Gateway™

User Guide

Gateway 9115 Server

Contents

Chapter 1

Checking Out Your Gateway Server

- Where drives, ports, jacks, and controls are located
- Where system board components are located
- What help resources are available

Unpacking

Warning

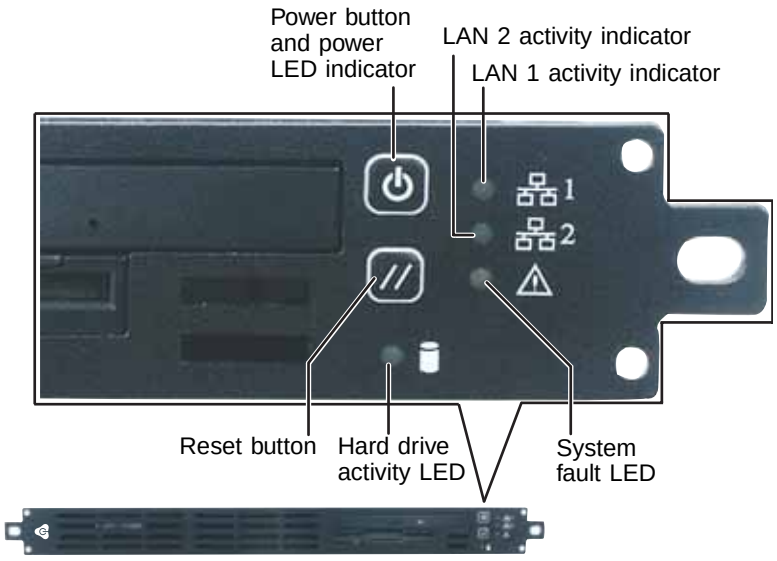
When unpacking your server, use two people or a mechanical lifting assist device to avoid personal injury or damage to the equipment.

To unpack your server:

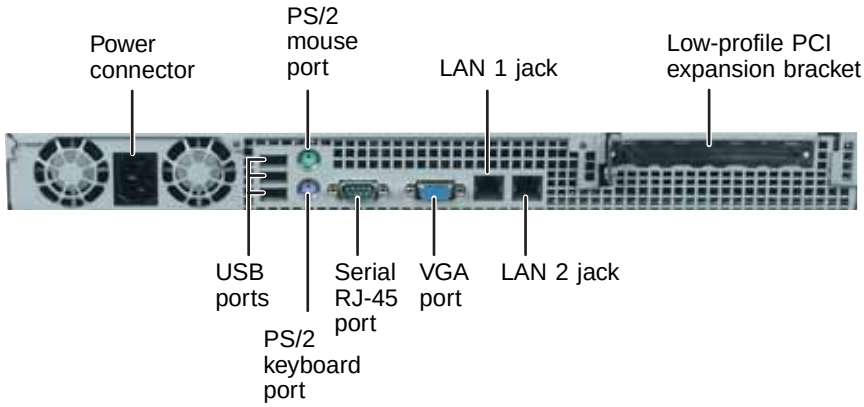
1. Remove the accessory box(es) and make sure that all components you ordered are present.
2. Remove the foam insert from the top of the server.
3. With the help of another person or a mechanical lift, carefully remove the server from the carton and place it on a flat surface.

Front

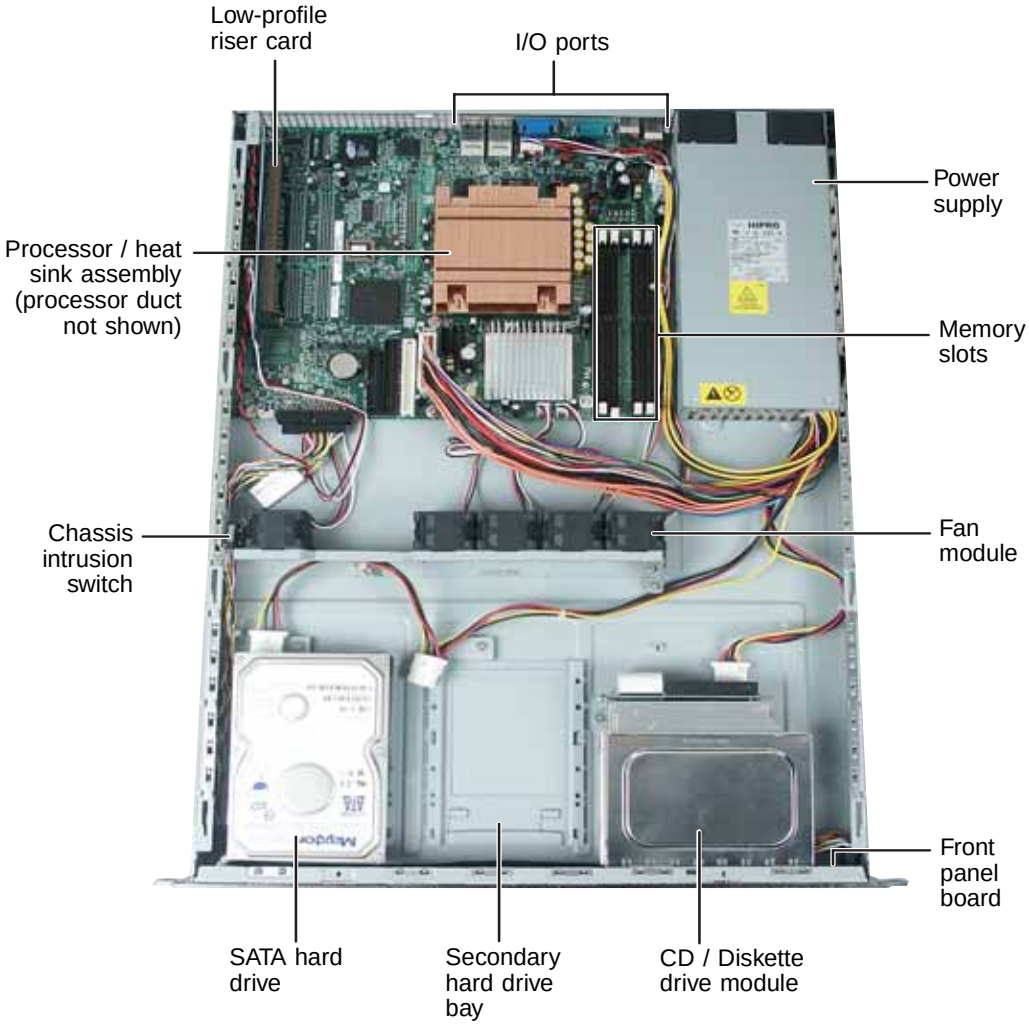
Control panel



Back

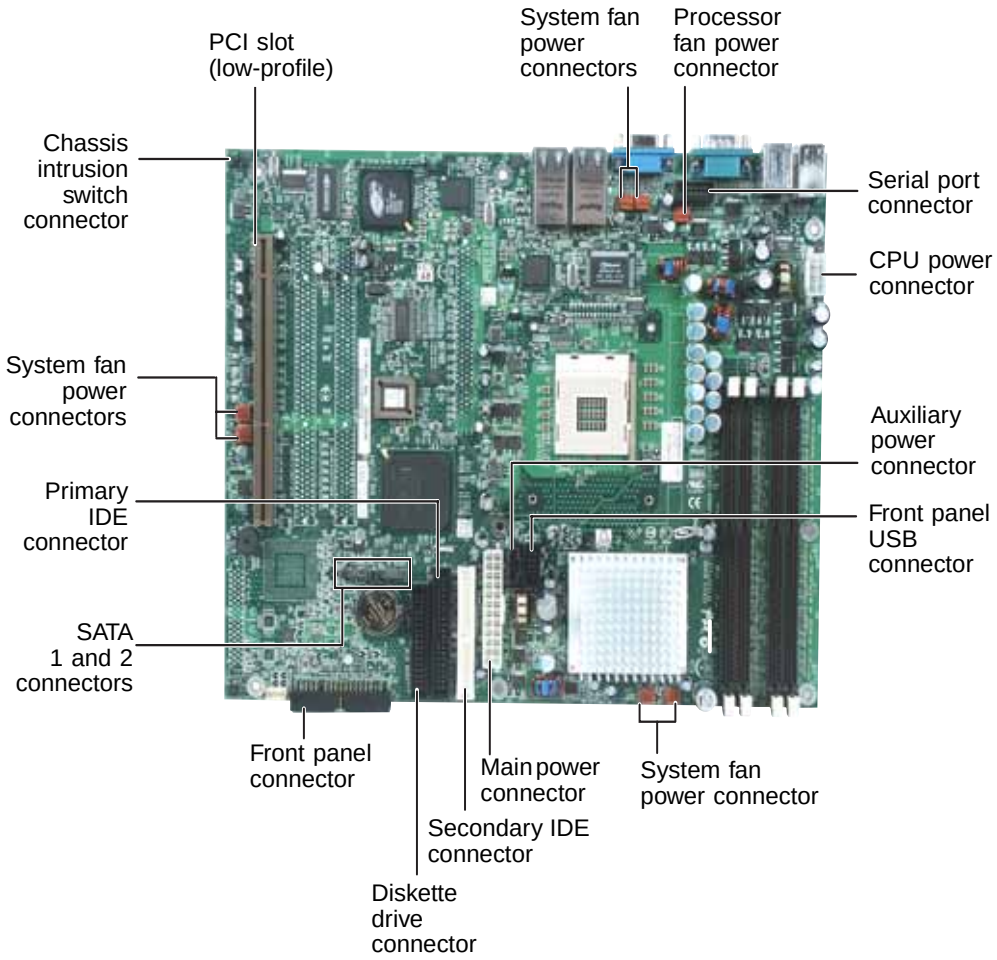

Power connector
PS/2 mouse port
LAN 1 jack
Low-profile PCI expansion bracket
USB ports
PS/2 keyboard port
Serial RJ-45 port
VGA port
LAN 2 jack

Interior


Low-profile riser card
I/O ports
Power supply
Processor / heat sink assembly (processor duct not shown)
Memory slots
Chassis intrusion switch
Fan module
Front panel board
SATA hard drive
Secondary hard drive bay
CD / Diskette drive module

System board

Connectors



Getting Help

In addition to your operating system's documentation, you can use the following information resources to help you use your server.

System Companion CD

Use the *System Companion CD* to access file utilities, hardware drivers, and documentation for your server and its components. For more information, see "Using your System Companion CD" on page 22.

Gateway Web site

Gateway provides a variety of information on its Web site to help you use your server.

Visit the Gateway Web site at support.gateway.com for:

- Technical documentation and product guides
- Technical tips and support
- Updated hardware drivers
- Order status
- Frequently asked questions (FAQs)

Telephone support

You can access a wide range of services through your telephone, including customer service, technical support, and information services. For more information, see "Telephone support" on page 70.

Chapter 2

Setting Up Your Server

- Use your server safely
- Start and turn off your server
- Set up your operating system

Setting up the hardware

To make sure that your working environment is safe:

- Use a clean, dry, flat, stable surface for your server. Allow at least 6 inches at the rear of the server for cabling and air circulation.
- Use a grounded (three-prong) surge protector. A surge protector helps protect against AC power fluctuations. For additional protection from power outages, we recommend that you use an uninterruptible power supply (UPS).

Warning

Your server comes with a 3-wire AC power cord fitted with the correct plug style for your region. If this plug does not match the connector on your surge protector, UPS, or wall outlet, do not attempt to modify the plug in any way. Otherwise you may damage the server or create a fire hazard. Use a surge protector, UPS, or wall outlet that is appropriate for the supplied AC power cord.

- Avoid subjecting your server to extreme temperature changes. Do not expose your server to direct sunlight, heating ducts, or other heat-generating objects. Damage caused by extreme temperatures is not covered by your warranty. As a general rule, your server is safest at temperatures that are comfortable for you.
- Keep your server and magnetic media away from equipment that generates magnetic fields, such as unshielded stereo speakers. Strong magnetic fields can erase data on both diskettes and hard drives. Even a telephone placed too close to the server may cause interference.

Important

Keep the server boxes and packing material in case you need to ship the server.

Protecting from power source problems

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

Surge protectors

During a power surge, the voltage level of electricity coming into your server can increase to far above normal levels and cause data loss or server damage. Protect your server and peripheral devices by connecting them to a surge protector, which absorbs voltage surges and prevents them from reaching your server.

Warning

High voltages can enter your server through the power cord, and the modem and network connections. Protect your server by using a surge protector. If you have a modem, use a surge protector that has the appropriate type of modem jack. During an electrical storm, unplug the surge protector and the modem and network cables.

When you purchase a surge protector:

- Make sure that the surge protector meets the appropriate product safety certification for your location, such as Underwriters Laboratories (UL).
- Check the maximum amount of voltage the protector allows to pass through the line. The lower the voltage that the protector allows to pass through, the better the protection for your server.
- Check the energy absorption (*dissipation)* rating. The higher the energy absorption rating, the better the protection for your server.
- 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 server from the small fluctuations in voltage from an electrical supply. Most servers can handle this variation, called *line noise*, without problems. However, some electrical sources include more line noise than normal. Line noise can also be a problem if your server is located near, or shares a circuit with, a device that causes electromagnetic interference, such as a television or a motor.

