Gateway

Gateway™

**8450R Server
System Manual**

Contents

Preface

Conventions used in this manual

Throughout this manual, you will see the following conventions:

Convention	Description
ENTER	Keyboard key names are printed in small capitals.
CTRL+ALT+DEL	A plus sign means to press the keys at the same time.
Setup	Commands to be entered, options to select, and messages that appear on your monitor are printed in bold.
User's Guide	Names of publications are printed in italic.
Viewpoint	All references to front, rear, left, or right on the server are based on the server being in a normal, upright position, as viewed from the front.

Important

A note labeled important informs you of special circumstances.

Caution

A caution warns you of possible damage to equipment or loss of data.

Warning

A warning indicates the possibility of personal injury.

Getting additional information

Log on to the Gateway technical support area at www.gatewayatwork.com to find information about your system or other Gateway products. Some types of information you can access are:

- Hardware driver and program updates
- Technical tips
- Service agreement information
- Technical documents and component information
- Frequently asked questions (FAQs)
- Documentation for peripherals or optional components
- Online technical support

System Features

Standard features

- As many as four Intel® Pentium® III Xeon™ processors with 100 MHz Front Side Bus (FSB) in Slot 2 processor sockets
- Sixteen Dual Inline Memory Module (DIMM) sockets on a memory riser card, that support as many as 16 GB of PC100 Synchronous Dynamic Random Access Memory (SDRAM)
- ServerWorks ServerSet™ IIIHE chipset
- Integrated Intel 82559 Fast Ethernet controller
- Integrated Adaptec AIC-7899 Dual-Channel Ultra/Ultra II/Ultra 160 (Ultra 3) small computer systems interface (SCSI) controller
- Integrated Adaptec AIC-7880 narrow/wide Ultra SCSI controller
- Integrated ATI Rage IIC video controller with 2 MB of SDRAM
- PCI hot-plug controller which supports six full-length, hot-pluggable PCI slots
- Two half-length PCI slots
- Baseboard Management Controller (BMC) hardware management
- ATX form factor system board and dedicated rackmount chassis
- One 3.5 inch 1.44 MB diskette drive and one CD drive
- As many as five hot-swap SCSI hard drives
- Keyboard port (PS/2®), mouse port (PS/2), 2 serial ports, parallel port, RJ-45 local area network (LAN) port, video port, and two Universal Serial Bus (USB) ports

Front bezel

Bezel door   Front panel controls
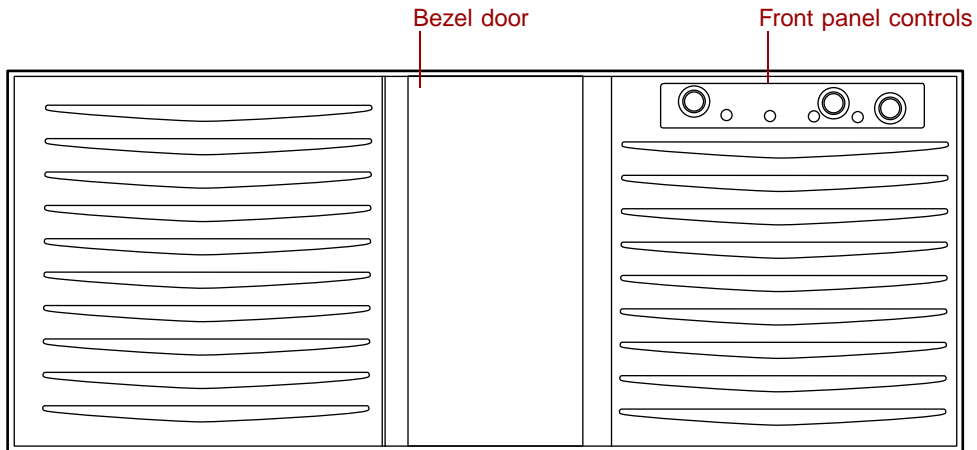
Bezel door provides access to the hot-swap drives and removable media drives.

Front panel controls provide buttons for power, reset, and sleep, and indicator lights for system fault, network activity, hard drive access, and power. For more information on the controls, see "Front panel board" on page 16.

Front panel

Power supply   5.25-inch drive bay   Hot-swap drive bay   Control panel

Power supply modules   Slimline CD drive   Slimline diskette drive   Hot-swap drives
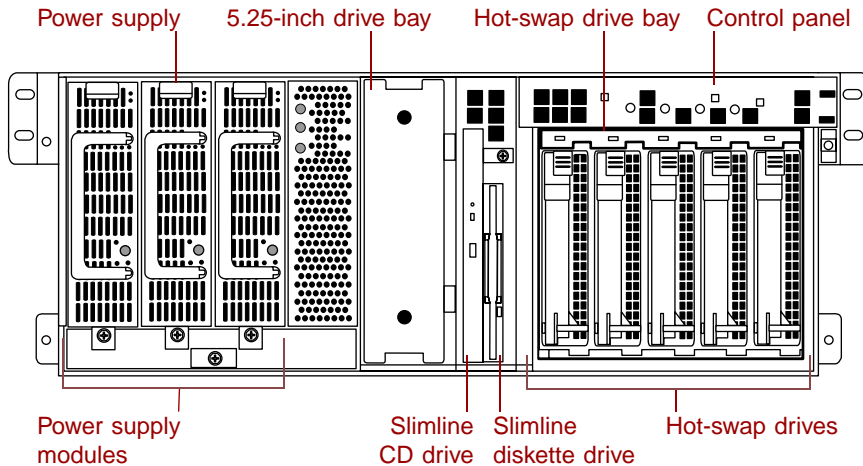
Power supply supports as many as three hot-swap power supply modules.

5.25-inch drive bay supports one half-height 5.25-inch device.

Control panel contains the light emitting diode (LED) indicators and the power, reset, and sleep buttons that control the server. For more information on the controls, see "Front panel board" on page 16.

Hot-swap drive bay includes up to five hot-swappable drives connected to a hot-swap backplane. The drive bays support 1.0-inch drives.

Hot-swap drives plug into the hot-swap drive bay.

Slimline diskette drive writes to and reads from 3.5-inch, 1.44 MB diskettes.

Slimline CD drive plays data or audio CDs.

Power supply modules provide N+1 redundant power (if all three modules are installed).

Back panel
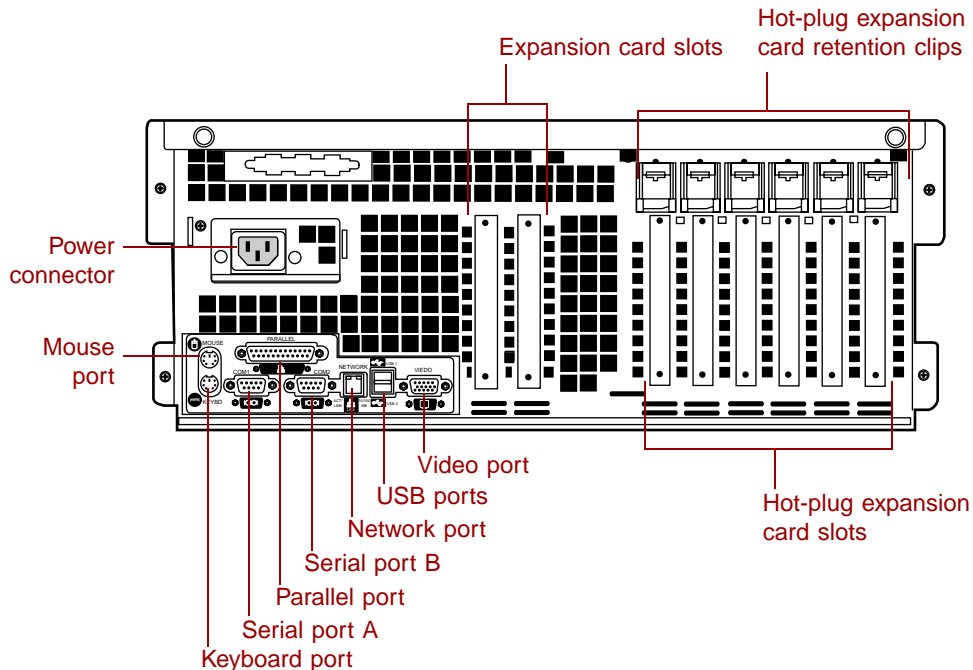
Expansion card slots (2) let you install as many as two 32-bit, 33 MHz PCI expansion cards.

Hot-plug expansion card retention clips provide toolless installation of hot-plug PCI cards.

Hot-plug expansion card slots (6) let you install as many as two 64-bit, 66 MHz hot-plug PCI expansion cards and as many as four 64-bit, 33 MHz hot-plug PCI expansion cards.

Video port connects the first (or only) monitor interface cable. The video controller is integrated in the system board.

USB ports connect external Plug-and-Play devices, such as printers, that are automatically configured when they are plugged into the server through one of these ports. USB keyboards and mice are not supported.

Network port lets you connect to a network. The adjacent indicator LEDs show LAN activity (yellow) and 100 Mbit speed (green).

Serial ports (2) connect to serial devices.

Parallel port connects a printer or other parallel device.

Keyboard port connects a PS/2-compatible keyboard.

Mouse port connects a PS/2-compatible mouse.

Power connector connects the server power cord. The other end of the power cord plugs into an AC outlet or power strip.

System interior
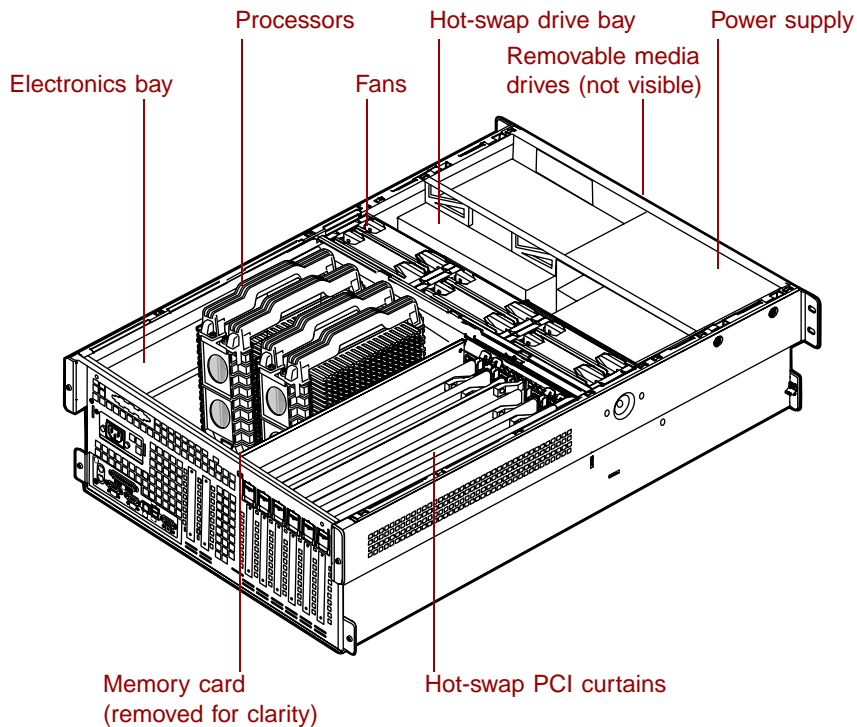
Electronics bay contains the system board, the processors, the memory, and the expansion cards.

As many as four **processors** provide the processing power for the server.

Fans provide cooling for all server components. There are as many as six hot-swap fans in the server.

Hot-swap drive bays support up to five 1-inch high 3.25-inch single connector attachment (SCA) SCSI hard drives. Empty drive bays contain empty carriers to control airflow and electro-magnetic carrier (EMC) emissions.

Removable media drives provide transportable storage for data. The server supports one slimline CD drive, one slimline diskette drive, and one 5.25-inch drive bay.

Power supply provides N+1 redundant power to the server components.

Hot-plug PCI curtains provide protection from electro-static discharge (ESD) when installing or replacing hot-plug PCI cards. As many as four 64-bit, 33 MHz cards and as many as two 64-bit, 66 MHz PCI cards can be installed between these curtains.

Memory card provides sixteen DIMM sockets and supports up to 16 GB of SDRAM.

System board
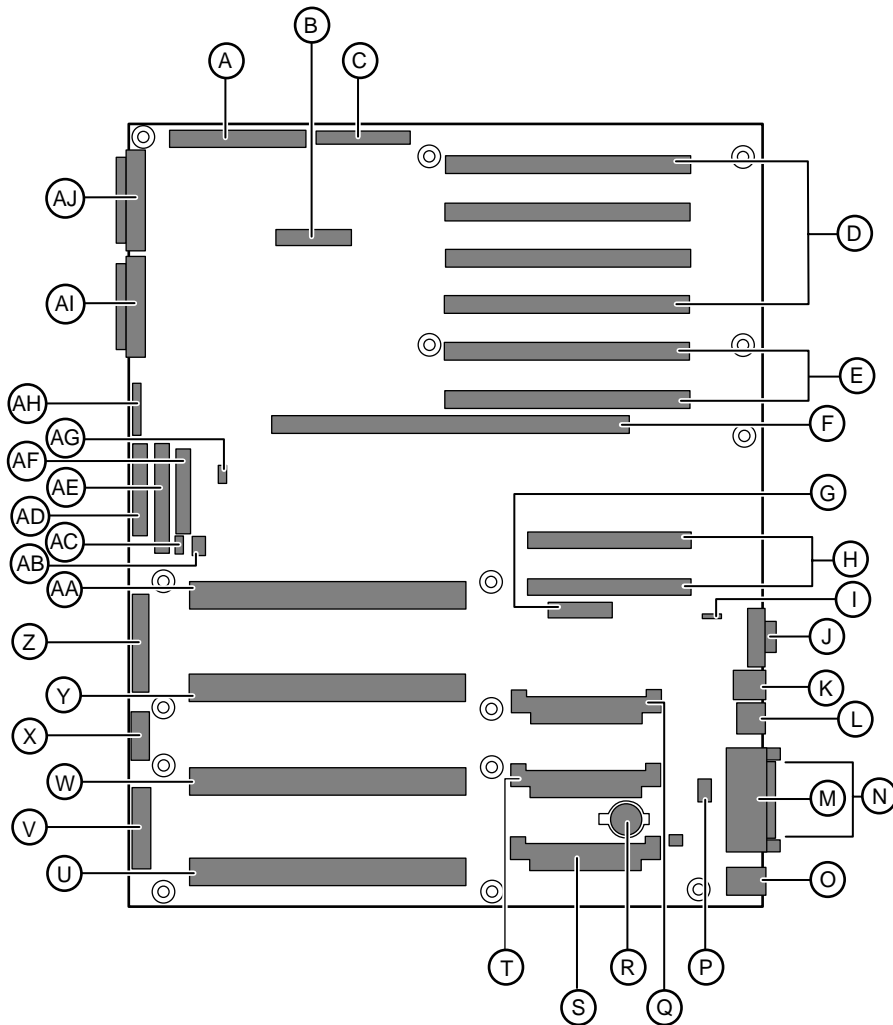
A Legacy narrow SCSI connector

B Server monitor module (SMM) feature connector

C Legacy wide SCSI connector

D 64-bit, 33 MHz hot-plug PCI expansion connectors

E 64-bit, 66 MHz hot-plug PCI expansion connectors

F Memory module connector

G Hot-plug indicator board connector

H 32-bit, 33 MHz half-length PCI expansion connectors

I Intelligent chassis management bus (ICMB) connector

J Video connector

K USB connectors (2)

L RJ-45 Ethernet LAN connector and LEDs

M Parallel port

N Serial ports

O Stacked keyboard and mouse ports

P Internal USB connectors

Q Voltage regulator module (VRM) socket (processor 2)

R Battery

S VRM socket (processor 4)

T VRM socket (processor 3)

U Processor 4 connector

V Main ATX power 1 connector

W Processor 3 connector

X ATX auxiliary power connector

Y Processor 2 connector

Z Main ATX power 2 connector

AA Processor 1 connector

AB Hard drive activity connector

AC SMBus (system management bus) connector

AD Diskette drive connector

AE Integrated drive electronics (IDE) connector

AF Front panel connector

AG Intra Module Bus (IMB) connector

AH Configuration jumper J9F2 (pins 1-3: CMOS Clear, pins 5-7: Password Clear, pins 9-11: Boot Option)

AI Ultra 160 SCSI A connector

AJ Ultra 160 SCSI B connector

Hot-swap backplane

Hot-swap SCSI indicator board connector

Fan connectors

Power connectors

SCSI ID 4

SCSI ID 3

SCSI ID 2

SCSI ID 1

SCSI ID 0

SCSI drive connectors (5)

SCSI data connector
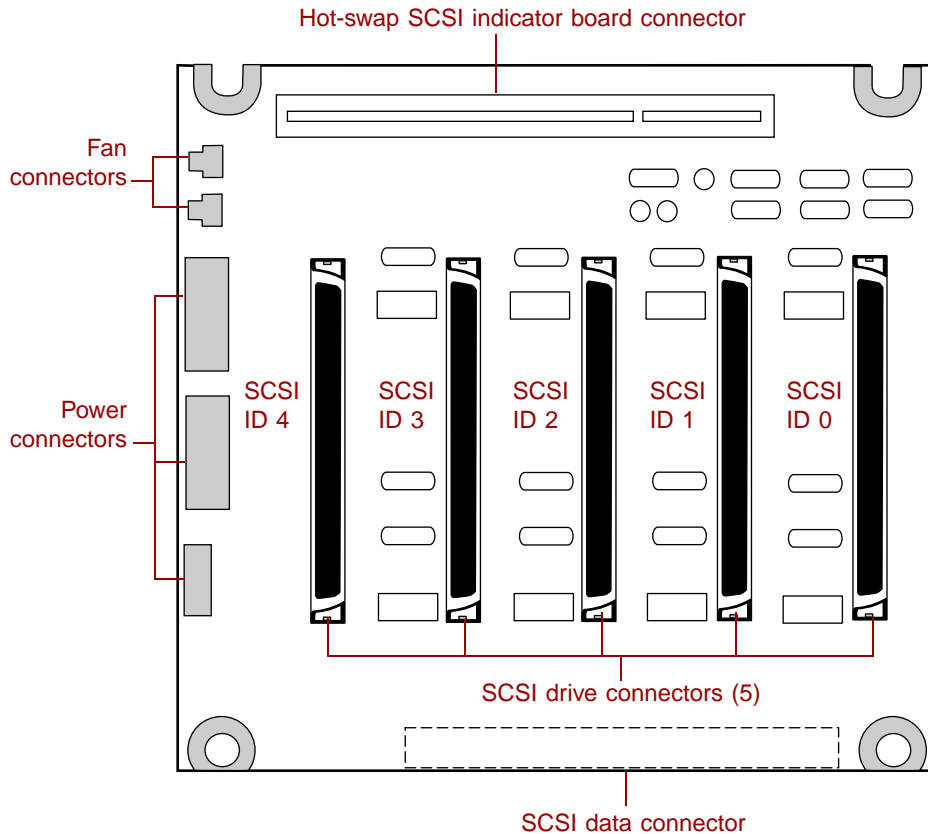
Hot-swap SCSI indicator board connector connects the hot-swap indicator board to the hot-swap backplane.

SCSI drive connectors (5) connect the five SCSI drives. Install drives in increasing order of SCSI ID.

SCSI data connector connects the SCSI cable from the redundant array of inexpensive drives (RAID) controller.

Power connectors connect the power cables from the power supply.

Fan connectors connect to dedicated fans for the hot-swap drive bay (not used).

Front panel board

The front panel board supports the LEDs and buttons accessible from the front panel. The buttons and LEDs on the front panel board are shown and described below.
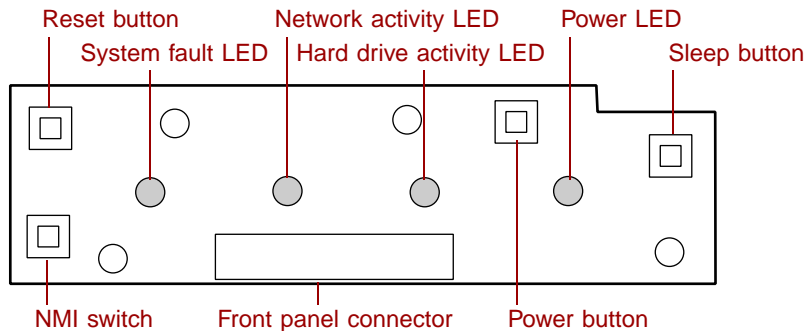
Reset button lets you reset the server if it has become nonresponsive.

system fault LED flashes whenever the server logs a failure.

Network activity LED lights whenever there is activity on the network.

Hard drive activity LED glows green whenever a hard drive is actively reading or writing data and glows amber if a drive fails.

Power LED glows green whenever the server is turned on. The LED also flashes when the server is in sleep mode.

Sleep button lets you put the server into sleep mode to reduce power consumption.

Power button turns the server on and off.

Front panel connector connects the controls on the front panel with the system board.

NMI switch allows a technician servicing the server to generate a non-maskable interrupt (NMI) to help debug server errors.

Hot-plug PCI indicator board

The hot-plug PCI indicator board provides two LEDs per hot-plug PCI slot to indicate the status of the board plugged into the slot.

Indicator LEDs

Data cable connector
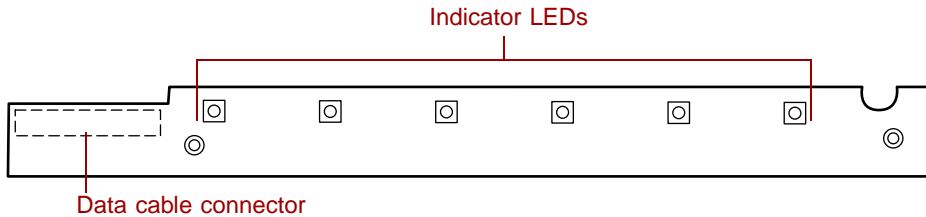
Indicator LEDs indicate whether the hot-plug PCI slot is active or if it is safe to replace the board in the indicated slot.

Data cable connector connects to the system board and carries the data indicating which slots are active.

System Setup

2

Setting up the server

Use the instructions on the quick guide poster that came with the server to assemble the server.

You can prepare a safer working environment before assembling the server by following these guidelines:

- Obtain an adequately rated uninterruptible power supply (UPS). A UPS protects against AC line spikes, power interruptions, and other power fluctuations that may damage the server.

- Protect the server from extreme temperature and humidity. Do not expose it to direct sunlight, heater ducts, or other heat-generating objects.

- Keep the server away from equipment that generates magnetic fields, such as unshielded stereo speakers. Even a telephone placed too close to the server may cause interference.

- Plug the server into a wall outlet, power strip, or UPS.

| **Important** | Keep the boxes and packing material. If you need to send the server to Gateway for repairs, you must use the original packaging or your warranty may be voided. |

Starting the server

Before you start the server for the first time, make sure:

■ The voltage selection switch is in the proper position. If the power supply is autosensing, it will not have a voltage selection switch and it automatically determines the voltage of the incoming power source.

■ All cables are firmly connected to the proper ports on the back panel of the server.

Caution	Electricity can flow from connected peripherals into the server causing a shock. Make sure the server and peripherals are turned off and unplugged from the power outlet when you connect peripherals to the server.

■ The server and monitor are plugged into an AC outlet, power strip, or UPS and that the power strip or UPS is turned on.

➲ To start the server:

1 If you have connected the system components to a power strip or UPS, make sure all the system components are turned off, then turn on the power strip or UPS.

2 Turn on the monitor.

3 Turn on the server. The LED on the control panel is lit when the power is on.

4 Turn on any other components connected to the server, such as speakers, a printer, or a scanner.

If nothing happens when you turn on the server:

■ Make sure that the power cables are securely plugged in and that the power strip or UPS (if you are using one) is plugged in and turned on.

■ Make sure the monitor is connected to the server, plugged into the power strip, AC outlet, or UPS, and turned on. You may also need to adjust the brightness and contrast controls on the monitor.

Understanding the Power-On Self-Test

When you turn on your server, the power-on self-test (POST) routine checks the server memory and components. To see this information on the screen, press ESC during POST. Press SPACEBAR to bypass the remaining memory count.

The server displays an error message if POST finds any problems. Write down any error messages that you see. If you continue to have problems, these error messages may help you or Gateway technical support diagnose the cause.

Setting up the operating system

The first time you start the server, the operating system takes a few minutes to set up.

Refer to your operating system documentation for specific questions regarding the operating system.

➲ To complete the operating system setup:

1 After the server starts, the start-up wizard opens. Click **Next**.

2 Type the requested information in the appropriate text boxes. When you have finished typing the information, click **Next**.

3 Continue following the instructions and selecting options in the start-up wizard dialog boxes, clicking **Next** to move through the dialog boxes, until the wizard tells you to restart your server.

If you need to return to the previous dialog box to change any of your entries, click **Back**.

4 Restart the server. The setup is complete.

| **Important** | For all operating systems, refer to the appropriate operating system software manual for specific instructions. |

Turning off the server

Every time you turn off the server, shut down the operating system first. You may lose data if you do not follow the proper procedure.

➲ To turn off the server in Windows NT:

1 Click **Start**, then select **Shut down the computer?**, then click **Shut Down**.

2 Click **OK**. The operating system shuts down. When you see a message saying **It is now safe to turn off your computer**, turn off the server by pressing the power button.

3 Turn off the monitor and peripherals.

Caution	When you turn the server off, some electric current still flows through it. Before opening the server case or connecting or removing any peripherals, turn off the server, then unplug the power cord.

Important	For other operating systems, such as Windows 2000 or Novell Netware, refer to the appropriate operating system software manual for specific instructions.

Resetting the server

If your server does not respond to keyboard or mouse input, you may have to close programs that are not responding. If closing unresponsive programs does not restore your server to normal operation, you may have to reset the server.

➲ **To close unresponsive programs and reset the server in Windows NT:**

1 Press CTRL+ALT+DEL. A window opens that lets you close a program that is not responding.

2 Click **Task Manager**, then select the program that is not responding.

3 Close the program by clicking **End Task**.

4 If the server does not respond, press the reset button to restart the server.

As a part of the regular startup process, a program to check the disk status runs automatically. When the checks are finished, Windows starts.

Important	For other operating systems, such as Windows 2000 or Novell Netware, refer to the appropriate operating system software manual for specific instructions.

Case Access

3

Preventing static electricity discharge

Before opening the server case, follow these precautions to prevent damage from static electricity. When opening your server case, always perform the following procedure.

| **Caution** ⚠ | Static electricity can permanently damage electronic components in your server. Prevent electrostatic damage to your server by following static electricity precautions every time you open your server case. |

➲ **To prevent static electricity discharge:**

1 Turn off the server.

2 Touch a bare metal surface on the back of the server.

3 Unplug all power cords from AC outlets and disconnect the modem cable (if installed).

Also follow these static electricity precautions:

■ Avoid static-causing surfaces such as plastic and packing foam in your work area.

■ Remove the parts from their antistatic bags or containers only when you are ready to use them. Do not lay parts on the outside of an antistatic bag or container because only the inside provides antistatic protection.

■ Always hold cards by the edges and their metal mounting brackets. Avoid touching components on the cards and the edge connectors that connect to expansion slots. Never slide cards or other parts over any surface.

Opening the case

The only components that are accessible from the outside of the chassis are the front panel controls and indicator lights, the hot-swap power supply modules, the slimline diskette and CD drives, and the hot-swap hard drives. To access the hot-swap drives, the removable media drives, or the front panel you must open the bezel. To work on the internal components of the server, you must open the chassis.

Because the components inside the server are extremely sensitive to static electricity, make sure you follow the precautions at the beginning of this chapter to avoid static electricity damage.

Only qualified personnel should open the server for maintenance. If you are qualified to maintain the server yourself, make sure you are properly grounded before opening the server chassis.

Caution

⚠

Avoid exposure to dangerous electrical voltages and moving parts by turning off your server and unplugging the power cord and modem cable (if installed) before removing the chassis cover.

Opening the bezel door

The bezel door covers the removable media drives, the hot-swap drives, and the front panel controls. To access these components, you must open the bezel.

➲

1 Grip the bezel door and pull the door straight out away from the chassis.
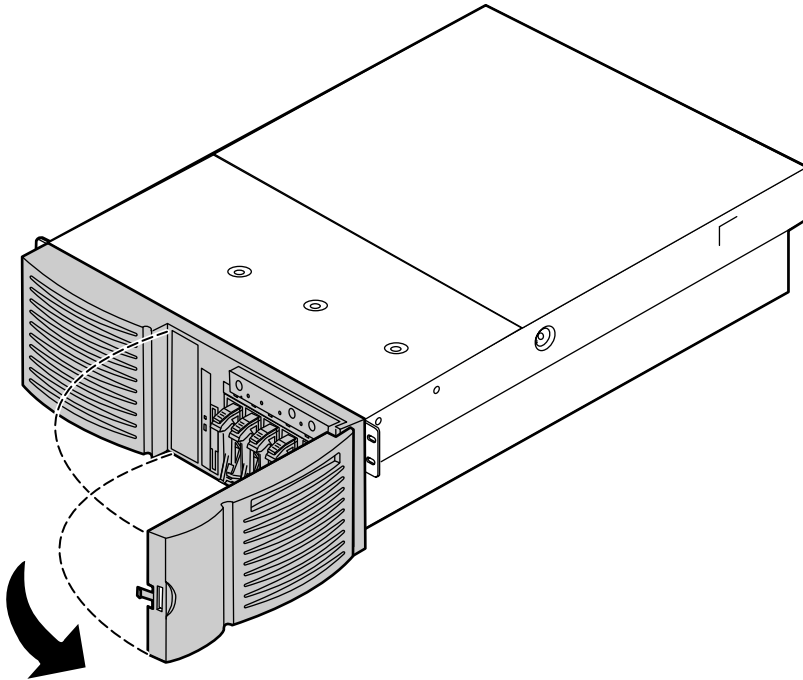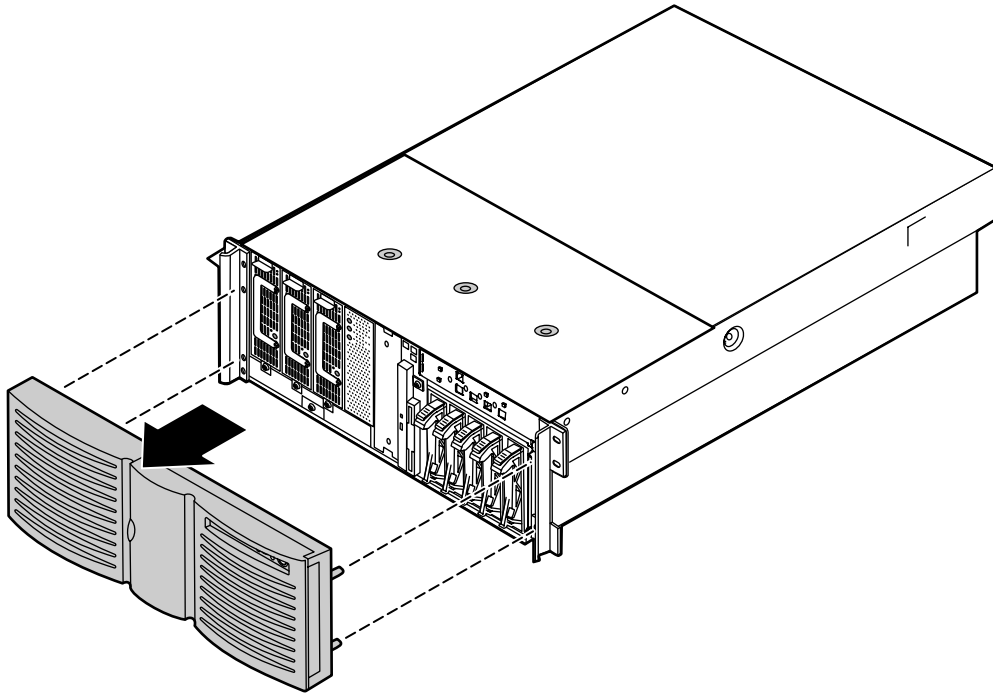

2 Swing the door outward to the right.

Removing the bezel

The bezel covers the hot-swap power supply modules and the fasteners for the removable media drives. You must remove the bezel to swap a power supply module or replace a removable media device.

