C H A P T E R **5**

Maintaining the Cisco uBR7200 Series Router

This chapter describes basic maintenance for the Cisco uBR7200 series universal broadband router and contains the following sections:

Online Insertion and Removal

All cable interface line cards or port adapters in a Cisco uBR7200 series universal broadband router support online insertion and removal (OIR). Technically, the Cisco uBR7200 series universal broadband routers support true OIR, or "hot swapping," of cable interface line cards only when exchanging cable interface line cards of the exact same type (for example, exchanging a Cisco uBR-MC28U card for another Cisco uBR-MC28U card). Under these conditions, no reload of the router is required.

You can remove and replace a cable interface line card or port adapter with the same type of component without interrupting the system. This function allows you to install and replace the same type of port adapters (Cisco PA-POS-OC3 with a Cisco PA-POS-OC3) or cable interface line cards (Cisco uBR-MC16C with a Cisco uBR-MC16C) while the router is operating.

Note
However, to replace a port adapter or a cable interface line card with a different type of port adapter or line card (for example, hot swapping from an Cisco uBR-MC16C to a Cisco uBR-MC16E or replacing a high-speed serial interface [HSSI] adapter with an ATM adapter), you must copy your startup configuration to your running configuration on the Cisco uBR7200 series router to enable the interfaces on the new cable interface line card or port adapter.

Caution
When you OIR different types of cable interface line cards (for example, a Cisco uBR-MC16C card replaced by a Cisco uBR-MC16S card, or Cisco uBR-MC16C card replaced by a Cisco uBR-MC28U card), you might have to reconfigure the interfaces, and we highly recommend that you reload the router.

Detailed instructions for installing Cisco cable interface line cards are contained in the document *Cisco uBR7200 Series Cable Interface Line Card Hardware Installation* at the following URL:

http://www.cisco.com/en/US/docs/interfaces_modules/cable/line_cards/installation/guide/mcxxfru.html

For information about installing and configuring port adapters, refer to the applicable Cisco uBR7200 series port adapter installation and configuration document at the following URL:

http://www.cisco.com/univercd/cc/td/doc/product/cable/cab_rout/cfig_nts/index.htm

Caution   The network processing engine, the I/O controller, and the cable clock card are system components that cannot be removed if the universal broadband router is operating. Removing the network processing engine, the I/O controller, or the cable clock card (Cisco uBR7246VXR only) while the Cisco uBR7200 router is operating causes the router to shut down or crash, and might damage or destroy memory files.

Each port adapter and cable interface line card has a bus connector that connects it to the routers's midplane. Each midplane connector has a set of tiered pins in three lengths. The pins send specific signals to the system as they make contact with the port adapter or interface card. The system assesses the signals it receives and the order in which it receives them to determine if a board is being removed or inserted into the midplane. From these signals, the system determines whether to reinitialize a new interface or shut down a removed interface. For example, when inserting a port adapter, the longest pins make contact with the port adapter first, and the shortest pins make contact last. The system recognizes the signals and the sequence in which it receives them.

When you remove or insert a port adapter or cable interface line card in a Cisco uBR7200 series router, the midplane pins send signals to notify the system, which then does the following:

1. Rapidly scans the midplane for configuration changes.

2. Initializes all newly inserted port adapters and cable interface line cards, noting any removed interfaces and placing them in the administratively shutdown state.

3. Brings all previously configured interfaces on the port adapter or cable interface line card back to the state they were in when it was removed. If the same type of port adapter or interface line card type is reinserted into a slot, its ports are configured and brought online up to the port count of the original port adapter or cable interface line card. If, however, any new interfaces are put in the administratively shutdown state, as if they were present (but not configured) at boot time the system must be configured.

Environmental Monitoring and Reporting Functions

Environmental monitoring and reporting functions are controlled by the network processing engine and allow you to maintain normal system operation by identifying and resolving adverse conditions before loss of operation. The environmental monitoring functions constantly monitor the internal chassis air temperature and DC supply voltages. Each power supply monitors its own voltage, currents, and temperature and shuts itself down if it detects a critical condition within the power supply. If conditions reach shutdown thresholds, the system shuts down to avoid equipment damage from excessive heat. The reporting functions periodically log the values of measured parameters so that you can retrieve them for analysis later, and the reporting functions display warnings on the console if any of the monitored parameters exceed defined thresholds.

