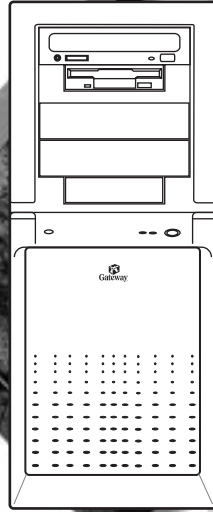


Maintaining and Troubleshooting Your E-5250 System





Maintaining and Troubleshooting Your E-5250 System



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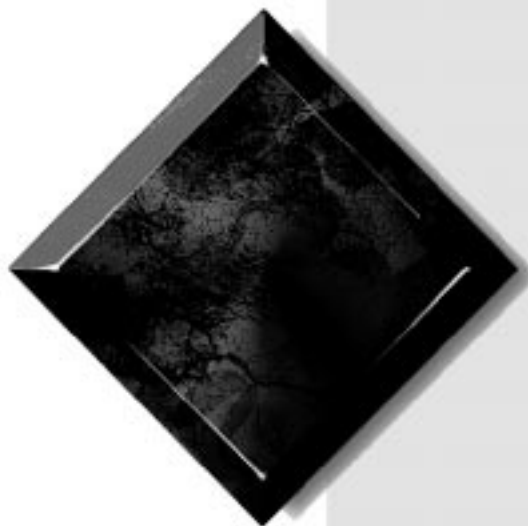
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Preface

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Conventions Used in This Guide

Throughout this guide, you will see the following conventions:

Convention	Description
ENTER	Keyboard key names are printed in small capitals.
CTRL+ALT+DEL	A plus sign indicates that the keys must be pressed simultaneously.
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 and files are printed in italic.
 <i>Important!</i>	An important informs you of special circumstances.
 <i>Caution!</i>	A caution warns you of possible damage to equipment or loss of data.
 <i>Warning!</i>	A warning indicates the possibility of personal injury.

Safety Instructions

Observe the following safety instructions when using your system:

- Follow all instructions marked on the system and in the documentation.
- When the computer is turned off, a small amount of electrical current still runs through the computer. Always unplug the computer from the electrical outlet before cleaning the system or opening the computer cover. (Follow the cleaning instructions in your user's guide.)
- Do not use this product near water or a heat source, such as a radiator or heat register.
- Do not spill anything on or into the system. The best way to avoid spills is to avoid eating and drinking near your system.
- Make sure you set up the system on a stable work surface.
- Openings in the computer cabinet are provided for ventilation. Do not block or cover these openings. Make sure you provide adequate space (at least 12 inches) around the system for ventilation when you set up your work area. Never insert objects of any kind into the computer ventilation slots.
- Use the voltage setting for your area. The voltage selector switch is set at the factory to the correct voltage.
- This computer is equipped with a 3-wire grounding plug (a plug with a grounding pin). This plug will only fit into a grounded power outlet. This is a safety feature. Do not defeat the purpose of the grounding pin. If you are unable to insert the plug into the outlet, contact your electrician to replace the outlet.
- Do not walk on the power cord or allow anything to rest on it.
- If you use an extension cord with this system, make sure the total ampere ratings on the products plugged into the extension cord do not exceed the extension cord ampere rating. Also, the total ampere requirements for all products plugged into the wall outlet must not exceed 15 amperes.

 **Warning!**

Do not attempt to service the system yourself except as explained elsewhere in the system documentation. Adjust only those controls covered in the instructions.

Opening or removing covers marked "Do Not Remove" may expose you to dangerous electrical voltages or other risks.

Refer all servicing of those compartments to qualified service personnel.

- There is a danger of explosion if the CMOS (complementary metal-oxide semiconductor) battery is replaced incorrectly. Replace the battery with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.
- 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's performance changes.

Additional Information Sources

Along with this manual and your user's guide, you can find additional information by using the following sources.

The Gateway Support Center

Log on to the Gateway Support Center at www.gateway.com/support to access information about your system or other Gateway products. Some types of information you can access are:

- Hardware driver (including BIOS) and software application updates
- An expanded glossary
- Technical tips
- Service Agreement information
- Technical documents and component information
- Frequently Asked Questions (FAQ)
- Online access to Tech Support

The System Restoration CD

The System Restoration CD included with your system contains online documentation for Gateway components (such as hard drives, modems, CD-ROM drives, and system boards).

If your system includes a component that requires setup or requires additional information to use or to set up software—and a printed document is not included in your accessory kit—that information should be on the CD in either HTML or Acrobat PDF format.

Instructions for using the System Restoration CD are included in the CD package.





System Access

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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 system by following static electricity precautions every time you open your computer case.

1. Wear a grounding wrist strap (available at most electronics stores).
2. Turn off the system power.
3. Touch the back of the power supply case to discharge any static electricity.
4. Unplug all power cords from AC outlets.
5. Open the computer case.

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

- Avoid static-causing surfaces, such as plastic and styrofoam, 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 the bag provides antistatic protection.
- Always hold cards by their edges and their metal mounting bracket. Avoid touching components on the cards and the edge connectors that connect to expansion slots.
- Never slide cards or other parts over any surface.

Opening the Case

The case of your system is made up of two side panels, a top panel, and a front bezel. To install or remove most components inside your system, you must remove the panel on the right side (as seen from the back of the system). For some procedures you must remove the left side panel and the front bezel also.

Your computer includes an anti-intrusion switch on the case. If you attempt to open the case without turning off the system, your system will automatically turn off.

Because the components inside your computer are extremely sensitive to static electricity, be sure to follow the precautions for avoiding static electricity damage at the beginning of this chapter.

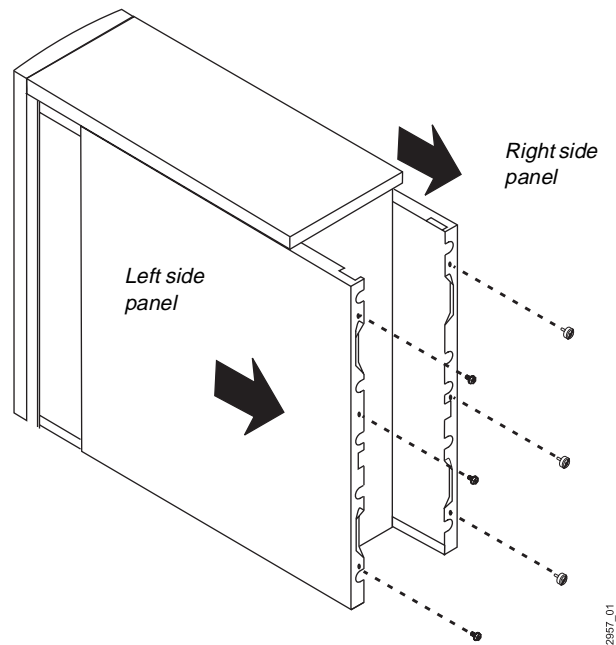
 **Warning!**

To avoid exposure to dangerous electrical voltages and moving parts, turn off your computer and unplug the power cord before opening the case.

You need a grounding wrist strap and a Phillips screwdriver to open the case.

To open the case

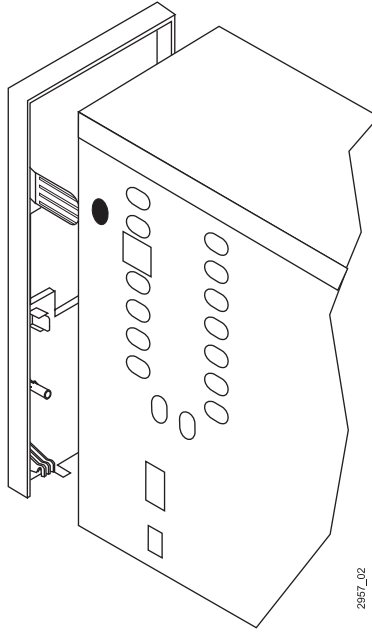
1. Turn off the system and disconnect all power cords.
2. With the back of the computer facing you, remove the three thumbscrews and the three Phillips screws that attach the side panels to the chassis.



3. Grasp the right panel by the handholds on the panel and slide the panel towards you until the panel comes off the chassis.
4. Grasp the left panel by the handholds on the panel and slide the panel towards you until the panel comes off the chassis.
5. Push in the tabs on each side of the front bezel and pull the bezel off the chassis.

1. Press in tabs
on both sides of
chassis

2. Pull off
bezel



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Closing the Case

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

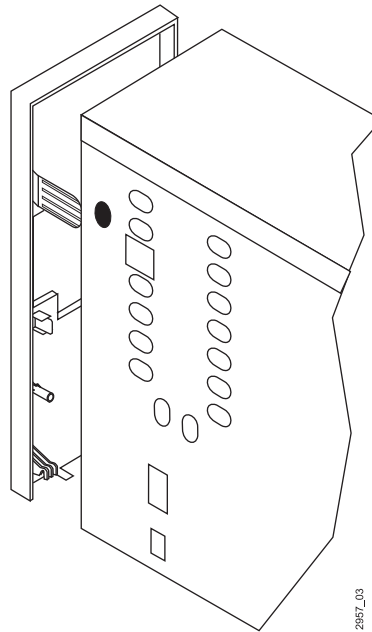
To close the case

1. Hook the tabs at the bottom of the front bezel into the slots in the chassis. Then push the bezel toward the chassis until the bezel snaps in place.

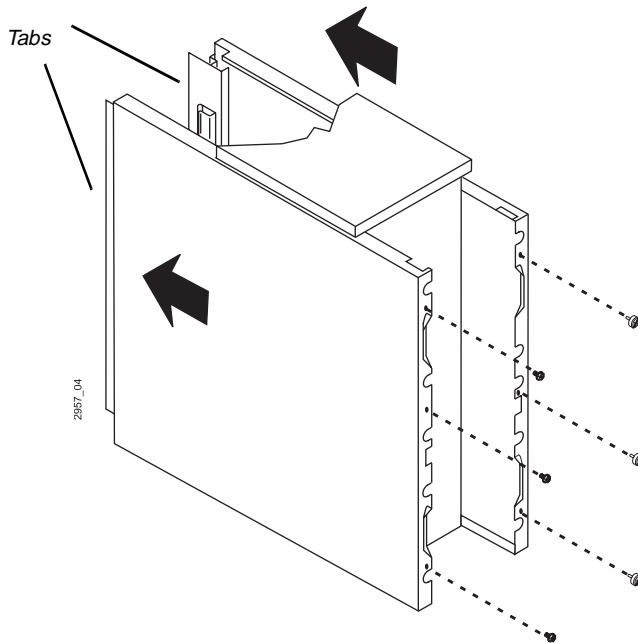
1. Hook tabs on both sides into chassis



2. Push bezel toward chassis



2. Place the left side panel on to the chassis and slide the panel toward the front of the chassis. Make sure the tab at the front of the panel fits under the edge of the chassis.



3. Replace the three screws that attach the left side panel to the chassis.
4. Place the right side panel on to the chassis, making sure the panel fits into the rails on the chassis. Slide the panel toward the front of the chassis until the tabs on the panel fit under the edge of the chassis.
5. Replace the three thumbscrews that attach the right side panel to the chassis.