1 Grip the bezel at both sides and pull it straight out from the front panel.

Removing the back top panel

The back top panel provides access to the hot-swap fans, the hot-swap PCI slots, the memory card, the processors and VRMs, and the standard PCI slots.
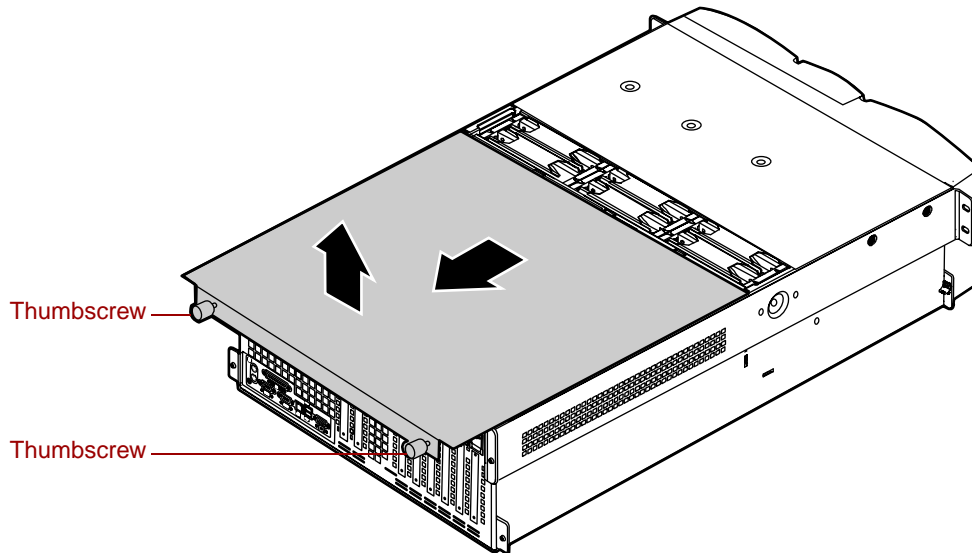
➲ To remove the back top panel:

1 Observe all safety and static electricity precautions, see "Preventing static electricity discharge" on page 25.

Important	You do not have to turn off the server to open the back top panel. However, do not remove the EMI foam from the electronics bay unless you have turned the server off and unplugged the power cord.

2 Loosen the two thumbscrews from the top edge of the back panel.

Thumbscrew

Thumbscrew

3 Slide the top panel slightly to the back, disengaging the front edge of the panel from the front top panel.
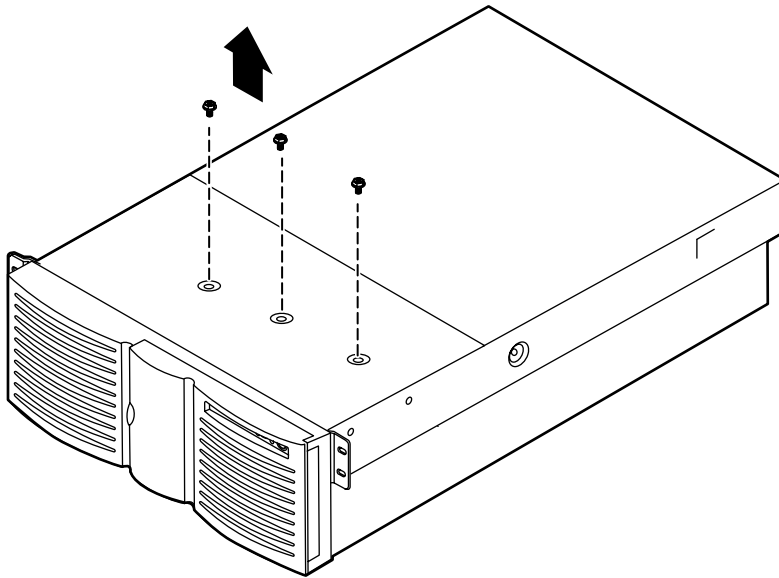
4 Lift the panel out and away from the chassis.

Removing the front top panel

The front top panel provides access to the hot-swap drive cage, the drive cables, the power supply cables, and the front panel board.
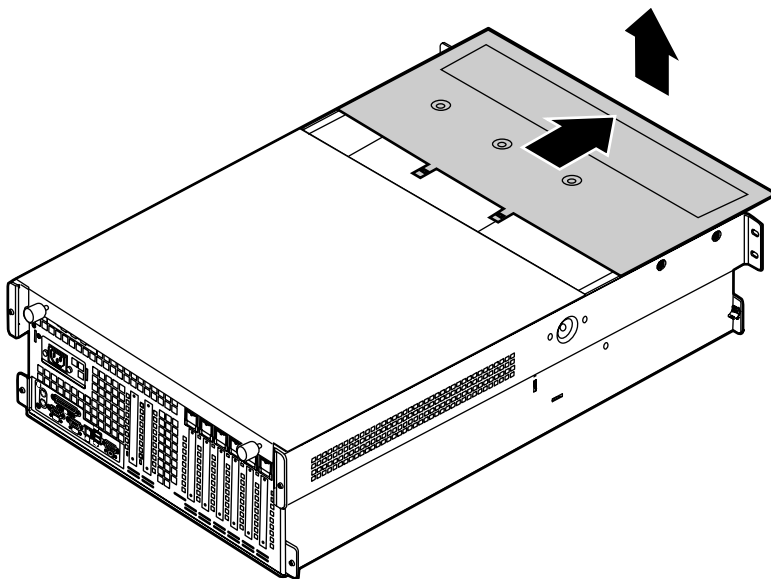
➲ To remove the front top panel:

1 Turn off the server and disconnect all power cords.

2 Observe all safety and static electricity precautions, see "Preventing static electricity discharge" on page 25.

3 Remove the three screws from the top of the front top panel.

4 Slide the top panel slightly to the front, disengaging the back edge of the panel from the top of the front panel.

5 Lift the panel out and away from the chassis.

Closing the case

Close the chassis as soon as you finish installing or removing components so that dust and dirt do not collect inside the server.

Replacing the front top panel

You can replace the front top panel whether the back top panel is on or off of the chassis. You must replace the front top panel before you can operate the server. If you do not, a system intrusion event is logged by the system management hardware. Be careful not to pinch any cables with the panel as you replace it.

➲ To replace the front top panel:

1 Place the front top panel on the top of the chassis approximately 3/4-inch forward from the front of the server.
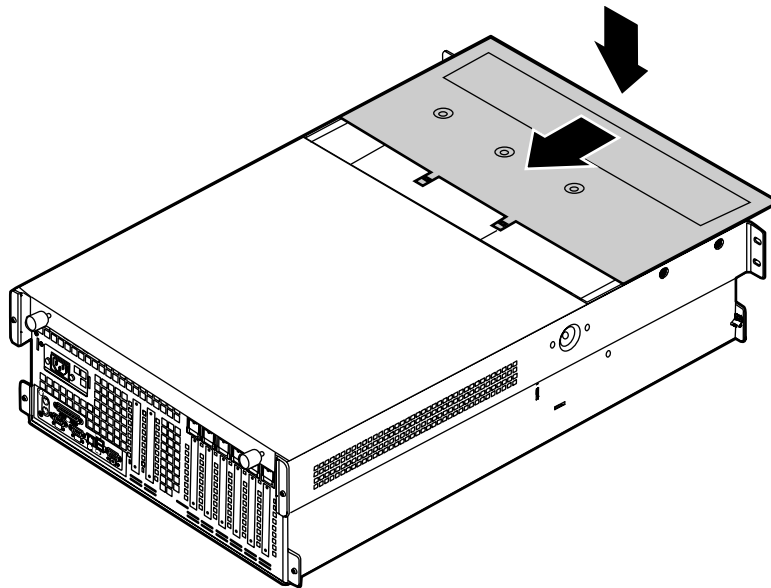
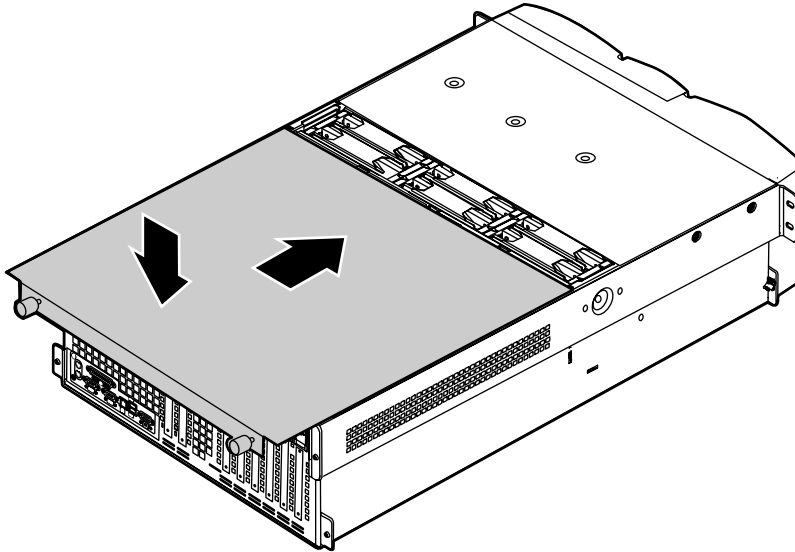**2** Slide the panel toward the back of the chassis, securing it in place. The tabs on the back edge of the front top panel slide under the lip of the back top panel.

3 Replace the screws you removed earlier.
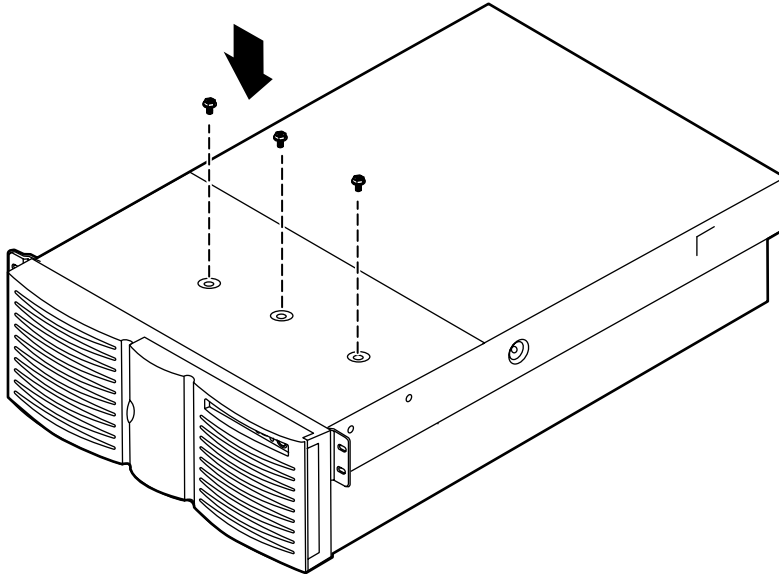
Replacing the back top panel

1 Place the back top panel on the top of the chassis approximately 3/4-inch back from the back edge of the front top panel.

2 Slide the panel toward the front of the chassis, securing it in place. Be careful not to pinch any cables with the panel as you replace it.

3 Tighten the thumbscrews you loosened earlier.

Replacing the bezel

The bezel prevents unauthorized access to the hot-swap power supply modules and the fasteners for the removable media drives.

➲

1 Align the four pins on the back of the bezel with the four holes in the sides of the front panel and press the bezel firmly into place.
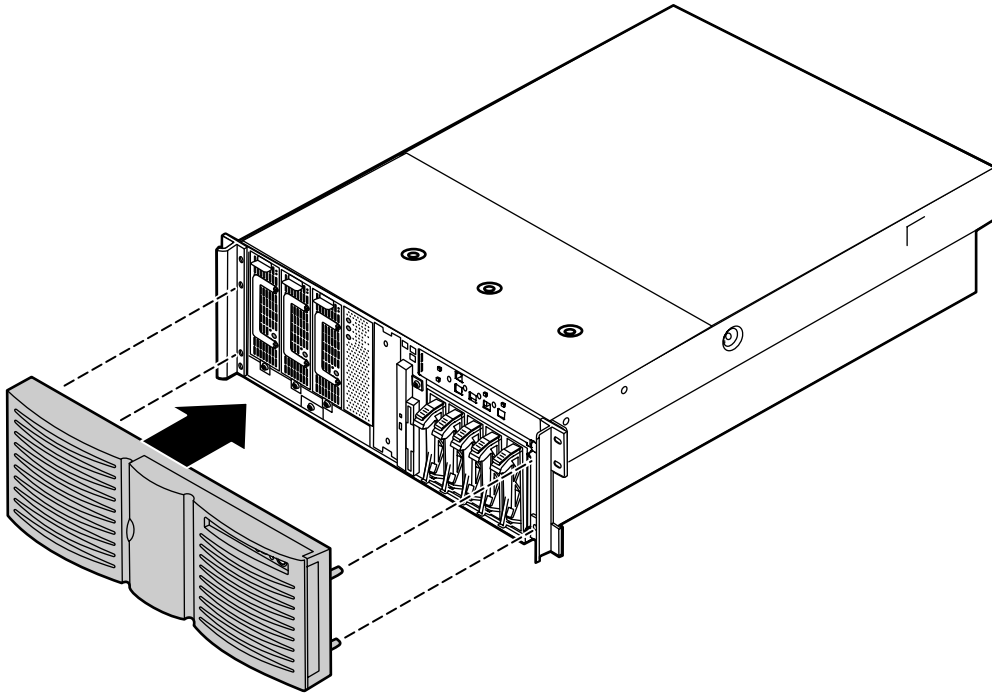
Replacing and Adding Internal Devices

4

Drives

There are several types of drives and similar devices that can be installed in the server.

Preparing to replace or add a drive

One 3.5-inch diskette drive, at least one 1-inch high 3.5-inch hot-swap hard drive, and one slimline CD drive are included with the server. You can add up to four additional 3.5-inch hot-swap drives for a total of five hot-swap drives. You may also add one 5.25-inch device.

As you prepare to install drives, keep the following in mind:

- If you remove a drive, place it in an antistatic bag or container.

- Before you install a drive, see the drive documentation for information on configuring the drive, setting any jumpers on the drive, and attaching cables to the drive.

- If you are installing a drive that uses an add-in controller, install the expansion card before you install the drive.

- You may need to configure the drives you install using the BIOS (Basic Input/Output System) Setup utility or the SCSISelect utility. Press F2 at start up to open the BIOS Setup utility or press CTRL+A to enter the SCSISelect utility.

Drive cabling information

The server includes four different types of drive cables. Each drive cable is clearly labeled, indicating the cable type and showing which end to connect to the appropriate connector on the system board and which end to connect to the drive.

- Use the diskette drive connector cable to connect the diskette drive.

- Use the standard IDE connector cable to connect the CD drive and an IDE device installed in the 5.25-inch drive bay to the system board.

- Use a narrow SCSI cable to connect a legacy narrow SCSI device in the 5.25-inch drive bay to the legacy narrow SCSI controller integrated onto the system board

- Use the SCSI low-voltage differential (LVD) cable to connect the hot-swap backplane to the integrated SCSI controller on the system board.

Removing a hot-swap drive

The hot-swap drives are located at right side of the front panel. The hot-swap drive bay supports as many as five, 1-inch high 3.5-inch SCSI hard drives.

The hot-swap drives are assigned SCSI ID numbers by the hot-swap backplane with the drive on the right end of the hot-swap bay assigned SCSI ID 0. The backplane assigns SCSI IDs to the other drives in order up to SCSI ID 4 on the left end of the hot-swap bay. See "Hot-swap backplane" on page 15 for the locations of the drives by SCSI ID number.

| **Important**	Gateway tests and verifies the operation and compatibility of the drives we sell. Additional or replacement drives must conform to Gateway standards, especially in a RAID or mission-critical environment.

Install the first drive at the right end, then install drives in increasing order by SCSI ID number thereafter. You do not need to turn off the server before you remove or replace a hot-swap drive.

To remove a hot-swap drive:

1 Follow the static electricity precautions in "Preventing static electricity discharge" on page 25.

2 Use the SCSI control software to stop activity on the drive you need to remove.

3 Open the bezel door as described in "Opening the bezel door" on page 27.

4 Pinch the grip of the drive carrier handle to release the clip at the top.
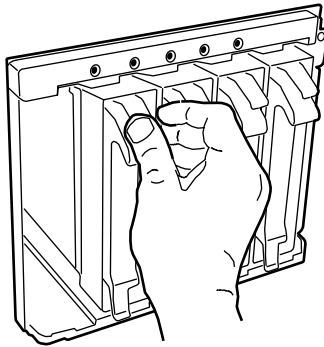
5 Swing the carrier handle down and pull the drive out of the drive cage. Continue pulling until the drive is entirely out of the drive cage.
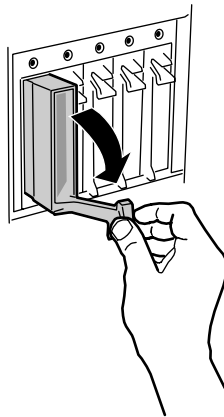

6 Place the drive on a static-free surface. If you are replacing the drive, see "Installing a hot-swap drive" on page 38.

Installing a hot-swap drive

If you are adding a drive to an empty drive slot, you must first remove the air baffles from the drive carrier. If you are replacing an existing drive, remove the old drive as described in "Removing a hot-swap drive" on page 36.

➲ To install a hot-swap drive:

1 Follow the static electricity precautions in "Preventing static electricity discharge" on page 25.

2 Remove the drive carrier as described in "Removing a hot-swap drive" on page 36.

3 Remove the four screws that secure the air baffles to the drive carrier. If you are removing an existing drive, the same four screws secure the old drive to the carrier.
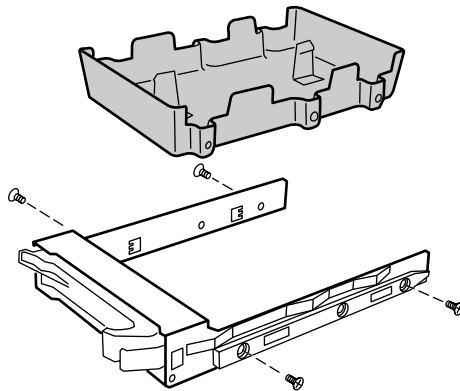
4 Use the four screws you removed in Step 3 to secure the new drive to the drive carrier.
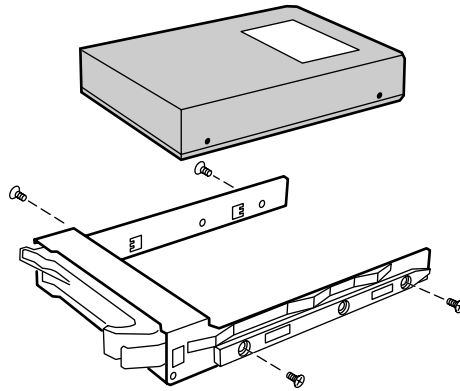
5 With the drive carrier handle in the open position, align the drive carrier rails with the grooves at the top and bottom of the drive bay.

6 Slide the drive into the bay until the handle starts to close. Make sure the tab on the bottom of the handle fits into the slot on the bottom of the drive cage.

Tab

Slot
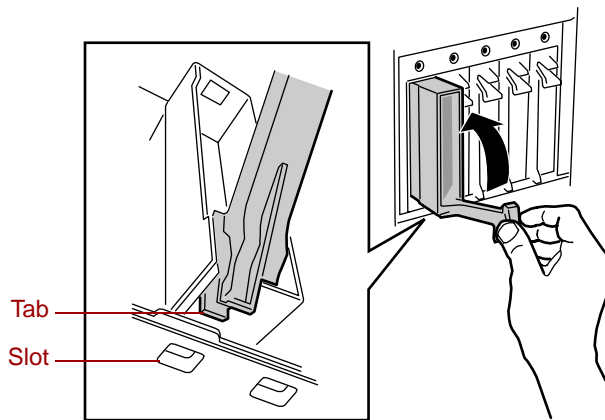
7 Close the handle securely to set the drive connector into the connector at the back of the drive cage.

8 Close the bezel door.

**9** Use the SCSI control utility to format and configure the new drive.

Replacing the hot-swap backplane

The hot-swap drive bay indicator board comes out of the server with the hot-swap backplane. This procedure removes both boards from the sever.

You should only replace the hot-swap backplane if Gateway Client Care has instructed you to do so. The hot-swap drive cage fits very tightly in the chassis and you may need the assistance of a second technician to remove it.
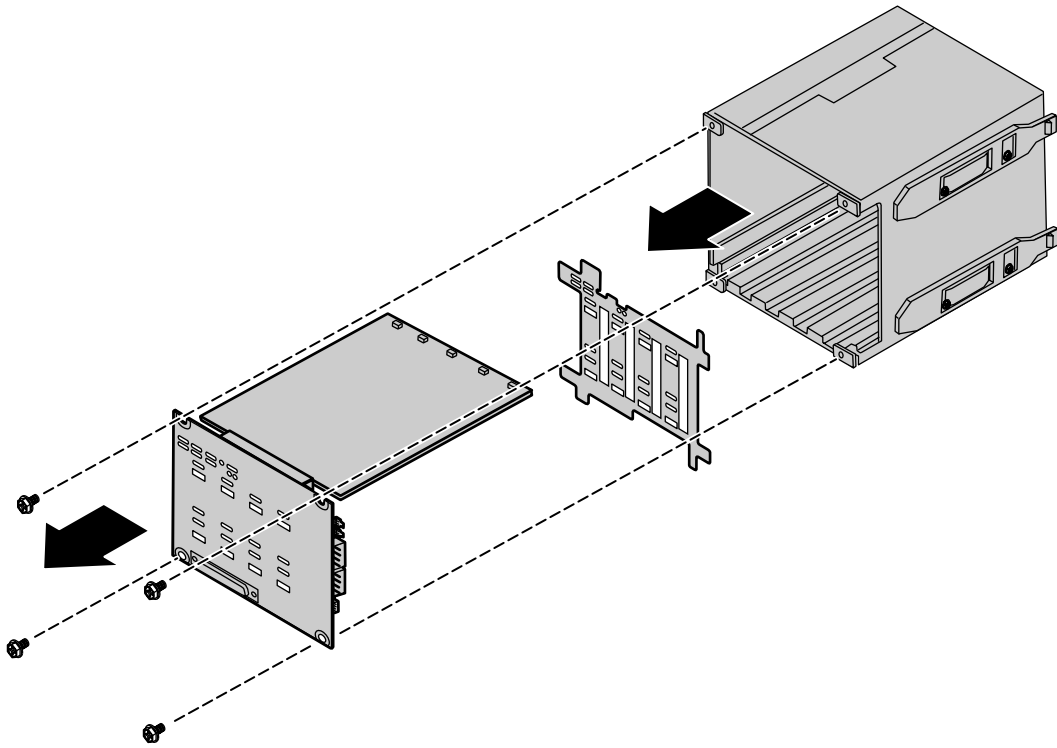
➲ To replace the hot-swap backplane:

1 Follow the static electricity precautions in "Preventing static electricity discharge" on page 25.

2 Turn off the server and disconnect the power cord and all other external peripheral devices.

3 Remove the front top panel as described in "Removing the front top panel" on page 29.

4 Disconnect all cables from the drive cage and the backplane.

5 Remove all of the hot-swap drive carriers from the hot-swap drive cage as described in "Removing a hot-swap drive" on page 36.

6 Using a flat-bladed screwdriver or similar tool, press the plastic tabs on both sides of the drive cage toward the center of the cage. You may need to hold them in on one side while pressing them in on the other.
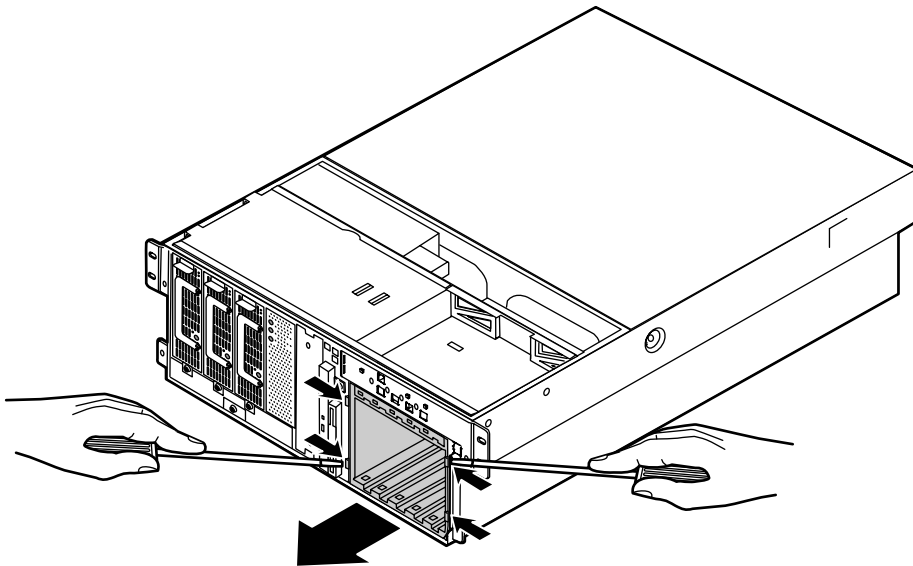
7 When you have freed all four tabs, push the drive cage out from the back, then pull it out of the chassis.
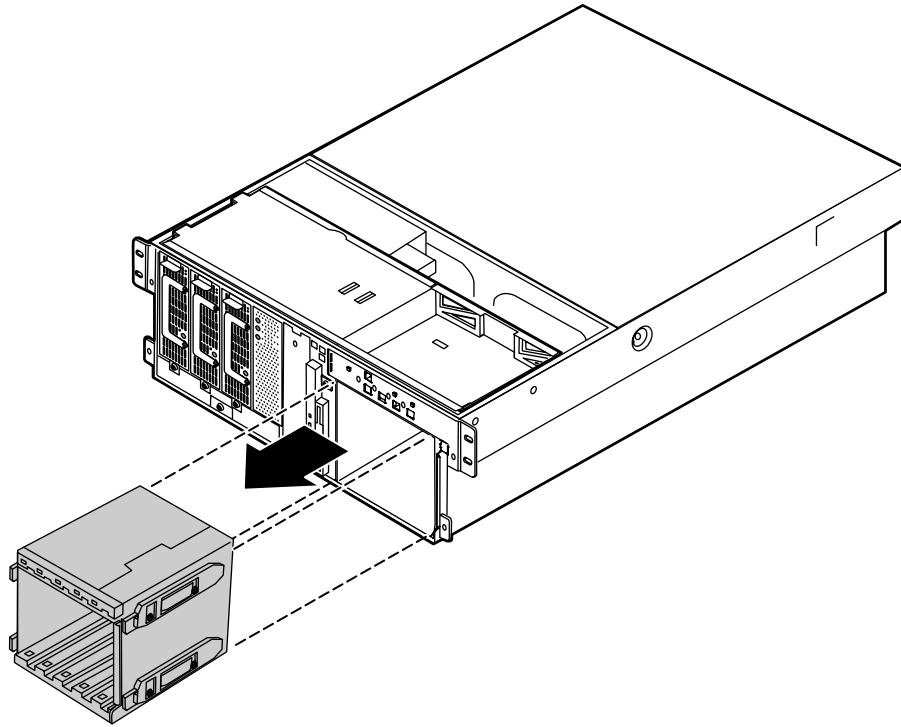
8 Remove the four screws that secure the hot-swap backplane to the hot-swap drive cage, then pull the backplane out of the drive cage. The hot-swap indicator board will also come out of the drive cage.

9 Remove the hot-swap indicator board and the plastic shield from the hot-swap backplane and place both boards on a static-free surface.
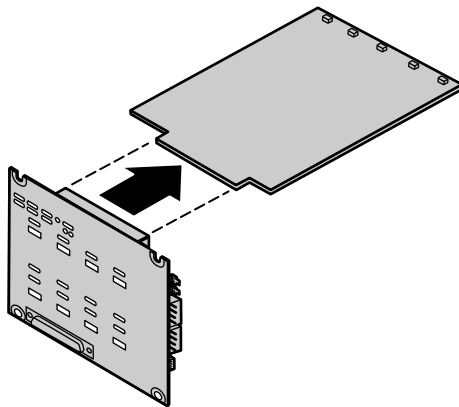
10 Plug the hot-swap indicator board into the new hot-swap backplane.
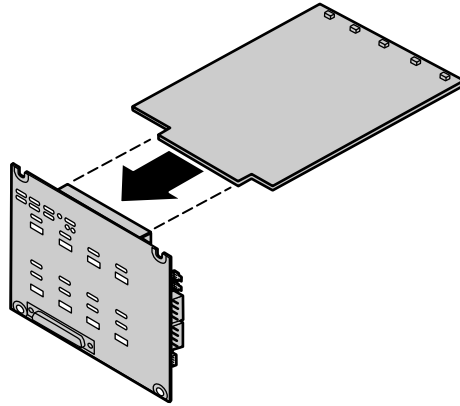
11 Put the plastic shield into place and carefully insert the two boards into the hot-swap drive cage

12 Secure the hot-swap backplane in placed with the four screws you removed in Step 8.

13 Align the four rails on the sides of the drive cage with the grooves in the chassis and slide the hot-swap drive cage back into the chassis.
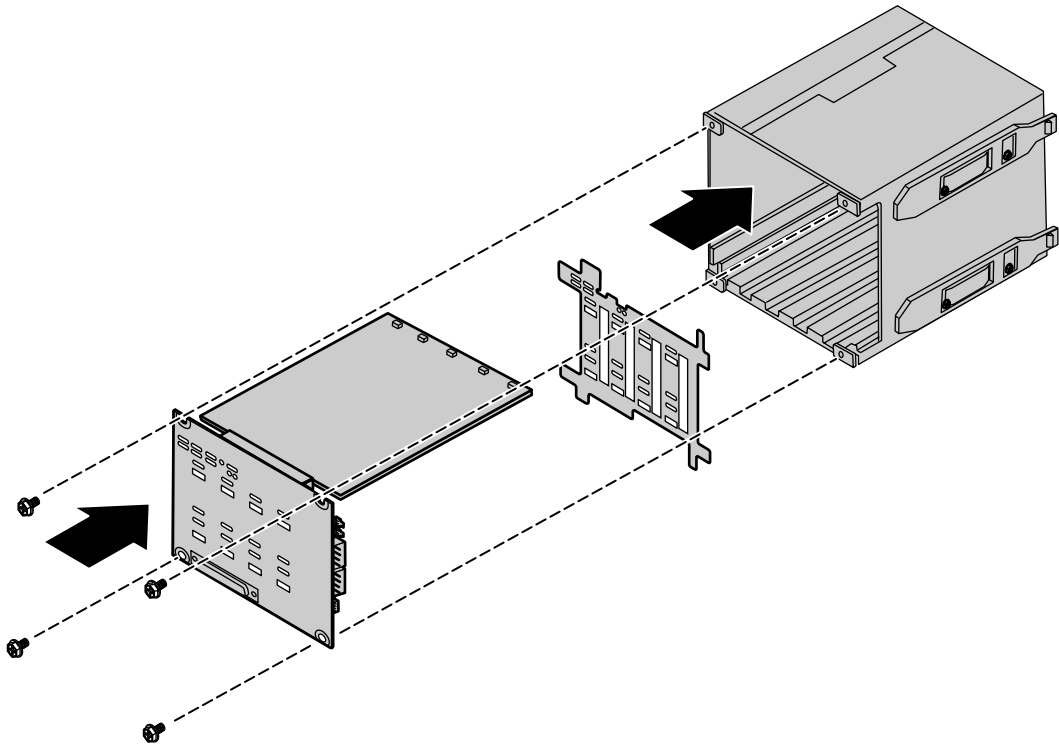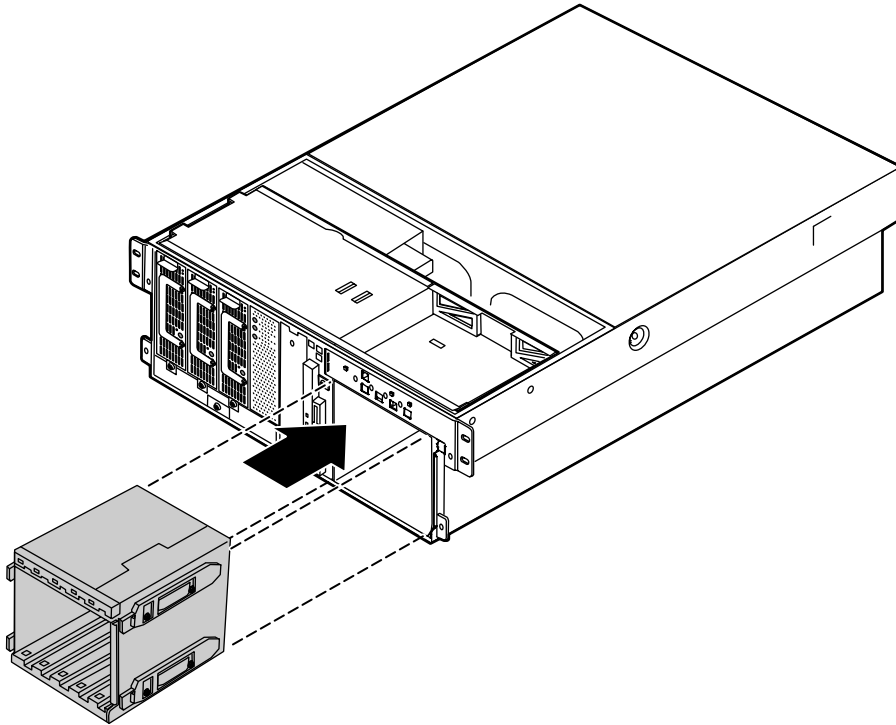

14 Install all of the hot-swap drive carriers as described in "Installing a hot-swap drive" on page 38.

15 Reconnect the cables to the hot-swap backplane.

16 Replace the front top panel as described in "Replacing the front top panel" on page 31.

17 Plug in the peripherals and the power cord and turn on the server.

Replacing the CD drive and the diskette drive

The slimline CD drive and the slimline diskette drive are near the center of the front panel. See "Front panel" on page 9 for the location of the slimline diskette drive and slimline CD drive.

1 Turn off the server and disconnect the power cord and all other external peripheral devices.

2 Remove the front top panel. (See "Removing the front top panel" on page 29 and "Preventing static electricity discharge" on page 25.)

