

# SGI™ 1200-Family of Servers User's Guide

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## About This Guide

This guide provides you with information on using and administering your SGI 1200 server. Although there are a number of models in the SGI 1200-family of servers, this document refers to the products generically as SGI 1200 servers. The following section describes this product's features.

### Product Features

The SGI 1200 server has one or two processors, and the chassis is built in a 2U form factor. Some of the server's features include:

- 2U (3.48-inch) height for convenient placement in a 19-inch EIA rack
- One or two Intel Pentium III processors
- Ultra2 SCSI controller, S-VGA video, serial, parallel ports and 10/100-BaseT Ethernet on the motherboard
- Up to 2 GB of ECC SDRAM

The SGI 1200 has four hard disk bays and an SCA (Single Connector Attachment) midplane for easy drive removal, replacement and chassis monitoring. The server can support hot-swap drives with an optional SGI 1200 server RAID controller. Other features include:

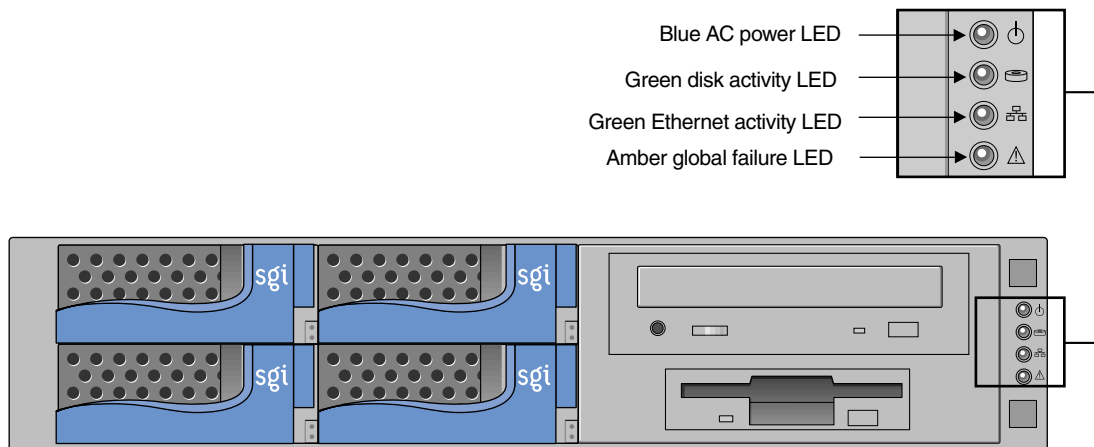
- Remote Server Management Port
- 400 watt autoranging power supply

The following topics are covered in this manual:

- Chapter 1, "Site Preparation and Technical Specifications" provides environmental and technical information needed to properly set up and configure the SGI 1200 server system.

- Chapter 2, “Hardware Overview” lists information on the server’s chassis, connectors, motherboard, LEDs, drives and other hardware components.
- Chapter 3, “Mounting the Server in a Rack” gives information on the proper procedures for mounting the SGI 1200 server system into a rack. Basic power and I/O connections for starting the system are covered.
- Chapter 4, “Peripheral Use” describes how to access, use, and replace the server’s peripheral components.
- Appendix A, “Regulatory Specifications” lists all regulatory information related to the use of the server in the United States and other countries.

Figure i shows the front of an SGI 1200 server with the CD/floppy drive cover removed.



**Figure i** Front Panel of SGI 1200 with Optional Hard Drives

## Where to Find More Information

SGI makes its manuals available in a variety of formats via the World Wide Web (WWW). Using your Web browser, open the following URL:

<http://techpubs.sgi.com/library>

Enter a keyword search, or search by title to find the information or manual you need.

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## Conventions and Terminology

This guide uses the following conventions:

- References to document titles are in *italics*.
- Commands and names of files appear in text as *italics*.
- References to other chapters and sections within this guide are in quotation marks.
- Anything that you type on your keyboard is in **Courier bold**.
- Anything displayed on the screen is in `Courier`.
- Steps to perform tasks are in numbered sentences. When a numbered step needs more explanation, the explanation follows the step and is preceded by a square bullet.
- Warning text that describes conditions that could cause injury or death is highlighted with a lightning bolt icon in the left margin.



**Figure ii** Injury or Death Warning Icon

- Warning or caution text that describes conditions that could cause equipment damage or major data loss is highlighted with a warning mark in the left margin.



**Figure iii** Equipment Damage or Data Loss Warning Icon

In addition, the term “hot-swap” in text with a RAID controller indicates that a hard drive can be removed and replaced while the server is running without data loss in a RAID configuration. Otherwise, the term “hot-swap” indicates that hard drives are conveniently removed and replaced for service and drive expansion, however no data redundancy occurs.

---

## Reader Comments

If you have comments about the technical accuracy, content, or organization of this document, please tell us. Be sure to include the title and part number of the document with your comments. (Online, the document number is located in the front matter of the manual. In printed manuals, the document number can be found on the back cover.)

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# Site Preparation and Technical Specifications

The SGI 1200 server is shipped in a rack, or ready for rack mounting.

## Site Preparation

Table 1-1 provides site preparation information for a single SGI 1200 chassis.

**Table 1-1** Cooling and Power Requirements

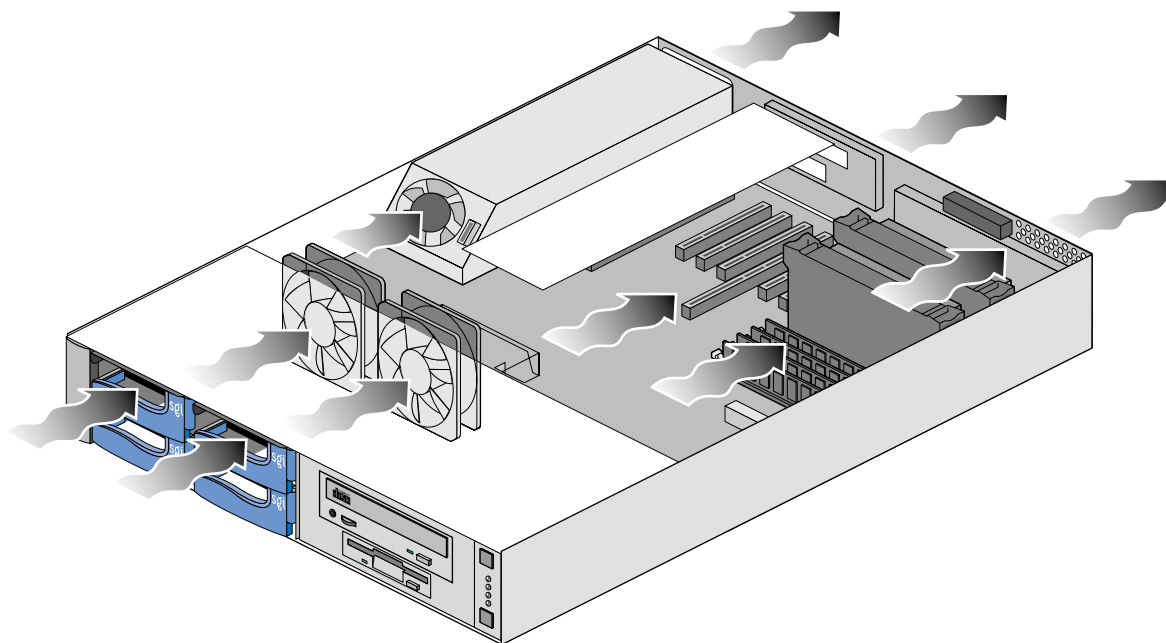
Specification	Value Per Server
Cooling Requirements	
Minimum configuration	730 BTU/hour
Maximum configuration	859 BTU/hour
Air Conditioning Load	0.0718 tons maximum
Power Consumption	
Minimum configuration	214 Watts
Maximum configuration	252 Watts
Volt-Amp Rating for a UPS	600 VA

As shown in Figure 1-1, the airflow in the server chassis flows through the mesh grill at the front of the chassis through the power supply, and over the motherboard. The hot air exhausts out the back of the chassis.

---

**Caution:** Always keep at least 2 inches (5.1 cm) of clearance at the back of the chassis for cooling.

---



**Figure 1-1** SGI 1200 Server Chassis Airflow Diagram



## Technical Specifications

Table 1-2 lists physical and environmental specifications.