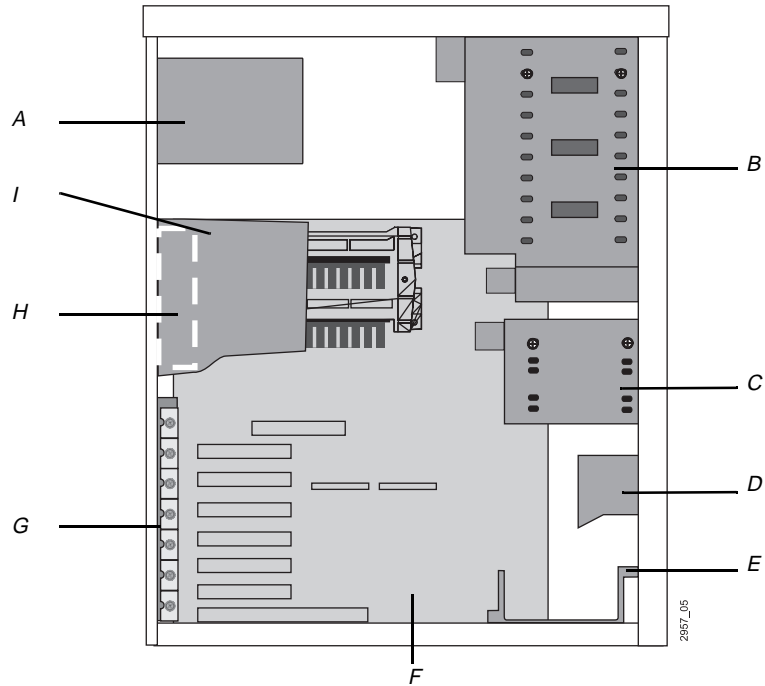
System Components

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System Components

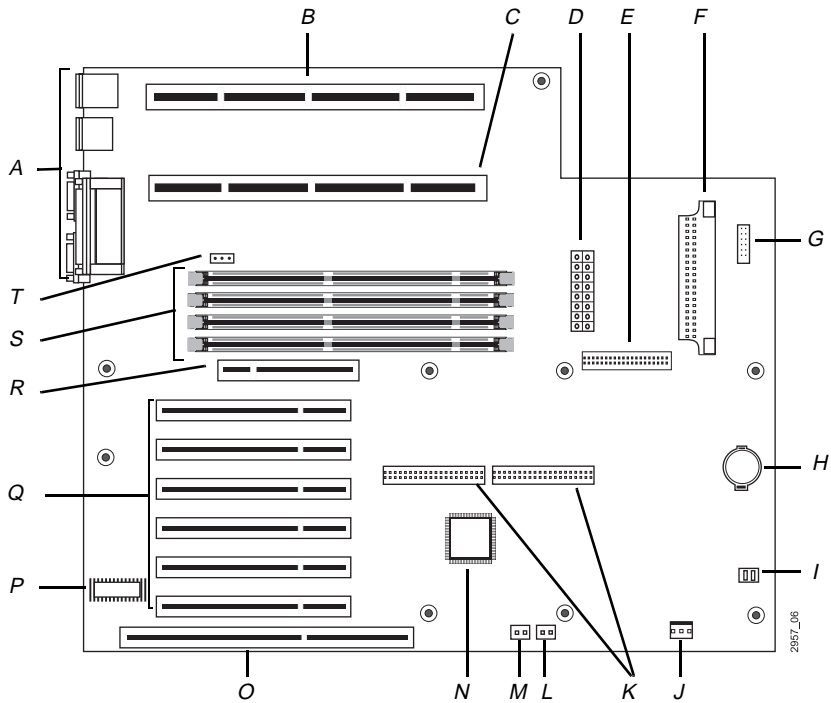
The following figure and list identify components inside the computer.



- A Power supply
- B Top drive cage
- C Middle drive cage
- D Add-in card guide (included in some systems)
- E Bottom drive cage
- F System board
- G Add-in card bracket
- H Fan
- I Fan duct

System Board

System board components are identified in the following figure and list.

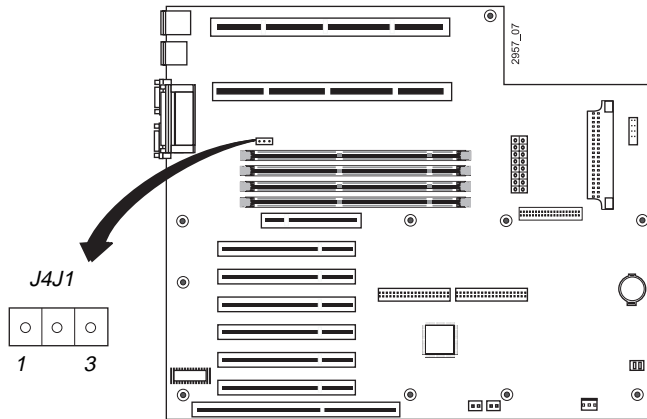


- A Back panel I/O connectors
- B Processor slot P1 (application processor)
- C Processor slot P0 (boot processor)
- D Power connector
- E Diskette drive connector
- F Voltage regulator module connector
- G Front panel I/O connector
- H Battery

- I Chassis intrusion switch
- J Wake on LAN connector
- K IDE connectors
- L SCSI LED connector
- M Wake on modem ring connector
- N 440GX chip
- O ISA expansion slot
- P BIOS chip
- Q PCI expansion slots (six)
- R AGP expansion slot
- S DIMM slots (four)
- T Jumper J4J1

Jumper

The following figure shows the location of the jumper on the system board.

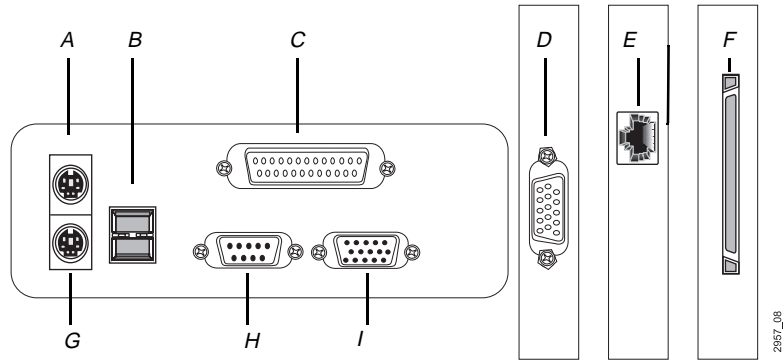


To set the jumper, place the jumper block over the jumper pins as indicated in the following table.

Pins	Operation
Pins 1 and 2	Default setting for normal system operation.
Pins 2 and 3	Opens the Maintenance menu in Setup, which enables you to set the processor speed and clear passwords. (See page 47 for more information on the Maintenance menu.)
Remove jumper block from pins	Enables you to attempt a BIOS recovery. (See page 58 for more information.)

I/O Connectors

The following I/O connectors are included with the standard system.



- A Mouse port
- B USB ports (two)
- C Parallel (printer) port
- D AGP video connector
- E Network connector
- F External SCSI connector
- G Keyboard port
- H Serial port 1 (A)
- I Serial port 2 (B)

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Installing Components

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Installing Memory

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

- 3.3 V
- 72 bit
- Intel 4-clock
- 100 MHz
- Unbuffered
- Registered
- ECC

Four DIMM sockets are available on the system board: bank 0, bank 1, bank 2, and bank 3. You can fill one or more of the banks with 128, 256, or 512 MB DIMMS. The maximum system memory is 2 GB.

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

- Do not install buffered and unbuffered DIMMs together.
- Do not install registered and unregistered DIMMs together.
- Do not install 66 MHz and 100 MHz DIMMs together.

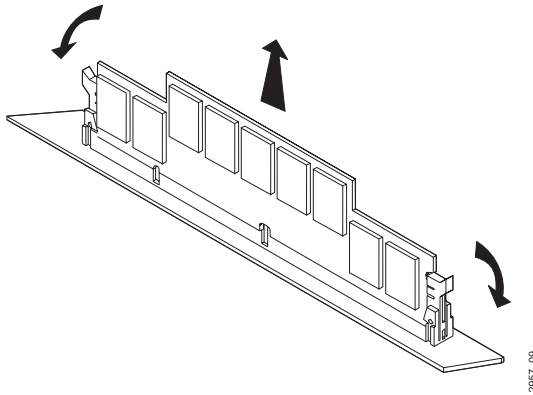
If you remove a DIMM place it in an antistatic bag.

See the figure on page 11 for the location of the DIMM sockets.

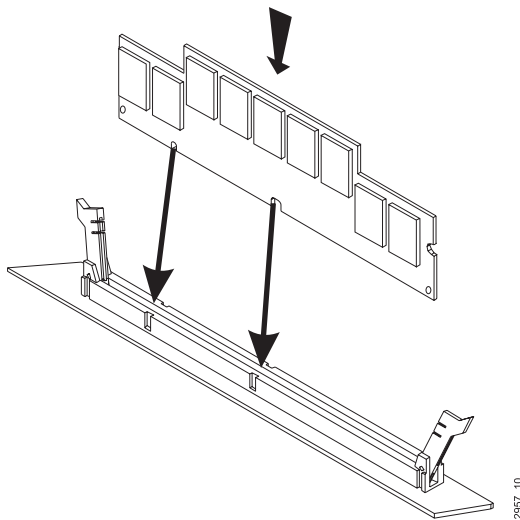
To install a DIMM

1. Turn off the system and unplug the power cord.
2. Remove the right side panel of the case (see page 3 for instructions), observing the static electricity precautions on page 2.
3. If you want to install a DIMM in an empty socket, pull open the socket clamps on each side of the socket.

4. If there is a DIMM in the socket you want to use, pull open the socket clamps on each side of the socket and carefully pull the DIMM out of the socket.



5. Insert the new DIMM perpendicular to the socket and align the two notches in the DIMM with the two notches in the DIMM socket.



6. Gently press the DIMM into the socket until it does not move any farther. (Inserting the DIMM correctly automatically closes and locks the socket clamps on the slot.)

Caution!

Never try to remove or install a DIMM without opening the socket clamps. You may break the socket or damage the DIMM.

7. Close the system case (see page 6 for instructions). Plug in the power cord and turn on the computer.

As the computer starts, you are prompted to press Esc to see the memory count on the screen. Check to see that the correct amount of memory is displayed.

If your computer does not start up correctly, see “Memory Problems” on page 67 or the section in the “Troubleshooting” chapter that corresponds to the problem you are having, such as no video on start up.

Installing Add-In Cards

The system board has eight expansion slots:

- One AGP expansion slot for a graphics card
- Six 32-bit PCI local bus interface expansion slots
- One 8/16-bit ISA expansion slot

The maximum number of slots that you can fill is seven. The ISA slot and PCI slot next to each other share a slot location. You can use one or the other slot, but not both.

Some ISA add-in cards have jumpers or switches that set interrupts and I/O addresses. To set the jumpers and switches, follow the instructions that come with the cards.

