

# SGI 1100 Server User's Guide

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## About This Guide

This guide describes the features of the SGI 1100 server, provides rack mounting instructions, and provides Setup utility information in the following chapters:

- Chapter 1, “System Overview and Setup”
- Chapter 2, “Rack Mounting Instructions”
- Chapter 3, “Setup Utility”

An index completes this guide.

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# System Overview and Setup

The SGI 1100 is a 1U, high-density, rackmountable, PCI bus-based dual-processor system built on an extended ATX baseboard. The system is fully compatible with Linux, Windows NT 4.0 and Windows 2000 Advanced Server operating systems.

This chapter describes the main features of the SGI 1100 server, and provides setup information in the following sections:

- Unpacking and Inspecting the Server
- Physical and Environmental Specifications
- Choosing a Site
- Chassis Front Controls and Indicators
- Rear Panel I/O Ports and Features
- Connecting a Console
- Starting the System
- IPMI (Intelligent Platform Management Interface)
- Power-on Problems

## Unpacking and Inspecting the Server

Remove the server from the packaging container and check that the following items are included:

- SGI 1100 system
- SGI 1100 Server Quick Start Guide
- SGI 1100 Server Documentation CD
- Resource CD (contains device drivers)
- Rack mount kit

Inspect the above items for evidence of mishandling during transit. If the contents appear damaged, file a damage claim with the carrier immediately.

Save the boxes and packing materials for future use.

## Physical and Environmental Specifications

The SGI 1100 server is designed to be mounted in a standard 19-inch rack. For instructions on mounting the SGI 1100 server in a 19-inch rack, see Chapter 2, “Rack Mounting Instructions”.

Table 1-1 shows the physical and environmental specifications for the SGI 1100 server system.

**Table 1-1** SGI 1100 Server Physical and Environmental Specifications

Height	1u (1.75 in., 4.45 cm)
Width	19.0 in. (48.25 cm)
Depth	21.2 in. (53.85 cm)
Weight	24.2 lbs. (11 kg), maximum configuration
Temperature	+5 °C (41 °F) to +35 °C (+95 °F) (operating) -10 °C (14 °F) to +60 °C (+149 °F) (non-operating)



**Table 1-1 (continued)** SGI 1100 Server Physical and Environmental Specifications

Humidity	20% - 80% RH, non-condensing
Vibration:	
Operating (unpacked)	5 - 16.2 Hz: 0.38 mm (peak to peak) 16.2 - 250 Hz: 0.2 G
Non-operating (packed)	5 - 27.1 Hz: 0.60 G 27.1 - 50 Hz: 0.4 mm (peak to peak) 50 - 500 Hz: 2.0 G

## Power Consumption

The server power supply is rated for a maximum of 200W DC output. Maximum AC input power consumption is approximately 307W. Consider the following:

- Using 110V AC power, a fully loaded system can consume up to 2.80A.
- Using 220V AC power, a fully loaded system can consume up to 1.40A.

The deployment of ultra-dense 1U servers represents a significant power requirement. A simple formula to calculate server power requirements for an installation is:

(Number of servers) x (307W) = maximum power requirements for servers

## Thermal Dissipation

The server has the following cooling systems:

- Fan wall with three internal swappable fans
- Fan-sink for each of two CPUs
- One internal power supply fan
- Two rear blowers

A fully configured SGI 1100 server under maximum workload can produce approximately 1047 Btu/hr. Air temperature measurements around the server may vary as much as 25 °C (45 °F) from front to back. Deployment of multiple ultra-dense servers will produce a significant amount of heat. For example, 36 servers under maximum workload can generate as much as 37,692 Btu/hr.

## Choosing a Site

The server operates reliably within normal office environments. Select a site that meets these criteria:

- Near a properly earthed, grounded, three-pronged power outlet, as follows:
  - In the U.S. and Canada: a NEMA 5-15R outlet for 100-120 V or a NEMA 6-15R outlet for 200-240 V.
  - In other geographic areas: a properly earthed, grounded outlet in accordance with the local electrical authorities and electrical codes of the region.

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**Note:** Rack installations will often use one or more power distribution units (PDUs). In these cases, the SGI 1100 server will be plugged into a PDU. Each PDU should in turn be connected to an appropriate power outlet in accordance with the local electrical authorities and electrical codes of the region.

---

- Clean and relatively free of excess dust.
- Well-ventilated and away from sources of heat, with the ventilation openings on the server kept free of obstructions.
- Away from sources of vibration or physical shock.
- Isolated from strong electromagnetic fields and line noise caused by electrical devices such as elevators, copy machines, air conditioners, large fans, large electric motors, radio and TV transmitters, and high-frequency security devices.
- Access space provided so the server power cords can be unplugged from the power supply or the wall outlet. This is the only way to remove AC power from the server.
- Clearance provided for cooling and airflow.

