C H A P T E R 4

Installing Hardware Options for the WAVE-574

This chapter provides basic instructions for installing hardware options in your WAVE-574. These instructions are intended for technicians who are experienced with setting up Cisco WAVE-574 hardware.

This chapter contains the following sections:

Removing the Covers

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

Caution To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

⚠️
Caution   Do not operate the WAVE appliance for long periods with the access panel open or removed. Operating the WAVE appliance in this manner results in improper airflow and improper cooling that can lead to thermal damage.

To remove the appliance covers, follow these steps:

Step 1   Review the information in the "Safety Warnings and Cautions" section on page 2-2 and the "Safety Guidelines" section on page 2-3.

Step 2   Power off the appliance and all attached devices and disconnect all external cables and power cords.

Step 3   Remove the WAVE appliance from the rack.

Step 4   Loosen the captive T-15 Torx thumbscrew that secures the access panel to the WAVE appliance.

Step 5   Slide the access panel toward the rear of the WAVE appliance, then lift it from the WAVE appliance.

Completing the Installation

To complete your installation after you have installed an inline adapter, hard drive, or memory, follow these steps:

Step 1   Lower the access panel onto the WAVE appliance and then slide the access panel toward the front of the WAVE appliance.

Step 2   Tighten the captive T-15 Torx thumbscrew that secures the access panel to the WAVE appliance.

Step 3   Install the appliance in a rack.

For complete rack installation and removal instructions, see Chapter 3, "Installing the WAVE-574."

⚠️
Caution   Install the appliance only in a rack cabinet with perforated doors.

⚠️

Caution   Do not leave open spaces above or below an installed appliance in the rack cabinet. To help prevent damage to appliance components, always install a filler panel to cover the open space and to help ensure proper air circulation. See the documentation that comes with your rack cabinet for more information.

Step 4   Connect the cables and power cords. For information on connecting cables and power cords, see the "Rack Mounting and Cabling the WAVE-574" section on page 3-3.
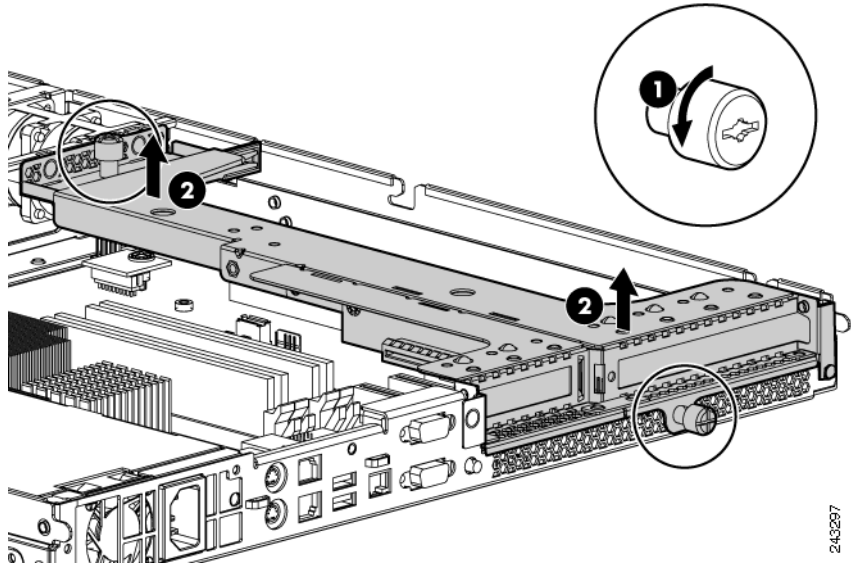
Installing a Cisco WAVE Inline Adapter

The WAVE-574 can accommodate one optional 2-port Gigabit Ethernet inline network adapter or one optional 4-port Gigabit Ethernet inline network adapter.

For information about the features of the Cisco WAVE Inline Network Adapter and its cabling requirements, see Chapter 5, "WAVE Inline Network Adapter."

To install a PCI adapter in the riser-card assembly, follow these steps:

Step 1   Review the information in the "Safety Warnings and Cautions" section on page 2-2 and the "Safety Guidelines" section on page 2-3.

Step 2   Power down the appliance and disconnect all power cords and external cables.

Step 3   Remove the covers. (See the "Removing the Covers" section on page 4-1.)

Step 4   Remove the PCI riser-card assembly. (See Figure 4-1.)