3 Remove the power and data cables from the back of the slimline diskette drive and the slimline CD drive, noting their locations and orientations. (You will reconnect these cables after you install the new drive.)

4 Remove the diskette drive tray by removing the screw from the front panel.
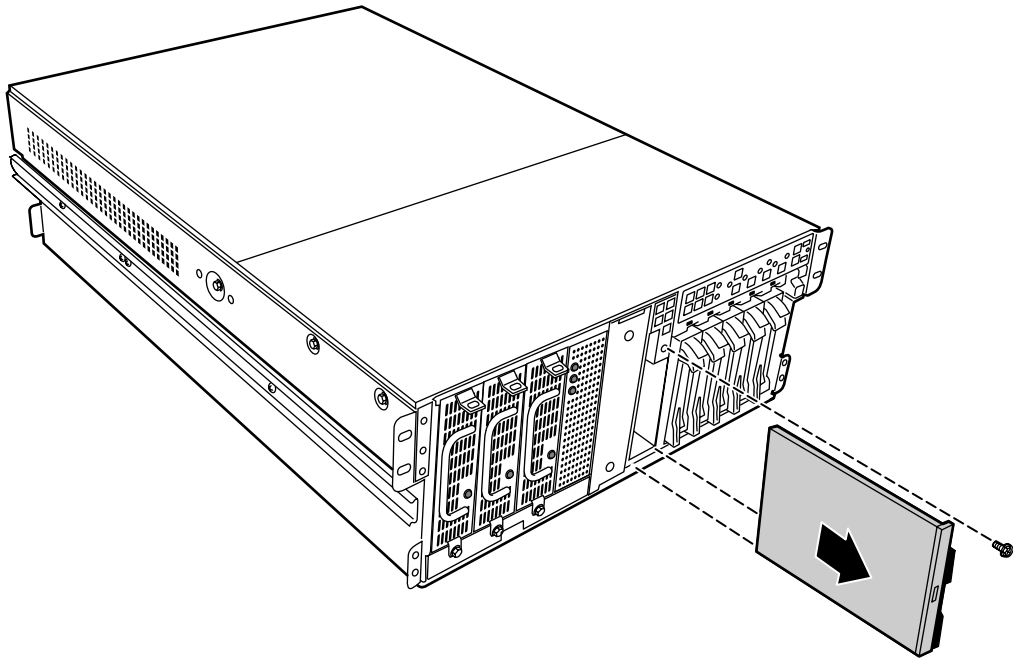
5 Pull the tray out of the chassis.

6 Pull the top (right) edge of the CD drive free from the clips holding it in place.
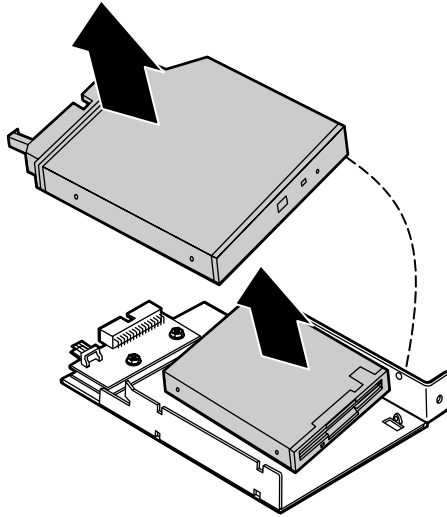
7 Pull the top (right) edge of the diskette drive free from the tray in the same manner.

8 If necessary, set any jumpers on the new diskette drive. (See your drive documentation for proper drive jumper settings and cable orientation.)

9 Align the holes on the bottom (left) edge of the diskette drive with the pins on the drive tray and press the diskette drive firmly in place.
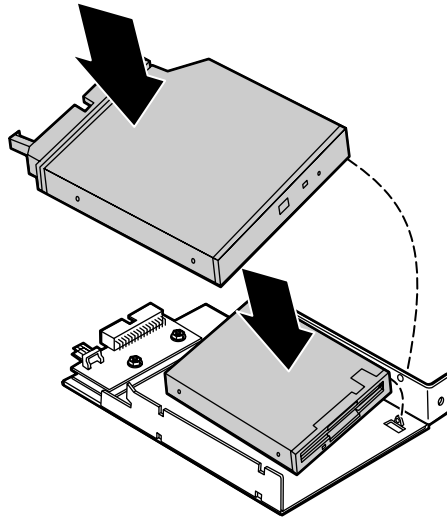
10 Align the holes on the bottom (left) edge of the CD drive with the pins on the drive tray and press the CD drive firmly into place.

11 Replace the tray in the chassis using the screw you removed in Step 4 to secure the tray in position.
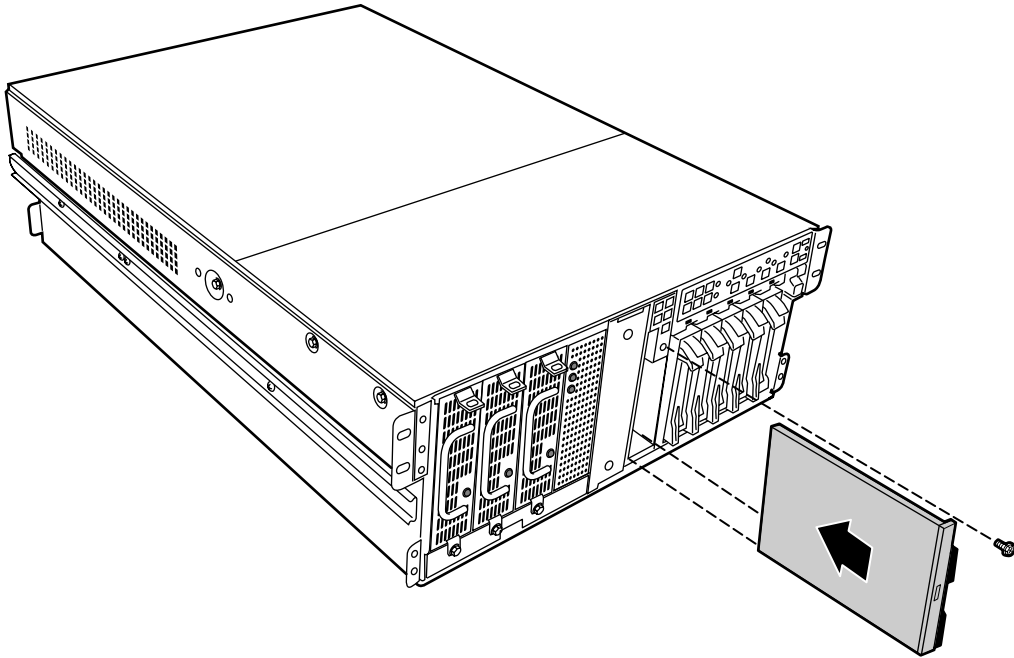
12 Connect the power and data cables, making sure the cables are in their original positions.

13 Close the case. (See "Closing the case" on page 31.)

14 Reconnect the power cord and all other external peripheral devices, then turn on the server.

Installing a 5.25-inch device

The chassis supports a single half-height 5.25-inch device. The 5.25-inch drive bay is in the center of the front panel (see "System board" on page 13.)

➲ To install a 5.25-inch device:

1 Turn off the server and disconnect the power cord and all other external peripheral devices.

2 Remove the bezel. (See "Removing the bezel" on page 27.)

3 Remove the front top panel. (See "Removing the front top panel" on page 29 and "Preventing static electricity discharge" on page 25.)

4 Pull out the metal electro-magnetic interference (EMI) shield from the front of the 5.25-inch drive bay and save it in case you need to remove the 5.25-inch device you are installing.

5 Install the drive rails on the 5.25-inch device. (See the documentation that came with the device for any jumper settings and cable orientation information.)
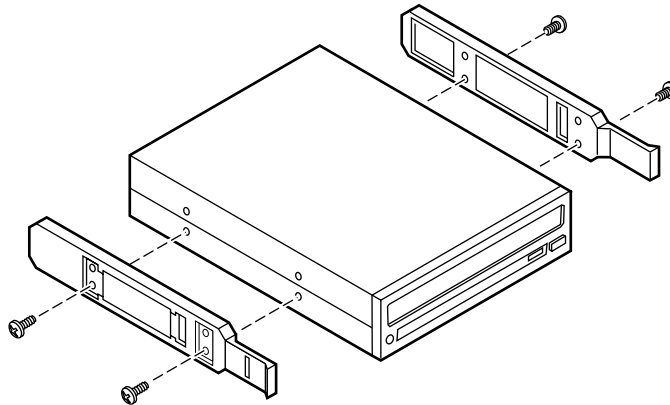
6 Align the drive rails with the grooves at the top and bottom of the 5.25-inch drive bay and slide the device into the bay until the rails click into place.

7 Connect power and data cables to the device, making sure the cables are oriented correctly.

8 Close the case. (See "Closing the case" on page 31.)

9 Reconnect the power cord and all other external peripheral devices, then turn on the server.
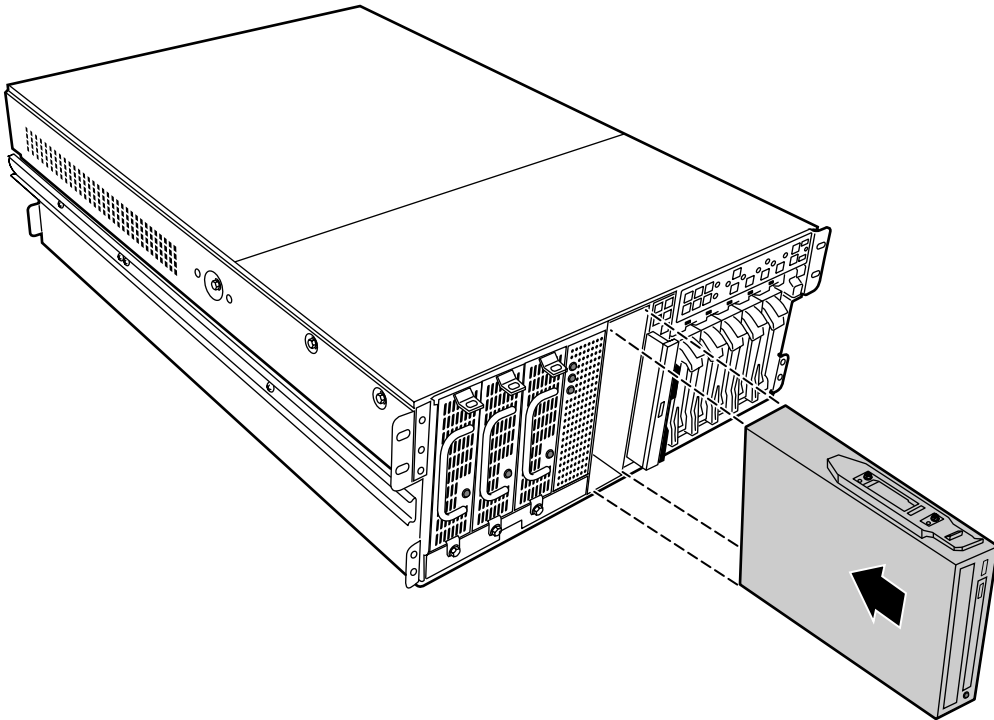
Replacing a 5.25-inch device

The chassis supports a single half-height 5.25-inch device. The 5.25-inch drive bay is in the center of the front panel. If you remove a device from the 5.25-inch drive bay, you must either install a replacement device or install the metal EMI shield that originally shipped with the server.

➲ To replace a 5.25-inch device:

1 Turn off the server and disconnect the power cord and all other external peripheral devices.

2 Remove the bezel. (See "Removing the bezel" on page 27.)

3 Remove the front top panel. (See "Removing the front top panel" on page 29 and "Preventing static electricity discharge" on page 25.)

4 Disconnect the power and data cables from the device. If you intend to install a replacement device, note the location and orientation of the cables to make installing the replacement device easier.

5 Pinch the front ends of the drive rails toward the center of the drive bay, and pull the drive out of the bay.
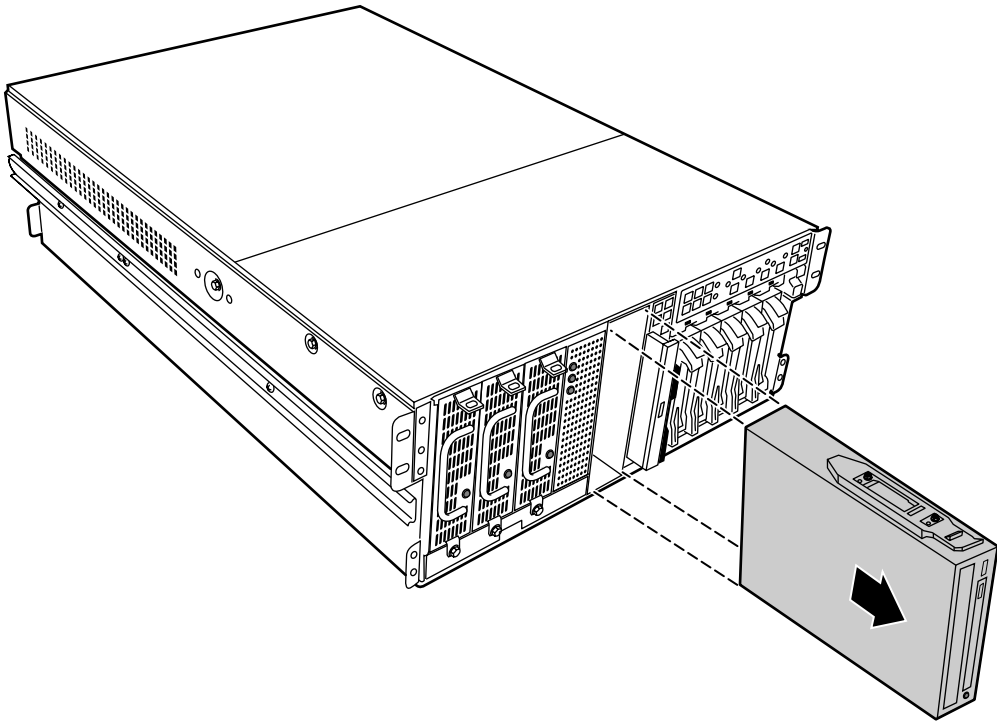
6 Remove the drive rails from the device by removing the four screws that hold them in place.
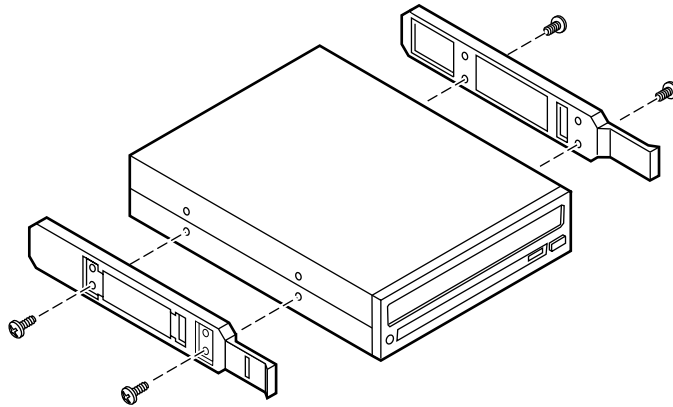
7 If you are installing a replacement device, install the rails on the device and proceed from Step 5 on page 49.

8 If you are not installing a replacement device, re-install the metal EMI shield you removed when you originally installed the 5.25-inch device.

9 Close the case. (See "Closing the case" on page 31.)

10 Reconnect the power cord and all other external peripheral devices, then turn on the server.

Memory

Sixteen DIMM sockets on the separate memory board support up to 16.0 Gigabytes (GB) of PC/100 SDRAM.

Replacing memory

The SDRAM DIMMs supported by your system board conform to the following standards:

- 64 MB, 128 MB, 256 MB, 512 MB, and 1 GB Error Checking and Correcting (ECC) DIMMs

- PC100-compliant, registered, parity, ECC SDRAM

When you select and install DIMMs, keep the following in mind:

- Registered DIMMs should not be combined with unbuffered DIMMs.

- Memory must be installed in complete banks (four DIMMs at a time), from bank A to bank D.

- No jumper settings are required for the memory size or type because the BIOS automatically detects this information.

- 16 GB maximum system memory.

Memory banks are arranged as shown in the figure below.
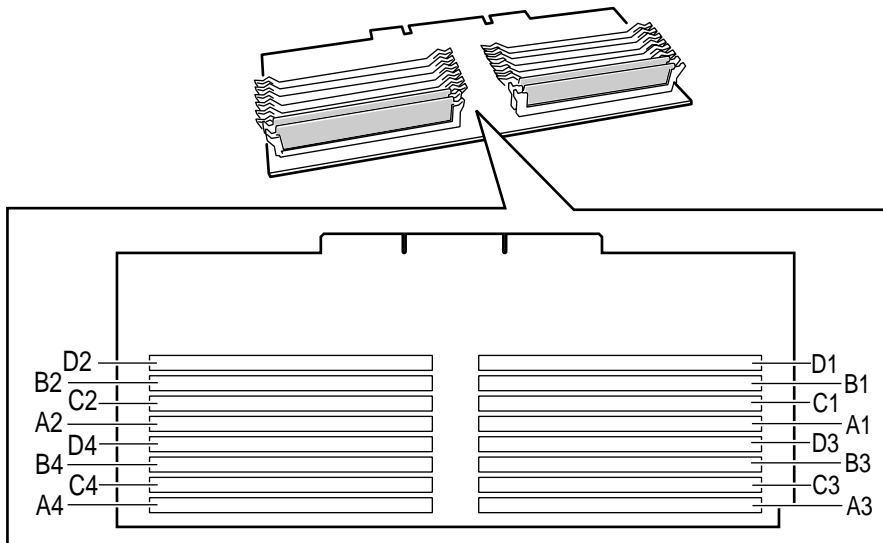
To replace DIMMs:

1 Turn off the server and disconnect the power cord and all other external peripheral devices.

2 Remove the back top panel. (See "Removing the back top panel" on page 28 and "Preventing static electricity discharge" on page 25.)

3 Remove the memory board retention bracket by removing the screw at the back end, sliding the bar to the front, and lifting the bracket out of the slot on the edge of the electronics bay.
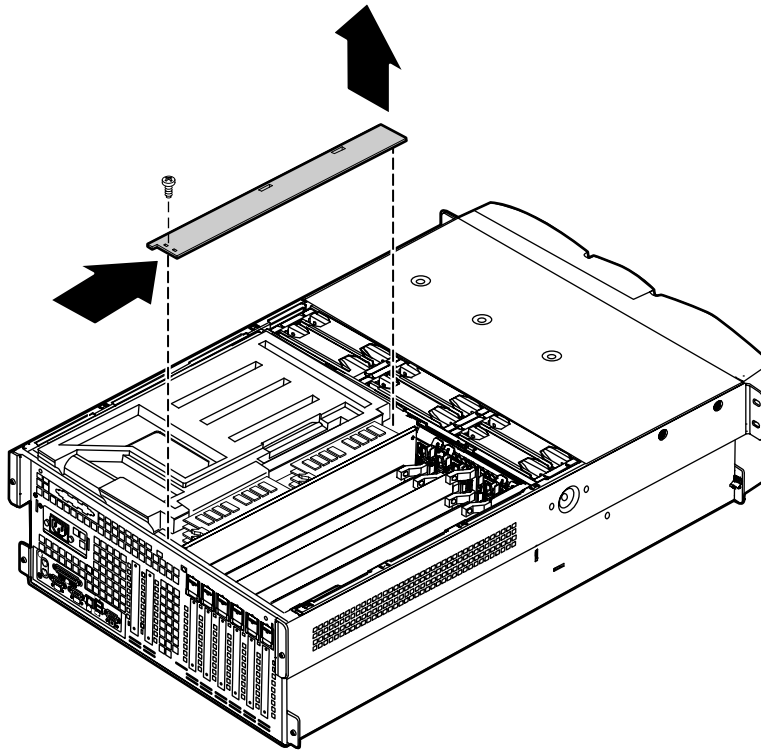
4 Pull the memory board out of the chassis and place it on a static-free surface.
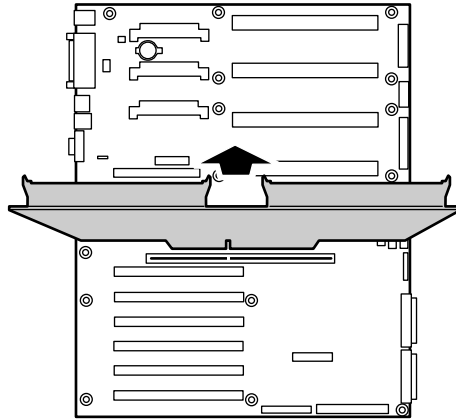
Boards shown outside chassis for clarity

5 Pull open the socket clamps on each side of the DIMM socket, then lift the DIMM out of the socket. Store the DIMM in an anti-static container.
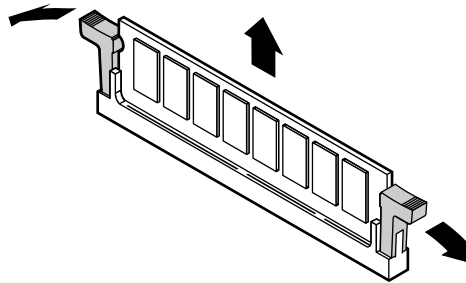
6 Insert the new DIMM into the socket, aligning the two notches in the DIMM with the two notches in the DIMM socket.

7 Gently press the DIMM into the socket until it is firmly seated. Inserting the DIMM automatically locks the socket clamps on each end of the DIMM.

8 Once all DIMMs have been installed, replace the memory board in the server.

9 Replace the memory board retention bracket, hooking the tab over the edge of the electronics bay and replacing the screw in the back panel.

10 Close the case. (See "Closing the case" on page 31.)

11 Reconnect the peripherals and the power cord, then turn on the server.

Installing memory

The SDRAM DIMMs supported by your system board conform to the following standards:

- 64 MB, 128 MB, 256 MB, 512 MB, and 1 GB ECC DIMMs
- PC100-compliant, registered, parity, ECC SDRAM

When you select and install DIMMs, keep the following in mind:

■ Registered DIMMs should not be combined with unbuffered DIMMs.

■ Memory must be installed in complete banks (four DIMMs at a time), from bank A to bank D.

■ No jumper settings are required for the memory size or type because the BIOS automatically detects this information.

■ 16 GB maximum system memory.

Memory banks are arranged as shown in the figure below.
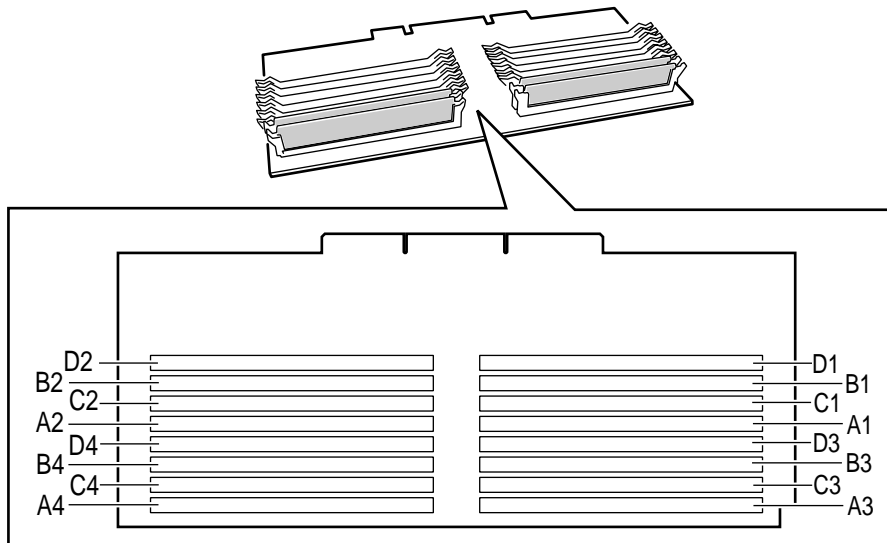
➲ To add DIMMs:

1 Turn off the server and disconnect the power cord and all other external peripheral devices.

2 Remove the back top panel. (See "Removing the back top panel" on page 28 and "Preventing static electricity discharge" on page 25.)

3 Remove the memory board retention bracket by removing the screw at the back end, sliding the bar forward, and lifting the bracket out of the slot on the edge of the electronics bay.
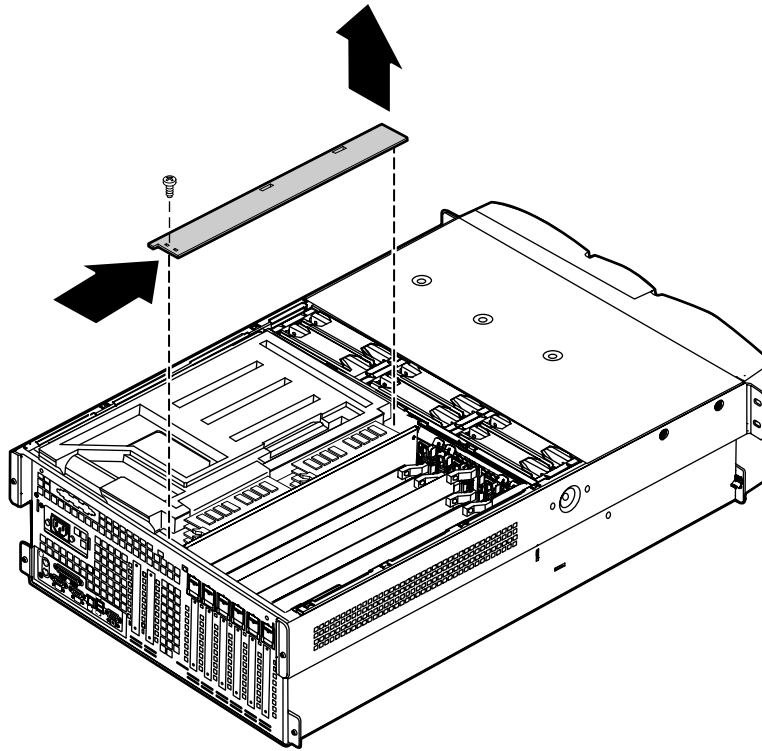

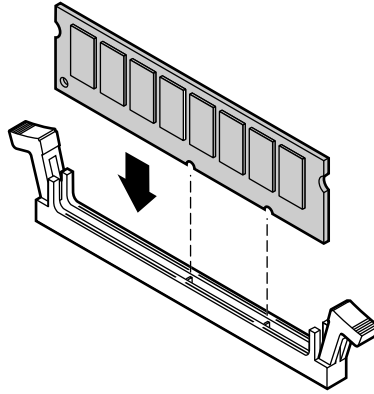**4** Pull the memory card out of the chassis and put it on a static-free surface.
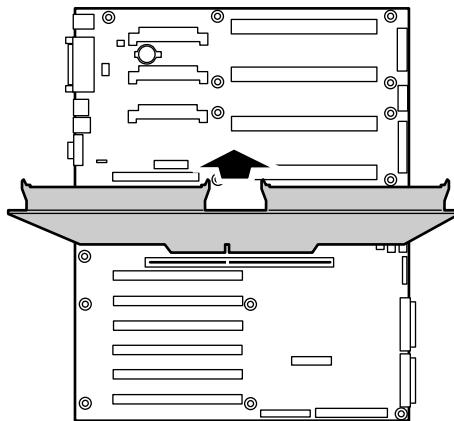
Boards shown outside chassis for clarity

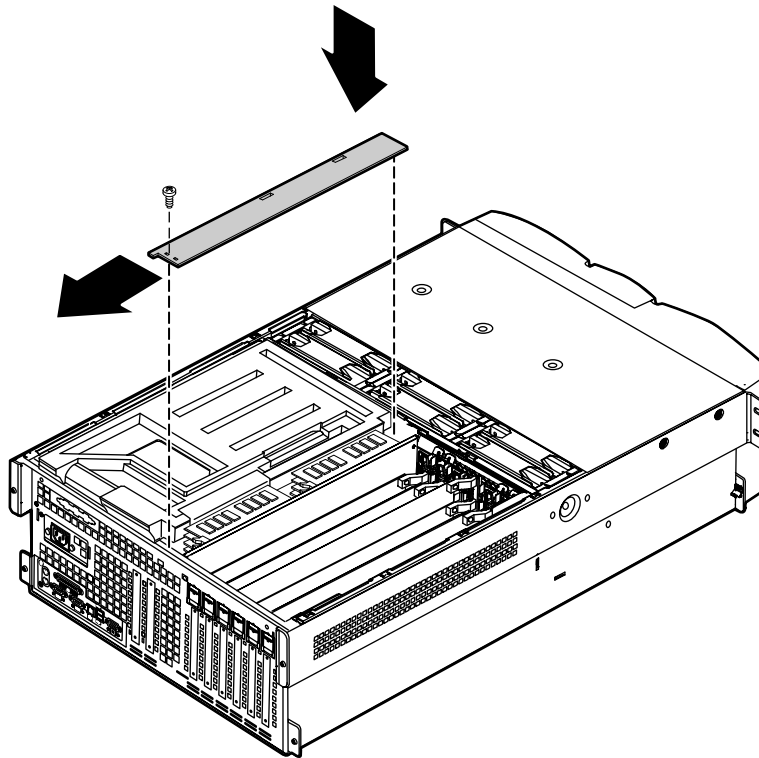**5** Pull open the socket clamps on each side of the DIMM socket.

6 Insert the new DIMM into the socket, aligning the two notches in the DIMM with the two notches in the DIMM socket.

7 Gently press the DIMM into the socket until it is firmly seated. Inserting the DIMM automatically locks the socket clamps on each end of the DIMM.

8 Once all DIMMs have been installed, replace the memory board in the server.

9 Replace the memory board retention bracket, hooking the tab over the edge of the electronics bay and replacing the screw in the back panel.

10 Close the case. (See "Closing the case" on page 31.)

11 Reconnect the peripherals and the power cord, then turn on the server.

Processors

The server is compatible with the Intel® Pentium® III 550 MHz and faster processors with 100 MHz FSB. As many as four processors may be installed in the server (they must have the same processor and FSB speed). Processor and FSB speed are automatically detected by the server. Processors must be installed in order, from slot 1 through slot 4 and a VRM must be installed for each processor added to the server. Whenever processors are installed, the most current version of the BIOS should be installed as well (see "Updating the BIOS" on page 113).

Replacing a processor

When replacing a processor, order a processor upgrade kit from Gateway.

| Caution	A heatsink must be installed on each processor. Installing a processor without a heatsink could result in damage to, or failure of, the processor.

➡ To replace a processor:

1 Turn off the server and disconnect the power cord and all external peripheral devices.

2 Remove the back top panel. (See "Preventing static electricity discharge" on page 25 and "Removing the back top panel" on page 28.)

3 Remove the EMI foam cover over the processors.
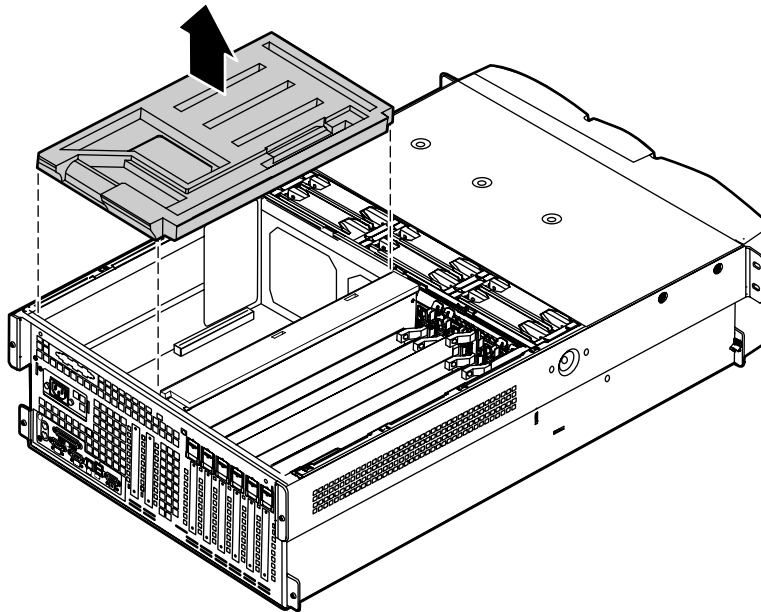
4 Using a phillips screwdriver, remove the two screws that hold the processor retention bracket in place.
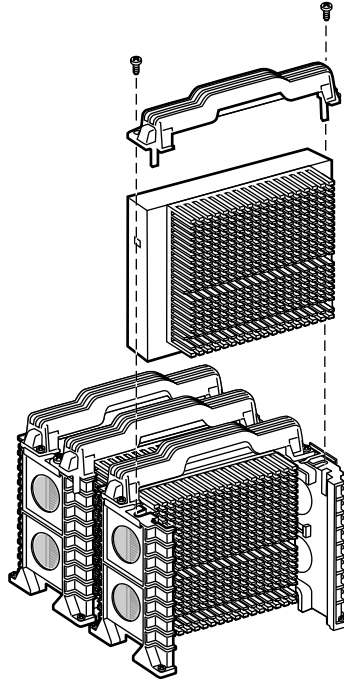
5 Pull the processor up and out of the slot.