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

Uninterruptible power supplies

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

Mounting your server into a rackmount cabinet

The server rackmount rail kit is optional. If you purchased rail kit hardware, use the instructions included in the rail kit packaging.

Caution

Before attaching the rackmount rail kit, make sure that the server is turned off and all power cords are unplugged.

Caution

The rackmount cabinet must provide sufficient airflow to the front of the server to maintain correct cooling. It must also include ventilation sufficient to exhaust a maximum of 1676 BTUs per hour for this server.

Starting your server

Before you start your server for the first time:

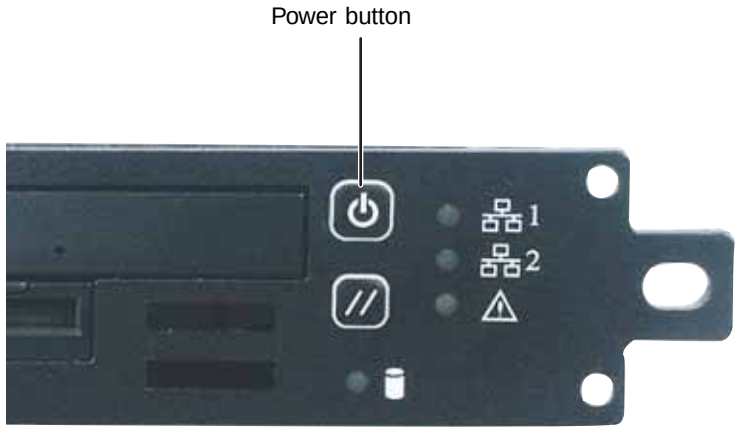
- Make sure that the server and monitor are plugged into a power outlet or surge protector and that the surge protector (if you are using one) is turned on.
- Make sure that all cables are connected securely to the correct ports and jacks on the back of the server.

Warning

When you connect peripheral devices to the server, make sure that your server and devices are turned off and the power cords are unplugged.

To start the server:

1. Turn on any peripheral devices connected to the server.
2. Press the power button.



When the power indicator is…	It means…
Green (steady on)	The server is turned on.
Green (blinking)	The server is in sleep mode.
Off	The server is turned off.

When the system fault LED is…	It means…
Green (steady on)	The server has a system fault.
Orange (steady on)	The server is in a critical or unrecoverable condition.
Orange (blinking)	The server is in a noncritical condition.
Off	POST failure or full system stop.

If nothing happens when you press the power button:

- Make sure that the power cable is plugged in securely and that your surge protector (if you are using one) is plugged in and turned on.
- Make sure that the monitor is connected to the server, plugged into the power outlet or surge protector, and turned on. You may also need to adjust the monitor's brightness and contrast controls.
- If you cannot find the cause of the power loss, contact Gateway Technical Support. For more information, see "Getting Help" on page 7.

3 The first time you turn on the server, any pre-installed operating system may begin asking you for configuration settings. See your operating system's documentation for instructions on configuring advanced settings for your specific network.

Understanding the power-on self-test

When you turn on your server, the power-on self-test (POST) routine checks the server memory and components. If POST finds any problems, the server displays error messages. Write down any error messages that you see, then see "Error messages" on page 73 and "Beep codes" on page 76 for troubleshooting information.

Turning off your server

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

To turn off the server:

1 See the operating system's documentation or online help for instructions on shutting down the operating system. Whenever possible, you should use the operating system's shut down procedure instead of pressing the power button.

Warning

The power button on the server does not turn off server AC power. To remove AC power from the server, you must unplug the AC power cord from the wall outlet or power source. The power cord is considered the disconnect device to the main (AC) power.

2 If your server did not turn off automatically, press the power button.

- OR -

Press the reset button to reset the server.

Setting up the operating system

If you ordered your server with the operating system already installed by Gateway, it is completely installed and the basic settings are already configured. See your operating system's documentation for instructions on configuring advanced settings for your specific network.

If you are installing an operating system because it was not already installed by Gateway, see the appropriate installation guide for instructions.

Chapter 3

Maintaining Your Server

- Care for your server
- Record the BIOS configuration
- Manage your server and network

Caring for your server

To extend the life of your server:

- Be careful not to bump or drop your server.
- When transporting your server, we recommend that you put it in the original packaging materials.
- Keep your server and magnetic media away from equipment that generates magnetic fields, such as unshielded speakers.
- Avoid subjecting your server to extreme temperatures. Do not expose your server to heating ducts or other heat-generating objects. Damage caused by extreme temperatures is not covered by your warranty. As a general rule, your server is safest at temperatures that are comfortable for you.
- Keep all liquids away from your server. When spilled onto server components, almost any liquid can result in extremely expensive repairs that are not covered under your warranty.
- Avoid dusty or dirty work environments. Dust and dirt can clog the internal mechanisms and can cause the server to overheat.

Cleaning your server

Keeping your server clean and the vents free from dust helps keep your server performing at its best. Your server cleaning kit could include:

- A soft, lint-free cloth
- Glass cleaner
- An aerosol can of air with a narrow, straw-like extension
- Isopropyl alcohol
- Cotton swabs
- A CD drive cleaning kit

Cleaning tips

- Always turn off your server and other peripheral devices before cleaning any components.

Warning

When you shut down your server, the power turns off, but some electrical current still flows through your server. To avoid possible injury from electrical shock, unplug the power cord and all other cables connected to the server.

- Use a damp, lint-free cloth to clean your server and other parts of your server system. Do not use abrasive or solvent cleaners because they can damage the finish on components.
- Keep the cooling vents free of dust. With your server turned off and unplugged, brush the dust away from the vents with a damp cloth, but be careful not to drip any water into the vents.

Cleaning the keyboard

You should clean the keyboard occasionally by using an aerosol can of air with a narrow, straw-like extension to remove dust and lint trapped under the keys.

If you spill liquid on the keyboard, turn off your server and turn the keyboard upside down to let the liquid drain. Let the keyboard dry completely before trying to use it again. If the keyboard does not work after it dries, you may need to replace it. Keyboard damage resulting from spilled liquids is not covered by your warranty.

Cleaning the screen

If your computer screen is a flat panel display, use only a damp, soft cloth to clean it. Never spray water directly onto the screen.

Caution

The computer screen is made of specially coated glass and can be scratched or damaged by abrasive or ammonia-based glass cleaners.

- OR -

If your computer screen is not a flat panel display, use a soft cloth dampened with glass cleaner to clean the screen. Never spray cleaner directly onto the screen.

Preparing for system recovery

If your system files are corrupted, you may not be able to start the server from the hard drive. *Startup diskettes* are diskettes that let you start the server and attempt to fix the problem. See your operating system's documentation or online help for instructions on creating startup diskettes.

Some operating systems also let you create an emergency repair diskette to back up critical operating system files. See your operating system's documentation or online help for instructions on creating and using an emergency repair diskette.

Recording the BIOS configuration

To help keep track of your custom changes to BIOS settings and to prepare for system recovery, you should record your BIOS configuration after you have your server set up and working.

To record your BIOS configuration:

1. Print the appendix for "BIOS Settings" on page 89.
2. Restart your server, then press **F2** when the Gateway logo screen appears during startup. The BIOS Setup utility opens.
3. Record the BIOS settings on your printout.

System administration

Gateway Systems Manager

Gateway Systems Manager 3.0 (GSM) lets you locally (using the Server console) and remotely (using the Administrator console) monitor the health and performance of your servers. From the Administrator console you can monitor any server that has one of the two consoles installed. You can monitor critical indicators such as:

- Hardware and software inventory (and configuration changes)
- Computer health (temperature, voltage, free memory, and disk space)
- Selected system events (specified by the administrator)

Printed documentation comes with the *Gateway Systems Manager* CD. You can find additional documentation in the program's online help.

Server security

Using BIOS security passwords

To prevent unauthorized use of the server, you can set server startup passwords. Set up an administrator password to prevent unauthorized access to the BIOS Setup utility.

For information about resetting BIOS passwords, see "Changing jumper settings" on page 66.

To set the BIOS security passwords:

1. Restart your server, then press **F2** when the Gateway logo screen appears during startup. The BIOS Setup utility opens.
2. Select the **Security** menu.
3. Select **Administrator Password**.
4. Type the password and press **ENTER**, then type it again and press **ENTER**.
5. Save your changes and close the BIOS Setup utility.

To remove a BIOS security password:

1. Restart your server, then press **F2** when the Gateway logo screen appears during startup. The BIOS Setup utility opens.
2. Select the **Security** menu, then select the password to remove.
3. Enter the current password, then press **ENTER**.
4. For the new password, leave the password field blank, then press **ENTER**. The password is removed.

Tips & Tricks

Passwords can also be cleared using jumpers on the system board. For instructions, see "Changing jumper settings" on page 66.

Using your System Companion CD

You can use your *System Companion CD* to:

- Install hardware drivers
- Install programs
- View server documentation

Instructions for using the CD are provided in *Using Your System Companion CD*.

Using the System Setup Utility

The System Setup Utility (SSU) lets you:

- View the System Event Log (SEL Mgr.)
- View Sensor Data Records (SDR Mgr.)
- View Field Replaceable Unit information (FRU Mgr.)
- Set up the server to send alerts for platform events
- Set up the remote LAN access for the server for out-of-band (OOB) access through Gateway Server Manager

Important

The SSU does **not** work within a DOS window running under an operating system such as Windows.

Viewing System Event Log information

To view the System Event Log (SEL) information:

1. Boot your server from the *System Companion CD*, then select **System Setup Utility** from the menu. The System Setup Utility starts.
2. From the *System Setup Utility* (SSU) main window, under Viewers, double-click **SEL Manager**. The system events log is displayed.
3. Double-click **SEL**, then click:
   - **Properties** to view the SEL properties
   - **Clear SEL** to clear the SEL contents.
   - **Reload** to refresh the SEL.
   - **Sort by** to select SEL sort options.

Viewing Sensor Data Records

To view the Sensor Data Records (SDR):

1. Boot your server from the *System Companion CD*, then select **System Setup Utility** from the menu. The System Setup Utility starts.
2. In the *SSU* main window, under Viewers, double-click **SDR Manager**. SDR categories are displayed in the left window pane.
3. In the left window pane, double-click a category. The category expands to show a list of SDRs for that category.
4. Double-click an SDR. Information for that SDR is displayed.

Viewing Field Replaceable Unit information

To view the Field Replaceable Unit (FRU) information:

1. Boot your server from the *System Companion CD*, then select **System Setup Utility** from the menu. The System Setup Utility starts.
2. From the *SSU* main window, under Viewers, double-click **FRU Manager**. The SSU automatically loads the current list of events from non-volatile memory.
3. In the left window pane, double-click **FRU Information** to expand the categories.
4. Double-click the category for **Product**, **Chassis**, or **Board**. The category expands to show a list of components for that category.
5. Double-click a component. Information for that component is displayed.

Setting up remote access

You can set up the server so you can perform system management tasks remotely.

Setting up remote LAN access

To set up remote LAN access:

1. Boot your server from the *System Companion CD*, then select **System Setup Utility** from the menu. The System Setup Utility starts.
2. In the *SSU* main window, under Server Configuration, double-click **LAN Setup**.
3. To require a password for remote access, type the password in the **Enter New Password** box and in the **Verify New Password** box. Passwords can be from 1 to 16 characters long, using any ASCII character in the range 32-126.

   To clear the password, leave both boxes blank. You can also clear the password by clicking **Options**, then **Clear LAN Password**.
4. Click the remote access mode from the **LAN Access Mode** list:
   - **Always Available**—A remote system can initiate a LAN connection regardless of the state of the server.
   - **Restricted**—A remote system can initiate a LAN connection, but cannot perform control operations such as turn off power, reset, or front panel NMI (non-maskable interrupt).
   - **Disabled**—Remote systems are not allowed to initiate LAN connections.
5. In the **IP Setup** box, click one:
   - **DHCP**—The IP address for the server is automatically assigned by the DHCP (dynamic host control protocol) server on the network. The Host, Gateway, and Subnet Mask boxes in the dialog box are ignored.
   - **Static**—Assign the IP address for the server using the Host, Gateway, and Subnet Mask boxes in the dialog box.
6. If you selected **Static** in the previous step, complete the IP addressing boxes:
   - **Gateway MAC Address**—The physical address of the router for this server.
   - **Host IP Address**—The IP address of this server.
   - **Gateway IP Address**—The IP address of the router for this server.
   - **Subnet Mask**—The IP address for the server's subnet. The server uses this to decide if the alert destination is on the same subnet.

7 Click **Save** to save the changes.

8 Click **Close** to return to the *SSU* main window.

Setting up LAN alerts

To set up LAN alerts:

1 Boot your server from the *System Companion CD*, then select **System Setup Utility** from the menu. The System Setup Utility starts.

2 In the *SSU* main window, under Server Configuration, double-click **LAN Setup**.

3 Click to select the **Enable LAN Alerts** check box.

4 In the **SNMP Community String** box, you can type an optional string for the community field in the **Header** section of the SNMP trap sent for an alert. The string must be from 5 to 16 characters. The default string is *public*.

