CHAPTER 7

Installing and Upgrading Internal Modules

This chapter describes how to install or upgrade modules that are located within your Cisco 1800 series fixed-configuration router, such as memory modules and an inline power supply card. You need to remove the router chassis cover to install or remove these items. This chapter contains the following sections:

- Safety Warnings, page 7-1
- Removing the Chassis Cover, page 7-2
- Locating Modules, page 7-3
- Installing and Removing DIMMs, page 7-4
- Installing the Optional Inline Power Supply, page 7-5
- Installing the Chassis Cover, page 7-6
- Removing and Installing CompactFlash Cards, page 7-7

All the module replacement procedures in this section require removal of the chassis cover. Before you perform any of the module replacement procedures, disconnect the power and remove the cover, as described in the "Removing the Chassis Cover" section on page 7-2. After you complete the module replacement procedures, install the chassis cover as described in the "Installing the Chassis Cover" section on page 7-6.

Safety Warnings

Warning **During this procedure, wear grounding wrist straps to avoid ESD damage to the card. Do not directly touch the backplane with your hand or any metal tool, or you could shock yourself.** Statement 93

Warning **Only trained and qualified personnel should be allowed to install, replace, or service this equipment.** Statement 1030

Warning **Before working on a system that has an on/off switch, turn OFF the power and unplug the power cord.** Statement 1

Warning **Do not work on the system or connect or disconnect cables during periods of lightning activity.** Statement 1001

Warning **Read the installation instructions before connecting the system to the power source.** Statement 1004

Warning **Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.** Statement 43

Warning **Hazardous network voltages are present in WAN ports regardless of whether power to the unit is OFF or ON. To avoid electric shock, use caution when working near WAN ports. When detaching cables, detach the end away from the unit first.** Statement 1026

Removing the Chassis Cover

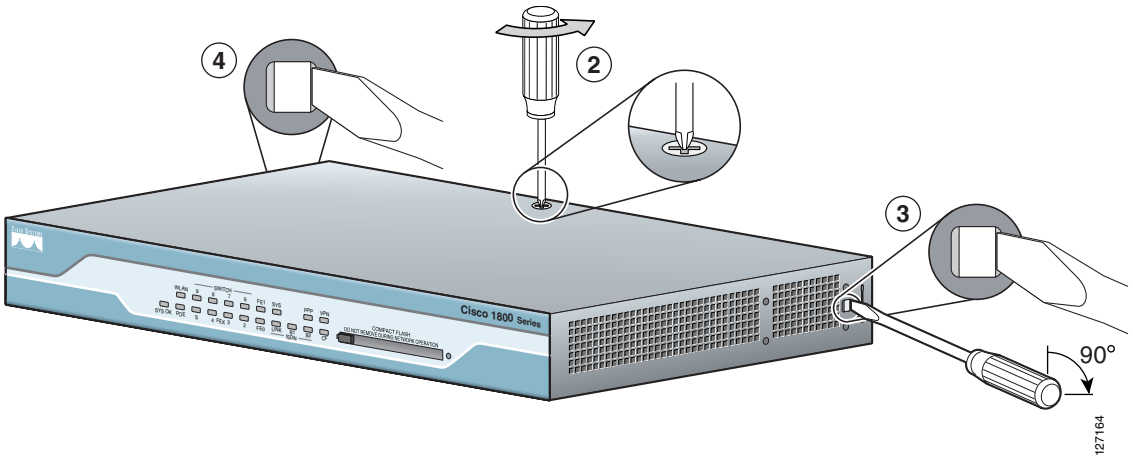
The Cisco 1800 series fixed-configuration routers have a cover that slides off the front of the chassis. Follow these steps to remove the cover from a Cisco 1800 series fixed-configuration router:

Step 1 Make sure that the router is turned off and is disconnected from the power supply.

Warning **Before opening the unit, disconnect the telephone-network cables to avoid contact with telephone-network voltages.** Statement 1041

Step 2 Use a Phillips screwdriver to remove the screw that fastens the chassis cover, as shown in Figure 7-1.