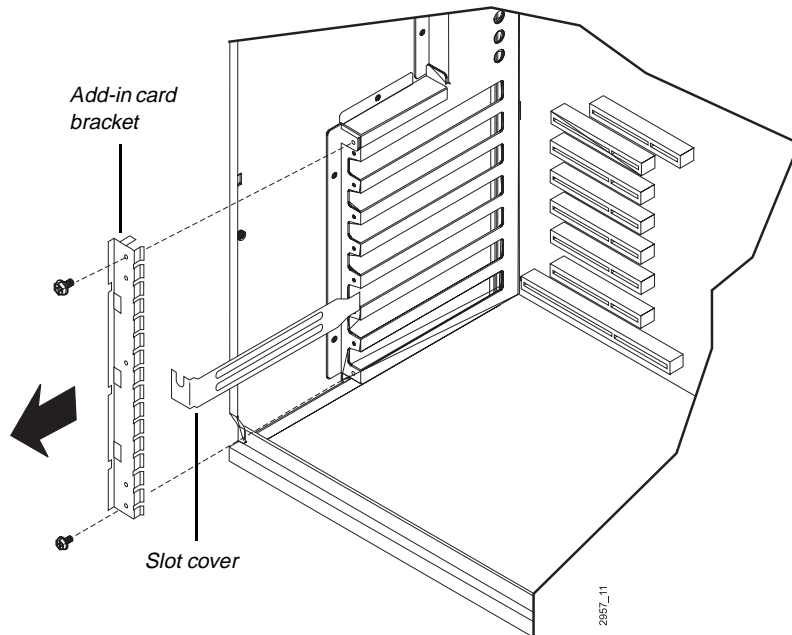
See the figure on page 11 for the location of the expansion slots.

To remove or install an add-in card, you need a Phillips screwdriver. If you remove a card, place it in an antistatic bag.

To install an add-in card

1. Turn off the system and unplug the power cord.
2. Remove the right side panel of the case (see page 3 for instructions), observing the static electricity precautions on page 2.

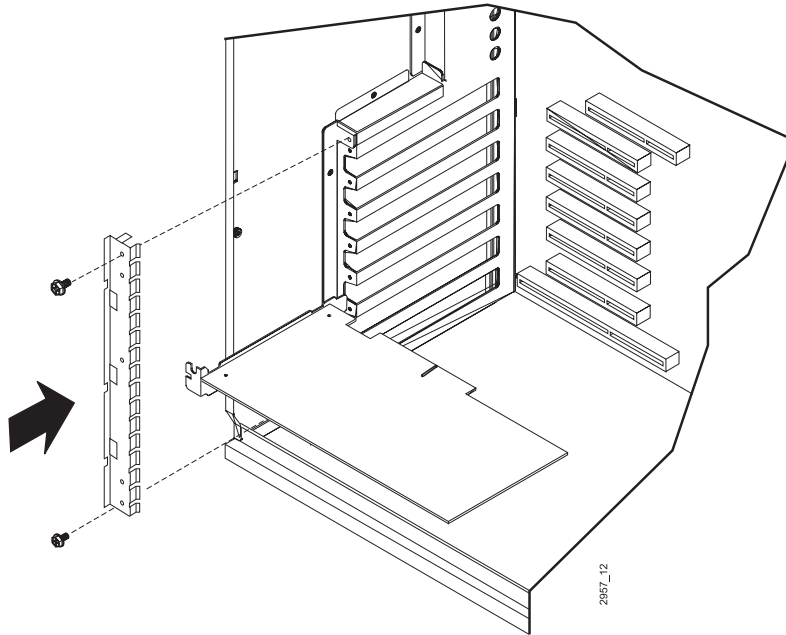
3. Remove the two screws that attach the add-in card bracket to the chassis. Then lift the bracket out of the system.



4. If there is a slot cover in the chassis next to the expansion slot you want to use, pull the slot cover out of the system. Save the cover in case you ever need to replace it.
5. If there is an add-in card installed in the slot you want to use, remove it:
 - Unplug the cables connecting the card to other devices.
 - Grasp the upper corners of the card, and pull the card out of the slot. If the card is difficult to remove, rock the card back and forth slightly as you pull the card out of the slot. Do not bend the card or you may damage it.

6. Insert the edge of the new add-in card into the slot. Push the card into the slot until the card is fully seated in the slot.

Make sure that the edge of the slot cover attached to the card fits between the system board and the chassis.



7. Replace the add-in card bracket and install the two screws that attach the bracket to the chassis.

8. If you are installing a sound card, see “To install a sound card” on page 22. If you are installing a video card, see “To install a video card” on page 23. If you are installing a modem, see “To install a modem” on page 23.

To install a sound card

1. See the sound card’s documentation for the location of the card’s connectors.
2. If you have a CD-ROM drive in your computer, connect the CD audio cable to the CD audio input jack on the card. Make sure the other end of the cable is connected to the CD audio output connector on the back of the CD-ROM drive.
3. Close the computer case (see page 6 for instructions). Plug in the power cord and turn on the computer.
4. If you have speakers, connect the speakers to the audio-out connector on the back of the sound card.
5. If you have a modem with answering machine functionality, connect the modem input cable to the telephone answering device (TAD) input connector on the back of the sound card.
6. If you have a joystick, connect it to the joystick/MIDI port on the back of the sound card.
7. If you have added the sound card as an option or upgraded your sound card, you must install the driver for it. See the sound card documentation for the installation instructions.

8. Try playing an audio CD to test the sound card's functions. If the sound card does not function correctly, see "Add-In Card Problems" on page 63 and "CD-ROM Problems" on page 63.

To install a video card

1. See the video card's documentation for the location of the card's connectors.
2. Close the system case (see page 6 for instructions).
3. Connect the monitor to the video connector on the back of the video card.
4. Plug in the computer's power cord and the monitor's power cord. Turn on the monitor and then the computer.
5. Install the video card drivers. Consult the card's documentation for driver installation instructions.
6. If the monitor does not display the video correctly, see "Add-In Card Problems" on page 63 and "Video Problems" on page 71.

To install a modem

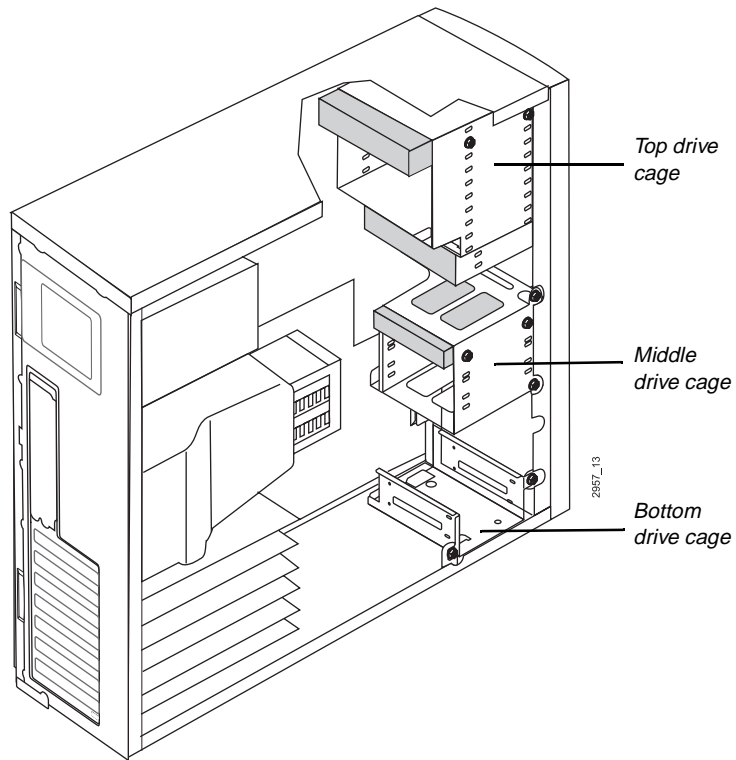
1. Close the system case (see page 6 for instructions). Plug in the power cord and turn on the computer.
2. Use the modem documentation to connect the telephone cables to the jacks in the back of the modem.
3. Set up the modem through your computer's operating system. See your modem documentation for instructions.
4. Try connecting to your Internet service provider or a bulletin board service.
5. If the modem does not connect, see "Add-In Card Problems" on page 63 and "Modem Problems" on page 68 for troubleshooting information.

Installing Drives

The drive cages in your system can hold the following drives:

- Top drive cage: five drives (5.25 inch and 3.5 inch) that can be accessed from outside the system.
- Middle drive cage: two full-height (1.6-inch high) or three half-height (1-inch high) 3.5-inch hard drives that are not accessible from outside the system.
- Bottom drive cage: one full-height (1.6-inch high) or two half-height (1-inch high) 3.5-inch hard drives that are not accessible from outside the system.

The following illustration shows the location of the drive cages.



The standard configuration for your computer includes a 5.25-inch CD-ROM drive, a 3.5-inch hard drive, and a 3.5-inch diskette drive.

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

- To remove and install drives, you need a magnetized 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 card controller, install the add-in card before you install the drive.
- The computer's integrated IDE connectors can support four IDE drives. The computer's integrated diskette connector can support a diskette drive.
- IDE hard drives can be configured as single, master, or slave. IDE CD-ROM drives can be configured as master or slave. Use the drive-select jumpers on the drives to configure IDE drives as follows: If only one drive is attached to the controller cable, configure the drive as single if it is a hard drive or master if it is a CD-ROM drive. If two drives of any type are attached to the cable, configure one as master and one as slave.
- A SCSI controller card is a standard feature of your system. To operate SCSI drives that you add, you may need to install software drivers.
- When you connect drives to a SCSI cable, the drive on the cable farthest from the SCSI card should be terminated. Other drives on the cable do not need to be terminated. See the drive's documentation for information on setting the termination jumper on the drive.
- The Setup utility is set by default to automatically configure diskette drives that you add to the system. You may need to configure some older drives manually. If so, press F1 at start up to access the Setup utility.

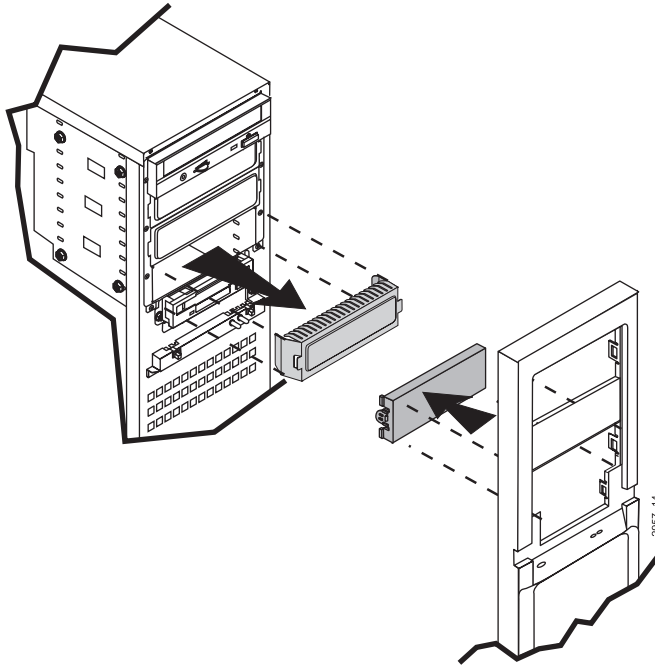
Installing Drives in the Top Drive Cage

You can install 5.25-inch and 3.5-inch externally accessible drives in the top drive cage.

