Gateway

E-4400 Desktop System Manual

Contents

iii

Preface

Conventions used in this manual

Throughout this manual, you will see the following conventions:

Convention	Description
ENTER	Keyboard key names are printed in small capitals.
CTRL+ALT+DEL	A plus sign means to press the keys at the same time.
Setup	Commands to be entered, options to select, and messages that appear on your monitor are printed in bold.
User's Guide	Names of publications are printed in italic.

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

- Intel® Pentium III processor with 133 MHz Front Side Bus (FSB)

- Desktop to tower conversion

- Two Rambus™ in-line memory module (RIMM™) sockets that support up to 1 Gigabyte (GB) of Rambus Dynamic Random Access Memory (RDRAM)

- Intel 820 Camino chipset

- 4X AGP graphics video add-on card

- Three PCI slots

- One 3.5 inch 1.44 MB diskette drive, one CD drive, and one hard drive

- Keyboard port, mouse port, serial port, parallel port, two Universal Serial Bus (USB) ports, RJ-45 Ethernet port, and audio line-out, audio line-in and audio microphone-in ports

- Integrated audio using Analog Devices AD1881 Digital Audio Codec controller

Front panel

The desktop case front panel includes the following features:
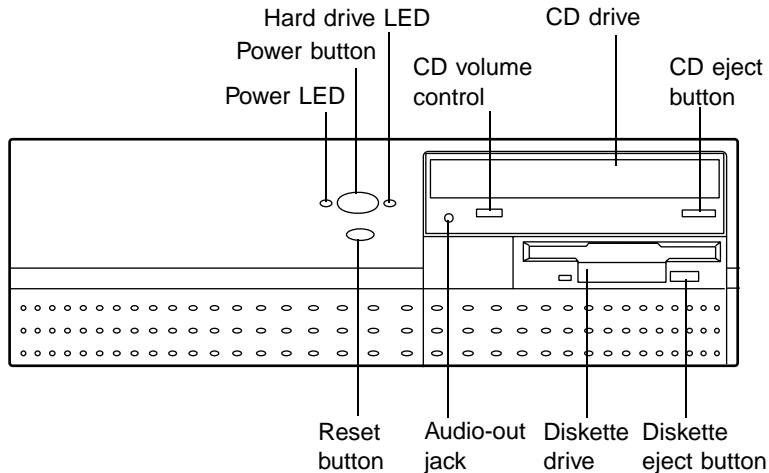
Audio-out jack connects headphones or powered speakers that let you listen to an audio CD (directly from the CD drive.)

CD drive plays data or audio CDs.

CD eject button ejects a CD from the CD drive.

CD volume control controls the volume of an audio CD.

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

Diskette eject button ejects diskettes from the diskette drive.

Hard drive LED lights when the hard drive is active.

Power button turns the computer on and off.

Power 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 sleep mode.

Reset Button restarts a system that becomes non-responsive.

Rear panel

The desktop case rear panel includes the following Input/Output (I/O) ports, connectors, and switches:
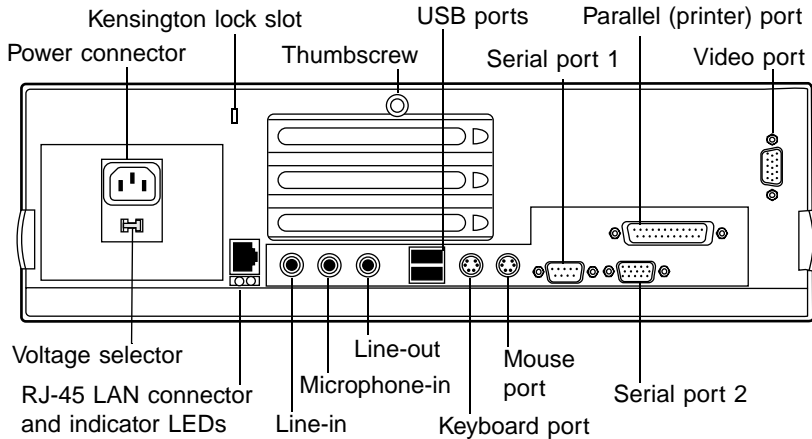
Kensington lock slot permits the use of a cable lock to secure the system.

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

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

Mouse port connects a PS/2-compatible mouse.

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

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

RJ-45 LAN connector lets you connect to a network, and the **Indicator LEDs** show LAN activity (yellow LED) and 100 Mb/sec speed (green LED.)

Serial ports connect to serial devices.

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

USB ports connect external Plug-and-Play devices.

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

Video port connects the monitor's interface cable.

Vertical desktop feature

You can set up your desktop to sit vertically by using a stand included with your accessory kit. This setup saves space and transforms your desktop into a minitower computer. See the illustrated instructions included with your accessory kit or the illustration below for more information.

Groove for stand
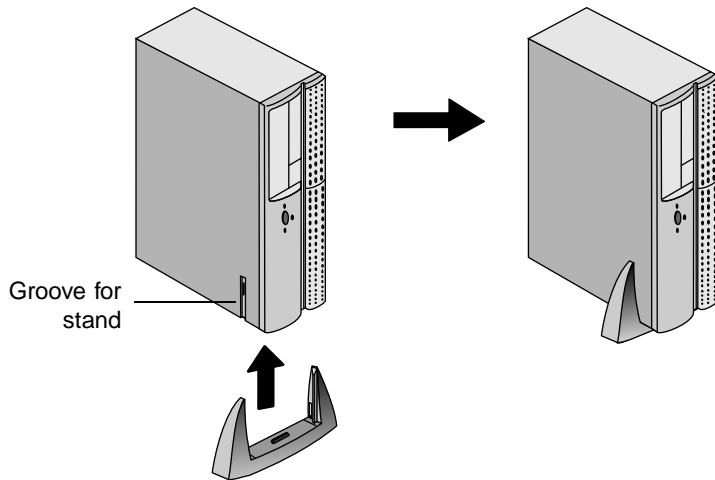
Important

If you set your system up vertically, make sure to use a CD drive with retaining clips. You can use these clips to hold the CD in place when using the vertical desktop feature. The CD drive that ships with your system includes these clips.

➲ To convert your computer to a tower:

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

2 Lift the right side of the computer until it rests vertically on its left side.

3 Lift the front of the computer by pushing on the top front, rocking it back, and place the plastic stand in the grooves provided for that purpose.

4 Lower the front of the computer, allowing it to balance on the stand.

5 Reconnect the power cord and cables you disconnected.

System board

The following figure and list identify system board components.
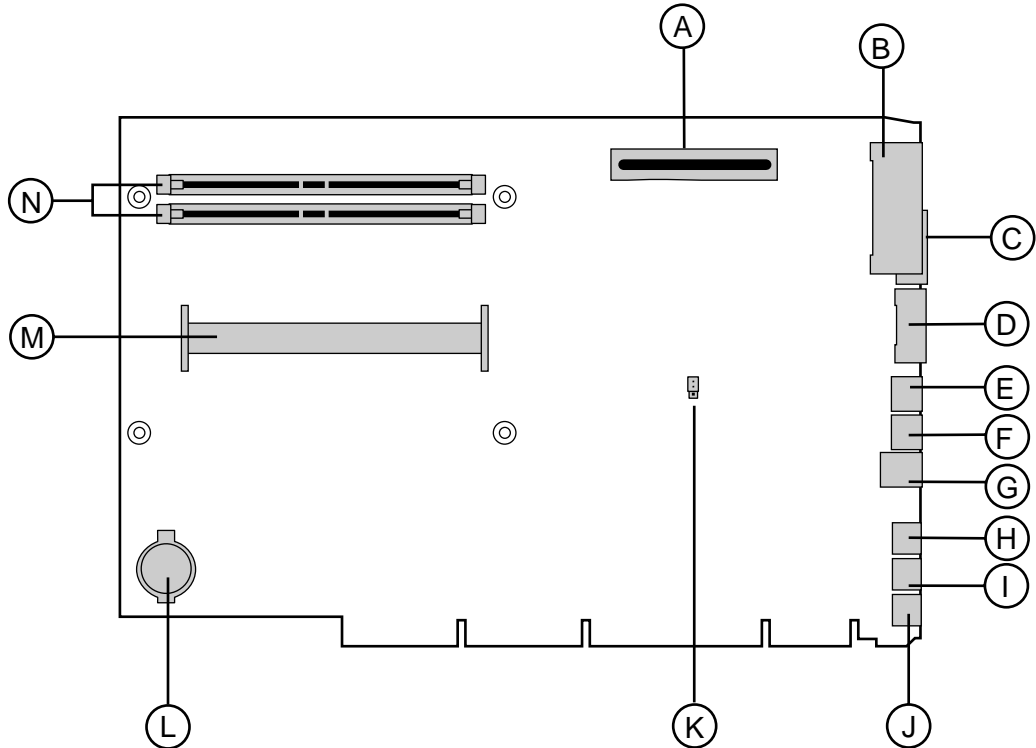
- **A** AGP slot
- **B** Parallel port
- **C** Serial port 2
- **D** Serial port 1
- **E** Mouse port
- **F** Keyboard port
- **G** USB ports (2)
- **H** Audio line-out

I Microphone-in

J Audio line-in

K Configuration jumper (J5K1)

L Battery

M Slot 1 connector

N RIMM sockets (2)

Riser card

The riser card is mounted to the chassis by brackets at its base and two screws at the top. The two screws attach the riser card to a bracket attached to the power supply cage. The riser card contains most of the connectors and slots used by the internal system components.