Environmental Monitoring

The environmental monitoring functions use the following five levels of status conditions to monitor the system. Four sensors, two on the network processing engine and two on the I/O controller, monitor the temperature of the cooling air as it moves through the chassis.

- Normal—All monitored parameters are within normal tolerances.

- Warning—The system has exceeded a specified threshold. The system continues to operate, but we recommend operator action to bring the system back to a normal state.

- Critical—An out-of-tolerance temperature or voltage condition exists. The system continues to operate; however, the system is approaching shutdown. Immediate operator action is required.

- Shutdown—The processor has detected a temperature condition that could result in physical damage to system components and has disabled DC power to all internal components. Requires immediate operator action. Before any shutdown, the system logs the status of monitored parameters in NVRAM so that you can retrieve it later to help determine the cause of the problem. The power supply repeatedly attempts to restart itself within 90 seconds to clear the temperature condition.

- Power supply shutdown—The power supply detected an internal out-of-tolerance overvoltage, overcurrent, or temperature condition and shut itself down. The power supply repeatedly attempts to restart itself within 90 seconds to clear the shutdown condition.

Table 5-1 lists the temperature thresholds for the processor-monitored levels.

Table 5-1   Typical Processor-Monitored Temperature Thresholds for the Cisco uBR7246VXR and Cisco uBR7246

Parameter	High Warning	High Critical	Shutdown
Chassis inlet	104°F (40°C)	122°F (50°C)	–
Chassis outlet 1	109°F (43°C)	127°F (53°C)	136°F (58°C)
Chassis outlet 2	167°F (75°C)	167°F (75°C)	–
Chassis outlet 3	131°F (55°C)	149°F (65°C)	158°F (70°C)
Chassis outlet 4	131°F (55°C)	149°F (65°C)	158°F (70°C)
Chassis outlet 5	131°F (55°C)	149°F (65°C)	158°F (70°C)

Temperature outlets 1 through 3 on both platforms are located on the NPE. See the appropriate chapter for your NPE in the *Network Processing Engine and Network Services Engine Installation and Configuration* document for their exact locations. Temperature outlets 4 and 5 on the Cisco uBR7246VXR are located on individual fans in the fan tray—each sensor is taped to one of the individual fan assemblies in the fan tray.

The exact location of these sensors can vary from one fan tray to another, but Figure 5-1 shows the typical location of each sensor. You can identify the sensor by looking for a small strip of metal that is taped to one of the fan assemblies.

Figure 5-1   *Temperature Sensors on the Cisco uBR7246VXR Fan Tray*
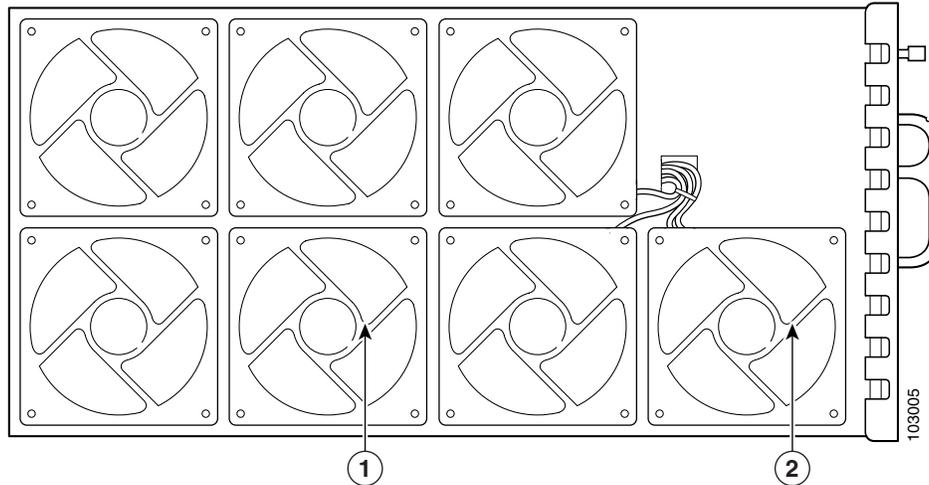

Table 5-2 lists the DC power thresholds for the normal, warning, and critical (power-supply-monitored) levels.