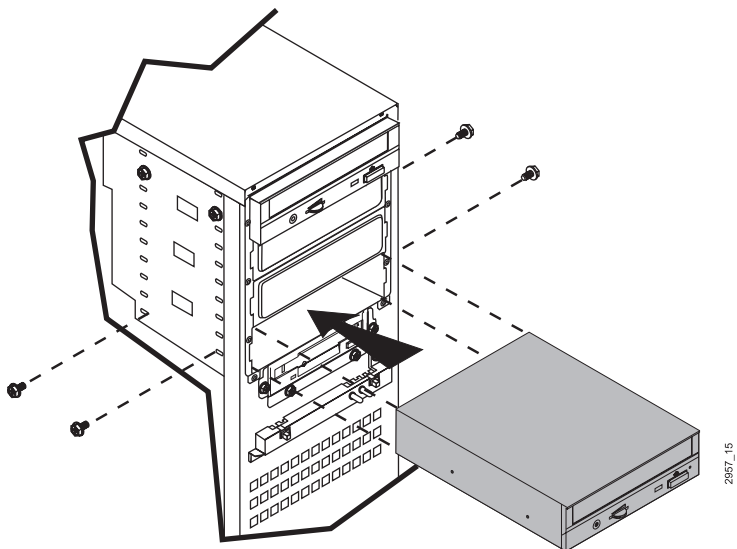
To install a drive in the top drive cage

1. Turn off the system and unplug the power cord.
2. Remove the case side panels. If a plastic slot cover or metal shield is located in the bay you want to use, remove the front bezel also. (See page 3 for instructions on opening the case). Observe the static electricity precautions on page 2 as you open the case.
3. If a drive is installed in the bay you want to use, remove the drive:
 - Disconnect the power and data cables from the back of the drive.
 - Remove the four screws (two on either side of the drive) that attach the drive to the drive cage.
 - Push the drive out of the chassis through the bezel.

4. If a metal shield and slot cover are in the bay you want to use, remove them:
- Push the metal shield out through the front of the chassis.
 - Push the slot cover out through the back of the bezel.



5. Slide the new drive into the system through the front of the chassis.



6. Install the four screws that attach the drive to the drive cage.
7. Connect the cables to the drive.
8. Close the system case (see page 6 for instructions). Plug in the power cord and turn on the computer.

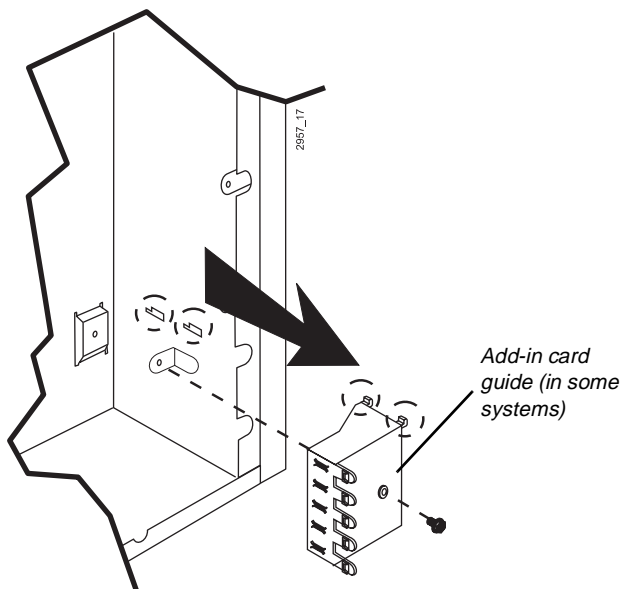
If the system does not recognize the new drive, see “CD-ROM Problems” on page 63 or “Diskette Drive Problems” on page 65 for troubleshooting information.

Installing Drives in the Middle Drive Cage

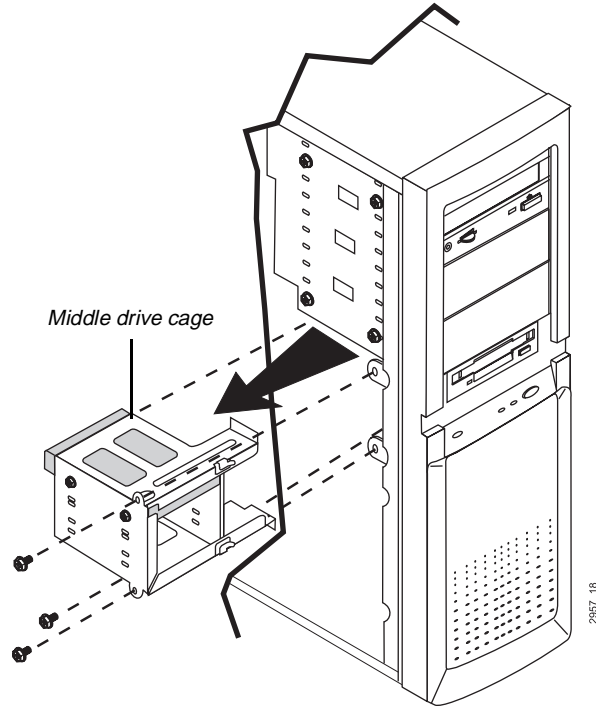
You can install 3.5-inch hard drives in the middle drive cage.

To install a drive in the middle drive cage

1. Turn off the system and unplug the power cord.
2. Remove the right side panel of the case (see page 3 for instructions), observing the static electricity precautions on page 2.
3. If any drives are installed in the drive cage, disconnect the cables from the back of the drives.
4. If your system includes an add-in card guide, remove it:
 - A. Remove any long add-in cards attached to the card guide (see page 19 for instructions).
 - B. Remove the screw that attaches the add-in card guide to the chassis and then slide the card guide out of the computer.

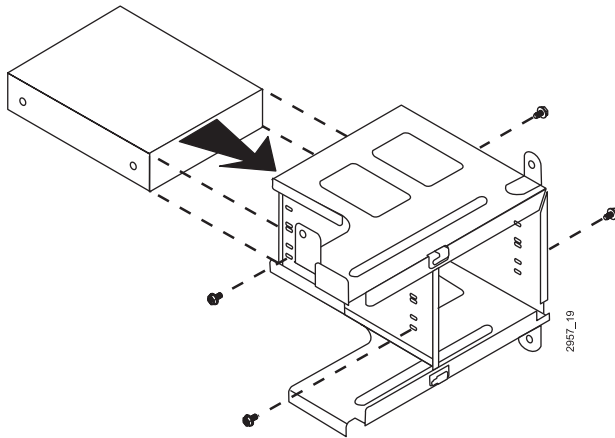


5. Remove the three screws that attach the middle drive cage to the chassis. Support the cage with your hand as you remove the last screw. Then slide the drive cage out of the chassis.

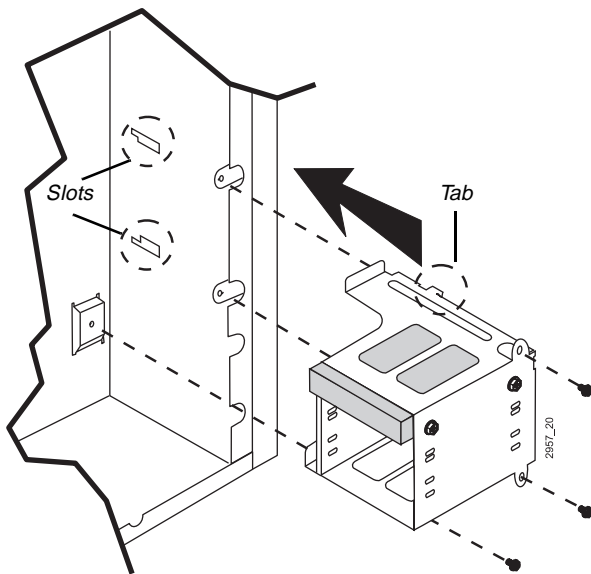


6. If a drive is in the bay of the cage that you want to use, remove the screws that attach the drive to the cage and remove the drive.

7. Slide the new drive into the cage and attach the drive to the cage with four screws.



8. Slide the drive cage into the chassis, making sure to hook the tabs on the cage into the slots on the chassis. Replace the three screws that attach the cage to the chassis.



★ **Important!**

When you reinstall the middle drive cage, make sure you do not set the cage on the cables attached to the control panel.

9. Connect the cables to the drives in the cage. If a card guide is included in your system, replace the add-in card guide and any add-in cards you removed.
10. Close the computer case (see page 6 for instructions). Plug in the power cord and turn on the computer.

If the system does not recognize the new drive, see “Hard Drive Problems” on page 66 for troubleshooting information.

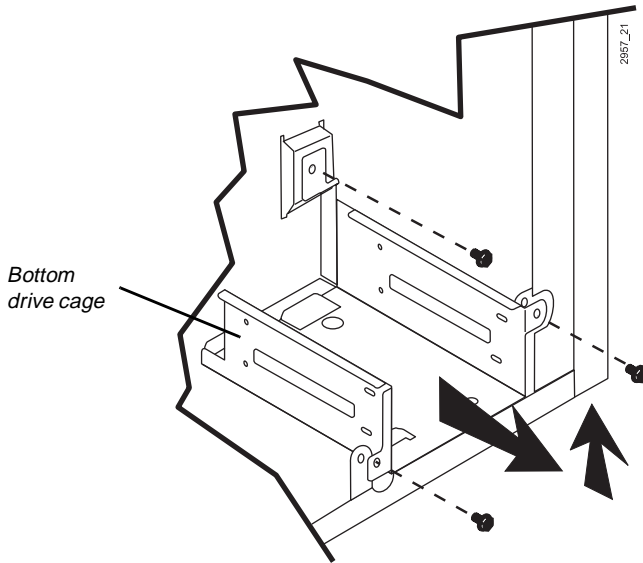
Installing Drives in the Bottom Drive Cage

You can install 3.5-inch hard drives in the bottom drive cage.

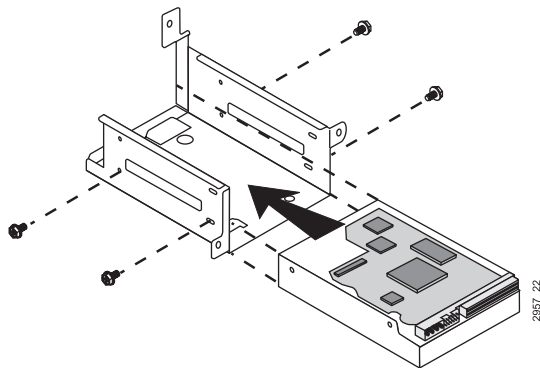
To install a drive in the bottom drive cage

1. Turn off the system and unplug the power cord.
2. Remove the right side panel of the case (see page 3 for instructions), observing the static electricity precautions on page 2.
3. If any drives are installed in the drive cage, disconnect the cables from the back of the drives.
4. If your system includes an add-in card guide, remove it:
 - A. Remove any long add-in cards attached to the card guide (see page 19 for instructions).
 - B. Remove the screw that attaches the add-in card guide to the chassis and then slide the card guide out of the computer.

