

Gateway



**E-5400 Mid Tower
System Manual**

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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.
<i>User's Guide</i>	Names of publications are printed in italic.
<i>Viewpoint</i>	All references to front, rear, left or right on the computer are based on the computer 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 Support Center at www.gateway.com/support to find information about your system or other Gateway products. Some types of information you can access are:

- Hardware driver and software application updates
- Technical tips
- Service agreement information
- Technical documents and component information
- Frequently asked questions (FAQ)
- Documentation for peripherals or optional components
- Online access to technical support

System Features

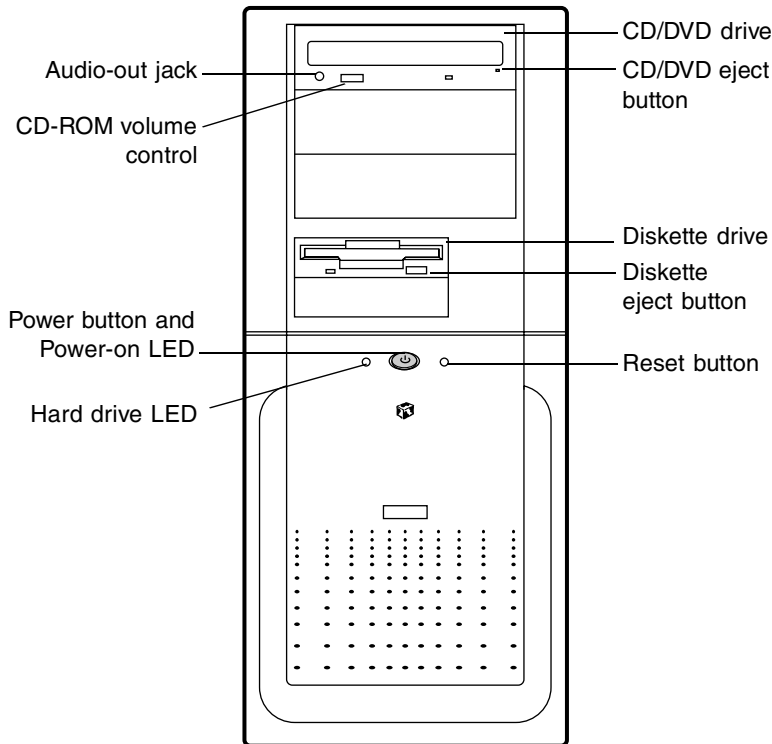
1

Standard features

- Up to two Intel® Pentium III processors with 133 MHz Front Side Bus (FSB) in Slot 1 processor sockets
- Four Rambus™ In-line Memory Module (RIMM™) sockets that support up to 2 Gigabytes (GB) of Rambus Dynamic Random Access Memory (RDRAM) up to 400 Mhz
- Intel 840 chipset
- Integrated Intel 82259 10/100 LAN support with Cape lookout
- AGP Slot (AGP 2.0 compliant)
- Matrox G400 AGP graphics controller with 32 MB of SGRAM and support for two monitors
- Five PCI slots
- ATX form factor system board and mid-tower chassis
- One 3.5 inch 1.44 MB diskette drive, one CD-ROM drive, and one hard drive
- Keyboard port (PS/2), mouse port (PS/2), serial port, parallel port, two Universal Serial Bus (USB) ports, RJ-45 Ethernet port, Audio line-out, Audio line-in, and Microphone-in
- Integrated core logic (ICH) audio using AC'97 2.1 compliant digital controller and AC'97 compliant Codec chip soft audio

Front panel

The front panel of the mid-tower case includes the following features:



Audio-out jack connects headphones or powered speakers that you use to listen to an audio CD (directly from the CD/DVD drive).

CD/DVD volume control controls the volume of an audio CD.

Power button turns the computer on and off.

Power on LED lights when the computer is turned on. The green light means your computer is using full power. The amber light means your computer is in power conservation mode.

Hard drive LED lights when the hard drive is active.

CD/DVD drive plays data or audio CDs.

CD/DVD eject button ejects a CD from the CD/DVD drive.

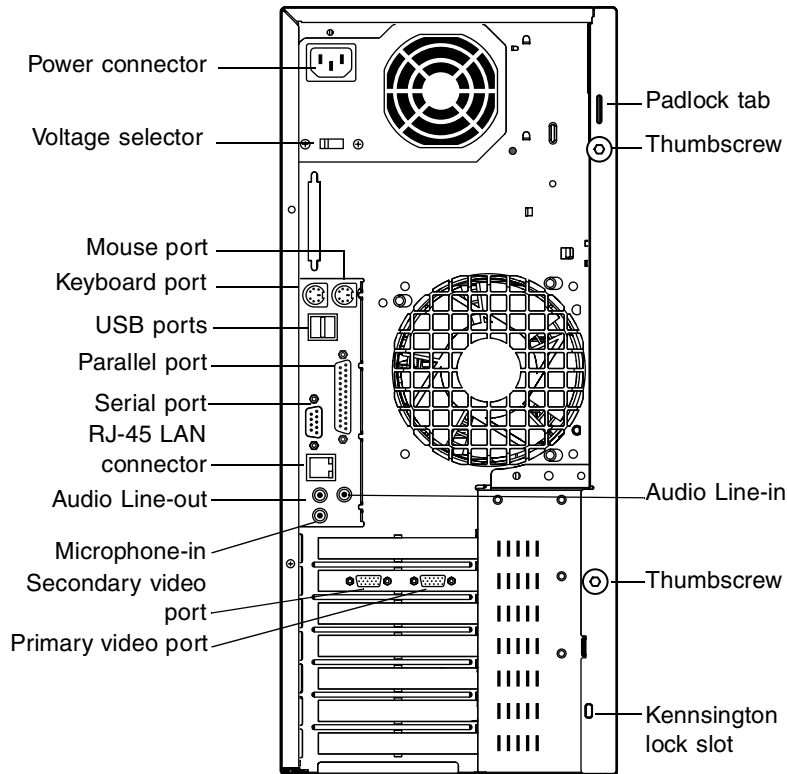
Diskette drive writes to and reads from 3.5-inch, 1.44 MB diskettes.

Diskette eject button ejects diskettes from the diskette drive.

Reset button restarts a system that has become non-responsive.

Rear panel

The mid-tower case rear panel includes the following Input/Output (I/O) ports, connectors, and switches:



Voltage selector sets the voltage for your area, either 115 V or 230 V.

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

Mouse port connects a PS/2-compatible mouse.

Keyboard port connects a Personal System/2[®] (PS/2) compatible keyboard.

USB ports connect external Plug-and-Play devices, such as keyboards and pointing devices, that are automatically configured when they are plugged into the computer through one of these ports.

Parallel (printer) port connects a printer or other parallel device.

Serial port connects to a serial device.

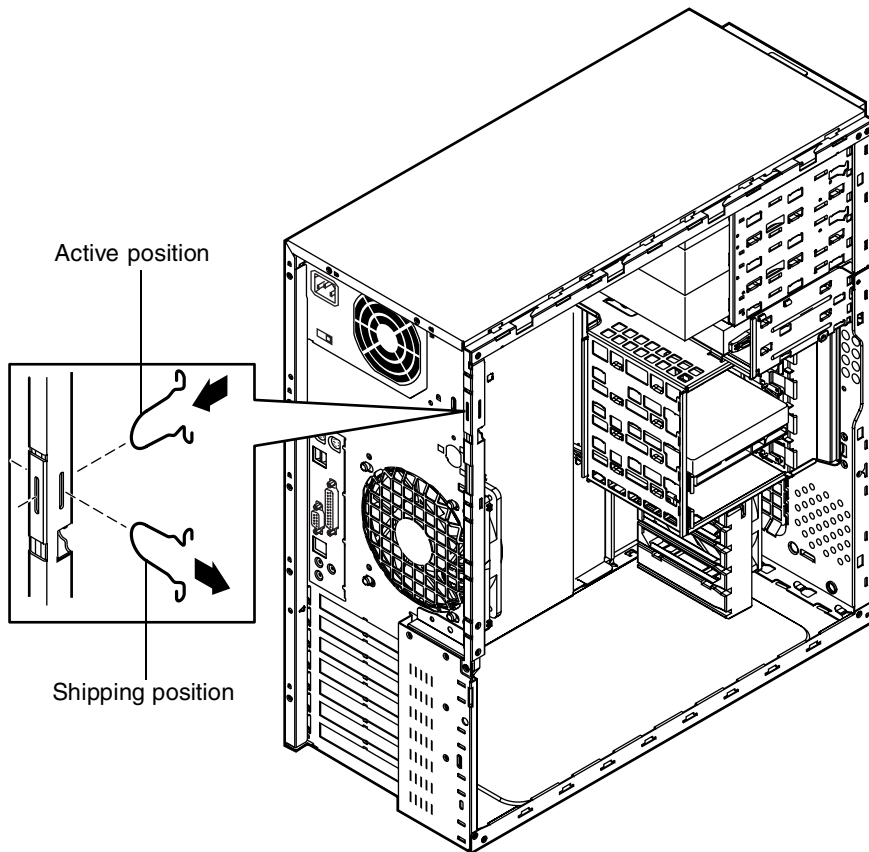
RJ-45 LAN connector lets you connect to a network, and the adjacent Indicator LEDs show LAN activity (yellow) and 100 Mbit speed (green).

Microphone-in, Audio Line-out, and Audio Line-in jacks connect audio devices such as speakers, tape players, and microphones.

Secondary video port connects the second monitor interface cable.

Primary video port connects the first (or only) monitor interface cable.

Padlock tab permits the use of a padlock to secure the system. To use the padlock tab it must be removed from its shipping position and reinstalled in the active position, as shown below.

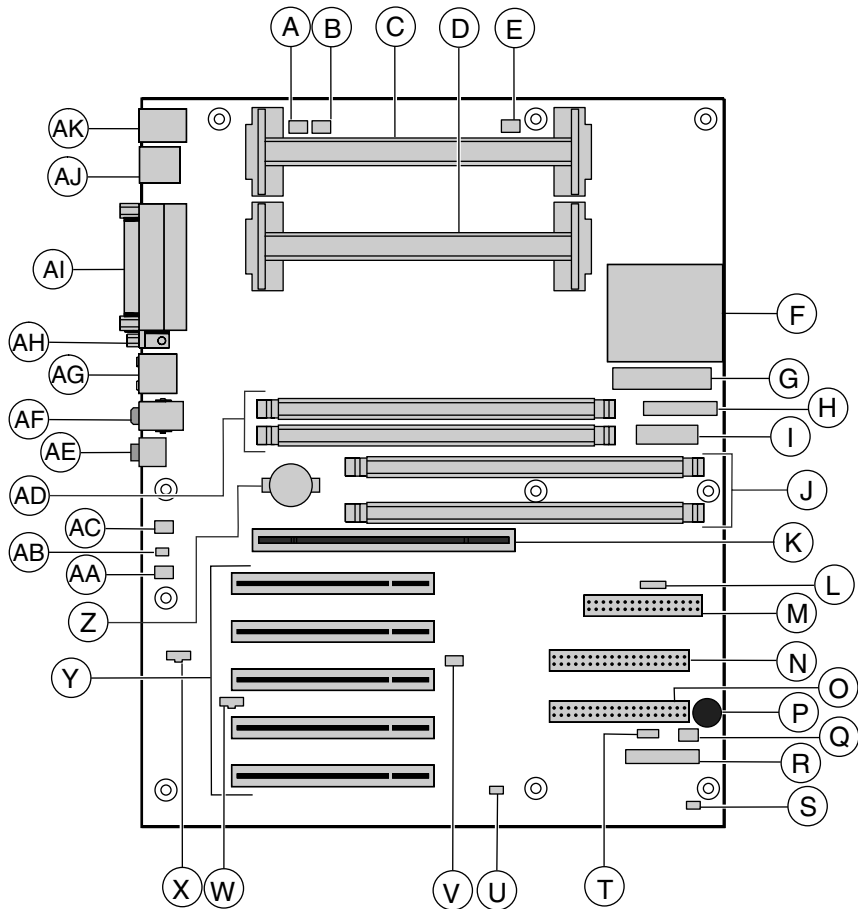


Thumbscrews must be loosened to remove the cover from the system.

Kensington lock slot lets you use a cable lock to secure the system.

System board

The following figure and list identify system board components.



- A** Processor fan 1 connector
- B** Processor fan 2 connector
- C** Processor slot 1
- D** Processor slot 2
- E** Processor fan 3 connector (not used)

- F** Voltage regulator module (VRM) for second processor
- G** ATX power connector
- H** Supplementary AGP Pro50 power connector
- I** Auxiliary power connector
- J** RIMM slots 1 and 2 (Channel A)
- K** AGP (accelerated graphics processor) slot
- L** SCSI LED connector
- M** Diskette drive connector
- N** Secondary IDE connector
- O** Primary IDE connector
- P** Internal speaker
- Q** Front system fan connector
- R** Front panel connector
- S** Front chassis intrusion connector (not used)
- T** Auxiliary LED connector
- U** Configuration jumper (J1F2)
- V** Internal MIDI connector
- W** Telephony connector
- X** CD/DVD audio connector
- Y** PCI slots (5)
- Z** Battery
- AA** System fan (not used)
- AB** Rear chassis intrusion connector
- AC** Rear system fan
- AD** RIMM slots 3 and 4 (Channel B)
- AE** Microphone-in connector

- AF** Audio line-in (right) and Audio line-out (left) connectors
- AG** RJ-45 Ethernet LAN connector and LEDs
- AH** Serial port
- AI** Parallel port
- AJ** USB ports
- AK** PS/2 Mouse and Keyboard ports

2

System Setup

Setting up your system

Use the instructions on the poster that came with your system to assemble your system. You can prepare a safer working environment before assembling your system by following the guidelines listed below.

- Provide a clean, flat, and stable surface for your system. Allow at least 12 inches at the rear of the computer for cabling and air circulation.
- Obtain a grounded (three-prong) AC surge-protected power strip. A surge-protected power strip helps protect against AC line spikes.
- Protect your system from extreme temperature and humidity. Do not expose your system to direct sunlight, heater ducts, or other heat-generating objects.
- Keep your computer away from equipment that generates magnetic fields, such as unshielded stereo speakers. Even a telephone placed too close to the computer may cause interference.
- Plug the computer into a wall outlet or power strip that is easily accessible. When you turn off the computer with the power button, some electricity still flows through the computer. To remove all power from the computer, you need to unplug the power cord.

Important



Keep the computer boxes and packing material, in case you need to send the computer to Gateway for repairs. If you return your computer in different packaging, your warranty may be void.

Starting your system

Before you start your system for the first time:

- Make sure that the voltage selector switch on the back of the computer is still set to the correct voltage for your area. This switch is set at the factory to the correct voltage (see “Rear panel” on page 4 for voltage selector switch location).
- Make sure all cables are firmly connected to the proper ports on the rear panel of the computer.

Caution



Make sure your computer and peripherals are turned off and unplugged from the power outlet when you connect peripherals to the computer.

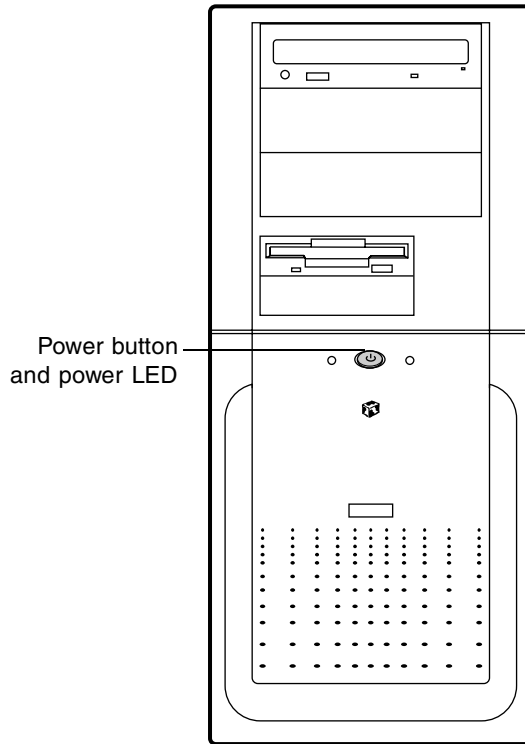
- Make sure the computer and monitor are plugged into an AC outlet or power strip and that the power strip is turned on.