Table 5-2   *Typical Power Supply-Monitored DC-Voltage Thresholds*

Sample Point	Low Critical	Low Warning	High Warning	High Critical
+3.5V	+3.32V	+3.34V	+3.66V	+3.68V
+5.2V	+4.97V	+4.99V	+5.45V	+5.48V
+12.2V	+11.42V	+11.52V	+12.85V	+12.90V
−12.2V	−11.33V	−11.43V	−12.74V	−12.84V
+16.0V	+15.15V	+15.30V	+19.65V	+19.85V
−16.0V	−15.15V	−15.30V	−19.65V	−19.85V

If the air temperature exceeds a defined threshold, the system controller displays warning messages on the console terminal and, if the temperature exceeds the shutdown threshold, it shuts down the system. The system stores the present parameter measurements for both temperature and DC voltage in NVRAM so that you can retrieve them later as a report of the last shutdown parameters.

The power supplies monitor internal power supply temperature and voltages. A power supply is either within tolerance (normal) or out of tolerance (critical), as shown in Table 5-2. If an internal power supply temperature or voltage reaches a critical level, the power supply shuts down without any interaction with the system processor.

Reporting Functions

The Cisco uBR7200 series router displays warning messages on the console if chassis interface-monitored parameters exceed a desired threshold. You can also retrieve and display environmental status reports with the **show environment**, **show environment all**, **show environment last,** and **show environment table** commands. Parameters are measured and reporting functions are updated every 60 seconds. A brief description of each of these commands follows.

⚠ **Caution**   To prevent overheating the chassis, ensure that your system is drawing cool inlet air. Overtemperature conditions can occur if the system is drawing in the exhaust air of other equipment. Ensure adequate clearance around the sides of the chassis so that cooling air can flow through the chassis interior unimpeded and exhaust air exits the chassis and is not drawn into the inlet vent of other devices.

The **show environment** command display reports the current environmental status of the system. The report displays parameters that are out of the normal values. No parameters are displayed if the system status is normal. The example that follows shows the display for a system in which all monitored parameters are within normal range:

```
Router# show environment

All measured values are normal
```

If the environmental status is *not* normal, the system reports the worst-case status level. Following is an example overvoltage warning:

```
Router# show environment

Warning: +3.45 V measured at +3.83 V
```

The **show environment last** command retrieves and displays the NVRAM log, which shows the reason for the last system shutdown (if the shutdown was related to voltage or temperature) and the environmental status at that time. Air temperature is measured and displayed, and the DC voltage supplied by the power supply is also displayed.

Following is sample output of the **show environment last** command for a Cisco uBR7246:

```
Router# show environment last

Temperature readings:
chassis inlet      previously measured at 23C/73F
chassis outlet 1   previously measured at 26C/78F
chassis outlet 2   previously measured at 32C/89F
chassis outlet 3   previously measured at 41C/105F
chassis outlet 4   previously measured at 21C/69F
chassis outlet 5   previously measured at 21C/69F

Voltage readings:
+3.5 V             previously measured at +3.57
+5.2 V             previously measured at +5.16
+12.2 V            previously measured at +12.26
-12.2 V            previously measured at -12.41
+16 V              previously measured at +17.01
-16 V              previously measured at -17.33

Reason for last shutdown:
power supply
```

📝 **Note**   The example above is specific to the Cisco uBR7246 and you might notice a difference in the output for your Cisco uBR7246VXR.

The **show environment table** command displays the temperature and voltage thresholds for each temperature sensor and for each monitored status level, which are related to those thresholds listed in Table 5-1. The display also lists the shutdown threshold for the system. You can abbreviate the command to **sh env table**.

Following is sample output of the **show environment table** command for a Cisco uBR7246:

```
Router# show environment table

Sample Point       LowCritical    LowWarning       HighWarning      HighCritical
chassis inlet                                      40C/104F         50C/122F
chassis outlet 1                                   43C/109F         53C/127F
chassis outlet 2                                   75C/167F         75C/167F
chassis outlet 3                                   55C/131F         65C/149F
chassis outlet 4                                   55C/131F         65C/149F
chassis outlet 5                                   55C/131F         65C/149F
+3.5 V             +3.32          +3.34            +3.66            +3.68
+5.2 V             +4.97          +4.99            +5.45            +5.48
+12.2 V            +11.42         +11.52           +12.85           +12.90
-12.2 V            -11.33         -11.43           -12.74           -12.84
+16 V              +15.15         +15.30           +19.65           +19.85
-16 V              -15.15         -15.30           -19.65           -19.85
System shutdown for chassis outlet 1 58C/136F
System shutdown for chassis outlet 3 70C/158F
System shutdown for chassis outlet 4 70C/158F
System shutdown for chassis outlet 5 70C/158F
```

Note   Temperature ranges and values are subject to change.