6 If the heatsink is separate, attach it to the processor.

7 Align the new processor with the processor slot (note that the processor slot is keyed so the processor can only be installed one way) and press firmly to install it.
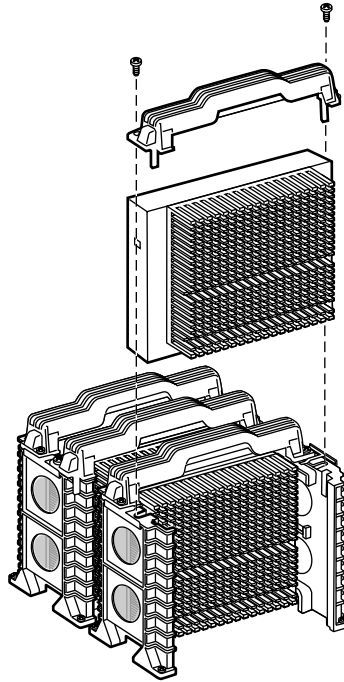
8 Replace the processor support bracket using the two screws you removed in Step 4.

9 Replace the EMI foam in the same orientation it was in when you removed it.
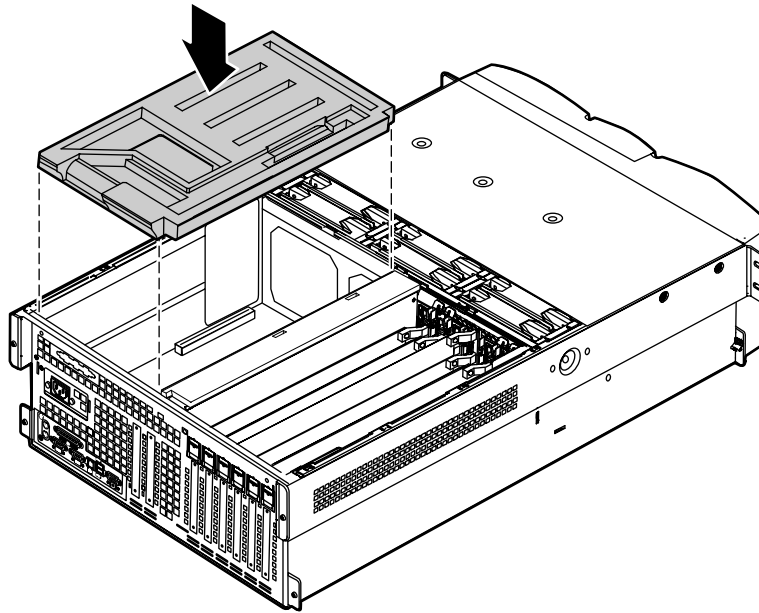
10 Close the case. (See "Closing the case" on page 31.)

11 Reconnect the power cord and all other cords you removed, then turn on the server.

Important	Gateway recommends that you run a processor retest from the BIOS Setup utility whenever you replace or add a processor.

Installing a processor

When replacing a processor, order a processor upgrade kit from Gateway.

Caution	A heatsink must be installed on each processor. Installing a processor without a heatsink could result in damage to, or failure of, the processor.

➲ To add a second (or later) processor:

1 Turn off the server and disconnect the power cord and all external peripheral devices.

2 Remove the back top panel. (See "Preventing static electricity discharge" on page 25 and "Removing the back top panel" on page 28.)

3 Remove the EMI foam cover over the processors.
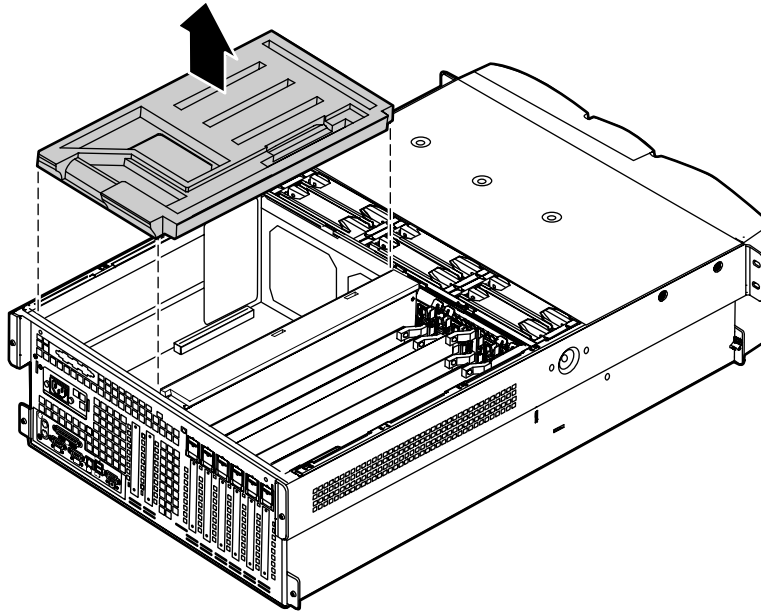
**4** Using a phillips screwdriver, remove the two screws that secure the processor retention bracket, then remove the terminator card from the processor slot you want to install the new processor in.
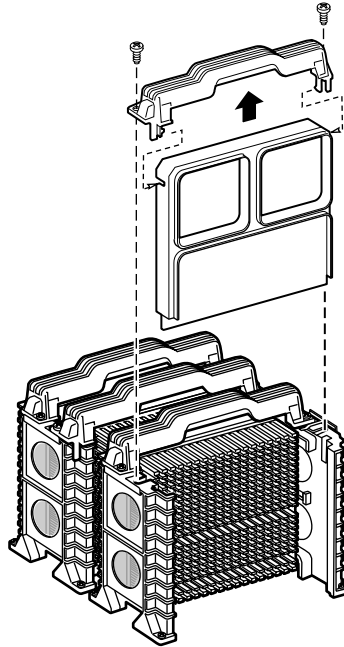
5 If the heatsink is separate, attach it to the new processor.

6 Align the new processor with the processor slot. Note that the processor slot is keyed so the processor can only be installed one way. Press it firmly to install it.
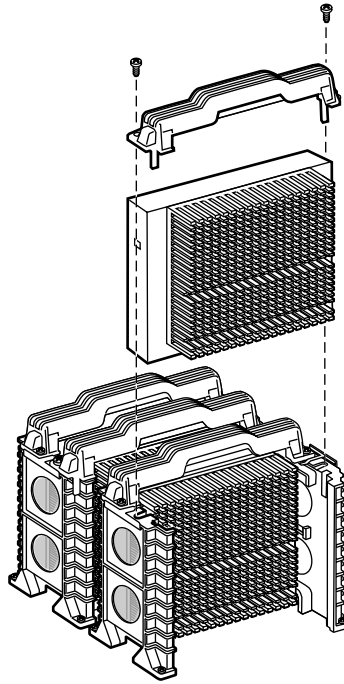
7 Secure the new processor with the processor retention bracket and the two screws you removed earlier.

Important	As originally shipped, the system board has all of the VRMs necessary to support a full complement of processors. If you need to replace any of the VRMs, you must install one VRM for each processor except the first.

8 Replace the EMI foam in the same orientation it was in when you removed it.
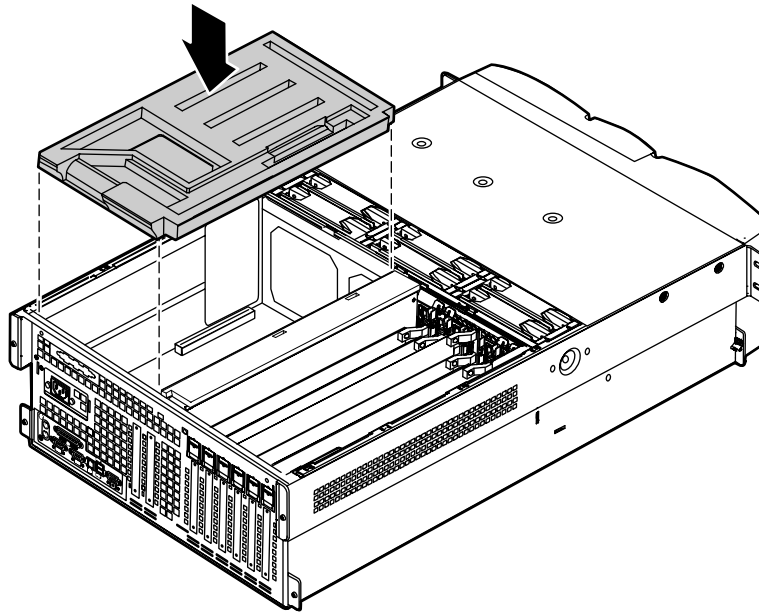
9 Close the case. (See "Closing the case" on page 31.)

10 Reconnect the power cord and all other cords you removed, then turn on the server.

Important	Gateway recommends that you run a processor retest from the BIOS Setup utility whenever you replace or add a processor.

Replacing the battery

The battery provides power for the server clock and CMOS memory, which holds the system configuration information.

If your battery is failing you may notice the server clock slowing down and giving you the incorrect time.

Open the BIOS Setup utility and write down all the values in the various menus before replacing the battery. Replacing the battery resets the BIOS Setup utility to its default values.

Warning	There is a danger of explosion if the battery is incorrectly replaced.
	Replace only with the same or equivalent type recommended by the manufacturer.
	Dispose of used batteries according to the manufacturer's instructions.

Warnung	Explosionsgefahr bel falsch eingebautter batterie.
	Ersetzen der batterien nur mit batterien des gleichen typs oder mit batterien vom hersteller empfohlenen typs.
	Entsorgen gebrauchter batterien entsprechned herstellerangaben.

Attention	Il y a danger d'explosion s'il y a replacement incorrect de la batterie.
	Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.
	Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

➲ To replace the battery:

1 Restart the server and start the BIOS Setup utility.

2 Write down the CMOS values from each tab in the BIOS Setup utility so you can reenter them after you replace the battery. For more information about the BIOS Setup utility, see "About the BIOS Setup utility" on page 111.

3 Turn off the server, disconnect the power cord and all external peripheral devices.

4 Remove the back top panel. (See "Removing the back top panel" on page 28 and "Preventing static electricity discharge" on page 25.)

5 Remove the EMI foam cover over the processors.
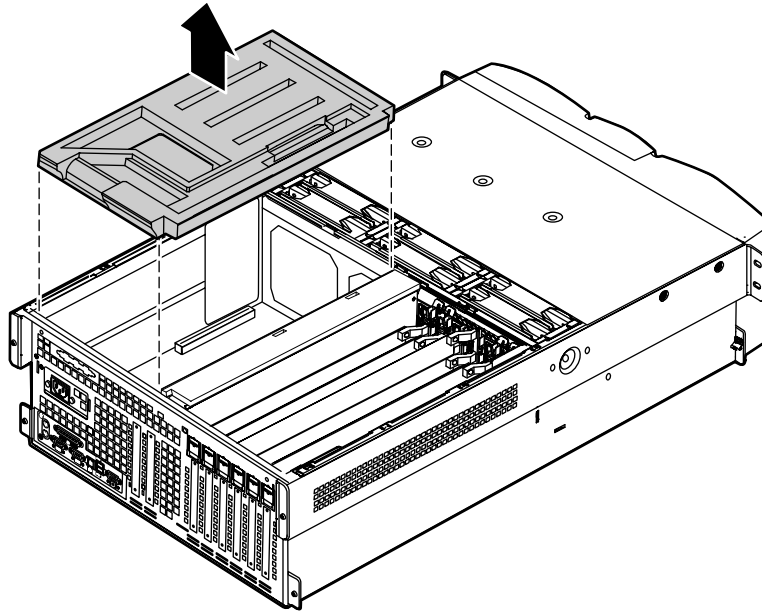
6 Locate the battery on the system board (see "System board" on page 13). The battery is circular and has the positive pole mark (+) on the top.

7 Using a small, flat-bladed screwdriver, carefully remove the battery from its socket on the system board.
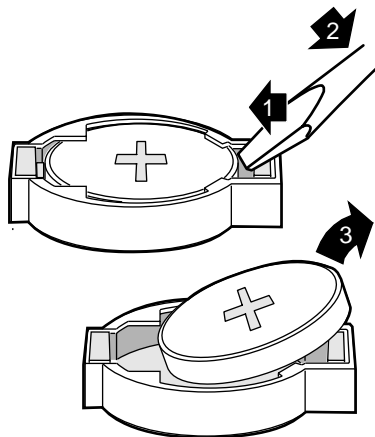
8 Press the new battery in the socket with the positive pole up. Be sure you press the battery down far enough for it to contact the base of the socket (it should snap into place).

9 Replace the EMI foam in the same orientation it was in when you removed it.
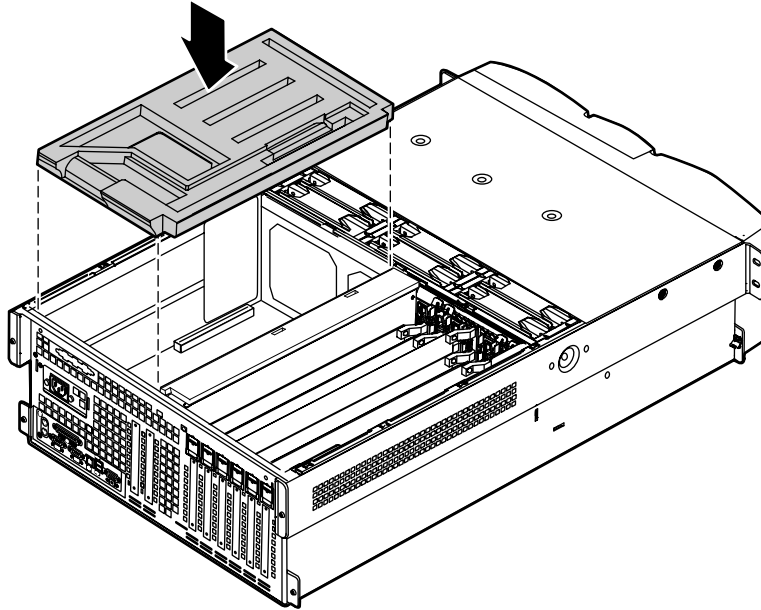
10 Close the case, as described in "Closing the case" on page 31.

11 Reconnect the peripherals and the power cord, then turn on the server.

12 If the CMOS data is not correct, change the information in the BIOS Setup utility using the data you recorded in Step 2.

Troubleshooting the battery installation

If you have problems after installing the new battery, try each of the items listed below.

■ Turn off the server and make sure that all exterior cables are attached and secured to the correct connectors.

■ Make sure that all power switches are on. If the server is plugged into a power strip or surge protector, make sure it is turned on.

- Enter the BIOS Setup utility and compare the settings on the screen with your notes or the server hardware manuals. Correct any discrepancies then save the changes and restart the server.

- Turn off the server, remove the cover, and make sure that all cables inside the case are attached securely. Also, make sure that the colored cable edges are aligned correctly and that the connectors did not miss any pins. Disconnect and reconnect the cables. Close the case as described in "Closing the case" on page 31, reconnect the modem and power cords, then turn on the server.

- Turn off the server, remove the cover and, if you have the proper test equipment, make sure that the new battery has power. (Although unlikely, your new battery may be defective.) Close the case as described in "Closing the case" on page 31, reconnect the power cord, then turn on the server.

Expansion cards

The server supports two 32-bit, 33 MHz PCI cards. Both slots support half-length cards. In addition, the server supports six full-length, hot-swap PCI cards. Two of these cards can be 64-bit, 66 MHz cards and four can be 64-bit, 33 MHz cards. See "System board" on page 13 for the locations of the card slots.

Replacing a hot-swap PCI card

You do not need to turn off the server to install or replace a hot-swap expansion card.

➲ To replace a hot-swap expansion card:

1 Set any jumpers and switches on the replacement card, if required in the card instructions.

2 On the back panel, check the hot-swap status indicator for the card you are replacing or the slot you are filling. If the slot has power, (the first LED is green) disable the card through software before replacing it.
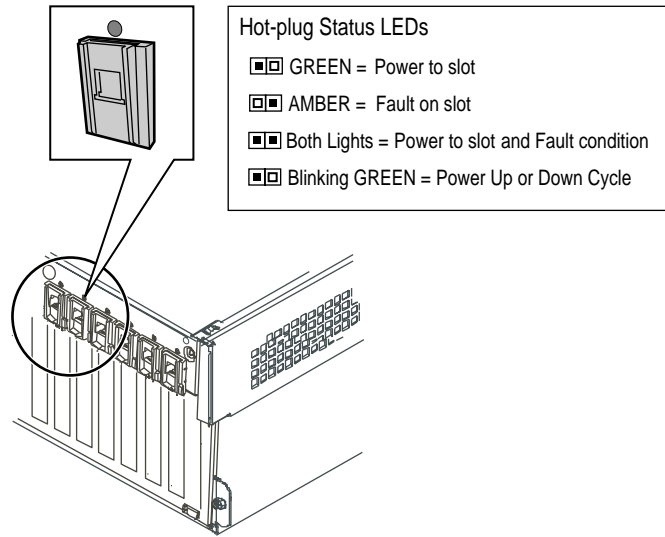
Hot-plug Status LEDs

■□ GREEN = Power to slot

□■ AMBER = Fault on slot

■■ Both Lights = Power to slot and Fault condition

■□ Blinking GREEN = Power Up or Down Cycle

3 Remove the back top panel according to the instructions in "Removing the back top panel" on page 28.

4 Open the hot-swap expansion card retention clip, by pressing gently on the clip and rotating it through the back panel.

Closed position   Open position

Green and Amber LED's

Press here then rotate

Inside View   Outside View

5 If the card is full-length, release the card retention mechanism at the end of the card and pull the card from the slot.
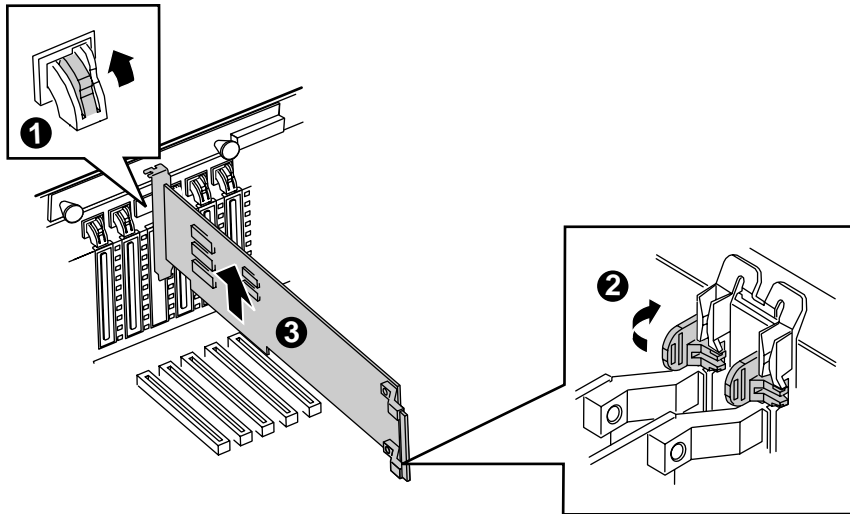
6 Insert the replacement card in the slot. Make sure it is fully seated.
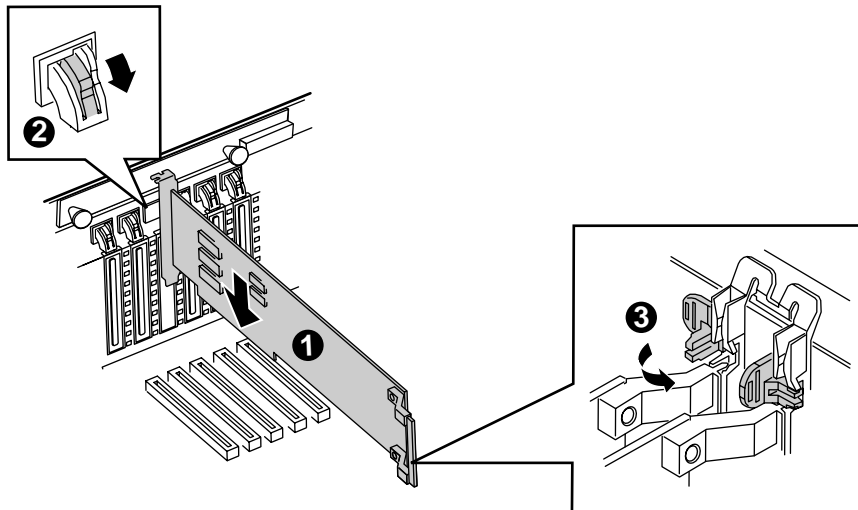
7 Push the hot-swap expansion card retention clip back through the back panel until it clicks into place.

8 Close the card retention mechanism at the end of the card, if the card is full length.

9 Connect any cables to the card (see card documentation for proper cable orientation).

10 Close the case. (See "Closing the case" on page 31.)

11 Reconnect the peripherals and the power cord, then turn on the server.

You may need to reconfigure the server after replacing a hot-swap expansion card. You may also need to install upgrade software that came with the card. Check the card documentation for additional information.

Replacing an expansion card

The server supports as many as two 32-bit, 33 MHz PCI expansion cards. These cards are not hot-swap cards and you must turn off the server before replacing one.
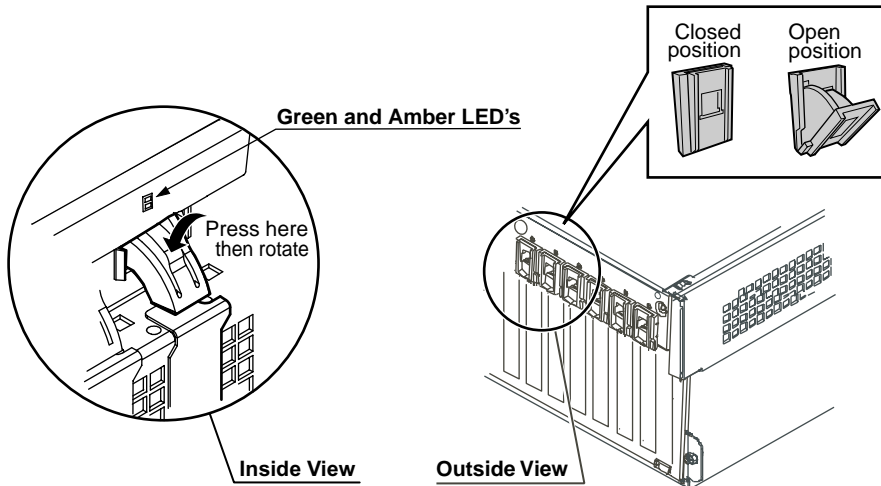
➲ To replace an expansion card:

**1** Set any jumpers and switches on the replacement card, if required in the card instructions.

2 Turn off the server, then disconnect the power cord and all external peripheral devices.

3 Remove the back top panel according to the instructions in "Removing the back top panel" on page 28. (See "Preventing static electricity discharge" on page 25.)

4 Remove the EMI foam cover over the processors.
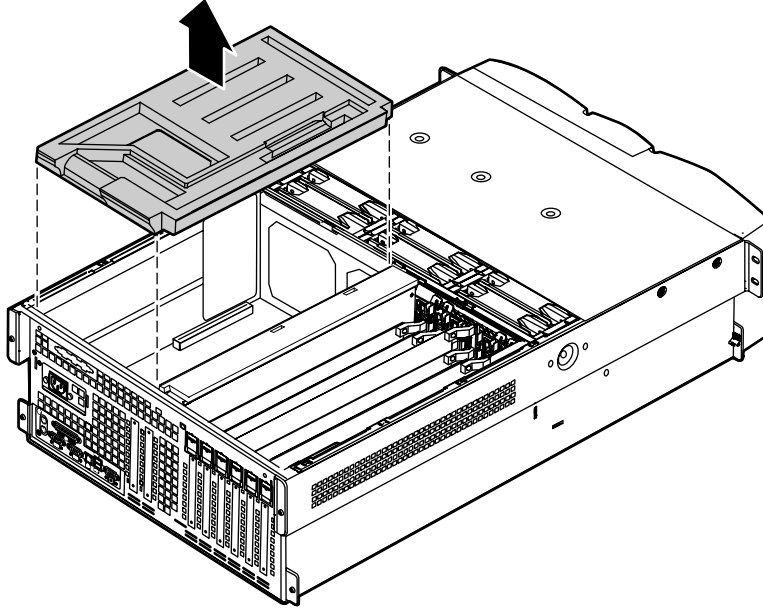
5 Disconnect any cables attached to the card.

6 Remove the screw that holds the expansion card in place and pull the card carefully from its slot.
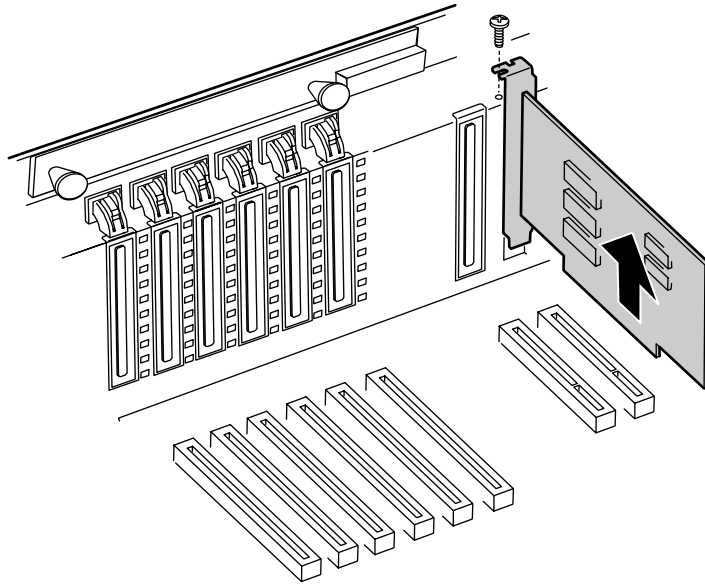
7 Insert the replacement expansion card firmly into the slot, then replace the screw you removed in Step 6.
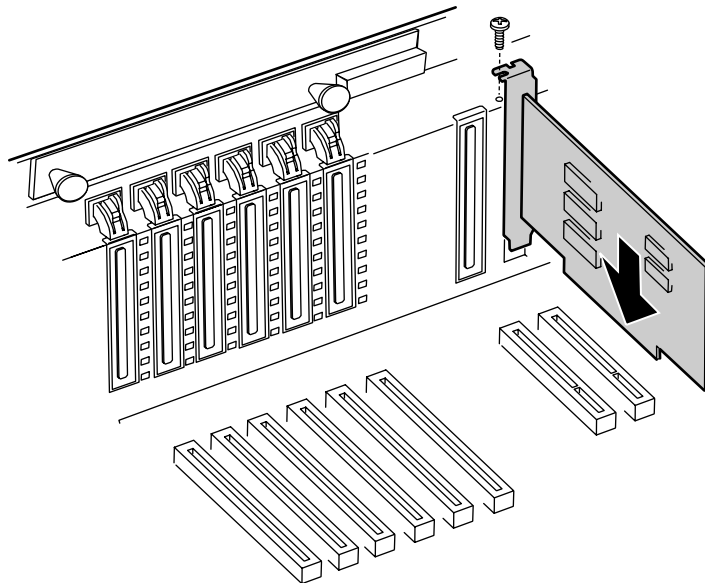
8 Connect any cables to the card (see card documentation for proper cable orientation).

9 Replace the EMI foam in the same orientation it was in when you removed it.
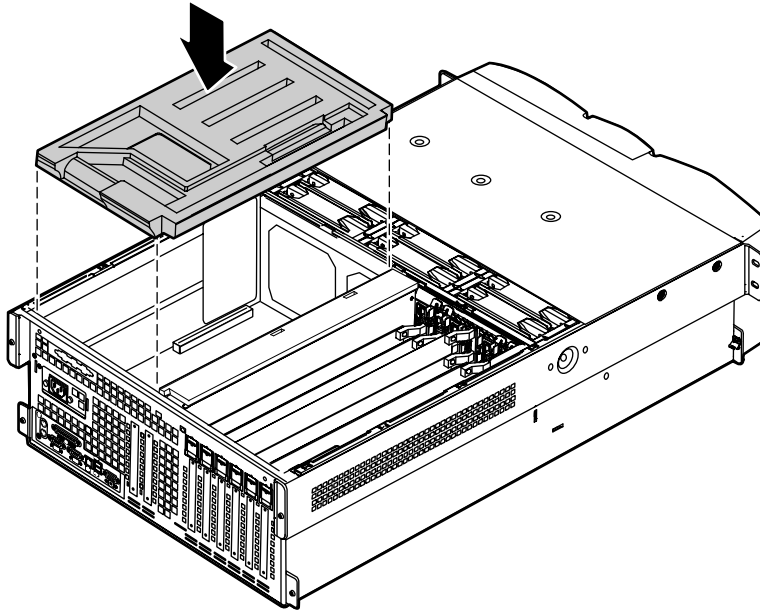
10 Close the case. (See "Closing the case" on page 31.)

11 Reconnect the peripherals and the power cord, then turn on the server.

You may need to reconfigure the server after replacing an expansion card. You may also need to install upgrade software that came with the card. Check the card documentation for additional information.

Adding an expansion card

The server supports as many as two 32-bit, 33 MHz PCI expansion cards. These cards are not hot-swap cards and you must turn off the server before installing one.

➲ To install an expansion card:

1 Set any jumpers and switches on the replacement card, if required in the card instructions.

2 Turn off the server, then disconnect the power cord and all external peripheral devices.

3 Remove the back top panel according to the instructions in "Removing the back top panel" on page 28. (See "Preventing static electricity discharge" on page 25.)

4 Remove the EMI foam cover over the processors.
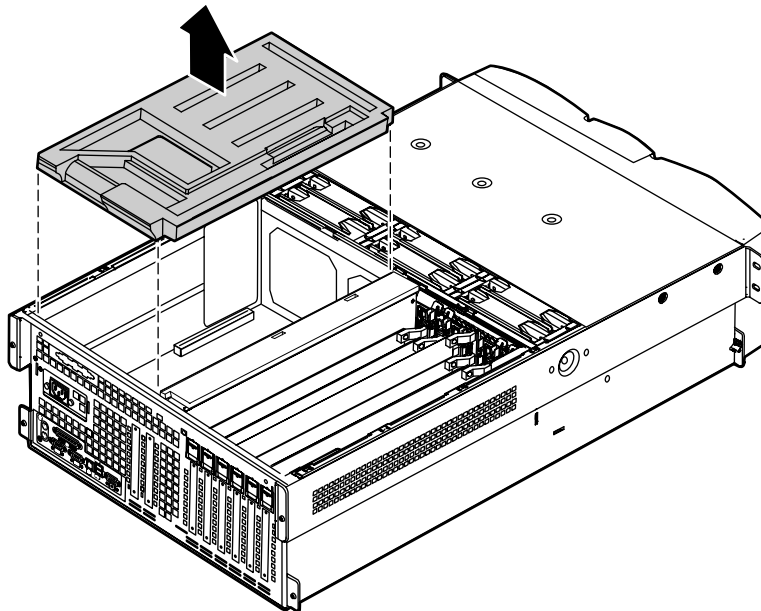
5 Locate an available slot and remove the slot cover by removing the screw that secures it in place, then pull out the slot cover.

6 Insert the bottom edge of the expansion card (the keyed edge with the contacts) into the slot on the system board and push in firmly to seat the card.
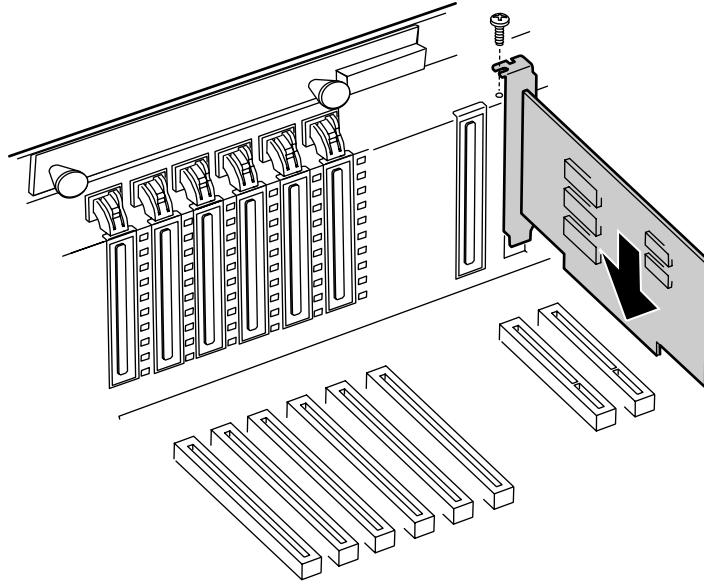
7 Replace the screw you removed earlier.