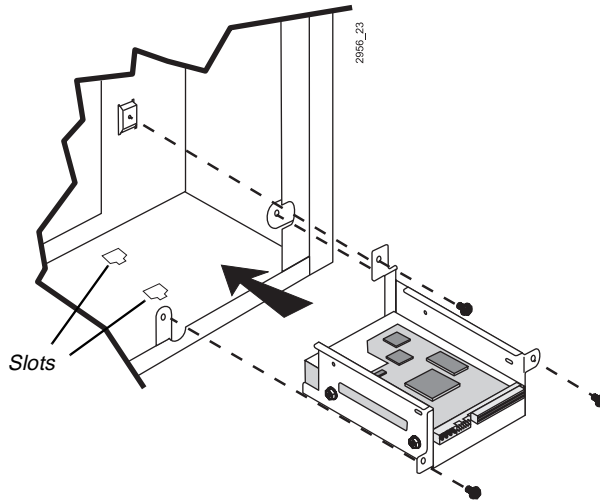
5. Remove the three screws that attach the drive cage to the chassis. Then slide the cage forward and lift it out of the chassis.



6. If a drive is in the bay of the cage that you want to use, remove the screws that attach the drive to the cage and remove the drive.
7. Slide the new drive into the cage with the bottom of the drive facing up. Attach the drive to the cage with four screws.



8. Slide the drive cage into the chassis, making sure to hook the tabs on the cage into the slots on the chassis. Replace the three screws that attach the cage to the chassis.



9. Connect the cables to the drives in the bracket.
10. If a card guide is included in your system, replace the add-in card guide and any add-in cards you removed.
11. Close the system case (see page 6 for instructions). Plug in the power cord and turn on the computer.

If the system does not recognize the new drive, see “Hard Drive Problems” on page 66 for troubleshooting information.

Replacing the CMOS Battery

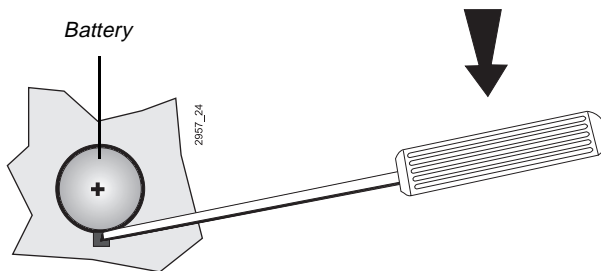
Your system board uses a 3-V coin-type lithium battery. If the settings you enter in the Setup utility are not saved when you turn off the computer, replace the battery.

If your battery is failing, you may notice your system clock slowing down and giving you the incorrect time. If so, open Setup and write down all the values in the menus and submenus before replacing the battery. Replacing the battery resets the Setup utility to its default values.

To remove and install the CMOS battery, you need a small flat-blade screwdriver. See the figure on page 11 for the location of the battery socket.

To install the battery

1. Turn off the system and unplug the power cord.
2. Remove the right side panel of the case (see page 3 for instructions), observing the static electricity precautions on page 2.
3. Place the edge of a small screwdriver under the battery and lift up the battery until it pops out of the socket.



4. Lift the battery out of the system.
5. Put the new battery into the socket. Press down until the battery snaps into place. Make sure the positive (+) side of the battery faces up.

Warning!

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 used batteries according to the manufacturer's instructions.

6. Close the system case (see page 6 for instructions). Plug in the power cord and turn on the system.
7. Open the Setup utility by pressing F1 at start up. Check the settings and restore any settings for your system. Save your changes, exit the Setup utility, and let the computer continue the startup process.

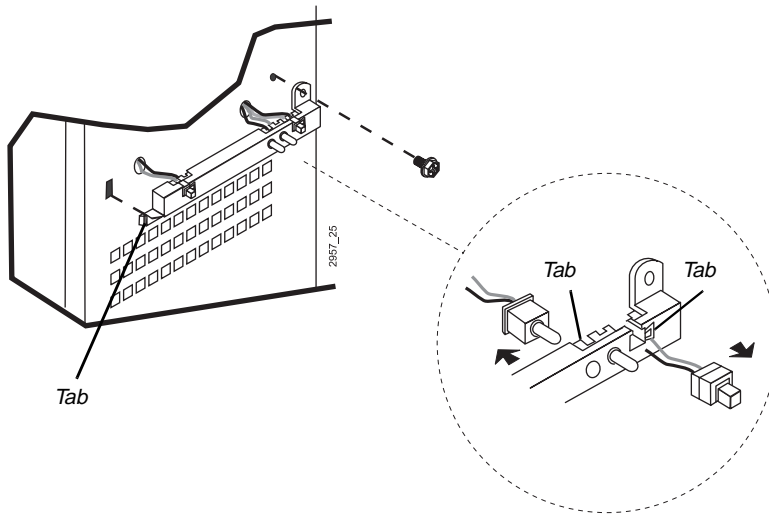
If your Setup changes are not saved correctly, make sure you have installed the battery correctly, with the positive side up.

Replacing the Control Panel

The control panel holds the LEDs and switches on the front of the system. To remove and install the control panel, you need a Phillips screwdriver.

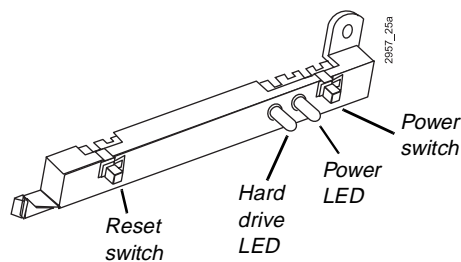
To install the control panel

1. Turn off the system and unplug the power cord.
2. Remove the and the front bezel (see page 3 for instructions), observing the static electricity precautions on page 2.
3. Remove the screw that attaches the control panel to the chassis.



4. Slide the panel to the right to disengage the tab on the panel from the slot in the chassis.

5. Remove the switches and LEDs from the panel:
 - To remove a switch, push the tab at the top of the switch slot outward and hold it. Pull the switch through the top of the slot and thread the cable through the hole in the panel.
 - To remove an LED, push the tab at the bottom of the LED slot outward and hold it. Push the LED through the bottom of the panel.
6. Push the switches and LEDs into the chassis through the holes on the outside of the chassis.
7. Disconnect the I/O cable from the system board and take the cable out of the chassis.
8. Connect the new I/O cable to the system board connector and push the switches and LEDs to the outside of the chassis through the holes in the chassis.
9. Install the switches and LEDs into the new LED panel. Make sure you install the switches and LEDs in the correct locations:
 - The green LED is the hard drive LED.
 - The white LED is the power LED.
 - The reset switch has a long cable.
 - The power switch has a short cable.



To install a switch, push the tab at the top of the switch slot outward and hold it. Push the switch through the top of the slot and thread the cable through the hole in the panel.

To install an LED, push the tab at the bottom of the LED slot outward and hold it. Push the LED through the bottom of the panel.

- 10.** Replace the panel on the chassis, making sure the tab on the panel is inserted into the slot in the chassis. Replace the screw that attaches the panel to the chassis.
- 11.** Close the system case (see page 6 for instructions). Plug in the power cord and turn on the system.

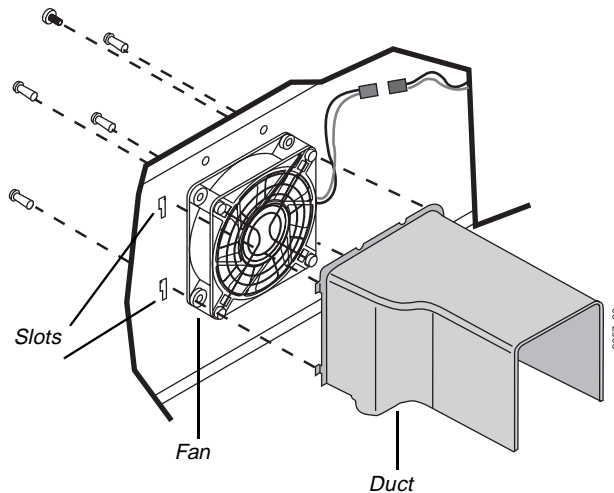
If the switches and LEDs do not work correctly, make sure you installed them into the correct slots on the panel. Check the connection of the I/O cable to the system board.

Replacing the Fan

To remove and install the fan, you need a and a small flat-blade screwdriver and a Phillips screwdriver. See the figure on page 10 for the location of the fan.

To install the fan

1. Turn off the system and unplug the power cord.
2. Remove the right side panel of the case (see page 3 for instructions), observing the static electricity precautions on page 2.
3. Disconnect the fan power cable from the power supply cable.
4. Remove the screw on the back of the chassis that holds the fan duct in place. Then slide the fan duct up until the tabs on the duct are disengaged from the slots in the chassis. Lift the duct out of the chassis.



5. With the flat-blade screwdriver, push out the four plastic rivets that attach the fan to the chassis. Support the fan as you remove the last rivet.
6. Place the new fan into the system, aligning the rivet holes in the fan with those in the chassis.
7. Push the rivets through the holes in the chassis.
8. Connect the fan power cable to the power supply cable.
9. Place the duct over the fan, making sure the tabs on the duct fit into the slots on the back of the chassis. Replace the screw that holds the duct in place.
10. Close the system case (see page 6 for instructions). Plug in the power cord and turn on the computer.

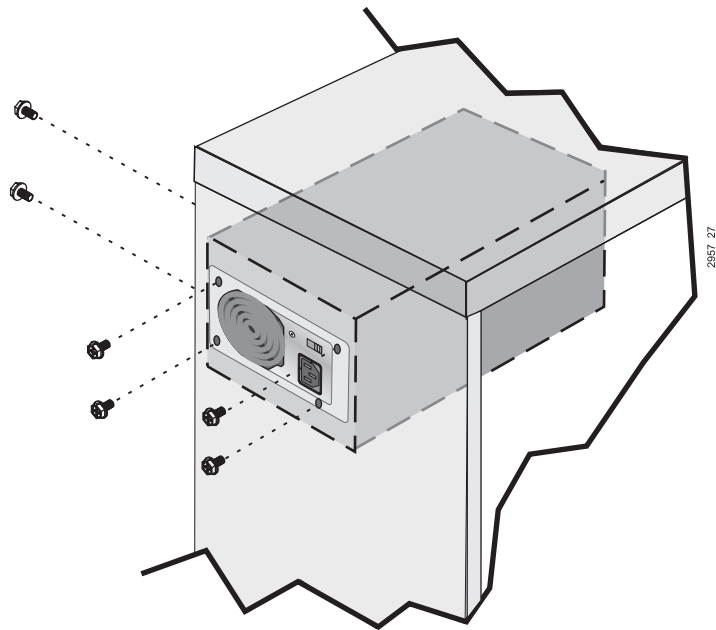
If the fan does not work correctly, make sure you installed the fan correctly and check the connection of the fan cable to the power supply cable.