Note   The example above is specific to the Cisco uBR7246, and you might notice a difference in the output for your Cisco uBR7246VXR.

The **show environment all** command displays an extended report that includes temperature readings and voltage readings. The **show environment all** command also displays a report showing which power supply slots are occupied and which are empty.

Following is sample output of the **show environment all** command for a Cisco uBR7246:

```
Router# show environment all

Power Supplies:
    Power supply 1 is empty.
    Power supply 2 is Zytek DC Power Supply. Unit is on.

Temperature readings:
    chassis inlet    measured at 23C/73F
    chassis outlet 1 measured at 25C/77F
    chassis outlet 2 measured at 32C/89F
    chassis outlet 3 measured at 41C/105F
    chassis outlet 4 measured at 46C/114F

Voltage readings:
    +3.5 V  measured at +3.59 V
    +5.2 V  measured at +5.22 V
    +12.2 V measured at +12.29 V
    -12.2 V measured at -12.39 V
    +16 V   measured at +15.46 V
    -16 V   measured at -18.29 V
```

Note   The example above is specific to the Cisco uBR7246, and you might notice a difference in the output for your Cisco uBR7246VXR.

Fan Failures

When the system power is on, the Cisco uBR7200 series router fans should be operational. The system continues to operate if a fan fails; however, if the air temperature exceeds a defined threshold, the system controller displays warning messages on the console terminal and, if the temperature exceeds the shutdown threshold, it shuts down the system.

If the system does shut down because the temperature exceeded the shutdown threshold, the system displays the following message on the console screen and in the environment display when the system restarts:

```
Queued messages:
%ENVM-1-SHUTDOWN: Environmental Monitor initiated shutdown
```

For complete descriptions and instructions for the environmental monitor commands, refer to the following documents:

Cisco IOS CMTS Cable Command Reference Guide at the following URL:

http://www.cisco.com/en/US/docs/ios/cable/command/reference/cbl_book.html

Cisco IOS CMTS Cable Software Configuration Guide at the following URL:

http://www.cisco.com/en/US/docs/ios/cable/configuration/guide/12_2sc/cbl_12_2sc_book.html

Configuration Fundamentals Command Reference at the following URL:

http://www.cisco.com/en/US/docs/ios/12_2/configfun/command/reference/ffun_r.html

Flash Memory Card

This section covers insertion, removal, and formatting of flash memory cards in the Cisco uBR7200 series universal broadband router.

The I/O controller has two Personal Computer Memory Card International Association (PCMCIA) slots for 16- or 20-MB Type II flash memory cards: slot 0 (lower) and slot 1 (upper). The following sections describe how to insert or remove a flash memory card in either PCMCIA slot.

Installing a Flash Memory Card

Complete the following steps to install a flash memory card in either PCMCIA slot:

Note   To avoid potential problems when inserting spare flash memory cards in your Cisco uBR7200 series router, we recommend that you reformat all your flash memory cards on a Cisco uBR7200 series router running Cisco IOS Release 12.0(5)T1 or later during your regularly scheduled service times. The "Reformatting a Flash Memory Card" section on page 5-12 contains instructions that explain how to reformat a flash memory card.

Step 1   Orient the flash memory card so that its connector end faces the appropriate slot. See (a) in Figure 5-2.

Step 2   Carefully guide the card into the slot until it mates with the slot's connector and the eject button for the slot pops out toward you. See (b) in Figure 5-2.

✎

Note Flash memory cards do not insert all the way into the PCMCIA slots; the end of the card protrudes from the I/O controller faceplate. Do *not* attempt to force the card past this point.

Removing a Flash Memory Card

To remove a flash memory card from either PCMCIA slot:

Step 1 Press the ejector button on the slot. See (c) in Figure 5-2.

Step 2 Grasp the card and pull it from the slot.

Step 3 Place the card in an antistatic bag.