**Table 1-2** Physical and Environmental Specifications

Specification	Value Per Server
Dimensions	
Chassis	3.48" height (2U) x 17.1" width x 23.92" length (8.85 cm height (2U) x 43.43 cm width x 60.76 cm length)
Weight	
Installed	42.0 lb (19.1 kg) maximum
In packaging	70.0 lb (31.8 kg) maximum
Installation Orientation	Any, with 2" (5.1 cm) clearance at back
Heat Dissipation	859 BTU per hour maximum
Acoustic Noise	50 dBA bystander position measurement as per ISO 7779
Air Temperature	
Operating	+41 to +95 °F (+5 to +35 °C)
In packaging	-40 to +149 °F (-40 to +65 °C)
Thermal Gradient	
Installed	18 °F (10 °C) per hour (maximum)
In packaging	108 °F (60 °C) per hour (maximum)
Altitude	
Installed	10,000 ft (3,048 m) MSL (maximum)
In packaging	40,000 ft (12,192 m) MSL (maximum)
Relative Humidity	
Operating	10% to 85%, noncondensing at +95 °F (35 °C)
In packaging	5% to 95%, noncondensing at +149 °F (65 °C)

**Table 1-2 (continued)** Physical and Environmental Specifications

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<b>Specification</b>	<b>Value Per Server</b>
Mechanical shock	
Operating	1 G. 11 msec duration, 1/2 sine wave
Nonoperating	10 Gs. 11 msec duration, 1/2 sine wave
In packaging	Adheres to Impact Specifications in ISTA specification
Mechanical vibration	
Operating	0.25 Gs. @ 5-350 Hz (peak to peak)
Nonoperating	0.7 Gs. @ 5-500 Hz
In packaging	Adheres to Random Vibration in ISTA specification

---

## Hardware Overview

This chapter provides information about the SGI 1200 server's hardware. In the first section, information about the motherboard is presented, and in the following sections, the text and supporting illustrations provide information about chassis internals, connectors and LEDs.

### Theory of Operations

The SGI 1200 server uses an Intel motherboard with the following features:

- MP (Multi-Processor) ready processor host bus interface support
- Dual or single Intel Pentium III processors
- Support for up to 2 GB of ECC memory
- Supports the ACPI (Advanced Configuration and Power Interface) power management specification
- L2 cache configurations of 512 KB
- Embedded dual function SCSI controller provides both Ultra2 (LVDS) wide and Ultra wide SCSI interfaces as two independent PCI bus masters
- Fast IDE controller support for removable media drives
- 10/100 Base-T ethernet support at burst rates of up to 132 MB/sec from the PCI bus to the ethernet controller

When you first boot your system you will see an Intel mother board identification number listed (for example L440GX+). If you need specific technical information regarding your server's mother board you can access the Intel documentation directly at:

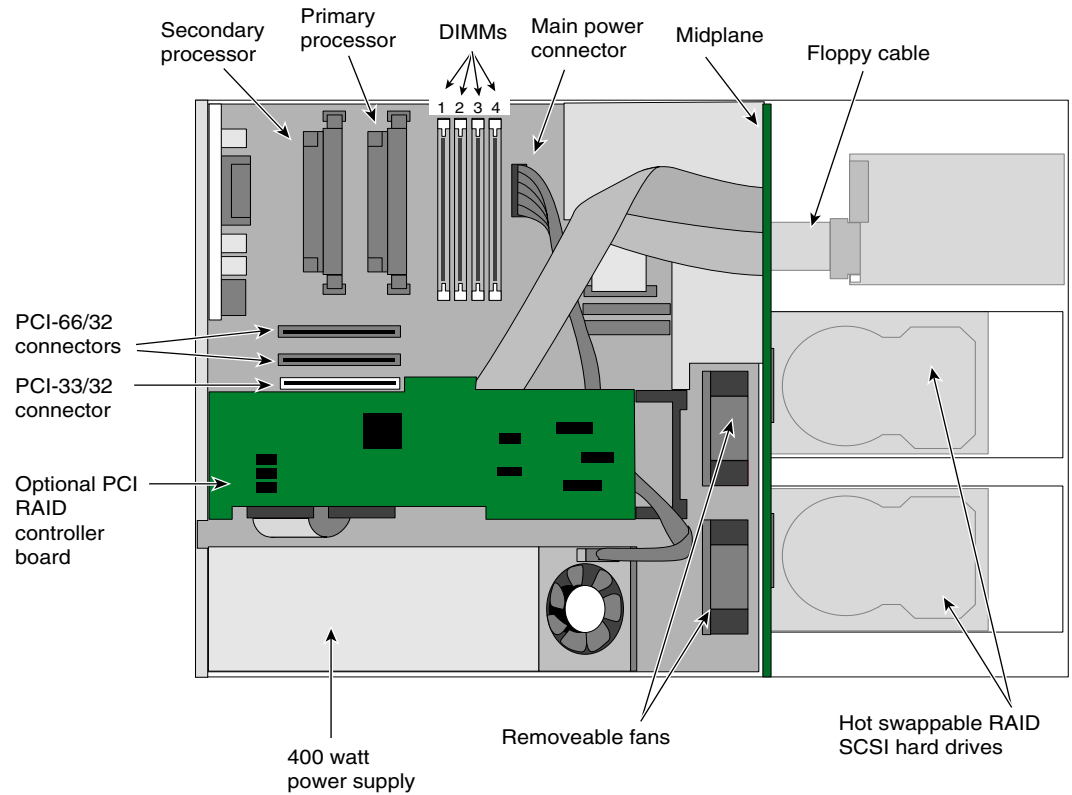
<http://support.intel.com/support/motherboards/server/>

The SGI 1200 server has four hard disk bays and a midplane for easy drive removal, replacement, and chassis monitoring. It supports hot-swap drives with an optional SGI 1200 server RAID controller. Two removable media drives are supported.

Figure 2-1 shows a top view of the chassis internals for an SGI 1200 server with a midplane and optional RAID controller.

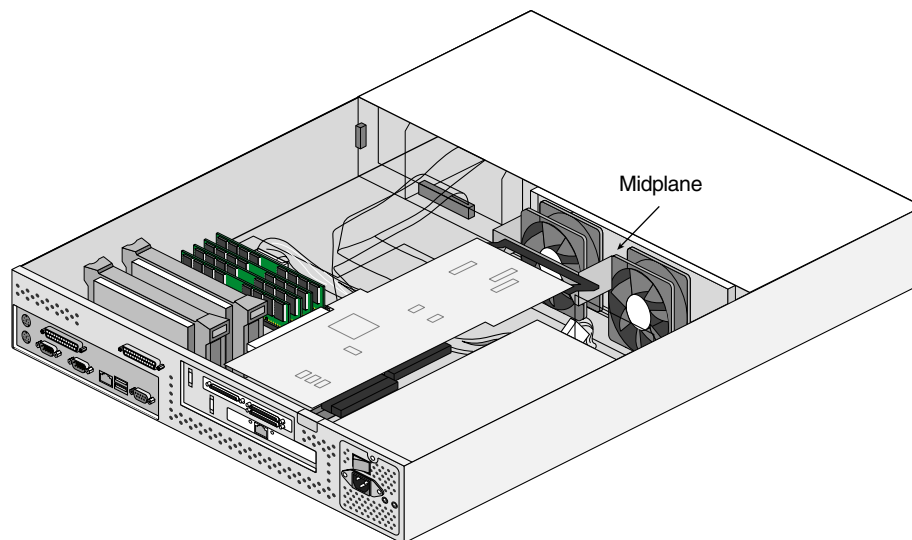
In Figure 2-1, note the following:

- A dual processor motherboard (in single processor systems the secondary processor location must have a terminator board installed)
- The DIMM locations are numbered from one to four moving from left to right.
- The midplane is connected to the optional RAID controller by way of a SCSI cable:
  - The optional RAID controller PCI card enables hot-swap capability.
  - In configurations with an SCA midplane but without the RAID controller, the drive bays have no hot-swap data redundancy.



**Figure 2-1** Internal View of SGI 1200 Server with Optional RAID Controller

Figure 2-2 shows the midplane location and optional RAID board in the SGI 1200 server. Note that the primary cooling fans are located in the middle of the chassis.



**Figure 2-2** Midplane and Chassis Fans

## Processors

The SGI 1200 server motherboard can be populated with up to two Intel Pentium III processors. The processors on the motherboard **must** be rated at the same clock speed. Contact your sales or customer support representative for information on upgrading your server's processors.

## Memory

The motherboard supports from 128 MB to 2 GB of 100 MHz PC/100 SDRAM memory. The system supports only error correcting code (ECC) memory. Contact your sales or system support representative for server memory upgrades.