5 In the **IP Setup** box, click either:

- **DHCP**—The IP address for the server is automatically assigned by the DHCP (dynamic host control protocol) server on the network. The Host, Gateway, and Subnet Mask boxes in the dialog box are ignored.
- **Static**—Assign the IP address for the server using the Host, Gateway, and Subnet Mask boxes in the dialog box.

6 If you chose **Static** IP Setup in the previous step, complete the IP addressing boxes:

- **Gateway MAC Address**—The physical address of the router for this server.
- **Host IP Address**—The IP address of this server.
- **Gateway IP Address**—The IP address of the router for this server.
- **Subnet Mask**—The IP address for the server's subnet. The server uses this to decide if the alert destination is on the same subnet.

7 In the **Alert IP Address** box, complete the IP address of the system you want to receive alerts from this server. If you want the alert to be broadcast to an entire subnet, enter the IP address for the subnet.

8 In the **Alert IP MAC Address** box, complete the physical Internet address (MAC address) of the system you want to receive alerts from this server. Enter only valid hex values for the Alert IP MAC address.

9 Click **Options**, then click **Configure Event Actions**.

10 In the *mBMC LAN-Alerting Actions* window, click the check box to select the options that you want alerts turned on for:

- **Fan Failure**
- **Temperature Sensor**

11 Click **Save** to save the changes.

12 Click **Close** to return to the *mBMC LAN Configuration* window.

13 Click **Save** to save the changes.

14 Click **Close** to return to the *SSU* main window.

Chapter 4

Installing Components

- Open and close the server case
- Replace components

Preparing to install components

You must open your server case to install components. If you are not comfortable with these procedures, get help from a computer service technician or contact Gateway Technical Support.

Selecting a place to work

Work on your server in an area that:

- Is clean (avoid dusty areas)
- Is a low-static environment (avoid carpeted areas)
- Has a stable surface on which to set your server
- Has enough room to place all of your server parts
- Is near a grounded outlet so you can test your server after installation
- Is near a telephone (in case you need help from Gateway Technical Support). The telephone must be directly connected to a telephone jack and cannot be connected to your server.

Gathering the tools you need

Some tools and supplies that you may need to work on your server are:

- A notebook to take notes
- A Phillips screwdriver
- A small flat-blade screwdriver
- Small containers to store various types of screws
- A grounding wrist strap (available at most electronic stores)

Getting Help

If you have questions about performing any of these procedures, contact Gateway Technical Support. For more information, see “Getting Help” on page 7.

Preventing static electricity discharge

The components inside your server are extremely sensitive to static electricity, also known as *electrostatic discharge* (ESD).

Warning

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

Caution

ESD can permanently damage electrostatic discharge-sensitive components in the server. Prevent ESD damage by following ESD guidelines every time you open the server case.

Before working with server components, follow these guidelines:

- Turn off the server, then unplug the power cords and all other cables.
- Press the power button to drain any residual power from the server.
- Wear a grounding wrist strap (available at most electronics stores) and attach it to a bare metal part of the server. You can also touch a bare metal surface on the back of the server with your finger.

Warning

To prevent risk of electric shock, do not insert any object into the vent holes of the power supply.

- Avoid static-causing surfaces such as carpeted floors, plastic, and packing foam.
- Avoid working on the server when your work area is extremely humid.
- Remove components from their antistatic bags only when you are ready to use them. Do not lay components on the outside of antistatic bags because only the inside of the bags provide electrostatic protection.
- Always hold expansion cards by their edges or their metal mounting brackets. Avoid touching the edge connectors and components on the cards. Never slide expansion cards or components over any surface.

Opening the server case

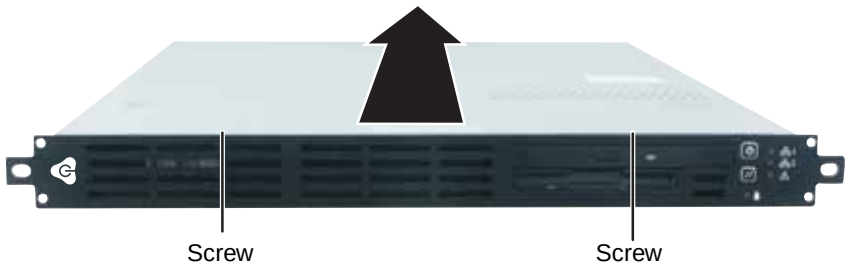
Because the components inside your server are extremely sensitive to static electricity, make sure that you follow the instructions at the beginning of this chapter to avoid static electricity damage.

Caution

For correct cooling and air flow, always reinstall the top panel before you turn on the server. Operating the server without the panel in place will cause the server to overheat.

To open the server:

1. Follow the instructions in "Preventing static electricity discharge" on page 31. Make sure that you turn off the server, then unplug the power cord and all other cables connected to the server.
2. If the server is mounted in a cabinet, remove the server from the cabinet. For more information, see the instructions included with the mounting hardware.
3. Place the server on a stable, non-skid surface.
4. Remove the two cover screws, slide the cover about 1 inch toward the back of the case, then lift the cover.



Closing the server case

To close the server case:

1. Make sure that all of the internal cables are arranged inside the case so they will not be pinched when you close the case.
2. Slide the top panel onto the server.

3 Slide the top panel toward the front of the server until it is flush with the front cover.

4 Reconnect the power cord and all other cables.

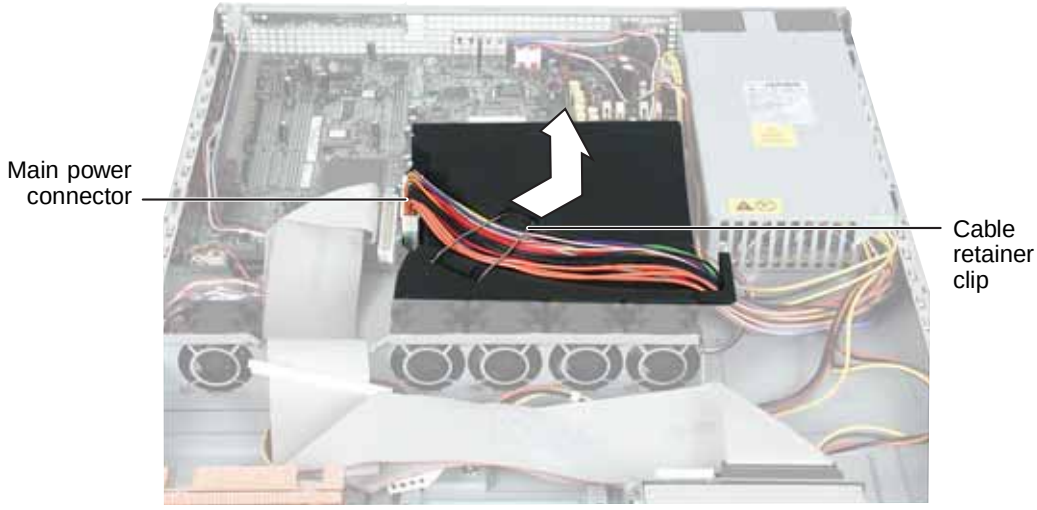
Replacing the processor air duct

To replace the processor air duct:

1 Follow the instructions in "Preventing static electricity discharge" on page 31.

2 Follow the instructions in "Opening the server case" on page 32.

3 Disconnect the main power connector, unlatch the cable retainer clip, then remove the power cable from the top of the processor air duct.



4 Lift the processor air duct away from the server case.

5 Install the replacement processor air duct.

6 Reinstall the main power cables across the top of the processor air duct (as shown above), secure the cables with the cable retainer clip, then reconnect the main power connector.

Installing drives

Your server's standard configuration includes one combination CD/diskette drive and as many as two SATA hard drives.

As you prepare to install drives, remember:

- Before you install a drive, see the drive's documentation for information on configuring the drive, setting drive jumpers, and attaching cables.
- You can install a third hard drive in the CD/diskette drive bay.
- You may need to configure the drives you install using the BIOS Setup utility. Press **F2** at startup to open the BIOS Setup utility.

Replacing the CD/diskette drive module

To replace the CD/diskette drive module:

1. Follow the instructions in "Preventing static electricity discharge" on page 31.

Warning

The combination CD/diskette drive is not hot-swappable. Before removing the drive, make sure that power is turned off.

2. Follow the instructions in "Opening the server case" on page 32.
3. Disconnect the data ribbon cables.

4 Disconnect the power cable.

5 Remove the two screws that secure the CD/diskette drive module to the server chassis.

6 Insert the new CD/diskette drive module into the module bay. Make sure that the module faceplate is flush with the front of the server.

7 Reinstall the two screws that secure the drive module to the server chassis.

8 Reconnect the power cable and data ribbon cables.

9 Follow the instructions in "Closing the server case" on page 32.

Installing a hard drive

Use this procedure to add or replace hard drives. The standard server configuration supports as many as two 1-inch high 3.5-inch SATA hard drives.

A 4 channel SATA add-in card can be added to the low-profile PCI expansion bracket to support as many as three SATA hard drives or a U320 SCSI add-in card can be added to the low-profile PCI expansion bracket to support as many as two SCSI hard drives. You can purchase additional SATA and SCSI hard drives and add-in cards through your Gateway sales or Technical Support representative.

Important

Gateway tests and verifies the operation and compatibility of the drives it sells. Additional or replacement drives must conform to Gateway standards, especially in a hot-swap or mission-critical environment.

To install a hard drive:

1 Follow the instructions in "Preventing static electricity discharge" on page 31.

Caution

Before you remove a failed drive, use the appropriate software and utilities installed on the server to stop all activity on the failed drive. Instructions for using the software are provided by the software manufacturer. Failure to do so may destroy the data on the drive.

2 Follow the instructions in "Opening the server case" on page 32.

3 Disconnect the SATA data cable and power cable.

4 Remove the screw that secures the hard drive assembly in the server bracket.

5 Slide the hard drive assembly toward the back of the server, then lift to remove.

6 If you are installing a new hard drive, remove the four screws that secure the hard drive to the hard drive bracket, then remove the hard drive from the bracket.

7 Line up the screw holes in the new drive with the holes in the side of the hard drive bracket, then secure the hard drive with the four screws you removed in Step 6.

8 Place the hard drive assembly on the hard drive retention tabs located in the server hard drive bay, then slide the assembly toward the front of the server.

9 Secure the hard drive assembly with the screw you removed in Step 4.

10 Reconnect the SATA data cable and power cable.

11 Follow the instructions in “Closing the server case” on page 32.

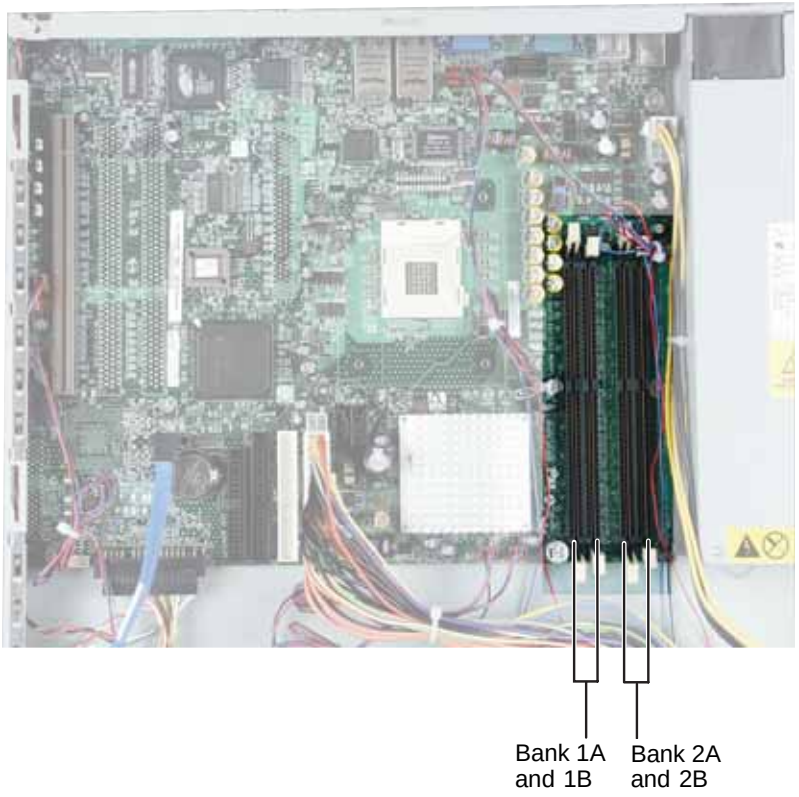
Installing memory

For best performance, we recommend that modules be installed in identical pairs. Use 184-pin single-sided or double-sided DDR Dual Inline Memory Modules (DIMM) (DDR266/333/400). DIMMs may also be labeled as PC2100/PC2700/PC3200. First install module pairs into Bank 1A and 2A, then install in Bank 1B and 2B. The server supports as much as 4 GB unbuffered ECC total memory.