Figure 5-2   *Removing a Flash Memory Card*
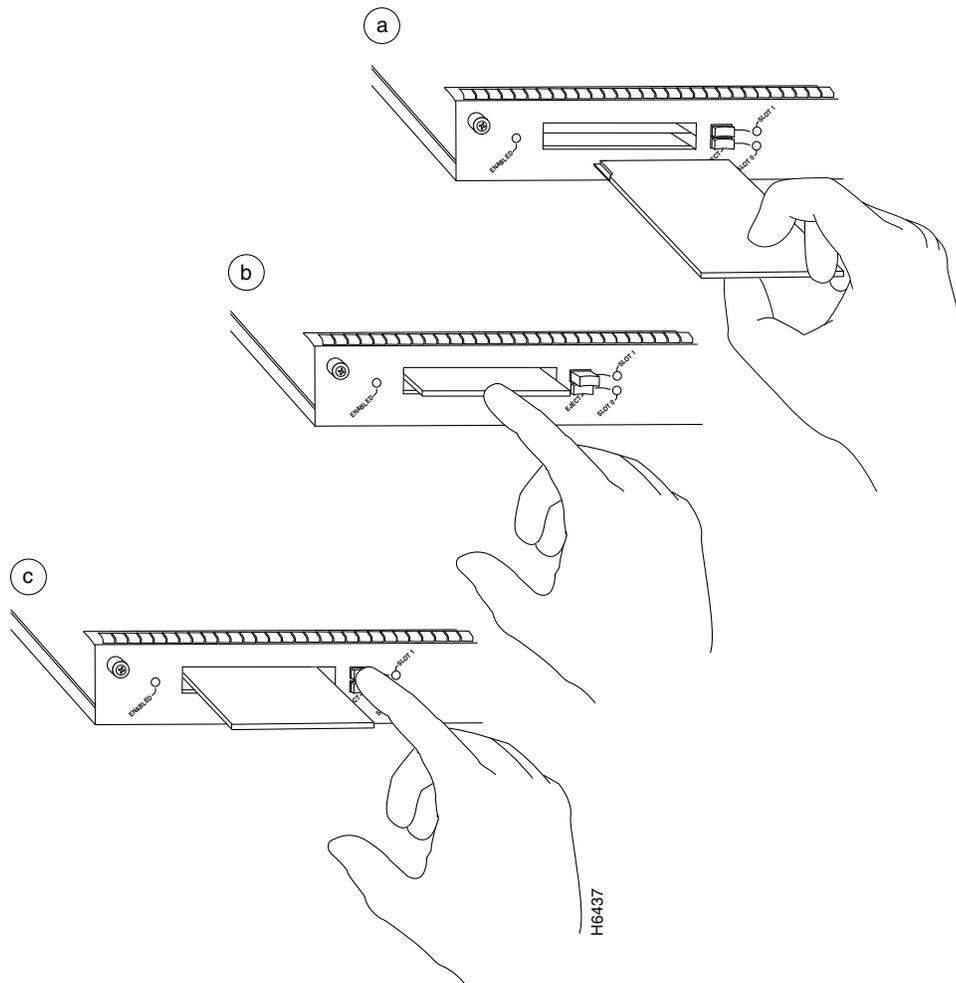
Formatting a New Flash Memory Card

The flash memory card that shipped with your Cisco uBR7200 series universal broadband router contains the Cisco IOS software image you need to boot your router. In some cases, you might need to insert a new flash memory card and copy images or back up configuration files onto it. Before you can use a new flash memory card, you must format it. (Use only Type II PCMCIA flash memory cards provided by Cisco.)

Note   To avoid potential problems when inserting spare flash memory cards in your Cisco uBR7200 series, we recommend that you reformat all your flash memory cards on a Cisco uBR7200 series router running Cisco IOS Release 12.0(5)T1 or later during your regularly scheduled service times. The "Reformatting a Flash Memory Card" section on page 5-12 contains instructions to reformat a flash memory card.

Caution   The following formatting procedure erases all information on the flash memory card. To prevent the loss of important data that might be stored on a flash memory card, proceed carefully. If you want to save the data on a flash memory card, copy the data to a server before you format the card.

Note   The following procedure assumes you have already booted your Cisco uBR7200 series router.

To format a new flash memory card:

Step 1   Using the procedure described in the "Installing a Flash Memory Card" section on page 5-7, insert the flash memory card into slot 0. (If slot 0 is not available, use slot 1.)