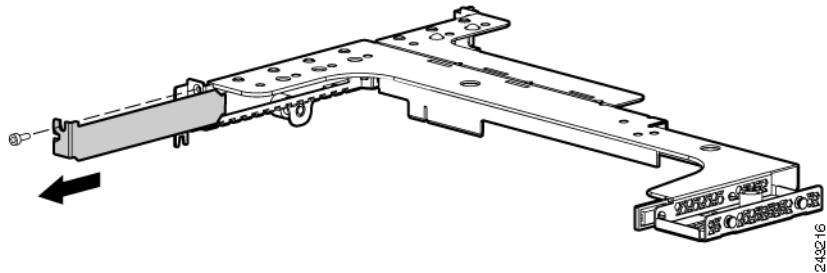*Figure 4-1   Removing the PCI Riser-Card Assembly*

Step 5   Locate Slot 4, which is a standard PCI Express full-length slot.

✎
Note   You can only install the Cisco WAVE inline network adapter card in Slot 4.
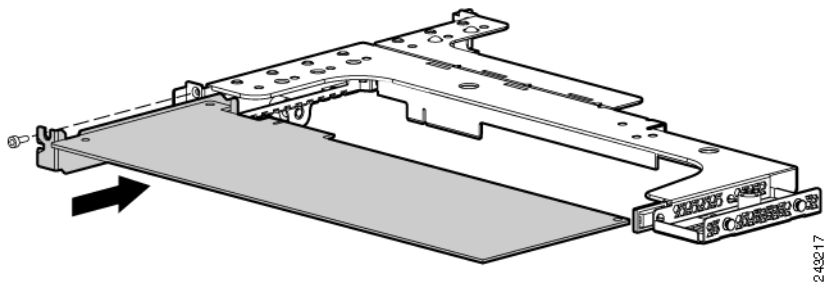
Step 6   Slide the expansion-slot cover out of the PCI riser-card assembly expansion slot. (See Figure 4-2.)

Figure 4-2   *Removing the Expansion Slot Cover*

Step 7   Install the WAVE inline adapter, as shown in Figure 4-3.

Figure 4-3   *Installing the WAVE Inline Adapter in the Riser-Card Assembly*

> **Note**   The WAVE appliance does not power up if the PCI riser board assembly is not seated properly.

Step 8   Install the PCI riser board assembly.

Step 9   Install the access panel.

For instructions on completing the installation, see the "Completing the Installation" section on page 4-2.

For information about connecting cables to the Cisco WAVE Inline Network Adapter, see Chapter 5, "WAVE Inline Network Adapter."

Replacing a Hard Disk Drive

The WAVE appliance supports as many as two 3.5-inch (Large Form Factor) SATA hard drives.

When replacing hard drives to the WAVE appliance, observe the following general guidelines:

- The system automatically sets all drive numbers.
- If only one hard drive is used, install it in the bay with the lowest drive number.
- Drives must be the same capacity to provide the greatest storage space efficiency when drives are grouped together into the same drive array.

Note   All hard disk drives being used in the appliance must be identical.
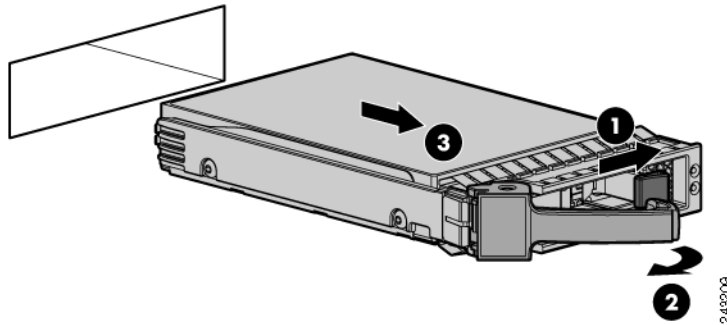
Caution   To maintain proper system cooling, do not operate the appliance for more than 10 minutes without either a hard disk drive or a filler panel installed in each bay.

To replace a hard disk drive in a bay, follow these steps:

Step 1   Review the information in the "Safety Warnings and Cautions" section on page 2-2 and the "Safety Guidelines" section on page 2-3.

Step 2   Make sure that the chassis cover is in place and fully closed.

Step 3   Power down the device and and disconnect the power cord and all external cables.

Step 4   Slide the latch and then pull out the handle (see Figure 4-4).

Figure 4-4   *Removing a Hard Disk Drive*

Step 5   Pull the drive assembly from the bay.

Step 6   Wait 1 minute and then insert the new drive into the same slot by aligning the replacement drive assembly with guide rails in the bay and sliding the drive assembly into the bay until it stops. Make sure that the drive is properly seated in the bay.

Step 7   Close the drive handle.

Step 8   Reboot the WAVE appliance.

