are installing Cisco IOS software images using a TFTP or remote copy protocol (rcp) server application. For rcp applications, substitute rcp for TFTP in the instructions.

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## Before You Begin



### Caution

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Do not save anything while you are in boot mode. Avoid using the saving commands (write mem or copy run start), and respond **no** to any prompt suggesting that you save your current configuration. If you save while you are in this mode, your configuration can be partially or completely erased.

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## Resolving Default Gateway Issues

### Determine the Default Gateway for the Router

The default gateway is always the next hop that any packet will have to cross to reach the workstation where you have the TFTP server or Telnet session source, or both. The traceroute command shows the IP address of the default gateway in the first line of the output:

## Example

```
Router> traceroute 172.17.247.195
Type escape sequence to abort.
Tracing the route to 172.17.247.195
 0 10.200.40.1 4 msec 4 msec 4 msec
 1 172.17.247.195 4 msec * 0 msec
Router>
```

## Adding the Default Gateway in the Configuration

To add the default gateway, type the **ip default-gateway** command in the global configuration mode.

```
ip default-gateway [ip address]
```

ip address	The IP address of the router.
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## Verifying the TFTP Server and Router are in the Same Network

You will need to compare the IP addresses and masks of the TFTP server and the Ethernet interface of the router.

### Example 1

The TFTP server IP address is 172.17.247.195 and the mask is 255.255.0.0. The interface Ethernet 0 of the router IP address is 172.17.3.192 and the mask is 255.255.0.0. In this example, the TFTP server and this interface of the router are in the same network, so a default gateway is not required.

### Example 2

The TFTP server IP address is 172.17.247.195 and the mask is 255.255.0.0. The interface Ethernet 0 of the router IP address is 172.10.3.192 and the mask is 255.255.0.0. In this example, they are on different IP networks so it is necessary to configure a default gateway on the router.

## Determining the IP Address and Mask on the Router

Look for the IP address command under the interface Ethernet statement in your configuration.

## Example

```
Router> en
Password:
Router# show run
Building configuration...
Current configuration:
!
version 11.3
```

```

service timestamps debug uptime
.....
interface Ethernet0
ip address 172.17.3.192 255.255.0.0

```

## Determining the IP Address of the TFTP Server on Windows 95

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- Step 1** From the toolbar, select Start and then Run.
- Step 2** Type winipcfg and then click OK to display the IP configuration dialog box.
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## Determining the IP Address of the TFTP Server on a UNIX Workstation

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- Step 1** Enter the command netstat -in. The IP addresses of the interfaces on your station appear.
- Step 2** Select the IP address for the interface that goes into the router network.
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## Troubleshooting Problems During Software Transfer

### Resolving Error Message Text checksum verification failure During the Copy

If you have seen many "." instead of "!" during the copy, you may see a message similar to the following example:

```

COPY: Text checksum verification failure
TFTP from 172.17.247.195 failed/aborted
Verifying checksum... invalid (expected 0x62B7,
computed 0x60B9)

```

If you enter a show flash command, you may see something similar to the following example:

```

Router# show flash
PCMCIA flash directory:
File Length Name/status
1 3437967 c1600-sy-mz.120-8.0.2.T
2 3489036 c1600-y-1.112-19.P1
3 290304 c1600-y-1.112-18.P [invalid checksum]

```

In both cases, a checksum failure indicates that the file has not been properly copied into the memory and you need to copy it again. First, verify that the file you copied to the TFTP server is the same size as the original file. (Be aware that the size is listed in bytes in the router and is sometimes listed in kilobytes in TFTP servers.) If the network is very busy, you may also see this behavior; try the copy again when the network is not so loaded, or establish a direct Ethernet connection between the TFTP server and the router to download the file.

## Resolving Error Message "error opening tftp"

This is an example of the error message:

```
Router# copy tftp flash
Address or name of remote host [172.17.0.5]?
Source filename [rsp-dsv-mz.112-19.P1.bin]?
Destination filename [rsp-dsv-mz.112-19.P1.bin]?
Accessing tftp://172.17.0.5/rsp-dsv-mz.112-19.P1.bin...
%Error opening tftp://172.17.0.5/rsp-dsv-mz.112-19.P1.bin (No such file or directory)
```

If you receive this message, verify that the file is in the root directory of the TFTP server, and check to see if you entered the correct filename. Some easily mistaken letters are I (capital i), l (small L) and 1 (one).