Front
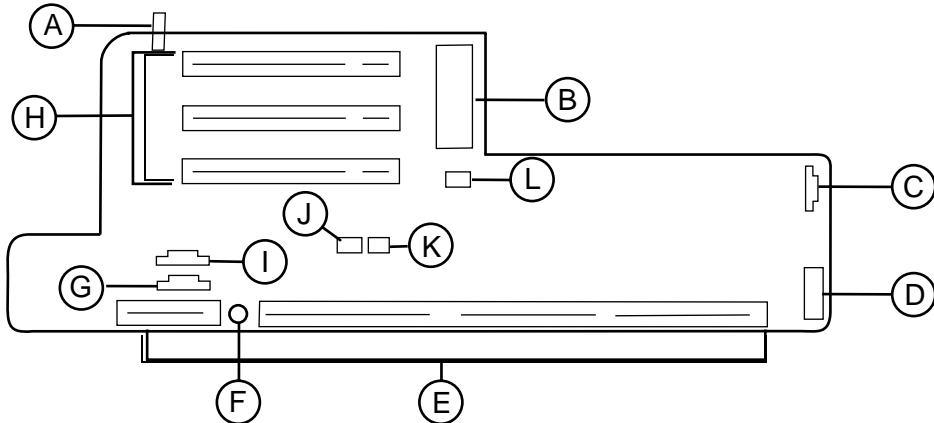
A SW1: Chassis intrusion switch

B ATX power connector

C JP11: SCSI LED connector

D Front panel control and chassis fan connector

E NLX system board edge connector

F 10 Mb/sec LED (Amber)

G CN4: CD/DVD audio connector

H PCI slots (3)

I CN3: TAD/Speakerphone connector

J JP7: Wake-on-LAN connector

K JP8: Ring-in connector

L JP9: Power supply fan connector

Back

Pin 1 position on
each connector

A

B

C

D

E
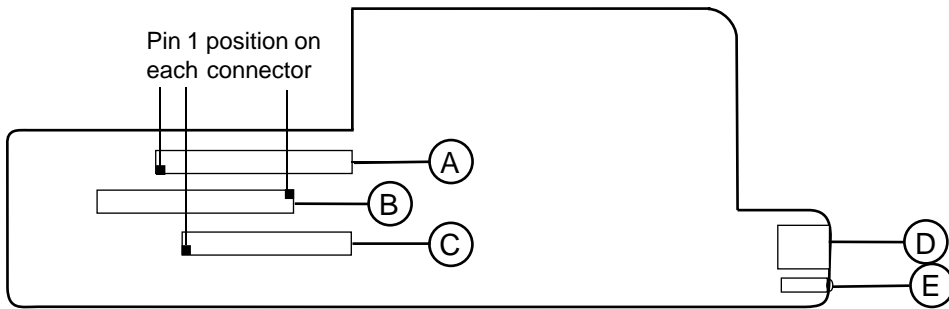
A Primary IDE connector

B Secondary IDE connector

C Floppy Drive connector

D RJ-45 LAN connector

E Ethernet LAN Indicator LEDs (Green = 100 Mb/sec. Yellow = LAN
   activity)

System Setup

2

Setting up your system

Follow the instructions on the poster that came with your system for assembly instructions. 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 it.

Important	Keep the product carton and packing material, in case you need to send the system out for repair. If you return your system to the factory 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 3 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.

➲ 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 the power button.

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

Power button

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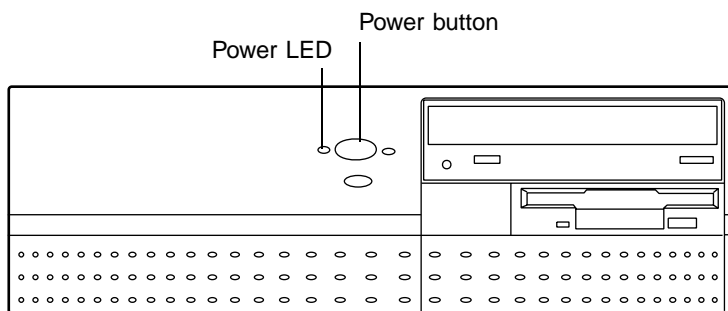
4 Turn on any other components connected to the computer, such as speakers, a printer, or a scanner.

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.

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 display this information, 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.

Setting up the operating system

At initial computer startup, the operating system takes a few minutes to set up.

Refer to your software documentation for specific questions.

➲ **To complete the operating system setup:**

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

2 Type the requested information in the appropriate text boxes. When you finish entering the information, click **Next.**

3 Follow the on-screen instructions, while selecting the desired options in the start-up wizard dialog boxes. Continue clicking **Next** to move through the dialog boxes until the wizard tells you to restart your computer.

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

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 or Windows 98:

1 Click **Start**, then select **Shut Down** (Windows 98) or **Shut down the computer?** (Windows 98 or Windows NT.)

2 Click **OK**. The computer turns off. If you see a message saying **It is now safe to turn off your computer** Windows NT only), turn off the computer by pressing the power button.

3 Turn off the monitor and all peripheral devices.

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.)

Important	You can use the power button to turn off your system if it does not respond. However, you must hold the power button in for 4 seconds to turn it off (Windows 98 only.)

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 98:**

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

2 Highlight a program that displays a "not responding" message, then click **End Task**. Close the program by following any additional screen prompts.

3 If the computer does not respond, restart the computer by pressing the reset button.

4 After displaying some of the startup screens, a message appears asking if you would like to run ScanDisk.

5 Run ScanDisk by pressing any key. Follow the on-screen instructions. When the checks are finished, Windows starts.

➲ **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 automatically runs. When the checks are finished, Windows starts.

3

Case Access

Static electricity precautions

Static electricity can permanently damage electronic components in your computer. When opening your computer case, always perform the following procedure.

Caution

⚠

Prevent electrostatic damage to your computer by following static electricity precautions every time you open your computer case.

➲ **To avoid static electricity discharge:**

1 Wear a grounding wrist strap (available at most electronics stores.)

2 Turn off the computer power.

3 Discharge any static electricity by touching a bare metal surface on the back of the case.

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

Follow these precautions to avoid electrostatic damage to your computer components:

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

- Remove the parts from their antistatic bags only when you are ready to use them. Do not lay parts on the outside of antistatic bags since only the inside of a bag provides antistatic protection.

- Always hold cards by their edges or 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.

Warning	Avoid exposure to dangerous electrical voltages and moving parts, by turning off your computer and unplugging the power cord and modem cord before removing the computer cover.

Opening the case

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

- A chassis cover, that surrounds the sides and top of the chassis
- A front bezel (faceplate) that covers the front of the chassis

Because the components inside your computer are extremely sensitive to static electricity, make sure to observe the precautions (see "Static electricity precautions" on page 15) to avoid static electricity damage.

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 chassis cover:

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

2 Remove the thumbscrew or lock on the back of the case.

3 With the front of the computer facing you, locate the latches at the rear sides of the case and pull both latches out until they clear the chassis.)

Thumbscrew

Latch

Latch
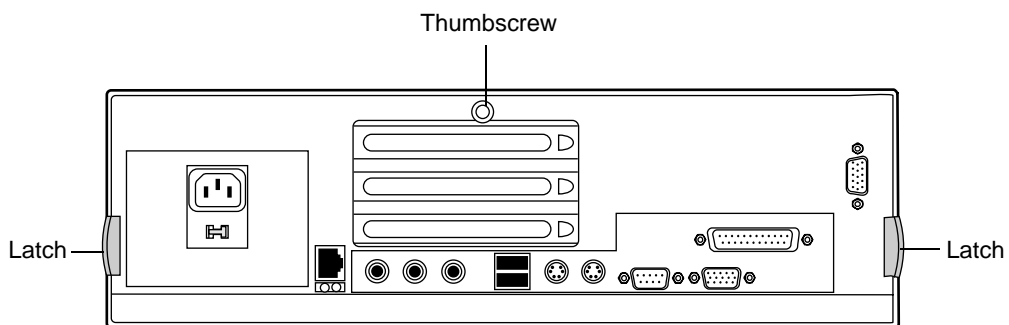
4 Lift up the rear of the cover and slide the cover toward the rear of the computer until the lip on the cover is free of the front bezel. Remove the cover.

Side view
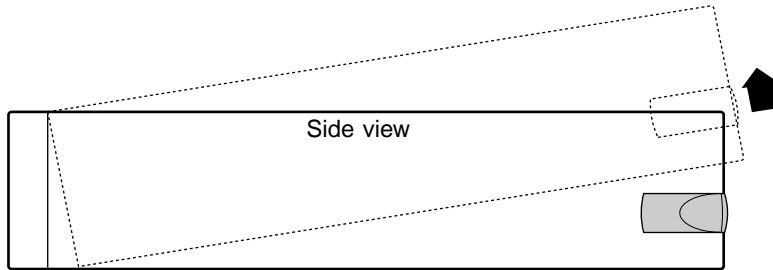
➲ To remove the front bezel:

1 Lift the three upper tabs and push them through the slots in the chassis. The top of the bezel unlatches out and away from the chassis.

2 Lift the front of the chassis until the lower bezel tabs clear the chassis locking holes. Remove the bezel.

Upper tabs
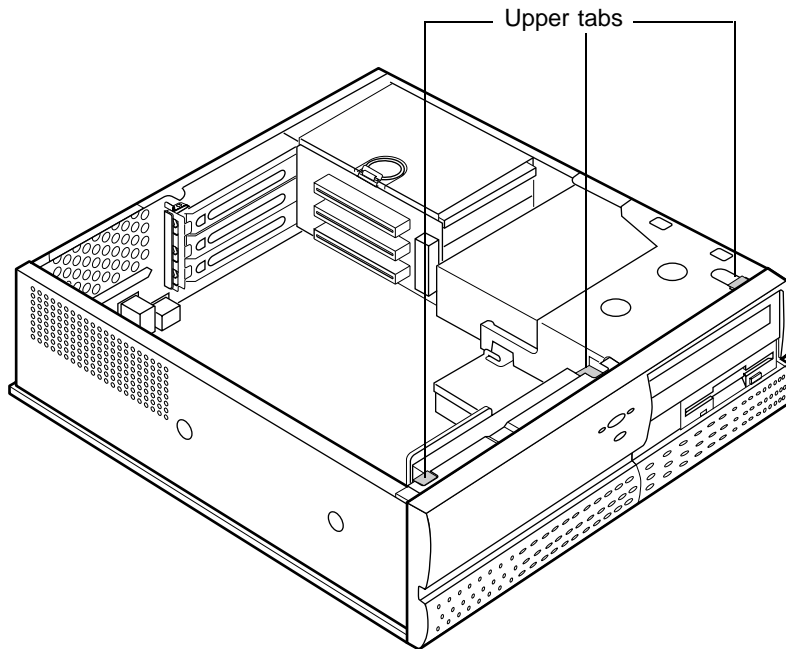
Closing the case

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

➲ **To replace the front bezel:**

1 Lift the front of the chassis and set the lower chassis tabs into the locking holes on the bezel.

2 Press the bezel into the chassis until the three upper tabs snap into their locking holes. Two of the three upper tabs latch underneath the locking holes. One tab latches over the top of the chassis.