Step 9   Check the hard disk drive status LED after the system has booted to verify that the hard disk drive is operating correctly. If the amber hard disk drive status LED for a drive is lit continuously, that drive is faulty and must be replaced. If the green hard disk drive activity LED is flashing, the drive is being accessed.

Step 10   Wait 1 minute and then verify that the replaced disk drive is in the Rebuilding state by using the **show disks details** command in EXEC mode.

> **Note**   The system automatically starts the rebuild operation when it detects the removal and reinsertion of a drive that is part of the logical RAID drive.

Step 11   Wait until the rebuild operation is complete. A disk rebuild operation may take several hours. You can check if the rebuild operation is complete by using the **show disk details** command in EXEC mode. The physical drive state will be Online and the RAID logical drive state will be Okay after the rebuild operation is completed.

Step 12 Use the **show disk tech** command in EXEC mode to verify that the firmware and BIOS information is correct for both hard drives.

If you have multiple disk failures and your RAID-1 logical status is Offline, you must recreate the RAID-1 array. For more information on disk removal and replacement procedures, see the *Cisco Wide Area Application Services Configuration Guide*, Chapter 15, "Maintaining Your WAAS System."

Installing Memory

This section contains the following topics:

- Memory Installation Guidelines, page 4-8
- Upgrading the Memory from 3 GB to 6 GB, page 4-9

Memory Installation Guidelines

The WAVE-574 appliance supports either 3 GB or 6 GB of memory.

Observe the following guidelines when installing additional memory:

- Use only Cisco memory upgrades in your appliance.
- BIOS detects the DIMM population and sets the system to dual-bank interleaved mode (DIMMs installed in both banks with equal bank capacities).

Table 4-1 lists the DIMM configurations available for the WAVE-574 appliance.

Table 4-1 **WAVE-574 DIMM Configurations**

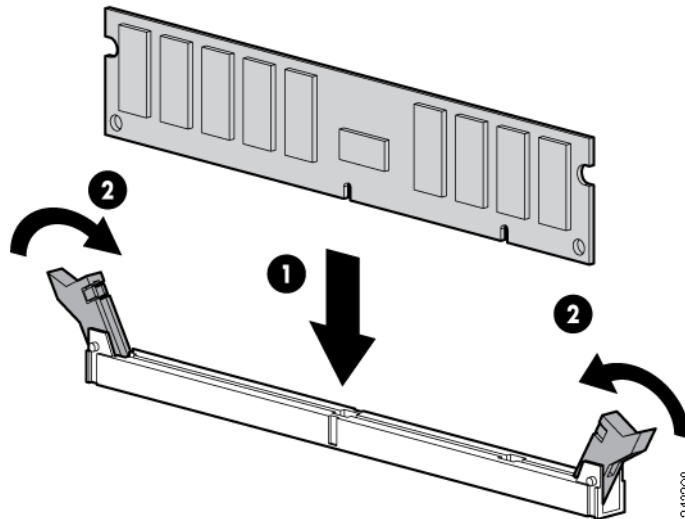|	Slot 1A (blue)	Slot 2B (black)	Slot 3A (blue)	Slot 4B (black)
3 GB Memory	1-GB DIMM	512-MB DIMM	1-GB DIMM	512-MB DIMM
6 GB Memory	1-GB DIMM	2-GB DIMM	1-GB DIMM	2-GB DIMM

Upgrading the Memory from 3 GB to 6 GB

This section describes how to upgrade your WAVE-574 device from the standard 3 GB of memory to 6 GB of memory.

To install the Cisco memory upgrade, follow these steps:

Step 1   Power down the WAVE appliance.

Step 2   Remove the WAVE appliance from the rack.

Step 3   Remove the primary access panel (See the "Removing the Covers" section on page 4-1).

Step 4   Open the DIMM slot latches for slot 2B and slot 4B (the black colored slots) See Figure 4-5 on page 4-10.

Step 5   Remove the 512 MB DIMMs from slot 2B and slot 4B.

Step 6   Install one replacement 2-GB DIMM into slot 2B. Install the other replacement 2-GB DIMM into slot 4B. See Figure 4-5 on page 4-10.

Figure 4-5   Installing a DIMM

Step 7   Check to make sure that the DIMM latches are fully engaged in the notches.

Step 8   Install the access panel.

Step 9   Install the WAVE appliance into the rack.

Step 10   Reboot the WAVE appliance.

Step 11   Use the **show memory** EXEC mode command to verify that the memory you installed is recognized by the WAVE appliance.

Step 12   Repartition the disks, using the **disk delete-data-partitions** command, and reload.

> **Note**   Repartitioning the disks deletes all data, including all virtual blades on the hardware.

> **Note** Repartitioning the disks is required after adding memory to reset the DRE space allocation.

Installing Memory