## I/O Subsystem

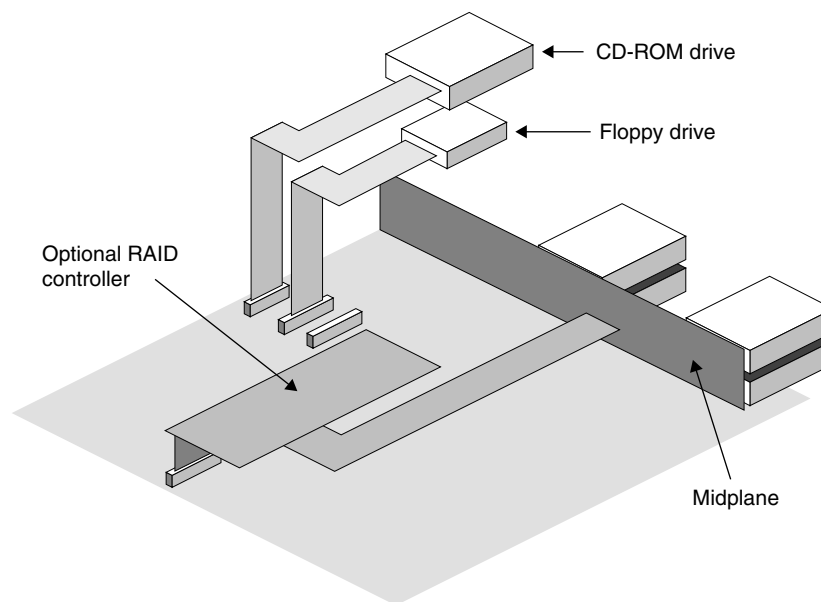
Figure 2-3 shows the basic cabling routes. Moving from left to right:

- The floppy controller on the motherboard connects to the floppy drive.
- The IDE controller on the motherboard connects to the CD-ROM drive.
- The Ultra-2 SCSI controller on the optional PCI-based RAID controller connects to the midplane providing hot-swap RAID capability for four or five hard drives.

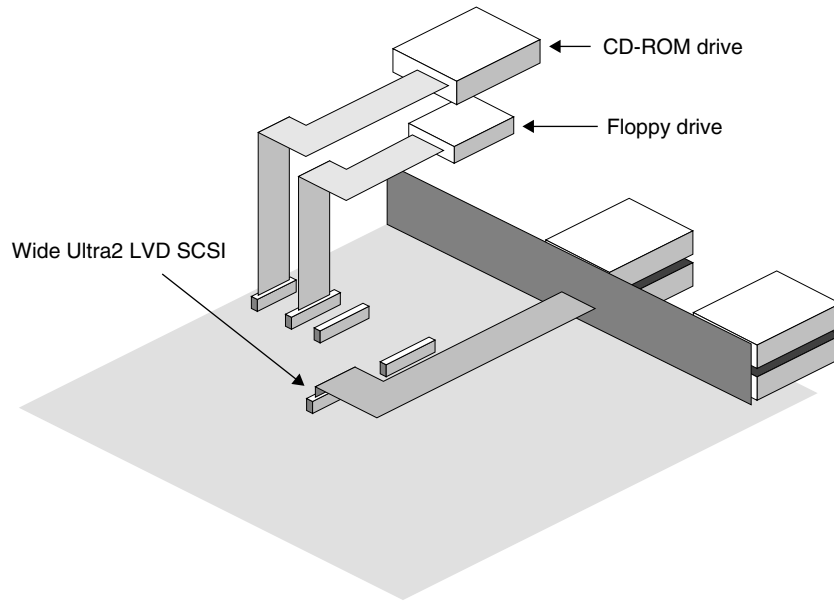
Figure 2-4 shows cabling routes without the optional PCI-based RAID controller:

- Wide Ultra2 LVD SCSI capability on the motherboard connects to the midplane providing high performance disk I/O for hard drives for customers who do not require hot-swap capability with data redundancy.

External connections are not shown. All configurations support an optional Ultra SCSI connector for external SCSI devices. See Figure 2-11 for the location of this connector on the back panel and Table 4-1 for additional information.



**Figure 2-3** SCSI Cabling Route to Midplane with Optional RAID Controller



**Figure 2-4** SCSI Cabling to Midplane without Optional RAID Controller

## Midplane

The SCA midplane on the SGI 1200 server provides easy hard drive removal and replacement. Adding a RAID controller supports hot-swap capability for SCA-2 hard drives using Ultra2 SCSI technology on a single channel. All bus termination and SCSI ID selection for SCA hard drives is handled automatically by the midplane.

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**Note:** The midplane does not support single ended SCSI devices.

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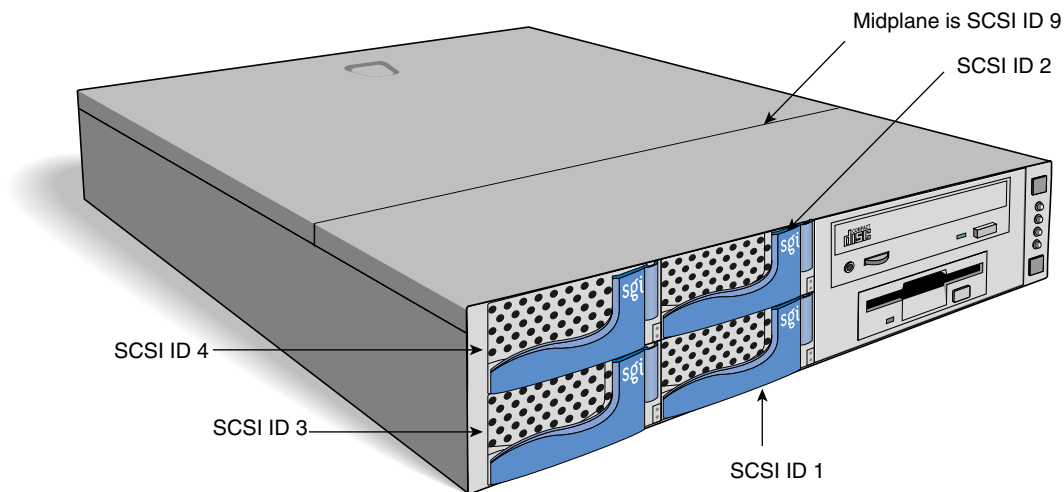
The SCA midplane uses Qlogic's GEM processor to implement the SAF-TE (SCSI Accessed Fault Tolerant Enclosure) specification. The processor monitors the removal and replacement of Ultra-2 SCSI SCA hard drives, scans the SCSI bus for errors, and senses chassis over-temperature and failed fan conditions.

The following SCSI error conditions are indicated as failures:



- hard drive not spinning
- hard drive not responding to low level SCSI commands

Figure 2-5 shows the SCSI IDs that the midplane assigns. The midplane itself uses SCSI ID 9.



**Figure 2-5** Midplane-Assigned SCSI IDs

Temperature sensors on the right and left side of the midplane monitor the chassis temperature. When the sensors detect internal chassis temperatures above 50 degrees C (equipment damaging conditions), the midplane issues a signal that causes the amber Global Failure LED on the front panel to light.

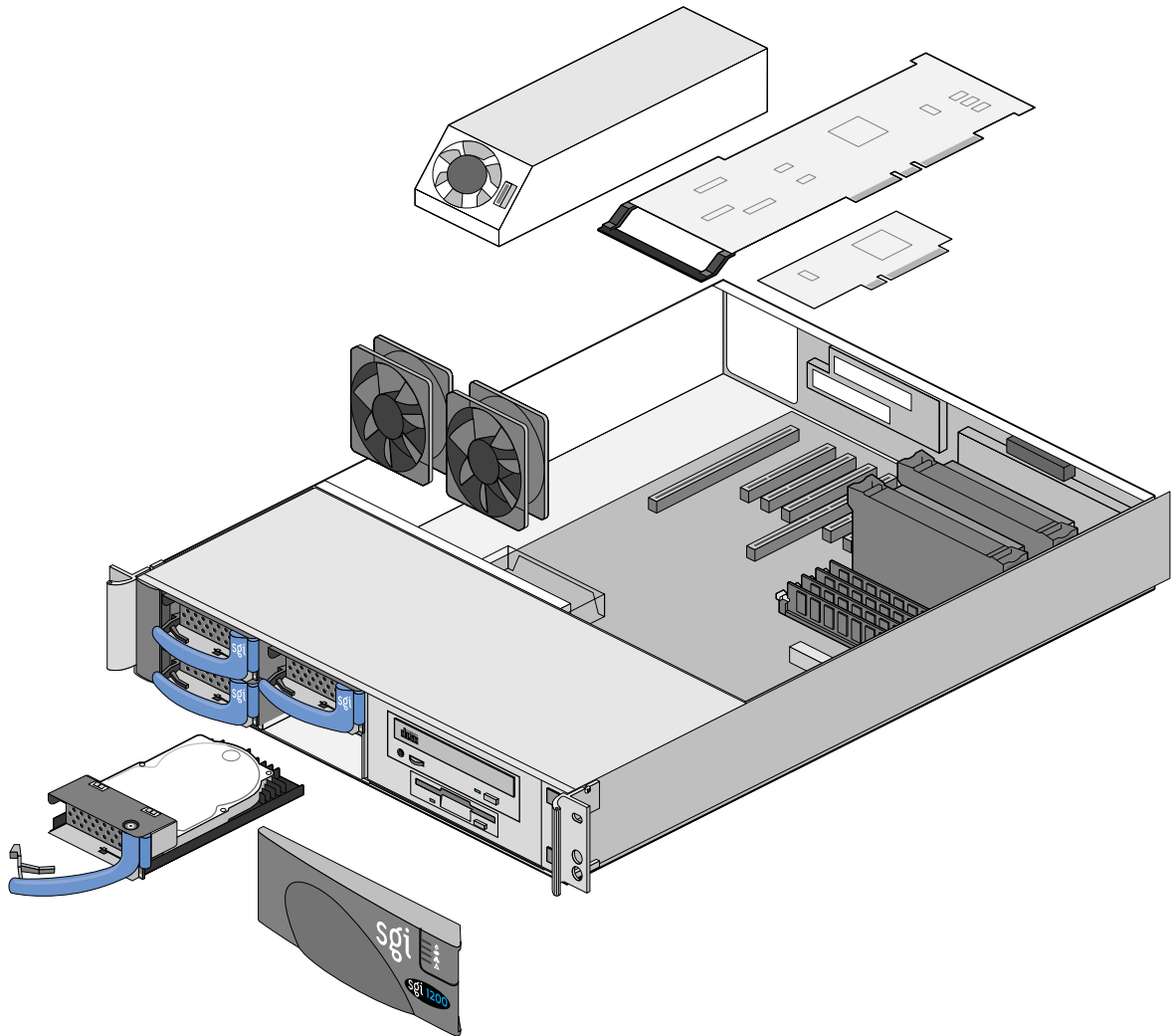
The chassis fans are also monitored, and a fan failure causes the Global Failure LED to light.