Step 2   To format the flash memory card, use the **format slot0:** (or **format slot1:**) command as follows:

```
Router# format slot0:

All sectors will be erased, proceed? [confirm]
Enter volume id (up to 30 characters): MyNewCard
Formatting sector 1
Format device slot0 completed
Router#
```

The new flash memory card is now formatted and ready to use.

Tip   For this example, a 16-MB flash memory card was used, and at the line "Formatting sector," the system counted the card's sectors backward from 128 to 1 as it formatted them. For 20-MB flash memory cards, the system counts backward from 160 to 1.

For configuration information and descriptions of the commands used, refer to the following documents:

*   *Configuration Fundamentals Configuration Guide* at the following URL:

    http://www.cisco.com/en/US/docs/ios/12_0/configfun/configuration/guide/fun_c.html

*   *Configuration Fundamentals Command Reference* at the following URL:

    http://www.cisco.com/en/US/docs/ios/12_2/configfun/command/reference/ffun_r.html

Copying a Bootable Image onto a Flash Memory Card

After you have formatted a new flash memory card, you can copy a bootable image onto it. To copy an image, use the following procedure, which assumes the following:

- You have an I/O controller with a good image in the onboard flash memory single in-line memory module (SIMM) so that you can start the Cisco uBR7200 series universal broadband router.

- The bootable image you want to copy to the flash memory card exists on a TFTP server to which you have access (meaning that you know its name and have connectivity to it), and at least one interface is available over which you can access this server.

Note   To ensure access to a TFTP server, you must configure at least one network interface on your Cisco uBR7200 series router. For instructions on using this procedure, refer to the *Cisco uBR7200 Series Software Configuration Guide* at the following URL:
http://www.cisco.com/en/US/docs/cable/cmts/ubr7200/configuration/guide/cr72scg.html

- You know the filename of the image you want to copy onto the flash memory card.

To copy a bootable file (called new.image in the following examples) onto the flash memory card:

Step 1   Boot the router and allow it to initialize.

Step 2   Insert an unformatted flash memory card and format it using the procedure in the "Formatting a New Flash Memory Card" section on page 5-9. Then proceed to Step 3.

Note   If you have already formatted a flash memory card, you can use it instead; however, you cannot boot from a flash memory card that was formatted on another type of system. You must reformat the card to use it as a boot source. To avoid potential problems when inserting flash memory cards in your router, we recommend reformatting all of your flash memory cards on a router running Cisco IOS Release 12.0(5)T1 or later during your regularly scheduled service times. The "Reformatting a Flash Memory Card" section on page 5-12 contains instructions that explain how to reformat a flash memory card.

Step 3   Copy the new image (new.image) to the flash memory card and make this image the default boot image. Then reboot the router using the following series of commands:

```
Router> enable
Password: <password>
Router# copy tftp:new.image slot0:new.image

20575008 bytes available on device slot0, proceed? [confirm]
address or name of remote host [1.1.1.1]?
loading new.image from 1.1.1.1 (via Ethernet1/0):!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
[OK - 7799951/15599616 bytes]
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCC
Router#
Router# configure terminal
Router(config)# no boot system
Router(config)# boot system flash slot0:new.image
Router(config)# ^z
Router# copy running-config startup-config
Router# reload
```

When the system reloads, it boots the new.image file from the flash memory card.

> **Note**   In the preceding example, the exclamation points (!!!) appear as the file is downloaded, and the "C" characters signify calculation of the checksum, which is a verification that the file has been correctly downloaded to the flash memory card.

Copying Bootable Images Between Flash Memory Cards

As future releases of Cisco IOS images become available, you will receive these images as a file booted from a network server, a file on floppy disk, or a file on a flash memory card.

The following scenario describes how to use a newly released image on a flash memory card in a system that has an older image on a flash memory card in slot 0 and a default boot image in the onboard flash memory SIMM.

> **Note**   This scenario assumes that the new image will fit on the flash memory card in slot 0, with the old image.

For this scenario, the filenames are as follows:

- The new image on the new flash memory card is new.image.
- The old image on the flash memory card in slot 0 is old.image.
- The bootable image in onboard flash memory is boot.image.

You will copy the new image from the new flash memory card onto the flash memory card that contains the old image.

Not Enough Memory on the Flash Memory Card

If there is not enough available space on the flash memory card do the following:

Step 1   Use the **delete** command to delete files from the flash memory card to make sufficient room for the new image; however, do *not* delete the old.image file.