To start the system:

- 1 If you have connected the system components to a power strip, make sure all the system components are turned off, then turn on the power strip.
- 2 Turn on the monitor by pressing its power button.

- 3 Turn on the computer by pressing its power button. The light-emitting diode (LED) in the power button is lit when the power is on.



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

If nothing happens when you turn on the system:

- Recheck the power cables to make sure that they are securely plugged in and that your power strip (if you are using one) is plugged in and turned on.
- Make sure the monitor is connected to the computer, plugged into the power strip or AC outlet, and turned on. You may also need to adjust the brightness and contrast controls on the monitor.

Important



Wait until the startup procedure is finished before loading a diskette in the diskette drive, or the computer may search the diskette for startup information.

Understanding the Power-On Self-Test

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

The system displays an error message if POST finds any problems. Write down the error message that appears. If you continue to experience problems, this error message may help technical support diagnose the cause.

Setting up the operating system

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

Refer to your software documentation for specific questions regarding software.



To complete the operating system setup:

- 1 After the computer starts, the start-up wizard opens. Continue by clicking **Next**.
- 2 Type the requested information in the appropriate text boxes. When you have finished typing the information, continue by clicking **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 computer.

Most of the dialog boxes that open in the start-up wizard have a button that takes you back to previous dialog boxes, in case you need to change or correct the information you typed.

- 4 Restart your system. The setup is complete.

Turning off your system

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

To turn off your system in Windows NT:

- 1** Click **Start**, then click **Shut down the computer?** (Windows NT), then select **Shut Down**.
- 2** Click **OK**. The computer turns off. If you see a message saying **It is now safe to turn off your computer**, turn off the computer by pressing the power button.
- 3** Turn off the monitor and peripherals.

Warning



When you turn the computer off by pressing the power button, some electric current still flows through the computer. Before opening the computer case or connecting or removing any peripherals, turn off the computer, then unplug the power cord and modem cord (if installed).

Resetting your system

If your computer does not respond to keyboard or mouse input, you may have to close a program or programs that may not be responding. If closing unresponsive programs does not restore your computer to normal operation, you may have to reset the system.

▣▣▣▣▶ **To reset your system in Windows NT:**

- 1** Press CTRL+ALT+DEL. A window opens that lets you to 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 computer does not respond, press the reset button to restart the computer.

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

Case Access

Preventing static electricity

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

Caution



Static electricity can permanently damage electronic components in your computer. Prevent electrostatic damage to your computer by following static electricity precautions every time you open your computer case.

▶▶▶ To prevent static electricity discharge:

- 1** Turn off the computer power.
- 2** Touch a bare metal surface on the back of the computer.
- 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 styrofoam in your work area.
- Remove the parts from their antistatic bag or container 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 their 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

Important



All references to front, rear, left or right on the computer are based on the computer being in a normal, upright position, as viewed from the front.

To work on the internal components of the computer, you must open the case, which has two removable parts:

- A left side cover panel that permits access to the interior of the case
- A bezel that covers the front of the chassis

Because the components inside your computer are extremely sensitive to static electricity, make sure to follow the precautions at the beginning of this chapter for avoiding static electricity damage. Only qualified personnel should open the system for maintenance. If you feel you are qualified to maintain the system yourself, make sure you are properly grounded before opening the system chassis.

Warning

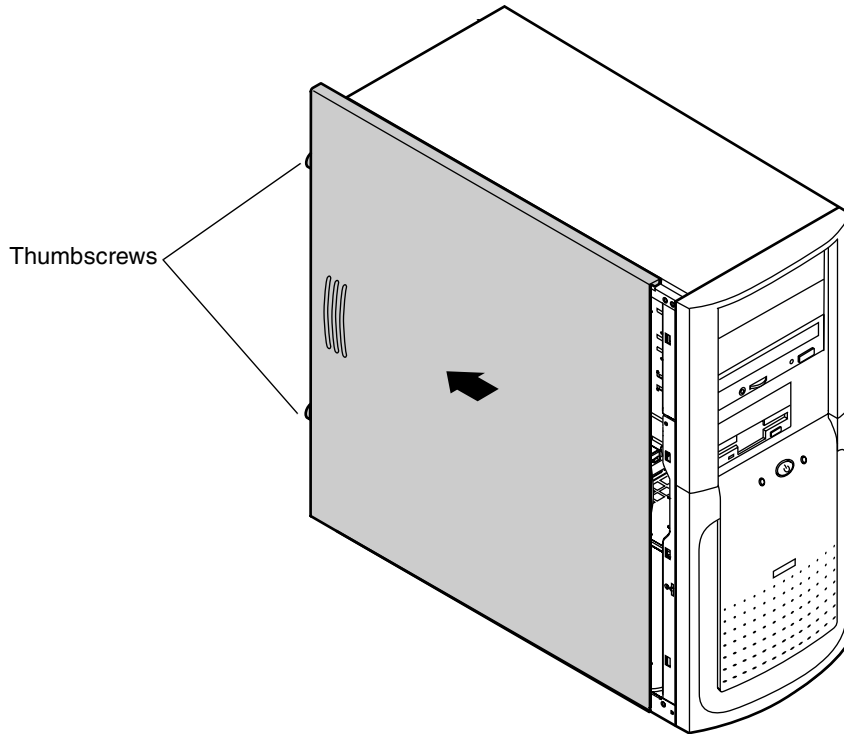


Avoid exposure to dangerous electrical voltages and moving parts, by turning off your computer and unplugging the power cord and modem cable (if installed) before removing the chassis cover.

To remove the left side cover panel:

- 1 Turn off the computer and disconnect all power cords.
- 2 Remove the thumbscrews from the back of the side panel and unlock the chassis lock (if applicable).

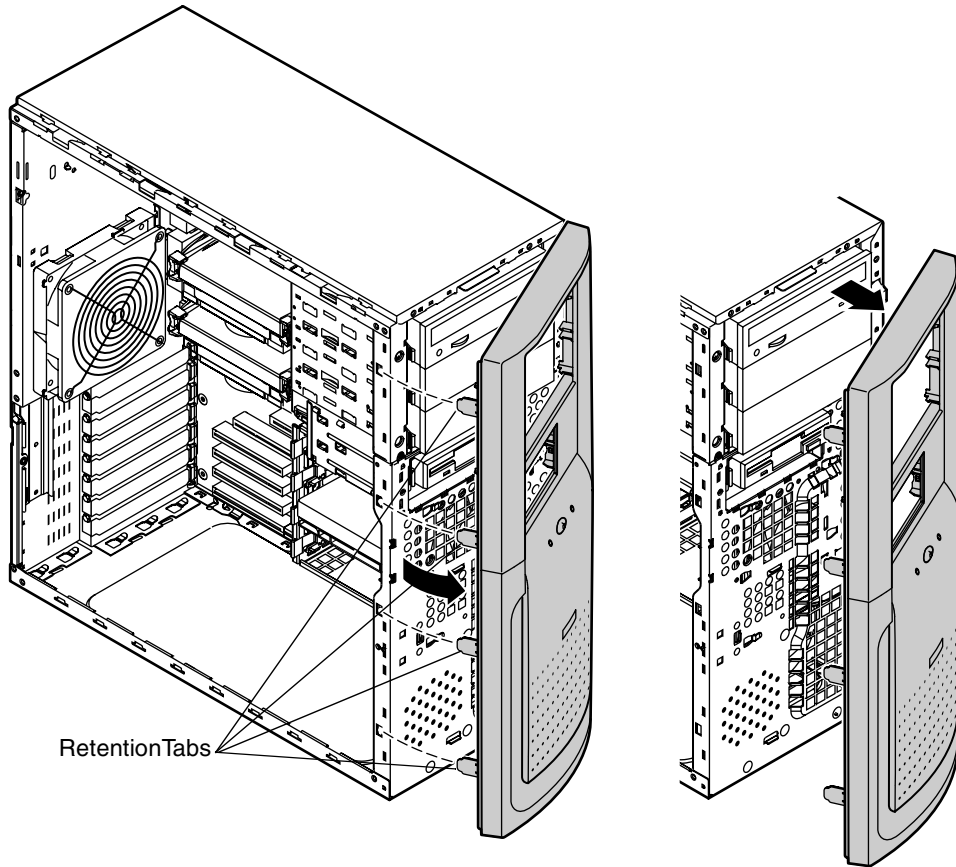
- 3 Slide the left side panel to the rear (approximately 3/4-inch), disengaging the retaining tabs on the top edge of the panel from the top of the chassis.



- 4 Lift the panel up and away from the chassis.

▣ **To remove the bezel:**

- 1 With the left side panel removed, disengage the retention tabs on the left side of the bezel by prying outward on each tab.
- 2 Swing the bezel out from the front of the chassis and disengage the hinge tabs on the right side of the bezel by moving the bezel to the right.
- 3 Remove the bezel.

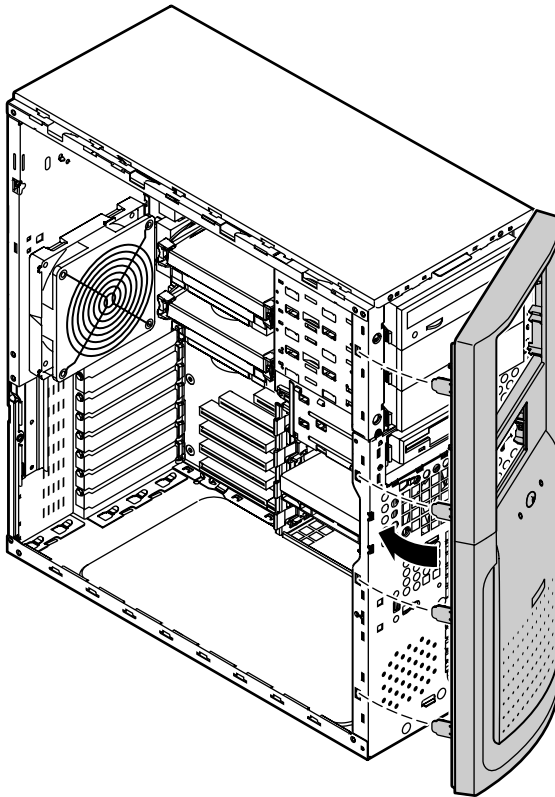


Closing the case

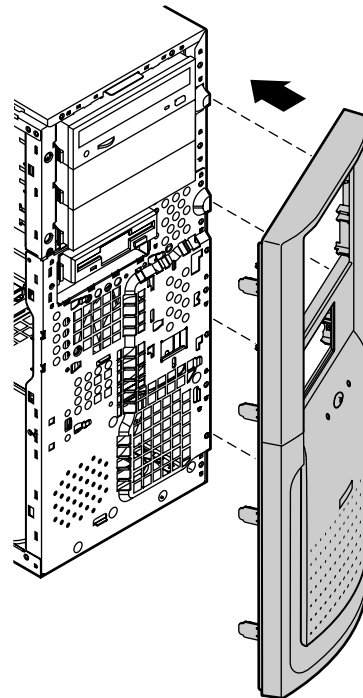
Replace the chassis cover as soon as you finish installing or removing components so that dust and dirt (which can damage the computer) do not collect inside the computer.

► To replace the bezel:

- 1 Holding the bezel at an angle to the front of the chassis, place the hinge tabs on the right side of the bezel in the appropriate slots in the front of the chassis.
- 2 Swing the left side of the bezel toward the chassis until the retaining tabs snap into place.

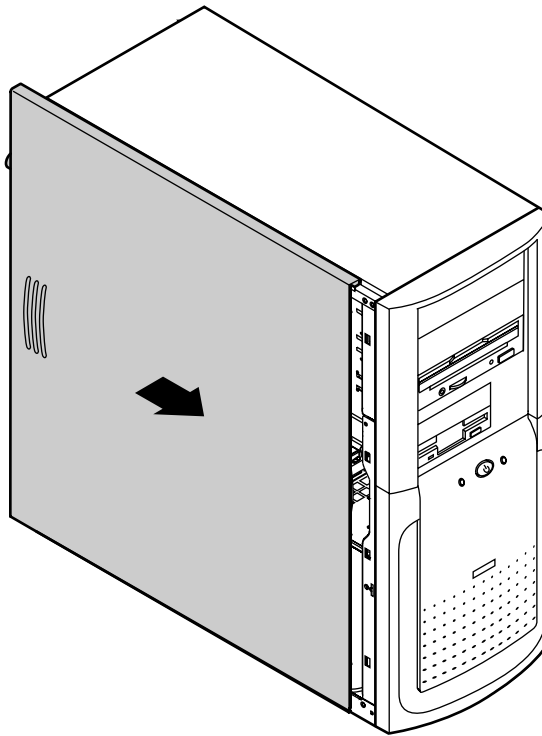


Four hinge tabs are located on the right side of the bezel and are not visible in this illustration



 **To replace the chassis cover:**

- 1** Holding the left side panel at an angle to the chassis and 3/4-inch to the rear, engage the retaining strip on the bottom edge of the panel with the lip at the bottom edge of the chassis.
- 2** Swing the top of the panel toward the chassis, engaging the retaining tabs on the top edge of the side panel with the slots on the chassis.
- 3** Slide the panel toward the front of the chassis 3/4-inch, securing it into place.
- 4** Reinstall the thumbscrews and lock the case (if applicable).



System Components

4

The system board

The system board is the heart of the computer, which integrates the other elements of the system, such as the processor, memory, storage, networking, and communications, and lets them operate in a coordinated and useful way.

Removing the system board

The system board is mounted on stand-off retention hooks on the right side of the chassis. The board is secured by two screws, one located on the back-right of the chassis, and one located inside the case.

Important

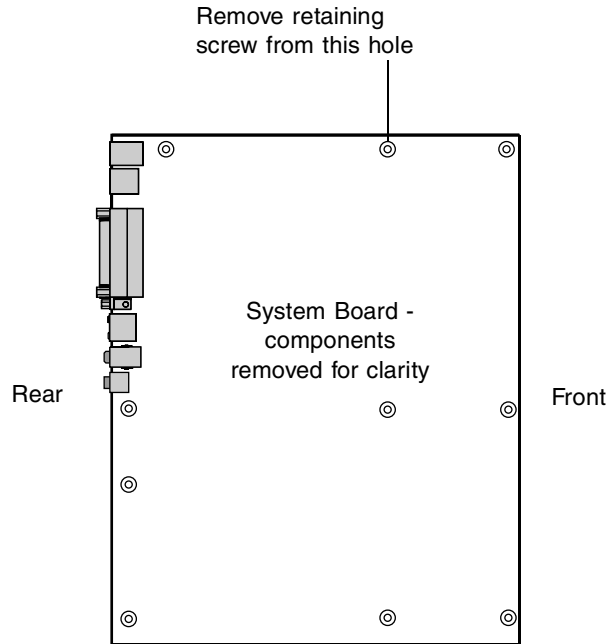


All references to front, rear, left or right on the computer are based on the computer being in a normal, upright position, as viewed from the front.