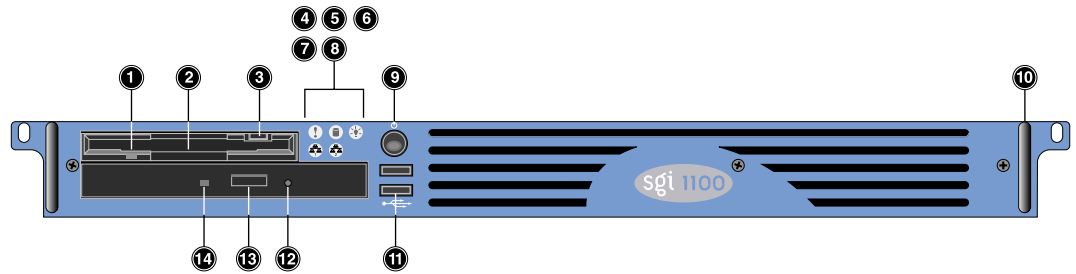


**Caution:** In regions that are susceptible to electrical storms, it is recommended that you plug your system into a surge suppressor and disconnect any telecommunication lines during electrical storms.

---

## Chassis Front Controls and Indicators

This section describes the front controls and indicators of the SGI 1100 server as shown in Figure 1-1.



**Figure 1-1** Front Controls and Indicators

Table 1-2 describes the front controls and indicators that are indicated in Figure 1-1.

**Table 1-2** Front Controls and Indicators

No.	Item
1	Slim-type floppy disk drive LED
2	Slim-type floppy disk drive
3	Slim-type floppy disk drive eject button
4	Event LED
5	Hard disk drive access LED
6	Power LED
7	LAN 2 access LED
8	LAN 1 access LED
9	Power button
10	Metal handle
11	USB ports (2 ports)

**Table 1-2 (continued)** Front Controls and Indicators

---

No.	Item
12	Slim-type CD-ROM drive emergency eject hole
13	Slim-type CD-ROM drive eject button
14	Slim-type CD-ROM drive LED

---

The general event LED indicates the following occurrences:

- Temperature, voltage, system fan, redundant power supply, or fuse events.
- CPU IERR and Thermtrip error.
- System fan or power supply unplug.
- Uncorrectable memory error (multiple ECC errors).
- PCI PERR or SERR error.

If all of the preceding events recover, the Baseboard Management Controller (BMC) should turn off the LED.

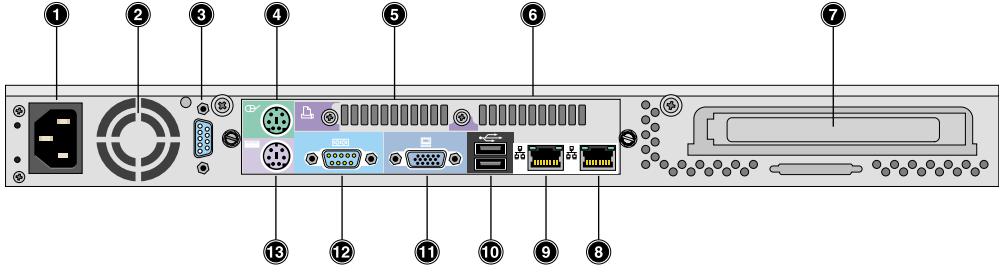
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**Note:** The BMC will not turn on the general event LED for BIOS POST, PCI hot plug, and correctable memory error events.

---

# Rear Panel I/O Ports and Features

This section describes the rear panel I/O ports and other features as shown in Figure 1-2.



**Figure 1-2** Rear Panel I/O Ports and Features

Table 1-3 describes the rear panel I/O ports and features that are indicated in Figure 1-2.

**Table 1-3** Rear Panel I/O Ports and Features

No.	Item
1	AC power input
2	Ventilation
3	Serial port 2
4	PS/2 mouse port
5	Ventilation
6	Ventilation
7	Add-on card bracket
8	LAN 2 port (RJ-45)
9	LAN 1 port (RJ-45)
10	USB ports (2 ports)
11	VGA port
12	Serial port 1
13	PS/2 keyboard port

## Connecting a Console

The SGI 1100 Server may be used with a VGA monitor, a keyboard (PS/2 or USB), and a mouse (PS/2 or USB). Once the system is configured, it may also be used with no console device.

The various connections are described in “Rear Panel I/O Ports and Features” on page 7.

## Starting the System

After making sure that you have set up the system properly and connected all the required cables, you may now power on the system by pressing the power button.

The system will start and display a welcome message. After that, a series of power-on self-test (POST) messages appear. The POST messages indicate if the system is running well or not.

---

**Note:** If the system does not turn on or boot after pressing the power button, see the next section for the possible causes of the boot failure.

---

Aside from the self-test messages, you can determine if the system is in good condition by checking if the following occur:

- Power indicator LED on the front bezel lights up (green).
- Num Lock, Scroll Lock, and Caps Lock LED indicators on the keyboard flash briefly.

## Power-on Problems

If the system does not boot after you have applied power, check the following factors that might have caused the boot failure.

- The external power cable may be loosely connected.  
Check the power cable connection from the power source to the power socket on the rear panel. Make sure that each cable is properly connected to each power supply.