➲ **To replace the chassis cover:**

1 Place the cover on the computer, making sure the tabs on the front end are inserted underneath the bezel and the rear of the cover is in a raised position.

2 Lower the rear of the cover onto the computer chassis until the side latches snap into place.

3 Reinstall the thumbscrew or lock that was removed to open the case.

Replacing and Adding Drives

4

Preparing to replace or add a drive

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

- Half-height 3.5-inch diskette drives - The riser card has a floppy controller that 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 riser card has two IDE connectors that support up to two drives each. To use another type of hard drive, such as a SCSI drive, install an add-in card.

- Half-height 3.5-inch tape storage or disk storage devices.

3.5-inch hard drive

5.25-inch CD drive

3.5-inch diskette drive

Additional 3.5-inch hard drive bay

Additional 3.5-inch drive bay
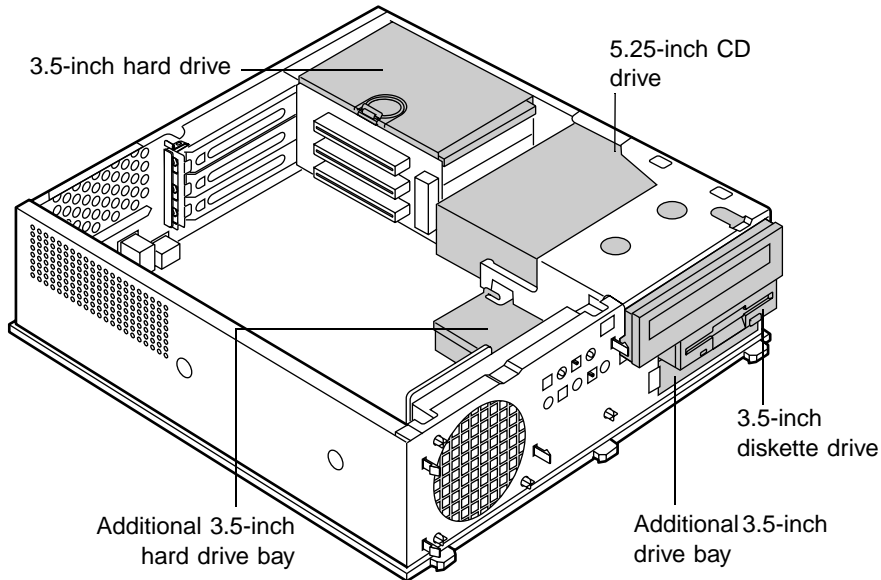
As you prepare to install drives, keep the following in mind:

■ 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.

■ 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 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 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 Setup utility program. Press F1 at start up to access the BIOS Setup utility program.

Important	If you choose to buy another IDE or SCSI hard drive, you must also buy the appropriate IDE or SCSI controller card.

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 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.

Diskette Drive
Connector Cable

IDE Connector Cables (two cables)

To floppy connector on riser card

To diskette drive that came with your system

Black to secondary IDE connector on riser card

40 wire cable

Black to connector on CD drive

Blue to primary IDE connector on riser card

80 wire cable

Black to connector on IDE drive
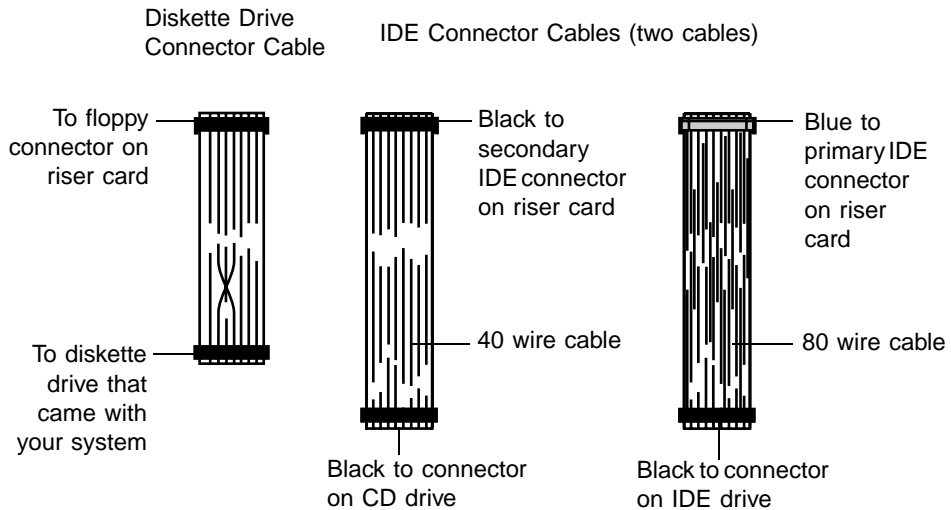
3.5-inch diskette or CD drives

Both the 3.5-inch diskette drive and 5.25-inch CD drives are secured in the chassis by a set of removable rails. The rails let the drives slide into and out of the guides in the front bays.

Removing and replacing the 3.5-inch diskette or CD drive

➲ **To remove or replace the drive:**

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

2 Open the case (see "Opening the case" on page 17) and remove the front bezel (see "To remove the front bezel:" on page 18), observing the "Static electricity precautions" on page 15.

3 Locate the 3.5-inch diskette or 5.25-inch CD drive. If you are removing the 3.5-inch diskette, you may need to partially remove the CD drive to get to the 3.5-inch diskette drive.

4 Disconnect the power and data cables from the back of the drive, noting their locations and orientations. (You will reconnect these cables after you install the new drive.)

5 Disengage the 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.

6 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 drive. Make sure you install the correct rails on each drive.

CD Drive

3.5-inch
Diskette Drive
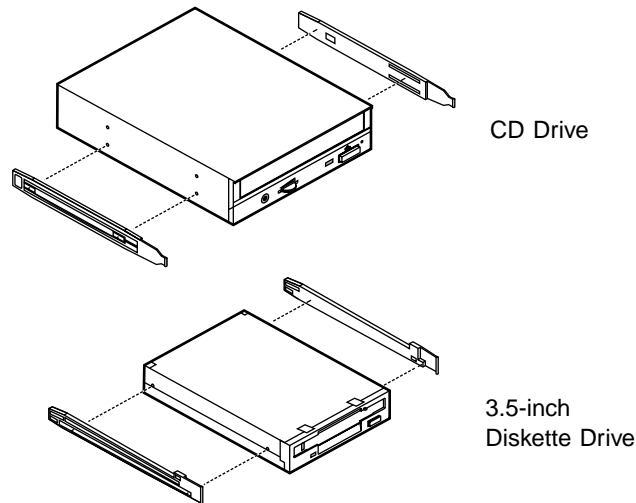
7 Align the rails with the appropriate bay and slide the drive into the bay until the locking tabs snap into place.

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 (see "Closing the case" on page 19.)

**10** Reconnect the power and modem cords, then turn on the system.

Installing an additional 3.5-inch device

The second 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. A set of rails are included in your system (in the drive bay under the diskette drive) and are used during the installation. You will have to purchase an IDE cable with three connectors and of sufficient length to connect the existing devices and the new device to the riser card IDE connector.

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

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

2 Open the case (see "Opening the case" on page 17) and remove the front bezel (see "To remove the front bezel:" on page 18), observing the "Static electricity precautions" on page 15.

3 Remove the bezel insert by disengaging the retaining tab and pushing the insert out from the back of the bezel. (You can save and replace the insert should you need to remove the device and continue to use the system.

Push on this tab to remove the insert

Back of bezel
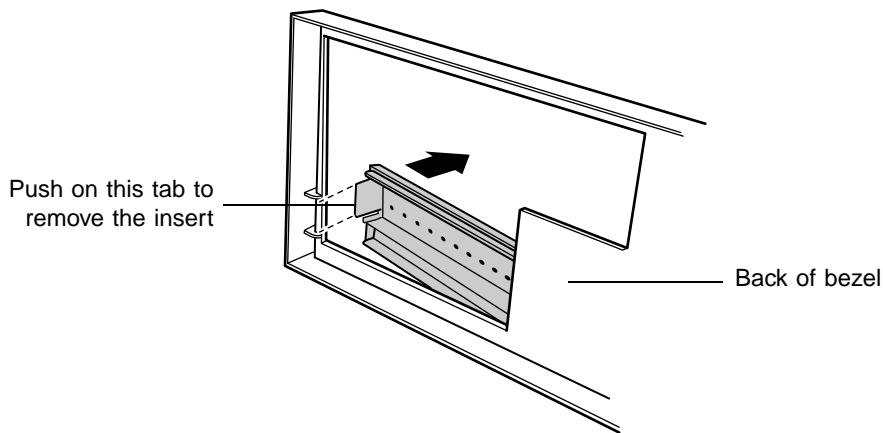
4 Remove the 3.5-inch diskette and CD drive (see "3.5-inch diskette or CD drives" on page 24.) This will allow access to the bottom drive bay.