## Resolving Display of Timeout Error Messages

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- Step 1** Verify that the TFTP server is open on your PC.
- Step 2** Make sure that the file is in the root directory (from the menu bar, select **View>Options**).
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## Resolving Error Message "Can't open file"

Verify that the TFTP server is running on your PC. Verify that you have copied the exact filename. Some easily mistaken letters are I (capital i), l (small L) and 1 (one).

### Instructions for Run-from-RAM Installations

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- Step 1** To copy a system image from one device to another, use the copy command in global configuration mode.

**Example:**

```
copy tftp ?
```

- Step 2** Refer to the [Cisco IOS Configuration Fundamentals Command Reference, Release 12.2](#) for additional information about the copy command. Methods vary according to different platforms.
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#### What to Do Next

The three most common forms of the copy command for this purpose are as follows:

```
copy tftp flash
copy rcp flash
copy slot0: slot1:
```

The following example provides an illustration of the copy slot0: slot1 command:

```

router# show slot0:
-#- ED --type-- --crc--- -seek-- nlen -length- -----date/time-----
name
1 .D unknown 5E8B84E6 209D8 11 2392 Jan 22 2000 00:22:42
flashconfig
2 .. image 5E7BAE19 B623C4 22 11802988 Jan 22 2000 00:23:18
rsp-jsv-mz.1
20-8.0.2.T
router# show slot1:
-#- ED --type-- --crc--- -seek-- nlen -length- -----date/time-----
name
1 .. unknown 6A2B4BA7 6FA9E0 20 7186784 Jul 30 1999 15:05:19
rsp-jv-mz.11 1-26.CC1
2 .. config 631F0D8B 6FB1EC 6 1929 Oct 19 1999 06:15:49
config
3 .. config 631F0D8B 6FB9F8 7 1929 Oct 19 1999 06:16:03
config1
router# copy slot0: slot1:
Source filename []? rsp-jsv-mz.120-8.0.2.T
Destination [slot1]?
CCCCCCCCCCCCCCCCCCCC
2392 bytes copied in 0.300 secs

```

## Instructions Before Reloading

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- Step 1** Verify that the new Cisco IOS software image has been stored properly. Use the show flash command to make sure that the file has been saved, that the size is correct, and that you do not have an invalid checksum message. If the file does not appear, or if it appears followed by "[invalid checksum]", or if the size does not correspond to the file size on the tftp server, you must start the installation again. Be aware that the size is listed in bytes in the router and is sometimes listed in kilobytes in TFTP servers.
- Step 2** Verify that the boot system commands are in the right order in the configuration. The router stores and executes the boot system commands in the order in which you enter them in the configuration file. If a boot system command entry in the list specifies an invalid device or filename, the router skips that entry.
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### What to Do Next

This is an example of boot system commands defined in the configuration file:

```

Router> en
Password:
Router# conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)# boot system flash c1600-y-1.112-18.P
Router(config)# boot system flash

```

# Troubleshooting Problems by Verifying the Software Image

## Resolving the show version Command not Displaying Proper Image

If the show version command output does not display the Cisco IOS image that you just loaded, perform these steps:

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- Step 1** Verify that the new Cisco IOS software image has been stored properly. Use the show flash command to make sure that the file has been saved, that the size is correct, and that you do not have an invalid checksum message. If the file does not appear, or if it appears followed by "[invalid checksum]", or if the size does not correspond to the file size on the tftp server, you need to start the installation again. Be aware that the size is listed in bytes in the router and is sometimes listed in kbytes in TFTP servers.
- Step 2** Verify that the boot system commands are in the right order in the configuration. The router stores and executes the boot system commands in the order in which you enter them in the configuration file. If a boot system command entry in the list specifies an invalid device or filename, the router skips that entry.
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## Resolving the Rxboot Prompt (Router(boot)) Displaying After Reload

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- Step 1** Verify that the new Cisco IOS software image has been stored properly. Use the show flash command to make sure that the file has been saved, that the size is correct, and that you do not have an invalid checksum message. If the file does not appear, or if it appears followed by "[invalid checksum]", or if the size does not correspond to the file size on the tftp server, you need to start the installation again. Be aware that the size is listed in bytes in the router and is sometimes listed in kbytes in TFTP servers.
- Step 2** Verify that the boot system commands are in the right order in the configuration. The router stores and executes the boot system commands in the order in which you enter them in the configuration file. If a boot system command entry in the list specifies an invalid device or filename, the router skips that entry.
- Step 3** Verify that the config register value is correct. The last digit should be a 2. You can check this with the show version command. If the value is not correct, you need to restore a valid value and reload the image.
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