- No power comes from the grounded power outlet.  
Ask an electrician to check your power outlet.

---

**Note:** If you have performed the preceding actions and the system still fails to boot, ask your dealer or a qualified technician for assistance.

---

## IPMI (Intelligent Platform Management Interface)

IPMI is an open standard hardware manageability interface specification. It provides an architecture that defines how unique devices can all communicate with the CPU in a standard way.

With IPMI, the CPU only communicates one event to the IPMI event log. The CPU only “asks” what has changed since the last time it asked. Every device communicates directly, through IPMI, to the event log, which is used to record, in a consistent way, all status events for the unique device. This simplifies the agent-handling routine. The system only needs a single agent, and it does not need to be changed when you change from five devices to manage, for example, to six. And the system does not need to change the way the CPU checks the event log when a new device is added to the system; it always checks in the same way, whether there is one device or 100 devices. With IPMI, use of the CPU is minimized, so overall system performance improves.

The following are the four elements of IPMI, each of which is described in the sections that follow:

- Intelligent Platform Management Interface
- Intelligent Platform Management Bus
- Intelligent Chassis Management Bus
- Baseboard Management Controller

### Intelligent Platform Management Interface (IPMI)

IPMI is the specification for the management controller command sets, including command sets for sensors, event logs, and sensor data record access. It is also the specification for the data formats, including sensor data records, event log entries, and FRU inventory information. IPMI is also the name used for the overall standardization effort.

### Intelligent Platform Management Bus (IPMB)

IPMB is the I2C-based, multi-master bus used for intra-chassis communication with “satellite” management controllers. Here sensor devices and cards with IPMI bus access can be added to the IPMI standard.



## **Intelligent Chassis Management Bus (ICMB)**

ICMB is the RS-485-based inter-chassis management bus, based on IPMB. It is used for common chassis and emergency management functions, including power and reset control, chassis status, events, and FRU inventory.

## **Baseboard Management Controller (BMC)**

BMC is used to monitor baseboard temperatures and voltages, and to manage the system event log and non-volatile storage for sensor data records. It provides a system software interface to the IPMB.



## Rack Mounting Instructions

This chapter provides information on mounting the SGI 1100 server in an SGI 19-inch rack.

Though the SGI 1100 server is not a very heavy system, installing one in a rack can be awkward, and it is therefore best to have assistance from a second person while performing the installation.

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**Note:** When installing an SGI 1100 server in certain slots in an SGI 19-inch rack, it may be necessary to remove one of the PDUs (power distribution units) in order to reach some of the slide bracket mounting screws.

---

## Unpacking and Inspecting the Server

Remove the server from the packaging container and check that all accessories are included. Inspect the packaging container for evidence of mishandling during transit. If the packaging container is damaged, photograph it for reference. After removing the contents, keep the damaged container and the packing materials.

Inspect the server and accessories for damage. If the contents appear damaged, file a damage claim with the carrier immediately.

## Determining Space Requirements

Table 2-1 specifies the space requirements for the SGI 1100 server system when installed in an SGI rack.

**Table 2-1** SGI 1100 Server Space Requirements

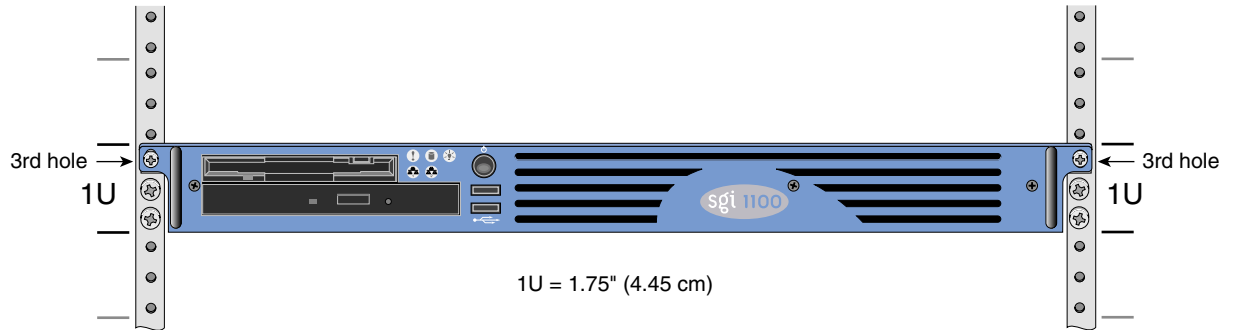
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Height	1u (1.75 in., 4.45 cm)
Width	19.0 in. (48.25 cm)
Depth	21.2 in. (53.85 cm)
Weight	24.2 lbs. (11 kg), maximum configuration
Required front clearance	25" (63.5 cm) minimum (for chassis servicing)
Required rear clearance	20" (50.8 cm) minimum (for rack door clearance)
Required side clearance	None

---

## Mounting-Hole Pattern of Rack Vertical Rails

The four vertical rails of the SGI rack contain mounting holes arranged in the manner shown in Figure 2-1.