5 Remove the metal shield from the front of the drive bay, if installed, by placing a flat-bladed screwdriver in the metal shield tab and pulling it outwards.

> **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 to the back of the drive. (See drive documentation for proper drive jumper settings and cable orientation.)

9 Reinstall the CD drive and 3.5-inch diskette drive (see "3.5-inch diskette or CD drives" on page 24 for instructions.)

10 Close the case (see "Closing the case" on page 19.)

11 Reconnect the power and modem cords, then turn on the system.

**12** Run the configuration software, if required.

Hard drives

Removing and replacing the hard drive

The hard drive is secured to a mounting plate that snaps out of and into the chassis.

➲ To replace the hard drive:

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

2 Open the case (see "Opening the case" on page 17), observing the "Static electricity precautions" on page 15.

3 Locate the 3.5-inch hard drive and mounting plate ring.

4 Lift the ring slightly, then pull it towards the center of the drive until the spring latch releases. Lift the drive out of the chassis.

Tabs
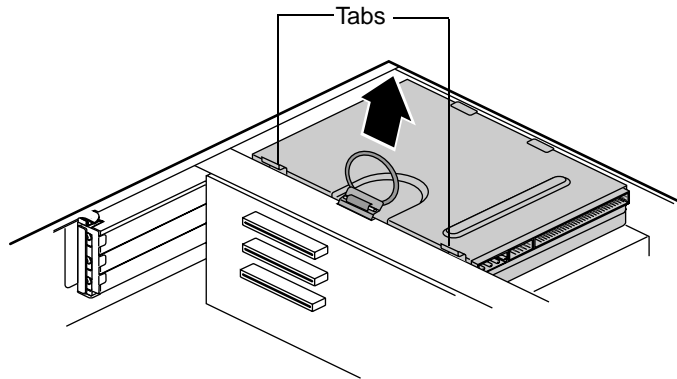
5 Remove the mounting plate from the old drive by lifting and sliding one tab at a time until they unlock. Lift the mounting plate off the drive.

6 Position the new drive upside down in the mounting plate and snap it into place.

7 Place the drive back into the drive bay.

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 (see "Closing the case" on page 19.)

10 Reconnect the power and modem cords, and turn on the system.

Adding a second hard drive

The system comes with a metal drive-mounting bracket you can use to install an additional internal hard drive. Due to difficulties in routing the existing IDE connector cable to this drive, you will need to purchase a PCI IDE drive controller add-in card and an additional IDE connector cable to complete the installation.

➲ **To install a second hard drive:**

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

2 Open the case (see "Opening the case" on page 17), observing the "Static electricity precautions" on page 15.

3 Locate and remove the two screws that attach the mounting bracket to the front of the chassis.

Mounting bracket

Screws
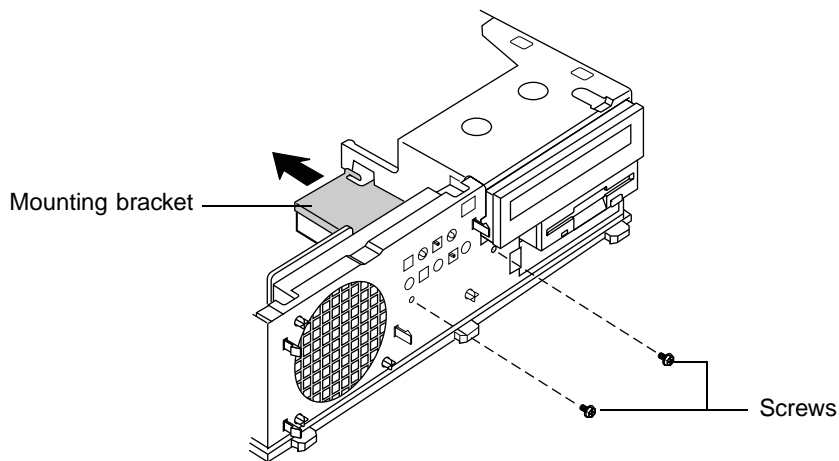
4 Remove the CD drive from the chassis so you can access the mounting bracket. (see "3.5-inch diskette or CD drives" on page 24, for instructions on removing the CD drive.)

5 Slide the mounting bracket towards the back of the chassis until the tabs disengage from the chassis. Lift the mounting bracket out of the chassis.

6 With the drive upside down, insert the metal points into the holes on one side of the drive and lower the mounting bracket over the bottom of the drive.

Metal points

Screw

Mounting bracket

Bottom side of drive

7 Secure the drive to the bracket with a screw.

8 Replace the mounting bracket into the chassis and slide the two locking tabs together.

9 Replace the two screws you removed in Step 3.

10 Replace the CD drive.

11 Install an IDE controller add-in card in one of the PCI slots and connect the new hard drive to this controller card with an IDE connector cable.

12 Close the case (see "Closing the case" on page 19.)

13 Reconnect the power and modem cords, then turn on the system.

System Components

5

Removing the system board

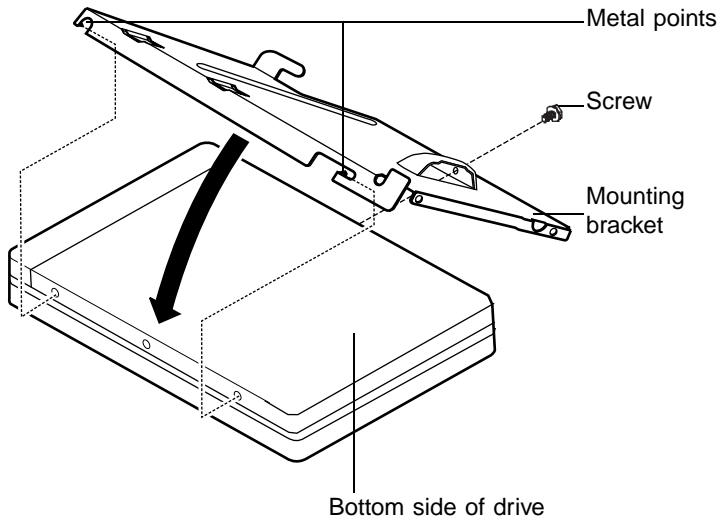The system board is installed on a set of guide rails, and can be removed without tools.

➲ **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 (see "Opening the case" on page 17) and remove the chassis cover (see "To remove the chassis cover:" on page 17), observing the "Static electricity precautions" on page 15.

3 Remove the chassis side panel by lifting up on both plastic release tabs on the outside of the chassis.

Tabs
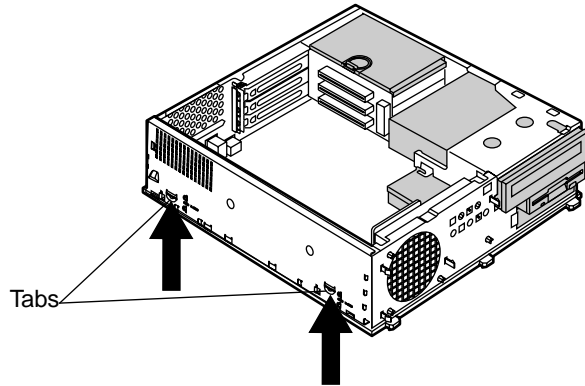
4 Lift the panel up and out.
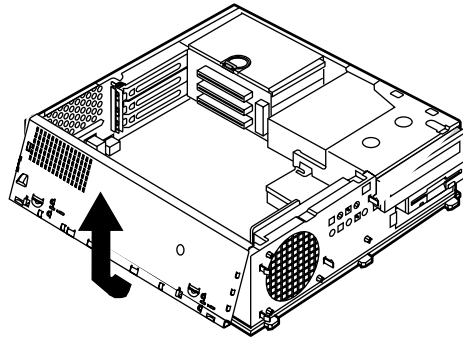
5 Clear the panel from the chassis.
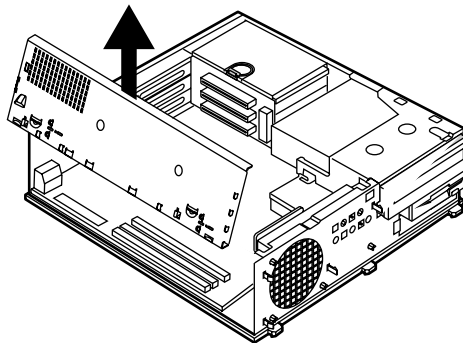
6 Locate the release lever at the outside center edge of the system board and lift the lever upward slightly. Pull it outward approximately eighty degrees from the edge of the system board to disengage the edge connector on the system board from the riser card and move the board slightly out of the chassis.
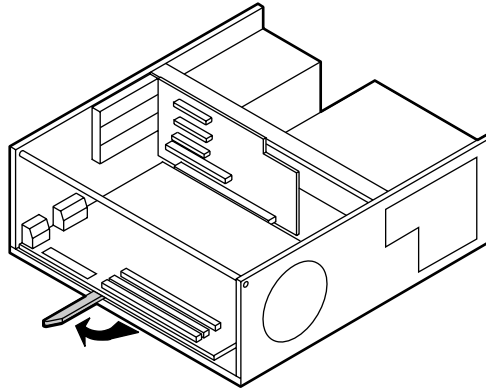
7 Grasp the edge of the system board and carefully slide it out of the chassis.

Caution

Be careful when handling the system board. The edges of the I/O panel are sharp and can cause injury if not handled with caution.