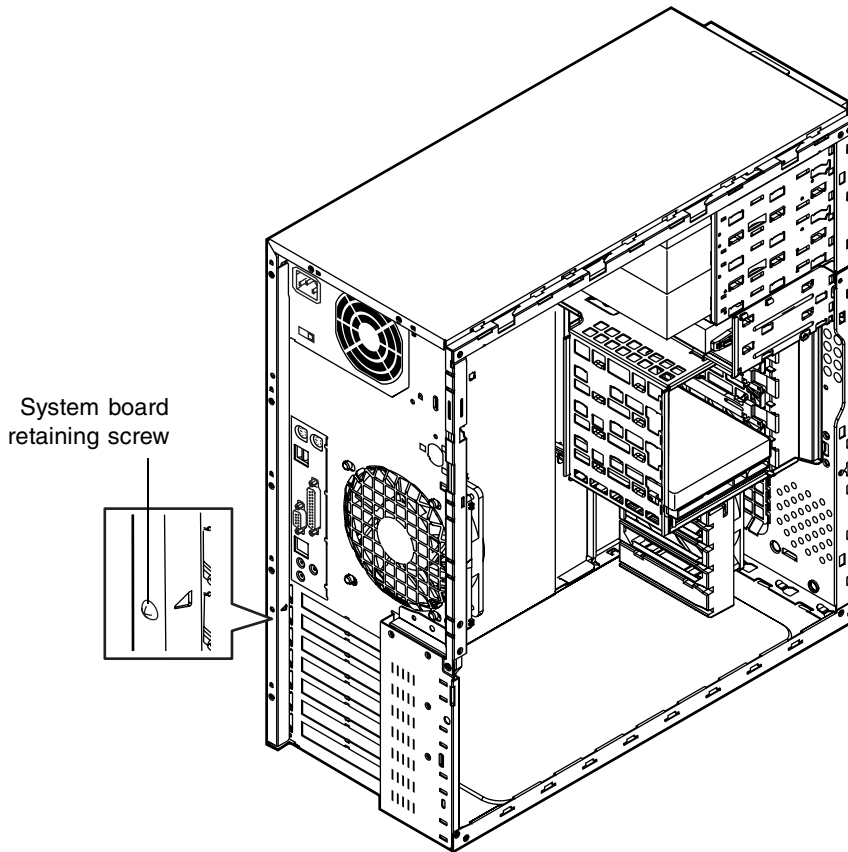
▶▶▶ To remove the system board:

- 1 Turn off the system and disconnect the power cord, modem cord (if installed), and all external peripheral devices.
- 2 Open the case by following the instructions on page 17. (See “Preventing static electricity” on page 15.)
- 3 Place the chassis gently on its right side.

- 4 Remove all expansion cards from the system board (See “Adding an expansion card” on page 34).
- 5 Disconnect all cables from the system board, including the power cables from the power supply. Note where the cables are connected.
- 6 Remove the retaining screw securing the board to the right side of the chassis.



7 Loosen the retaining screw at the back (right side) of the chassis.

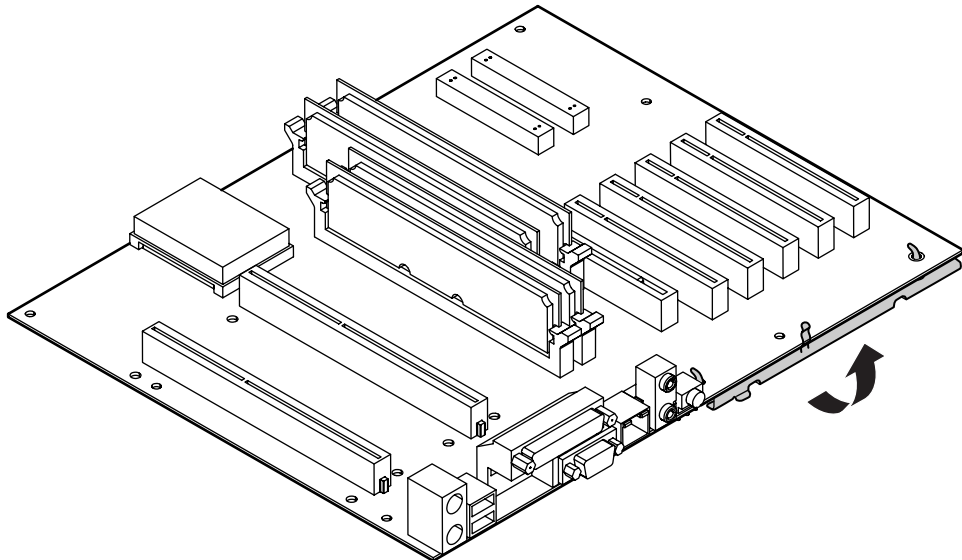
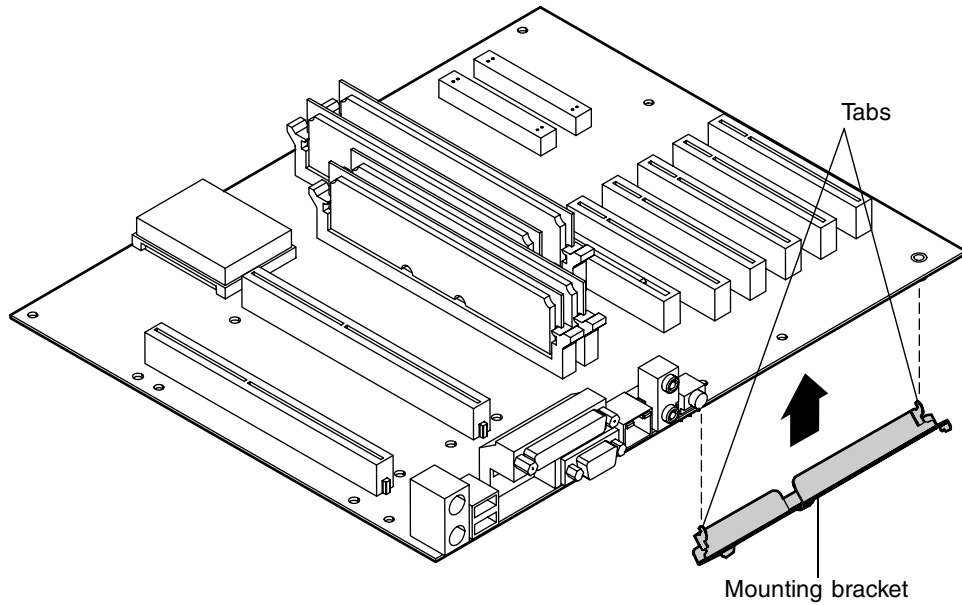


8 Slide the system board toward the front of the chassis slightly, to disengage it from the stand-off retention hooks (see illustration under "To install the system board:"), then remove it carefully.

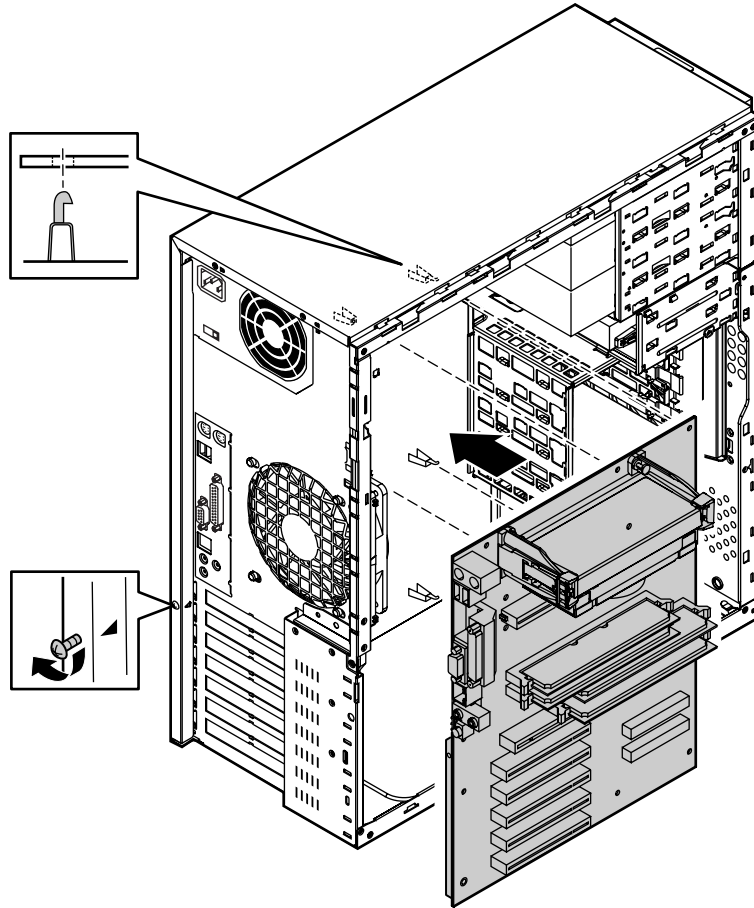
9 Remove the system board mounting bracket (shown below) and place the board in a static-free bag or container.

➡ **To install the system board:**

- 1 Install the system board mounting bracket on the rear edge of the system board by inserting the tabs into the corresponding holes in the board and rotating the bracket into place.



- 2 Holding the system board by the top and bottom edges, place it in the case by aligning the mounting holes on the board with the stand off (threaded) and stand off retention hooks on the right side of the case.



- 3 Holding the system board in place, tighten the retaining screw on the right rear of the case.
- 4 Replace the retention screw previously removed from the system board, then tighten the screw until the board is secured.
- 5 Reconnect peripherals, the modem cord, and the power cord, then turn on the system.

Replacing or adding a processor

The system is compatible with the Intel® Pentium® III 667 and 733 MHz and faster processors with 133 MHz front-side bus (FSB). Up to two processors may be installed in the system.

When replacing a processor, or adding an additional processor, order a Pentium III processor upgrade kit from Gateway. The kit includes the Pentium III processor, a fan/heatsink, and a disposable electrostatic wrist strap.

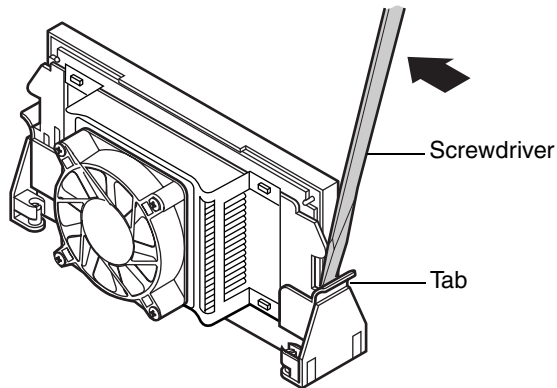
Caution



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

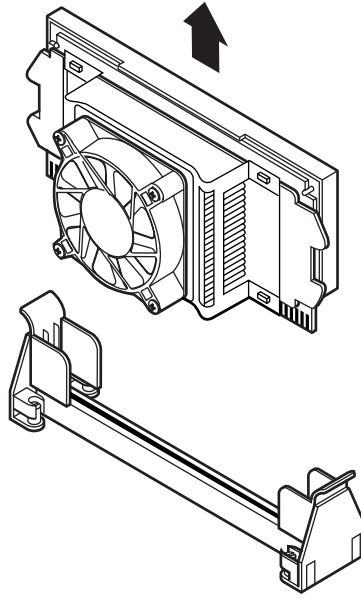
➡ To replace a processor:

- 1 Turn off the system and disconnect the power cord and modem cord (if installed) and all other external peripheral devices.
- 2 Open the case by following the instructions on page 17. (See “Preventing static electricity” on page 15.)
- 3 Disconnect the power supply cable of the processor fan from the CPU fan connector on the system board.
- 4 Place the head of a flat-bladed screwdriver behind the tab on one side of the processor retention bracket holding the processor to be removed.

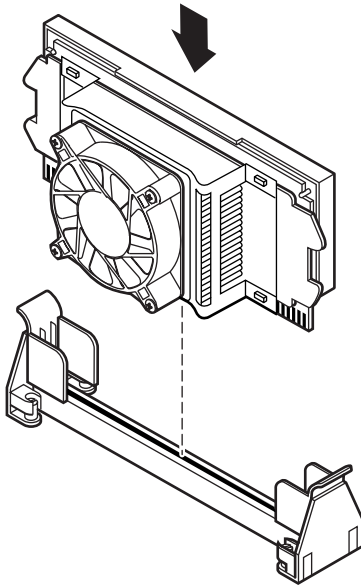


- 5 Push the handle of the screwdriver toward the processor. When the tab that locks the processor in place opens, lift up slightly on the side of the processor.

- 6 Repeat the previous two steps for the other side of the processor.
- 7 Pull the processor up and out of the slot.



- 8 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.



- 9 Reconnect the power supply cable of the processor fan to the CPU fan connector on the system board.
- 10 Close the case, as described in Chapter 3.
- 11 Reconnect the power cord and all other cords you removed, then turn on the system.

To add an additional processor:

- 1 Turn off the system and disconnect the power cord and modem cord (if installed) and all other external peripheral devices.
- 2 Open the case by following the instructions on page 17. (See “Preventing static electricity” on page 15.)
- 3 Remove the terminator card from the second processor slot to make room for the additional processor.
- 4 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.
- 5 Connect the power supply cable of the processor fan to the second CPU fan connector on the system board (See “System board” on page 6 for location).
- 6 Close the case, as described in Chapter 3.
- 7 Reconnect the power cord and all other cords you removed, then turn on the system.

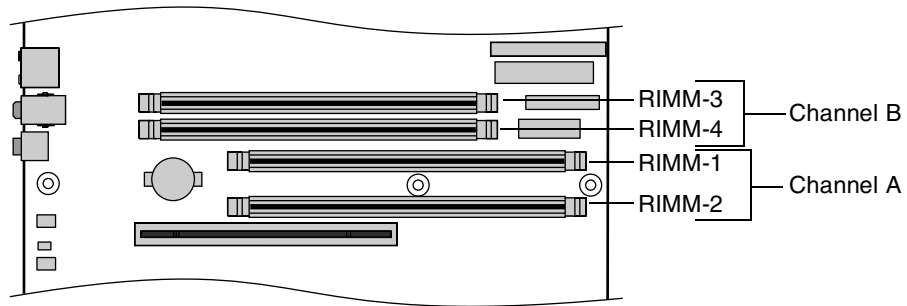
Adding or replacing memory

The Rambus Dynamic Random Access Memory (RDRAM) Rambus In-line Memory Modules (RIMMs) supported by your system board conform to the following standards:

- 32 MB, 64 MB, 128 MB, 256 MB, and 512 MB ECC or non-ECC RIMMs
- Single- or double-sided configurations
- 2 GB maximum system memory

When you are selecting and installing RIMMs, keep the following in mind:

- RIMM modules must be installed symmetrically into both channels, that is, if a RIMM is installed in RIMM-1 (Channel A), the same size, density, type, and speed RIMM **must** be installed in RIMM-3 (Channel B), likewise for RIMM-2 and RIMM-4. If RIMMs are not installed in this manner, the computer will not boot. Using the encoded part numbers on the RIMM modules is the best way to make sure that the parts are the same.



- To optimize memory performance, RIMM-1 and RIMM-3 must be populated first.
- ECC memory cannot be combined with non-ECC memory.
- *Continuity Modules* (CRIMMs) are required in all blank memory slots. If CRIMMs are not installed in blank slots, the computer will not boot.
- No jumper settings are required for the memory size or type because this information is automatically detected by the BIOS.
- At the time this manual was printed, some RIMM module configurations were not available for testing or sale. The following chart is not intended to imply either availability or compatibility. As new RIMM configurations become available, check with Gateway's website (www.gateway.com) for updated information.

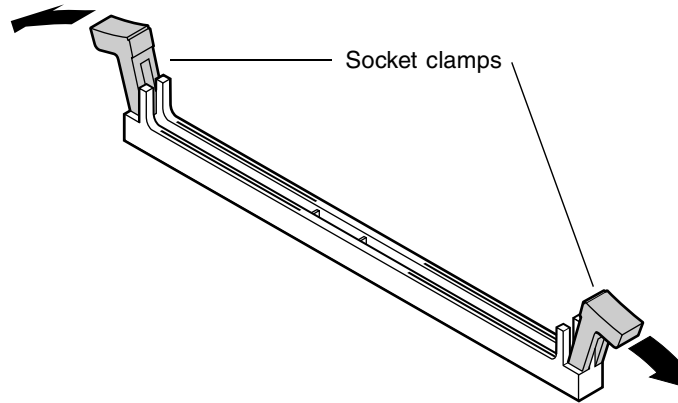
RIMM Modules	Total Memory
2 - 32 MB RIMMs, 2 - CRIMMs	64 MB
4 - 32 MB RIMMs,	128 MB
2 - 64 MB RIMMs, 2 - 32 MB RIMMs	192 MB
4 - 64 MB RIMMs	256 MB
2 - 96 MB RIMMs, 2 - 64 MB RIMMs	320 MB

4 - 96 MB RIMMs	384 MB
2 - 128 MB RIMMs, 2 - 96 MB RIMMs	448 MB
4 - 128 MB RIMMs	512 MB
2 - 256 MB RIMMs, 2 - 128 MB RIMMs	768 MB
4 - 256 MB RIMMs	1 GB
2 - 512 MB RIMMs, 2 - 256 MB RIMMs	1.5 GB
4 - 512 MB RIMMs	2 GB

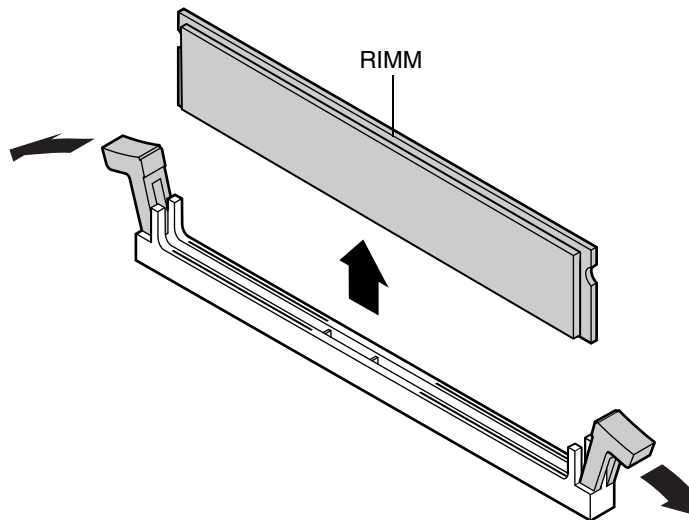
 **To add or remove RIMMs:**

- 1** Turn off the system and disconnect the power cord and modem cord (if installed) and all other external peripheral devices.
- 2** Open the case by following the instructions on page 17. (See “Preventing static electricity” on page 15.)