Replacing the Power Supply

To remove and install the power supply, you need a Phillips screwdriver.

To install the power supply

1. Turn off the system and unplug the power cord.
2. Remove the right side panel of the case (see page 3 for instructions), observing the static electricity precautions on page 2.
3. Disconnect all power supply cables from internal devices, including the main power supply connection to the system board.
4. Remove the four screws on the back of the chassis that attach the power supply to the chassis.



5. Support the power supply with your hand and remove the two screws on the side of the chassis that attach the power supply.

- 6.** Lift the power supply out of the chassis.
- 7.** Check the red voltage switch on the back of the new power supply. Be sure it is set to the correct voltage for your area.
- 8.** Line up the holes in the new power supply with the screw holes in the back of the chassis.
- 9.** Replace the four screws on the back of the chassis and the two screws on the side of the chassis.
- 10.** Reconnect the power supply cables.
- 11.** Replace the system cover (see page 6 for instructions). Plug in the power cord and turn on the computer.

If the system does not work correctly, make sure that you installed the power supply correctly and connected the power supply cable to the power connector on the system board. Check that the voltage selector on the back of the power supply is set correctly.

Installing a Processor

▼ *Caution!*

If you install a second processor, make sure both processors are of the same speed and have the same amount of cache memory.

If your system shipped from the factory with one processor installed, a terminator card is installed in the other processor slot. You can replace the processor in the boot processor slot or install a second processor in the application processor slot.

Install only Pentium® II Xeon™ processors. Other processors may not function correctly in your computer.

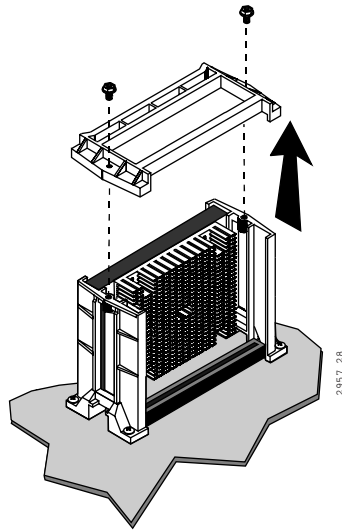
To remove and install a processor, you need a Phillips screwdriver. If you remove a processor, place it in an antistatic bag.

For the location of the processor slots, see the figure on page 11.

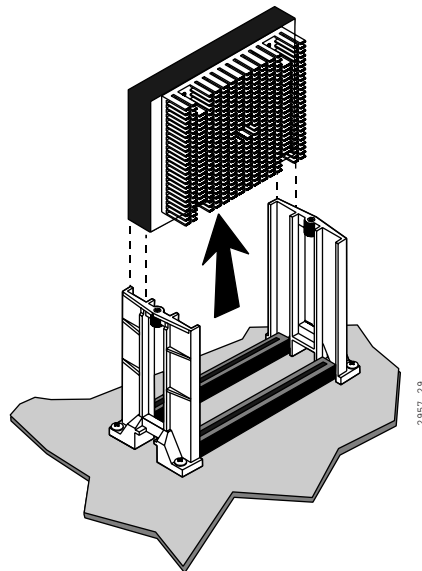
To install a processor

1. Turn off the system and unplug the power cord.
2. Remove the right side panel of the case (see page 3 for instructions), observing the static electricity precautions on page 2.
3. Remove the screw on the back of the chassis that holds the fan duct in place. Then slide the fan duct up until the tabs on the duct are disengaged from the slots in the chassis. Lift the duct out of the chassis.

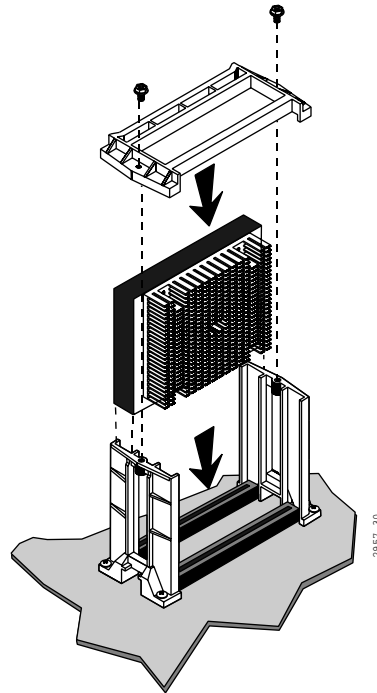
4. Remove the two screws that attach the top bracket to the processor slot and lift the bracket out of the chassis.



5. Gently pull the processor (or terminator card) out of the processor slot. If necessary you can rock the processor (or terminator card) back and forth slightly to loosen it from the connector.



6. Push the new processor into the slot until it is fully seated.

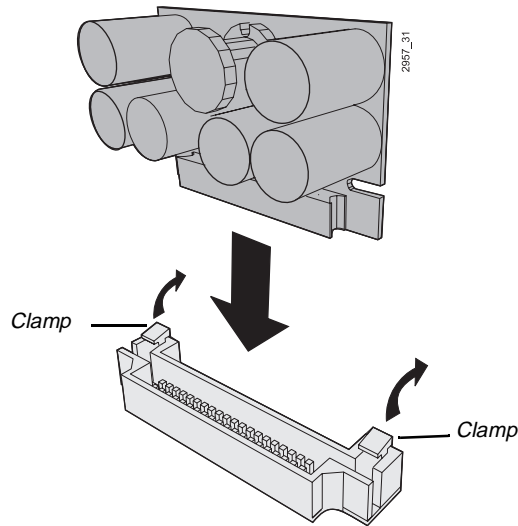


7. Replace the top bracket and the two screws that hold the bracket in place
8. If you installed a second processor into the application processor slot, install the voltage regulator module into the voltage regulator connector on the system board. See the figure on page 11 for the location of the connector.
 - A. Remove the middle drive cage, following the instructions on page 29.
 - B. Open the socket clamps on the voltage regulator connector.

▼ **Caution!**

Never try to install or remove the voltage regulator without opening the connector clamps. You may break the connector or damage the module.

- C. Press the module into the connector until it is fully seated. (Inserting the module correctly automatically closes and locks the clamps.)



9. Move the jumper at J4J1 to pins 2 and 3. (See the illustration on page 13 for the location of the jumper.) This setting enables you to view the Maintenance menu in Setup. You set processor speed through this menu.

Maintenance	Main	Advanced	Security	Power	Boot	Exit
Processor Speed: [400 MHz] Clear Passwords: [Enter]				Sets the Processor Speed. WARNING: SETTING THE PROCESSOR SPEED GREATER THAN ITS RATED VALUE CAN CAUSE DAMAGE TO THE PROCESSOR		

- 10.** Replace the right side panel of the case (see page 6 for instructions). Plug in the power cord and turn on the computer.
- 11.** As the system starts, press F1 when prompted to enter the Setup program. The Maintenance menu opens. Select the correct processor speed, save your change, and exit Setup.
- 12.** Turn off the computer, unplug the power cord, and remove the right side panel of the case. Move the jumper at J4J1 to pins 1 and 2 for normal operation.
- 13.** Place the duct over the fan, making sure the tabs on the duct fit into the slots on the back of the chassis. Replace the screw that holds the duct in place.
- 14.** Replace the case side panel, plug in the power cord, and turn on the computer. If you installed a second processor in your computer, run the Uni-Multi Processor Upgrade Utility provided with your processor.

If the system does not work correctly after you install a processor, see “Processor Problems” on page 70 for troubleshooting information.

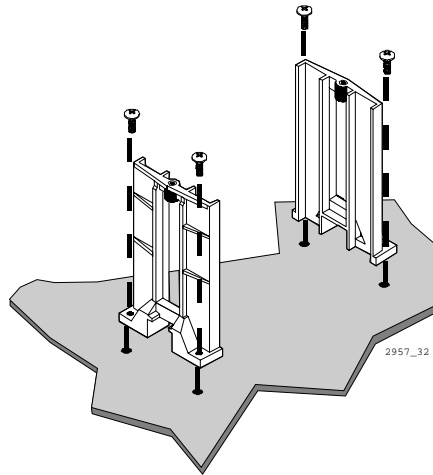
Replacing the System Board

To remove and install the system board, you need a Phillips screwdriver and a flat-blade screwdriver. Make sure to place all static-sensitive devices in antistatic bags. See the figures on page 10 and page 11 for the location of the system board and the location of connectors on the board.

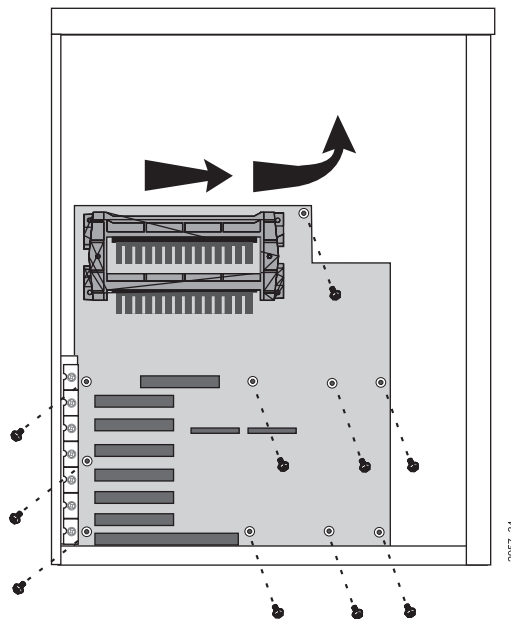
To install the system board

1. Turn off the system and unplug the power cord.
2. Remove the case side panels (see page 3 for instructions), observing the static electricity precautions on page 2.
3. Remove the following devices:
 - Add-in cards: see page 19 for instructions.
 - Middle drive cage: see page 29 for instructions.
 - Bottom drive cage: see page 32 for instructions.
 - Fan duct: see page 40 for instructions.
 - Processor: see page 44 for instructions.
 - Peripheral devices attached to the rear-panel I/O connectors.
 - Devices from the old system board, including cables, that are not included with the new board. See the figure on page 11 for the location of the cable connectors.

4. Remove the four screws that attach the bottom processor brackets to the system board and lift the brackets out of the chassis.



5. Remove the ten screws that attach the system board to the chassis.



6. Slide the system board toward the front of the chassis until the ports clear the back panel. Then lift the system board out of the chassis.
7. Remove the new system board from its packing material. Place the new system board into the chassis, lining it up with the chassis screw holes. Make sure the ports on the board fit through the holes on the back of the chassis. Install the ten screws that attach the system board to the chassis.
8. Replace the bottom processor brackets and install the four screws that attach them to the system board.
9. Replace the following devices:
 - Add-in cards: see page 19 for instructions.
 - Middle drive cage: see page 29 for instructions.
 - Bottom drive cage: see page 32 for instructions
 - Fan duct: see page 40 for instructions.
 - Processor: see page 44 for instructions.
 - Peripheral devices attached to the rear-panel I/O connectors.
 - Devices from the old system board, including cables, that are not included with the new board. See the figure on page 11 for the location of the cable connectors.
10. Replace the case side panels (see page 6 for instructions). Plug in the power cord and turn on the computer.