Figure 7-1 Removing the Chassis Cover Screw



Step 3 Insert a flat-blade screwdriver between the chassis and chassis cover at the screwdriver pry point on one side of the chassis, as indicated in Figure 7-1. Rotate the screwdriver 90 degrees to disengage the chassis cover from the chassis.

Step 4 Repeat Step 3 on the other side of the chassis, as indicated in Figure 7-1.

Step 5 Gently slide the chassis cover of the router away from the bottom of the chassis.

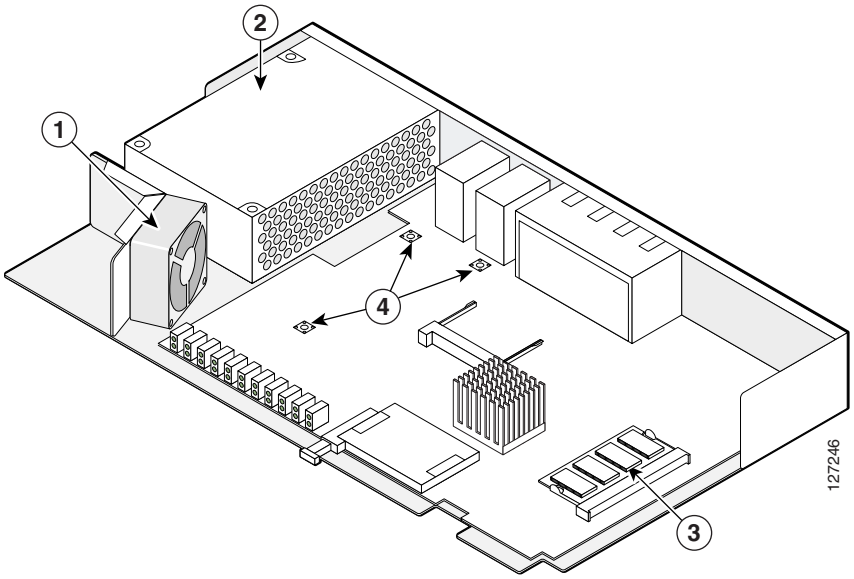
Caution Be sure to slide the chassis cover all the way off before you lift it off the chassis. The plastic eject button on the CompactFlash slot can be broken if you do not slide the chassis cover all the way off the chassis before you lift it off the chassis.

Step 6 Place the router bottom on an antistatic mat, and begin installing modules.

Locating Modules

Figure 7-2 shows the locations of the fan, DIMM, power supply, and the holes in the system board used to install an inline power supply card in the Cisco 1800 series fixed-configuration routers.

Figure 7-2 Module Locations in Cisco 1800 Series Fixed-Configuration Routers



1	Fan
2	Power supply
3	DIMM module
4	Holes used for inline power supply card installation

Installing and Removing DIMMs

Cisco 1800 series fixed-configuration routers have 128 MB of DDR SDRAM installed on the system board. You can install an additional DIMM in the DIMM connector to expand system memory to a maximum of 384 MB.

Before you remove or install a DIMM, remove the chassis cover as described in the "Removing the Chassis Cover" section on page 7-2.

Caution When you remove or install DIMMs, always wear an ESD-preventive wrist strap, and ensure that it makes good contact with your skin. Connect the equipment end of the wrist strap to the metal part of the chassis.

Caution Handle DIMMs by the edges only. DIMMs are ESD-sensitive components and can be damaged by mishandling.

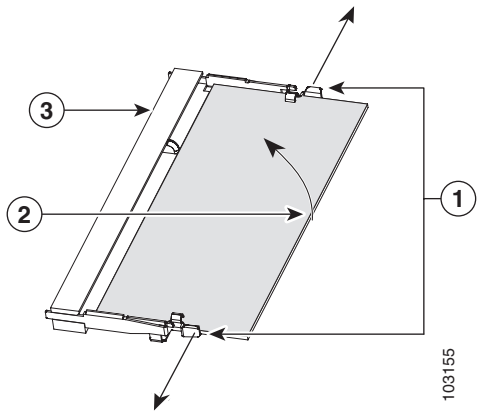
Removing a DIMM

Follow these steps to remove a DIMM from the system board:

Step 1 Locate the DIMM on the system board. Figure 7-2 shows the location of the DIMM connector.