- 3** If you are adding a RIMM, pull open the socket clamps on each side of the RIMM socket and remove the CRIMM.

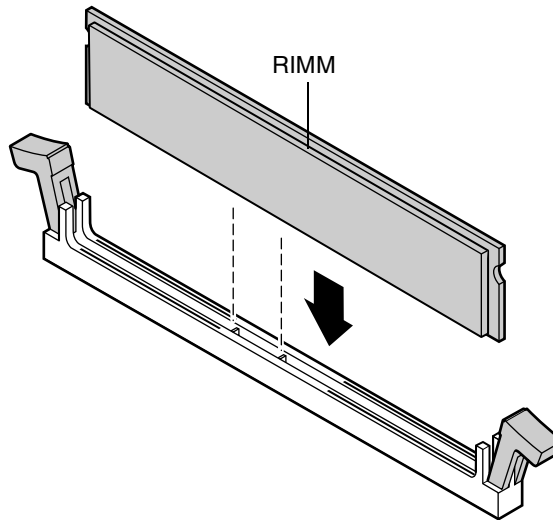


- 4** If you are replacing a RIMM, pull open the socket clamps on each side of the RIMM socket, then lift the RIMM out of the socket.



- 5** Store the RIMM in a static-free container.

- 6 Insert the new RIMM into the socket and align the two notches in the RIMM with the two notches in the RIMM socket.



- 7 Gently press the RIMM into the socket until it's firmly seated. Inserting the RIMM automatically locks each of the socket clamps on each end of the RIMM.
- 8 Close the case, as described in Chapter 3.
- 9 Reconnect peripherals, the modem cord, and the power cord, then turn on the system.

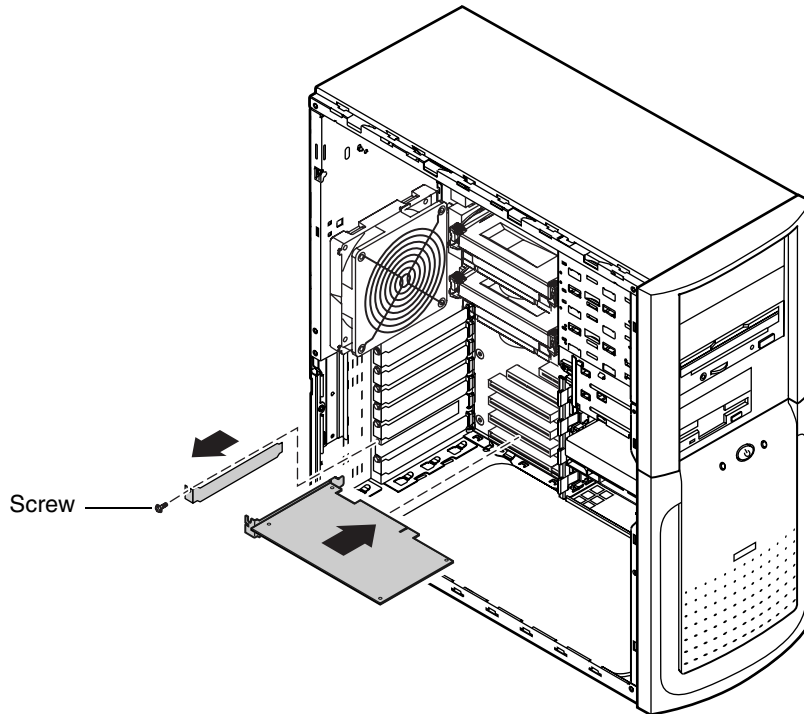
Adding an expansion card

The E-5400 computer has five PCI expansion slots on the system board, which may be used for a variety of add-on cards. These cards may include a SCSI controller card, a modem, a high-end sound card, or an additional IDE controller card. The computer also has a single AGP slot which contains the graphics controller card for the system.

➡ To add an expansion card:

- 1 Set any jumpers and switches on the card, if required in the card instructions. Turn off the computer, disconnect the power cord, modem cord (if installed), and all external peripheral devices.

- 2** Open the case by following the instructions on page 17. (See “Preventing static electricity” on page 15.)
- 3** Locate an available slot and remove the slot cover by removing the screw that secures it to the back of the chassis.
- 4** 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.



- 5** After seating the card firmly, use the screw you removed to secure the card to the rear of the chassis.
- 6** Connect any cables to the card (see card documentation for proper jumper settings and cable orientation).
- 7** Close the case, as described in Chapter 3.
- 8** Reconnect peripherals, the modem cord, and the power cord, then turn on the system.

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

Replacing the battery

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

If your battery is failing you may notice your system clock slowing down and giving you the incorrect time. If so, open the BIOS Configuration Manager and write down all the values in the various tabs before replacing the battery. Replacing the battery resets the BIOS Configuration Manager to its default values.

Caution



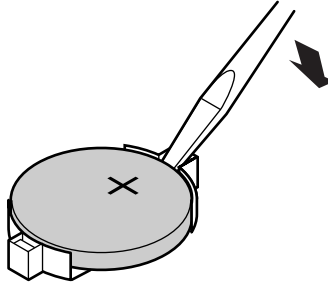
There is a danger of explosion if the battery is incorrectly replaced. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.



To replace the battery:

- 1 Restart the computer and start the BIOS Configuration Manager program by selecting **Enter Setup** when you are prompted to do so.
- 2 Write down the CMOS values from the **Boot Options, Integrated IDE, Integrated Floppy, Peripheral Ports, Power Events, General** and **Security** tabs in the BIOS Configuration Manager so you can reenter them after you replace the battery. For more information about the BIOS Configuration Manager program, see “Using the BIOS Configuration Manager” on page 65.
- 3 Turn off the computer, disconnect the power cord, modem cord (if installed), and all external peripheral devices.
- 4 Open the case by following the instructions on page 17. (See “Preventing static electricity” on page 15.)
- 5 Locate the battery on the system board (see “System board” on page 6). The battery is circular and has the positive pole mark (+) on the top.

- 6 Using a small, flat-bladed screwdriver, carefully remove the battery from its socket on the system board.



- 7 Press the new battery in the socket with the positive pole up. Be sure you have pressed the battery down far enough for it to contact the base of the socket (it should snap into place).
- 8 Close the case, as described in Chapter 3.
- 9 Reconnect peripherals, the modem cord, and the power cord, then turn on the system.
- 10 If the CMOS data is not correct, change the information in the BIOS Configuration Manager 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, restarting the computer after each try.

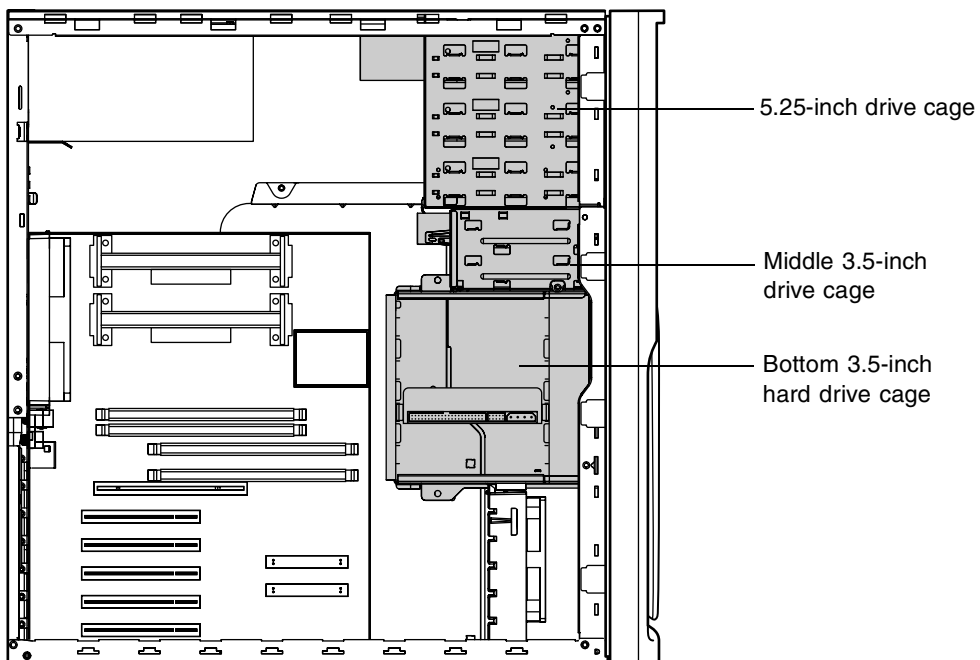
- Turn off the computer and make sure that all exterior cables are attached and secured to the correct connectors.
- Make sure that all power switches are on. If the computer is plugged into a power strip or surge protector, make sure it is turned on also.
- Enter the BIOS Configuration Manager program and compare the settings on the screen with your notes or the system hardware manuals. Correct any discrepancies.

- Turn off the computer, 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 didn't miss any pins. Disconnect and reconnect the cables. Close the case as described in Chapter 3, reconnect the modem and power cords, then turn on the computer.
- Turn off the computer, 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 Chapter 3, reconnect the modem and power cords, then turn on the computer.

Preparing to replace or add a drive

One 3.5-inch diskette drive, one 3.5-inch hard drive, and one CD-ROM drive are included with your computer. You can add additional drives of the following types:

- Half-height 3.5-inch diskette drives - The floppy controller supports up to two diskette drives, one of which is the 3.5-inch diskette drive that comes with your computer.
- Half-height 3.5-inch hard drives - The system board has two IDE connectors that support up to two drives each, for a total of four IDE drives. To use another type of hard drive, such as a SCSI drive, an add-in card must be installed.
- Half-height 3.5-inch tape storage or disk storage devices.
- Half-height 5.25-inch devices.



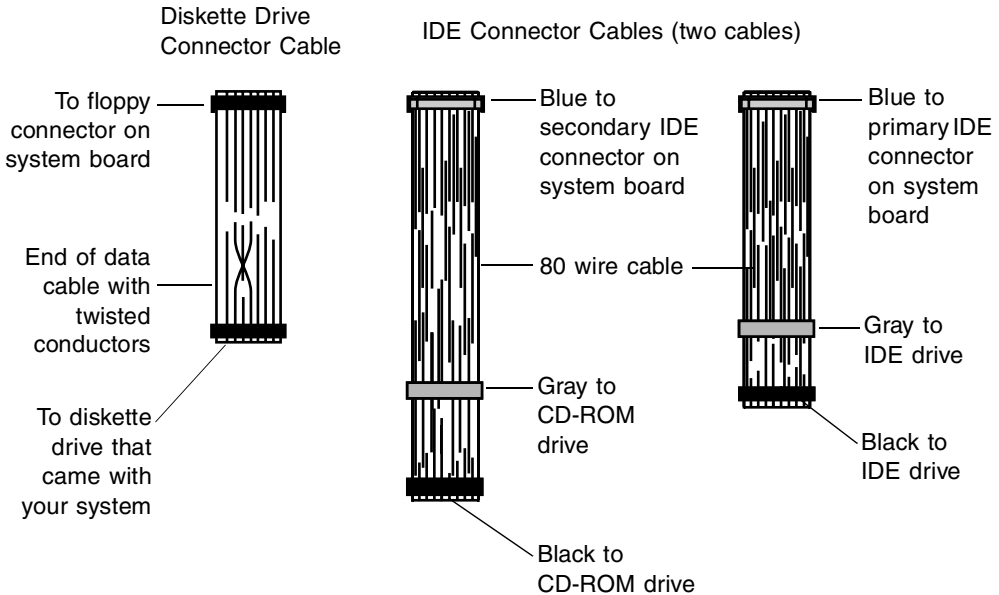
As you prepare to install drives, keep the following in mind:

- To remove and install drives, you need a grounding wrist strap and a Phillips screwdriver.
- If you remove a drive, place it in an antistatic bag or container.
- Before you install a drive, see the drive's 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 add-in card before you install the drive.
- IDE hard drives can be configured as single, master, or slave. IDE CD-ROM drives can be configured as master or slave. Configure the drives by using the drive-select jumpers located on the drives.
- If only one drive is attached to a controller cable, configure the drive as single if it is a hard drive or master if it is a CD-ROM drive. If two drives of any type are attached to the cable, configure one as master and one as slave.
- You may need to configure the drives you install using the BIOS Configuration Manager program. Select **Enter Setup** at start up to access the BIOS Configuration Manager program.

Drive cabling information

Three drive cables are included with your system. The diskette drive connector cable is used to connect diskette drives and other non-IDE devices such as tape backup drives. The two IDE connector cables are used to connect IDE devices such as CD-ROM drives and hard drives.

If you want to add additional drives, you can replace the drive connector cables with ones that contain three connectors, which would let you add a total of four IDE devices or two diskette drives.



3.5-inch diskette or CD/DVD drives

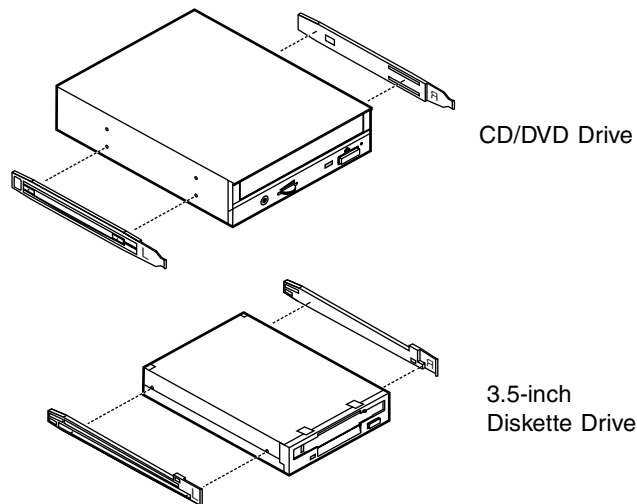
Removing and replacing the 3.5-inch diskette or CD/DVD drive

To replace the drives:

- 1 Turn off the system and disconnect the power cord and modem cord (if installed) and all other external peripheral devices.
- 2 Open the case by following the instructions on page 17. (See “Preventing static electricity” on page 15.)
- 3 Remove the bezel, as described in “To remove the bezel:” on page 19.
- 4 Locate the 3.5-inch diskette or 5.25-inch CD/DVD drive.
- 5 Remove the power and data cables from the back of the drive, noting their location and orientation. (You will reconnect these cables after you install the new drive.)

Both the 3.5-inch diskette drive and 5.25-inch CD/DVD drives are secured in the chassis by sets of removable rails. The rails let the drives slide into and out of the guides in the front bays. Extra rails are included with your system and are clipped to the outsides of the drive cages, inside the case.

- 6** Disengage the rail locking tabs by pressing inward on both front rail extensions, then move the drive slightly out of the bay by pushing on the back of the drive. Pull the drive out of the chassis.
- 7** Remove the rails on both sides of the drive and snap them onto the new drive in the same positions. Make sure the front rail extensions are towards the front of the drive.