## Chassis Tour

Figure 2-6 shows some of the main chassis components in an exploded view. They are:

- Front drive cover
- Hot swappable SCA hard drives

- Fans
- Optional PCI cards
- Power supply

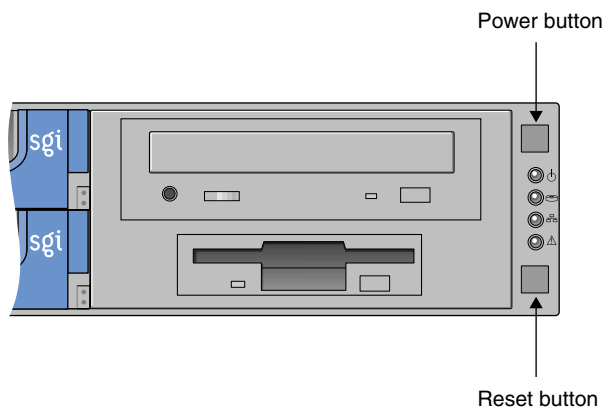


**Figure 2-6** Exploded View of SGI 1200 Server Chassis

## Chassis LEDs, Buttons and Connectors

There are two push buttons and several LEDs on the right hand side of the SGI 1200 server front panel. The following sections provide information about the buttons and LEDs on the front and back panel, and information about error conditions that the LEDs can indicate. The information in this section can help you make a quick visual inspection of the status of the hard drives, network connections and internal components of your SGI 1200 server.

If the amber Global Failure LED that you can view through the front cover does light, you can use the information in this section, and Chapter 5 to troubleshoot the failure source.



**Figure 2-7** Front Panel Push Buttons (Cover Removed)

### Front AC Power Push Button

Pressing this button powers on the SGI 1200 server. If you decide that you don't want to power up the SGI 1200 server, press the button again to immediately shut down the system. The blue LED will blink briefly and the server shuts down before the BIOS or operating system are initialized.

When the SGI 1200 server is operating, holding this button for five seconds issues a shutdown command to the system.



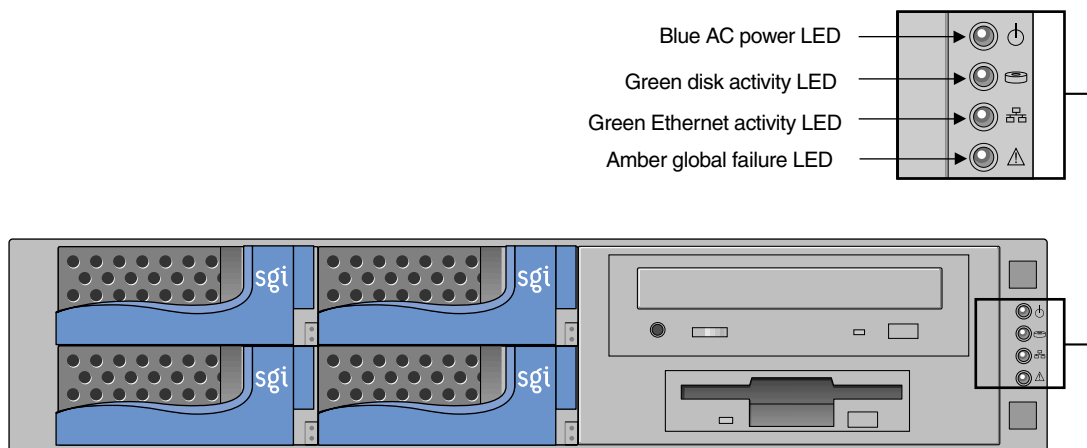
**Warning:** The SGI 1200 server continues to have AC power inside the chassis even after the front power push button has been pressed to power down the SGI 1200 server. As long as the AC power cord is connected, the power supply supplies DC power so that the motherboard can be controlled through the Emergency Management Port (EMP) for remote management, fan usage and processor cooling. Factory authorized service personnel must unplug the AC cord before opening the chassis for service.

### Reset Push Button

The reset push button connects to the motherboard. If the SGI 1200 server freezes during use, pressing the reset button issues a hardware reset to the BIOS, and the operating system reloads.



**Caution:** Pressing the reset button is the last resort for dealing with a non-responsive server. Any work not saved to disk will be lost when the reset button is pressed. Pressing the reset button can leave the operating system in an uncertain state, so try logging into an alternate console to cancel a runaway process before you reset your system. Check with your system administrator.



**Figure 2-8** Front Panel LEDs

### Blue AC Power Led



When the blue LED lights, the SGI 1200 server has a live AC power connection. See also “Power Supply LEDs” on page 17.

### Green Disk LED



The green LED located beneath the blue AC power LED is the disk activity LED. It flickers during disk activity.

### Ethernet Activity LED



The green Ethernet activity located above the amber Global Failure LED flickers during 100 and 10 Mbps Ethernet activity.

### Amber Global Failure LED



There are a variety of failure conditions that cause the amber Global Failure LED to light, including:

- AC power into the power supply out of normal range
- DC power outputs from the power supply not within specified range
- A variety of hard disk drive failure conditions (see the troubleshooting section of Chapter 5 for more details)
- Chassis detects temperatures that exceed the acceptable ranges
- Fan failure

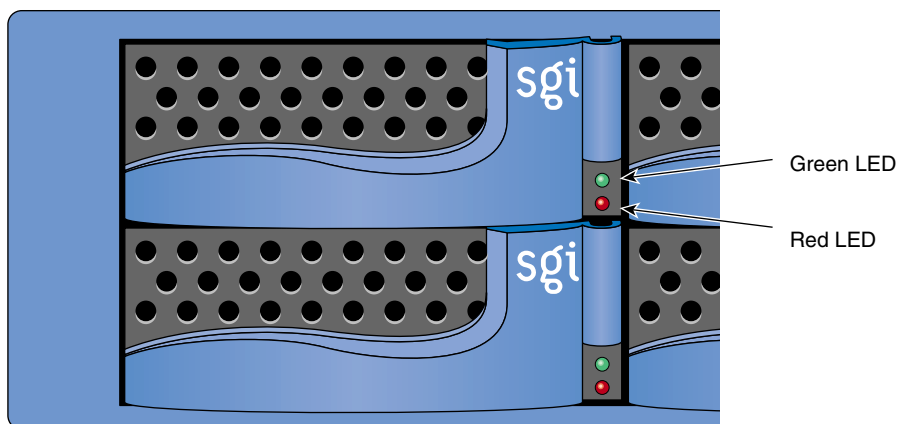
Table 2-1 provides a summary of the front panel LED states.

**Table 2-1** Front Panel LED State Summary

LED	Normal Status During Use	Problem Indication
AC Power LED	Bright blue	LED not lit
Disk Activity LED	Blinks green during any hard disk activity	LED never flickers
Network Activity LED	Blinks green during 10 and 100 Mbps network activity	LED never flickers
Global Failure LED	LED not lit	Solid amber LED, or very slow blinking amber LED

### Hard Drive Carrier LEDs

Figure 2-9 shows the location of the green and red hard drive carrier LEDs.



**Figure 2-9** Hard Drive Carrier LEDs

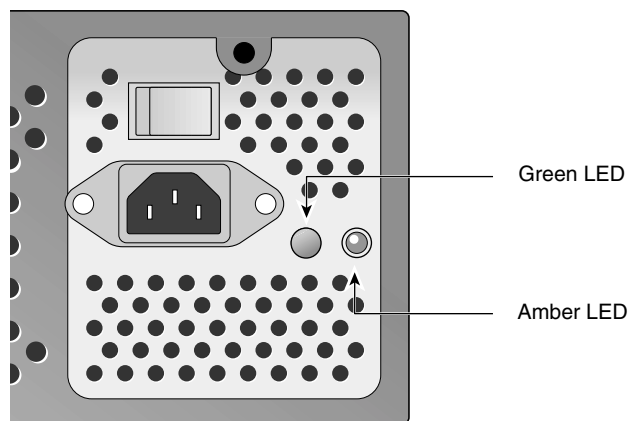
Table 2-2 provides a summary of the LEDs on the hard drive carrier.