If the system does not work correctly, see “Troubleshooting Tips” on page 62 for troubleshooting information.





BIOS Setup

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Using the BIOS Setup Utility

The computer's BIOS has a built-in program that lets you set many basic system characteristics. These settings are stored in battery-backed RAM (CMOS memory) and saved even when the power is off. This chapter contains information about this Setup utility and is intended to serve as a guide so that you can make changes to your system's BIOS when necessary.

To enter the Setup utility, turn on the computer, and then press F1 when prompted during the startup process. When Setup opens, the Main Setup screen appears.

BIOS Setup Utility					
Main	Advanced	Security	Power	Boot	Exit
BIOS Version				Item Specific Help	
Processor 0 Type		Pentium®II processor		Select the display language for the BIOS.	
Processor 1 Type		Pentium®II processor			
Processor Speed		400 MHz			
Cache RAM		1024 KB			
System Memory		128 MB			
Memory Bank 0		128 MB SDRAM			
Memory Bank 1		Not Installed			
Memory Bank 2		Not Installed			
Memory Bank 3		Not Installed			
Language:		[English US]			
ECC Configuration		[ECC]			
System Time:		[16:51.37]			
System Date:		[05/06/1999]			
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Default ESC Exits ←→ Select Menu Enter Select > Sub-Menu F10 Save and Exit					

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

You can use the following keys to navigate through the menus and perform other functions.

- F1 opens the Help screen, which provides general help for using the 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.
- The plus (+) and minus (-) keys change values in fields or move an item up or down in a list.
- ENTER either moves you to a submenu or selects an item.
- ESC closes the screen you are in and returns you to the previous screen.
- F9 enables you to return all values to their default settings.
- F10 enables you to save all settings and then exit the Setup utility.

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

- **Main** includes settings related to your system hardware and configuration.
- **Advanced** includes settings for system resources, hardware, and system configuration.
- **Security** includes settings for system access passwords.
- **Power** includes power-saving settings.
- **Boot** includes settings that determine how your computer starts.
- **Exit** includes options for exiting the Setup utility.

Clearing Passwords

You can set both user and administrative passwords in the Setup program. If only a user password is set, you can clear the password by pressing **ENTER** at the **Set User Password** field in the Security menu of Setup, entering the current password, and then pressing **ENTER** each time you are asked for a new password.

However, if an administrative password is set, you must change a jumper setting before you can clear either the administrative password or the user password.

To clear an administrative password

1. Turn off the computer, unplug the power cord. Remove the right side panel of the case (see page 3 for instructions), observing the static electricity precautions on page 2.
2. Move the jumper at J4J1 to pins 2 and 3. See the figure on page 13 for the location of the jumper.
3. Replace the case side panel, plug in the power cord, and turn on the computer.
4. When prompted during startup, press **F1** to enter Setup. The Maintenance menu opens.
5. Select **Clear Passwords** and press **ENTER**.
6. Select **Yes** and press **ENTER**.
7. Save your changes and exit from Setup.
8. Turn off the computer, unplug the power cord, and remove the right side panel of the case.
9. Move the jumper at J4J1 to pins 1 and 2.
10. Replace the case side panel, plug in the power cord, and turn on the computer. The passwords are cleared and the computer starts normally.

Updating the BIOS

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

To update the BIOS

1. Turn on your computer and press F1 during start up to enter Setup. Write down the settings in each menu and submenu. (At the end of the BIOS update process, you will reset the BIOS back to the default values.) Exit the Setup program.
2. Connect to the web site and download the correct BIOS file.
3. Uncompress the contents of the BIOS file you downloaded, and copy the contents onto a bootable diskette.
4. Place the bootable diskette into drive A and restart the system with the diskette in the drive.
5. Follow the instructions on the screen for entering the BIOS update utility.
6. Select **Option 1, Update flash memory area from a file**.
7. Select **Update System BIOS**.
8. Tab to the .BIO file in the **Files** area on the screen. Press ENTER.
9. When the update is finished, remove the diskette from the drive and press ENTER.
10. Restart your system. Enter the Setup utility when prompted.
11. In the Advanced menu, change **Reset Configuration Data** to **Yes**. Save the change and exit Setup.

If nothing appears on the screen after your BIOS update, follow the instructions in the next section, “Recovering the BIOS.”

Recovering the BIOS

If your BIOS update does not work correctly and nothing appears on the screen after the update, you can attempt to recover the BIOS.

To recover the BIOS

1. Turn off the computer and unplug the power cord.
2. Remove the case right side panel (see page 3 for instructions), observing the static electricity precautions on page 2.
3. Remove the jumper from J4J1. (See the illustration on page 13 for the location of the jumper.)
4. Replace the case right side panel and plug in the power cord.
5. Put the disk that contains your BIOS into the diskette drive.
6. Turn on your computer. The computer beeps once and the light on the diskette drive goes on. Then the computer beeps twice.
7. Turn off the computer, unplug the power cord, and remove the diskette.
8. Remove the case right side panel (see page 3 for instructions), observing the static electricity precautions on page 2.
9. Replace the jumper at J4J1 over pins 1 and 2.
10. Replace the side panel, plug in the power cord, and turn on the system. Your system should start normally.



Troubleshooting

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Viewing System Resources

You can view system resources through the Windows NT Diagnostics screen. Check what system resources are already used before adding peripherals to avoid conflicts in resource usage.

To view system resources

1. Click **Start**, select **Programs**, select **Administrative Tools (Common)**, and click **Windows NT Diagnostics**. The Windows NT Diagnostics window opens.
2. Click a tab to see the information that you want:
 - **IRQ:** shows the interrupt request lines assigned to devices in the system. The IRQ is a hardware line that a device can use to send signals to the processor when the device needs the processor's services.
 - **I/O ports:** shows the input/output ports used by devices such as printers.
 - **DMA:** shows the direct memory access channels used by devices in the system. DMA channels enable devices to access memory directly, instead of going through the processor to access memory.
 - **Memory addresses:** shows how the memory in the system is allocated.
 - **Installed devices:** shows the devices installed in your system.

Using Your System Restoration CD

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

- Restore your Windows 95 or Windows 98 operating system
- Install hardware drivers for Windows 95, Windows 98, and Windows NT
- Reinstall selected software applications, such as LANDesk® Client Manager or McAfee® Virus Scan
- View or install component online documentation

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

Troubleshooting Tips

This section presents solutions to some potential problems. You may also check the technical support area of the Gateway web site (www.gateway.com) for more information.

 **Warning!**

When you turn the computer off by pressing the power button, some electric current still flows through the system. Before removing the system cover or connecting or removing any peripherals, turn off the system and then unplug the power cord from the electrical outlet.

Safety Guidelines

While troubleshooting your computer, follow these safety guidelines:

- Never remove the computer cover while the system is turned on.
- Do not attempt to open the monitor; it is extremely dangerous. Even if the monitor's power is disconnected, energy stored in the monitor's components can be dangerous.
- Make certain you are properly grounded before opening the system chassis. See the static electricity precautions on page 2 for more information on preventing electrostatic damage to the system.


Basic Troubleshooting

If you have problems with your system, try these basic troubleshooting tips:

- Make sure the power cord is connected to the computer and an AC outlet.
- Make sure the AC outlet is supplying power.
- If you use a power strip, make sure it is switched on and the circuit breaker is set.
- Make sure the voltage selection switch on the back of the system is set to the proper voltage.
- If a peripheral, such as the keyboard, mouse, hard drive, or printer does not appear to work, ensure that all connections are secure.
- If an error message is displayed on the screen, write it down, word for word. You may be asked about it when calling Technical Support.

- Enter the Setup program and check your configuration settings. If your system is not operating correctly, Setup may contain an invalid configuration setting.
- If you added or removed system components, reread the instructions for the procedures you performed to see if you made a mistake.
- If an error occurs within an application, consult the documentation supplied with the software.

Add-In Card Problems

 An add-in card is not recognized by the system

Probable Cause	Solution
The card was not installed correctly.	Reseat the card and make certain that its jumpers are configured appropriately. See the card's documentation for instructions on setting jumpers.
The IRQ or I/O address is set incorrectly.	Check the IRQ and address configuration of the card and ensure that there is not a conflict with another card in the system.

CD-ROM Problems

 An audio CD produces no sound

Probable Cause	Solution
The CD is loaded incorrectly.	Make certain the CD label is facing upward, and then try again.
The speakers are not connected.	Check the speaker cables. Make certain they are connected properly and securely.
The speaker volume is turned down.	Check the volume control on the speaker and on the CD-ROM.

Probable Cause	Solution
The sound card may not be installed correctly.	Open the system and then reseal the sound card. Make certain the cables are connected properly.
The speakers may be faulty.	Connect a set of headphones to the audio-out jack to test the output. If they work, replace the speakers.

 The system does not recognize the CD-ROM drive

Probable Cause	Solution
The CD is loaded incorrectly.	Make certain the CD label is facing upward, and then try again.
The CD is dirty.	Clean the CD with a lint-free cloth.
For a SCSI CD-ROM, the CD-ROM may not be connected correctly to the SCSI controller card.	Check the cable connected to the SCSI card. If the CD-ROM is the last drive on the SCSI cable (the drive farthest from the card), make sure the CD-ROM is terminated.
For an IDE CD-ROM, the IDE controller may be disabled.	Restart your computer, and then press F1 to enter the Setup program. Make sure that the IDE controllers are enabled in the program.
The drive may not be configured properly.	Consult the drive's documentation for instructions on how to configure the drive.
The CD-ROM cables are not installed correctly.	Open the system and check that the cables are connected correctly to the CD-ROM drive.
The IDE cable is not installed correctly.	Open the system and check that the IDE cable is connected to the system board IDE connector.

Diskette Drive Problems

❓ The diskette drive is not recognized by the system

Probable Cause	Solution
The diskette controller may be disabled.	Restart your computer and then press F1 to enter the Setup program. Make sure that the diskette controller is enabled in Setup.
The diskette drive may be configured incorrectly.	Restart your computer and then press F1 to enter the Setup program. Make sure that the diskette drive settings are correct in Setup.
The diskette drive cables are not installed correctly.	Open the system and check that the cables are connected correctly to the diskette drive.
The controller cable is not installed correctly.	Open the system and check that the diskette cable is connected to the system board diskette connector.

❓ The diskette drive will not read, write, or format

Probable Cause	Solution
The diskette is not IBM formatted.	Make certain the diskette you are trying to format is IBM-compatible. If it is, try reformatting it. If the diskette is not IBM-compatible, use a different diskette.
The diskette is corrupted.	Run Check Disk on the diskette. If errors are detected and corrected, try accessing the diskette again.
The diskette is write protected.	Make certain the write-protection window on the upper-right corner of the diskette is closed (unprotected).

❓ The diskette drive LED is lit continuously

Probable Cause	Solution
The diskette is corrupted.	Remove the diskette from the drive. If the light remains on, try restarting the system.

Probable Cause	Solution
The cable to the drive is not connected properly.	Open the system and check the cable between the diskette drive and its controller. Make certain the pins are not bent or misaligned.