8 Connect any cables to the card (see card documentation for proper cable orientation).

9 Replace the EMI foam in the same orientation it was in when you removed it.
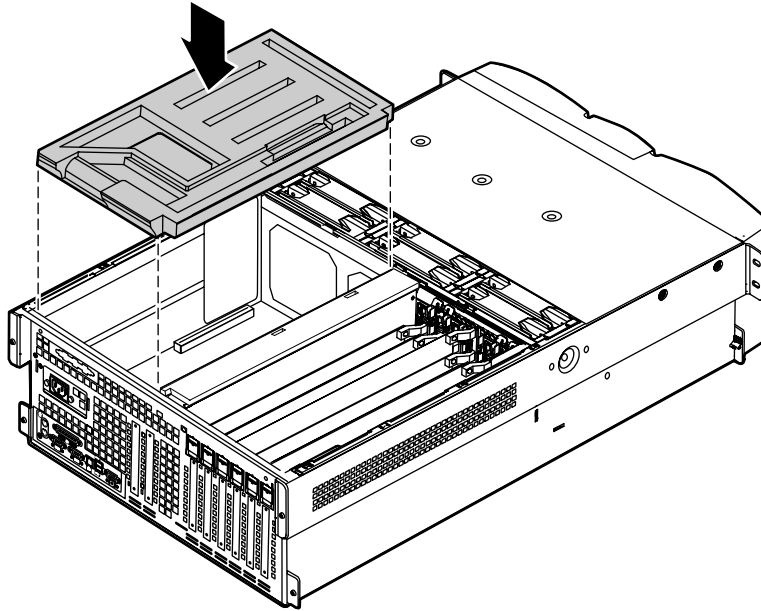
10 Close the case. (See "Closing the case" on page 31.)

11 Reconnect the peripherals and the power cord, then turn on the server.

You may need to reconfigure the server after installing some expansion cards. You may also need to install software that came with the card. Check the card documentation for additional information.

Power supplies

The server ships with as many as three 350-W hot-swap power supply modules. With all three modules, the server provides N+1 power supply redundancy, letting you hot-swap a power supply module if one fails. If the power distribution system fails you must replace the entire power supply.

Hot-swapping a power supply module

If all three hot-swap power supply modules are installed, you can replace a failed module without turning the server off.

➲ **To replace a hot-swap power supply module:**

1 Follow the static electricity precautions in "Preventing static electricity discharge" on page 25.

2 Determine which power supply has failed by checking the indicator LEDs or using your server management software.

3 Remove the bezel. (See "Removing the bezel" on page 27.)

4 Loosen the captive thumbscrew at the bottom of the failed power supply module.

5 Press down on the tab at the top of the failed module and pull the module out.
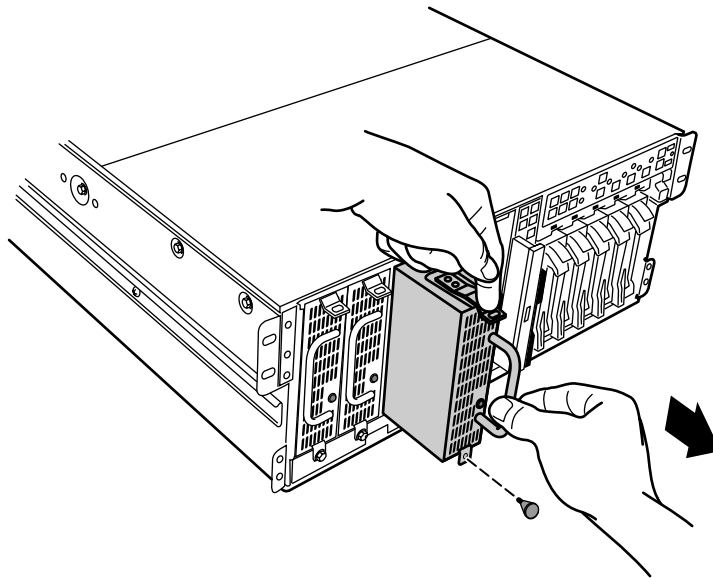
6 Pull the power supply module entirely out of the chassis.

7 Align the rails on the new power supply module with the grooves at the top and bottom of the power supply and slide the power supply module in.
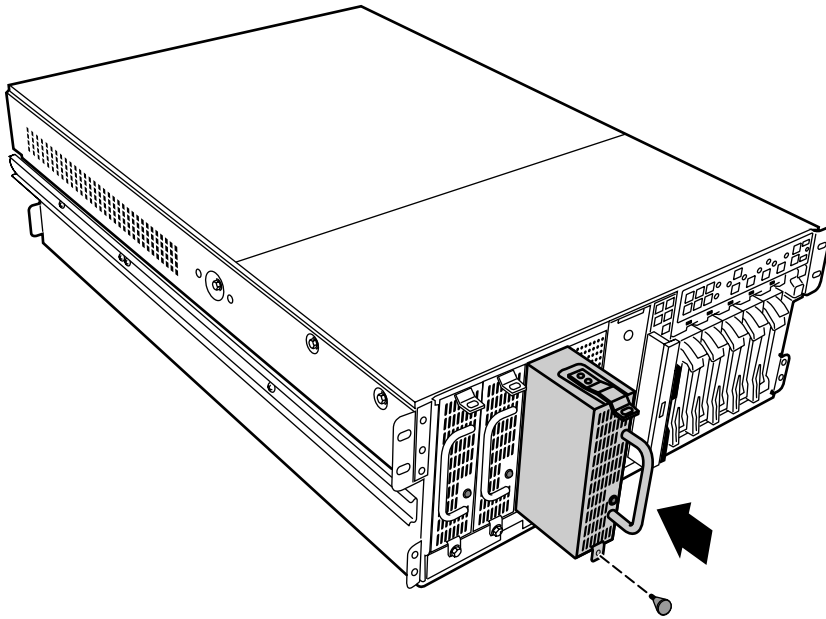
8 Slide the module all of the way into the space until the clip at the top clicks into place, then tighten the thumbscrew at the bottom of the power supply module.

9 Replace the bezel.

Replacing the power supply

The redundant 350-W power supply provides all system power. If one of the components of the power distribution hardware fails, you must replace the entire power supply.

➲ To replace the power supply:

1 Turn off the server and disconnect the power cord and all peripherals.

2 Remove the bezel and the front top panel. (See "Removing the bezel" on page 27, "Removing the front top panel" on page 29, and "Preventing static electricity discharge" on page 25.)

3 Remove the four screws that secure the upper drive bay bracket in place, then slide the bracket forward before lifting it from the chassis.
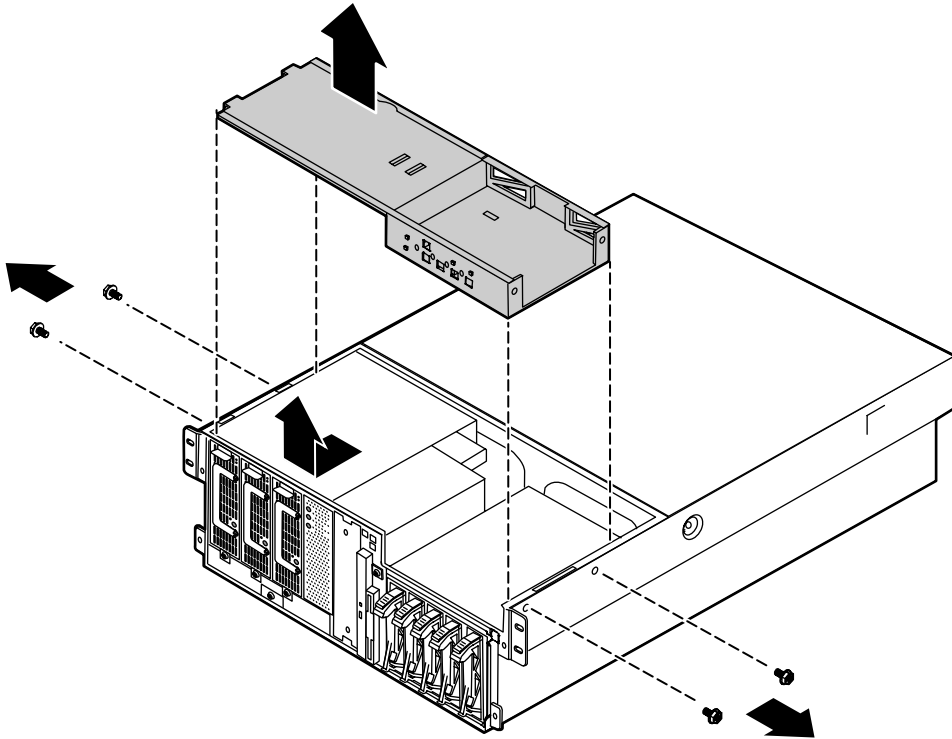
4 Disconnect all cables attached to the power supply. Note their locations and orientations so you can reconnect them later.

5 Loosen the captive thumbscrew at the bottom, center of the power supply front, then slide the power supply forward until it stops.

Captive thumbscrew
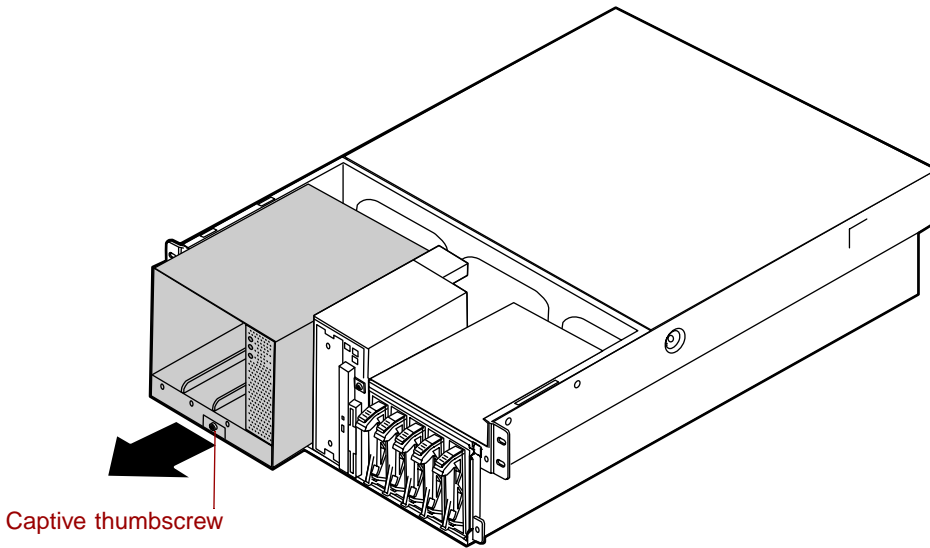
6 Tilt the power supply forward and lift it up and back to clear the tab on the bottom of the chassis.
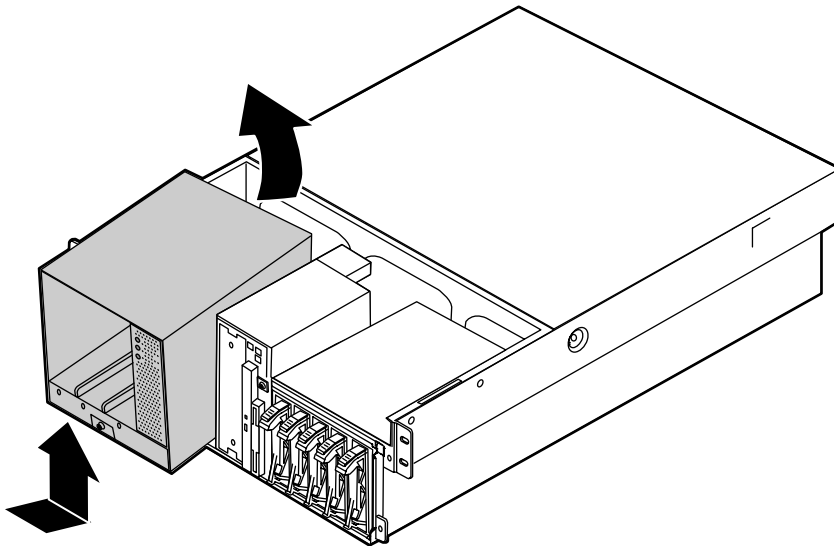
7 Holding the new power supply at an angle, place the new power supply over the tab on the bottom of the chassis, then rotate it so that it rests flat on the bottom of the chassis.
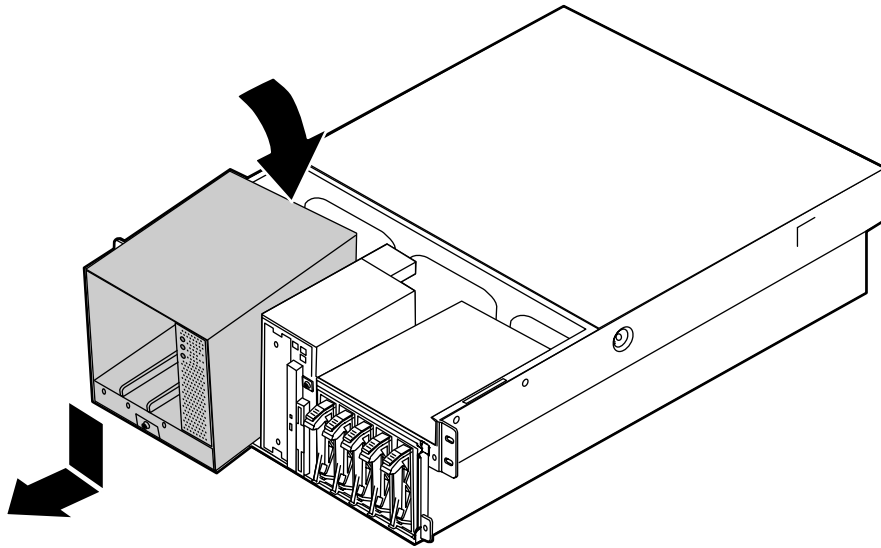
8 Slide the power supply back to insert the tabs on the back of the power supply under the slots on the bottom of the chassis.

Captive thumbscrew
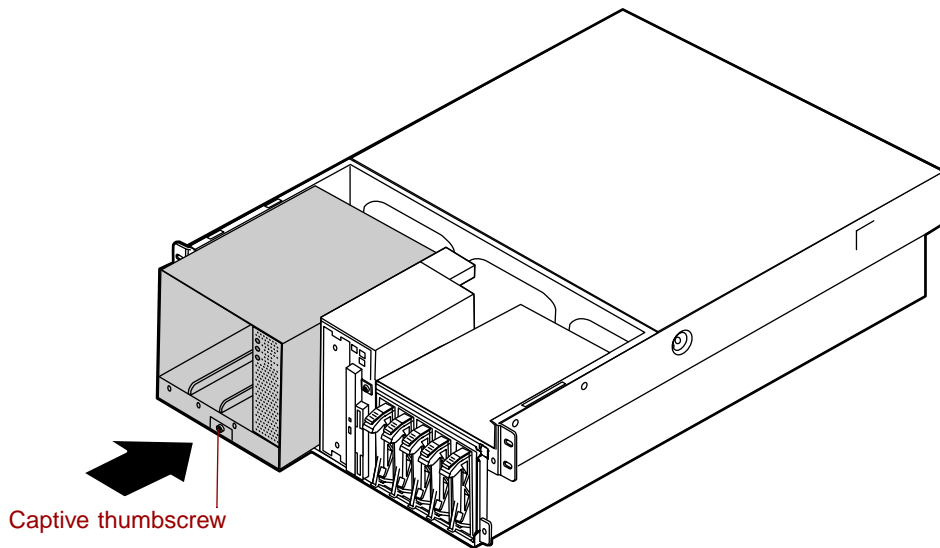
9 Tighten the thumbscrew at the bottom of the power supply to secure it in place.

10 Place the upper drive bay bracket on the top of the chassis. Make sure the tabs on the bottom of the bracket fit into the slots at either side of the chassis.

11 Slide the upper drive bay bracket back to set the tabs, then replace the four screws you removed in Step 3.
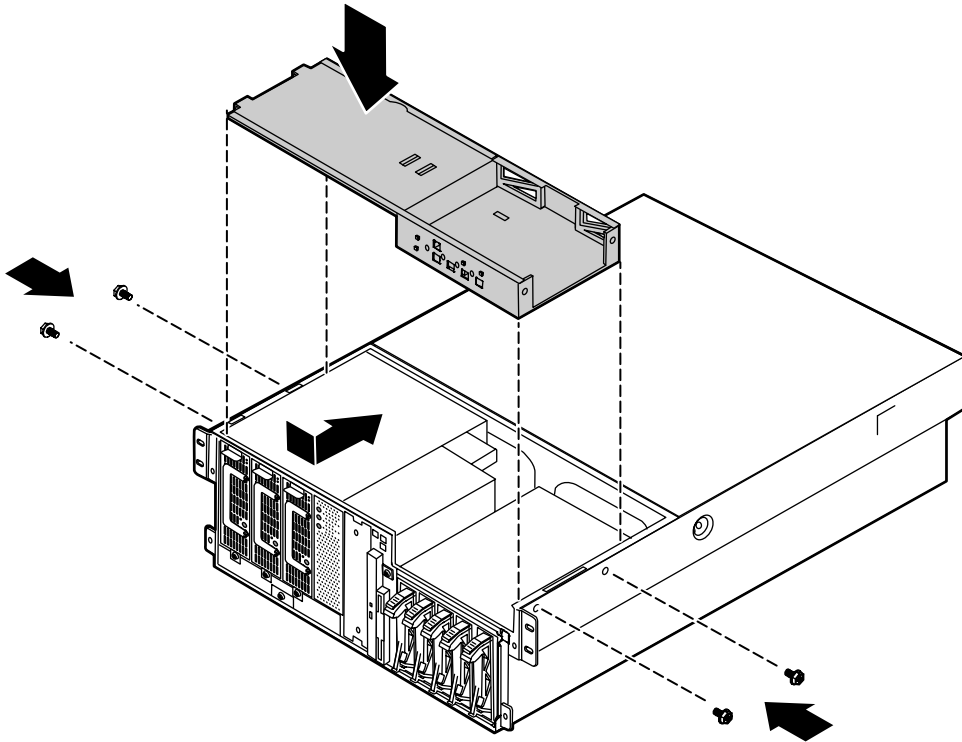
12 Close the case. (See "Closing the case" on page 31.)

13 Reconnect the power cord and all external peripherals, then turn on the server.

Fans

The server contains six hot-pluggable fans to keep the internal temperature down to acceptable levels.

Replacing the fans

The fans are located between the electronics bay and the drive bays. The fans are hot-plug capable so you do not need shut down the server to replace a fan.

➲ To replace a fan:

1 Remove the back top panel. (See "Removing the back top panel" on page 28 and "Preventing static electricity discharge" on page 25.)

2 Determine which fan has failed by looking at the fan status LEDs in the fan tray.
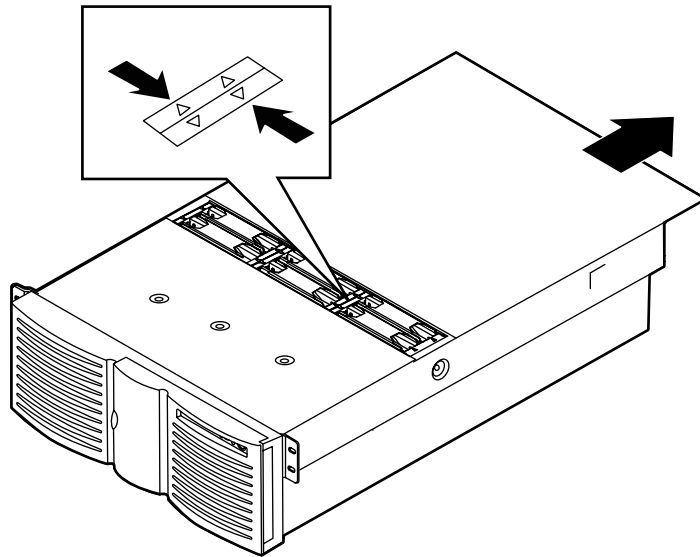
3 Place your fingers in the holes on the top of the fan and pull the fan out of the fan tray. Wait until the fan blades stop rotating before you put the fan down.
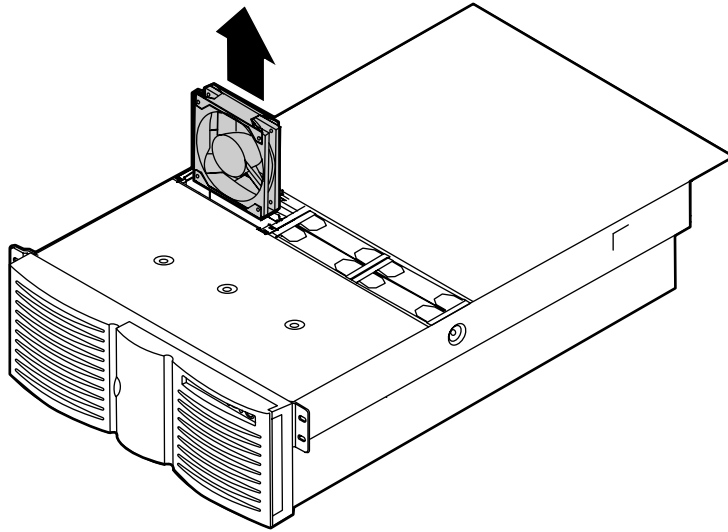
4 Insert the new fan into the fan assembly. Make sure the direction of rotation and airflow match the direction and airflow of the fan you removed.

5 Close the case. (See "Closing the case" on page 31.)

Replacing the fan power distribution board

The fan power distribution board rests in the bottom of the fan tray and distributes power to all of the fans and the fan status LEDs. The fan power distribution board also provides hardware monitoring for all fans.

➲ To replace the power supply:

1 Turn off the server and disconnect the power cord and all peripherals.

2 Remove both top panels. (See "Opening the case" on page 26 and "Preventing static electricity discharge" on page 25.)

3 Remove all of the fans from the fan tray.

4 Disconnect the cables from the bottom front side of the fan tray. Note the location and orientation of each cable so you can connect them correctly to the new board.

5 Remove the two screws that secure the hot-plug fan tray, then lift the tray out of the chassis and place it on a static-free surface.
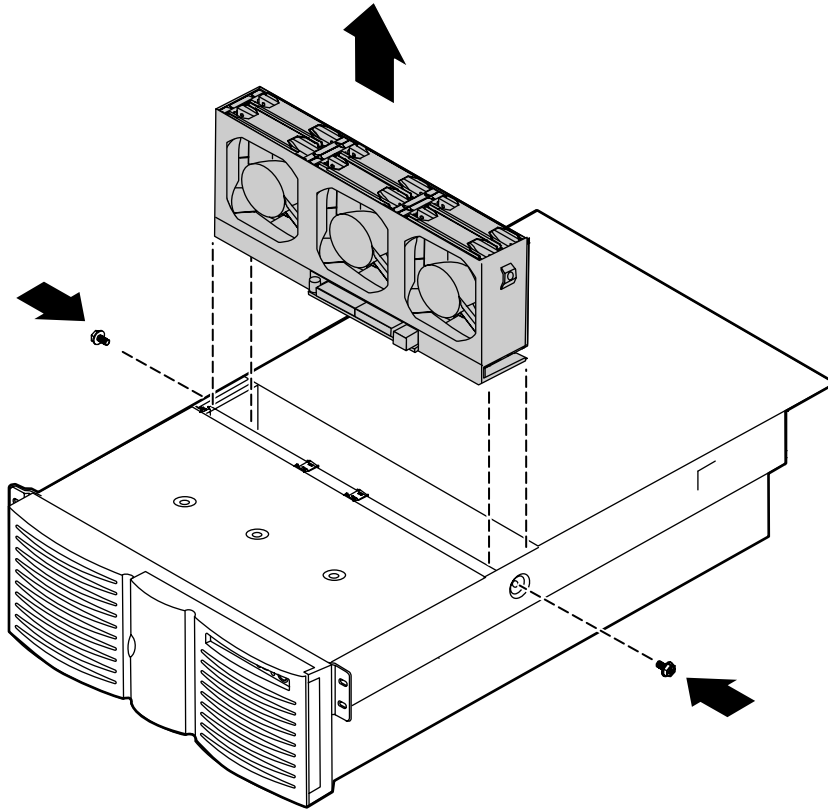
6 Remove the three screws at the bottom of the fan tray, then rotate the top of the fan tray back on its hinges to expose the fan power distribution board.

Plastic board shield

Fan power distribution board

Top of fan tray
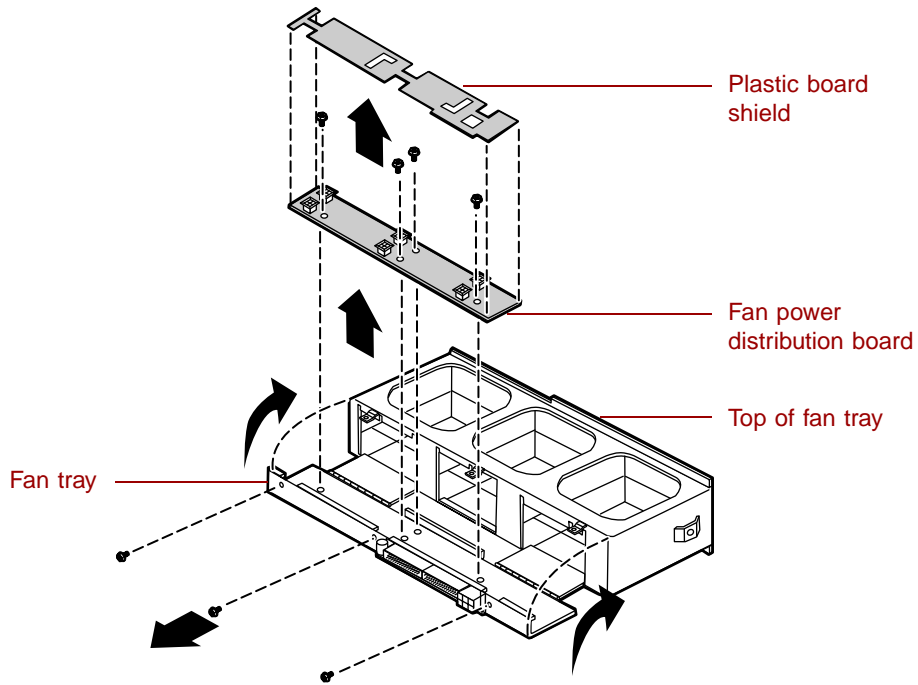
Fan tray

7 Lift off the plastic board shield, then remove the four screws that secure the fan power distribution board to the bottom of the fan tray and lift the board out of the tray.

8 Place the new fan power distribution board in the fan tray and secure it with the four screws you removed in Step 7.

Plastic board shield

Fan power distribution board

Top of fan tray
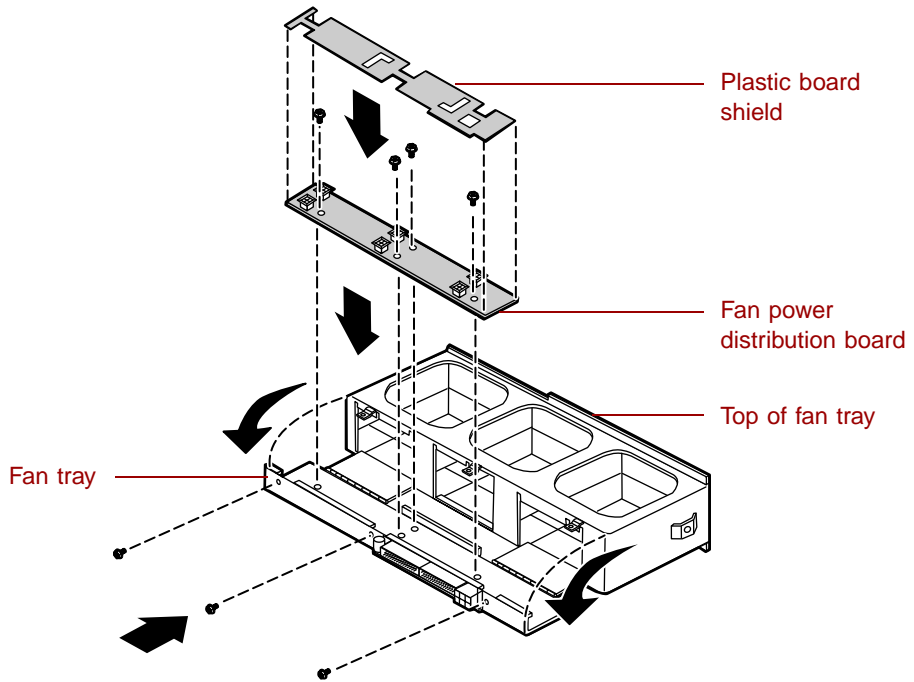
Fan tray

9 Place the plastic board shield over the fan power distribution board, then close the fan tray and secure it with the three screws you removed in Step 6.

10 Place the fan tray in the chassis and secure it with the screws you removed in Step 5.
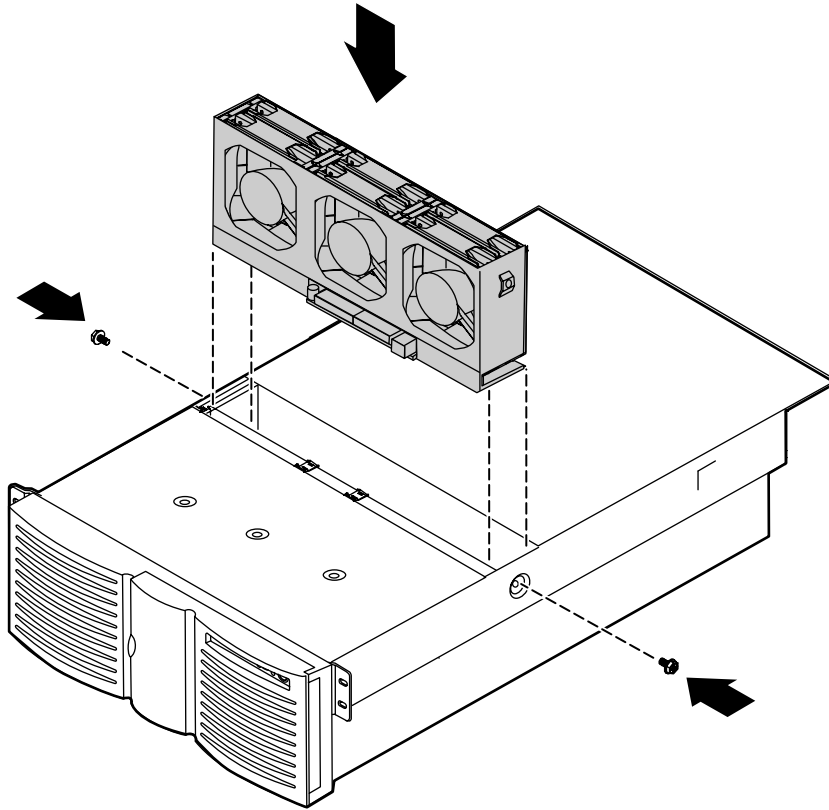
11 Reconnect the cables you removed in Step 4.

12 Replace all of the fans in the fan tray.

13 Close the case. (See "Closing the case" on page 31.)

**14** Reconnect the power cord and all external peripherals, then turn on the server.

Replacing the front panel board

The front panel board is mounted on the front of the chassis, inside the front panel.

➲ To replace the front panel board:

1 Turn off the server and disconnect the power cord and all external peripherals.

2 Remove the front top panel. (See "Removing the front top panel" on page 29 and "Preventing static electricity discharge" on page 25.)

3 Remove the two screws that secure the front panel board to the front of the chassis, then remove the board from the server.
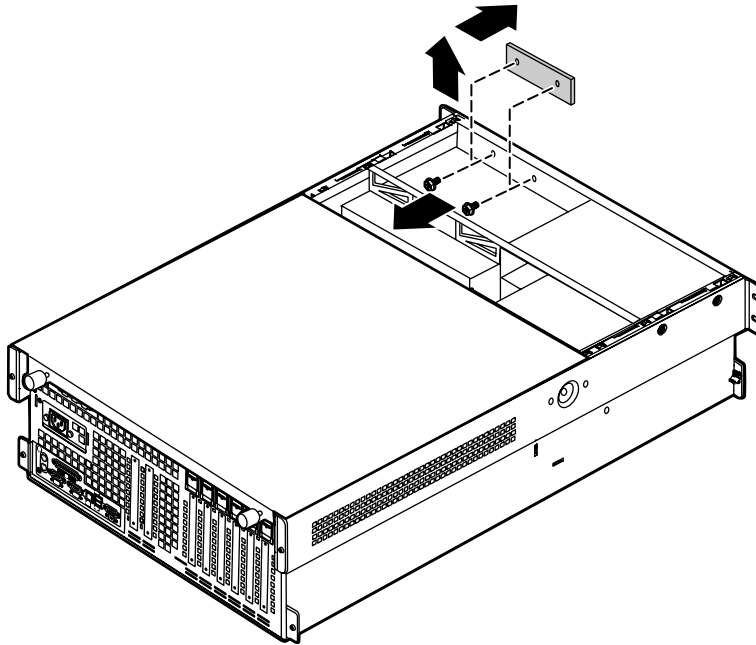
4 Disconnect the cable from the front panel board. Note the location and orientation of the cable as you remove it.