**Table 2-2** Hard Drive Carrier LED State Summary

LED	Normal Status During Use	Problem Indication
Green LED	LED blinks during hard drive disk read and write activity	LED not lit
Red LED	LED never lit	LED blinks or lit

### Power Supply LEDs

As Figure 2-10 shows, there are two LEDs next to the power supply.



**Figure 2-10** Power Supply LEDs

The amber LED lights when the AC power cord is plugged into the AC power cord receptacle. This indicates that the power supply is supplying the chassis with +5V standby for EMP port control. The amber LED turns off when the rocker switch above the AC power receptacle is switched on and the chassis receives all DC power. A lit green LED indicates the chassis is powered up.

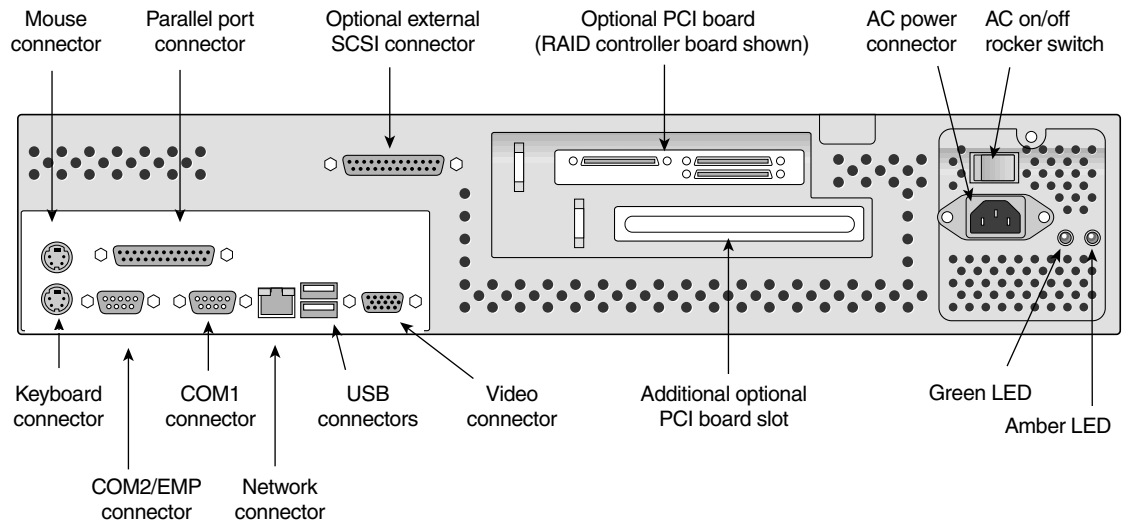
Table 2-3 provides a summary of the LEDs on the power supply.

**Table 2-3** Power Supply LED State Summary

LED	Normal Status During Use	Problem Indication
Green LED	LED lit	Green LED does not light after power switched on
Amber LED	LED lit when AC cord plugged in, amber LED turns off when AC rocker switch turned on	Amber LED remains lit after power switched on

**Back Panel Connectors**

Figure 2-11 shows the SGI 1200 server backpanel.



**Figure 2-11** Connectors on the SGI 1200 Server Back Panel



## Mounting the Server in a Rack

This chapter provides illustrations and procedures used to mount your SGI 1200 server in a 19-inch equipment rack.

### Mounting the System in a Rack

This section provides information about installing the SGI 1200 server into a rack. Before you begin, check Table 3-1, Table 3-2, and Table 3-3 to make sure that you have the hardware necessary to complete the installation.



---

**Warning:** Service personnel could be seriously injured and equipment damaged if the rack topples over. Make sure that only one SGI 1200 server at a time in the rack is extended forward on slides. Install all equipment into the rack from the lowest available position. The rack must be anchored to the floor with stabilizing feet to enhance stability. Also, make certain that the rack has sufficient power for the server's needs. Check with the appropriate facilities authorities before installing this server into a rack.

---

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**Note:** This installation requires two people and a #2 Phillips screwdriver.

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**Tip:** After you have removed the server from its shipping materials, remove the shipping tape (if any) that secures the removable hard drives during transit.

---

## Slide Rail Mount

This section describes how the slide rails are installed.

**Table 3-1** Rack Installation Hardware for Slide Rail Mount

Part Description	Quantity
10-24 x 1/4" screws	10
10-32 x 1/4" screws (used to mount the slides to the rear mounting brackets)	8
10-32 nuts (kepnuts)	8
Slide rails (right and left pair)	1
Rear mounting bracket extenders (right and left pair)	1
10-32 x 1/2" screws (black)	12
10-32 barnuts	4

1. Find the two slides and mounting hardware within the shipping container. Check Table 3-1 to make sure that you received all items necessary to complete the installation.
2. Identify the right and left side slide rails.
3. Extend each slide out until the tab snaps into place.
4. Press the tab, and remove the slide from the rail.
5. Place the SGI 1200 server on a flat surface and attach the right and left side slide rails. Line up the five screw holes on each side, and install five 1/4-inch (0.64 cm) length 10-24 screws to attach each slide.

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**Caution:** Use only the included 1/4-inch (0.64 cm) length screws. Using longer screws will damage the power supply case.

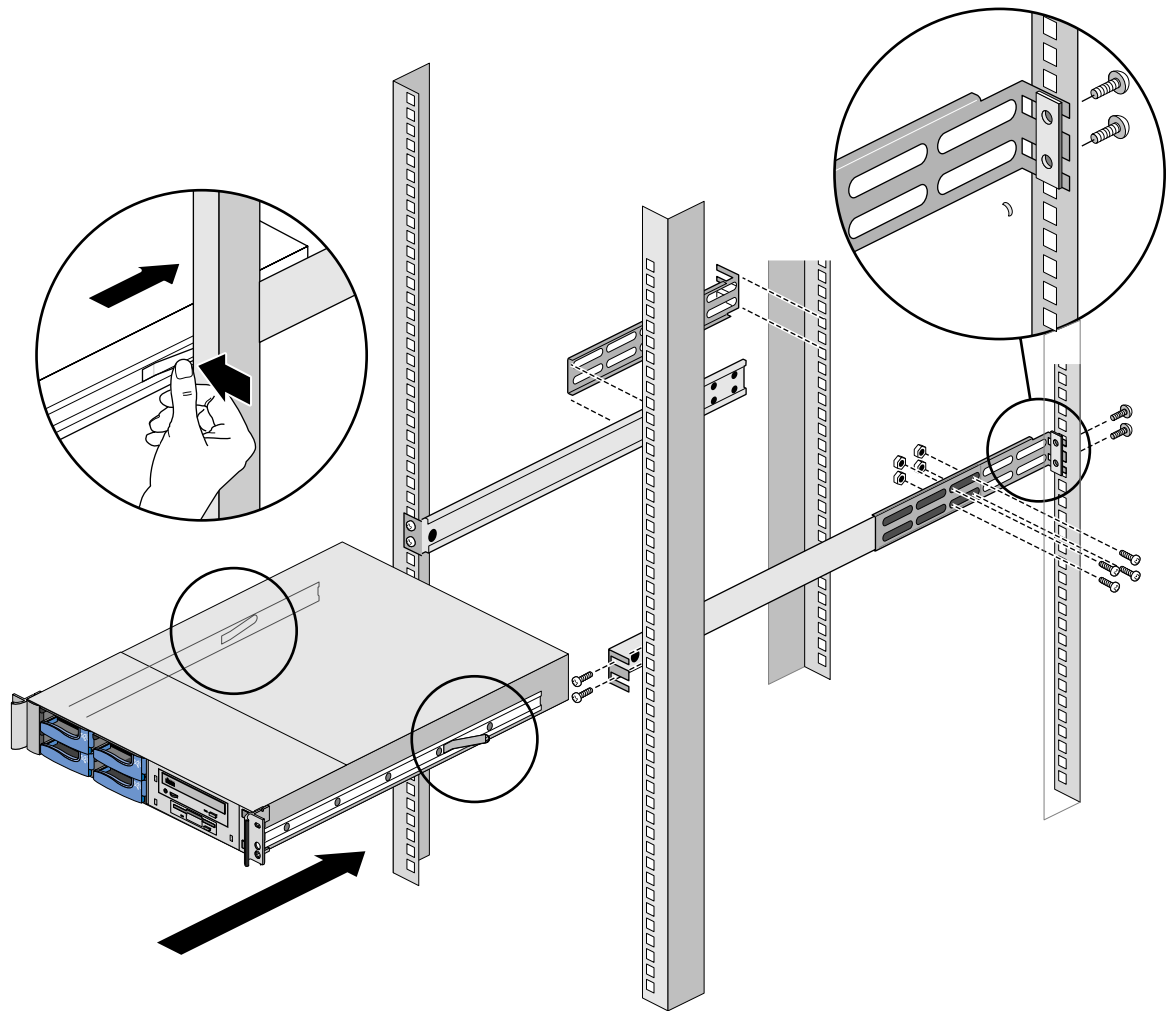
---

6. Install the right and left rear mounting brackets and extenders into the rack frame. See Figure 3-1.

**Tip:** Make sure you install the rails level. Count the holes on the rack rails from the bottom of the rack carefully on each side. Make sure the ends of the brackets face toward the front of the rack.