Important



The rails on the 3.5-inch drive are different from those on the CD/DVD drive. Make sure you install the correct rails on each drive.

- 8** Align the rails with the appropriate open bay, and slide the drive into the bay until the locking tabs snap into place.
- 9** Connect the power and data cables, making sure the cables match their original position. (See your drive documentation for proper drive jumper settings and cable orientation.)
- 10** Close the case, as described in Chapter 3.
- 11** Reconnect the power and modem cords, then turn on the system.

Installing an additional 3.5-inch device

The second, externally accessible 3.5-inch drive bay can be used to install a 3.5-inch device such as a tape drive, a 100 MB or 120 MB disk storage device, or an additional 3.5-inch diskette drive. Extra sets of rails are included with your system (clipped to the drive cage) and are used for the installation. You will have to purchase an additional cable with three connectors and of sufficient length to connect the existing devices and the new device to the connector on the system board.

To install an additional device in the 3.5-inch drive bay:

- 1 Turn off the system and disconnect the power cord and modem cord (if installed) and all other external peripheral devices.
- 2 Open the case by following the instructions on page 17. (See “Preventing static electricity” on page 15.)
- 3 Remove the bezel, as described in “To remove the bezel:” on page 19.
- 4 Remove the plastic bezel insert covering the open bay by disengaging the retaining tab and pushing the insert out from the back of the bezel. Save the insert so that you can replace it if you remove the added device.
- 5 Remove the metal EMI shield from the front of the drive bay, if installed, by unscrewing the retaining screw on the right side of the shield and swinging it out to disengage it from the chassis..

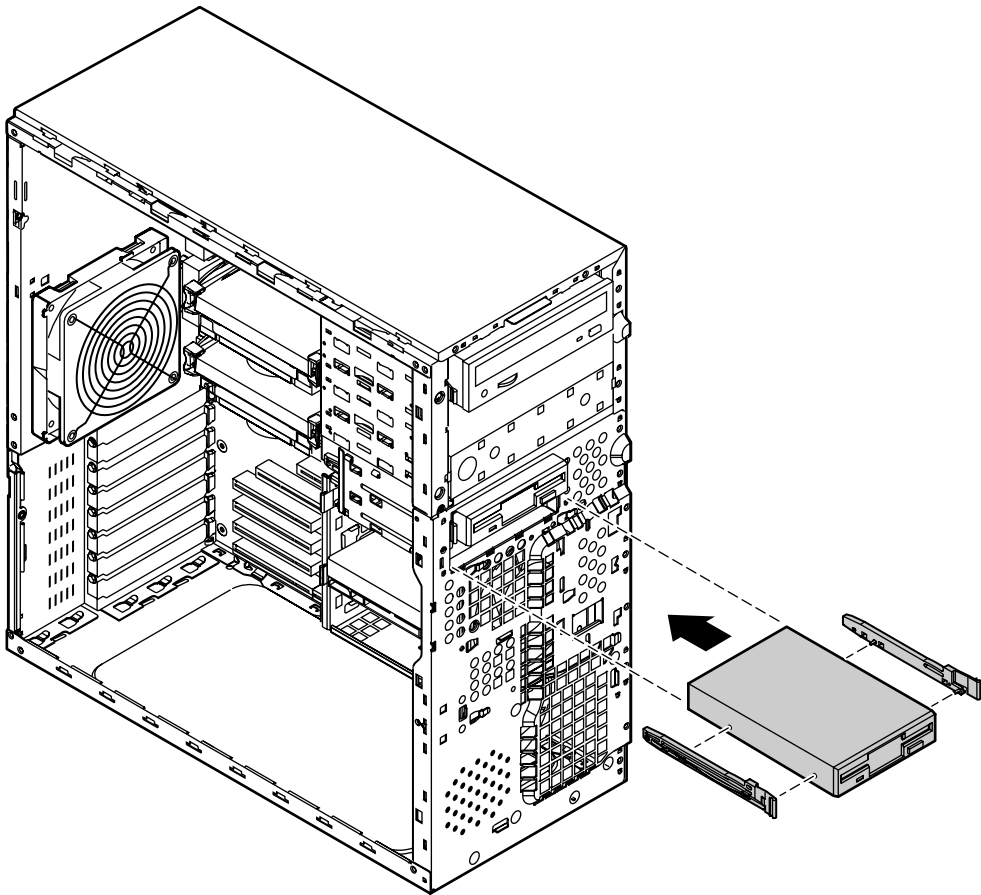
Caution



Your system was designed to adhere to electromagnetic interference requirements and the shield is an integral part of the system. Installing an approved device should continue to maintain those standards. If you remove the device you should reinstall the shield.

- 6 Snap the rails onto the drive, making sure the front rail extensions are towards the front of the device.

- 7 Align the rails with the open bay, and slide the drive into the chassis until the locking tabs snap into place.



- 8 Connect the power and data cables to the back of the drive. (See drive documentation for proper drive jumper settings and cable orientation.)
- 9 Close the case, as described in Chapter 3.
- 10 Reconnect the power and modem cords, then turn on the system.
- 11 Run the configuration software, if required.

Installing an additional 5.25-inch device

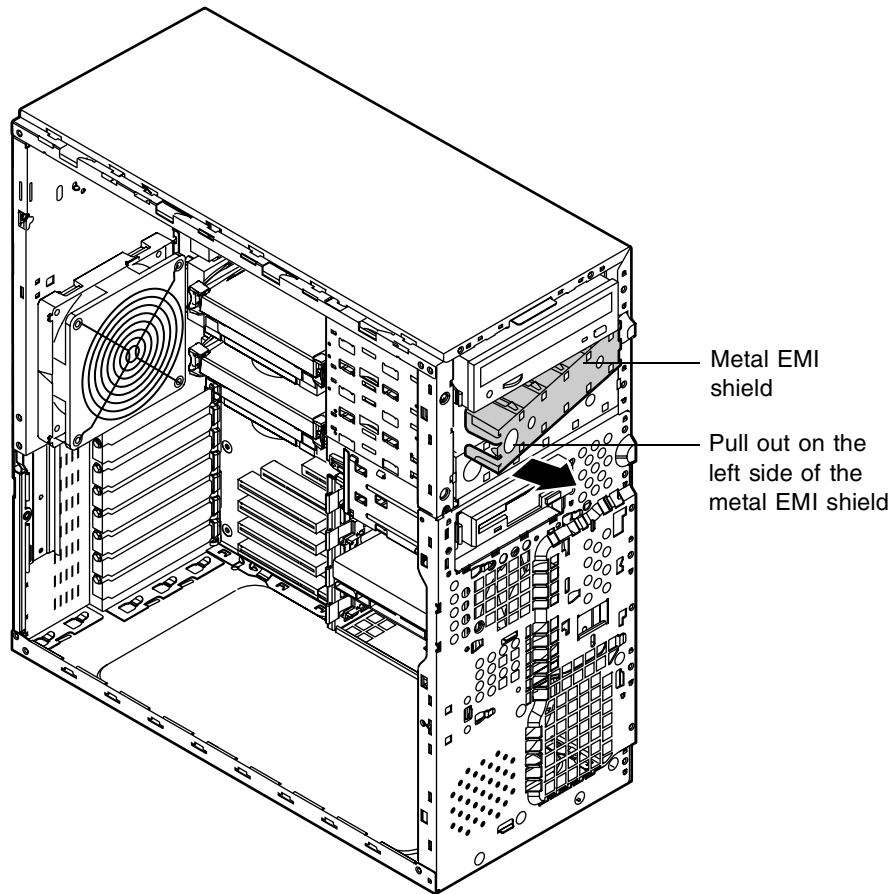
Two additional, externally accessible 5.25-inch drive bays can be used to install additional 5.25-inch devices such as a CD-ROM writer or a tape backup. Extra sets of rails are included with your system (clipped to the drive cage) and are used for the installation. You may need to purchase an additional cable of sufficient length to connect the existing devices and the new device to the connector on the system board.



To install an additional device in the 5.25-inch drive bay:

- 1 Turn off the system and disconnect the power cord and modem cord (if installed) and all other external peripheral devices.
- 2 Open the case by following the instructions on page 17. (See “Preventing static electricity” on page 15.)
- 3 Remove the bezel, as described in “To remove the bezel:” on page 19.
- 4 Remove the plastic bezel insert covering the open bay by disengaging the retaining tab and pushing the insert out from the back of the bezel.

- 5 Remove the metal EMI shield from the front of the drive bay, if installed, by placing a finger in the hole on the left side of the shield and pulling out to disengage it from the chassis.



Caution



Your system was designed to adhere to electromagnetic interference requirements and the shield is an integral part of the system. Installing an approved device should continue to maintain those standards. If you remove the device you should reinstall the shield.

- 6 Snap the rails onto the drive, making sure the front rail extensions are towards the front of the device.

- 7** Align the rails with the bay, and slide the drive into the chassis until the locking tabs snap into place.
- 8** Connect the power and data cables, making sure the cables match their original position. (See your drive documentation for proper drive jumper settings and cable orientation.)
- 9** Close the case, as described in Chapter 3.
- 10** Reconnect the power and modem cords, then turn on the system.
- 11** Run the configuration software, if required.

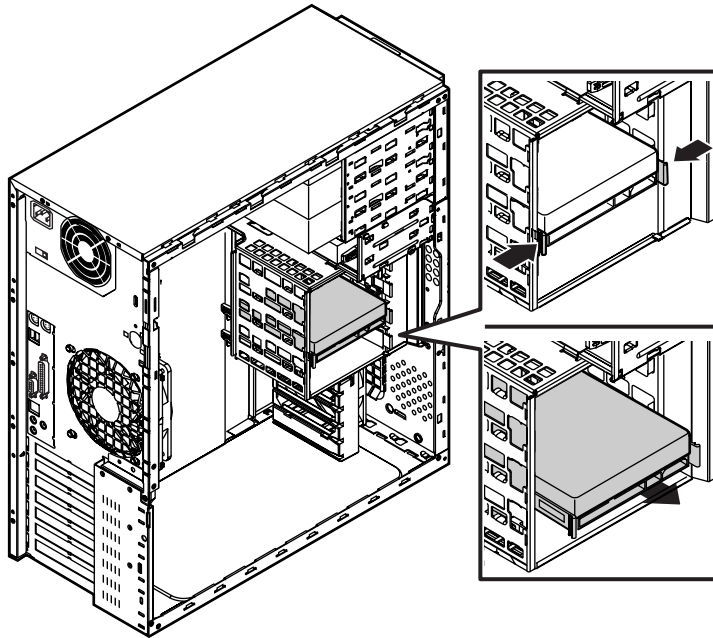
Hard drives

Removing and replacing the hard drive

The hard drive that is included with your system is mounted in the bottom drive cage in the chassis.

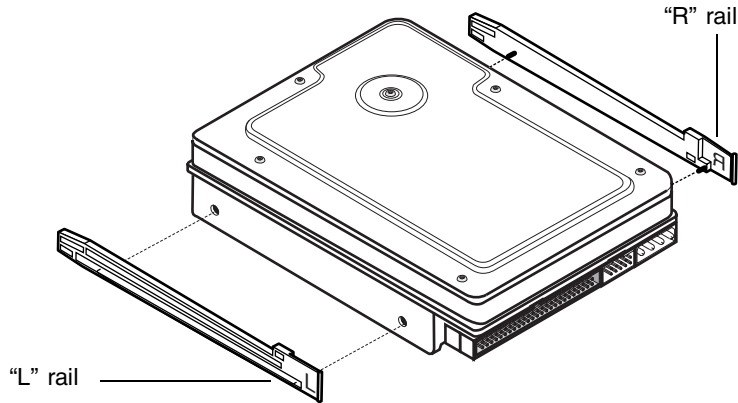
► To replace the hard drive:

- 1 Turn off the system and disconnect the power cord and modem cord, if installed.
- 2 Open the case by following the instructions on page 17. (See “Preventing static electricity” on page 15.)
- 3 Locate the 3.5-inch hard drive in the bottom drive cage.
- 4 Remove the power and data cables from the hard drive.
- 5 Grip the plastic mounting rails firmly with thumb and index finger and pull the drive carefully straight out of the drive cage.



- 6 Remove the small, plastic mounting rails from the hard drive.

- 7 Place the old drive in an antistatic bag or container, then place the new hard drive on a static-free surface with the top up and the connectors facing you.
- 8 Install two small, plastic drive mounting rails (“L” rail on the left and “R” rail on the right) to the new hard drive, making sure the front rail extensions are towards the front of the device. Align the wire retention clips to the mounting holes in the drive and pressing the rails to the sides of the drive.



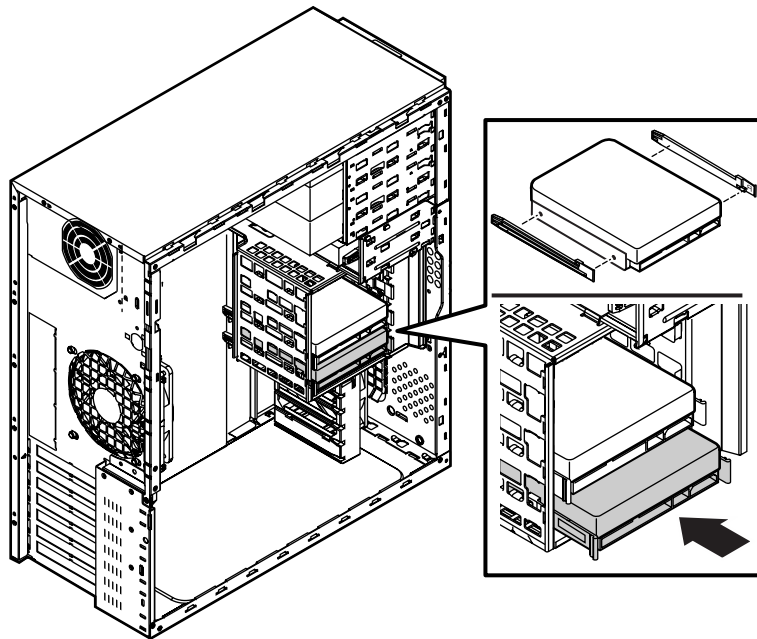
- 9 Align the rails with an open bay in the bottom drive cage, and slide the drive into the cage until the locking tabs snap into place (be sure that the data and power connectors on the drive face outward).
- 10 Connect the power and data cables to the drive. (See drive documentation for proper drive jumper settings and cable orientation.)
- 11 Close the case, as described in Chapter 3.
- 12 Reconnect the power and modem cords, then turn on the system.

Installing an additional hard drive

The system comes equipped with a drive cage that will accept additional internal hard drives. You will have to purchase an IDE cable with three connectors and of sufficient length to connect the existing hard drive and the new drive to the IDE connector on the system board.

To install an additional hard drive:

- 1 Turn off the system and disconnect the power cord and modem cord, if installed.
- 2 Open the case by following the instructions on page 17. (See “Preventing static electricity” on page 15.)
- 3 Place the new hard drive on a static-free surface with the top up and the connectors facing you.
- 4 Install two small, plastic drive mounting rails (“L” rail on the left and “R” rail on the right) to the new hard drive, making sure the front rail extensions are towards the front of the device. Align the wire retention clips to the mounting holes in the drive and pressing the rails to the sides of the drive.
- 5 Align the rails with an open bay in the bottom drive cage, and slide the drive into the chassis until the locking tabs snap into place.



- 6 Connect the data and power cables to the drive. (See drive documentation for proper drive jumper settings and cable orientation.)
- 7 Close the case as described in Chapter 3.
- 8 Reconnect the power and modem cords, then turn on the system.