**Figure 2-1** Mounting-Hole Pattern of Rack Vertical Rails

The system occupies 1U in the rack. Count the U positions and hole numbers from the bottom up.

---

**Note:** The unit of measurement used in this document is “U” (1U = 1.75 inches or 44.5 mm). The total sum of the heights of all components in the rack measured in “U” cannot exceed the height of the rack. For more information, see the rack’s documentation.

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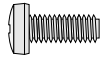


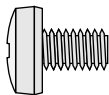

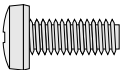

The distance from the center of any hole to the center of the third hole above it is equivalent to 1U.

When installing components, you must start your measurement from the center of the two holes with closer spacing. Otherwise, the screw holes on the component may not match with those on the rack.




## Rack Mounting Hardware

The hardware detailed in Table 2-2 is used in the mounting of the SGI 1100 server in an SGI 19-inch rack:

**Table 2-2** Rack Mounting Hardware

Figure	Hardware type	Qty	Usage
	M4 x L8 screw	12	Secures the slides to their mounting brackets.
	M4 lock-washer	12	Secures the slides to their mounting brackets.
	M4 nut	12	Secures the slides to their mounting brackets.
	M6 x L10 screw	8	Secures the slide mounting brackets to the rack rails.
	10-32 U-nut	2	Provides a threaded hole for fastening the SGI 1100 server front panel to the rack rails.
	10-32 x 0.5" screw	2	Fastens the SGI 1100 server front panel to the U-nut.
	M4 x L5 screw	8	Secures the component rails to the system.

**Table 2-2 (continued)** Rack Mounting Hardware

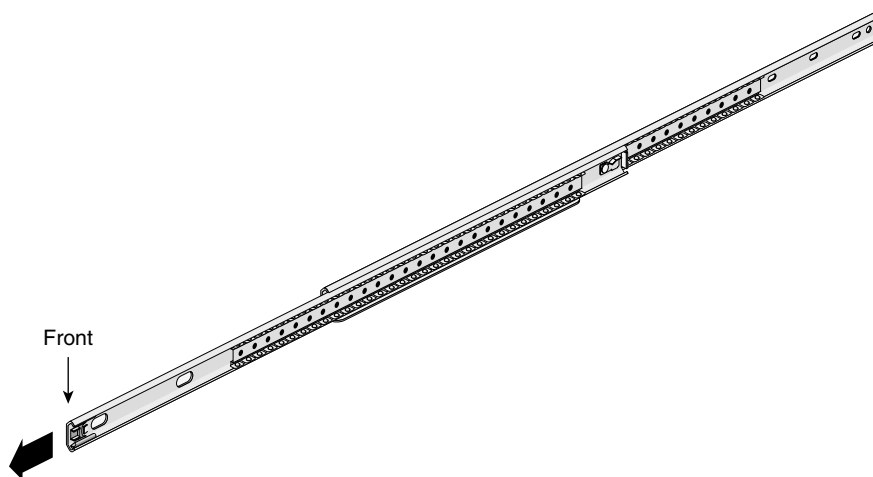
Figure	Hardware type	Qty	Usage
	Slide	2	Allows SGI 1100 server chassis to slide out of rack for access. (The left and right slides are identical.)
	Mounting bracket	4	Mounts slide to rack vertical rails. (All four brackets [right front, right rear, left front, left rear] are identical.)
	Chassis rail	2	Attaches to SGI 1100 server chassis. (The left and right rails are identical.)

**Note:** The rack-mounting kit may also include additional hardware, such as step washers for use with certain brands of racks. This additional hardware is not used when mounting the SGI 1100 server in an SGI rack.

## Assembling Slides

Follow these steps to assemble the slides:

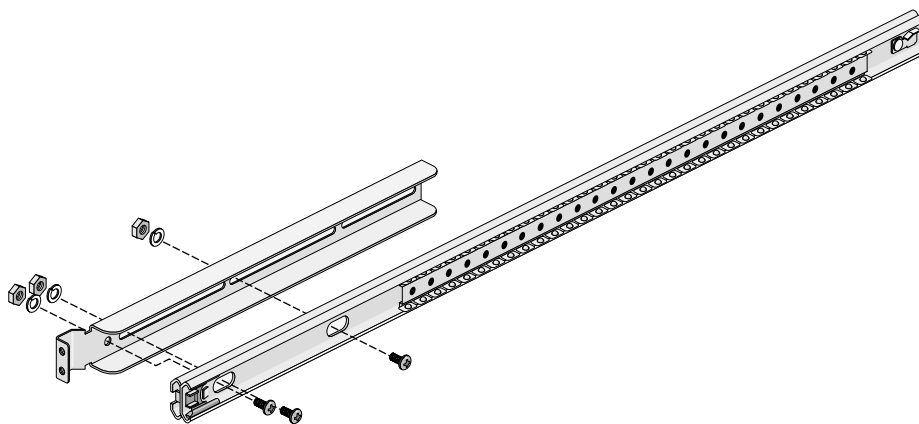
1. Remove the chassis rail from one of the slides (see Table 2-2 for illustrations of the two components). In order to remove the rail, you will need to push a release latch, as shown in Figure 2-11.
2. Push the slide back to its collapsed position.
3. Identify the front of the slide. The arrow in Figure 2-2 points toward the front.