Step 2 Pull the latches away from the DIMM at both ends; pulling the latches away lifts the DIMM slightly. Now you can lift the DIMM out of the connector. See Figure 7-3.

Figure 7-3 Removing a DIMM



1	Release the latches	2	Remove the DIMM

Step 3 Place the DIMM in an antistatic bag to protect it from ESD damage.

Installing a DIMM

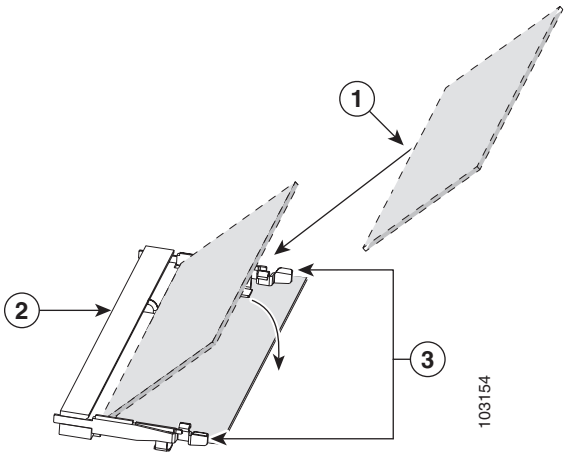
Follow these steps to install a DIMM in a Cisco 1800 series fixed-configuration router:

Step 1 Locate the DIMM on the system board. See Figure 7-2 for the location of the DIMM connector.

Step 2 Remove any existing DIMM by gently pulling the spring-loaded clips on the end of the socket far enough to clear the DIMM, and then gently pulling the DIMM up and away from the socket. See Figure 7-3.

Step 3 Insert the DIMM into the DIMM socket, as shown in Figure 7-4.

Figure 7-4 Installing a DIMM



1	DIMM	**2**	Insert and rotate into socket.

Step 4 Firmly press the DIMM into the socket until the spring-loaded clips on the socket snap over the end of the DIMM.

Installing the Optional Inline Power Supply

The inline power supply option for the Cisco 1800 series fixed-configuration routers includes an inline power supply card that must be installed inside the router, and an external power supply. Perform the following steps to install the inline power supply card. See Figure 7-2 for the locations of connectors and other components within the router.

Warning **Voltages that present a shock hazard may exist on Power over Ethernet (PoE) circuits if interconnections are made using uninsulated exposed metal contacts, conductors, or terminals. Avoid using such interconnection methods, unless the exposed metal parts are located within a restricted access location and users and service people who are authorized within the restricted access location are made aware of the hazard. A restricted access area can be accessed only through the use of a special tool, lock and key or other means of security.** Statement 1072

Warning **Installation of the equipment must comply with local and national electrical codes.** Statement 1074

Caution Ensure that the inline power supply is not connected to the back of the router prior to installation of the inline power supply card. Failure to do so may result in damage to the inline power supply card or to the router.

Caution When installing the inline power supply card, ensure that the card is installed in the proper direction. Improper installation will result in damage to the inline power supply card. Installation of the inline power supply card requires the installation of three metal standoffs, to which the card is then secured using three screws. Be sure to use all three screws to ensure that the card is installed properly—if the card is not installed in the correct direction, the three screw holes will not match up with the three metal standoffs.

Step 1 Find the metal standoff attachment locations on the system board, which are indicated by a star pattern surrounding each of the three holes in the system board.

Step 2 Install the three metal standoffs into the system board in the metal standoff attachment locations (denoted by a star pattern around the holes). Use a 1/4-inch nut driver to tighten the standoffs.

Caution Make sure that the standoffs are straight when installed. Tighten them gently but firmly. The shoulder of each standoff must be seated tightly against the system board.

Step 3 Place the inline power supply card on top of the three metal standoffs, lining up the metal standoffs with the screw holes in the inline power supply card.

Step 4 Insert the screws provided in the accessory kit through the inline power supply card and into the metal standoffs. Carefully tighten the screws with a Phillips screwdriver.