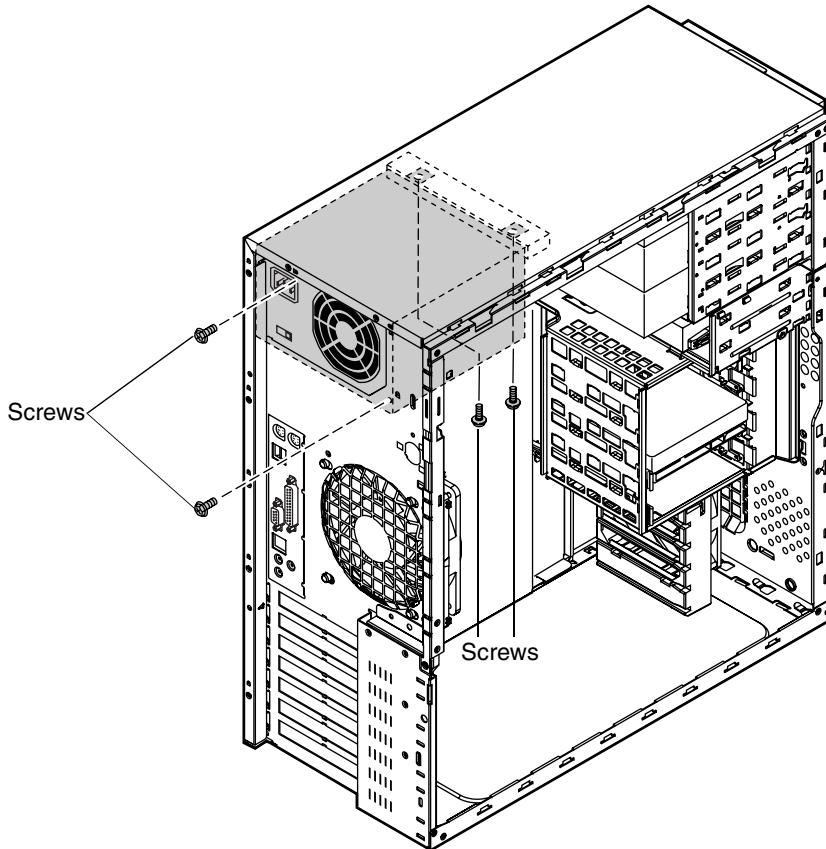
Power supply

Removing and replacing the power supply

To remove the power supply:

- 1** Turn off the system and disconnect the power cord and modem cord, if installed.
- 2** Open the case by following the instructions on page 17. (See “Preventing static electricity” on page 15.)
- 3** Lay the case on its right side, if possible.
- 4** Locate and disconnect the power supply connectors from all internal devices, including the 3.5-inch diskette drive, the CD-ROM drive and all hard drives.
- 5** Locate and disconnect the main power supply connector to the system board, by pressing on the tab to release the connector, then gently pulling the connector from the board.

- 6 Locate and remove the two supporting screws securing the power supply to the top of the chassis.



- 7 While supporting the power supply with one hand, locate and remove the two screws securing the power supply to the rear of the chassis. Carefully lift the power supply out of the chassis.

➡ To install the new power supply:

- 1 Before installing the new power supply, verify that it matches the one you previously removed. The mounting holes should line up correctly, and the specifications and power output connectors should be the same.
- 2 Make sure that the red voltage switch on the back of the new power supply is set to the proper voltage for your area.
- 3 Place the new power supply in the proper position in the chassis and line up the mounting holes with the holes in the chassis.

- 4** Replace the two screws securing the power supply to the back of the chassis, leaving them slightly loose.
- 5** Replace the two supporting screws securing the power supply to the top of the chassis, then tighten all screws.
- 6** Reconnect the power connectors to the system board and to all internal devices.
- 7** Place the case upright, then close the case as described in Chapter 3.
- 8** Reconnect the power and modem cords, then turn on the system.

System fans

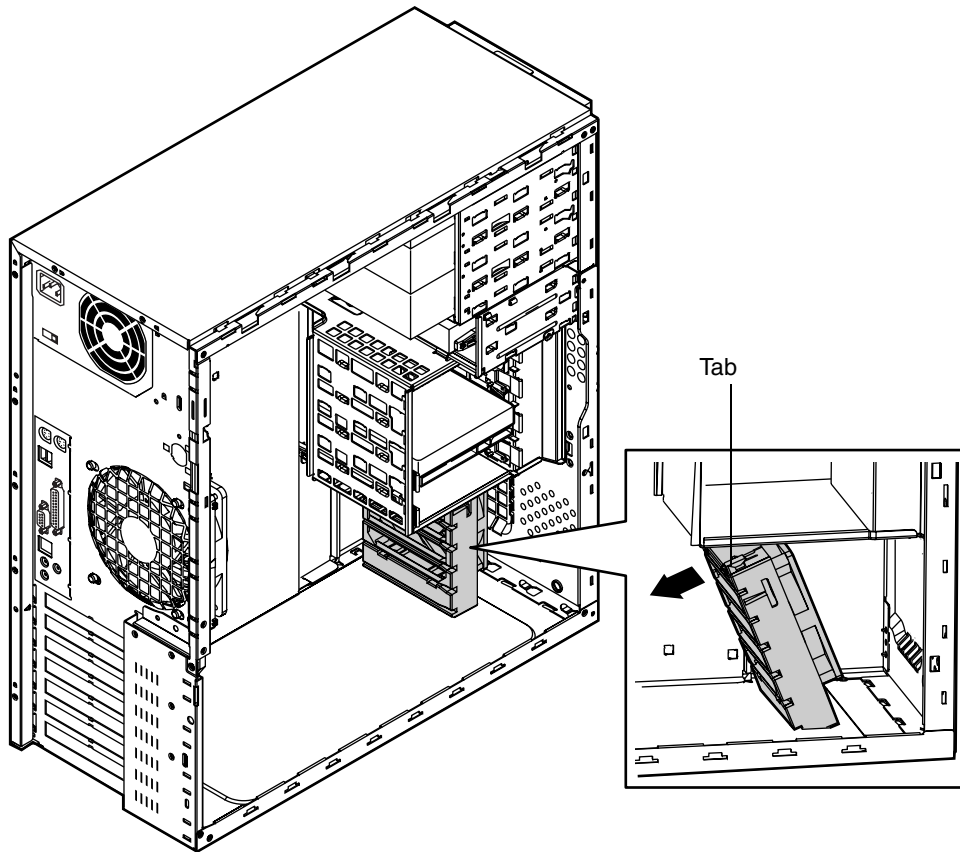
Removing and replacing the system fans

The front system fan is mounted on the front of the bottom drive cage. The rear system fan is mounted on a fan mounting bracket attached to the rear of the system.

To remove the front system fan:

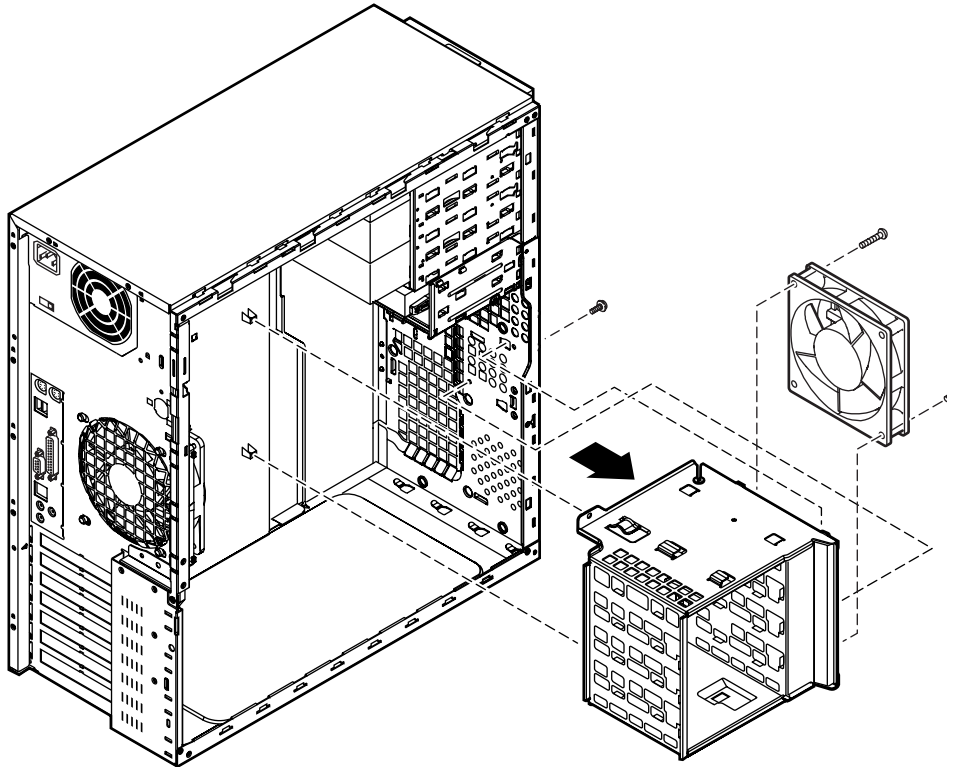
- 1** Turn off the system and disconnect the power cord and modem cord, if installed.
- 2** Open the case by following the instructions on page 17. (See “Preventing static electricity” on page 15.)
- 3** Remove the bezel, as described in “To remove the bezel:” on page 19.
- 4** Disconnect the front fan power cable from the system board.
- 5** Remove the power and data cables from any hard drives mounted in the bottom drive cage.
- 6** Remove the drives from the bottom drive cage and place them in anti-static bags or containers.

- 7 Remove the plastic card guide attached to the bottom drive cage by depressing the locking tabs (from the rear of the guide) and pivoting the top of the guide toward the back of the system. (You may have to remove one or more add-in cards from the system board.)



- 8 Remove the two screws securing the bottom drive cage to the front of the chassis and the two screws securing it to the right side of the chassis.

- 9 Slide the bottom drive cage toward the left side of the chassis, then toward the back, disengaging it from the middle drive cage and the chassis.



- 10 Carefully remove the bottom drive cage from the chassis.
- 11 Remove the four screws securing the front system fan to the bottom drive cage and lift the fan from the cage. Note the routing of the fan power cable.

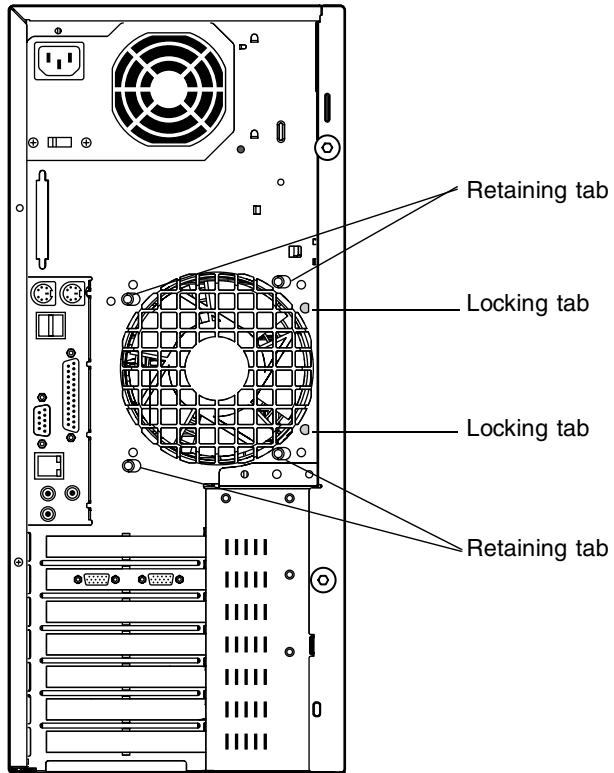
To install the new front system fan:

- 1** Place the new front system fan into the recess in the front of the bottom drive cage. Orient the fan with the label toward the inside of the chassis (toward the system board), and the fan power cable to the right side of the drive cage.
- 2** Secure the fan to the drive cage with the four screws previously removed.
- 3** Place the bottom drive cage into the chassis under the middle drive cage and slide it forward so that the support tabs on top of the bottom cage engage the middle drive cage, then slide it right to align the screw holes with the holes on the front of the chassis.
- 4** Secure drive cage with the four screws previously removed. Make sure to correctly route the fan power cable.
- 5** Replace the plastic card guide and any add-in cards removed previously.
- 6** Replace the hard drives into the bottom drive cage.
- 7** Replace the data and power cables on the hard drives.
- 8** Plug the fan power cable into the appropriate connector on the system board.
- 9** Replace the bezel and close the case as described in Chapter 3.
- 10** Reconnect the power and modem cords, then turn on the system.

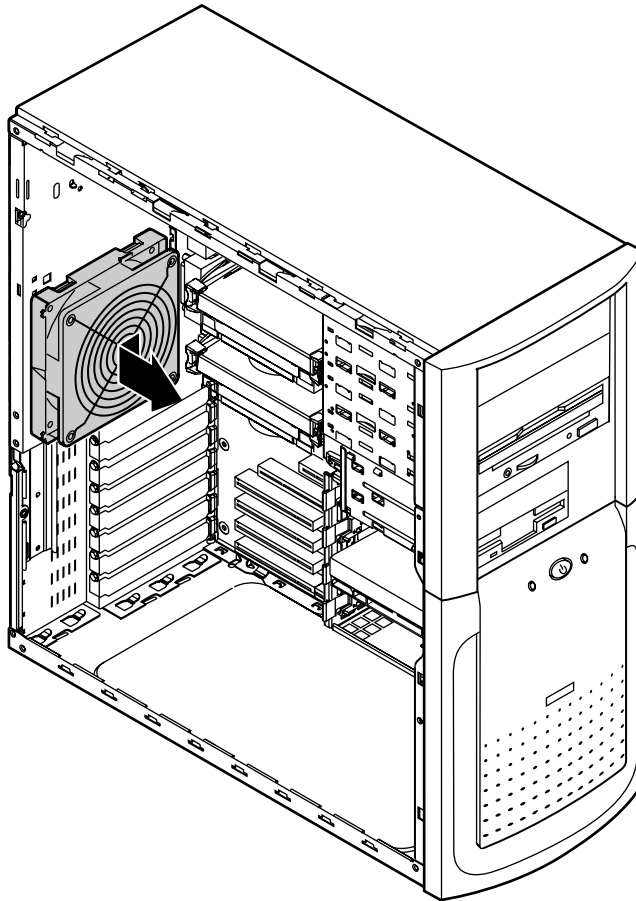
To remove the rear system fan:

- 1** Turn off the system and disconnect the power cord and modem cord, if installed.
- 2** Open the case by following the instructions on page 17. (See “Preventing static electricity” on page 15.)
- 3** Disconnect the rear fan power cable from the system board.

- 4 Depress the two locking tabs on the plastic fan bracket (from the back of the chassis), then move the fan bracket to the left (from the inside) to disengage the four retaining tabs from the back of the chassis.



- 5 Carefully remove the fan and bracket from the chassis.



- 6 Remove the fan from the bracket by carefully prying up on each corner with a flat-bladed screwdriver.
- 7 Remove the fan guard by removing the four screws securing it to the fan.

➡ To install the new rear system fan:

- 1 Install the fan guard on the new fan with the four screws you removed from the old fan.
- 2 Place the new fan into the recess in the rear fan bracket and press it firmly into place. Orient the fan with the fan label toward the rear of the chassis.

- 3** Replace the fan bracket unit into the chassis by engaging the four retaining tabs with the holes in the back of the chassis and sliding the unit to the right until the two locking tabs click into place.
- 4** Plug the fan power cable into the appropriate connector on the system board.
- 5** Close the case as described in Chapter 3.
- 6** Reconnect the power and modem cords, then turn on the system.