---

- As one person holds each bracket, the other person lines up the front screw holes and attaches the 10-24 rack screws on the right and left sides.
  - From the sides of the rack, line up the four screw holes on each side of the rear mounting bracket and extender, and install four 1/4-inch (0.64 cm) length 10-32 screws and 10-32 nuts on the inside.
  - At the back of the rack, line up the rear screw holes and attach the 10-24 rack screws on the right and left sides.
7. With one person holding each side, slide the SGI 1200 server chassis with slides attached onto the rails into the rack. Line up the slides and rails carefully on each side, press the locking tabs, and slide the chassis into the rack. See Figure 3-1.
  8. Install two 10-24 rack screws at the front of each rail to secure the slide rail. The server chassis is now securely attached to the rack.



**Figure 3-1** Slide Rail Installation

## Center Mount

This section describes how the SGI 1200 server is installed into a rack with center mount brackets. Table 3-2 lists the installation hardware included with your shipment.

**Table 3-2** Rack Installation Hardware for Center Mount

Part Description	Quantity
10-24 chassis screws with captive washers (from rack, not supplied)	4
Front mounting brackets	2
Center mounting brackets	2
10-24 x 1/4" screws	4

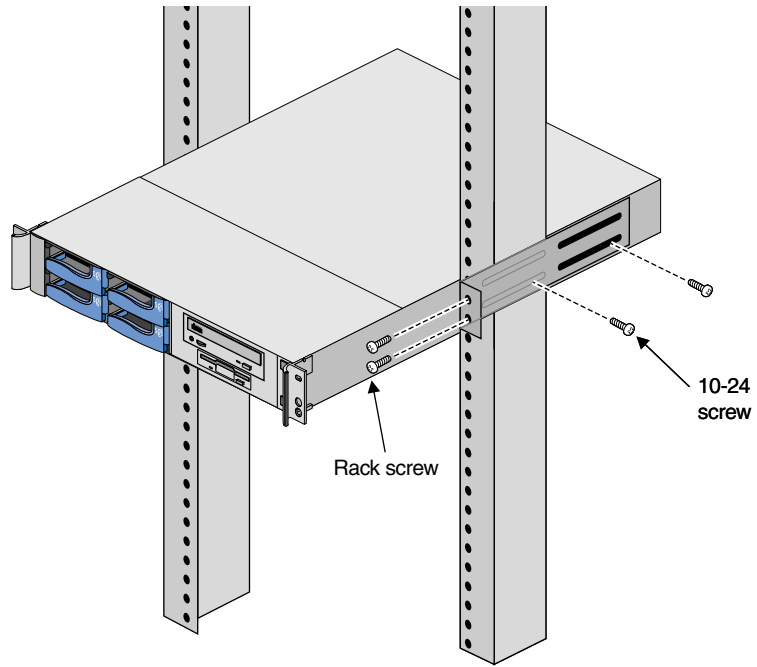
1. Find the mounting hardware within the shipping container. Check the table above to make sure you received all items necessary to complete the installation.
2. Place the SGI 1200 server on a flat surface.
3. Install the right and left rear mounting brackets loosely onto the back of the rack frame.

---

**Tip:** Make sure you install the rails level. Count the holes on rack rails from the bottom of the rack carefully on each side.

---

4. As one person slides the system onto the brackets from the front of the rack, and holds it in place, the other person lines up the top two front screw holes. Tip the system up slightly, and install the front two top chassis screws loosely to hold the majority of the system's weight. See Figure 3-2.
5. Install the bottom two chassis screws.
6. Tighten the front two bottom chassis screws first (one on each side), then the front two top screws next.



**Figure 3-2** Installing the Chassis into a Center Mount Rack

## Connecting Everything to Get Started

See Figure 2-11 on page 18 for the location of the back panel connectors.

1. Check to be sure the AC power switch at the back of the chassis is in the **Off (-)** position.
2. Connect the AC power cable to the power receptacle.
3. Connect the mouse cable from the optional mouse.
4. Connect the keyboard cable from the optional keyboard.
5. Connect any other cables (serial, EMP, and S-VGA monitor) as applicable.
6. Connect the Ethernet cable.
7. Turn the AC power switch on the power supply to the **On (I)** position.
8. Press the AC power switch on the front panel.





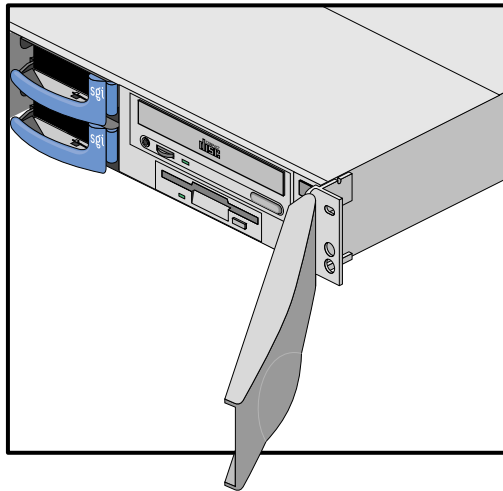
---

## Peripheral Use

There is no front cover on the four hard disk drive locations. To access or use the CD and floppy drives, you must open or remove the plastic front cover. The following section describes how.

### Opening the CD and Floppy Cover

As shown in Figure 4-1, the plastic front cover swings open to the right. Note that there is no fastener to hold the cover closed.



**Figure 4-1** Opening the CD and Floppy Front Cover

You can remove the cover using the following information:

1. Grasp the plastic cover close to the right edge (where the door attaches to the bracket).
2. Pull outward and downward on the door and the cover detaches from the bracket.

To reinstall the door:

1. Seat the lower ball in the hole in the bottom of the bracket.
2. Push the upper ball forward until it snaps into the hole on the top of the bracket.

## Hot-swap Drive Use

If your SGI 1200 server has a RAID controller, it is essential to keep the following warnings in mind as you begin using the hot-swap drives.



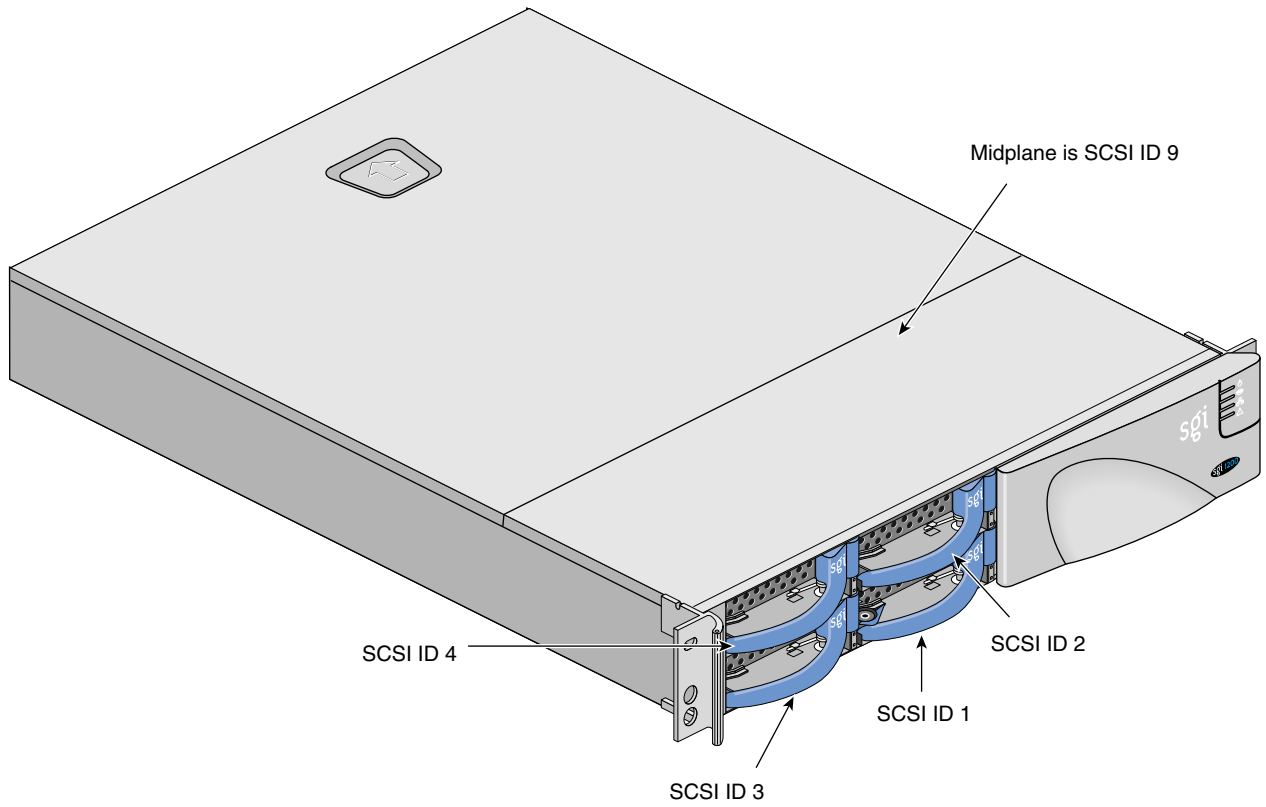
---

**Caution:** NEVER remove a hot-swap drive while the array is being rebuilt. The amber global failure LED on the front panel blinks very slowly while the array rebuilds, so do not remove a drive until the array is finished rebuilding. Never remove more than one hard drive carrier from the SGI 1200 server at a time. All RAID levels fail when more than one hard drive is removed from the chassis. Also, do not operate your SGI 1200 for extended periods without having all drive bays filled with either devices or a filler drive blank.