I/O panel
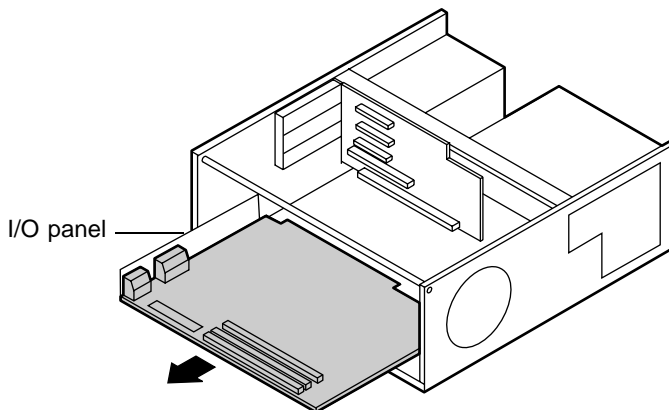
8 If the system board is being replaced, remove the rails from the bottom of the board and place the board in a static-free container.

➲ To install the system board:

1 If installing a new system board, mount the rails (removed in Step 9 above) on the bottom of new board.

2 Align the rails located underneath the system board with the guides on the chassis, and slide the system board into the chassis.

3 Push in the release lever until it is parallel with the chassis. This will complete the reinstallation and lock the board in place.

4 Reconnect peripherals, the modem cord, and the power cord, then turn on the system.

Replacing the processor

The system is compatible with the Intel® Pentium® III 100 and 133 MHz front-side bus (FSB) processors.

The system board will support the following processor/bus configurations:

■ 350 MHz through 700 MHz processors with 100 MHz FSB

■ 533 MHz, 600 MHz, and faster processors with 133 MHz FSB

Important	A heat sink must be installed on each Pentium processor.

When replacing a processor, order a Pentium processor upgrade kit. The kit includes the Pentium processor, a heat sink, and a disposable electrostatic wrist strap.

➲ **To replace the processor:**

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

2 Open the case (see "Opening the case" on page 17), observing the "Static electricity precautions" 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 retention bracket.

Tab
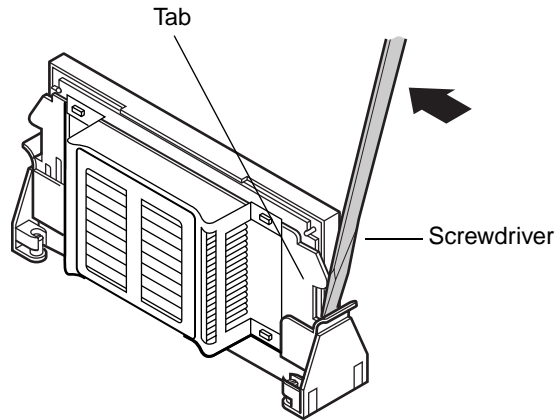
Screwdriver

5 Push the screwdriver toward the processor. 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.
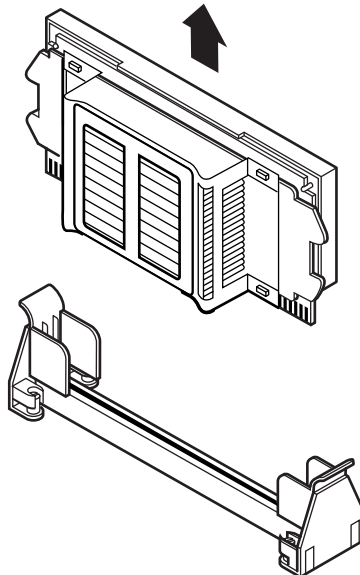
8 Align the new processor with the processor slot (note that the processor slot is keyed so the processor can only be installed one way) and press firmly to install it.
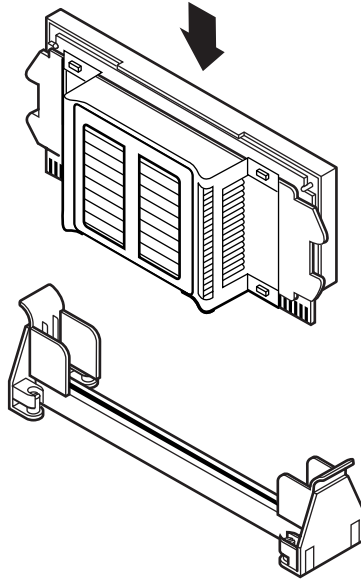
9 Close the case (see "Closing the case" on page 19.)

10 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:

■ 64 MB, 128 MB, 256 MB, and 512 MB RIMMs

> **Important**
>
> Do not combine PC600 RIMMS with PC800 RIMMS in the same computer. ECC and non-ECC type RIMMS may be combined; however, if this is done the BIOS will set the memory type as non-ECC.

■ Single- or double-sided configurations

■ 1 GB maximum system memory

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

■ A maximum of 32 *devices,* or actual RDRAM chips on the RIMMs, are allowed in any memory configuration. RIMMs, like other memory modules, consist of a printed circuit card onto which memory devices are mounted. The number of devices on each module may not be readily apparent, since the devices are covered by a metal heat spreader. Refer to the chart below to determine how many devices are on each type of RIMM module and for suggested memory configurations.

■ *Continuity Modules* (CRIMMs) are required in all blank memory slots.

■ 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 the Gateway Web site (www.gateway.com) for updated information.

RIMM Modules (64 Mb RDRAMs)	Number of Devices	Total Memory
One 64 MB Non-ECC RIMM One CRIMM	8 (1 RIMM with 8 devices)	64 MB
Two 64 MB Non-ECC RIMMs	16 (2 RIMMs with 8 devices each)	128 MB
One 64 MB Non-ECC RIMM One 128 MB Non-ECC RIMM	24 (1 RIMM with 8 devices and 1 RIMM with 16 devices)	192 MB
Two 128 MB Non-ECC RIMMs	32 (2 RIMMs with 16 devices)	256 MB
RIMM Modules (128 Mb RDRAMs)	Number of Devices	Total Memory
One 64 MB Non-ECC RIMM One CRIMM	4 (1 RIMM with 4 devices)	64 MB
Two 64 MB Non-ECC RIMMs	8 (2 RIMMs with 4 devices each)	128 MB
One 64 MB Non-ECC RIMM One 128 MB Non-ECC RIMM	12 (1 RIMM with 4 devices and 1 RIMM with 8 devices)	192 MB
Two 128 MB Non-ECC RIMMs	16 (2 RIMMs with 8 devices each)	256 MB
One 128 MB Non-ECC RIMM One 256 MB Non-ECC RIMM	24 (1 RIMMs with 8 devices and 1 RIMM with 16 devices)	384 MB
Two 256 MB Non-ECC RIMMs	32 (2 RIMMs with 16 devices each)	512 MB
RIMM Modules (256 Mb RDRAMs)	Number of Devices	Total Memory
One 256 MB Non-ECC RIMM One 512 MB Non-ECC RIMM	24 (1 RIMM with 8 devices and 1 RIMM with 16 devices)	768 MB
Two 512 MB Non-ECC RIMMs	32 (2 RIMMs with 16 devices each)	1 GB

➲ To add or remove RIMMs:

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

2 Open the case (see "Opening the case" on page 17), observing the "Static electricity precautions" 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.
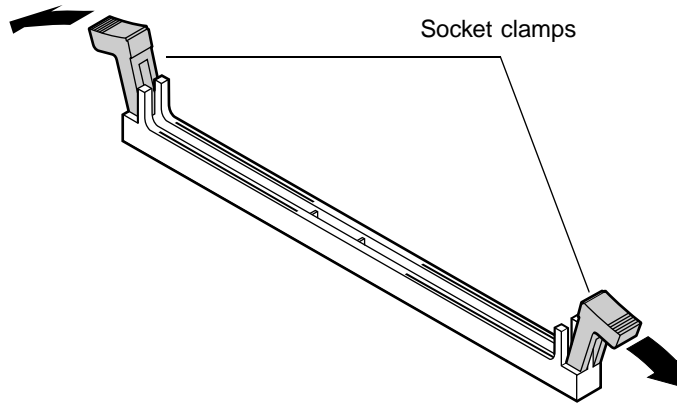
Socket clamps

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.
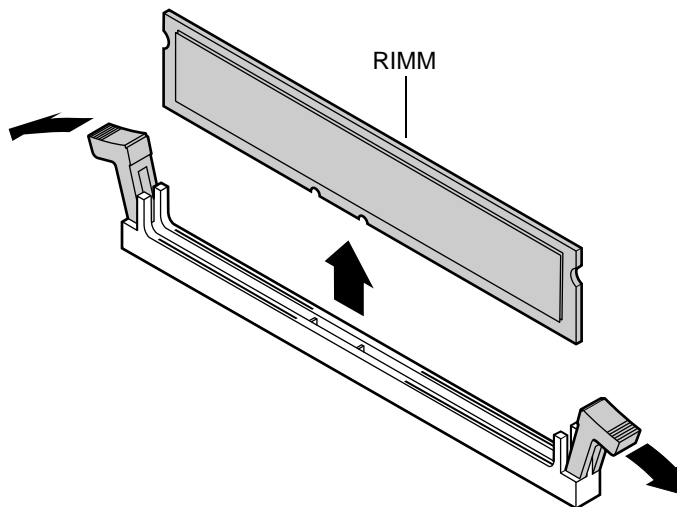
RIMM

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.
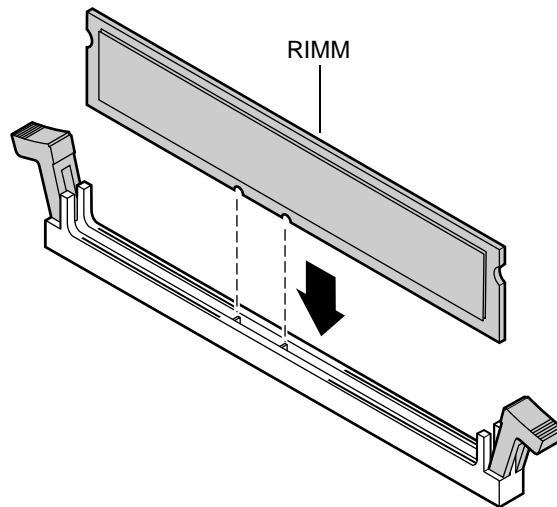
RIMM

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

8 Close the case (see "Closing the case" on page 19.)

9 Reconnect peripherals, the modem cord and the power cord, then turn on the system.

Adding an expansion card

The E-4400 desktop computer has three expansion slots on the riser card for PCI cards.