Caution

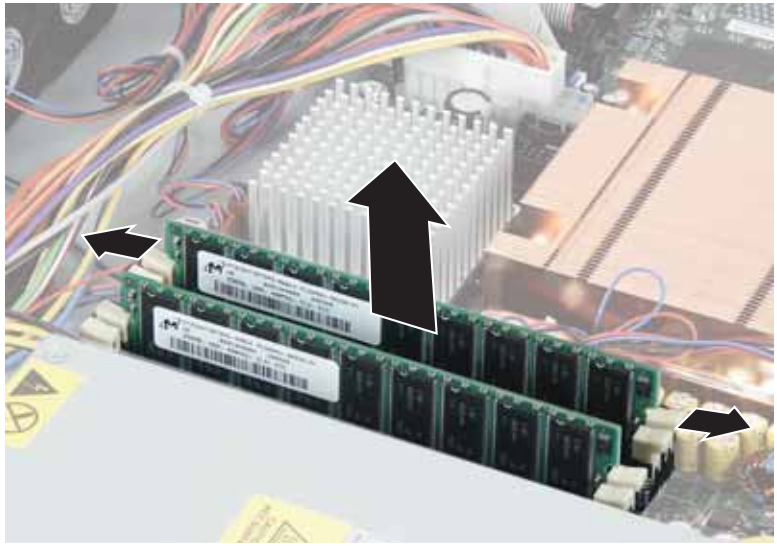
For best performance, we recommend that modules be installed in identical pairs. Use only DDR-266, 333, or 400 compliant, SDRAM unbuffered ECC, DIMM memory modules.

Install memory first into Bank 1A and 2A, then install into Bank 1B and 2B.



To install or replace memory:

1. Follow the instructions in “Preventing static electricity discharge” on page 31.
2. Follow the instructions in “Opening the server case” on page 32.
3. Pull the plastic tabs away from the sides of the memory module slot. If you are replacing a memory module, lift the old module out of the slot.



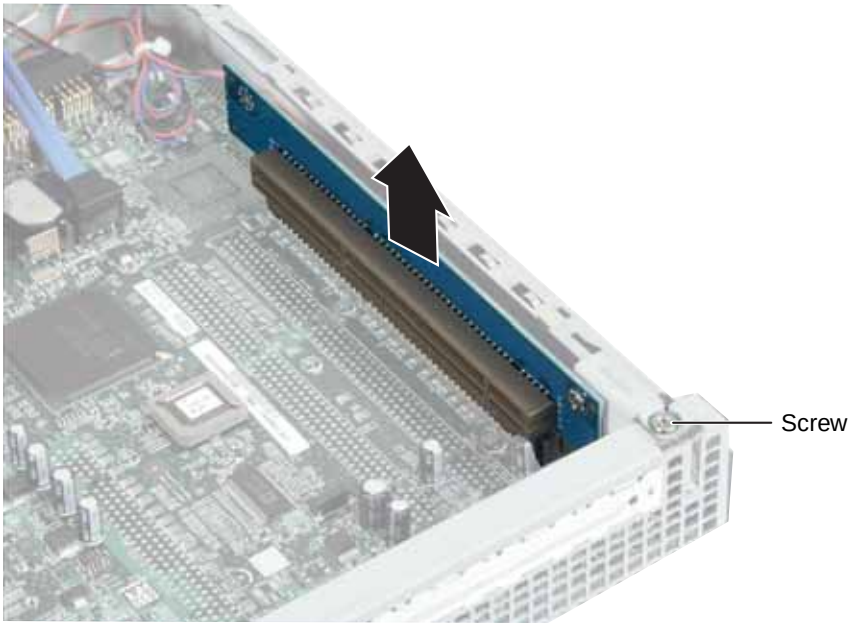
4. Align the notch on the new module with the notch in the memory module slot and press the module firmly into the slot. The tabs on the sides of the memory slot should secure the memory module automatically.
5. Follow the instructions in “Closing the server case” on page 32.
6. Turn on the server, then make sure that the operating system completely loads. If you receive an error, see “Memory” on page 80.

Installing a PCI expansion card

To replace, add, or reseat a PCI expansion card:

1. Follow the instructions in "Preventing static electricity discharge" on page 31.
2. Follow the instructions in "Opening the server case" on page 32.
3. If you are replacing a PCI expansion card that is connected to the PCI riser card, disconnect any cables that are attached to the old card.

4 Remove the screw that secures the PCI riser card to the server case, then lift the card out of the PCI slot. You can slightly seesaw the card end-to-end to loosen the card, but do not bend the card sideways.



Caution

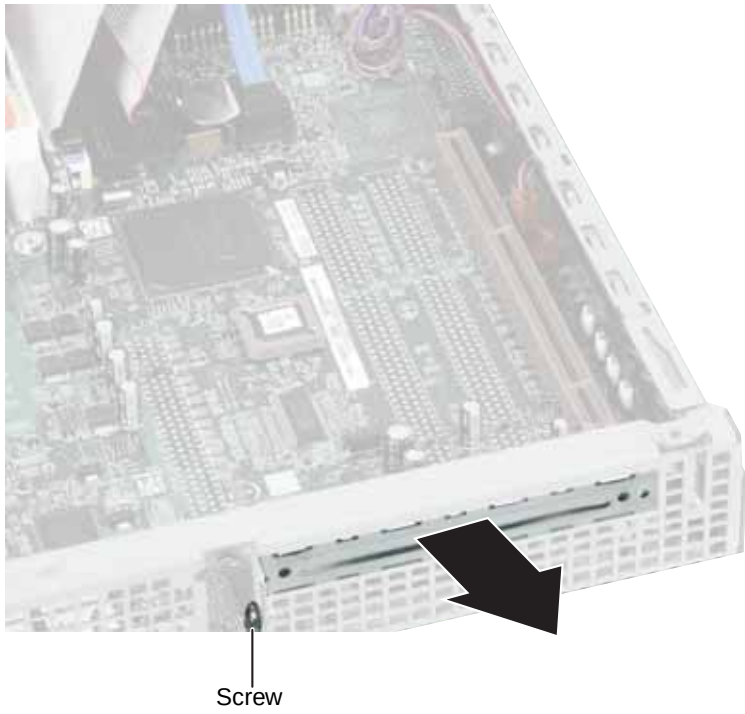
Do not touch the contacts on the bottom part of the PCI card. Touching the contacts can cause electrostatic damage to the card.

5 If you are replacing a PCI expansion card, remove the PCI expansion card from the PCI riser card. You can slightly seesaw the card end-to-end to loosen the card, but do not bend the card sideways.

Caution

Do not touch the contacts on the bottom part of the PCI expansion card. Touching the contacts can cause electrostatic damage to the card.

6 If this is the first time the slot will be used for a PCI expansion card, remove the screw that secures the EMI shield to the server, then push the EMI shield toward the back of the server and remove it from the server case.



7 If you are replacing a PCI expansion card, insert the new PCI expansion card into the card slot on the PCI riser card. You can slightly seesaw the card end-to-end to help insert the card, but do not bend the card sideways.

8 Install the riser card back into the server's PCI slot, then secure the riser card with the screw you removed in Step 4.

9 If you are replacing a PCI expansion card, secure the PCI expansion card to the server with the screw you removed in Step 6.

10 Connect any cables to the PCI expansion card following the instructions in the card's documentation.

11 Follow the instructions in "Closing the server case" on page 32.

12 See the PCI expansion card's documentation for software installation instructions.

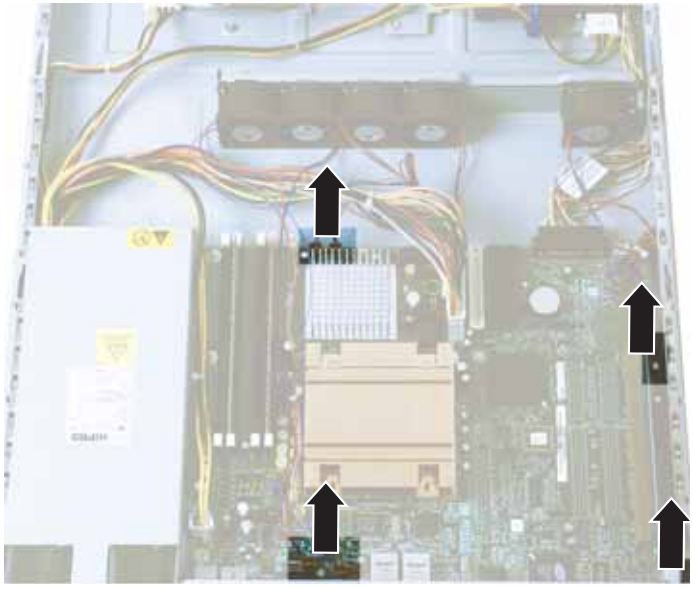
Replacing the fan module

To replace the fan module:

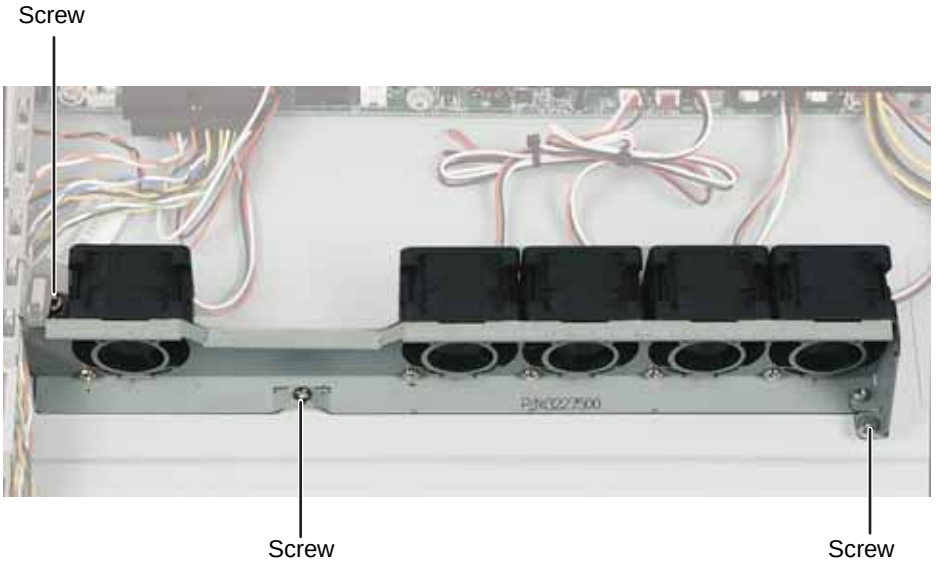
1. Follow the instructions in "Preventing static electricity discharge" on page 31.
2. Follow the instructions in "Opening the server case" on page 32.
3. Remove the processor air duct. For instructions, see "Replacing the processor air duct" on page 33.
4. Disconnect the fan module's power connectors and the intrusion switch power connector from the system board.

Important

You may need to remove the PCI expansion card to disconnect the intrusion switch power connector. For instructions, see "Installing a PCI expansion card" on page 41.



5 Remove the three screws that secure the fan module to the server chassis, then lift the fan module out of the server.



6 Insert the new fan module and align the module with the screw holes.

7 Reinstall the three screws that you removed in Step 5.

8 Connect the fan module power connectors and the intrusion switch power connector to the system board. For more information about system fan power connector locations, see the label inside the server cover.

9 Reinstall the processor air duct. For instructions, see “Replacing the processor air duct” on page 33.

10 Follow the instructions in “Closing the server case” on page 32.

Replacing a processor

This server is compatible with Intel® Pentium 4 or Celeron processors. The server automatically detects the processors each time you turn on the server. Whenever you install a new processor, you should first install the most current version of the BIOS. For instructions, see "Updating the BIOS" on page 65.

Warning

Processors and heat sinks may be hot if the computer has been running. Before replacing a processor or heat sink, allow them to cool for several minutes.

Caution

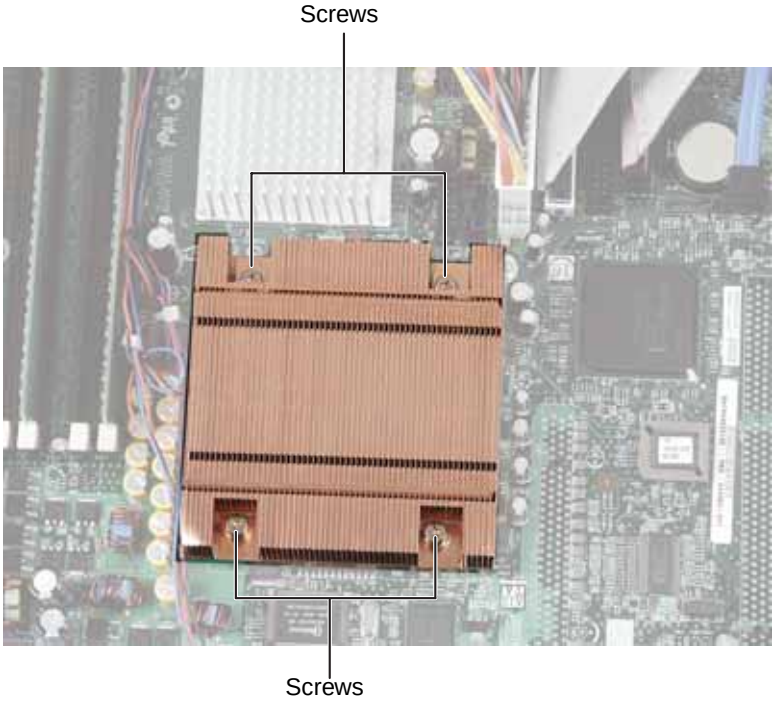
A heat sink must be installed on the processor. Installing a processor without a heat sink could damage the processor.