**Figure 2-2** Identifying Front of Slide

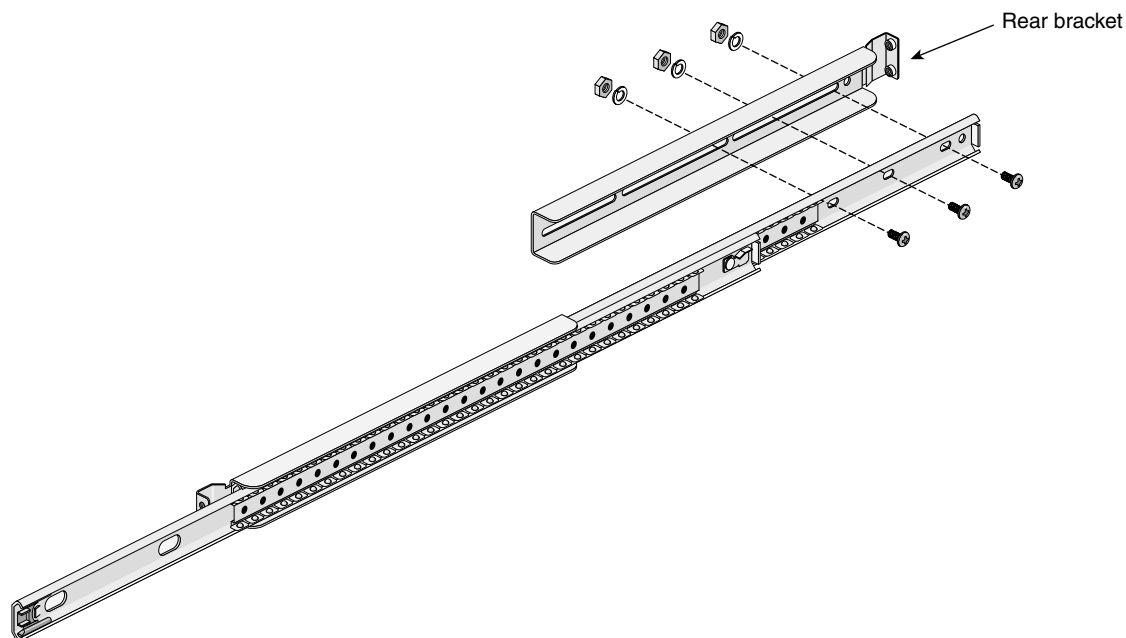


4. Insert one of the M4xL8 screws (see Table 2-2) through the round hole at the front of slide, then through the round hole in one of the brackets (as shown in Figure 2-3). It will be necessary to extend the slide very slightly in order to reach the front hole.
5. Place one of the M4 lock washers and one of the M4 nuts (see Table 2-2) on the screw, and tighten normally.
6. Retract the slide again, then insert two more M4xL8 screws through the two elongated holes in the slide, then through the two slots in the bracket (as shown in Figure 2-3).
7. Place an M4 lock washer and an M4 nut on each of the two screws, and tighten normally.



**Figure 2-3** Attaching Front Bracket to Slide

8. Extend the slide about half way.
9. Insert three M4xL8 screws through the three elongated holes in the rear portion of the slide, then through the rear two slots in the bracket (see Figure 2-4). Do not place any of the screws through the rear round hole in the bracket.
10. Place an M4 lock washer and an M4 nut on each of the three screws, but leave them slightly loose (they will get tightened later).