5 Plug the front panel cable into the connector on the new front panel board.

6 Install the new front panel board by placing the board in position and replacing the two screws you removed in Step 4.
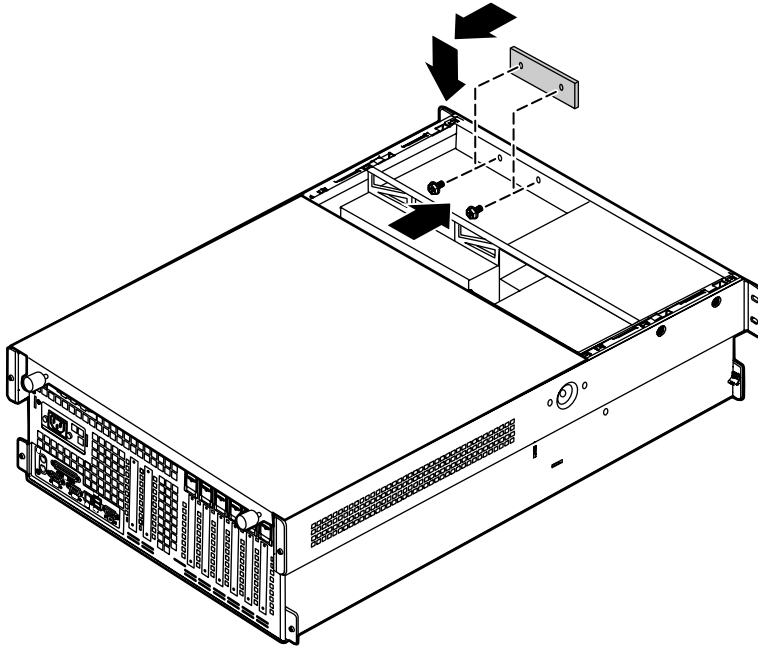
7 Close the case. (See "Closing the case" on page 31.)

8 Reconnect the power cord and the external peripherals, then turn on the server.

Replacing the hot-plug PCI indicator board

The hot-plug PCI indicator board is mounted on the back panel of the chassis, above the hot-plug PCI slots.

➲ To replace the hot-plug PCI indicator board:

1 Turn off the server and disconnect the power cord and all external peripherals.

2 Remove the back top panel. (See "Removing the back top panel" on page 28 and "Preventing static electricity discharge" on page 25.)

3 Disconnect the cable from the hot-plug PCI indicator board. Note the location and orientation of the cable as you remove it.

4 Remove the two thumbscrews that secure the board to the back panel, then remove the board from the server.
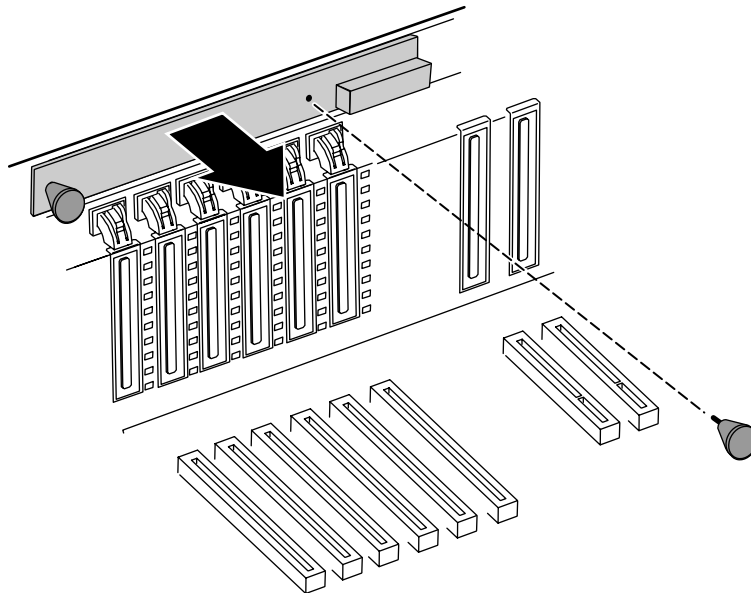
5 Install the new front panel board by placing the board in position and replacing the two screws you removed in Step 4.
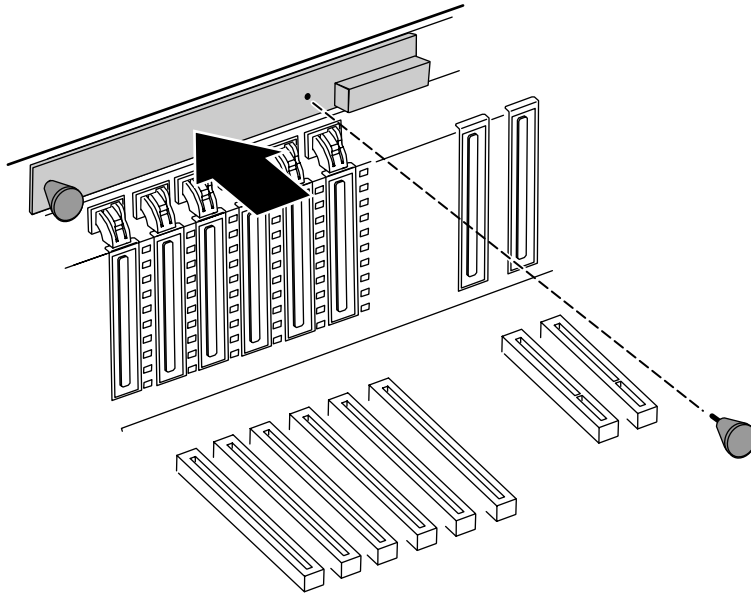
6 Plug the hot-plug PCI indicator board cable into the connector on the new board.

7 Close the case. (See "Closing the case" on page 31.)

8 Reconnect the power cord and the external peripherals, then turn on the server.

Replacing the system board

The system board integrates the other elements of the server, such as the processor, memory, storage, networking, and communications.

➲ To replace the system board:

1 Turn off the server and disconnect the power cord and all external peripheral devices.

2 Open the case. (See "Opening the case" on page 26 and "Preventing static electricity discharge" on page 25.)

3 Remove all expansion cards from the server. (See "Replacing a hot-swap PCI card" on page 73 and "Replacing an expansion card" on page 76.)

4 Disconnect all cables from the system board. Note the location and orientation of each cable as you remove it.

5 Remove the four screws that secure the electronics bay to the chassis, then pull the electronics bay out through the back panel of the chassis and place it on a static-free surface.
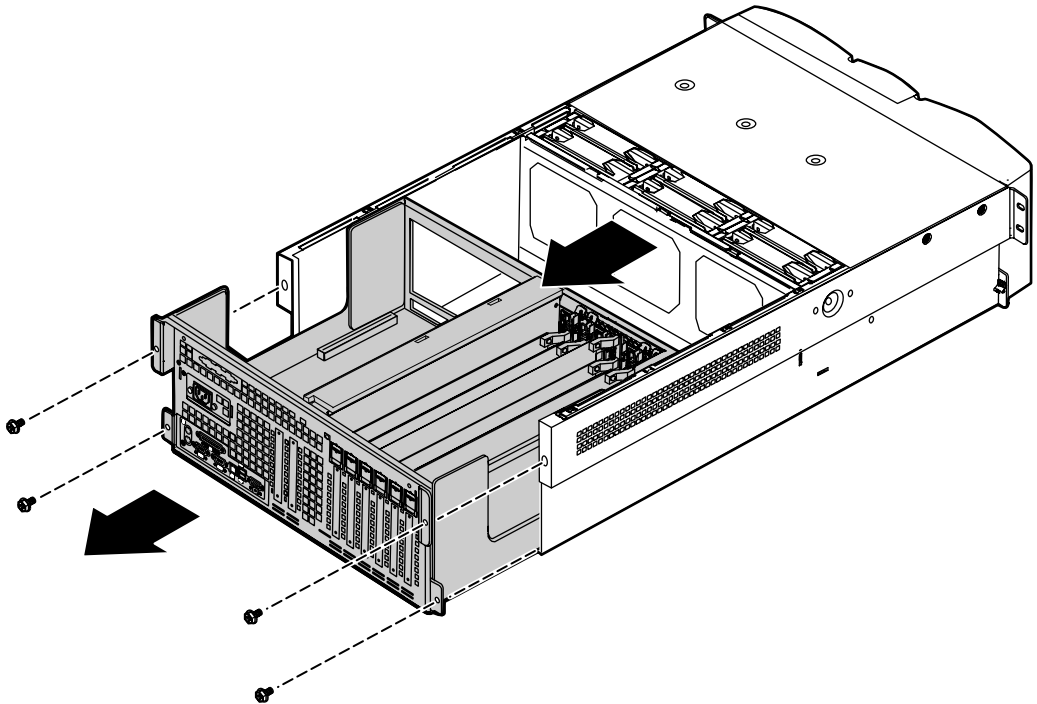
6 Remove the memory board retention bracket by removing the screw at the back end, sliding the bar forward, and lifting the bracket out of the slot.
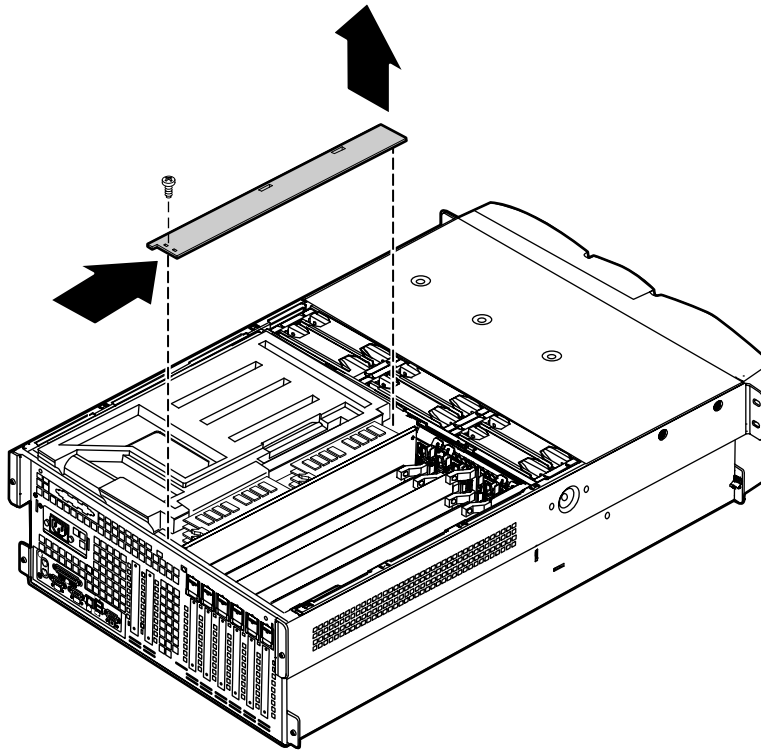
7 Pull the memory board out of the chassis and put it on a static-free surface.
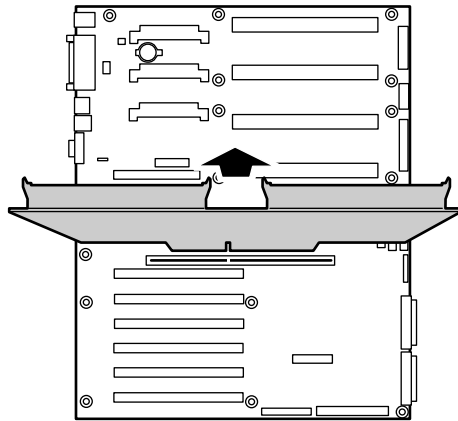
Boards shown outside chassis for clarity

8 Remove the EMI foam cover over the processors.
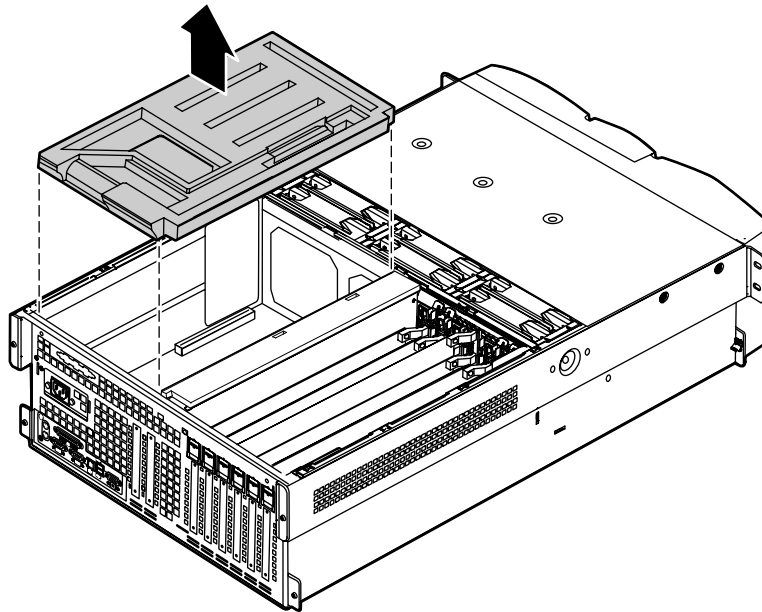
9 Remove the processors by removing the screws and the retention bracket.
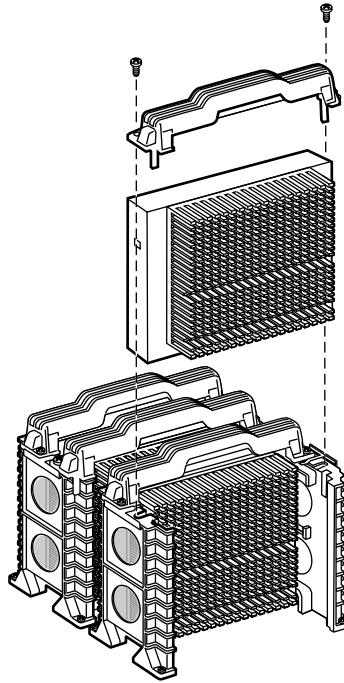
10 Remove all of the VRMs from the system board by pulling the clips back and pulling the VRM out of the socket.
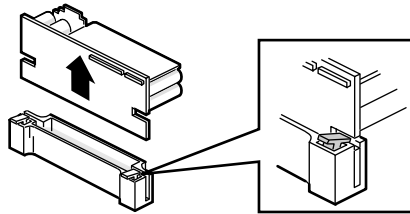
11 Remove the plastic hot-plug PCI curtains from the electronics bay by pulling them out of the supports at each end.
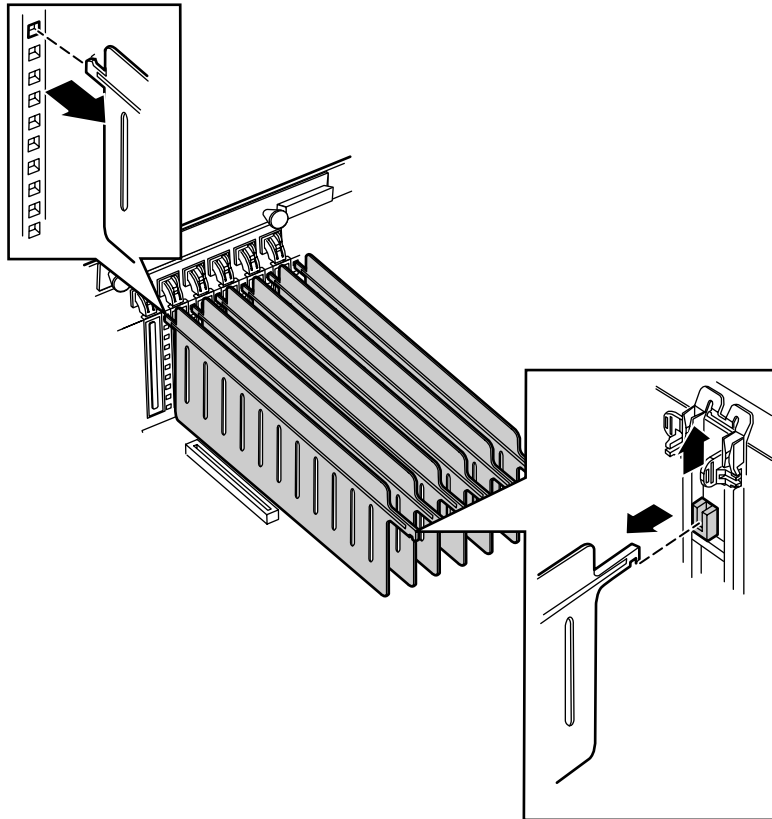
12 Lift out the plastic system board shield, then remove the two screws and pull out the system board.
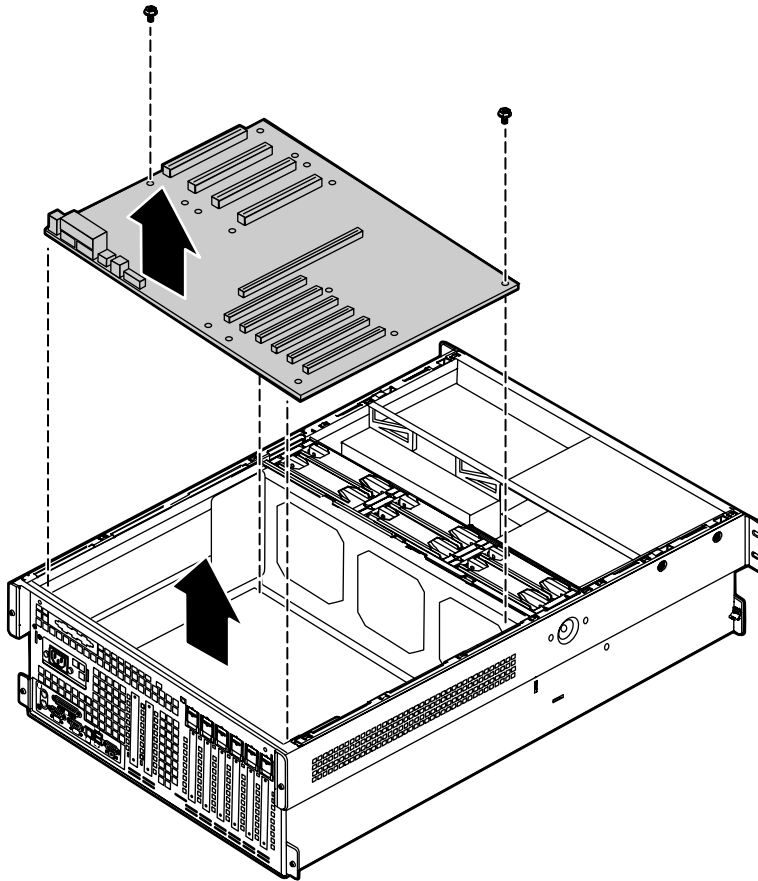
13 Remove the new system board from its anti-static bag and set any jumpers that you may need to set for your configuration. See "System board" on page 13 and "Setting the system board jumpers" on page 114.

14 Place the new system board in the chassis and secure it with the screws you removed in Step 12.
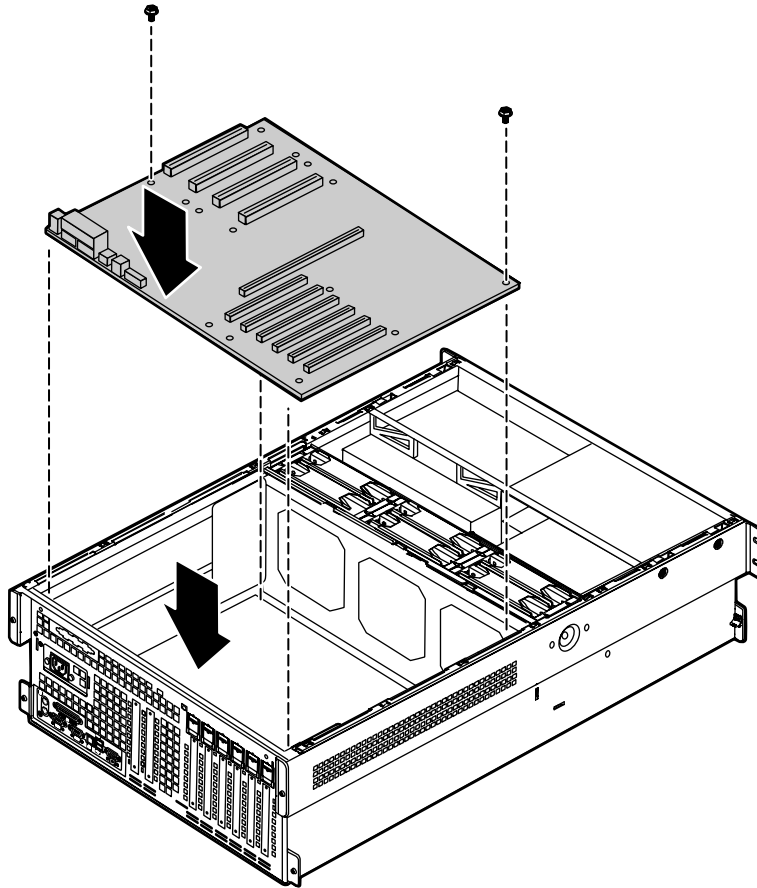
15 Replace the plastic system board shield, then replace the plastic hot-plug PCI curtains in the electronics bay.
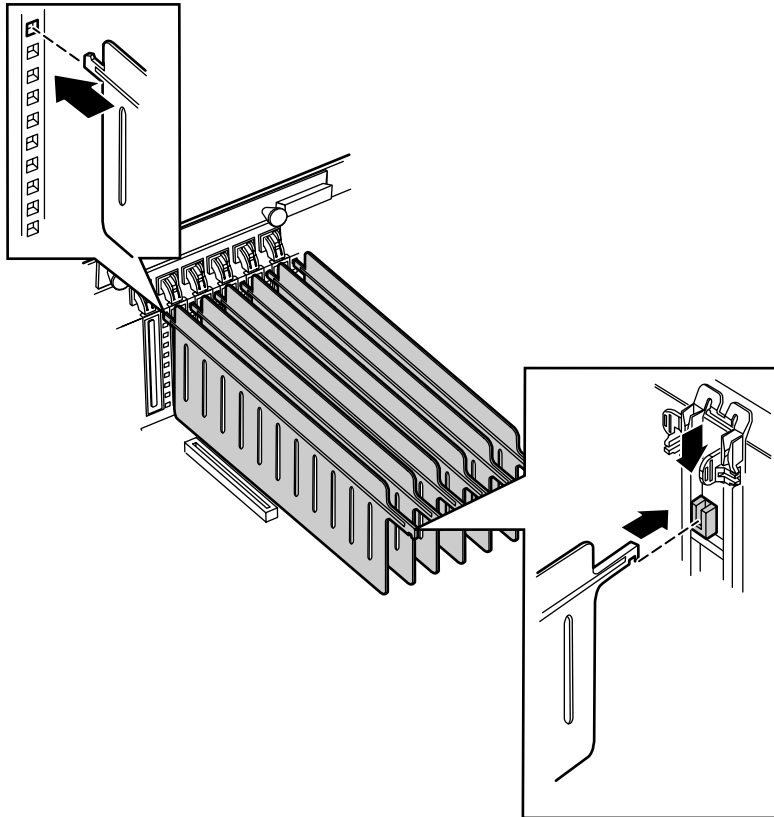
16 Replace all of the VRMs in the system board. Press each one firmly into the socket until the clips snap into place.
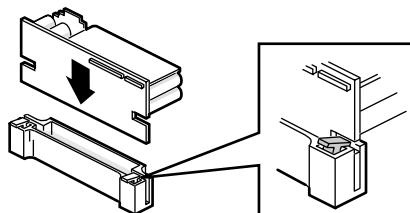
17 Replace all of the processors in the system board and secure them with the retention brackets and two screws each.
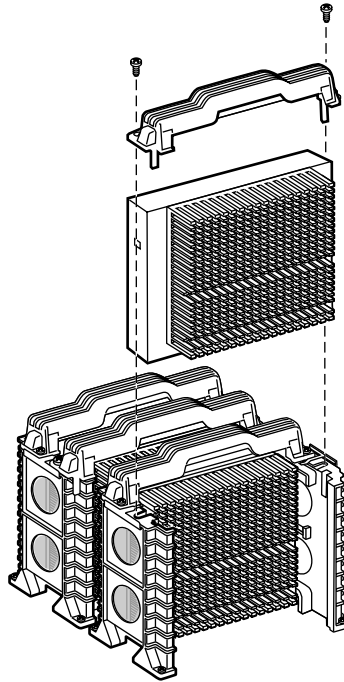
18 Replace the EMI foam cover over the processors.
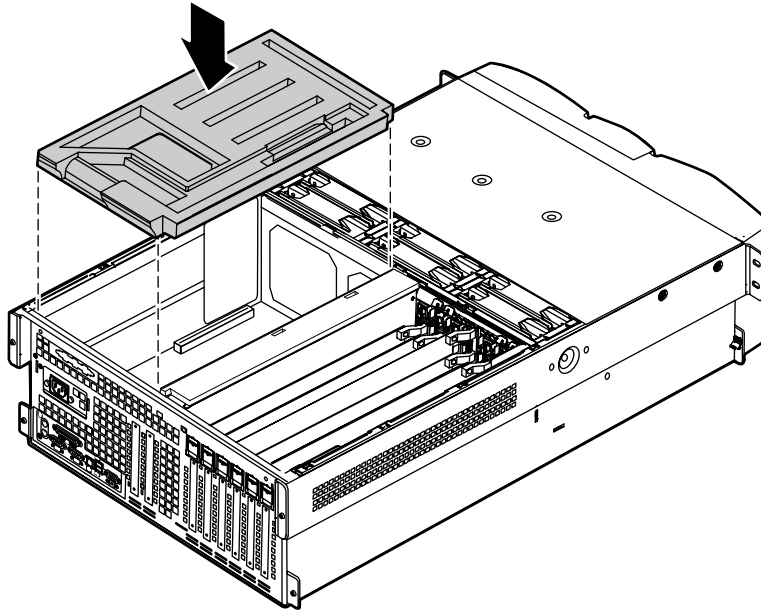
19 Replace the memory board in the chassis, then replace the memory board retention bracket by hooking the bar over the edge of the electronics bay and securing the other end with the screw you removed in Step 6.
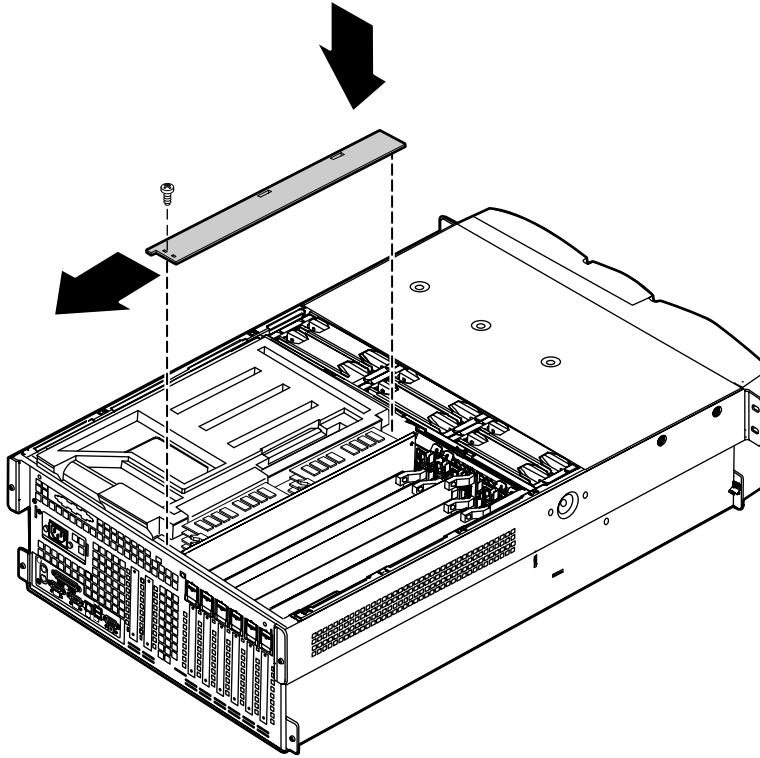
20 Slide the electronics bay back into the chassis and secure it in place with the four screws you removed in Step 5.
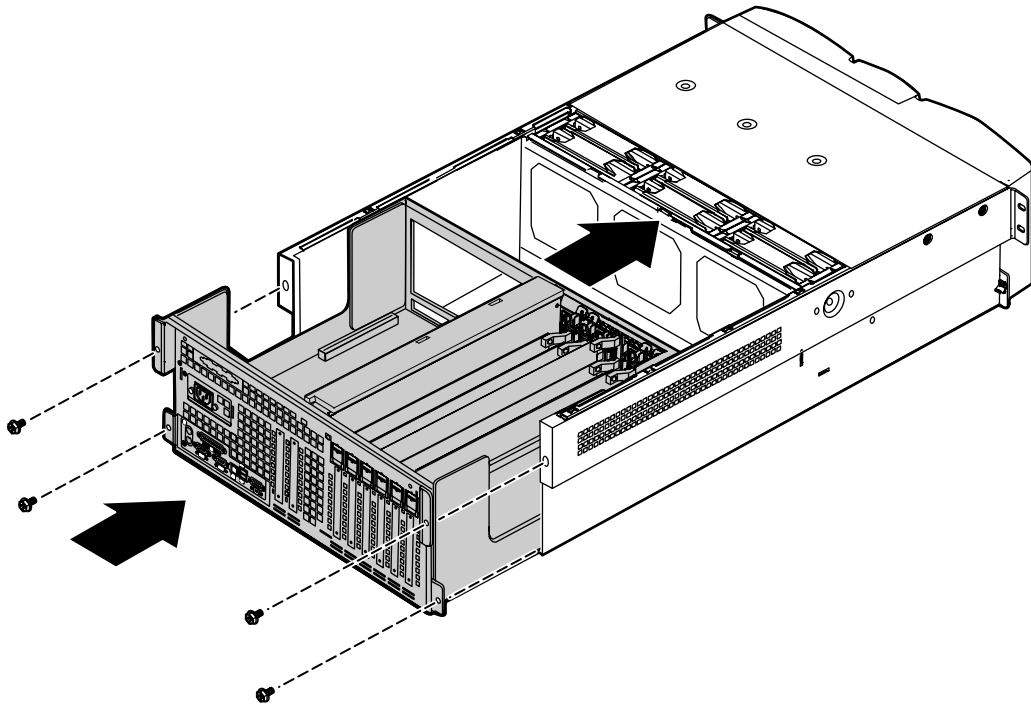
21 Reconnect the system cables to the appropriate connectors on the system board. See "System board" on page 13 for reference.

22 Replace the expansion cards and connect any required cables to the expansion cards.

23 Close the case. (See "Closing the case" on page 31.)

24 Reconnect all peripherals and the power cord, then turn on the server.

25 Open the BIOS setup utility and correct any inaccurate settings. (See "About the BIOS Setup utility" on page 111 for more information.)

Using the BIOS Setup Utility

5

About the BIOS Setup utility

The server BIOS has a built-in setup utility that lets you configure several basic system characteristics. The settings are stored in battery-backed RAM and are retained even when the power is off.

Enter the BIOS Setup utility by restarting the server, then pressing F2 when prompted during the startup process. The Main BIOS Setup utility screen opens. It may not look exactly like the screen shown below.

```
                          BIOS Setup Utility
Main      Advanced      Security      Server      Boot      Exit
                                                  Item Specific Help

             System Time:  [xx:xx:xx]
             System Date:  [xx/xx/xxxx]


        Legacy Diskette A:  [    ]
        Legacy Diskette B:  [    ]

      Hard Disk Pre-Delay:  [enabled]

       Primary IDE Master:  [auto]
        Primary IDE Slave:  [    ]
     Secondary IDE Master:  [    ]
      Secondary IDE Slave:  [    ]

        Processor Settings:

                Language:  [English (US)]

 F1 Help      ↑↓ Select Item    -/+ Change Values      F9 Setup Defaults
 ESC Exit   ←→ Select Menu   ENTER Select > Sub-Menu   F10 Save & Exit
```

As you select items on the Main menu or in submenus, you see specific information related to the current selection in the Item Specific Help box.

The command bar shows the keystrokes necessary to access help, navigate through the menus, and perform other functions.

- F1 opens the Help screen, providing general help for using the BIOS Setup utility.

- The ↑ (up arrow) and ↓ (down arrow) keys select items in the menu.

- The ← (left arrow) and → (right arrow) keys move you between the menus.

- ENTER either moves you to a submenu screen when a selected item is preceded by > or activates a selected field.

- ESC closes the screen you are in and returns you to the previous screen or exits you from the BIOS Setup utility.

- F9 opens a screen that lets you return all values to their default settings.

- F10 opens a screen that lets you save all settings, then exit the BIOS Setup utility.

The main screen has the following menu selections at the top of the screen:

- **Main** gives you access to basic information and settings related to your system hardware and configuration.

- **Advanced** gives you access to information and settings for system resources, hardware, and system configuration.

- **Security** gives you access to settings related to system access passwords.

- **Server** gives you access to information and options for server management features.

- **Boot** gives you access to information and settings for boot features and boot sequences.

- **Exit** gives you access to options for exiting the BIOS Setup utility.

Refer to the Help box on the right side of the BIOS Setup screens for information about menu items.

Updating the BIOS

If you need a new version of the BIOS, you can download the BIOS update from the technical support area on the Gateway Web site (www.gatewayatwork.com) and install the new version from a diskette.

To update the BIOS you need to perform the following tasks in sequence:

- Create a bootable diskette
- Note the current BIOS settings
- Create the BIOS update diskette
- Update the BIOS
- Restore the BIOS settings

Follow the detailed instructions for updating the BIOS that are included in the self-extracting file that you can download from the technical support area of Gateway's Web site.

Important	Whenever the BIOS is updated, the microcode table is returned to the default setting. To update the table to the proper settings for your processor, you must run the MULOADER.EXE program, which is available from the same site where you obtain the BIOS update files.

Setting the system board jumpers

The system board has three jumpers. Each of these jumpers has a specific function described in the sections below.