To replace a processor:

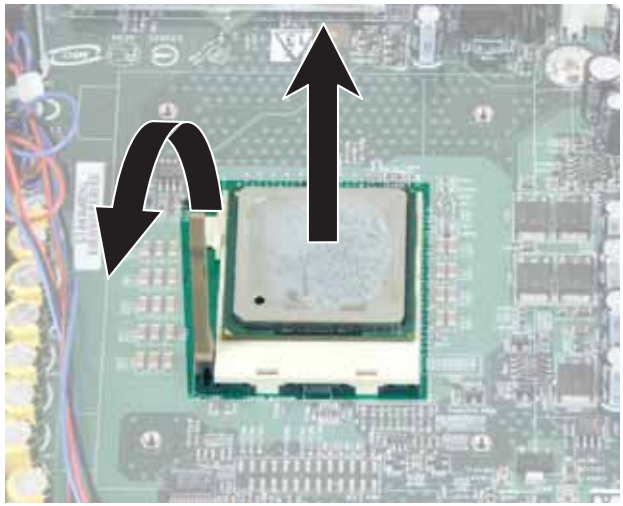
1. Install the most current BIOS version. For instructions, see "Updating the BIOS" on page 65.
2. Follow the instructions in "Preventing static electricity discharge" on page 31.
3. Follow the instructions in "Opening the server case" on page 32.
4. Remove the processor air duct. For instructions, see "Replacing the processor air duct" on page 33.
5. Loosen the four captive screws that secure the heat sink to the system board, then gently twist and lift the heat sink to loosen the phase change material bond between the heat sink and the processor. After the phase change material bond between the heat sink and the processor breaks, remove the heat sink from the system board.

Important

The heat sink phase change material may harden over time and hold the heat sink securely to the processor. Make sure that you gently twist and lift to release the heat sink from the processor. If the heat sink pulls the processor out of the processor socket, the processor should still be undamaged. Continue with Step 7 of this procedure.



6 Lift the processor release lever to release the processor, then lift the processor out of the socket.



7 Before inserting the new processor into the socket, make sure that:

- The processor release lever is open all the way
- The triangular arrow on the corner of the processor aligns with the triangular icon on the corner of the processor socket

8 Install the new processor into the processor socket, then latch the processor locking lever down.

9 If you are installing a new heat sink, remove the clear protective cover and paper that covers the phase change material on the bottom of the heat sink.

10 Align the heat sink captive screws with the system board threads for the heat sink screws, then secure the heat sink on the system board.

11 Reinstall the processor air duct. For instructions, see “Replacing the processor air duct” on page 33.

12 Follow the instructions in “Closing the server case” on page 32.

Replacing the power supply

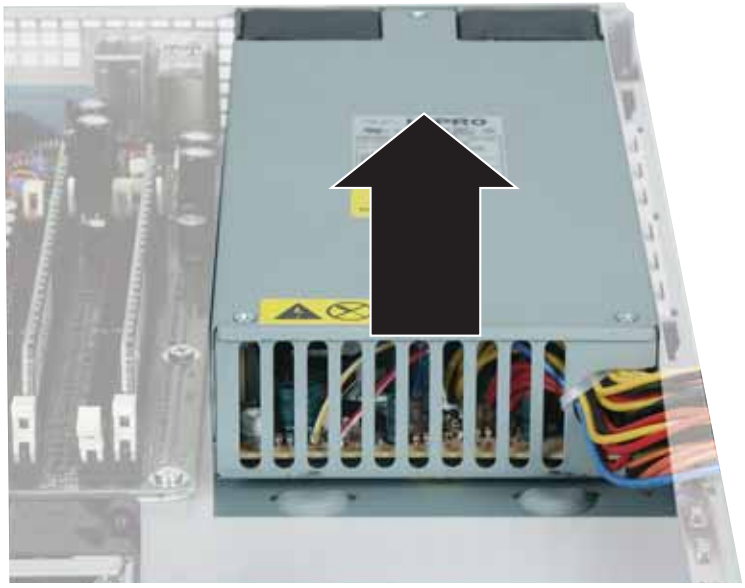
Warning

The power supply in this server contains no user-serviceable parts. Only a qualified computer technician should service the power supply.

Your server comes with a 3-wire AC power cord fitted with the correct plug style for your region. If this plug does not match the connector on your surge protector, UPS, or wall outlet, do not attempt to modify the plug in any way. Use a surge protector, UPS, or wall outlet that is appropriate for the supplied AC power cord.

To replace the power supply:

1. Follow the instructions in "Preventing static electricity discharge" on page 31.
2. Follow the instructions in "Opening the server case" on page 32.
3. Disconnect all of the power supply cables from the server devices.
4. Lift the front of the power supply just far enough to clear the metal tabs that hold the power supply in place.



5. Slide the power supply toward the front of the server, then lift the power supply out of the case.

6 Lay the new power supply onto the metal tabs, then slide it toward the back of the server until the front of the power supply is secured behind the metal tabs.

7 Follow the instructions in “Closing the server case” on page 32.

Replacing the CMOS battery

If the server clock does not keep time or the settings in the BIOS Setup utility are not saved when you turn off the server, replace the CMOS battery with an equivalent battery.

Warning

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of or recycle used batteries by taking them to a hazardous waste facility. Follow all local regulations for correct battery disposal.

To replace the battery:

1. Print the appendix for "BIOS Settings" on page 89.
2. Open the BIOS Setup utility. For instructions, see "Opening the BIOS Setup utility" on page 64.
3. Record the BIOS settings on your printout, then close the utility.
4. Turn off your server, then follow the instructions in "Preventing static electricity discharge" on page 31.
5. Follow the instructions in "Opening the server case" on page 32.

6 Locate the old battery on the system board and note its orientation. You will need to install the new battery the same way.

7 Push the battery retention clip away from the battery until the battery pops up, then remove the old battery. You can use a screwdriver to help lift the battery.

8 Make sure that the positive (+) side of the new battery is facing up, then press the new battery into the socket until it snaps into place.

9 Follow the instructions in "Closing the server case" on page 32.

10 Turn on your server, then press **F2** when the Gateway logo screen appears during startup.

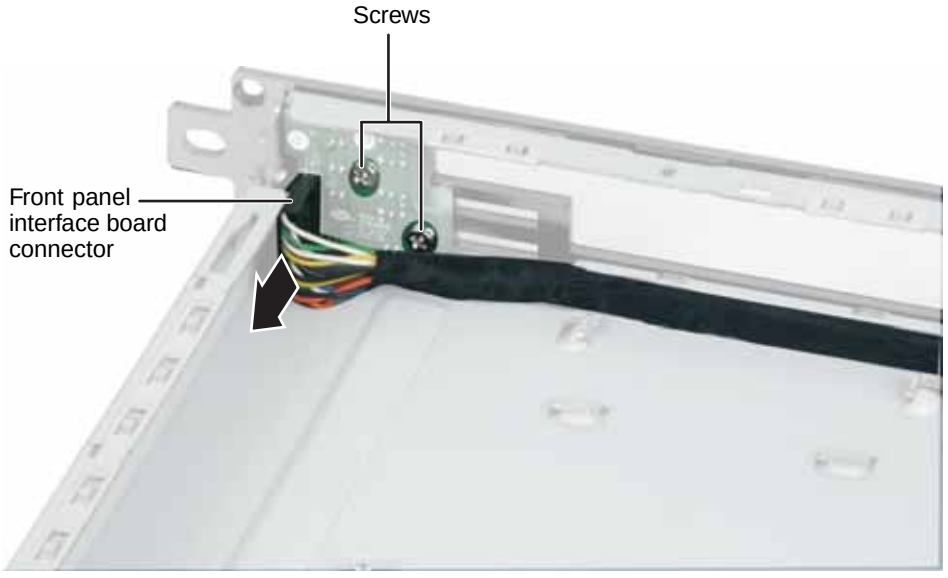
11 Restore any BIOS settings that you wrote down in Step 3.

12 Save all your settings and close the BIOS Setup utility.

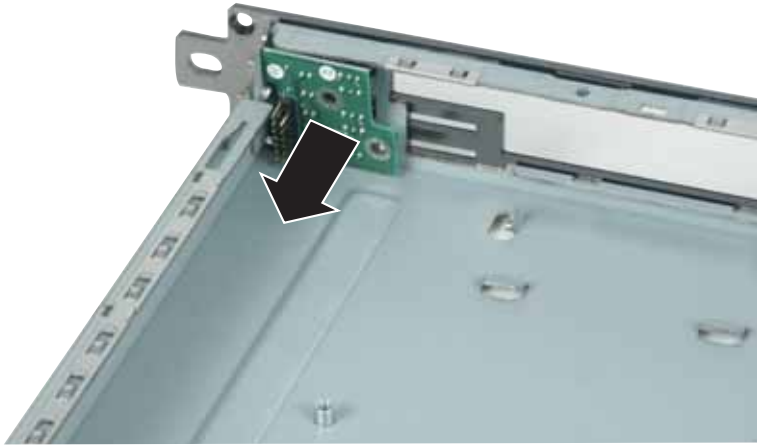
Replacing the front panel interface board

To replace the front panel interface board:

1. Follow the instructions in "Preventing static electricity discharge" on page 31.
2. Follow the instructions in "Opening the server case" on page 32.
3. Remove the front panel interface board connector, then remove the two screws that secure the board to the front of the server chassis.



4 Remove the front panel interface board from the server.



5 Insert the replacement front panel interface board, then secure with the two screws you removed in Step 3.

6 Reconnect the front panel interface board connector.

7 Follow the instructions in “Closing the server case” on page 32.

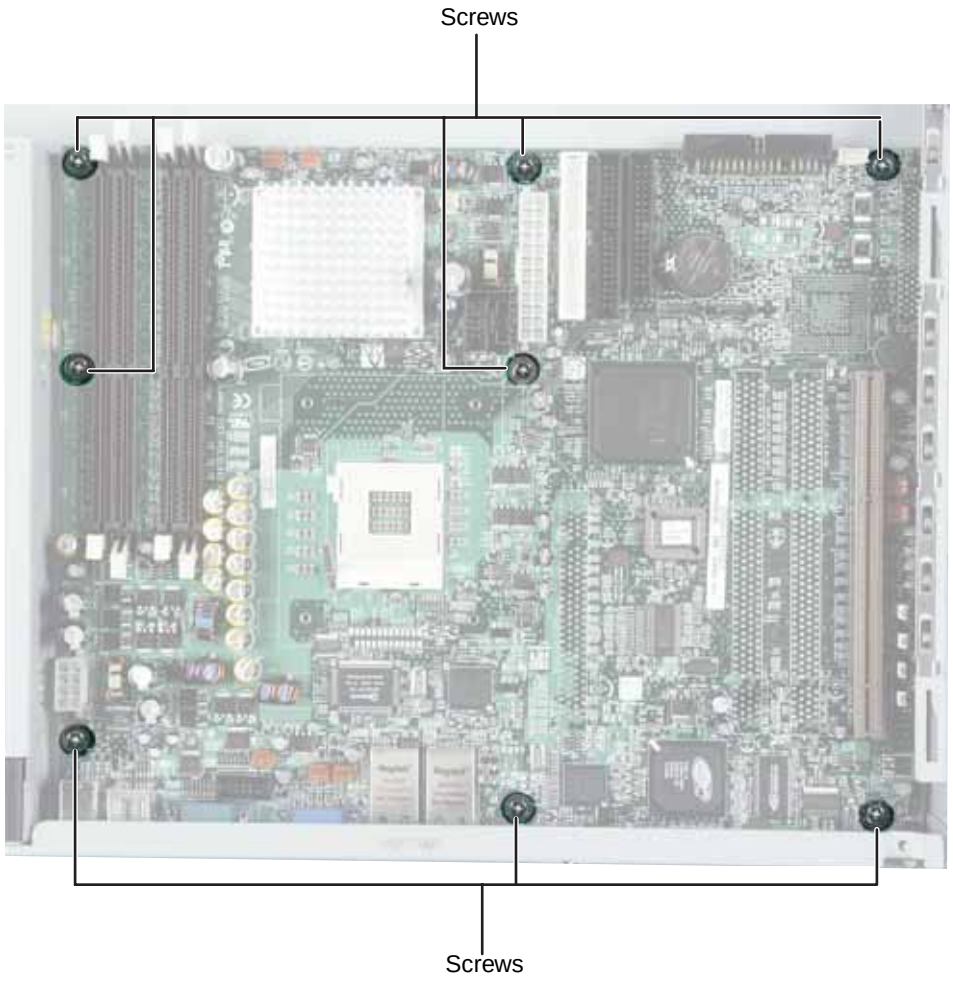
Replacing the system board

To replace the system board:

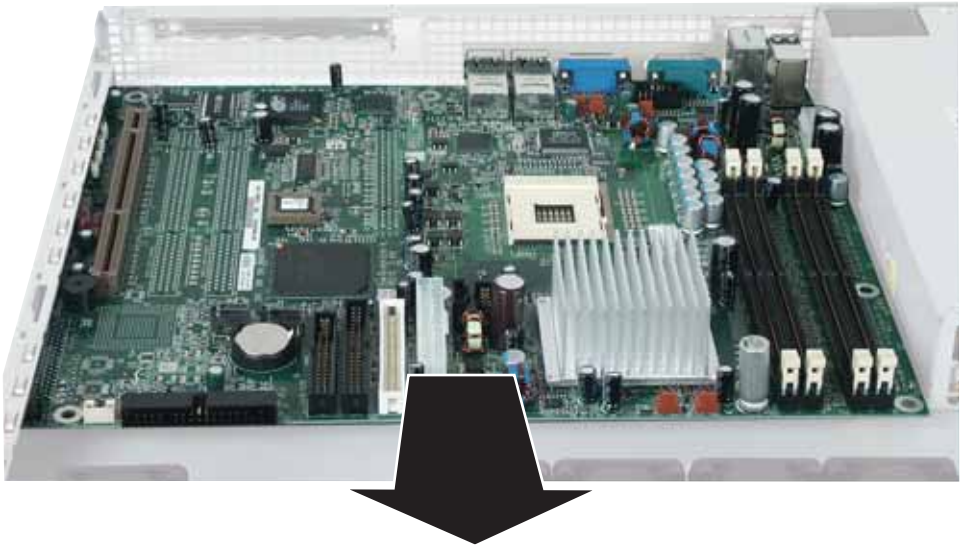
1. Print the appendix for “BIOS Settings” on page 89.
2. Restart your server, then press **F2** when the Gateway logo screen appears during startup.
3. Record any custom BIOS settings on your printout, then close the BIOS utility.
4. Follow the instructions in “Preventing static electricity discharge” on page 31.
5. Follow the instructions in “Opening the server case” on page 32.
6. Remove the memory modules. For instructions, see “Installing memory” on page 39.
7. Remove the riser cards. For instructions, see “Installing a PCI expansion card” on page 41.
8. Remove the heat sink and processor. For instructions, see “Replacing a processor” on page 47.