Hard Drive Problems

A SCSI drive is not recognized by the system

Probable Cause	Solution
The expansion controller card is not seated properly.	Open the system and reseal the drive controller.
The cables are not connected correctly.	Open the system and check that the controller and power cables are connected correctly to the drive.
The SCSI drive is not properly terminated.	Make certain the last device on the SCSI cable is properly terminated.
The drive is configured with a conflicting SCSI address.	Change the drive's SCSI address to one that is not currently being used by the system.

An IDE drive is not recognized by the system

Probable Cause	Solution
The IDE device may be configured incorrectly.	Restart your computer and then press F1 to enter the Setup program. Make sure the IDE connectors are enabled in Setup.
The drive may not be configured properly.	Consult the hard drive's documentation for instructions on how to configure the drive.
The IDE cable is not installed correctly.	Open the system and check that the IDE cable is connected to the system board IDE connector.

Keyboard Problems

 The keyboard does not work

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

Memory Problems

 Memory errors were detected during system startup

Probable Cause	Solution
The memory module was installed incorrectly.	Check the memory module for proper seating and orientation.
A memory chip on a module is faulty.	Replace the module on which the faulty chip resides. Third-party diagnostic programs can help determine which chip or memory segment is failing.

Modem Problems

❓ The modem is not recognized by the system

Probable Cause	Solution
The modem is not connected to a live phone jack.	Make certain 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 certain the other device does not have the port open (for instance, someone is on the phone, or another modem is in use).
The modem is not seated properly in the expansion slot.	Open the system and reseat the modem.

Mouse Problems

❓ The mouse does not work

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

 The mouse pointer moves erratically on the screen

Probable Cause	Solution
There is dirt inside the mouse.	Remove the mouse roller ball and clean the ball and the inside of the mouse-ball socket.


Printer Problems

 The printer will not turn on

Probable Cause	Solution
The printer is not plugged in.	Check the power cable. Make certain it is plugged into a live power source.
The printer is not turned on.	Make certain the printer is turned on. If the printer has power, the power LED should be on.
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 certain 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 certain you have selected it through the application's printer setup function.
The printer has not been added to the system.	From the Printers window (Start Settings Printers), double-click Add Printer . Follow the directions for adding the new printer.

 The printer prints garbled text


Probable Cause	Solution
The wrong driver is being used for the selected printer.	From the Printers window (Start Settings Printers), select the printer. From the File menu, click Properties . Make certain the printer is using the right printer driver. If not, install the correct one.

Processor Problems

 A new processor is not recognized by the system

Probable Cause	Solution
The processor was installed incorrectly.	Check the installation. Make sure the processor is fully seated in the slot.
Windows NT does not recognize the second processor.	Run the Uni-Multi Processor Upgrade Utility provided with your processor.
The processor speed was not set in Setup.	Set the processor speed through the Maintenance menu of Setup. See page 47 for instructions.

System Problems

 The system will not start up

Probable Cause	Solution
The system is not connected to an AC outlet.	Check the power cable and make certain it is connected to an AC power source.
Voltage selection switch not set correctly.	Make certain the voltage selection switch reflects the correct power source for your area.

Probable Cause	Solution
The power supply is not connected to the system board.	Check the cable connecting the power supply to the system board.

 The settings in the Setup program are not retained

Probable Cause	Solution
The CMOS battery has failed.	Replace the CMOS battery.
The CMOS battery was installed incorrectly.	Make certain the battery is installed with the positive (+) side up.

Video Problems


 The system is running but there is no display

Probable Cause	Solution
The monitor is not turned on.	Make certain the monitor is plugged in and turned on. If the monitor is turned on, the power LED should be lit.
The monitor's cable is not connected.	Make certain the monitor's cable is connected to the video port on the back of the system.
The connector or cable is damaged.	Check the connector and cable for bent or damaged pins.
The monitor's brightness and contrast controls are turned down.	Adjust the brightness and contrast controls 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.	PCI video cards must be compatible with the system.

Probable Cause	Solution
The monitor is defective.	Connect a working monitor to the computer.

 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 controls until the text becomes clear.
Sunlight is glaring off the display.	Position the monitor away from the sun or window.

 The color monitor displays everything in black and white

Probable Cause	Solution
The system was turned on before the monitor.	Make certain the monitor is turned on and then restart the system.
The display type is set incorrectly.	From the Control Panel window (Start Settings Control Panel), double-click Display , click the Settings tab, and click Display Type . Set the display to the appropriate monitor type and 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 video card has failed.	Try another video card.

Probable Cause	Solution
The display setup is incorrect.	From the Control Panel window (Start Settings Control Panel), double-click Display , click the Settings tab, and check the settings. The correct display type should be selected, along with a supported resolution. Check your monitor and video card documentation for details.

 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 power strip is damaged.	Disconnect the monitor power cable and connect it directly to the power source.
The monitor is too close to a source of electrical interference.	Move the monitor away from sources of electrical interference, such as televisions, unshielded speakers, microwaves, 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 and then restart the system.

Error Messages

This section lists common error messages that may be displayed on your monitor.

Error Message	Solutions
Access denied.	Try saving to a new file or diskette. Move the write-protection tab over the hole on the back of the diskette.
Bad command or file name.	Make certain you entered the right command. Verify the specified drive and try it again.
Base memory [xxx] expansion.	This is an informational message only. No action is required.
Checking RAM on disk controller.	Your Setup configuration is incorrect. Enter Setup and verify the setting values.
CD-ROM is not recognized.	See "The system does not recognize the CD-ROM drive" on page 64.
Data error.	Run Check Disk on the reported disk.
Decreasing available memory.	Your Setup configuration is incorrect. Enter Setup and verify the setting values.
Diskette drive is not recognized.	See "The diskette drive is not recognized by the system" on page 65.
Diskette drive 0 seek to track 0 failed.	Enter Setup and verify the diskette drive settings. Check the diskette drive cables. Make certain Pin 1 on the cable aligns with Pin 1 on the connector.
Diskette drive reset failed.	Enter Setup and verify the diskette drive settings. Check the diskette drive cables. Make certain Pin 1 on the cable aligns with Pin 1 on the connector.
Diskette read failed - strike F1 to retry boot.	Make certain the boot disk contains the command.com file. Press F1 to try the startup again.

Error Message	Solutions
Gate A20 failure.	You may have an XT keyboard connected to an AT system or vice versa. Make certain 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 certain the hard disk cable is properly connected. Open the Setup program and 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 retry the boot.
Insert bootable media device.	See "An IDE drive is not recognized by the system" on page 66. See "A SCSI drive is not recognized by the system" on page 66. 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 Setup and verify the setting values.
Invalid password.	Enter your password again, making certain to enter it correctly. If you do not know the password, you may need to reinstall the software you are trying to access.
Keyboard clock line failure.	Try a working keyboard. Make certain 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 certain 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 67. Turn off the system and check the keyboard cable.

Error Message	Solutions
Keyboard stuck key failure.	Remove any objects that may be resting on the keyboard and 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 startup" on page 67.
Memory size error.	Enter Setup and save the memory configuration.
Non-system disk or disk error.	Eject the diskette and press ENTER. If the diskette is bootable, check it for errors.
Not enough memory.	Close all programs that are not currently in use.
Print queue is full.	Wait until the current print job has been 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 certain the printer is online.
Required parameter missing.	Make certain you entered the right command.
Syntax error.	Make certain you entered the right command.
Time and date not set.	Enter Setup 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.

BIOS Beep Codes

During normal operation the computer emits one short beep as the BIOS is loading. If POST detects errors, the computer emits a series of beeps to indicate what POST was testing when the error was detected.

The following table lists the BIOS beep codes. In the table, *nnnn* indicates hexadecimal numbers.

Number of Beeps	Description
1-2 (One long beep, two short)	Search for option ROMs.
1-2-2-3	BIOS ROM checksum.
1-3-1-1-	Test DRAM refresh.
1-3-1-3	Test keyboard controller.
1-3-4-1	RAM failure on address line <i>nnnn</i> .
1-3-4-3	RAM failure on data bits <i>nnnn</i> of low byte of memory bus.
1-4-1-1	RAM failure on data bits <i>nnnn</i> of high byte of memory bus.
2-1-2-3	Check ROM copyright notice.
2-2-3-1	Test for unexpected interrupts.





Appendix

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System Specifications

The following table lists the specifications for your system.

Case size	Width: 8.5 in. Depth: 18.2 in. Height: 20.9 in.
Processor	Dual processor slots on the system board. Slots support Intel® Pentium® II Xeon™ processors with speeds of 400 and 450 Mhz.
Cache	Level 1: 16 MB on processor. Level 2: 512 K or 1 MB pipelined burst cache on processor.
RAM	Four sockets on the system board support SDRAM ECC 4-clock DIMMs. Maximum memory is 2 GB. System supports 128, 256, and 512 MB registered DIMMs.
BIOS	Flash BIOS for easy updates from diskette.
IDE interfaces	Supports up to four ATAPI/IDE devices (hard drives or CD-ROMs) 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, and one PS/2 mouse port on the system board. LPT and COM are configurable from the Setup program.
Expansion slots	One AGP, one ISA, and six PCI slots. One ISA and one PCI slot are shared.
Temperature, operating	10° to 40° Celsius
Temperature, nonoperating	-35° to 71° Celsius
Humidity, operating	10 to 80 percent
Humidity, nonoperating	5 to 95 percent
Shock (12 G, half-sine), nonoperating	11 ms
Vibration	2 to 300 Hz, 0.25 G (sinusoidal)

Voltage, AC input	90 to 130 VAC, 180 to 265 VAC
Voltage, DC input	±10 percent of all DC outputs from power supply
Frequency	57 to 63 at 115 VAC, 47 to 53 at 230 VAC
Certification	FCC Class B, UL, CUL, EN 55022, EN50082-1, EN60950, VCCI Class B

Regulatory Compliance Statements

American Users



Caution!

The Federal Communications Commission warns users that changes or modifications to the unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.
- Use shielded I/O cables when operating this equipment.

Accessories: This equipment has been tested and found to comply with the limits of a Class B digital device. The accessories associated with this equipment are as follows:

- Shielded video cable
- Shielded power cord

These accessories are required to be used in order to ensure compliance with FCC rules.

Canadian Users:



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.

Attention!

Couper le courant avant l'entretien.

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

[i]EMC Directive 89/336/EEC amending Directives 92/31/EEC & 93/68/EEC as per:

-EN 50081-1:1992 according to
EN 55022:1995 Class B
EN 61000-3-2:1995 or EN 60555-2:1986
EN 61000-3-3: 1995

-EN50082-1:1992 according to
EN 61000-4-2:1995 or IEC 801-2:1984
ENV 50140:1994 or IEC 801-3:1984
EN 61000-4-4:1988 or IEC 801-4:1998

[ii]Low Voltage Directive (Safety) 73/23/EEC as per EN 60950:1992, A1, A2, and A3

This is a Class B product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

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。

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 Spectrum Management Agency.

European Users:



Japanese Users:



Australian and New Zealand Users:





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