The CMOS Clear jumper

The CMOS (complimentary metal-oxide semiconductor) Clear jumper on the system board (pins 1 through 3 of jumper J9F2) lets you clear all BIOS Setup settings, protect them, or place them under control of the BMC. (See the figure on page 13 for the location of the jumper.)

The following table shows the settings required to perform those tasks. Make sure you turn off the server and unplug the power cord before moving the jumper.

Mode	Jumper Setting	Action When Set
CMOS protected	Pins 1-2	Normal operation
Clear CMOS	Pins 2-3	Causes the server to clear all BIOS settings and return to defaults

Caution	Moving the jumper while the power is on can damage your server. Always turn off the server and unplug the power cord(s) from the server before changing the jumper.

Password Clear jumper

The Password Clear jumper on the system board (pins 5 through 7 of jumper J9F2) lets you delete the passwords. (See the figure on page 13 for the location of the jumper.)

The following table shows the settings required to perform this task. Make sure you turn off the server and unplug the power cord before moving the jumper.

Mode	Jumper Setting	Action When Set
Protect	Pins 5-6	Normal operation
Clear	Pins 6-7	Clears all passwords at bootup

Caution

⚠

Moving the jumper while the power is on can damage your server. Always turn off the server and unplug the power cord(s) from the server before changing the jumper.

BOOT Option jumper

The BOOT Option jumper on the system board (pins 9 through 11 of jumper J9F2) lets you recover the BIOS. (See the figure on page 13 for the location of the jumper.)

The following table shows the settings required to perform those tasks. Make sure you turn off the server and unplug the power cord before moving the jumper.

Mode	Jumper Setting	Action When Set
Normal	Pins 9-10	Normal operation
Recovery	Pins 10-11	Causes the server to attempt BIOS update or recovery from diskette

Caution

⚠

Moving the jumper while the power is on can damage your server. Always turn off the server and unplug the power cord(s) from the server before changing the jumper.

BIOS recovery mode

If you are trying to update the BIOS and have a problem such as a power outage, the update may not be successful. You can then try to recover the BIOS by setting the Boot Option jumper.

When you are trying to recover the BIOS, no image appears on your monitor.

➲ To recover the BIOS:

1 Turn off the server and disconnect the power cord, modem cord (if installed), and all external peripheral devices.

2 Remove the back top panel. (See "Removing the back top panel" on page 28 and "Preventing static electricity discharge" on page 25.)

3 Remove the jumper from pins 9-10 of jumper J9F2 (see "System board" on page 13 for location) and place it on pins 10-11.

4 Close the case by following the instructions on page 31, then reconnect the power cord.

5 Place the bootable diskette containing the BIOS files into drive A:, then turn on the server.

At the start of the BIOS recovery process, the server beeps once. The recovery process may take a few minutes.

6 When the process is completed, you will be prompted to remove the diskette from drive A: and turn off the server.

7 Disconnect the power cord and remove the back top panel again. (See "Removing the back top panel" on page 28 and "Preventing static electricity discharge" on page 25.)

8 Place the jumper back on pins 9-10 of jumper J9F2.

9 Close the case, reconnect the cords, then turn on the server.

10 Enter the BIOS Setup utility by pressing F2 when the Gateway Logo screen appears.

11 Once in BIOS Setup utility, go to the appropriate tabs and select any BIOS fields you want to change, then reenter the values you wrote down at the beginning of this process.

12 Save your changes, then exit the BIOS Setup utility.

Troubleshooting: If the BIOS recovery was unsuccessful, go back to the Gateway Web site and start the process over. If you continue to have problems, contact Client Care or your system administrator.

Managing the Server

Avoiding power source problems

Surge suppressors, line conditioners, and uninterruptible power supplies can help protect the server against power source problems.

Surge suppressors

During a power surge, the voltage level of electricity coming into the server can increase far above normal levels and cause data loss or system damage.

Protect your server and peripherals by connecting them to a surge suppressor, which will absorb voltage surges and prevent them from reaching your server.

When purchasing a surge suppressor:

■ Make sure the surge suppressor meets the appropriate product safety certification for your location, such as Underwriters Laboratories (UL) or Conformite European (CE).

■ Check the maximum amount of voltage the suppressor allows to pass through the line. The lower the voltage that the suppressor allows to pass through, the better the protection for the server.

■ Check the energy absorption (*dissipation*) rating. The higher the energy absorption rating, the better the protection for the server.

■ Check line-conditioner capabilities. A line conditioner smooths out some normal line noise (small voltage fluctuations) of an electrical supply.

Line conditioners

A line conditioner protects the server from the small fluctuations in voltage from an electrical supply. Most systems can handle this variation (*line noise*) without problems. However, some electrical sources include more line noise than normal. Line noise can also be a problem if the server is located near, or shares a circuit with, a device that causes electromagnetic interference, such as a television or a motor.

Some surge suppressors and uninterruptible power supplies include simple line-conditioning capabilities.

Uninterruptible power supplies

Use a standby uninterruptible power supply (UPS) to protect your server from data loss during a total power failure. A UPS uses a battery to keep your server running temporarily during a power failure and lets you save your work and shut down your server. You cannot run your server for an extended period of time while using only the UPS.

Maintaining and managing your hard drive

Regular maintenance can keep your hard drive operating efficiently and good file management can keep the server free of unwanted files while making important files secure and easier to find.

Hard drive maintenance utility

If you are using the Windows NT operating system, you can help maintain the performance of your hard drive by regularly using Check Disk.

Important	For other operating systems, such as Windows 2000 or Novell Netware, refer to the appropriate operating system manual.

Using Check Disk in Windows NT

Bad sectors are parts of a hard drive or diskette that will not hold data. A lost allocation unit is a group of sectors that has lost its place in the table that the operating system uses to locate files. Check Disk checks the hard drive for bad sectors or lost allocation units and lets you fix them.

Use Check Disk from once a week to once a month, depending on how often you use the server. Also use Check Disk if you have any hard drive problems.

➲ To use Check Disk:

1 Double-click the **My Computer** icon. The My Computer window opens.

2 Right-click the drive you want to check.

3 Select **Properties**. The drive's properties window opens.

4 Click the **Tools** tab.

5 At **Error-checking**, click **Check Now**. The Check Disk window opens.

6 Scan the entire hard drive by selecting **Scan for and attempt recovery of bad sectors**.

7 Click **Start.** Check Disk checks the drive for errors.

8 Follow any on-screen instructions for completing the scan.

Hard drive management practices

By deleting unneeded files from your hard drive and managing the space that is automatically allocated for saving certain files, you can help maintain the performance of the hard drive. We suggest that you first check your hard drive for available space, then back up important files prior to deleting unneeded files, in case you delete important files by mistake.

Checking hard drive space

In Windows, you can see a chart of the available hard drive space.

➲ To check hard drive space:

1 Double-click the **My Computer** icon on the desktop. The My Computer window opens.

2 Right-click the drive you want to check.

3 Select **Properties**. The drive's properties window opens. The **General** tab shows you the available and used space on the drive.

Backing up files

Regularly backing up your files protects you from losing data and lets you keep fewer files on your hard drive. Back up old files to a large capacity disk drive or tape drive and delete the files from your hard drive. You can use the software that came with your tape backup drive or your large capacity disk drive to back up the files.

You can also back up files by running the Backup utility that came with your operating system. In Windows NT, Backup copies files to a tape drive.

➲ To run Backup in Windows NT:

1 Click **Start**, then select **Programs**, **Administrative Tools,** then **Backup**.

2 Follow the on-screen instructions.

Deleting unneeded files

By deleting unneeded files from the hard drive, you free up space on the hard drive and help improve hard-drive performance. The following sections give you some simple ways to delete unneeded files.

Deleting Windows temporary files

During normal operation, Windows constantly creates new temporary (.tmp) files. You can safely delete all but the most recent .tmp files.

➲ To delete .tmp files:

1 Open Windows Explorer, then select **Tools**, **Find**, then **Files and Folders**.

2 In the **Named** text box, type ***.tmp**.

3 In the **Look in** drop down list, select your drive letter.

4 Click **Find Now**. The list of .tmp files appears.

5 Click **Modified** above the list. To see the **Modified** button, you may need to maximize the Find window. The list is sorted by date.

6 Highlight all the files in the list except those with the current date.

7 Press SHIFT + DELETE. A dialog box opens asking if you want to delete the files.

8 Click **Yes**. The files are deleted.

Deleting temporary Internet files

As you visit Web sites, your browser stores temporary Internet files on your hard drive in a *memory cache* and a *disk cache.* Files in the memory cache are removed when you turn off your server. Files are saved in the disk cache until the space designated for the cache is full. See your browser's Help files for instructions on emptying the disk cache.

You can save space on the hard drive by decreasing the size of the Internet disk cache. See your browser's Help files for instructions.

Emptying the Recycle Bin

When you delete a file from your hard drive in Windows, it is not immediately removed from the hard drive. Instead, the file is moved into the Recycle Bin. Because files are stored in the Recycle Bin and not deleted from the hard drive immediately, you can retrieve a file that you accidentally delete from the hard drive.

To delete all the files from the Recycle Bin, right-click the **Recycle Bin** icon on the desktop, then click **Empty Recycle Bin**.

You can save space on the hard drive by decreasing the size of the Recycle Bin.

➲ To decrease the size of the Recycle Bin:

1 Right-click the **Recycle Bin,** then select **Properties**.

2 At the Global tab, select either **Configure drives independently** or **Use one setting for all drives**.

3 If you are configuring drives independently, click the tab for the drive you want to configure.

4 Move the slider to set the size of the Recycle Bin. A good initial setting is 5%.

5 Click **OK**.

Protecting the server against viruses

A *virus* is a program that attaches itself to a program or data file on a computer, then spreads from one computer to another. Viruses can damage data, cause computers to malfunction, and can display annoying or offensive messages. Some viruses can go unnoticed for long periods of time because they are activated by a certain date or time. Protect your server from viruses by:

- Using an anti-virus program to check files and programs that are on diskettes, attached to e-mail messages, or downloaded from the Internet. After you run the anti-virus program you can back up your files to diskettes, a separate hard drive, or a high-capacity storage drive.

- Keeping your anti-virus program updated.

- Obtaining all software from reputable sources and checking the software for viruses before installing it.

- Disabling macros on suspicious Microsoft Word and Excel files. These programs will warn you if a document that you are opening contains a macro that might have a virus.

➲ To remove a virus:

1 Find and remove the virus immediately using an anti-virus program.

2 Turn off your server and leave it off for at least 30 seconds.

3 Turn on the server and rescan for the virus.

4 If the virus is still present, contact the manufacturer of your anti-virus program or Gateway Client Care.

System administration and control

The server has three server-management tools included to enable administration and control of Windows NT environments. These tools are Intel® Server Control (ISC), ManageX Event Manager, and the Direct Platform Control (DPC) Console. Each tool provides some of the system security features.

Intel Server Control (ISC)

Using a graphical user interface, ISC can locally or remotely provide real-time monitoring and alerting for server hardware sensors. ISC monitors and records system status indicators such as temperature, voltage, cooling, chassis intrusion, processor status, cooling fan status, and power supply status. You can establish a threshold or range of accepted values for each of these indicators and you can configure ISC to respond to variances in a number of ways, from an entry in the event log, to a displayed message or audio alarm, or even a complete server shutdown.

ISC also provides a system hardware inventory, SCSI controller status, LAN adapter status, and BIOS and system slot information.

You can find additional information about Intel Server Control under **Documentation** on the Server Companion CD which came with the server.

ManageX Event Manager

ManageX lets the system administrator manage multiple systems on a Windows NT, Windows 2000, or Novell Netware network from a single window, and implement commands and policies across the network with a single action. With this tool you can automate system management tasks, which can be triggered by specific events or at specified thresholds.

You can find additional information about the ManageX Event Manager under **Documentation** on the Server Companion CD which came with the server.

Direct Platform Control (DPC) Console

The Direct Platform Control (DPC) Console provides remote emergency management of servers. The DPC Console is independent of the server operating system and provides a means to remotely diagnose problems or verify the state of the server. It will also turn the server on or off.

You can find additional information about DPC Console under **Documentation** on the Server Companion CD which came with the server.

System security

To help prevent unauthorized entry or use of the system, the server includes key locks on the chassis (to prevent entry) and the bezel door (to prevent use).

You can also set security measures in the BIOS Setup utility which establishes passwords and automatic system lockouts. The system also includes server management software that monitors the chassis intrusion switch.

Mechanical locks and monitoring

The server includes a chassis intrusion switch. When the access cover is opened, the switch transmits an alarm signal to the system board, where server management software processes the signal. You can program a response to an intrusion, for example, the server may power down or lock the keyboard.

Software locks through the BIOS Setup utility

The BIOS Setup utility provides several security features to prevent unauthorized or accidental access to the system. Once the security measures are enabled, access to the system is allowed only after you enter the correct password(s). For example, the utility lets you:

■ Enable the keyboard lockout timer so the server requires a password to reactivate the keyboard and mouse after a specified time-out period of 1 to 120 minutes

■ Set and enable administrator and user passwords

■ Set secure mode to prevent keyboard or mouse input and to prevent use of the front panel reset and power switches

■ Activate a hot-key combination to enter secure mode quickly

■ Disable writing to the diskette drive when secure mode is set

Using passwords

If you set and enable a user password but not an administrator password, enter the user password to boot the server with limited BIOS Setup access.

If you set and enable both a user and an administrator password:

- Enter either one to boot the server and enable the keyboard and mouse
- Enter the administrator password to gain full access to the BIOS Setup to change the system configuration

Secure mode

Configure and enable the secure boot mode by using the BIOS Setup. When secure mode is in effect, you:

- Can boot the server and run the OS, but you must enter the user password to use the keyboard or mouse
- Cannot turn off server power or reset the system from the front panel switches

Taking the system out of secure mode does not change the state of server power. That is, if you press and release the power switch while secure mode is in effect, the server will not power off when secure mode is later removed. However, if the front panel power switch remains depressed when secure mode is removed, the server will power off.

Summary of software security features

The following table lists the software security features and describes what protection each offers. In general, to enable or set the features listed here, you must run the BIOS Setup utility and go to the Security Menu. The table also refers to other Setup utility menus. For more information on setting the security features, see "About the BIOS Setup utility" on page 111.

Feature	Description
Secure boot mode	To enter secure mode, set and enable a password to automatically put the server into secure mode.
	If you set a hot-key combination, you can secure the system by pressing the key combination. This means you do not have to wait for the inactivity time-out period.
	When the system is in secure mode, the server boots and runs the operating system. It does not accept mouse or keyboard input until you enter the user password.
	At bootup, if the server detects a CD in the CD drive or a diskette in drive A, it requests a password. When you enter the password, the server boots from CD or diskette and disables secure mode.
	If you have not installed a CD drive or if there is no CD in the drive or diskette in drive A, the server boots from drive C and automatically enters secure mode. All enabled secure mode features go into effect at bootup.
	To leave secure mode, enter the correct password(s).
Disable writing to diskette	In secure mode, the server will not boot from or write to a diskette unless a password is entered. To set these features, see "About the BIOS Setup utility" on page 111.
Disable the power and reset buttons	If you enable this protection feature, the server disables the power and reset buttons when in secure mode.
Set a time-out period so that keyboard and mouse input are not accepted.	You can specify and enable an inactivity time-out period from 1 to 120 minutes. If no keyboard or mouse action occurs for the specified period, keyboard and mouse input is not accepted. To set this feature, see "About the BIOS Setup utility" on page 111.
Control access to the BIOS Setup utility (set administrator password)	To control access to the system configuration, set an administrator password and enable it through the BIOS Setup utility.
	If both the administrator and user passwords are enabled, either can be used to boot the server or enable the keyboard and/or mouse, but only the administrator password allows changes to the BIOS Setup utility.
	Once set, passwords can be disabled by setting the password to a null string or by changing the Clear Password jumper. See "Password Clear jumper" on page 115.

Feature	Description
Control access to the system other than BIOS Setup (set user password)	To control access to the system, set a user password and enable the Password on Boot option using the BIOS Setup utility.
	Once set, passwords can be disabled by deleting the password or by changing the Password Clear jumper. See "Password Clear jumper" on page 115.
Boot without keyboard	The server can boot with or without a keyboard. During POST and before the server boots, the BIOS automatically detects and tests the keyboard, if present, and displays a message. Do not plug in a keyboard while the server is on.
Specify the boot sequence	The sequence you specify in the BIOS determines the boot order (see "About the BIOS Setup utility" on page 111). If secure mode is enabled (user password is set), you are prompted for a password before the server boots fully. If secure mode is enabled and the Secure Mode Boot option is also enabled, the server boots fully but requires a password before accepting any keyboard or mouse input.

System recovery

Take precautions that allow you to recover damaged files and recover your system in the event that your hard drive is damaged or your BIOS or system files get corrupted.

Creating a startup diskette

If your server hard drive is damaged, you may not be able to start the server from the hard drive. A startup diskette is a bootable diskette that lets you start the server and attempt to fix the problem.

When you set up Windows NT, you are prompted to create a startup diskette. If you did not choose to create a startup diskette at that time, you can create one later by running the Windows NT upgrade/installation program. Perform this process by going to the DOS Command Prompt, changing to the C:\I386 subdirectory and typing **"winnt32/ox"**. Press ENTER and follow the prompts.

Using your Server Companion CD

The Server Companion CD included with your server can be used to:

■ Install hardware drivers for Windows NT

■ Reinstall selected utilities

■ Access system documentation

Instructions for each operating system are provided with the Server Companion CD.

Troubleshooting

7

Introduction

If the server does not operate correctly, re-read the instructions for the procedures you have performed. If an error occurs within a program, refer to the documentation supplied with the program. This section identifies solutions to some possible problems.

Troubleshooting checklist

Before turning on the server, make sure that:

- The power cord is connected to the AC power-in connector and an AC outlet.

- The AC outlet is supplying power.

- If a power strip is used, it is turned on.

- If the power supply has a voltage selection switch, the voltage selection switch reflects the proper voltage.

Verifying your configuration

If the server is not operating correctly, the BIOS may contain an invalid configuration parameter. Open the BIOS Setup utility and check your configuration settings. (See "About the BIOS Setup utility" on page 111.)

Troubleshooting guidelines

As you troubleshoot the server, keep the following guidelines in mind:

■ Never remove the chassis cover while the server is turned on.

■ Do not attempt to open the monitor; it is extremely dangerous. Even if the power is disconnected, stored energy in the components can be dangerous.

■ If a peripheral does not work, make sure that all connections are secure.

■ If you see an error message on the screen, write it down, word for word. You may be asked about it when calling Gateway Client Care.

■ Only qualified personnel should open the server for maintenance.

■ If you are qualified to maintain the server yourself, make sure you are properly grounded before opening the server chassis. See Chapter 3, Case Access, for more information on preventing electrostatic damage to the server.

CD drive problems

The server does not recognize the CD drive

Probable cause	Solution
The CD is not intended for PC use	Make sure that the disc is PC-compatible.
The CD is loaded incorrectly	Make sure that the label is facing up, then try again.
The CD is scratched or dirty	Try cleaning the CD with a lint-free cloth. Make sure the disk is not scratched.
The CD drive needs to be added as new hardware	In the **Control Panel** window (**Start** | **Settings** | **Control Panel**), double-click **Add New Hardware**. Follow the on-screen instructions for adding the drive.
The secondary IDE device may be disabled	Restart your server, then press F2 to enter the BIOS Setup utility program. From the **Advanced | IDE Configuration** menu, set the **IDE Controller** to **Both** and the **Secondary IDE Master** to **Auto**.

Probable cause	Solution
The CD drive cables are not installed correctly	Open the server, then make sure all cables between the IDE controller and the CD drive are correctly connected.
The CD drive may be defective	Replace the CD drive.

Diskette drive problems

The system does not recognize the diskette drive

Probable cause	Solution
The diskette drive may be configured incorrectly	Restart your server, then press F2 to enter the BIOS Setup utility. In the **Boot	Removable Devices** menu, make sure that the diskette drive parameters are set correctly.
The drive cables are not connected properly	Open the server, then make sure all cables are properly connected to the controller card. Some servers do not have a floppy controller card because the floppy controller is built into the system board.
The drive controller is not seated properly	Open the server, then reseat the drive controller. Some servers do not have a floppy controller card because the floppy controller is built into the system board.

The diskette drive will not read, write, or format

Probable cause	Solution
The diskette is not IBM-formatted	Make sure that the diskette you are trying to format is IBM-compatible. If it is, try reformatting it. If not, get another diskette.
The disk is write-protected	Make sure that the write-protection window on the upper-right corner of the diskette is closed (unprotected).
The diskette is corrupted	Run CheckDisk on the diskette. If errors are detected and corrected, try accessing the diskette again.

The diskette drive LED illuminates continuously

Probable cause	Solution
The diskette is corrupted	Remove the diskette from the drive. If the light remains on, try restarting the server.
The cable to the drive is not connected properly	Open the server, then make sure the cable between the diskette drive and its controller is properly connected. Make sure that the pins are not bent or misaligned.

Hard drive problems

The server does not recognize a SCSI drive

Probable cause	Solution
SCSI hot-swap drive is not seated correctly	Open the server and reseat the hot-swap drive(s). This problem is most common immediately after shipping.
The SCSI bus is not properly terminated	Open the server and make sure that the last device on the SCSI bus is properly terminated.
The drive is configured with a conflicting SCSI address	Change the device's SCSI address to one that is not currently being used by the server.
The cables are not connected correctly	Open the server, then make sure the cables are connected properly.

Memory and processor problems

The system detected memory errors during start up

Probable cause	Solution
Memory was added or removed, and the new configuration was not saved in the BIOS Setup utility	Open the BIOS Setup utility and save the new memory configuration.
The memory was installed incorrectly	Make sure that the memory is proper seated and oriented.

Probable cause	Solution
A memory chip is faulty	Replace the card with the faulty chip. Third-party diagnostic programs can help determine which chip or memory segment is failing.

The system does not recognize a new or second processor

Probable cause	Solution
The processor was installed incorrectly	Check the installation. Make sure that the processor is fully seated in its socket. The processor should be recognized automatically if it was installed correctly.
The processor speed was not set correctly in the BIOS Setup utility	If the server BIOS lets you select the processor speed, make sure that you have selected the proper speed.
The system only detected one processor	Enable the processor retest in the BIOS Setup utility.

Modem problems

The system does not recognize the modem

Probable cause	Solution
The modem has not been added as new hardware	Add the modem as new hardware.
The modem is not connected to a live phone jack	Make sure that the line connected to the modem is working and plugged into the appropriate port on the modem (line port).
The telephone line is in use	If the modem shares the jack with another device, make sure that the other device does not have the port open.
The modem is not configured with a valid interrupt or address	Check the system settings for possible conflicts. If one exists, correct the problem by selecting an available interrupt and address.

Peripheral/Adapter problems

The system does not recognize a SCSI device

Probable cause	Solution
The device needs to be added as new hardware	From the **Control Panel** window (**Start | Settings | Control Panel**), double-click **Add New Hardware**. Follow the on-screen instructions for adding the device.
The SCSI ID may be invalid	Assign an available SCSI ID to the device.
The SCSI bus is not terminated	Make sure the last device on the SCSI bus is terminated.
The device cables are not installed correctly	Open the server, then check all cables between the controller and the device.

The system does not recognize an expansion card

Probable cause	Solution
The interrupt or I/O address is set incorrectly	Check the address configuration of the adapter card and make sure that it does not conflict with another card in the server.
The card has not been configured through the software	Configure the card with the appropriate software.
The card was not installed correctly	Make sure the card jumpers are set correctly and reseat the card.

Printer problems

The printer will not turn on

Probable cause	Solution
The printer is not turned on	Make sure that the power switch is depressed or set to the On position. If the printer is turned on, the green power LED should be illuminated.
The printer is not plugged in	Make sure that the power cable is plugged into a live power source.
The printer is defective	Try another printer, if one is available.

The printer is turned on but will not print

Probable cause	Solution
The printer is not online (ready)	Make sure the on-line or ready light is on, or the display indicates "Ready."
The printer is not connected to the system	Make sure the data cable between the printer and the system is properly connected. Make sure that it is connected to the proper port. Make sure the connector and cable have no bent or broken pins.
The printer is not designated as the default printer	If the printer that you are trying to print to is not the default printer, make sure that you have selected it through the program printer setup function.
The printer has not been added to the system	In the **Printers** window (**Start | Settings | Printers**), double-click **Add Printer**. Follow the on-screen instructions for adding the new printer.

The printer prints garbled text

Probable cause	Solution
The wrong driver is being used for the selected printer	In the Printers window (**Start** | **Settings** | **Printers**), select the printer. From the **File** menu, click **Properties**. Make sure that the printer is using the correct printer driver. If not, install the correct one.

System problems

The system will not start up

Probable cause	Solution
The system is not connected to an AC outlet	Make sure that the power cable is connected to an operating AC power source.
Voltage selection switch not set correctly	Make sure that the voltage selection switch is set to the correct power source.
A power supply module has failed	Power supply alarm buzzes and power supply status LED blinks indicating a failed power supply module. Replace the indicated power supply module. (You can turn off the audible alarm by inserting an appropriate tool into the port on the front panel and pressing the switch.)
The power supply has failed	The power supply alarm buzzes and all power supply status LEDs blink, indicating a failed common component. Replace the entire power supply housing. (One or more of the power supply modules may also be bad.)

The system is non-responsive

Probable cause	Solution
An error occurs during an application or the server may be out of memory	Restart your server by pressing the reset button. If the system is still non-responsive, press and hold in the power button for 4 seconds to turn the server off. Turn the server back on, then follow the on-screen instructions.
Keyboard, mouse, and front panel are locked out when the password is set	Enter the password.

The keyboard does not work

Probable cause	Solution
Keyboard is locked out when the password is set	Enter the password.

Probable cause	Solution
A key was depressed while the server was starting up	Clear the sticking key, then turn off the server, wait for a few seconds, then turn the server back on.
The keyboard is not plugged in or connected properly	Make sure the cable is properly connected.
Something spilled into the keyboard	Turn off the server. Turn the keyboard upside down to drain it, then turn is right-side up to let it dry before using the keyboard again.
The keyboard is defective	Try a keyboard that you know is working.

The mouse does not work

Probable cause	Solution
Mouse is locked out when the password is set	Enter the password.
The mouse is not plugged in or connected properly	Make sure that the cable is plugged in correctly.
The mouse driver did not load when the server started	Load the appropriate mouse driver manually or contact technical support.
The mouse is defective	Try a mouse that you know is working.

The server power and reset buttons are not responsive:

Probable cause	Solution
The front panel is locked out when the password is set	Enter the password.

Video problems

The system is running but the screen is blank

Probable cause	Solution
The monitor is not turned on	Make sure that the monitor is plugged in and turned on. If the monitor is turned on, the green power LED should illuminate.
The monitor data cable is not connected	Make sure that the monitor data cable is connected to the video controller on the back of the server.
The connector or cable is damaged	Check the connector and cable for bent or damaged pins.
The monitor brightness and contrast controls are turned down	Adjust the brightness and contrast knobs to the center position.
The monitor is defective	Connect a working monitor to the server.
The video card is not seated correctly	Open the server, then make sure the video card is seated properly. Some servers do not have a video controller card because the video controller is built into the system board.
The video card is not compatible with the server	Check the documentation or technical support to make sure that the video card is compatible with the server. If not, obtain a compatible video card. The server board may have a built-in video adapter, so there may not be a video adapter to remove and replace.
The terminator card or the second processor is not seated properly	Open the server and reseat the terminator card or the second processor.

The image on the screen is dim or difficult to read

Probable cause	Solution
The monitor brightness and contrast controls are turned down	Adjust the brightness and contrast knobs until the text becomes clear.
Sunlight is glaring off the display	Position the monitor away from the sun or a window.
The monitor may be old	Replace the monitor.

The color monitor displays everything in black and white

Probable cause	Solution
The server was turned on before the monitor	Make sure that the monitor is turned on, then restart the system.
The display type is set incorrectly	In the Control Panel window (**Start** | **Settings** | **Control Panel**), double-click **Display**, set the display to the appropriate monitor type, then restart the server.

The displayed characters are garbled

Probable cause	Solution
The video cable is damaged	Make sure the connector and cable have no bent or damaged pins.
The display setup is incorrect	In the Control Panel window (**Start** | **Settings** | **Control Panel**), double-click **Display** and check the settings. The correct video type should be selected, along with a supported resolution. Check your monitor and video controller documentation for details.
The video card has failed	Try another video card.

The video is distorted

Probable cause	Solution
The monitor controls are not properly adjusted	Adjust the monitor controls until the text becomes clear. (See your monitor documentation for more information.)
The connector or cable is damaged	Check the connector and cable for bent or damaged pins.
The surge protector or UPS is damaged	Disconnect the monitor power cable, then connect it directly to the power source.
The monitor is too close to a source of electrical interference	Move the monitor away from sources of electrical interference, such as televisions, unshielded speakers, microwave ovens, fluorescent lights, and metal beams or shelves.
The monitor needs to be degaussed	Turn off the server and monitor and leave them off for at least a half hour, then restart the server.

Error messages

This section lists common error messages that you may see. These messages often indicate procedural errors such as an incorrect keystroke or a write-protected diskette. Some messages, however, may indicate a problem that requires you to consult the troubleshooting section of this manual.

Error message	Solutions
Access denied	Try saving to a new file or diskette.
	Move the write-protection tab over the hole on the back of the diskette.
Bad command or file name	Make certain you entered the right command.
	Verify the specified drive, then try it again.
	If you are trying to exit MS-DOS to return to Windows, type **exit,** then press ENTER.
Base memory [xxx] expansion	This is an informational message only. No action is required.
Checking RAM on disk controller	Your BIOS configuration is incorrect. Open the BIOS Setup utility, then make sure the settings are correct.
CD-ROM is not recognized	See "The server does not recognize the CD drive" on page 132 for a possible solution.
Data error	Use CheckDisk on the drive with the error.

Error message	Solutions
Decreasing available memory	Your BIOS configuration is incorrect. Enter the BIOS Setup utility, then make sure the settings are correct.
Diskette drive is not recognized	See "The system does not recognize the diskette drive" on page 133 for a possible solution.
Diskette drive 0 seek to track 0 failed	Enter the BIOS Setup utility, then make sure the settings are correct. Check the diskette drive cables. Make sure that Pin 1 on the cable aligns with Pin 1 on the connector.
Diskette drive reset failed	Open the BIOS Setup utility, then make sure the settings are correct. Check the diskette drive cables. Make sure Pin 1 on the cable aligns with Pin 1 on the connector.
Diskette read failed - strike F1 to retry boot	Make sure that the boot disk contains the Command.com file. Use the BIOS Setup utility (if necessary) to make sure that your drive or controller configuration is correct. Press F1 to try to restart the server.
Gate A20 failure	You may have an XT keyboard connected to an AT system or vice versa. Make sure that the keyboard is configured to work with the appropriate system. Some keyboards have a switch to select either AT or XT.
Hard disk controller failure	Make sure that the hard drive cable is properly connected. Open the BIOS Setup utility, then make sure that the correct drive type is selected.
Hard disk controller failure - press F1 to try reboot	The drive controller may be defective. Press F1 to try to restart the server. Try running a disk formatting utility. For more information, refer to your operating system documentation.
Insert bootable media device	See "The server does not recognize a SCSI drive" on page 134 for a possible solution. Backup your files as soon as possible.
Insufficient disk space	Check the free space on the disk volume. If the volume is full or almost full, remove unnecessary files.
Invalid configuration information	Open the BIOS Setup utility, then make sure the settings are correct.

Error message	Solutions
Invalid password	Enter your password again, make sure to enter it correctly. Be aware that some passwords are case sensitive.
	If you do not know the password, you may need to reinstall the software you are trying to access.
	Startup passwords are stored in BIOS. If this password has been set and is unknown, you may be able to reset the password via system board jumper settings.
Keyboard clock line failure	Try a working keyboard.
	Make sure that the keyboard is compatible with the system. You may have to change the switch setting to AT.
Keyboard controller failure	Try a working keyboard.
	Make sure that the keyboard is compatible with the system. You may have to change the switch setting to AT.
Keyboard not detected	See "The keyboard does not work" on page 138 for a possible solution.
	Turn off the server, then check the keyboard cable.
Keyboard stuck key failure	Remove any objects that may be resting on the keyboard, then restart the server.
	Check for sticking keys. Clean the keyboard if necessary.
Memory errors were detected while the server powered up	See "The system detected memory errors during start up" on page 134 for a possible solution.
Memory size error	Enter the BIOS Setup utility and save the memory configuration.
Non-system disk or disk error	Eject the diskette, then press ENTER.
	If the diskette is bootable, check it for errors.
Not enough memory	Close all programs that are not currently in use.
Print queue is full	Wait until the current print job has completed before sending another print job.
	If you receive this error often, you need to add memory to the printer.
Printer is out of paper	Add paper to the printer.
	Make sure that the printer is online.
Required parameter missing	Make sure that you entered the right command.
	If you are trying to exit MS-DOS to return to Windows, type **exit**, then press ENTER.
Syntax error	Make sure that you entered the right command.
	If you are trying to exit MS-DOS to return to Windows, type **exit**, then press ENTER.

Error message	Solutions
Time and date not set	Open the BIOS Setup utility, then set the system date and time.
Write protect error	Move the write-protection tab over the hole on the back of the diskette.