9 Disconnect all cables from the system board, noting their locations and orientation. (You will reconnect the cables after you install the new board.)

10 Remove the eight screws that secure the system board to the server chassis.

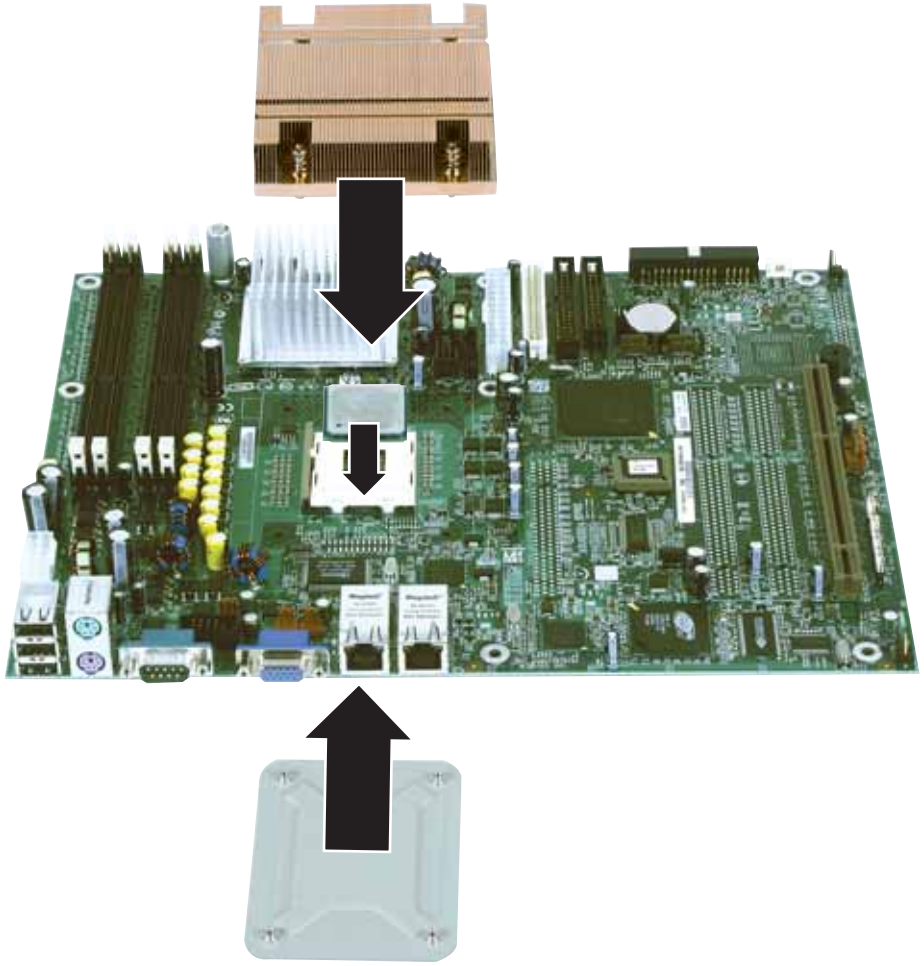


11 Slide the system board toward the front of the server. If the board is difficult to move, push on the rear I/O port panel for added leverage.



12 Lift the board out of the case. The heatsink plate should be loose in the server chassis after the system board is removed. Save the heatsink plate for the new system board installation.

13 Before installing the new system board into the case, install the processor, heat sink plate (underneath the system board), and heatsink. Reinstall the processor and heatsink by following the instructions in “Replacing a processor” on page 47.



14 Slide the system board toward the back of the case. then align the board with the mounting standoff in the bottom of the case.

15 Replace the eight system board screws you removed in Step 10 to secure the board to the server chassis.

16 Reinstall the memory. For instructions, see “Installing memory” on page 39.

17 Reinstall the riser cards. For instructions, see “Installing a PCI expansion card” on page 41.

18 Follow the instructions in “Closing the server case” on page 32.

19 Turn on your server, then press **F2** when the Gateway logo screen appears during startup.

20 Check BIOS settings to make sure that they detect the server’s new hardware, then save your changes (if any) and close the BIOS Setup utility.

21 If your server does not start after installing the new system board, contact Technical Support. For more information, see “Getting Help” on page 7.

Chapter 5

Using the BIOS Setup Utility

- Open the BIOS Setup utility
- Update the BIOS
- Reset the BIOS settings to the factory defaults
- Reset the BIOS passwords

Opening the BIOS Setup utility

The BIOS Setup utility stores basic settings for your server. These settings include basic hardware configuration, resource settings, and password security. These settings are stored and saved even when the power is off.

Caution

The options in the BIOS Setup utility have been set at the factory for optimal performance. Changes to these settings will affect the performance of your server.

Before changing any settings, write them down in case you need to restore them later. You can record the settings on a printout of this guide's appendix for "BIOS Settings" on page 89.

To open the BIOS Setup utility:

1. Restart your server, then press **F2** when the Gateway logo screen appears during startup.

   When you select menu items, the Item Specific Help box on the right side of the screen displays specific information about the selection. The command bar across the bottom of the screen shows the keys you press to access help, navigate through the menus, and perform other tasks.

2. Select one of these menus:

   - **Main** gives you access to basic information and settings related to your server's hardware and configuration.
   - **Advanced** gives you access to information and settings for PCI, peripheral devices, memory, and the chipset.
   - **Boot** gives you access to information and settings for startup features and startup sequences.
   - **Security** gives you access to settings related to system access passwords. For more information, see "Server security" on page 21.
   - **Server** gives you access to settings for system management, console redirection, event log configuration, and fault-resilient boot settings.
   - **Exit** gives you access to options for closing the BIOS Setup utility.

Updating the BIOS

If you need a new version of the BIOS, you can download the BIOS update from the Gateway Web site, then install the new version from a diskette.

To update the BIOS:

1. Print the appendix for "BIOS Settings" on page 89.
2. Restart your server, then press **F2** when the Gateway logo screen appears during startup.
3. Record any custom BIOS settings on your printout, then close the BIOS utility.
4. Download the BIOS update from support.gateway.com.
5. Follow the instructions in the self-extracting BIOS update file.
6. Restart your server, then press **F2** when the Gateway logo screen appears during startup.
7. Enter any custom BIOS settings you recorded in Step 3, then save your changes and close the BIOS Setup utility.

Changing jumper settings

You can change the JIDI jumper settings on the system board to:

- Recover the BIOS configuration
- Disable the BIOS Flash write protect
- Clear the current system password
- Clear the CMOS

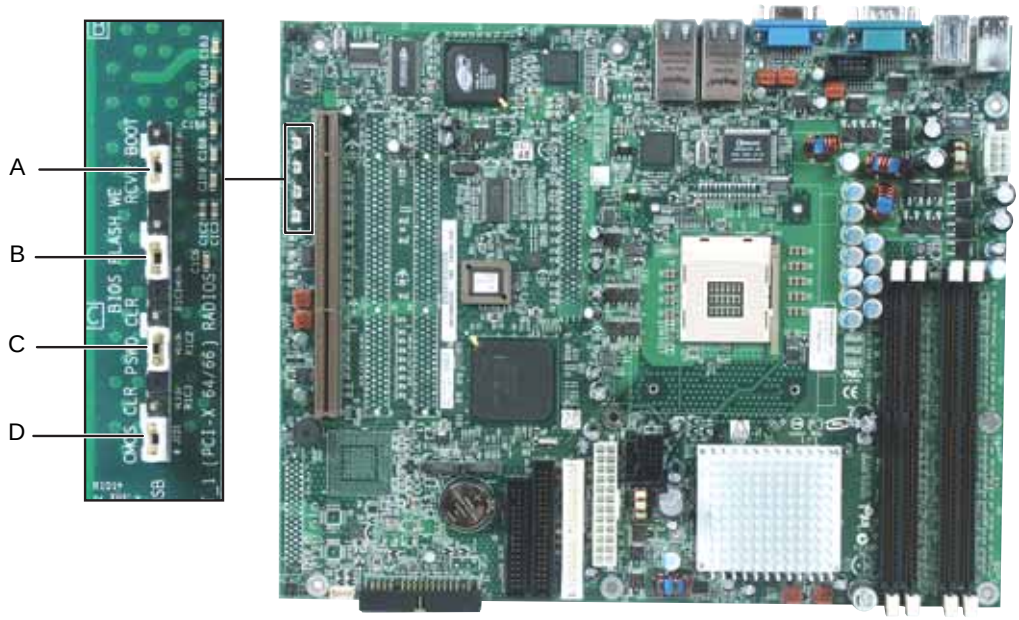
To change jumper settings

1. Print the appendix for "BIOS Settings" on page 89.
2. Restart your server, then press **F2** when the Gateway logo screen appears during startup.
3. Record any custom BIOS settings on your printout.
4. Follow the instructions in "Preventing static electricity discharge" on page 31.
5. Turn off the server, then disconnect the power cord and all other cables connected to the server.
6. Remove the top panel. For instructions, see "Opening the server case" on page 32.

Caution

Moving the jumper while the power is on can damage your server. Always turn off the server and unplug the power cord and all other cables before changing the jumper.

7 Place a jumper across the jumper pins of jumpers J1D1 as required.



Item	Function/Mode	Jumper Setting	Configuration
A	Normal boot		The BIOS uses current configuration information and passwords for booting.
	Recovery boot		The BIOS attempts to recover the BIOS configuration. ??A recovery diskette is required.
B	BIOS protect		The BIOS is in protected mode.
	BIOS unprotect		The BIOS is in unprotected mode and can be updated (flashed) with a current BIOS. For more information, see “Updating the BIOS” on page 65.
C	Password protect		The system password setting is in protected mode.
	Password clear		The system password setting is in unprotected mode.
D	CMOS normal		The CMOS is in normal operation.
	CMOS clear		The CMOS content is in cleared mode.

8 Follow the instructions in “Closing the server case” on page 32.

9 Turn on your server. Your server completes the action specified by the jumper setting you made.

10 Turn off the server, then disconnect the power cord.

11 Remove the top panel. For instructions, see “Opening the server case” on page 32.

12 Place the jumper across the normal jumper pins of J1D1 to change the setting you made in Step 7 back to normal the setting.

13 Follow the instructions in “Closing the server case” on page 32.

Chapter 6

Troubleshooting

- Get telephone support and training
- Interpret error messages and codes
- Troubleshoot

If the suggestions in this chapter do not correct the problem, see "Telephone support" on page 70 for more information about how to get help.

Telephone support

Before calling Gateway Technical Support

If you have a technical problem with your server, follow these recommendations before contacting Gateway Technical Support:

- Make sure that your server is connected correctly to a grounded AC outlet that is supplying power.
- If a peripheral device, such as a keyboard or mouse, does not appear to work, make sure that all cables are plugged in securely and plugged into the correct port or jack.
- If you have recently installed hardware or software, make sure that you have installed it following the instructions provided with it. If you did not purchase the hardware or software from Gateway, see the manufacturer's documentation and technical support resources.
- If you have "how to" questions about using a program, see:
  - The program's online Help
  - The program's documentation
  - Your operating system's documentation
  - The software or hardware manufacturer's Web site
- See "Troubleshooting" on page 75.
- Have your client ID, serial number (located on the back of your server case), and order number available, along with a detailed description of your issue, including the exact text of any error messages, and the steps you have taken.
- Make sure that your server is nearby at the time of your call. The technician may have you follow appropriate troubleshooting steps.
- Consider using Gateway's Internet technical support. Gateway's Web site has FAQs, tips, and other technical help. You can also use the Web site to e-mail Technical Support. For more information, visit Gateway's Technical Support Web site at support.gateway.com.