---

If your SGI 1200 server does not have a RAID controller, the hot-swap drives function as removable drives only. Data is not protected if a hard drive crash occurs.

Use Figure 4-2 to correlate removable hard drives with their SCSI bay locations.



**Figure 4-2** SCSI Drive Numbering

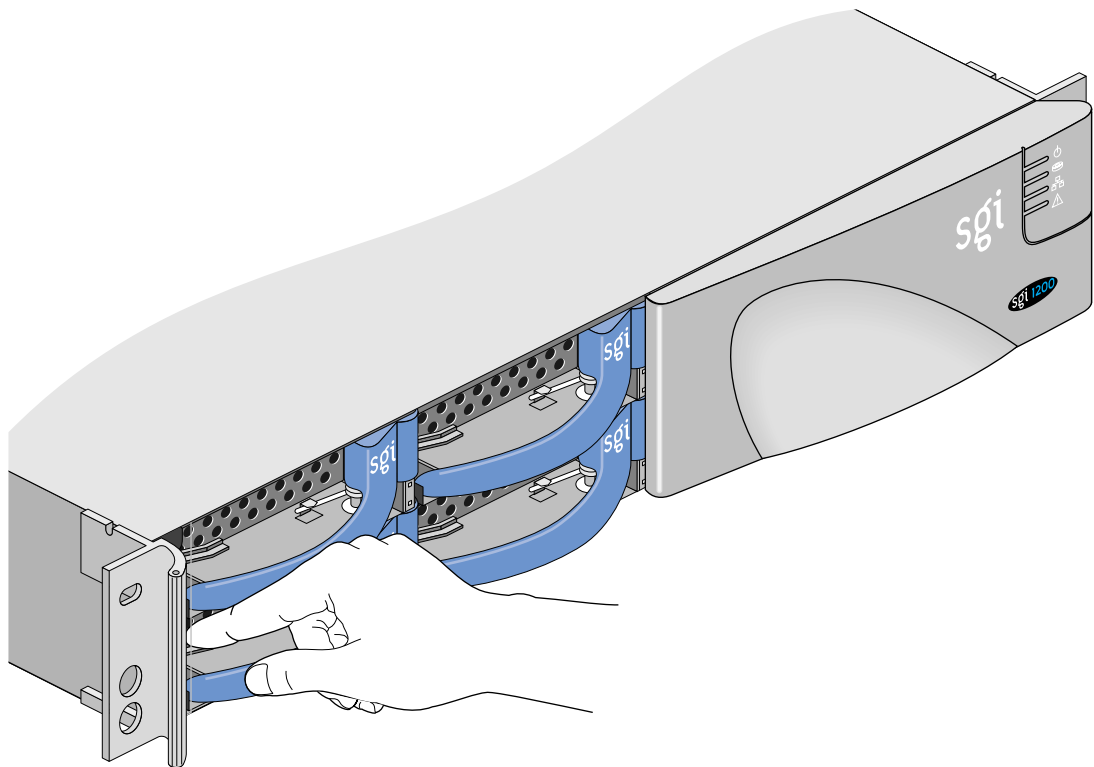
Remove a hard disk from the system using the following steps and Figure 4-3:

1. Grasp the middle of the release handle.
2. Squeeze the middle of the drive handle.

---

**Note:** If you are using an optional RAID controller, you must have the RAID configured properly to remove and replace a hard drive carrier with the power on. Refer to the PCI RAID card's documentation for additional information.

---

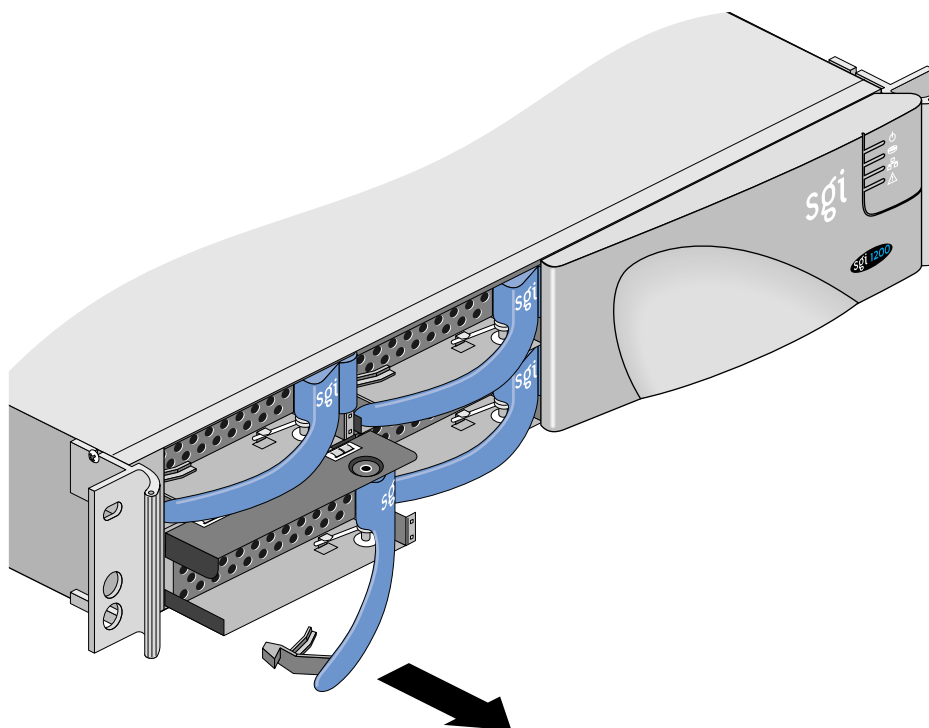


**Figure 4-3** Releasing a Hard Disk Drive

- Slide the hard drive out, see Figure 4-4.