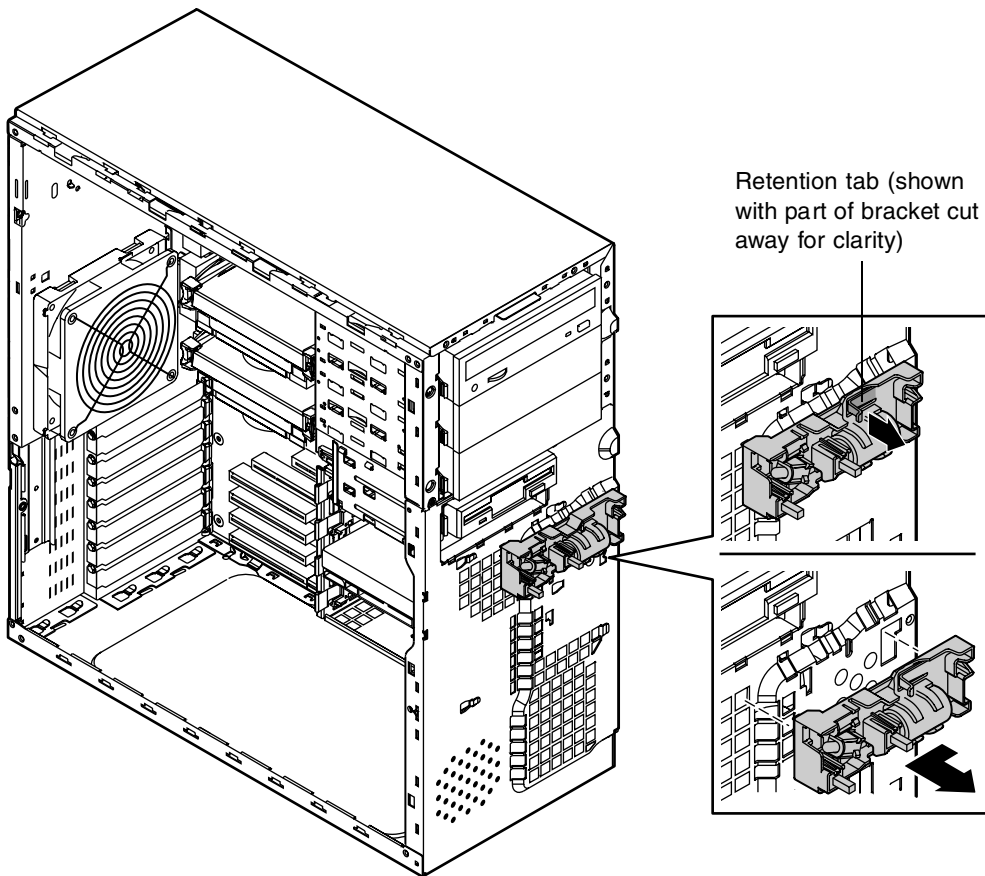
Control panel

Removing and replacing the control panel

▣▶ To remove the control panel:

- 1 Turn off the system and disconnect the power cord and modem cord, if installed.
- 2 Open the case by following the instructions on page 17. (See “Preventing static electricity” on page 15.)
- 3 Remove the bezel, as described in “To remove the bezel:” on page 19.
- 4 After noting the position of the cables, disconnect the front panel connector from J13J2 on the system board.

- 5 Pull out on the retention tab and slide the control panel unit to the left, then pull it away from the front of the chassis, taking care not to damage the control panel cables or connectors as you pull them from the chassis.



▶▶▶ To install the new control panel:

- 1 Feed the control panel connector and cables through the opening in the front of the chassis.
- 2 Noting the position of the cables, plug the control panel connector into J13J2 on the system board.

- 3** Insert the mounting tabs of the control panel unit into the proper slots on the front of the chassis, then slide the unit to the right until it locks into place.
- 4** Replace the bezel and close the case as described in Chapter 3.
- 5** Reconnect the power and modem cords, then turn on the system.

Using the BIOS Configuration Manager

5

About the BIOS Configuration Manager

The computer's BIOS has a built-in configuration manager 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 Configuration Manager by restarting the computer, then selecting **Enter Setup** with your mouse when the Gateway Logo screen appears. Upon entering BIOS Configuration Manager, the screen on the following page is initially displayed.

Important



This BIOS will not display the usual system messages on the screen when the system is first started. If you require this information, you must enter the BIOS Configuration Manager to obtain it.

BIOS Configuration Manager					
Help	System Processors	System Memory	Boot Options	System Even	<>
<p>BIOS Configuration Manager General Help</p> <p>Copyright (c) 1999 Intel Corporation Copyright (c) 1985-1998 American Megatrends Inc.</p> <p>Tab Navigation: Use the left mouse button or Left/Right Arrow keys to select a tab. Use the scroll buttons (upper right corner) to display additional tabs.</p> <p>Field Navigation: Use the left mouse button or Tab and Shift + Tab keys to select a field.</p> <p>Changing Settings: Use the left mouse button to change field values or use the Space bar for check boxes and Up/Down Arrow keys for list boxes.</p> <p>Save/Exit: Select the appropriate button on the Save/Exit tab. The Esc key will activate the Save/Exit tab.</p> <p>Tab Specific Help: For tab-specific Help press F1 or the right mouse button.</p>					

This BIOS Configuration Manager Help tab provides information on how to navigate through the various tabs, as well as how to change settings and exit the BIOS setup.

The BIOS Configuration Manager also has the following tabs available at the top of the main screen. Each tab provides specific information or provides access to specific options, as described in the following list:

- **Help** provides information on using the Configuration Manager.
- **System Processors** provides information on the processor with which your system is configured, as well as the host bus speed.
- **System Memory** provides information on your system's current memory configuration.

- **Boot Options** gives you access to information and settings for boot features and boot sequences.
- **System Event Log** provides information on event log capability and validity, as well as event log options. Allows the user to view the event log.
- **Integrated IDE** lets you to enable or disable the integrated IDE controller. Also lets you enable, disable or configure, primary and secondary drives. Lets you change the spin delay.
- **Integrated Floppy** lets you enable or disable the integrated diskette drive controller, provides a selection of drive size options, and lets you write-protect the drive.
- **System BIOS** provides information on the BIOS and SMBIOS versions.
- **Peripheral Ports** lists all available peripheral ports and configuration options for each.
- **Power Events** lets you enable or disable all power-on options.
- **Time/Date** shows current time and date and allows you to change both.
- **General** lets you configure general platform options.
- **Security** gives you access to settings related to system access passwords.
- **Save/Exit** gives you access to options for exiting the BIOS Configuration Manager.

Updating the BIOS

Flash memory simplifies distributing BIOS upgrades. If you need a new version of the BIOS, you can download the BIOS update from technical support on the Gateway Web site 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

➡ To create a bootable diskette:

- 1 Insert a blank, 3½-inch diskette into drive A:.
- 2 Insert the *System Restoration CD* into the CD drive, go to the **utilities** tab, then select **Boot Disk** to format the diskette and make it bootable.

➡ To note the current BIOS settings:

- 1 Remove the bootable diskette and restart your computer.
- 2 Enter the BIOS Configuration Manager by selecting **Enter Setup** with your mouse when the Gateway Logo screen appears.
- 3 Write down the settings for each of the fields. (At the end of the BIOS update process, you will reset the fields back to the values you recorded.)
- 4 Exit the BIOS Configuration Manager.

➡ To create the BIOS update diskette:

- 1 Go to the Gateway Web site (www.gateway.com/product/drivers/BIOS/pentium.shtml).
- 2 Download the appropriate file (you will need to know your BIOS version number) to your hard drive.
- 3 Double-click on the file to unzip it, then copy **autoexec.bat**, **newflash.exe**, and **wpgbios.bin** to the diskette.

To update the BIOS:

- 1** Place the bootable diskette containing the BIOS files into drive A: then restart the computer.
- 2** The BIOS update program will run.
- 3** The BIOS update program will let you know what to expect when you attempt to update the BIOS and will give you a choice to update or not. Select **Y** to update the BIOS.
- 4** The system will automatically reboot and find the wpgbios.bin file on the diskette, then it will load the file to update the BIOS.
- 5** When the process is completed the system will beep. If the BIOS update was successful, you will hear three groups of three beeps (3-3-3). If you hear anything else, the BIOS update was not successful and the old version of the BIOS is still in place. If this happens, try the update procedure again. If the update is still unsuccessful, call technical support.
- 6** Once the BIOS files have been loaded, remove the diskette from drive A:, then restart the computer.
- 7** As the computer starts up, enter the BIOS Configuration Manager by selecting **Enter Setup** with your mouse when the Gateway Logo screen appears.
- 8** Go to the **BIOS Version** tab and make sure that the number of the BIOS version reported on the screen is the number of the new BIOS you downloaded from the Gateway Web site.

To restore the BIOS settings:

- 1** Enter the BIOS Configuration Manager by restarting the computer, then selecting **Enter Setup** with your mouse when the Gateway Logo screen appears.
- 2** Once in BIOS Configuration Manager, select the **Save/Exit** tab and click on **Load Factory Settings**.
- 3** 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.
- 4** Exit the BIOS Configuration Manager and restart the computer.




Setting the system board jumpers

The J1F2 configuration jumper on the system board lets you clear passwords and recover the BIOS. (See the figure on page 6 for the location of the jumper.) The table below shows the settings required to perform those tasks. Make sure you turn off the computer and unplug the power cord before moving the jumper.

Caution



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

J1F2 Mode	Jumper Setting	Action When Set
Normal	 Pins 1-2	Normal operation
Configure	 Pins 2-3	Adds a Maintenance menu to BIOS Setup utility with options to clear passwords
Recovery	 No jumper	Causes computer to attempt BIOS update or recovery from diskette

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 J1F2 jumper.

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



To recover the BIOS:

- 1 Turn off the system and disconnect the power cord, modem cord (if installed), and all external peripheral devices.
- 2 Open the case by following the instructions on page 17. (See "Preventing static electricity" on page 15.)

- 3 Remove the jumper from the J1F2 (See “System board” on page 6 for location) and set it aside. You will use it in a later step.
- 4 Close the case (see “Closing the case” on page 20 for instructions), then reconnect the power cord.
- 5 Place the previously created bootable diskette containing the BIOS files into drive A:, then turn on the computer. The recovery process may take a few minutes.
- 6 When you hear three groups of three beeps (3-3-3), the BIOS has been successfully recovered. Remove the diskette from drive A:, turn off the computer, and disconnect the power cord.

If you do not hear three groups of three beeps (3-3-3), the BIOS recovery was not successful. See the troubleshooting section at the end of this procedure for further information.

- 7 Open the case again by following the instructions on page 17. (See “Preventing static electricity” on page 15.)
- 8 Place the jumper back on pins 1-2 on the J1F2 jumper.
- 9 Close the case, reconnect the cords, then turn on the computer.
- 10 Enter the BIOS Configuration Manager by selecting **Enter Setup** with your mouse when the Gateway Logo screen appears.
- 11 Once in BIOS Configuration Manager, select the **Save/Exit** tab and click on **Load Factory Settings**.
- 12 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.

Troubleshooting: If the BIOS recovery was unsuccessful the computer beeps continuously, beeps other than three groups of three beeps (3-3-3), or does not beep at all. If the computer beeps continuously, make sure all the BIOS files you downloaded are on your diskette. If the computer does not beep at all and the diskette drive light stays on, make sure your BIOS update diskette is a bootable diskette. You will need another system to verify this.

Managing Your System

6

Protecting against power source problems

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

Surge suppressors

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

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

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 your system.

- Check the energy absorption, or *dissipation*, rating. The higher the energy absorption rating, the better the protection for your system.
- Check for line-conditioner capabilities. A line conditioner smooths out some of the normal line noise (small voltage fluctuations) of an electrical supply.

Line conditioners

A line conditioner protects your system from the small daily fluctuations in voltage from an electrical supply. Most systems can handle this variation, or *line noise*, without problems. However, some electrical sources include more line noise than normal. Line noise can also be a problem if your system 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 computer from data loss during a total power failure. A UPS uses a battery to keep your computer running during a power failure and lets you save your work and shut down your computer. You cannot run your computer for an extended period of time while using the UPS.

Maintain and manage your hard drive

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

Hard drive maintenance utility

By regularly using Check Disk, you can help maintain the performance of your hard drive.

Using Check Disk in Windows NT

Check Disk checks the hard drive for bad sectors or lost allocation units and lets you fix them. 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.

Use Check Disk from once a week to once a month, depending on how often you use your system. 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 Select **Scan for and attempt recovery of bad sectors** to scan the entire hard drive.
- 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.

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 on 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 (temp) files. You can safely delete all but the most recent temp files.



To delete temp files:

- 1 Open Windows Explorer, and 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 temp 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 today's 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 computer. 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 file 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** from the pop-up menu.
- 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. 5% is a good initial setting.
- 5** Click **OK**.

System integrity

It's important to protect your system against electrical problems and physical hazards such as heat, moisture, and dust. It's also important to protect it against less obvious hazards such as viruses and hardware overloads.

Protecting your computer from 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 computer from viruses by:

- Using the Norton[®] AntiVirus to check files and programs that are on diskettes, attached to e-mail messages, or downloaded from the Internet. After you run Norton AntiVirus you can back up your files to diskettes, a separate hard drive, or a high-capacity storage drive.
- Updating Norton AntiVirus periodically to keep up with new viruses.
- 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 Norton AntiVirus.
- 2 Turn off your computer and leave it off for at least 30 seconds.
- 3 Turn on the computer and rescan for the virus.

Monitoring system health with LANDesk

Intel LANDesk® Client Manager is a desktop management interface (DMI) that lets you monitor the health of your system components. Through LANDesk, you can view software and hardware properties. You can also set LANDesk to notify you when system resources reach certain levels.

To install LANDesk Client Manager:

- 1 Double-click the **Setup** icon in the c:\dmi folder on your hard drive. The InstallShield® wizard starts.
- 2 Follow the on-screen instructions.
- 3 If you are prompted for a password during the installation process, type **lowtco**.

LANDesk Client Manager comes with complete documentation and online help. Refer to these sources for more information on using the software.

System Recovery

In the event that your hard drive is damaged, or if your BIOS or system files get corrupted, it's important to take advanced precautions that will allow you to restart your system and recover damaged files.

Creating a startup diskette

If your computer hard drive is damaged, you may not be able to start the computer from the hard drive. A startup diskette is a bootable diskette that lets you start the computer 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 may create one later by running the Windows NT upgrade/installation program. This is done 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 System Restoration CD

The *System Restoration CD* included with your system can be used to:

- Install hardware drivers for Windows NT
- Reinstall selected software applications, such as LANDesk Client Manager

Instructions for each operating system are provided with the *System Restoration CD*.

Cleaning Your System

7

Cleaning the mouse

If the mouse pointer on the screen moves erratically when you move the mouse, the inside of the mouse may be dirty.

To clean the mouse:

- 1 Turn off the computer, then disconnect the mouse cable from the mouse port.
- 2 Turn your mouse upside down and remove the roller ball cover.
- 3 Cup your hand under the mouse and turn your mouse right-side up. The roller ball should drop into your hand. If it does not, gently shake the mouse until the ball drops out of the socket.
- 4 Use adhesive tape to pick up any dust or lint on the surface of the ball and wipe away dirt or lint inside the ball socket. You can also blow into the socket to remove dirt and lint. Use a cotton swab dipped in isopropyl alcohol to clean the rollers inside the socket.
- 5 Let surfaces dry completely.
- 6 Return the ball to the socket and replace the cover.

Cleaning the keyboard

You should clean the keyboard occasionally to free it of dust and lint particles trapped under the keys. The easiest way to do this is to blow trapped dirt from under the keys using an aerosol can of air with a narrow, straw-like extension.

If you spill liquid on the keyboard, turn off the computer, then disconnect it. Turn the keyboard upside down to let the liquid drain. Let the keyboard dry for a few days before trying to use it again. If the keyboard does not work after it is dry, you may need a new one.

Cleaning the monitor screen

Use a soft cloth and window cleaner to clean the monitor screen. Squirt a little cleaner on the cloth (never directly on the screen), then wipe the screen with the cloth.

Cleaning the computer and monitor cases

Warning



When you clean the system, turn off the computer, monitor, and peripherals, then unplug the power cord and modem cord (if installed). Be careful not to drip liquid into the computer, monitor, and peripherals when cleaning the system.

Always turn off the computer and other peripherals before cleaning any components.

Use a damp, lint-free cloth to clean the computer case, monitor case, keyboard, speakers, and other parts of your system. Avoid abrasive or solvent cleaners because they can damage the finish on your components.

Your computer is cooled by air drawn in through the vents on the chassis and blown out through the power supply exhaust fan. Keep vents on the front and back of the chassis free of dust. With the computer turned off and unplugged, brush the dust away from the vents with a slightly damp cloth. Be careful not to drip any water into the vents. Do not attempt to clean dust from the inside the computer.

Troubleshooting

8

Introduction

If your system does not operate correctly, re-read the instructions for the procedures you have performed. If an error occurs within an application, consult the documentation supplied with the software. This section identifies solutions to some possible problems.

Troubleshooting checklist

Before turning on the system, 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, setting the circuit breaker.
- The voltage selection switch on the system power supply reflects the proper voltage.

Verifying your configuration

If your system is not operating correctly, the BIOS may contain an invalid configuration parameter. Enter the BIOS Setup utility and check your configuration settings.