Telephone support

Gateway offers a wide range of customer service, technical support, and information services.

Telephone numbers

You can access the following services through your telephone to get answers to your questions:

Resource	Service description	How to reach
Fax on demand support	Order a catalog of documents on common problems, then order documents by document numbers. The documents will be faxed to you.	800-846-4526 (US) 877-709-2951 (Canada)
Tutorial support	Learn networking tips from Gateway's tutorial support on a per-issue fee basis.	877-485-1464 (US) 800-846-3609 (Canada and Puerto Rico) 605-232-2191 (all other countries) 800-846-1778 (TDD)
Gateway Technical Support	Talk to a Gateway Technical Support representative about a non-tutorial technical support question. (See "Before calling Gateway Technical Support" on page 70 before calling.) Technical support is available 24 hours a day, seven days a week, 365 days a year. TDD Technical Support (for hearing impaired) is available: Weekdays 6:00 a.m. - 8:00 p.m. Central Time Weekends 6:00 a.m. - 5:00 p.m. Central Time	877-485-1464 (US) 800-846-3609 (Canada and Puerto Rico) 605-232-2191 (all other countries) 800-846-1778 (TDD)
Sales, accounting, and warranty	Get information about available systems, pricing, orders, billing statements, warranty service, or other non-technical issues.	800-846-2000 (US) 888-888-2037 (Canada)

Safety guidelines

While troubleshooting your server, follow these safety guidelines:

- Never remove the top panel while your server is turned on and while the modem cable and the power cord is connected.
- Do not attempt to open the monitor. To do so is extremely dangerous. Even if the power is disconnected, energy stored in the monitor components can be dangerous. Also, opening the monitor voids its warranty.
- Make sure that you are grounded correctly before opening the server. For more information about preventing damage from static electricity, see “Preventing static electricity discharge” on page 31.
- After you complete any maintenance task where you have to open the server case, make sure that you close the case and reconnect all cables before you restart your server.

Warning

To avoid bodily injury, do not attempt to troubleshoot your server problem if:

- The power cord or plug is damaged
- Liquid has been spilled into your server
- Your server was dropped
- The case was damaged

Instead, unplug your server and contact a qualified computer technician. If your server was damaged during shipment from Gateway, contact Gateway Technical Support. For more information, see “Telephone support” on page 70.

Error messages

These messages often indicate procedural errors such as typing an incorrect keystroke or trying to save a file to a write-protected diskette. Some messages, however, may indicate a problem that requires further troubleshooting.

Diskette drive 0 seek to track 0 failed

- Restart your server, then open the BIOS Setup utility by pressing and holding **F2** while your server restarts. Make sure that the drive settings are correct.

Error loading operating system

- The master boot record may be corrupt. For troubleshooting information, see "The master boot record is corrupted" on page 80.

Hard disk controller failure

- Make sure that the hard drive cable is connected securely.
- Restart your server, then open the BIOS Setup utility by pressing and holding **F2** while your server restarts. Make sure that the correct drive type is selected.

Hard disk controller failure - press F1 to try reboot

- The drive controller may be defective. Press **F1** to try to restart the server. For more information about running diagnostics on your hard drive, see your operating system's documentation.

Insert bootable media device

- Restart your server, then open the BIOS Setup utility by pressing and holding **F2** while your server restarts. Make sure that the drive settings are correct.
- See "Your server does not recognize an SCSI drive (applies to SCSI configured servers only)" on page 79 for a possible solution.

Invalid configuration information

- Restart your server, then open the BIOS Setup utility by pressing and holding **F2** while your server restarts. Make sure that the settings are correct.
- Reset the BIOS. For instructions, see "Changing jumper settings" on page 66.

Invalid partition table

- The master boot record may be corrupt. For troubleshooting information, see "The master boot record is corrupted" on page 80.

Invalid password

- Enter your password again. Some passwords are case sensitive.

- If you do not know the password, you may need to reinstall the software you are trying to access.
- System startup passwords are stored in BIOS. If this password has been set and you do not know it, you may be able to reset the password through system board jumper settings. For instructions, see "Changing jumper settings" on page 66.

Memory errors were detected while the system started up

- See "Memory errors were detected during server start up" on page 80 for a possible solution.

Memory size error

- Restart your server, then open the BIOS Setup utility by pressing and holding **F2** while your server restarts. Save the memory configuration.

Missing operating system

- The master boot record may be corrupt. For troubleshooting information, see "The master boot record is corrupted" on page 80.

System Event Log Full

- Clear the event log. To clear or view the event log, restart your server, then open the BIOS Setup utility by pressing and holding **F2** while your server restarts. Select the **Server** menu, then select the **Event Log Configuration** menu.
  - OR -
  Clear the System Event Log using the System Setup Utility, for more information see "Viewing System Event Log information" on page 23.

Troubleshooting

First steps

Try these steps first before going to the following sections:

- Make sure that the power cord is connected to your server and an AC outlet and that the AC outlet is supplying power.
- If you use a surge protector or a UPS, make sure that it is turned on and is rated to handle the power required by your server.
- If you added or removed server components before the problem started, review the installation procedures you performed and make sure that you followed each instruction. You may need to remove the device, uninstall the device's software, then reinstall the device.
- If an error message appears on the screen, write down the exact message before calling Gateway Technical Support. For more information, see "Telephone support" on page 70.
- Restart your server, then open the BIOS Setup utility by pressing and holding **F2** while your server restarts. Check your configuration settings.
- If an error occurs in a program, see its documentation or online help.

Warning

To avoid bodily injury, do not attempt to troubleshoot your server problem if:

- The power cord or plug is damaged
- Liquid has been spilled into your server
- Your server was dropped
- The case was damaged

Instead, unplug your server and contact a qualified computer technician.

Battery replacement

If you have problems after installing a new CMOS battery, try each of the following items, closing the case and restarting the server after each try:

- Restart your server, then open the BIOS Setup utility by pressing and holding **F2** while your server restarts. Correct any discrepancies.
- Remove the top panel by following the instructions in "Opening the server case" on page 32, then make sure that all cables inside the case are attached securely. Also, make sure that the colored cable edges are aligned correctly and that the connectors do not miss any pins.

Warning

To avoid bodily injury, do not attempt to troubleshoot your server problem if:

- The power cord or plug is damaged
- Liquid has been spilled into your server
- Your server was dropped
- The case was damaged

Instead, unplug your server and contact Gateway Technical Support or a qualified computer technician.

- If you have the correct test equipment, make sure that the new battery has power. Although unlikely, your new battery may be defective.

Beep codes

Whenever a recoverable error occurs during the power-on self-test (POST), the BIOS displays an error message that describes the problem. The BIOS also sounds a beep code for errors when video is not available for text messages.

A PCI expansion card (for example, a RAID controller) can also issue audible errors by itself, usually consisting of one long tone followed by a series of short tones. For more information on the beep codes issued, check the documentation for that device.

Beeps	Description	Troubleshooting steps
1	The memory refresh circuitry on the system board is faulty.	Reseat the memory or replace with modules you know are good.
2	Parity cannot be reset.	Same as for 1 beep.
3	Base memory test failure.	Same as for 1 beep.
4	System timer is not operational.	Remove all expansion cards. ▪ If the beep code occurs even when all expansion cards have been removed, the system board may be at fault. Contact Gateway Technical Support. ▪ If the beep code does not occur when the expansion cards have been removed, one of the cards is causing the problem. Install the cards one at a time until the problem happens again. When the beep code returns, the most recent card you installed is at fault.
5	Processor failure detected.	▪ Set the Retest Processor option to **Yes** in the BIOS Setup utility. ▪ Reseat the processor and start the server again.
6	The keyboard controller may be bad. The BIOS cannot switch to protected mode.	▪ Connect a keyboard that you know is good. ▪ If the error occurs when a keyboard is not attached, contact Gateway Technical Support.
7	The processor generated an exception interrupt.	Same as for 5 beeps.
8	The server's video memory is faulty. This is not a fatal error.	The system board may be faulty. Call Technical Support.
9	The ROM checksum value does not match the value encoded in the BIOS.	Same as for 4 beeps.
10	The shutdown register for CMOS RAM failed.	Same as for 4 beeps.
11	General BIOS ROM error.	Update the BIOS. For instructions, see "Updating the BIOS" on page 65.

BIOS

The settings in the BIOS Setup utility are not retained

- Replace the CMOS battery. For instructions, see "Replacing the CMOS battery" on page 52.

CD drive

Your server does not recognize a CD or the CD drive

- Restart your server, then open the BIOS Setup utility by pressing and holding **F2** while your server restarts. Make sure that the IDE controllers are enabled. For more information, see "Using the BIOS Setup Utility" on page 63.
- Reinstall the device driver. For instructions, see "Using your System Companion CD" on page 22.
- Turn off your server, then make sure the drive cables are connected correctly. For instructions, see "Replacing the CD/diskette drive module" on page 34.

Your CD drive tray does not open

- Press a straightened paper clip wire into the CD drive's manual eject hole. The drive tray opens.
- If this problem happens frequently while the server is turned on, the drive may be defective.

Diskette drive

The diskette drive is not recognized

- Restart your server.
- Turn off your server, then make sure that the drive cables are connected correctly. For instructions, see "Replacing the CD/diskette drive module" on page 34.

The diskette drive LED is lit continuously

- Remove the diskette from the drive. If the light stays on, try restarting your server.
- Turn off your server, then remove the combination drive and push it in again to make sure the drive is seated correctly. For instructions, see "Replacing the CD/diskette drive module" on page 34.

Expansion cards

Your server does not recognize an expansion card

- Restart your server.
- Make sure that you have installed the necessary software or driver. For instructions, see the card's documentation.
- Reseat the expansion card and the riser card. For instructions, see "Installing a PCI expansion card" on page 41.

Hard drive

The hard drive cannot be accessed, or you receive a "General failure reading drive C" error message

- If a diskette is in the diskette drive, eject it and restart your server by pressing the reset button.
- Restart your server by pressing the reset button.
- Turn off your server, then make sure the drive cables are connected correctly. For instructions, see "Installing a hard drive" on page 36.
- Run a verification from the SCSI BIOS. This applies only if your configuration includes a SCSI hard drive.
- If your server has been subjected to static electricity or physical shock, you may need to reinstall the operating system.

You receive a "Non-system disk" or "disk error" error message

- Eject the diskette from the diskette drive, then press **ENTER**.
- Make sure that your hard drive has an active partition. For more information, see "The master boot record is corrupted" on page 80.

Your server does not recognize an SCSI drive (applies to SCSI configured servers only)

- Make sure that the SCSI controller is enabled in the BIOS Setup utility.
- Reinstall the device driver. For instructions, see "Using your System Companion CD" on page 22.
- Change the drive's SCSI address to one that is not being used by your server. For more information about SCSI device configurations, see your drive's documentation.
- Run SCSI Verify in the SCSI BIOS. For more information about the SCSI BIOS, see the SCSI controller's documentation.
- Turn off your server, then make sure the drive cables are connected correctly. For instructions, see "Installing a hard drive" on page 36.

The master boot record is corrupted

- In a Windows network operating system, repair the master boot record using FDISK.

To repair the master boot record:

- At a DOS command prompt, type **fdisk/mbr**, then press **ENTER**.

Internet

See also *Modem*.

You cannot connect to the Internet

- Make sure that your account with your Internet Service Provider (ISP) is set up correctly. Contact your ISP technical support for help.
- Make sure that you do not have a problem with your modem. For instructions, see "Modem (telephone dial-up)" on page 81.

Keyboard

Liquid has been spilled into the keyboard

- If you spilled liquid in the keyboard, turn off your server and unplug the keyboard. Clean the keyboard and turn it upside down to drain it. Let the keyboard dry before using it again. If the keyboard does not work after it dries, you may need to replace it. This type of damage is not covered by your server's warranty.

Memory

Memory errors were detected during server start up

- Open your server and make sure that the memory modules are installed correctly. For instructions, see "Installing memory" on page 39.
- A memory module may be defective. If possible, try another memory module and see if the error repeats.

Modem (telephone dial-up)

See also *Internet*.

Your modem does not dial or does not connect

- Make sure that your server is connected to the telephone line and the telephone line has a dial tone.
- Make sure that the modem cable is less than 6 feet (1.8 meters) long.
- Remove any line splitters or surge protectors from your telephone line, then check for a dial tone by plugging a telephone into the telephone jack.
- If you have additional telephone services such as call waiting, call messaging, or voice mail, make sure that all messages are cleared and call waiting is disabled before using the modem. Contact your telephone service to get the correct code to temporarily disable the service. Also make sure that the modem dialing properties are set correctly.
- If you purchased the modem from Gateway, contact Gateway Technical Support.

To check the dialing properties in Windows:

1. In Windows 2000 Server, click **Start**, **Settings**, then click **Control Panel**. The *Control Panel* window opens.

   - OR -

   In Windows Server 2003, click **Start**, then click **Control Panel**. The *Control Panel* window opens.