➲ To add a PCI expansion card:

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

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

3 Open the case (see "Opening the case" on page 17), observing the "Static electricity precautions" on page 15.

4 Remove the slot cover bracket by pressing downward and outward on the tab.

Tab
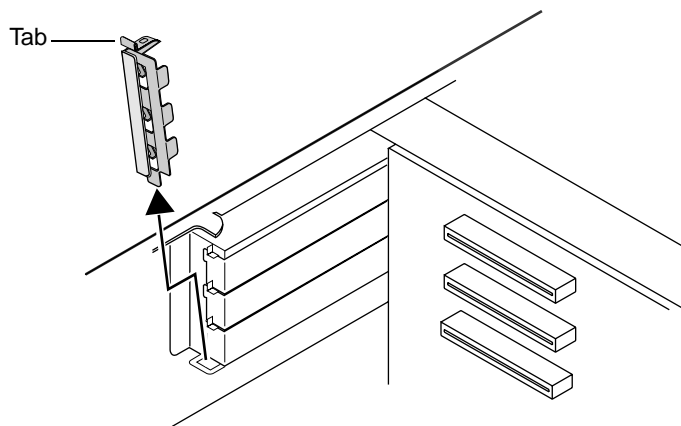
5 Locate an available slot and remove the slot cover by releasing the lock tab. Save the cover for reinstallation if you need to remove the card. (You can use a blunt tool such as a flat-bladed screwdriver if the tab does not release with finger pressure.) Either apply inward pressure to the middle of the slot cover or use a flat-bladed screwdriver and insert it into the tab hole.

6 Insert the edge of the expansion card into the slot on the riser card and press firmly to seat the card.

7 After seating the card firmly, replace the slot cover bracket.

8 Connect any cables to the card (see card documentation for proper jumper settings and cable orientation)

9 Close the case (see "Closing the case" on page 19.)

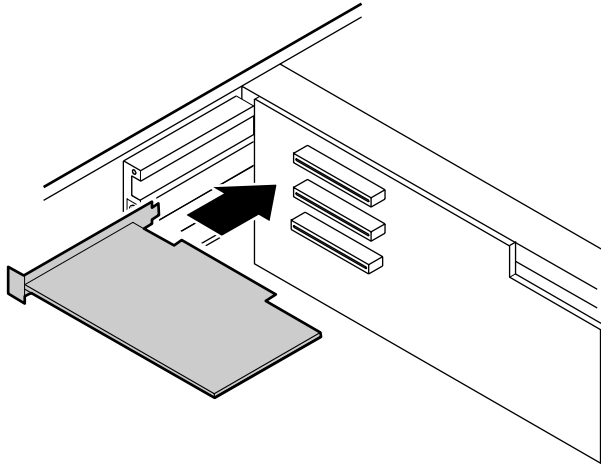**10** Reconnect peripherals, the modem cord, and the power cord, and turn on the system.

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 Setup utility and write down all the values in the setup utility screens before replacing the battery. Replacing the battery resets the BIOS Setup utility 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 Setup utility program by pressing F1 when you are prompted to do so.

2 Write down the CMOS values from the Main BIOS Setup utility screens so you can reenter them after you replace the battery. For more information about the BIOS Setup utility program, see page 47.

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

4 Open the case (see "Opening the case" on page 17), observing the "Static electricity precautions" on page 15.

5 Remove the system board (see "Removing the system board" on page 31)

6 Locate the battery on the system board (see "System board" on page 5.) The battery is circular and has the positive pole mark (+) on the top.

7 Using a small flat-bladed screwdriver, carefully remove the battery from its socket on the system board.
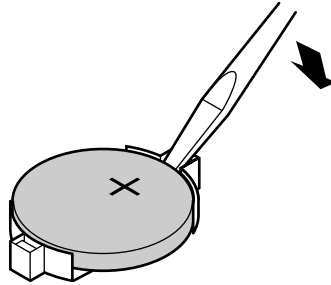
8 Press the new battery in the socket with the positive pole up. Make sure you have pressed the battery down far enough for it to contact the base of the socket.

9 Close the case (see "Closing the case" on page 19.)

10 Reconnect peripherals, the modem cord, and the power cord, and turn on the system.

11 Enter the BIOS Setup utility program and verify that the system configuration is correct using the data you recorded in Step 2.

If the CMOS data is not correct, change the information in the BIOS Setup utility screens as necessary.

Troubleshooting the battery installation

If you have problems after installing the new battery, try each of the items listed below, replacing the cover if removed, and 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 Setup utility 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 verify that all cables inside the case are attached securely. Also, make sure that the colored cable edges are aligned correctly and that the connectors did not miss any pins. Disconnect and reconnect the cables, then replace the cover carefully, so as not to disturb any cables.

- Turn off the computer, remove the cover and, if you have the proper test equipment, verify that the new battery has power. (Although highly unlikely, your new battery could be defective.)

When everything works properly, close the case (see "Closing the case" on page 19), reconnect the modem and power cords, and turn on the computer.

6

Using the BIOS Setup Utility

About the BIOS Setup utility

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

Enter the BIOS Setup utility by restarting the computer, then pressing F1 when prompted during the startup process. The Main BIOS Setup utility screen, which may not look like the screen shown below, opens.

```
                        BIOS Setup Utility
Main     Advanced      Security     Power     Boot     Exit

                                          Item Specific Help

        BIOS Version: xx                  Select the default
                                          language used by the
     Processor Type:  Intel Pentium III   BIOS.

    Processor Speed:  600 MHz

          Cache RAM:  256 KB

       Total Memory:  96 MB

           Bank 0:  RDRAM
           Bank 1:  RDRAM              ←——→ Select Menu

                                       ↑↓ Select Item
                   [English (US)]      Enter Select>Sub-Menu
         Language:                     F9  Setup Default
                   [xx:xx:xx]          F10  Save and Exit
       System Time: [xx/xx/xxxx]       ESC  Exit
       System Date:                    F1  Help
```

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

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

- F1 opens the **Help** screen, providing general help for using the BIOS Setup utility.
- The ↑ (up arrow) and ↓ (down arrow) keys select items in the menu.
- The ← (left arrow) and → (right arrow) keys move you between the menus.
- ENTER either moves you to a submenu screen when a selected item is preceded by > or activates a selected field.
- ESC closes the screen you are in and returns you to the previous screen or exits you from the BIOS Setup utility.
- F9 opens a screen that lets you return all values to their default settings.
- F10 opens a screen that lets you save all parameters, then exit the BIOS Setup utility.

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

- **Main** gives you access to basic information and settings related to your system hardware and configuration.
- **Advanced** gives you access to information and settings for system resources, hardware, and system configuration.
- **Security** gives you access to settings related to system access passwords.
- **Power** gives you access to information and settings for power management features.
- **Boot** gives you access to information and settings for boot features and boot sequences.
- **Exit** gives you access to options for exiting the BIOS Setup utility.

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

Updating the BIOS

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

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

■ Create a bootable diskette

■ Note the current BIOS settings

■ Create the BIOS update diskette

■ Update the BIOS

■ Restore the BIOS settings

➲ **To create a bootable diskette:**

1 Enter DOS and type the following at the DOS prompt: **format a: /s**

2 Put a blank diskette in the diskette drive, then press ENTER.

3 Follow the instructions on the screen.

➲ **To note the current BIOS settings:**

1 Remove the bootable diskette and restart your computer.

2 Enter BIOS Setup by pressing F1 when prompted during startup.

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 Setup utility.

➲ **To create the BIOS update diskette:**

1 Log on to the Internet.

2 Download the correct BIOS file from the technical support area of www.gateway.com.

3 Decompress the contents of the BIOS file you downloaded and copy the contents onto the bootable diskette.

➲ To update the BIOS:

1 Place the bootable diskette containing the BIOS files into drive A: then restart the computer. The BIOS Setup utility starts.

2 Press ENTER. The **Main** menu opens.

3 Select **Update Flash Memory From a File**, then press ENTER.

4 Select **Update System BIOS**.

5 Press TAB to select the file name, then press ENTER. The computer warns you that the BIOS is about to be changed and asks you to confirm the BIOS version.

6 Press ENTER. The BIOS files are loaded.

7 Once the BIOS files have been loaded, remove the diskette from drive A: and press ENTER when prompted to restart the computer.

8 As the computer starts up, verify that the number of the BIOS version reported on the screen is the number of the new BIOS you downloaded from the Internet.

➲ To restore the BIOS settings:

1 Enter BIOS Setup by pressing F1 when prompted during startup.

2 Once in BIOS Setup, press F9 to load the BIOS Setup utility default settings.

3 Select any BIOS fields you want to change by using the ↑ (up arrow) and ↓ (down arrow) keys. Press ENTER, then reenter the values you wrote down at the beginning of this process.

Setting the system board jumpers

The J5K1 configuration jumper on the system board lets you clear passwords and recover the BIOS. (See the figure on page 5 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.

J5K1 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

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 attempt to recover the BIOS by setting the J5K1 jumper.

When you are attempting 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 (see "Opening the case" on page 17), observing the "Static electricity precautions" on page 15.

3 Remove the jumper from the J5K1 (see "System board" on page 5) and set it aside. You will need it in a later step.

4 Close the case (see "Closing the case" on page 19), then reconnect the power cords.

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

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

6 When you hear two beeps, 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 two beeps, the BIOS recovery was not successful. See the troubleshooting section at the end of this procedure for further information.

7 Open the case again (see "Opening the case" on page 17), observing the "Static electricity precautions" on page 15.

8 Place the jumper back on pins 1-2 on the J5K1 jumper.

9 Close the case (see "Closing the case" on page 19), then reconnect the power cords, and turn on the computer.

10 Enter BIOS Setup utility by pressing F1 when prompted during startup. Once in BIOS Setup utility, press F9. The default settings for the BIOS Setup utility are loaded.