Step 2   Use the **squeeze** command to remove the deleted files from the flash memory card.

Step 3   If, after you have deleted files and used the **squeeze** command, the two files cannot coexist on the flash memory card in slot 0:

   a.   Remove this card (place it in an antistatic bag and store it in a safe place).

   b.   Insert the new flash memory card (with the file new.image) in slot 0.

   c.   Proceed to Step 5 of the "Adding a New Image to the Flash Memory Card" and use the **boot system flash slot0:new.image** command to designate the file new.image as the default boot image.

Adding a New Image to the Flash Memory Card

Step 1   Boot the Cisco uBR7200 series router. By default, the file boot.image is used.

Step 2   Enable the router as follows:

```
Router> enable
Password: <password>
Router#
```

Step 3   Insert the new flash memory card into slot 1.

Step 4   Use the following command to copy the file new.image in slot 1 to the flash memory card in slot 0, *only if* there is not enough memory space for the two images to coexist. If there is not enough memory space, proceed to Step 5.

```
Router# copy slot1:new.image slot0:new.image
```

✎
Note   You can also enter the preceding command as **copy slot1:new.image slot0:**.

Step 5   Use the following series of commands to designate the file new.image (which is on the flash memory card in slot 0) as the default boot image:

```
Router# configure terminal
Router(config)# no boot system
Router(config)# boot system flash slot0:new.image
Router(config)# ^z
Router# copy running-config startup-config
Router# reload
```

When the system reloads, it boots the file new.image from the flash memory card in slot 0.

Reformatting a Flash Memory Card

Depending on the circumstances, you might need to use a flash memory card from another system to copy images or back up configuration files; however, you cannot boot from a flash memory card that was formatted on another type of system. You must reformat the card before you can use it as a boot source. (Use only Type II PCMCIA flash memory cards provided by Cisco.)

✎
Note   To avoid potential problems when inserting spare flash memory cards in your Cisco uBR7200 series router, Cisco recommends that you reformat all of your flash memory cards on a Cisco uBR7200 series router running Cisco IOS Release 12.0(5)T1 or later during your regularly scheduled service times.

⚠
Caution   The following formatting procedure erases all information on the flash memory card. To prevent the loss of important data that might be stored on a flash memory card, proceed carefully. If you want to save the data on a flash memory card, copy the data to a server before you format the card.

The reformatting procedure assumes the following:

- You have already booted your Cisco uBR7200 series router.

- You have access to a TFTP server (meaning that you know its name and have connectivity to it) and at least one interface is available over which you can access this server or to a secondary flash memory card.

Note   To ensure access to a TFTP server, you must configure at least one network interface on your Cisco uBR7200 series router. For instructions on using this procedure, refer to the *Cisco uBR7200 Series Software Configuration Guide* at the following URL:
http://www.cisco.com/en/US/docs/cable/cmts/ubr7200/configuration/guide/cr72scg.html

- You know the filename of the image you want to copy to the TFTP server or onto the secondary flash memory card.

To reformat a flash memory card:

Step 1   Insert the flash memory card into slot 0. (If slot 0 is not available, use slot 1.) Refer to the "Installing a Flash Memory Card" section on page 5-7.

Step 2   Copy all the files on the flash memory card to a TFTP server or a secondary flash memory card. The following example is for copying files to a TFTP server. Refer to the "Copying a Bootable Image onto a Flash Memory Card" section on page 5-10 for flash memory card examples.

```
Router> enable
Password: <password>
Router# copy slot0:image.name tftp
Enter destination file name [image.name]: image.name
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Address or name of remote host [tftp.server.name]? tftp.server.name
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Router#
```

Step 3   To reformat the flash memory card, use the **format slot0:** (or **format slot1:**) command as follows:

```
Router# format slot0:

All sectors will be erased, proceed? [confirm]
Enter volume id (up to 30 characters): MyNewCard
Formatting sector 1
Format device slot0 completed
Router#
```

Step 4   Copy the files you saved to the TFTP server back to the flash memory card as follows:

```
Router# copy tftp slot0

Enter source filename: image.name
20575008 bytes available on device slot0, proceed? [confirm]
address or name of remote host [tftp.server.name]? tftp.server.name
loading new.image from tftp.server.name (via Ethernet1/0):!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
[OK - 7799951/15599616 bytes]
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Router#
```

The flash memory card is now reformatted and ready to use.