2. Click/Double-click the **Modems** icon, then click **Dialing Properties**. The *Dialing Properties* dialog box opens.

3. Make sure that all settings are correct.

- Make sure that you are not using a digital, rollover, or PBX line. These lines do not work with your modem.
- Check for line noise (scratchy, crackling, or popping sounds). Line noise is a common problem that can cause the modem to connect at a slower rate, abort downloads, or even disconnect. The faster the modem, the less line noise it can tolerate and still work correctly.

  Listen to the line using your telephone. Dial a single number (such as 1). When the dial tone stops, listen for line noise. Wiggle the modem cable to see if that makes a difference. Make sure that the connectors are free from corrosion and all screws in the wall or telephone jack are secure.

You can also call your telephone service and have your telephone line checked for noise or low line levels.

- Try connecting with the modem at a lower connection speed. If reducing the connection speed lets you connect, contact your telephone service. The telephone line may be too noisy.
- Try another telephone line (either a different telephone number in your business or a telephone line at a different location). If you can connect on this line, call your telephone service.

Your 56K modem does not connect at 56K

Current FCC regulations restrict actual data transfer rates over public telephone lines to 53K. Other factors, such as line noise, telephone service provider equipment, or ISP limitations, may lower the speed even further.

If your system has a v.90 modem, the speed at which you can upload (send) data is limited to 33.6K. If your system has a v.92 modem, the speed at which you can upload data is limited to 48K. Your ISP may not support 48K uploads.

The modem is not recognized by your server

- If the modem shares the telephone line with another device, make sure that the telephone line is not in use (for example, someone is on the telephone, or another modem is in use).
- Shut down and restart your server.
- Reinstall the modem device driver. For instructions, see "Using your System Companion CD" on page 22.
- Open your server and reseat the modem. For instructions, see "Installing a PCI expansion card" on page 41.

Monitor

Your server is running but there is no picture

- Adjust the brightness and contrast controls to the center position.
- Make sure that the monitor is plugged in and turned on. If the monitor is turned on, the power LED should be lit.
- Check the port and cable for bent or damaged pins.
- Connect your monitor to another computer, or connect a monitor that you know works to your server.

The color is not uniform

Make sure that the monitor warms up for at least 30 minutes before making a final judgment about color uniformity.

Make sure that:

- The monitor is not positioned too close to another monitor, electric fan, or fluorescent light.
- You demagnetize the screen using the monitor's degauss feature. For more information on degauss, see the monitor's documentation.

A horizontal line or wire is visible across the monitor screen

The monitor may use thin *damper* wires, located approximately 1/3 of the way from the upper and lower screen edges, to stabilize the internal aperture grille. These wires are most obvious when the monitor displays a white background. The aperture grille allows more light to pass through the screen for brighter colors and greater luminescence. The damper wire is a critical part of the overall monitor design and does not negatively affect the monitor's function.

Power

You press the power button, but the server does not turn on

- If the power button LED is green, the server is turned on, but you may not be seeing an image on the monitor. For monitor troubleshooting, see "Monitor" on page 82.
- If your server is plugged into a surge protector or UPS, make sure that the surge protector or UPS is connected securely to an electrical outlet, turned on, and working correctly. One way to check this is to plug the server directly into a wall outlet, bypassing the surge protector or UPS.
- Make sure that the electrical outlet is working by plugging a working device, such as a lamp, into the outlet, then turning it on to test the outlet.
- Open your server and make sure that the power supply cable and power button cable are connected correctly to the system board.

When you turn on the server, it makes several short beeps

- The short beeps indicate the server has encountered some type of error. See "Beep codes" on page 76.

Processor

Your server does not recognize a new processor

- Make sure that the processor is fully seated in its socket. The processor should be recognized automatically if it is installed correctly.

Appendix A

Server Specifications

System specifications

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

Case size	23.89 × 16.93 × 1.685 inches (609.2 mm × 430 mm × 42.8 mm) (without handles)
Weight	Varies by configuration. A fully loaded server weighs about 30 lbs. (13.6 kg)
Fans	▪ One fan module, containing five 40 mm fans ▪ Fully configured system requires 1676 BTU/hour cooling capacity
Ports	▪ PS/2 keyboard or mouse (2) ▪ USB (3) ▪ Serial (9-pin) (1) ▪ VGA (1) ▪ SCSI (1) ▪ LAN (2) (RJ-45)
Drives (standard)	One drive module contains: ▪ 3.5-inch diskette ▪ CD-ROM
Card sizes	Supports one low-profile PCI-X 64-bit expansion card
Power supply	▪ 250 W VAC ▪100–127 volts (V) ~ at 50/60 Hertz (Hz); 5.67 amperes (A) maximum (max) ▪200–240 V ~ at 50/60 Hz; 2.89 A maximum ▪ IEC inlet receptacle
Operating systems	Supports Windows 2000 Server and Windows Server 2003 Compatible with: ▪ Windows NT ▪ Novell NetWare 6

System board specifications

Processor	mPGA478 package 800/533/400 MHz system bus Supports either 1 Intel Pentium 4 or 1 Intel Celeron CPU
Chipset	Intel 827210 ▪ Intel 827210 Memory Controller Hub (MCH) (Northbridge) ▪ Intel 6300ESB I/O controller (Southbridge) ▪ Intel 82802AC 8 Megabit Firmware Hub (FWH)
Memory	▪ Four 184-pin DDR SDRAM Dual Inline Memory Module (DIMM) slots support as much as 4 GB unbuffered ECC system memory ▪ Support for single-sided or double-sided DIMMs (DDR266/333/400) ▪To run DDR400 memory at full speed use an Intel Pentium 4 processor with 800 MHz system bus frequency. ▪To run DDR333 memory at full speed use an Intel Pentium 4 processor with 533 MHz system bus frequency. Note: DDR333 memory will run at 320 MHz frequency when you use an Intel Pentium 4 processor with system bus frequency of 800 MHz. ▪To run DDR266 memory use with an Intel Pentium 4 processor with 400 MHz or 533 MHz system bus frequency only.
PCI device/slot	One low profile (LP) PCI-X 64-bit PCI riser slot
VGA	On-board ATI Rage XL ▪ 8 MB SDRAM ▪ 1600 × 1200 (2D) max ▪ 1024 × 768 (3D) max
LAN	▪ One Intel 82547EI Platform LAN Connect (PLC) device for 10/100/1000 Mbps Ethernet LAN connectivity ▪ One Intel 82551QM device for 10/100 Mbps Ethernet LAN connectivity
SCSI	▪ Optional add-in Ultra 320 SCSI controller card through the PCI slot.
ACPI	ACPI compliance Supports: ▪ S0 ▪ S1 ▪ S4 ▪ S5

Environmental specifications

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

Variable	Requirements
Temperature	Operating: 41° to 95°F (5° to 35°C) Maximum rate of change: 18°F (10°C) per hour Non-operating: -40° to 158°F (-40° to 70°C)
Humidity	Non-operating: 95% relative (non-condensing) at 80° F (30° C)
Acoustic noise	59 dBA (rackmount) in idle state at typical office ambient temperature (73.4°F +/- degrees F) (23 +/- degrees C)
Operating shock	No errors with a half sine wave shock of @ G (with 11 millisecond duration)
Package shock	Operations after a 30-inch (76.2-cm) fall. Cosmetic damage may be present (chassis weight 30 lbs/13.6 kg)
ESD	+/- 15 kV per Intel environmental test specification
System cooling	1676 BTU/hour

Additional specifications

For more information about your server, such as memory size, hard drive size, and processor type, visit Gateway's *eSupport* page at support.gateway.com. The *eSupport* page also has links to additional Gateway documentation and detailed specifications for your server.

Appendix B

BIOS Settings

If you ever need to restore your BIOS settings, such as after a system board change, a record of the settings will make the process much easier. You can print this appendix, then record your custom BIOS settings on the printout. Only settings which can be changed are listed. For a complete list of viewable BIOS settings, run the BIOS Setup utility.

To view all BIOS settings:

1. Restart your server, then press **F2** when the Gateway logo screen appears during startup. The BIOS Setup utility opens.
2. Select menus and submenus to display setting information.

BIOS menu	BIOS submenu	Setting	Value
Main			
		System Time	
		System Date	
Advanced			
CPU Configuration		Ratio CMOS Setting VID CMOS Setting L3 Cache Max CPUID Value Limit Hyper Threading Technology	
IDE Configuration	ATA Configuration ▪ Map PATA to Legacy ATA, Config SATA	SATA Controller Enhanced Mode P-ATA Channel Selection S-ATA Ports Definition	
		▪ Primary IDE Master ▪ Primary IDE Slave ▪ Secondary IDE Master ▪ Secondary IDE Slave ▪ Third IDE Master ▪ Fourth IDE Master	
		Hard Disk Write Protect	
		IDE Detect Time Out (Sec)	
		ATA(PI) 80Pin Cable Detection	
Floppy Configuration		Floppy A	

BIOS menu	BIOS submenu	Setting	Value
Advanced (cont.)			
SuperIO Configuration		Onboard Floppy Controller Serial Port1 Address Serial Port2 Address	
ACPI Configuration		ACPI Aware O/S	
	Advanced ACPI Configuration	ACPI 2.0 Features ACPI APIC support AMI OEMB table Headless mode Remote Access	
Event Log Configuration		ECC Event Logging PCI Error Logging	
USB Configuration		USB Function Legacy USB Support Port 64/60 Emulation USB 2.0 Controller USB 2.0 Controller Mode USB Beep Message	
PCI Configuration		On-Board Video On-Board LAN1 LAN1 PXE On-Board LAN2 Slot 1 Option ROM Slot 2 Option ROM Slot 3 Option ROM Slot 6 Option ROM	
Boot			
Boot Settings Configuration		Quick Boot Quiet Boot AddOn ROM Display Mode Bootup Num-Lock PS/2 Mouse Support POST Error Pause Hit <F2> Message Display Extended Memory Test Scan User Flash Area	

BIOS menu	BIOS submenu	Setting	Value
Boot (cont.)			
Boot Device Priority		1st Boot Device 2nd Boot Device 3rd Boot Device 4th Boot Device	
Hard Disk Drives		1st Drive	
Removable Drives		1st Drive	
CD/DVD Drives		1st Drive	
Security			
		Change Supervisor Password	
		Change User Password	
		Clear User Password	
		Boot Sector Virus Protection	
		Secure Mode Boot	
		Diskette Write Protect	
		NMI Control	
Server			
System Management		Board Part Number Board Serial Number System Part Number System Serial Number Chassis Part Number Chassis Serial Number Version BMC Device ID BMC Firmware Revision BMC Device Revision SDR Revision	
Serial Console Features		BIOS Redirection Port Baud Rate Flow Control Terminal Type	

BIOS menu	BIOS submenu	Setting	Value
Server (cont.)			
Event Log configuration		Clear All Even Logs Event Logging Critical Event Logging	
		Assert NMI on PERR Assert NMI on PERR AC Link FRB-2 Policy Late POST Timeout Hard Disk OS Boot Timeout PXE OS Boot Timeout FRB-4 Policy LAN Console Support	

Appendix C

Safety, Regulatory, and Legal Information

- Saftey information
- Legal and Regulatory Information

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.
- Set up the system on a stable work surface.
- The product should be operated only 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 fit only 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 provide some protection against voltage surges and buildup 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.
- 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. To avoid electrical shock, 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.

Warning

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

Regulatory compliance statements

United States of America

Federal Communications Commission (FCC)
Unintentional emitter per FCC Part 15

FCC Part 15 Class A Statement

The server is designated as complying with Class A requirements if it bares the following text on the rating label:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at your own expense.

Caution

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

Telecommunications per part 68 of the Code of Federal Regulations (CFR 47) (applicable to products fitted with USA modems)

Your modem complies with Part 68 of the Code of Federal Regulations (CFR 47) rules. On the computer or modem card is a label that contains the registration number and Ringer Equivalence Number (REN) for this device. If requested, this information must be provided to the telephone company.

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

The Ringer Equivalence Number (REN) is used to determine the number of devices which may be connected to the telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most areas, the sum of RENs 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, an identification of the business, 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.

FCC declaration of conformity

Responsible party:

Gateway Companies, Inc.
610 Gateway Drive, North Sioux City, SD 57049
(605) 232-2000 Fax: (605) 232-2023

Product:

- Gateway 9115 Server

For unique identification of the product configuration, please submit the 10-digit serial number found on the product to the responsible party.

This device complies with Part 15 of the FCC Rules. Operation of this product is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution

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

Canada

Industry Canada (IC)
Unintentional emitter per ICES-003

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

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

Telecommunications per Industry Canada CS03 (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.

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.

California Proposition 65 Warning

Warning

This product contains chemicals, including lead, known to the State of California to cause cancer, birth defects, or reproductive harm.

Notices

14303 Gateway Place
Poway, CA 92064 USA

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The information in this manual has been carefully checked and is believed to be accurate. However, changes are made periodically. These changes are incorporated in newer publication editions. Gateway may improve and/or change products described in this publication at any time. Due to continuing system improvements, Gateway is not responsible for inaccurate information which may appear in this manual. For the latest product updates, consult the Gateway Web site at www.gateway.com. In no event will Gateway be liable for direct, indirect, special, exemplary, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages.

In the interest of continued product development, Gateway reserves the right to make improvements in this manual and the products it describes at any time, without notices or obligation.

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