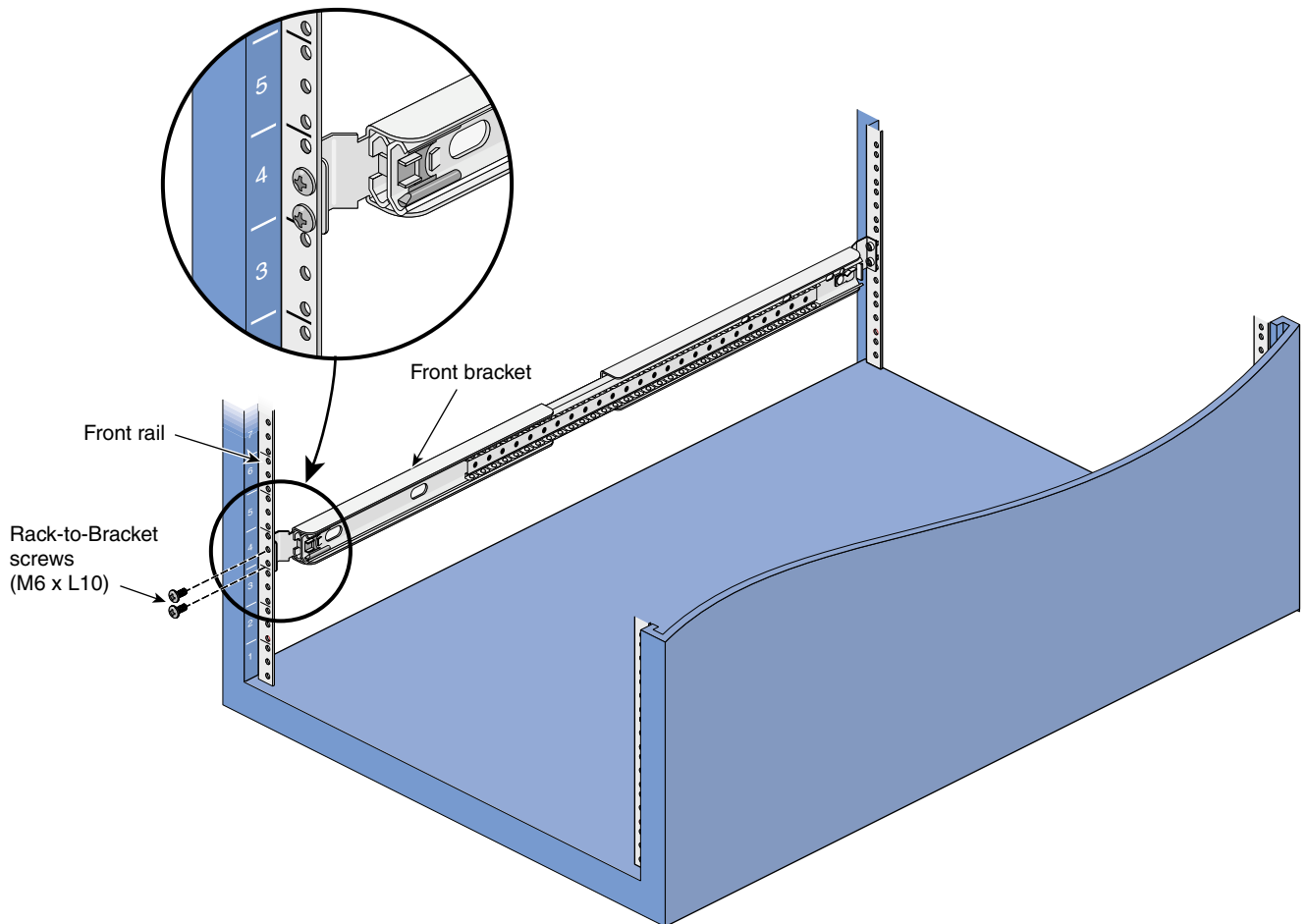
**Figure 2-4** Attaching Rear Bracket to Slide

11. Repeat steps 1 through 10 for the second slide, using the remaining two brackets.

## Mounting Slides in Rack

Follow these steps to mount the two slides into the SGI rack:

1. Take one of the assembled slides, and place the front bracket against the lower two holes of the chosen U on the left front rack rail.
2. Using two M6xL10 screws (see Table 2-2), fasten the bracket to the rack rail (see Figure 2-5).



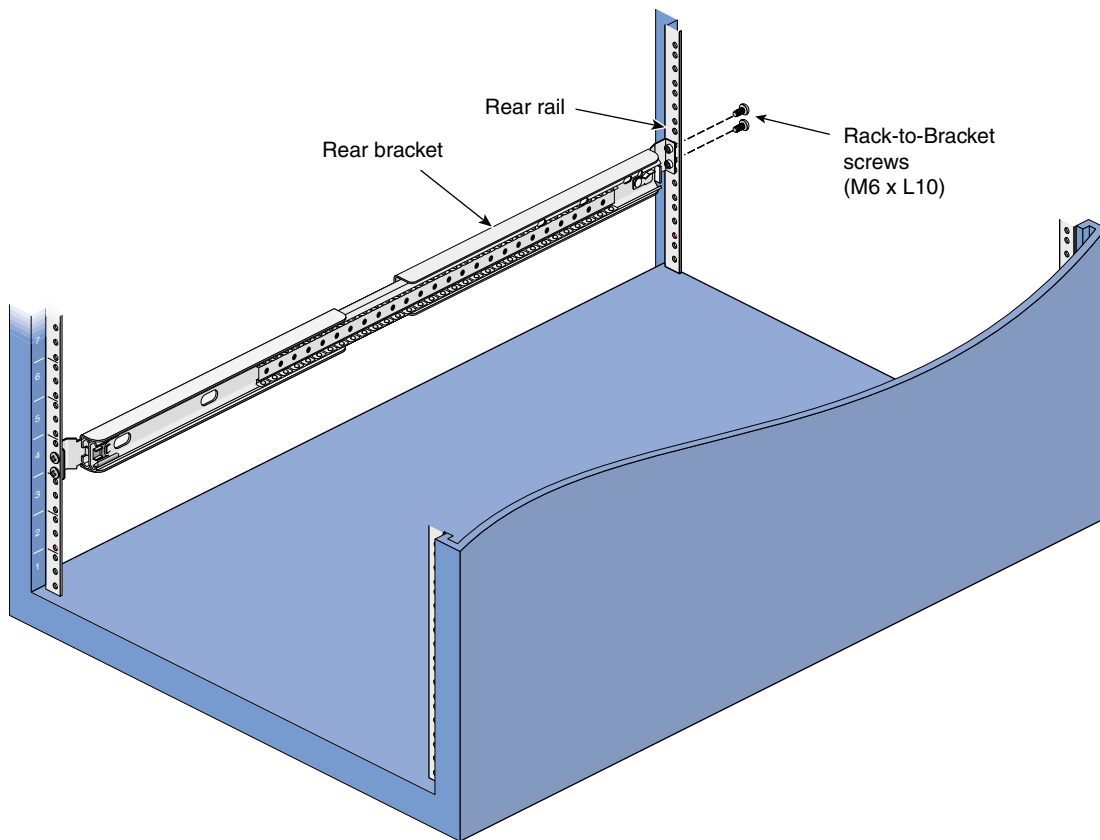
**Figure 2-5** Fastening Slide Bracket to Front Rack Rail