After you install the inline power supply card in the router, install the router cover and connect the inline power supply to the power connector on the back of the router.

Installing the Chassis Cover

The Cisco 1800 series fixed-configuration router has a cover that slides onto the chassis from the back of the chassis. Follow these steps to install the chassis cover on a Cisco 1800 series fixed-configuration router:

Step 1 Gently slide the cover of the router onto the chassis.

Step 2 Replace the cover screw that you removed when you opened the chassis. See the "Removing the Chassis Cover" section on page 7-2.

Removing and Installing CompactFlash Cards

This section describes how to install and replace CompactFlash cards in Cisco 1800 series fixed-configuration routers. It contains the following sections:

- Preventing Electrostatic Discharge Damage
- Removing a CompactFlash Memory Card
- Installing a CompactFlash Memory Card

Preventing Electrostatic Discharge Damage

CompactFlash memory cards are sensitive to electrostatic discharge (ESD) damage. ESD damage, which can occur when electronic cards or components are handled improperly, results in complete or intermittent failures.

To prevent ESD damage, follow these guidelines:

- Always use an ESD wrist strap, and ensure that it makes good skin contact.
- Connect the equipment end of the strap to an unfinished chassis surface.
- Place a removed CompactFlash memory card on an antistatic surface or in a static shielding bag. If the card will be returned to the factory, immediately place it in a static shielding bag.
- Avoid contact between the card and your clothing. The wrist strap protects the card from ESD voltages on the body only; ESD voltages on clothing can still cause damage.
- Do not remove the wrist strap until the installation is complete.

Caution For safety, periodically check the resistance value of the antistatic strap. The measurement should be between 1 and 10 megohms (Mohm).

Removing a CompactFlash Memory Card

To remove a CompactFlash memory card from the chassis, perform the following steps. See Figure 7-5.

Caution Do not remove a CompactFlash memory card from the chassis while it is being accessed. A blinking CF LED indicates that the CompactFlash memory is being accessed. Removing the CompactFlash memory card from the router while it is being accessed can damage your router.

Step 1 Press the ejector button next to the CompactFlash memory card. The ejector button moves outward so that it projects from the panel.

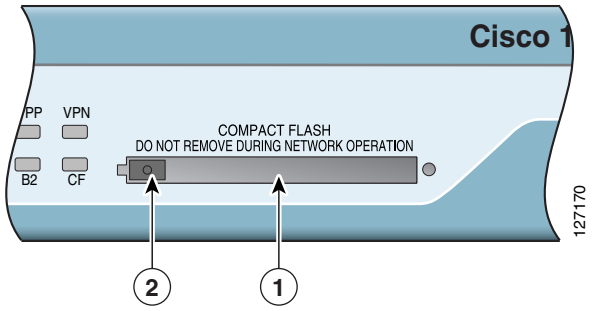
Step 2 Press the ejector button again. This ejects the CompactFlash memory card partway out of its slot.

Step 3 Pull the CompactFlash memory card out of its slot.

Step 4 Push the ejector button in until the button is flush with the bezel.

Caution To prevent damage to the ejector mechanism, the ejector button must remain pressed all the way in (flush against the bezel) when it is not being used to eject a CompactFlash memory card.

Figure 7-5 CompactFlash Memory Card Slot in Cisco 1800 Series Fixed-Configuration Routers



1	CompactFlash slot	2	Ejector button

Installing a CompactFlash Memory Card

To install a CompactFlash memory card, perform the following steps (see Figure 7-5):

Step 1 Make sure that the ejector button is pressed flush with the front panel, so that it does not project beyond the panel.

Note If the ejector button is projecting beyond the panel, push it in until it is flush with the bezel.

Step 2 Insert the CompactFlash memory card into the slot until it is fully seated. The ejector button remains flush with the panel.

Note If the ejector button is projecting from the panel after you insert the CompactFlash memory card, remove the CompactFlash memory card, press the ejector button until it clicks, and reinsert the CompactFlash memory card.

Caution To prevent damage to the ejector mechanism, the ejector button must remain pressed flush against the front panel when it is not being used to eject a CompactFlash memory card.