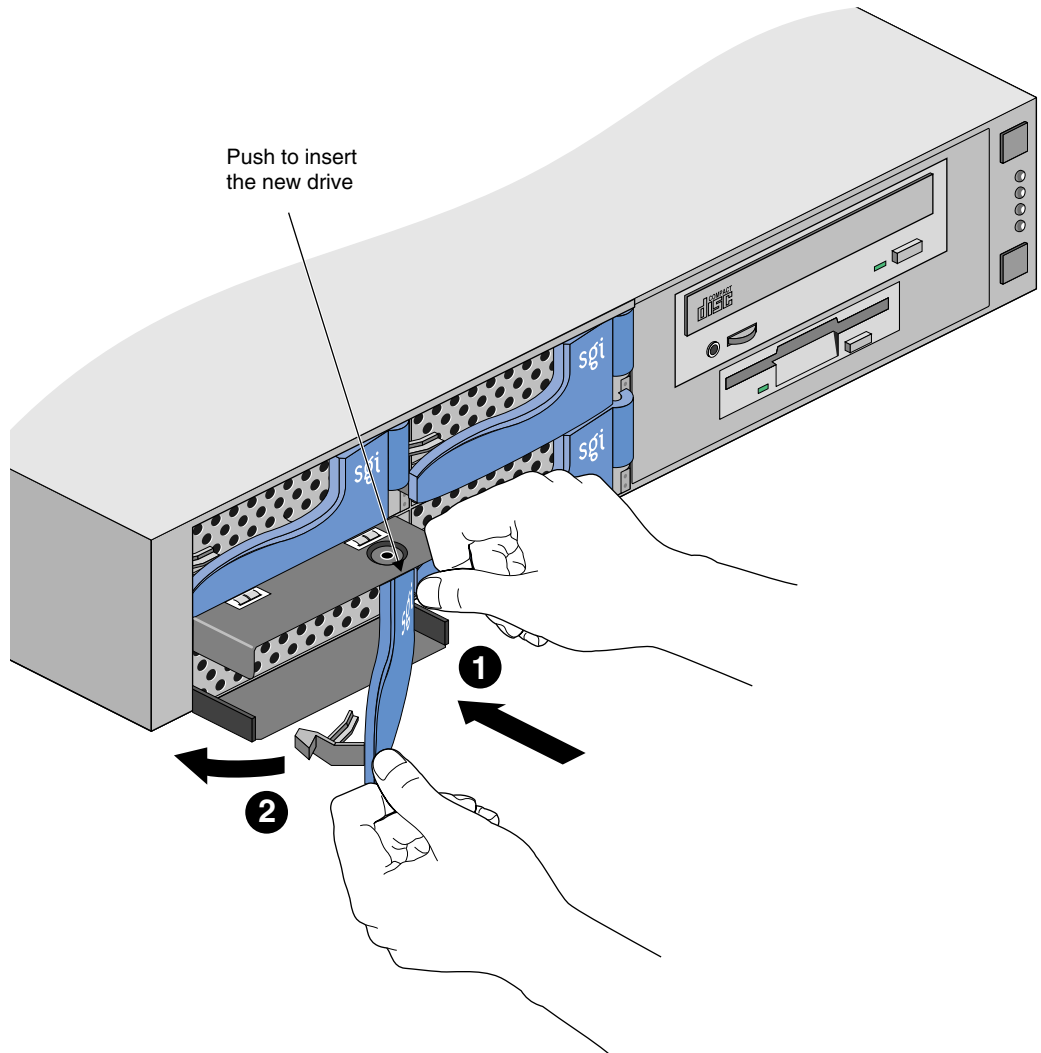


**Caution:** If you do not have an optional PCI RAID card you will probably lose data on a failed drive. You will need to restore backup data after the failed drive is replaced. Also, allowing 30 seconds for the hard drive to spin down after releasing the drive handle is highly recommended.



**Figure 4-4** Removing a Hard Drive

- Slide a new drive into the drive bay using the drive release handle in a two step motion as shown in Figure 4-5.



**Figure 4-5** Replacing a Hard Disk Drive

5. Find the icon on the drive release handle. Push the drive carrier in.
6. Press the handle toward the chassis, and lock the drive release handle.

## Hard Drive Upgrade Strategies

This section provides information about hard drive upgrade strategies for SGI 1200 servers with RAID and non-RAID drives. The SGI 1200 server can be configured with up to four internal hard disk drives.

---

**Note:** When upgrading storage, the system must be powered down to install the new drives, regardless of the drive type or RAID controller being used.

---




---

**Caution:** Always perform a full backup before upgrading your SGI 1200 server.

---

To install internal hard drives perform the following steps:

1. Back up your system.
2. Safely shut down the system.
3. Install the hard drive.
4. Restart the operating system.
5. Configure the new device as applicable to your operating system.

The two independent SCSI channels on the motherboard enable a variety of external SCSI connections. Table 4-1 shows that the SGI 1200 server can be connected to Ultra SCSI by way of an optional SCSI connector, and some versions can connect with an Ultra2 connection.

**Table 4-1** SGI 1200 Server External SCSI Connection Choices

Internal RAID	No RAID
Ultra2, Ultra SCSI or none	Ultra SCSI or none

Table 4-2 describes some of the internal and external RAID upgrade parameters for the SGI 1200 chassis with midplane and optional RAID controller.

**Table 4-2** SGI 1200 RAID Configurations

<b>SGI 1200 Version</b>	<b>Internal RAID</b>	<b>External RAID</b>
4 bay hot-swap hard drives with RAID controller	Yes	Yes
Non-RAID hard drives	No	Yes

For the SGI 1200 with hot-swap hard drives and the optional RAID controller, there are two different methods to install new hard drives into a chassis with existing hard drives already configured for RAID 5. The chassis must have a minimum of three hard drives to support RAID 5. Both of these methods are summarized as B in Table 4-3. The first method involves the following steps:

1. Back up your system.
2. Safely shut down the system.
3. Install the hard drive.
4. Configure the new hard drive in a fault tolerant configuration in a second volume.
5. Start the system.
6. Configure the drive as a new logical volume.

The second alternative involves the following steps:

1. Back up your system.
2. Safely shut down the system.
3. Install the hard drive.
4. Format hard drives to erase the old RAID 5 configuration.
5. Configure all the hard drives in the system as a RAID 5 as a single volume.
6. Start the system.
7. Restore your system files on the new drive configuration from backups.



**Table 4-3** RAID 5 Hard Drive Upgrade Strategy

<b>Drive Slot Number</b>				
Number of installable hard drives	1	2	3	4
Three hard drives + one new in slot 4	R5	R5	R5	



## Regulatory Specifications

The following sections and illustrations present information that may be important to the operation of your SGI server.

### Manufacturer's Regulatory Declarations

The SGI 1200-family of server products conform to several national and international specifications and European Directives listed on the "Manufacturer's Declaration of Conformity." The CE insignia displayed on each device is an indication of conformity to the European requirements.

---

**Caution:** Each SGI server system has several governmental and third-party approvals, licenses, and permits. Do not modify this product in any way that is not expressly approved by Silicon Graphics. If you do, you may lose these approvals and your governmental agency authority to operate this device.

---

### Server Model Number

The CMN (model) number for each server is shown on the system label on the unit.

### Series Number

The series number is on the serial number label on the back of the SGI 1200 server.

You need to know the series number and CMN number for downloading the Manufacturer's Declaration of Conformity from the World Wide Web.

## Manufacturer's Declaration of Conformity

A "Manufacturer's Declaration of Conformity" is available on the World Wide Web. Look on your system (regulatory) label on the system to determine your CMN (model) number, and on the serial number label to determine your series number. You need both to identify your Declaration of Conformity. To locate the information on the World Wide Web, enter the following in your Web browser location window:

<http://www.sgi.com/compliance>

## Upgrade Regulatory Label

If you received a regulatory label with an upgrade, place it on the system near the Manufacturer's Declaration of Conformity label.

## Class A Compliance

This equipment complies with Part 15 of the FCC Rules. Operation 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.

---

**Note:** This equipment 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 when the equipment is operated 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 to 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 his own expense.

---

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- 
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  - Consult the dealer or an experienced radio/TV technician for help.

---

**Caution:** Users should note that changes or modifications to the equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

---

## Electromagnetic Emissions

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

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Also, this device complies with Class A electromagnetic emissions limits of C.I.S.P.R. Publication 22, Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment.

## VCCI Notice (Japan Only)

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

## NOM 024 Information (Mexico Only)

La información siguiente se proporciona en el dispositivo o en dispositivos descritos en este documento, en cumplimiento con los requisitos de la Norma Oficial Mexicana (NOM 024):

Exportador: Silicon Graphics, Inc.

Importador: Silicon Graphics, Inc.

Embarcar a: Av. Vasco de Quiroga  
No. 3000  
Col. Santa Fe  
C.P. 01210  
México, D.F. México

Tensión alimentación:  
100/240 ~ VAC

Frecuencia: 50/60 Hz: Consumo de corriente: 7.6 A

### Chinese Class A Regulatory Notice

警告使用者：

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

### Industry Canada Notice (Canada Only)

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique n'émet pas de perturbations radioélectriques dépassant les normes applicables aux appareils numériques de Classe A prescrites dans le Règlement sur les interférences radioélectriques établi par le Ministère des Communications du Canada.

### CE Notice

Marking by the "CE" symbol indicates compliance of the device to directives of the European Community. A "Declaration of Conformity" in accordance with the standards has been made and is available from Silicon Graphics upon request.

---

## Korean Class A Regulatory Notice

이 기기는 업무용으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며 만약 잘못 판매 또는 구입하였을 때에는 가정용으로 교환하시기 바랍니다.

## Shielded Cables

The SGI 1200-family of server systems is FCC-compliant under test conditions that include the use of shielded cables between the server and its peripherals. Your server and any peripherals you purchase from Silicon Graphics have shielded cables. Shielded cables reduce the possibility of interference with radio, television, and other devices. If you use any cables that are not from Silicon Graphics, make sure they are shielded. Telephone cables do not need to be shielded.

Optional monitor cables supplied with your server system use additional filtering molded into the cable jacket to reduce radio frequency interference. Always use the cable supplied with your system. If your monitor cable becomes damaged, a replacement cable should be obtained from Silicon Graphics.

## Electrostatic Discharge

Silicon Graphics designs and tests its products to be immune to the effects of electrostatic discharge (ESD). ESD is a source of electromagnetic interference and can cause problems ranging from data errors and lockups to permanent component damage.

It is important that while you are operating the server system you keep all the covers and doors, including the plastics, in place. The shielded cables that came with the server and its peripherals should be installed correctly, with all thumbscrews fastened securely.

An ESD wrist strap may be included with some products, such as memory or PCI upgrades. The wrist strap is used when installing these upgrades to prevent the flow of static electricity, and it should protect your system from ESD damage.





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