Troubleshooting guidelines

As you troubleshoot your system, keep the following guidelines in mind:

- Never remove the chassis cover while the computer is turned on.
- Do not attempt to open the monitor; it is extremely dangerous. Even if the monitor's power is disconnected, stored energy within the monitor's components can be dangerous.
- If a peripheral, such as the keyboard, mouse, drive, or printer does not appear to work, make sure that all connections are secure.
- If an error message appears 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 system for maintenance.
- If you feel you are qualified to maintain the system yourself, make sure you are properly grounded before opening the system chassis. See Chapter 3, Case Access, for more information on preventing electrostatic damage to the system.

CD/DVD problems

An audio CD produces no sound

Probable Cause	Solution
The CD/DVD is loaded incorrectly.	Make sure that the label is facing upward, then try again.
The speakers are not connected.	Make sure that the speaker cables are connected properly and securely.
The speaker volume is turned down.	Check the volume control.
The speakers may be muted via the Multimedia volume control.	From the Accessories menu (Start Programs Accessories), select Multimedia , then select Volume Control . Make sure that the volume is turned up.
The speakers may be faulty.	Connect a set of headphones to the line-out jack on the rear of the computer to test the output. If they work, replace the speakers.
The sound card may not be installed correctly.	Open the system, then reseal the sound card. Make sure that the cables are connected properly.
The CD/DVD drive audio cable may be installed incorrectly.	Open the system and make sure that the cables are connected properly.

Important



Some systems do not have sound cards because sound capabilities are built into the system board.

The CD/DVD drive is not recognized by the system

Probable Cause	Solution
The CD/DVD is not intended for PC use.	Make sure that the disc is PC compatible.
The CD/DVD is loaded incorrectly.	Make sure that the label is facing upward, then try again.
The CD/DVD is scratched or dirty.	Try cleaning the disc with a lint-free cloth. Check the disk for scratches.

Probable Cause	Solution
The CD/DVD drive needs to be added as new hardware.	From the Control Panel window (Start Settings Control Panel), double-click Add New Hardware . Follow the directions for adding the drive. If you are not experienced with this procedure, call Gateway Client Care.
The secondary IDE device may be disabled.	Restart your computer, then press F1 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 .
The CD/DVD drive cables are not installed correctly.	Open the system, then check all cables between the IDE controller and the CD/DVD drive.
The CD/DVD drive may be defective.	Replace the CD/DVD drive.

Hard drive problems

The SCSI drive is not recognized by the system

Probable Cause	Solution
The SCSI bus is not properly terminated.	Make sure that the last device on the SCSI chain 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 system.
The cables are not connected correctly.	Open the system, then check the cable connections.

The IDE drive is not recognized by the system

Probable Cause	Solution
The primary IDE device may be configured incorrectly.	Restart your computer, then press F1 to enter the BIOS Setup utility program. From the Advanced IDE Configuration menu, set the IDE Controller to Both and the Primary IDE Master to Auto .
The drive may not be configured properly.	Consult the hard drive user's guide for instructions on how to configure the drive.
The drive cables are not connected properly.	Open the system, then check all cables connected to the controller card.
The drive controller is not seated properly.	Open the system, then reseat the drive controller.

Important



Some systems do not have IDE controller cards because the IDE controller is built into the system board.

Memory/Processor problems

Memory errors were detected during system start up

Probable Cause	Solution
Memory was added or removed, and the new configuration was not saved in BIOS Setup utility.	Enter the BIOS Setup utility and save the new memory configuration.
The memory was installed incorrectly.	Check the memory for proper seating and orientation.
A memory chip is faulty.	Replace the card on which the faulty chip resides. Third-party diagnostic programs can help determine which chip or memory segment is failing.

A new processor is not recognized by the system

Probable Cause	Solution
The processor was installed incorrectly.	Check the installation. The processor should be recognized automatically if it was installed correctly.
The processor speed was not set correctly in the BIOS Setup utility configuration mode.	If your system BIOS lets you to select the processor speed, make sure that you have selected the speed properly.
The processor was not seated correctly in the socket.	Make sure that the processor is fully seated in its socket.

Modem problems

The modem is not recognized by the system

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 live and plugged into the appropriate port on the modem (line port).
The phone jack is shared by another modem or telephone.	If the modem shares the jack with another device, make sure that the other device does not have the port open (for instance, someone is on the phone, or another modem is in use).
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

A SCSI device is not recognized by the system

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 directions for adding the device. If you are not experienced with this procedure, call technical support.
The SCSI ID may be invalid.	Assign an available SCSI ID to the device.
The SCSI chain is not terminated.	Make certain the last device on the SCSI chain is terminated.
The device cables are not installed correctly.	Open the system, then check all cables between the controller and the device.

The diskette drive is not recognized by the system

Probable Cause	Solution
The diskette drive may be configured incorrectly.	Restart your computer, then press F1 to enter the BIOS Setup utility program. From the Boot Removable Devices menu, make sure that the diskette drive parameters are set correctly.
The drive cables are not connected properly.	Open the system, then check all cables connected to the controller card.
The drive controller is not seated properly.	Open the system, then reseat the drive controller.

Important



Some systems 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.
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 ScanDisk 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 system.
The cable to the drive is not connected properly.	Open the system, then check the cable between the diskette drive and its controller. Make sure that the pins are not bent or misaligned.

An adapter card is not recognized by the system

Probable Cause	Solution
The interrupt and/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 system.
The card has not been configured through the software.	Configure the card with the appropriate software.
The card was not installed correctly.	Reseat the card, then make sure that its jumpers are configured appropriately.

Printer problems

The printer will not turn on

Probable Cause	Solution
The printer is not turned on.	Make sure that the printer's power switch is depressed or set to the On position. If power is applied to the printer, the green power LED should be illuminated.
The printer is not plugged in.	Check the power cable. Make sure that it 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 connected to the system.	Check the data cable between the printer and the system. Make sure that it is connected to the proper port. Check the connector and cable for bent or broken pins.
The printer is not designated as the default printer.	If the printer to which you are trying to print is not the default printer, make sure that you have selected it through the application's printer setup function.
The printer has not been added to the system.	From the Printers window (Start Settings Printers), double-click Add Printer . Follow the directions for adding the new printer.

The printer prints garbled text

Probable Cause	Solution
The wrong driver is being used for the selected printer.	From the Printers window (Start Settings Printers), select the printer. From the File menu, click Properties . Make sure that the printer is using the right 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 AC power source.
Voltage selection switch not set correctly.	Make sure that the voltage selection switch is set to the correct power source.

The system is non-responsive

Probable Cause	Solution
An error occurs during an application or your system may be out of memory.	Restart your computer 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 system off. Turn the system back on, then follow the on-screen instructions.

The keyboard does not work

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

The mouse does not work

Probable Cause	Solution
The mouse is not plugged in or connected properly.	Check the cable. Make sure that it is plugged in correctly.
The mouse driver did not load when the system started.	Load the appropriate mouse driver manually or contact technical support.
The mouse is defective.	Try a mouse you know is working.

Video problems

The system is running but there is no display

Probable Cause	Solution
The monitor is not turned on.	Make sure that the monitor is plugged in and turned on. If power is applied to the monitor, the green power LED should illuminate.
The monitor's data cable is not connected.	Make sure that the monitor's data cable is connected to the video controller on the back of the system.
The connector or cable is damaged.	Check the connector and cable for bent or damaged pins.
The monitor's 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 computer.
The video card is not seated correctly.	Open the system and reseat the video card.
The video card is not compatible with the system.	Check the documentation or technical support to make sure that the video card is compatible with the system. If not, obtain a compatible video card.

Important



Your system board may have a built-in video adapter, so there may not be a video adapter to remove and replace.

The text on the display is dim or difficult to read

Probable Cause	Solution
The monitor's 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 window.
The monitor may be old.	Replace the monitor.

The color monitor displays everything in black and white

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

The displayed characters are garbled

Probable Cause	Solution
The video cable is damaged.	Check the connector and cable for bent or damaged pins.
The display setup is incorrect.	From 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's 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 computer and monitor and leave them off for at least a half hour, then restart the system.

Error messages

This section lists common error messages that may appear on your monitor. 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. Enter the BIOS Setup utility, then verify the parameter values.
CD-ROM is not recognized.	See "The CD/DVD drive is not recognized by the system" on page 87 for a possible solution.
Data error.	Run ScanDisk on the reported disk.
Decreasing available memory.	Your BIOS configuration is incorrect. Enter the BIOS Setup utility, then verify the parameter values.
Diskette drive is not recognized.	See "The diskette drive is not recognized by the system" on page 92 for a possible solution.
Diskette drive 0 seek to track 0 failed.	Enter the BIOS Setup utility, then verify the diskette drive parameters. Check the diskette drive cables. Make sure that Pin 1 on the cable aligns with Pin 1 on the connector.

Error Message	Solutions
Diskette drive reset failed.	Enter the BIOS Setup utility, then verify the diskette drive parameters. 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 configuration utility (if applicable) to make sure that your drive or controller configuration. Press F1 to try to restart the computer.
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 disk cable is properly connected. Open the BIOS Setup utility program, 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 computer. Try running Fdisk and DOS Format. For more information, refer to your DOS documentation.
Insert bootable media device.	See "The IDE drive is not recognized by the system" on page 89 for a possible solution. See "The SCSI drive is not recognized by the system" on page 89 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...	Enter the BIOS Setup utility, then verify the parameter values.

Error Message	Solutions
Invalid password.	<p>Enter your password again, making certain to enter it correctly.</p> <p>If you do not know the password, you may need to reinstall the software you are trying to access.</p> <p>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.</p>
Keyboard clock line failure.	<p>Try a working keyboard.</p> <p>Make sure that the keyboard is compatible with the system. You may have to change the switch setting to AT.</p>
Keyboard controller failure.	<p>Try a working keyboard.</p> <p>Make sure that the keyboard is compatible with the system. You may have to change the switch setting to AT.</p>
Keyboard controller failure.	<p>Try a working keyboard.</p> <p>Make sure that the keyboard is compatible with the system. You may have to change the switch setting to AT.</p>
Keyboard not detected.	<p>See “The keyboard does not work” on page 95 for possible solution.</p> <p>Turn off the system, then check the keyboard cable.</p>
Keyboard stuck key failure.	<p>Remove any objects that may be resting on the keyboard, then restart the system.</p> <p>Check for sticking keys. Clean the keyboard if necessary.</p>
Memory errors were detected while the system powered up.	<p>See “Memory errors were detected during system start up” on page 90 for a possible solution.</p>
Memory size error.	<p>Enter the BIOS Setup utility and save the memory configuration.</p>
Non-system disk or disk error.	<p>Eject the diskette, then press ENTER.</p> <p>If the diskette is bootable, check it for errors.</p>
Not enough memory.	<p>Close all programs that are not currently in use.</p>

Error Message	Solutions
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 .
Time and date not set.	Enter the BIOS Setup utility to set the system's date and time.
Write protect error.	Move the write-protection tab over the hole on the back of the diskette.

Safety, Regulatory, and Notices

9

Important safety Information

Your Gateway system 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 system.

Setting up your system

- Read and follow all instructions marked on the product and in the documentation before you operate your system. 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 system on a stable work surface.
- The product should only be operated from the type of power source indicated on the rating label.
- If your computer 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 computer 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 system for ventilation when you set up your work area. Never insert objects of any kind into the computer 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 system, 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 system 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 system. 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 computer is turned off, a small amount of electrical current still flows through the computer. Always unplug all power cables and modem cables from the wall outlets before cleaning the system.
- Unplug the system from the wall outlet and refer servicing to qualified personnel if:
 - The power cord or plug is damaged.
 - Liquid has been spilled into the system.
 - The system does not operate properly when the operating instructions are followed.
 - The system 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.

Caution



To reduce the risk of fire, use only No. 26 AWG or larger telecommunications line cord.

Regulatory compliance statements

American users

FCC Part 15

This device has been tested and found to comply with the limits for a Class B 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.

Compliance Accessories: 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.

Caution



Changes or modifications not expressly approved by Gateway could void the FCC Compliance and negate your authority to operate the product.

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 RENs 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 B 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 B 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 make sure 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 make sure 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 do not attempt to make electrical ground connections by yourself. 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 50081-1:1992 according to
 - EN 55022:1994 Class B
 - EN 61000-3-2:1995 or EN 60555-2:1987
 - EN 61000-3-3:1995 or EN 60555-3:1987
 - EN50082-1:1992 according to
 - EN 61000-4-2:1995 or IEC 801-2:1984
 - ENV 61000-4-3:1996 or IEC 801-3:1984
 - EN 61000-4-4:1995 or IEC 801-4:1988
- 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 **CE **** 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.

Warning



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 setup.

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 Gateway customer support.

Japanese users

VCCI statement

This equipment is in the Class B 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 areas. When used near a radio or TV receiver, it may become the cause of radio interference. Read instructions for correct handling.

電波障害について

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取扱説明書に従って正しい取り扱いをして下さい。

Australia and New Zealand users

EMI statement

This device has been tested and found to comply with the limits for a Class B 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 make sure 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 make sure 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 make sure 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/NFPA 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.

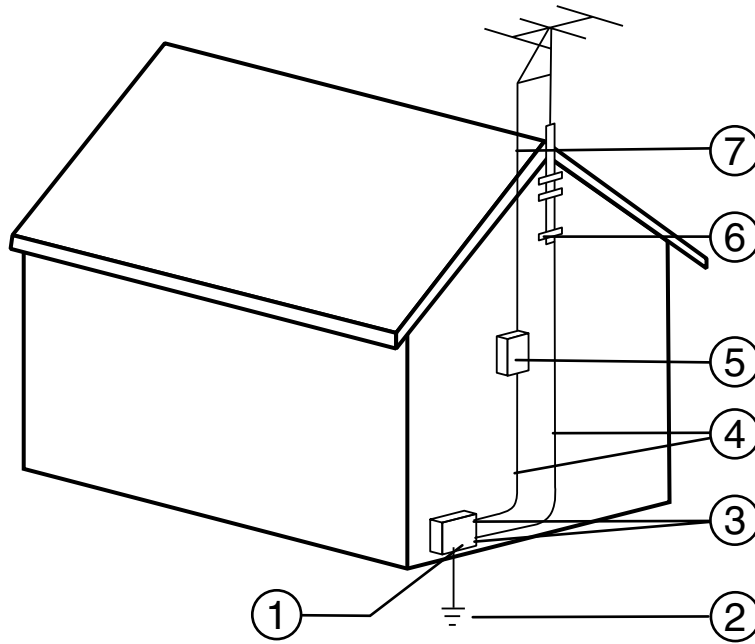
Power lines

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

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Appendix

System specifications

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

Case size	Width: 8.25-inch Depth: 18.625-inch Height: 19.125-inch
Processors	Intel® Pentium III™ processors operating at 500 MHz and faster
Cache	512K on processor
RAM	Four RIMM sockets on the system board support 2.5 volt Rambus Dynamic Random Access Memory (RDRAM) RIMMs. Maximum memory is 2 GB
BIOS	Flash BIOS for easy updates from diskette
IDE interfaces	Two PCI IDE controllers support up to two ATAPI/IDE devices each (hard drives or CD-ROMs) for a total of up to four IDE devices
Diskette drive interface	A diskette drive controller is integrated on the system board

I/O ports	One parallel port, one serial port, two USB ports, one PS/2 keyboard port, one PS/2 mouse port, one microphone-in jack, one audio line-in jack, one audio line-out jack, one RJ-45 network jack
Expansion slots	Five PCI slots
Drive Bays	Three 5.25-inch drive bays (one occupied by CD-ROM drive), two external 3.5-inch drive bays (one occupied by diskette drive), and four 3.5-inch internal drive bays (one occupied by included hard drive).
Temperature, operating	10° to 40° Celsius or 50° to 104° Fahrenheit.
Humidity, operating	20% to 80%
Altitude	-200 feet to 10,000 feet
Voltage, AC input	90 to 135 VAC, 180 to 265 VAC
Frequency	47 to 63 Hz
Certification	FCC Class B, ETL Listed to UL 1950, CAN/CSA STD C22.2 No. 950, CE Mark, VCCI Class B, Energy Star Compliant, CB scheme

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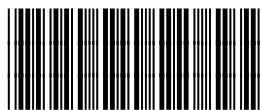
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