Safety, Regulatory, and Notices

A

The Gateway 8450R Server originally shipped with a Class A rating according to FCC rules part 15. Later modifications may have improved the rating to Class B. To check the rating of the server as shipped to you, check the FCC label at the back of the chassis for the rating.

Important safety information

Your Gateway server is designed and tested to meet the latest standards for safety of information technology equipment. However, to ensure safe use of this product, it is important that the safety instructions marked on the product and in the documentation are followed.

Warning	Always follow these instructions to help guard against personal injury and damage to your Gateway server.

Setting up your server

- Read and follow all instructions marked on the product and in the documentation before you operate your server. Retain all safety and operating instructions for future use.
- Do not use this product near water or a heat source such as a radiator.
- Make sure you set up the server on a stable work surface.
- The product should only be operated from the type of power source indicated on the rating label.
- If your server has a voltage selector switch, make sure that the switch is in the proper position for your area. The voltage selector switch is set at the factory to the correct voltage.

- Openings in the server case are provided for ventilation. Do not block or cover these openings. Make sure you provide adequate space, at least 6 inches (15 cm), around the server for ventilation when you set up your work area. Never insert objects of any kind into the server ventilation openings.
- Some products are equipped with a three-wire power cord to make sure that the product is properly grounded when in use. The plug on this cord will only fit into a grounding-type outlet. This is a safety feature. If you are unable to insert the plug into an outlet, contact an electrician to install the appropriate outlet.
- If you use an extension cord with this server, make sure that the total ampere rating on the products plugged into the extension cord does not exceed the extension cord ampere rating.
- If your server is fitted with a TV Tuner, cable, or satellite receiver card, make sure that the antenna or cable system is electrically grounded to prevent against voltage surges and build up of static charges.

Care during use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill anything on the server. The best way to avoid spills is to avoid eating and drinking near your system.
- Some products have a replaceable CMOS battery on the system board. There is a danger of explosion if the CMOS battery is replaced incorrectly. Replace the battery with the same or equivalent type recommended by the manufacturer. Dispose of batteries according to the manufacturer's instructions.
- When the server is turned off, a small amount of electrical current still flows through the server. Always unplug all power cables and modem cables from the wall outlets before cleaning the server.
- Unplug the server from the wall outlet and refer servicing to qualified personnel if:
    - The power cord or plug is damaged.
    - Liquid has been spilled into the server.
    - The server does not operate properly when the operating instructions are followed.
    - The server was dropped or the cabinet is damaged.
    - The system performance changes.

Replacement parts and accessories
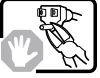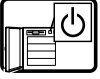
Use only replacement parts and accessories recommended by Gateway.
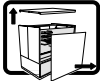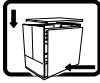
Important	Do not use Gateway products in areas classified as hazardous locations. Such areas include patient care areas of medical and dental facilities, oxygen-laden environments, or industrial facilities.

Warnings

WARNING: English (US)	AVERTISSEMENT: Français	WARNUNG: Deutsch	AVVERTENZA: Italiano	ADVERTENCIAS: Español
The power supply in this product contains no user-serviceable parts. There may be more than one supply in this product. Refer servicing only to qualified personnel.	Le bloc d'alimentation de ce produit ne contient aucune pièce pouvant être réparée par l'utilisateur. Ce produit peut contenir plus d'un bloc d'alimentation. Veuillez contacter un technicien qualifié en cas de problème.	Benutzer können am Netzgerät dieses Produkts keine Reparaturen vornehmen. Das Produkt enthält möglicherweise mehrere Netzgeräte. Wartungsarbeiten müssen von qualifizierten Technikern ausgeführt werden.	Rivolgersi ad un tecnico specializzato per la riparazione dei componenti dell'alimentazione di questo prodotto. È possibile che il prodotto disponga di più fonti di alimentazione.	El usuario debe abstenerse de manipular los componentes de la fuente de alimentación de este producto, cuya reparación debe dejarse exclusivamente en manos de personal técnico especializado. Puede que este producto disponga de más de una fuente de alimentación.
Do not attempt to modify or use the supplied AC power cord if it is not the exact type required. A product with more than one power supply will have a separate AC power cord for each supply.	Ne pas essayer d'utiliser ni modifier le câble d'alimentation CA fourni, s'il ne correspond pas exactement au type requis. Le nombre de câbles d'alimentation CA fournis correspond au nombre de blocs d'alimentation du produit.	Versuchen Sie nicht, das mitgelieferte Netzkabel zu ändern oder zu verwenden, wenn es sich nicht genau um den erforderlichen Typ handelt. Ein Produkt mit mehreren Netzgeräten hat für jedes Netzgerät ein eigenes Netzkabel.	Non modificare o utilizzare il cavo di alimentazione in c.a. fornito dal produttore, se non corrisponde esattamente al tipo richiesto. Ad ogni fonte di alimentazione corrisponde un cavo di alimentazione in c.a. separato.	No intente modificar ni usar el cable de alimentación de corriente alterna, si no corresponde exactamente con el tipo requerido. El número de cables suministrados se corresponden con el número de fuentes de alimentación de corriente alterna que tenga el producto.
The power button on the system does not turn off system AC power. To remove AC power from the system, you must unplug each AC power cord from the wall outlet or power supply. The power cord(s) is considered the disconnect device to the main (AC) power. The socket outlet that the system plugs into shall be installed near the equipment and shall be easily accessible.	Notez que le commutateur CC de mise sous tension /hors tension du panneau avant n'éteint pas l'alimentation CA du système. Pour mettre le système hors tension, vous devez débrancher chaque câble d'alimentation de sa prise.	Der Wechselstrom des Systems wird durch den Ein-/Aus-Schalter für Gleichstrom nicht ausgeschaltet. Ziehen Sie jedes Wechselstrom-Netzkabel aus der Steckdose bzw. dem Netzgerät, um den Stromanschluß des Systems zu unterbrechen.	L'interruttore attivato/disattivato nel pannello anteriore non interrompe l'alimentazione in c.a. del sistema. Per interromperla, è necessario scollegare tutti i cavi di alimentazione in c.a. dalle prese a muro o dall'alimentazione di corrente.	Nótese que el interruptor activado/desactivado en el panel frontal no desconecta la corriente alterna del sistema. Para desconectarla, deberá desenchufar todos los cables de corriente alterna de la pared o desconectar la fuente de alimentación.
SAFETY STEPS: Whenever you remove the chassis covers to access the inside of the system, follow these steps: 1 Turn off all peripheral devices connected to the system. 2 Turn off the system by pressing the power button. 3 Unplug all AC power cords from the system or from wall outlets. 4 Label and disconnect all cables connected to I/O connectors or ports on the back of the system. 5 Provide some electrostatic discharge (ESD) protection by wearing an antistatic wrist strap attached to chassis ground of the system—any unpainted metal surface—when handling components. 6 Do not operate the system with the chassis covers removed.	**CONSIGNES DE SÉCURITÉ -** Lorsque vous ouvrez le boîtier pour accéder à l'intérieur du système, suivez les consignes suivantes: 1 Mettez hors tension tous les périphériques connectés au système. 2 Mettez le système hors tension en mettant l'interrupteur général en position OFF (bouton-poussoir). 3 Débranchez tous les cordons d'alimentation c.a. du système et des prises murales. 4 Identifiez et débranchez tous les câbles reliés aux connecteurs d'E-S ou aux accès derrière le système. 5 Pour prévenir les décharges électrostatiques lorsque vous touchez aux composants, portez une bande antistatique pour poignet et reliez-la à la masse du système (toute surface métallique non peinte du boîtier). 6 Ne faites pas fonctionner le système tandis que le boîtier est ouvert.	**SICHERHEISMASSNAHMEN:** Immer wenn Sie die Gehäuseabdeckung abnehmen um an das Systeminnere zu gelangen, sollten Sie folgende Schritte beachten: 1 Schalten Sie alle an Ihr System angeschlossenen Peripheriegeräte aus. 2 Schalten Sie das System mit dem Hauptschalter aus. 3 Ziehen Sie den Stromanschlußstecker Ihres Systems aus der Steckdose. 4 Auf der Rückseite des Systems beschriften und ziehen Sie alle Anschlußkabel von den I/O Anschlüssen oder Ports ab. 5 Tragen Sie ein geerdetes Antistatik Gelenkband, um elektrostatische Ladungen (ESD) über blanke Metallstellen bei der Handhabung der Komponenten zu vermeiden. 6 Schalten Sie das System niemals ohne ordnungsgemäß montiertes Gehäuse ein.	**PASSI DI SICUREZZA:** Qualora si rimuovano le coperture del telaio per accedere all'interno del sistema, seguire i seguenti passi: 1 Spegnere tutti i dispositivi periferici collegati al sistema. 2 Spegnere il sistema, usando il pulsante spento/acceso dell'interruttore del sistema. 3 Togliere tutte le spine dei cavi del sistema dalle prese elettriche. 4 Identificare e sconnettere tutti i cavi attaccati ai collegamenti I/O od alle prese installate sul retro del sistema. 5 Qualora si tocchino i componenti, proteggersi dallo scarico elettrostatico (SES), portando un cinghia anti-statica da polso che è attaccata alla presa a terra del telaio del sistema – qualsiasi superficie non dipinta – . 6 Non far operare il sistema quando il telaio è senza le coperture.	**INSTRUCCIONES DE SEGURIDAD:** Cuando extraiga la tapa del chasis para acceder al interior del sistema, siga las siguientes instrucciones: 1 Apague todos los dispositivos periféricos conectados al sistema. 2 Apague el sistema presionando el interruptor encendido/apagado. 3 Desconecte todos los cables de alimentación CA del sistema o de las tomas de corriente alterna. 4 Identifique y desconecte todos los cables enchufados a los conectores E/S o a los puertos situados en la parte posterior del sistema. 5 Cuando manipule los componentes, es importante protegerse contra la descarga electrostática (ESD). Puede hacerlo si utiliza una muñequera antiestática sujetada a la toma de tierra del chasis — o a cualquier tipo de superficie de metal sin pintar. 6 No ponga en marcha el sistema si se han extraído las tapas del chasis.

WARNING: English (US)	AVERTISSEMENT: Français	WARNUNG: Deutsch	AVVERTENZA: Italiano	ADVERTENCIAS: Español
After you have completed the six SAFETY steps above, you can remove the system covers. To do this: 1 Unlock and remove the padlock from the back of the system if a padlock has been installed. 2 Remove and save all screws from the covers. 3 Remove the covers.	Une fois TOUTES les étapes précédentes accomplies, vous pouvez retirer les panneaux du système. Procédez comme suit : 1 Si un cadenas a été installé sur à l'arrière du système, déverrouillez-le et retirez-le. 2 Retirez toutes les vis des panneaux et mettez-les dans un endroit sûr. 3 Retirez les panneaux.	Nachdem Sie die oben erwähnten ersten sechs SICHERHEITSSCHRITTE durchgeführt haben, können Sie die Abdeckung abnehmen, indem Sie: 1 Öffnen und entfernen Sie die Verschlußeinrichtung (Padlock) auf der Rückseite des Systems, falls eine Verschlußeinrichtung installiert ist. 2 Entfernen Sie alle Schrauben der Gehäuseabdeckung. 3 Nehmen Sie die Abdeckung ab.	Dopo aver seguito i sei passi di SICUREZZA sopracitati, togliere le coperture del telaio del sistema come seque: 1 Aprire e rimuovere il lucchetto dal retro del sistema qualora ve ne fosse uno installato. 2 Togliere e mettere in un posto sicuro tutte le viti delle coperture. 3 Togliere le coperture.	Después de completar las seis instrucciones de SEGURIDAD mencionadas, ya puede extraer las tapas del sistema. Para ello: 1 Desbloquee y extraiga el bloqueo de seguridad de la parte posterior del sistema, si se ha instalado uno. 2 Extraiga y guarde todos los tornillos de las tapas. 3 Extraiga las tapas.
For proper cooling and airflow, always reinstall the chassis covers before turning on the system. Operating the system without the covers in place can damage system parts. To install the covers: 1 Check first to make sure you have not left loose tools or parts inside the system. 2 Check that cables, add-in boards, and other components are properly installed. 3 Attach the covers to the chassis with the screws removed earlier, and tighten them firmly. 4 Insert and lock the padlock to the system to prevent unauthorized access inside the system. 5 Connect all external cables and the AC power cord(s) to the system.	Afin de permettre le refroidissement et l'aération du système, réinstallez toujours les panneaux du boîtier avant de mettre le système sous tension. Le fonctionnement du système en l'absence des panneaux risque d'endommager ses pièces. Pour installer les panneaux, procédez comme suit : 1 Assurez-vous de ne pas avoir oublié d'outils ou de pièces démontées dans le système. 2 Assurez-vous que les câbles, les cartes d'extension et les autres composants sont bien installés. 3 Revissez solidement les panneaux du boîtier avec les vis retirées plus tôt. 4 Remettez le cadenas en place et verrouillez-le afin de prévenir tout accès non autorisé à l'intérieur du système. 5 Rebranchez tous les cordons d'alimentation c. a. et câbles externes au système.	Zur ordnungsgemäßen Kühlung und Lüftung muß die Gehäuseabdeckung immer wieder vor dem Einschalten installiert werden. Ein Betrieb des Systems ohne angebrachte Abdeckung kann Ihrem System oder Teile darin beschädigen. Um die Abdeckung wieder anzubringen: 1 Vergewissern Sie sich, daß Sie keine Werkzeuge oder Teile im Innern des Systems zurückgelassen haben. 2 Überprüfen Sie alle Kabel, Zusatzkarten und andere Komponenten auf ordnungsgemäßen Sitz und Installation. 3 Bringen Sie die Abdeckungen wieder am Gehäuse an, indem Sie die zuvor gelösten Schrauben wieder anbringen. Ziehen Sie diese gut an. 4 Bringen Sie die Verschlußeinrichtung (Padlock) wieder an und schließen Sie diese, um ein unerlaubtes Öffnen des Systems zu verhindern. 5 Schließen Sie alle externen Kabel und den AC Stromanschlußstecker Ihres Systems wieder an.	Per il giusto flusso dell'aria e raffreddamento del sistema, rimettere sempre le coperture del telaio prima di riaccendere il sistema. Operare il sistema senza le coperture al loro proprio posto potrebbe danneggiare i componenti del sistema. Per rimettere le coperture del telaio: 1 Controllare prima che non si siano lasciati degli attrezzi o dei componenti dentro il sistema. 2 Controllare che i cavi, dei supporti aggiuntivi ed altri componenti siano stati installati appropriatamente. 3 Attaccare le coperture al telaio con le viti tolte in precedenza e avvitarle strettamente. 4 Inserire e chiudere a chiave il lucchetto sul retro del sistema per impedire l'accesso non autorizzato al sistema. 5 Ricollegare tutti i cavi esterni e le prolunghe AC del sistema.	Para obtener un enfriamiento y un flujo de aire adecuados, reinstale siempre las tapas del chasis antes de poner en marcha el sistema. Si pone en funcionamiento el sistema sin las tapas bien colocadas puede dañar los componentes del sistema. Para instalar las tapas: 1 Asegúrese primero de no haber dejado herramientas o componentes sueltos dentro del sistema. 2 Compruebe que los cables, las placas adicionales y otros componentes se hayan instalado correctamente. 3 Incorpore las tapas al chasis mediante los tornillos extraídos anteriormente, tensándolos firmemente. 4 Inserte el bloqueo de seguridad en el sistema y bloquéelo para impedir que pueda accederse al mismo sin autorización. 5 Conecte todos los cables externos y los cables de alimentación CA al sistema.
A microprocessor and heat sink may be hot if the system has been run-ning. Also, there may be sharp pins and edges on some board and chassis parts. Contact should be made with care. Consider wearing protective gloves.	Le microprocesseur et le dissipateur de chaleur peuvent être chauds si le système a été sous tension. Faites également attention aux broches aiguës des cartes et aux bords tranchants du capot. Nous vous recommandons l'usage de gants de protection.	Der Mikroprozessor und der Kühler sind möglicherweise erhitzt, wenn das System in Betrieb ist. Außerdem können einige Platinen und Gehäuseteile scharfe Spitzen und Kanten aufweisen. Arbeiten an Platinen und Gehäuse sollten vorsichtig ausgeführt werden. Sie sollten Schutzhandschuhe tragen.	Se il sistema è stato a lungo in funzione, il microprocessore e il dissipatore di calore potrebbero essere surriscaldati. Fare attenzione alla presenza di piedini appuntiti e parti taglienti sulle schede e sul telaio. È consigliabile l'uso di guanti di protezione.	Si el sistema ha estado en funcionamiento, el microprocesador y el disipador de calor pueden estar aún calientes. También conviene tener en cuenta que en el chasis o en el tablero puede haber piezas cortantes o punzantes. Por ello, se recomienda precaución y el uso de guantes protectores.
Danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Dispose of used batteries according to manufacturer's instructions.	Danger d'explosion si la batterie n'est pas remontée correctement. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le fabricant. Disposez des piles usées selon les instructions du fabricant.	Bei falschem Einsetzen einer neuen Batterie besteht Explosionsgefahr. Die Batterie darf nur durch denselben oder einen entsprechenden, vom Hersteller empfohlenen Batterietyp ersetzt werden. Entsorgen Sie ver-brauchte Batterien den Anweisungen des Herstellers entsprechend.	Esiste il pericolo di un esplosione se la pila non viene sostituita in modo corretto. Utilizzare solo pile uguali o di tipo equivalente a quelle consigliate dal produttore. Per disfarsi delle pile usate, seguire le istruzioni del produttore.	Existe peligro de explosión si la pila no se cambia de forma adecuada. Utilice solamente pilas iguales o del mismo tipo que las recomendadas por el fabricante del equipo. Para deshacerse de las pilas usadas, siga igualmente las instrucciones del fabricante.

WARNING: English (US)	AVERTISSEMENT: Français	WARNUNG: Deutsch	AVVERTENZA: Italiano	ADVERTENCIAS: Español

The system is designed to operate in a typical office environment. Choose a site that is:

- Clean and free of airborne particles (other than normal room dust).
- Well ventilated and away from sources of heat including direct sunlight.
- Away from sources of vibration or physical shock.
- Isolated from strong electromagnetic fields produced by electrical devices.
- In regions that are susceptible to electrical storms, we recommend you plug your system into a surge suppresser and disconnect telecommunication lines to your modem during an electrical storm.
- Provided with a properly grounded wall outlet.
- Provided with sufficient space to access the power supply cords, because they serve as the product's main power disconnect.

Le système a été conçu pour fonctionner dans un cadre de travail normal. L'emplacement choisi doit être :

- Propre et dépourvu de poussière en suspension (sauf la poussière normale).
- Bien aéré et loin des sources de chaleur, y compris du soleil direct.
- A l'abri des chocs et des sources de vibrations.
- Isolé de forts champs électromagnétiques géenérés par des appareils électriques.
- Dans les régions sujettes aux orages magnétiques il est recomandé de brancher votre système à un supresseur de surtension, et de débrancher toutes les lignes de télécommunications de votre modem durant un orage.
- Muni d'une prise murale correctement mise à la terre.
- Suffisamment spacieux pour vous permettre d'accéder aux câbles d'alimentation (ceux-ci étant le seul moyen de mettre le système hors tension).

Das System wurde für den Betrieb in einer normalen Büroumgebung entwickelt. Der Standort sollte:

- sauber und staubfrei sein (Hausstaub ausgenommen);
- gut gelüftet und keinen Heizquellen ausgesetzt sein (einschließlich direkter Sonneneinstrahlung);
- keinen Erschütterungen ausgesetzt sein;
- keine starken, von elektrischen Geräten erzeugten elektromagnetischen Felder aufweisen;
- in Regionen, in denen elektrische Stürme auftreten, mit einem Überspannungsschutzgerät verbunden sein; während eines elektrischen Sturms sollte keine Verbindung der Telekommunikationsleitungen mit dem Modem bestehen;
- mit einer geerdeten Wechselstromsteckdose ausgerüstet sein;
- über ausreichend Platz verfügen, um Zugang zu den Netzkabeln zu gewährleisten, da der Stromanschluß des Produkts hauptsächlich über die Kabel unterbrochen wird.

Il sistema è progettato per funzionare in un ambiente di lavoro tipo. Scegliere una postazione che sia:

- Pulita e libera da particelle in sospensione (a parte la normale polvere presente nell'ambiente).
- Ben ventilata e lontana da fonti di calore, compresa la luce solare diretta.
- Al riparo da urti e lontana da fonti di vibrazione.
- Isolata dai forti campi magnetici prodotti da dispositivi elettrici.
- In aree soggette a temporali, è consigliabile collegare il sistema ad un limitatore di corrente. In caso di temporali, scollegare le linee di comunicazione dal modem.
- Dotata di una presa a muro correttamente installata.
- Dotata di spazio sufficiente ad accedere ai cavi di alimentazione, i quali rappresentano il mezzo principale di scollegamento del sistema.

El sistema está diseñado para funcionar en un entorno de trabajo normal. Escoja un lugar:

- Limpio y libre de partículas en suspensión (salvo el polvo normal).
- Bien ventilado y alejado de fuentes de calor, incluida la luz solar directa.
- Alejado de fuentes de vibración.
- Aislado de campos electromagnéticos fuertes producidos por dispositivos eléctricos.
- En regiones con frecuentes tormentas eléctricas, se recomienda conectar su sistema a un eliminador de sobrevoltage y desconectar el módem de las líneas de telecomunicación durante las tormentas.
- Provisto de una toma de tierra correctamente instalada.
- Provisto de espacio suficiente como para acceder a los cables de alimentación, ya que éstos hacen de medio principal de desconexión del sistema.

Regulatory compliance statements

Rack mounting

If rack mounted units are installed in a closed or multi-unit rack assembly, they may require further evaluation by Certification Agencies. The following items must be considered:

- The ambient within the rack may be greater than room ambient. Installation should be such that the amount of airflow required for safe operation is not compromised. The maximum temperature for the equipment in this environment is 50C, unless otherwise specified in the environmental specifications for the equipment. Consideration should be given to the maximum rated ambient.
- Installation should be such that a hazardous stability condition is not achieved due to uneven loading.

Input supply:

Check nameplate ratings to assure there is no overloading of supply circuits that could have an effect on overcurtrent protection and supply wiring.

Grounding:

Reliable grounding of this equipment must be maintained. Particular attention should be given to supply connections when connecting to power strips, rather than direct connections to the branch circuit.

American users

FCC Part 15

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.
- Use only shielded cables to connect peripherals to the server.

Accessories: This equipment has been tested and found to comply with the limits of a Class A digital device. The accessories associated with this equipment are: shielded video cable. These accessories are required to be used in order to ensure compliance with FCC rules.

FCC Part 68 (applicable to products fitted with USA modems)

Your modem complies with Part 68 of the Federal Communications Commission (FCC) rules. On the computer or modem card is a label that contains the FCC registration number and Ringer Equivalence Number (REN) for this device. If requested, this information must be provided to the telephone company.

An FCC compliant telephone line cord with a modular plug is required for use with this device. The modem is designed to be connected to the telephone network or premises wiring using a compatible modular jack which is Part 68 compliant. See installation instructions for details.

The Ringer Equivalence Number (REN) is used to determine the number of devices which may be connected to the telephone line. Excessive REN's on a telephone line may result in the devices not ringing in response to an incoming call. In most areas, the sum of REN's should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total REN's, contact the local telephone company.

If this device causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. The telephone company may request that you disconnect the equipment until the problem is resolved.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of this equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

This equipment cannot be used on telephone company provided coin service. Connection to party line service is subject to state tariffs. Contact the state public utility commission or public service commission for information.

When programming or making test calls to emergency numbers:

- Remain on the line and briefly explain to the dispatcher the reason for the call.
- Perform such activities in the off-peak hours such as early morning or late evenings.

The United States Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device to send any message via a telephone fax machine unless such message clearly contains in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business or other entity, or other individual sending the message and the telephone number of the sending machine or such business, other entity, or individual. Refer to your fax communication software documentation for details on how to comply with the fax-branding requirement.

Canadian users

ICES-003

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe A prescrites dans le règlement sur le brouillage radioélectrique édicté par Industrie Canada.

DOC Notice (for products fitted with an IC-compliant modem)

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operation, and safety requirements. The Department does not guarantee the equipment will operate to the users' satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the inside wiring associated with a single-line individual service may be extended by means of a certified connector assembly. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Warning	To avoid electrical shock or equipment malfunction you should not attempt to make electrical ground connections by yourself, but should contact the appropriate inspection authority or an electrician, as appropriate.

The **Ringer Equivalence Number** (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

European users

European directives

This Information Technology Equipment has been tested and found to comply with the following European directives:

- EMC Directive 89/336/EEC amending directive 92/31/EEC & 93/68/EEC as per
  - EN 55022:1995 Class A
  - EN 55024:1998 according to

    EN 61000-3-2:1995

    EN 61000-3-3:1995

    EN 61000-4-2:1995

    EN 61000-4-3, ENV 50204

    EN 61000-4-4:1995

- Low Voltage Directive (Safety) 73/23/EEC as per EN 60950: 1992(A1/A2/A3/A4/A11)

European Telecommunication Information (for products fitted with EU approved modems)

Marking by the symbol $C \epsilon ****X$ indicates compliance of this equipment to the Telecom Terminal Equipment and Satellite Earth Stations Directive 98/13/EEC. Such marking is indicative that this equipment meets or exceeds the following technical standards:

CTR 21 (1998) - Attachment requirements for pan-European approval for connection to the analogue Public Switched Telephone Networks (PSTNs) of TE (excluding TE supporting voice telephony services) in which network addressing, if provided, is by means of Dual Tone Multi Frequency (DTMF) signaling.

Caution ⚠	Although this equipment can use either loop disconnect (Pulse) or DTMF (Tone) signaling, only the performance of the DTMF signaling is subject to regulatory requirements for correct operation. It is therefore strongly recommended that the equipment is set to use DTMF signaling for access to public or private emergency services. DTMF signaling also provides faster call set up.

This equipment has been approved to Council Decision 98/482/EEC--"CTR 21" for Pan-European single terminal connection to the Public Switched Telephone Network (PSTN). However, due to differences between the individual PSTNs provided in different countries, the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN termination point. In the event of problems, you should contact Gateway customer support.

Japanese users

VCCI statement

This equipment is in the Class A category (Information Technology Equipment to be used in a residential area or an adjacent area thereto) and conforms to the standards set by the Voluntary Control Council for Interference by Information Technology Equipment aimed at preventing radio interference in such residential area. When used near a radio or TV receiver, it may become the cause of radio interference. Read instructions for correct handling.

　この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Australia and New Zealand users

EMI statement

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to the Australian/New Zealand standard AS/NZS 3548 set out by the Australian Communications Authority and Radio Spectrum Management Agency.

New Zealand Telecommunication statement (for products fitted with Telepermit approved modems)

The grant of a Telepermit for any item of terminal equipment indicates only that Telecom has accepted that the item complies with minimum conditions for connection to its network. It indicates no endorsement of the product by Telecom, nor does it provide any sort of warranty. Above all, it provides no assurance that any item will work correctly in all respects with another item of Telepermitted equipment of a different make or model, nor does it imply that any product is compatible with all of Telecom's network services.

This equipment shall not be set up to make automatic calls to the Telecom '111' Emergency Service.

Important	Under power failure conditions, this telephone may not operate. Please ensure that a separate telephone, not dependent on local power, is available for emergency use.

Some parameters required for compliance with Telecom's Telepermit requirements are dependent on the equipment (PC) associated with this device. The associated equipment shall be set to operate within the following limits for compliance with Telecom's Specifications:

(a) There shall be no more than 10 calls to the same number within any 30 minute period for any single manual call initiation, and

(b) The equipment shall go on-hook for a period of not less than 30 seconds between the end of one attempt and the beginning of the next attempt.

The equipment shall be set to ensure that automatic calls to different numbers are spaced such that there is no less than 5 seconds between the end of one call attempt and the beginning of another.

The equipment shall be set to ensure that calls are answered between 3 and 30 seconds of receipt of ringing.

Laser safety statement

All Gateway systems equipped with CD and DVD drives comply with the appropriate safety standards, including IEC 825. The laser devices in these components are classified as "Class 1 Laser Products" under a US Department of Health and Human Services (DHHS) Radiation Performance Standard. Should the unit ever need servicing contact an authorized service location.

Warning	Use of controls or adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure. To prevent exposure to laser beams, do not try to open the enclosure of a CD or DVD drive.

Television antenna connectors protection (for systems fitted with TV/cable TV tuner cards)

External television antenna grounding

If an outside antenna or cable system is to be connected to your Gateway PC, make sure that the antenna or cable system is electrically grounded to provide some protection against voltage surges and built up static charges.

Article 810 of the National Electrical Code, ANSI/NFPSA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Lightning protection

For added protection of any Gateway product during a lightning storm or when it is left unattended or unused for long periods of time, unplug the product from the wall outlet and disconnect the antenna or cable system.

Power lines

Do not locate the antenna near overhead light or power circuits, or where it could fall into such power lines or circuits. When installing or re-aligning an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits. Contact with them could be fatal.

Warning	When installing or realigning an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits. Contact with them could be fatal.
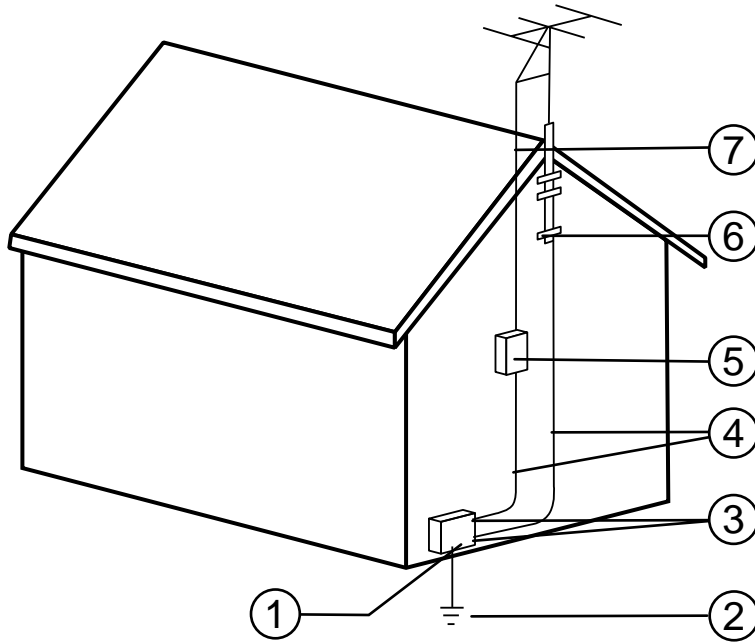
Antenna and satellite grounding

Reference	Grounding component
1	Electric service equipment
2	Power service grounding electrode system (NEC Art 250, Part H)
3	Ground clamps
4	Grounding conductors (NEC Section 810-21)
5	Antenna discharge unit (NEC Section 810-20)
6	Ground clamp
7	Antenna lead-in wire

Notices

System Specifications

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The following specifications are for the standard configuration. The server may contain optional equipment. All specifications are subject to change.

Case size	17.5 in. (444 mm) x 26.5 in. (673 mm) x 7.0 in. (178 mm)
Processors	As many as four Intel® Pentium™ III Xeon processors operating at 600 MHz and faster
Cache	256K on each processor
RAM	Sixteen DIMM sockets support up to 16 GB of PC/100 SDRAM
BIOS	Flash BIOS for easy updates from diskette
IDE interfaces	One PCI IDE controller supports as many as two ATAPI/IDE devices (hard drives or CDs). (The chassis supports only the slimline CD drive and one 5.25-inch device.)
Diskette drive interface	Diskette drive controller is integrated on the system board
I/O ports	One parallel port, two serial ports, two USB ports, one PS/2 keyboard port, one PS/2 mouse port, one RJ-45 network port, and one video port
Power supply	Redundant (N+1) power supply supporting as many as three 350-W power supply modules
SCSI interfaces	Integrated Adaptec AIC-7899 Dual-Channel Ultra/Ultra II/Ultra 160 SCSI controller and an integrated Adaptec AIC-7880 narrow/wide Ultra SCSI controller
Network interface	Integrated Intel 82559 Fast Ethernet controller
Server management	Monitoring, alerting, and logging of critical system information obtained from embedded sensors on the system board, including thermal levels, voltage levels, fan speeds, and chassis intrusion monitoring

Expansion slots	Two 32-bit, 33 MHz PCI slots, four 64-bit, 33 MHz hot-plug PCI slots, and two 64-bit, 66 MHz hot-plug PCI slots all on the system board
Drive Bays	One slimline CD drive bay, one slimline 3.5-inch drive bay (occupied by diskette drive), one half-height 5.25-inch drive bay, and five hot-swap bays (at least one is occupied by a 1-inch high hot-swap drive)

Environmental specifications

The following specifications identify maximum environmental conditions. At no time should the server run under conditions which violate these specifications.

Temperature, operating	5° to 35° Celsius or
	41° to 95° Fahrenheit
Humidity, operating	20% to 80%
Altitude	-200 feet to 5,000 feet
Voltage, AC input	90 to 135 VAC, 180 to 255 VAC
Frequency	47 to 63 Hz
Certification	FCC Class A, UL, CUL, CAN/CSA STD C22.2 No. 950, CE Mark, VCCI Class A, CB scheme

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