11 Select a BIOS field that you want to change by using the ↑ (up arrow) and ↓ (down arrow) keys. Press ENTER, then reenter the values you wrote down at the beginning of the BIOS update process.

Troubleshooting: If the BIOS recovery was unsuccessful the computer will beep continuously or will 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. If you continue to have problems, contact Client Care or your system administrator.

Managing Your System

7

Protecting against power source problems

Surge suppressors, line conditioners, and uninterruptible power supplies (UPS) 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 for a few milliseconds. Data may be lost or the system may be damaged. To protect against power surges, use a surge suppressor. The surge suppressor absorbs voltage surges and prevents them from reaching your system.

You plug a surge suppressor into an electrical outlet, then you connect your computer, monitor, and other devices to it instead of directly to the outlet.

If you have a modem, make sure your surge suppressor has jacks for the telephone and modem cables. Power surges can pass through telephone wires as well as electrical wires.

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

You may lose data during a total power failure. A standby Uninterruptible Power Supply (UPS) uses a battery to keep your system running during a power failure. The UPS lets you shut down your system normally, but cannot run the system for an extended time.

If you purchase a standby UPS, make sure the UPS includes surge suppression and line-conditioning features.

Maintaining and managing 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 utilities

By regularly using the following utilities, you can help maintain the performance of your hard drive:

■ ScanDisk (Windows 98)

■ Check Disk (Windows NT)

■ Disk Defragmenter (Windows 98)

Using ScanDisk in Windows 98

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

Use ScanDisk from once a week to once a month, depending on how often you use your system. Also use ScanDisk if you have any hard drive problems.

➲ **To use ScanDisk:**

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

2 Click the drive you want to check.

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

4 Click the **Tools** tab.

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

6 Select the options you want for checking the drive.

If you want ScanDisk to check more than one drive, press and hold SHIFT, then click on the additional drives in the list of drives to check.

7 Click **Start.** ScanDisk checks the drive for errors.

8 Follow any instructions on screen for completing the scan.

Using Check Disk in Windows NT

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

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

➲ To use Check Disk:

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

2 Click the drive you want to check.

3 Select **File**, then **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 the options you want for checking the drive. Check **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 instructions on screen for completing the scan.

Using Disk Defragmenter in Windows 98

When working with files, Windows may divide the files into pieces and store the pieces at different places on the hard drive. This division of files, called *fragmentation*, is normal. However, to access a file, the hard drive must search for the pieces of the file and put the file back together, which can slow down your system.

Disk Defragmenter brings all the separate pieces back together. Defragment your computer frequently to improve system performance.

Log off network connections before starting Disk Defragmenter, or network communication may stop the defragmentation process and restart it at the beginning. Also, do not use your keyboard or mouse during the defragmentation process or the process may stop and restart at the beginning.

Important | A disk defragmentation utility does not ship with Windows NT, but you can purchase one. If you purchase a defragmentation program, make sure it can defragment the NT File System (NTFS).

➲ **To use Disk Defragmenter:**

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

2 Click the drive you want to check.

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

4 Click the **Tools** tab.

5 At **Defragmentation status**, click **Defragment Now**. The defragmentation process begins. If your drive has a high percentage of fragmentation, it may take a half-hour or longer to defragment it, depending upon the size of the hard drive.

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 Click the drive you want to check.

3 Select **File**, then **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 98, Backup copies files to diskettes or a tape drive. In Windows NT, Backup copies files to a tape drive.

➲ To run Backup in Windows 98:

1 Click **Start**, then select **Programs**, **Accessories**, **System Tools**, then **Backup**.

2 Follow the instructions on the screen.

➲ To run Backup in Windows NT:

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

2 Follow the instructions on the screen.

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 Explorer, select **Tools**, **Find**, then **Files and Folders**.

2 At **Named**, type ***.tmp**

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

4 Click **Find Now**. The list of temp files is generated.

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 DELETE.

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 select **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** icon on the desktop.

2 Select **Properties**. The Recycle Bin Properties window opens.

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

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

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

6 Click **OK**.

System integrity

Important

✓

To protect your system against electrical problems and physical hazards such as heat, moisture, and dust. Also, to protect it against less obvious hazards such as viruses and hardware overloads.

Protecting against viruses

A *virus* is a program written with malicious intent for the purpose of creating havoc in a computer system.

Viruses spread through executable files, document macros, or boot sectors. Diskettes used in a contaminated computer can get a virus and transfer the virus when used in another computer. A virus can also spread through files downloaded from bulletin boards or the Internet.

Some viruses may only cause your system to beep or display messages or images on the screen. Other viruses are highly destructive, and corrupt or erase the contents of your files or diskettes. To be safe, never assume any virus is harmless. Always protect your system against viruses.

To protect your system against viruses:

■ Use Norton's® AntiVirus to scan your computer regularly. Make sure to update Norton's® AntiVirus periodically to keep up with new viruses.

■ Make backup copies of all files and write-protect the diskettes. A virus cannot infect a write-protected diskette.

■ Obtain all software from reputable sources and always scan new software for any viruses before installing it.

■ Be cautious about files you receive in e-mail or download from a network or the Internet. If you download a file, use your virus checking software to scan the directory on your computer that contains the downloaded file before you open the file.

■ If you have doubts about the source of a Microsoft® Word or Excel file, disable the file macros before opening the file. Word and Excel are set by default to warn you if a document you are about to open contains a macro that might have a virus.

➲ To remove a virus:

1 If you suspect your system has been infected with a virus, find and remove the virus immediately using an antivirus program.

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

3 Turn on the computer and rescan for the virus. If the virus is still on your computer, contact your system administrator or Gateway Client Care.

Checking system health with LANDesk

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 In the C:\DMI folder on your hard drive, double-click the **Setup** icon to launch the InstallShield® wizard.

2 Follow the instructions that appear on the screen. If you are prompted for a password during the installation process, type **lowtco**.

LANDesk Client Manager comes with complete electronic documentation and online help. Refer to these documents and the program's Help for more information.

If you need to restore LANDesk from the *System Restoration CD* and are prompted for a password, type **lowtco** and press ENTER.

System Recovery

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

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 98, you are prompted to create a startup diskette. You can also create a startup diskette in Windows 98 at any time.

➲ **To create a startup diskette:**

1 Click **Start**, then select **Settings**, then **Control Panel**. The Control Panel Window opens.

2 Double-click **Add/Remove Programs**. The Add/Remove Program Properties window opens.

3 Click the **Startup Disk** tab.

4 Insert a diskette into the diskette drive, then click **Create Disk**.

5 Follow the directions on the screen.

Keeping a record of system configuration

In Windows 98, you can print a summary of the configuration of your system and the memory allocation. This printed summary can provide information to reset your system configuration properly if the information is lost, or help you troubleshoot your system.

➲ **To print a system summary:**

1 Right-click the **My Computer** icon on the desktop.

2 Select **Properties**. The System Properties window opens.

3 Click the **Device Manager** tab.

4 Click **Print.**

5 In **Report type**, select **All devices and system summary**.

6 Press **OK**.

Using your System Restoration CD

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

■ Install hardware drivers for Windows 98 and Windows NT

■ Reinstall selected software applications, such as LANDesk Client Manager

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

System power management

The power-management features supported by your system are described in the following sections.

About soft-off

When you turn off your computer by following the Windows shutdown procedure or pressing the power button, a small amount of power (less than 5 watts) still runs to the wakeup circuitry on the system board. In this *soft-off* state, your computer can still respond to an incoming signal from the modem or to certain LAN commands.

To remove all power from your computer, turn off the computer and unplug the power cord. When you plug the power cord back in, the network connection LEDs may flash and the fan may start before you press the power button. This is normal.

Using Standby in Windows 98

Windows 98 supports two standards of power management, Advanced Power Management (APM) and Advanced Configuration and Power Interface (ACPI).

The Standby mode, available through both APM and ACPI, saves power by spinning down the hard drive, and by reducing or turning off power to the monitor. ACPI lets your system save additional power in Standby by controlling the power usage of individual devices, add-in boards, and hard drives.

When the system is in Standby, it appears to be off. The computer's power LED turns amber and the monitor darkens, indicating that the system has entered Standby. However, some wakeup events can bring the system out of Standby.

Important	If your system is part of a Novell network, putting your system in Standby disconnects you from your network connection. Reestablish your network connection when you take your system out of Standby.

Checking the type of power management on your system

ACPI is available only if Windows 98 was installed with ACPI enabled. If Windows 98 was not installed with ACPI enabled, APM power management is available.

➲ **To check the type of power management on your system:**

1 Click **Start**, then select **Settings**, then **Control Panel**. The Control Panel window opens.

2 Double-click **System**. The System Properties window opens.

3 Click the **Device Manager** tab, then double-click **System devices**. The type of power management supported appears at the top of the list under **System devices**.

If you want to enable ACPI in Windows 98, see the Microsoft Web site for instructions.

Putting your system into Standby (S1)

You can put your system into Standby by clicking **Start**, then selecting **Shutdown**, **Standby**, then clicking **OK**. This procedure puts your system into Standby with both APM and ACPI.

If ACPI is enabled on your system, you can also set a timer or press the power button to put your system into Standby.

➲ **To set the standby timer:**

1 Click **Start**, then select **Settings**, then **Control Panel**. The Control Panel window opens.

2 Double-click the **Power Management** icon. The Power Management Properties window opens.

3 On the **Power Schemes** tab, set the timer. Your system enters Standby when it has been inactive for the amount of time you set.

➲ **To set the computer's power button to put the system into Standby:**

1 Click **Start**, then select **Settings**, then **Control Panel**. The Control Panel window opens.

2 Double-click the **Power Management** icon. The Power Management Properties window opens.

3 Click the **Advanced** tab.

4 Under **When I press power button on my computer**, select **Standby**.

5 Click **OK**.

After you have set the power button to be a standby button, the button functions in this way:

State of system	Length of time you press button	Result
Normal working state	Less than 4 seconds	System enters Standby
Normal working state	More than 4 seconds	Computer turns off
Standby	Less than 4 seconds	System returns to normal working state
Standby	More than 4 seconds	Computer turns off

Taking your system out of Standby

Do one of the following to take your system out of Standby:

■ Press any key on the keyboard. (A PS/2 or USB keyboard can bring the system out of Standby.)

■ If your system uses APM, move the mouse. (A PS/2 or USB mouse can bring the system out of Standby.)

■ If you have set the power button to be a Standby button, press the power button for less than 4 seconds.

The power LED turns green, and your system returns to the state it was in before it entered Standby.

➲ To reestablish your network connection:

1 Click **Start**, then **Shut Down**.

2 Select **Close all programs and log on as a different user**. Selecting this option bypasses the restart process and displays your network logon dialog box.

3 Type your password, then click **OK**. Your logon script runs and your network connections are reestablished. See your Windows 98 Help or documentation for more information on using power management.

Cleaning Your System

8

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. 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

<div style="text-align: right; font-size: 2em;">**9**</div>

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, then the circuit breaker is set.

- 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 program 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. Even if the monitor's power is disconnected, stored energy within the monitor's components can cause bodily injury.

- If a peripheral, such as the keyboard, mouse, drive, or printer does not appear to work, verify that all connections are secure.

- If an error message displays on the screen, write it down, word for word. You may be asked about it when calling Technical Support.

- 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. Observe the "Static electricity precautions" on page 15.

CD drive problems

An audio CD produces no sound

Probable Cause	Solution
The CD is loaded incorrectly.	Make sure the label is facing upward, then try again.
The speakers are not connected.	Check the speaker cables. Make sure they are connected properly and securely.
The speaker volume is turned down.	Check the volume control.
The speakers may be muted through the Multimedia volume control.	Double-click speaker icon on the task bar. Make sure the mute button is not selected.
The speakers may be faulty.	Connect a set of headphones to the line out jack to test the output. If they work, replace the speakers.
The sound card may not be installed correctly.	Open the system, then reseat the sound card. Make sure the cables are connected properly.
The CD drive audio cable may be installed incorrectly.	Open the system and make sure the cables are connected properly.

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

The CD drive is not recognized by the system

Probable Cause	Solution
The CD is not intended for PC use.	Make sure the CD is PC compatible.
The CD is loaded incorrectly.	Make sure the label is facing upward, then try again.

Probable Cause	Solution
The CD is scratched or dirty.	Try cleaning the CD with a lint-free cloth. Check the CD for scratches.
The CD 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 technical support.
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 cables are not installed correctly.	Open the system, then check all cables between the CD controller and the CD drive.
The CD drive may be defective.	Replace the CD 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 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 you have selected the correct speed.
The processor was not seated correctly in the socket.	Make sure 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 the line connected to the modem is live and plugged into the appropriate port on the modem (line port.)
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.
The phone jack is shared by another modem or telephone.	If the modem shares the jack with another device, make sure the other device does not have the port open (for instance, someone is on the phone, or another modem is in use.)

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 sure 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 disk 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 the diskette you are trying to format is IBM compatible. If it is, try reformatting it.
The diskette is corrupted.	Run ScanDisk on the diskette. If errors are detected and corrected, try accessing the diskette again.
The disk is write protected.	Make sure the write-protection window on the upper-right corner of the diskette is closed (unprotected.)

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 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 plugged in.	Check the power cable. Make sure it is plugged into a live power source.
The printer is not turned on.	Make sure 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 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 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 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, select **Properties**. Make sure 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.	Check the power cable(s), then verify connection to an AC power source.
The Voltage selection switch is not set correctly.	Make sure 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 it is plugged in correctly.
Something spilled into the keyboard.	Turn off the system. Turn the keyboard upside down to let it dry before using the keyboard again.
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 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 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 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 is defective.	Connect a working monitor to the computer.
The monitor's brightness and contrast controls are turned down.	Adjust the brightness and contrast knobs to the center position.
The video card is not seated correctly.	Open the system and reseat the video card.
The video card is not compatible with the system.	Make sure the card is compatible with your system. Try a different PCI video card.

Important ✓ Some systems 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 CRT 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 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 cable and connectors for bent pins or broken wires.
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.

Probable Cause	Solution
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 be displayed 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 sure you entered the right command. Verify the specified drive and try it again. If you are trying to exit MS-DOS to return to Windows, type **exit** and 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 is not recognized.	See "The CD drive is not recognized by the system" on page 73 for 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 78 for 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 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 - press F1 to retry boot.	Make sure the boot disk contains the Command.com file. Use the configuration utility (if applicable) to verify 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 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 the hard drive cable is properly connected.
	Open the BIOS Setup utility program, then verify 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 75 for possible solution.
	See "The SCSI drive is not recognized by the system" on page 75 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.	Enter your password again, making sure to enter it correctly.
	If you do not know the password, you may need to reinstall the software you are trying to access.
	Startup passwords are stored in BIOS. If this password has been set and is unknown, you may be able to reset the password through system board jumper settings.
Keyboard clock line failure.	Try a working keyboard.
	Make sure the keyboard is compatible with the system. You may have to change the switch setting to AT.
Keyboard controller failure.	Try a working keyboard.
	Make sure the keyboard is compatible with the system. You may have to change the switch setting to AT.
Keyboard controller failure.	Try a working keyboard.
	Make sure the keyboard is compatible with the system. You may have to change the switch setting to AT.
Keyboard not detected.	See "The keyboard does not work" on page 81 for possible solution.
	Turn off the system, then check the keyboard cable.
Keyboard stuck key failure.	Remove any objects that may be resting on the keyboard, then restart the system.
	Check for sticky keys. Clean the keyboard if necessary.
Memory errors were detected while the system powered up.	See "Memory errors were detected during system start up" on page 76 for possible solution.
Memory size error.	Enter the BIOS Setup utility and save the memory configuration.
Non-system disk or disk error.	Eject the diskette, then press ENTER.
	If the diskette is bootable, check it for errors.

Error Message	Solutions
Not enough memory.	Close all programs that are not currently in use.
Print queue is full.	Wait until the current print job has completed before sending another print job.
	If you receive this error often, you need to add memory to the printer.
Printer is out of paper.	Add paper to the printer.
	Make sure the printer is online.
Required parameter missing.	Make sure you entered the right command. If you are trying to exit MS-DOS to return to Windows, type **exit** and press ENTER.
Syntax error.	Make sure 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

10

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 REN's on a telephone line may result in the devices not ringing in response to an incoming call. In most areas, the sum of REN's should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, 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
  - EN 50082-1:1992 according to

    EN 61000-4-2:1995 or IEC 801-2:1984

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

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

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 contact 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
　この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＢ情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
　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. 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/NFPSA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Lightning protection

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

Power lines

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

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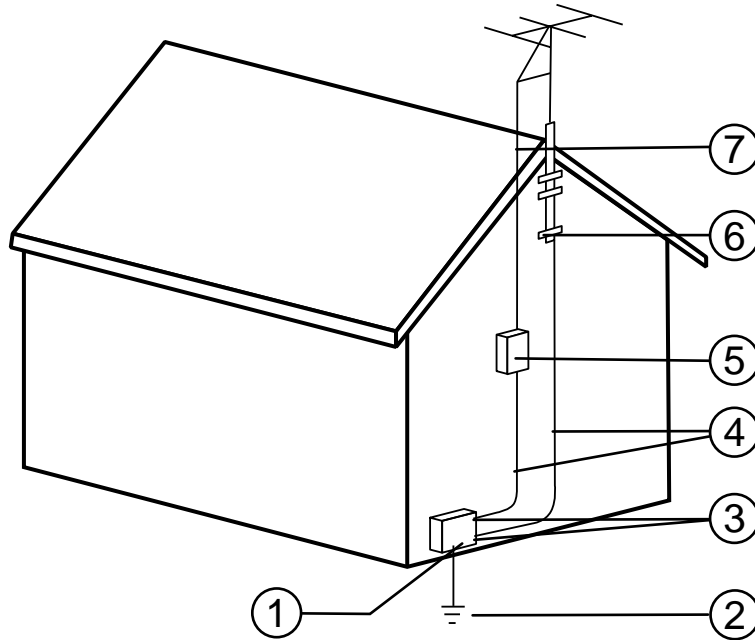
Antenna and satellite grounding

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

Notices

Specifications

A

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

Case size (without the optional minitower base)	Width: 15" Depth: 17.5" Height: 4.7"
Processors	Intel® Pentium III™ processors operating at 533, 600, 733, 800, 866, 933 MHz and faster
Cache	256k or 512K, depending on processor
RAM	Two RIMM sockets on the system board support 2.5 volt Rambus Dynamic Random Access Memory (RDRAM) RIMMs. Maximum memory is 1 GB
BIOS	Flash BIOS for easy updates from diskette
Video	4X AGP slot
IDE interfaces	Supports up to two ATAPI/IDE devices (hard drives or CD drives) using two onboard PCI IDE controllers
Diskette drive interface	A diskette drive controller is integrated on the system board

I/O ports	One parallel port, two serial ports, two USB ports, one PS/2 keyboard port, one PS/2 mouse port, one video port, one audio microphone-in jack, one audio line-in jack, one audio line-out jack, one RJ-45 network jack
Expansion slots	Three PCI slots on riser card
Drive Bays	One 5.25-inch drive bay (occupied by CD drive), and four 3.5-inch drive bays (one occupied by diskette drive)
Temperature, operating	10° to 35° Celsius or 50° to 95° 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 Complaint

Index