3. Place the rear bracket against the lower two holes of the corresponding U on the left rear rack rail.
4. Using two M6xL10 screws, fasten the bracket to the rack rail (see Figure 2-6).

---

**Note:** Some locations in the SGI rack may require removal of a power distribution unit (PDU) in order to access the rear bracket screws.

---



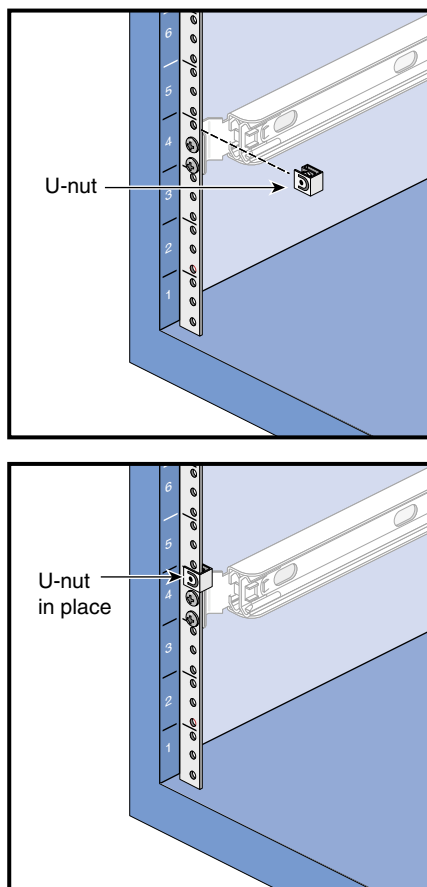
**Figure 2-6** Fastening Slide Bracket to Rear Rack Rail

5. Once both the front and the rear brackets are mounted to the rack rails, tighten the three rear slide-to-bracket screws and nuts that you left slightly loose when you mounted the rear bracket to the slide.
6. Repeat steps 1 through 5, this time mounting the second slide on the right rail.

## Installing Caged U-Nuts in Rack Rails

Caged U-nuts (see Table 2-2) are used to secure systems and other components to the vertical rails in the rack.

Snap the two caged U-nuts into place by sliding one caged U-nut over each of the two remaining holes in the selected U on the front rails (one on the right front rail, one on the left front rail). See Figure 2-7 for details.

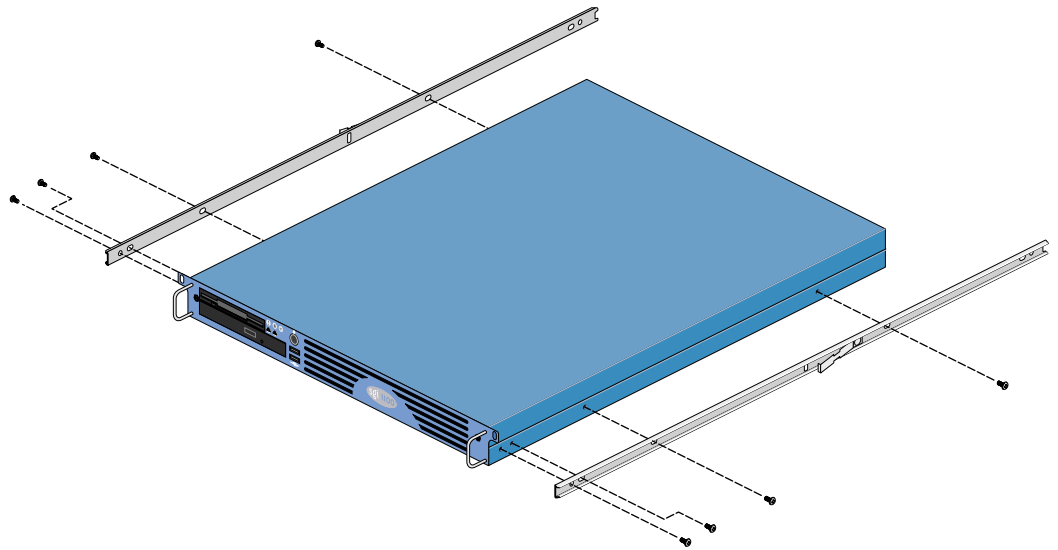


**Figure 2-7** Installing Caged U-Nuts in Rack Rails

## Preparing the SGI 1100 Server for Rack Mounting

Follow these steps to prepare the SGI 1100 server for rack mounting:

1. Using four M4xL5 screws (see Table 2-2), attach one of the chassis rails to the right side of the SGI 1100 server chassis. Ensure that the rail is installed in the correct direction (see Figure 2-8 for details).



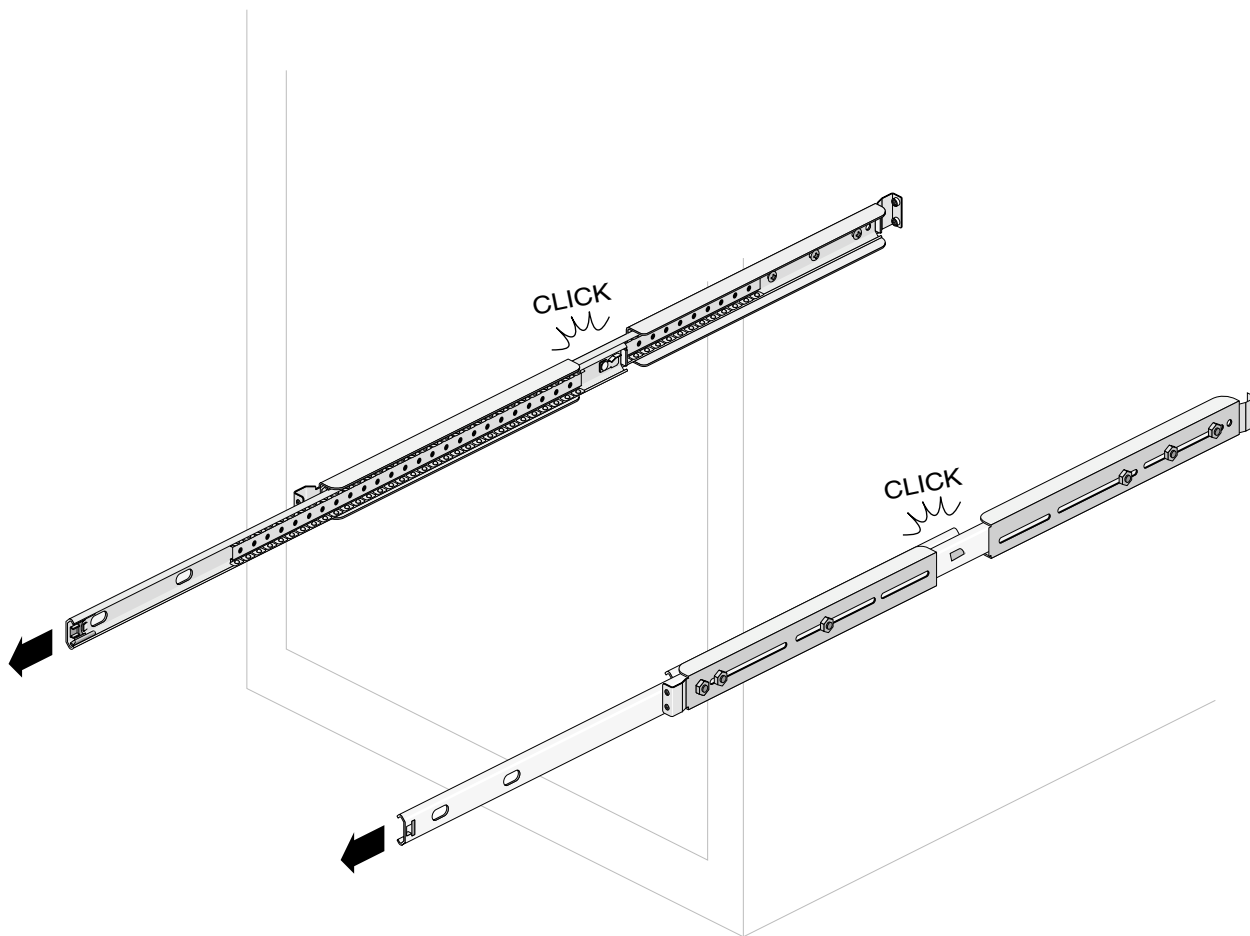
**Figure 2-8** Attaching Rails to SGI 1100 Server Chassis

2. Repeat step 1, this time mounting the second rail to the left side of the SGI 1100 server chassis.

## Installing the SGI 1100 Server into the Rack

Follow these steps to install the SGI 1100 server in the rack:

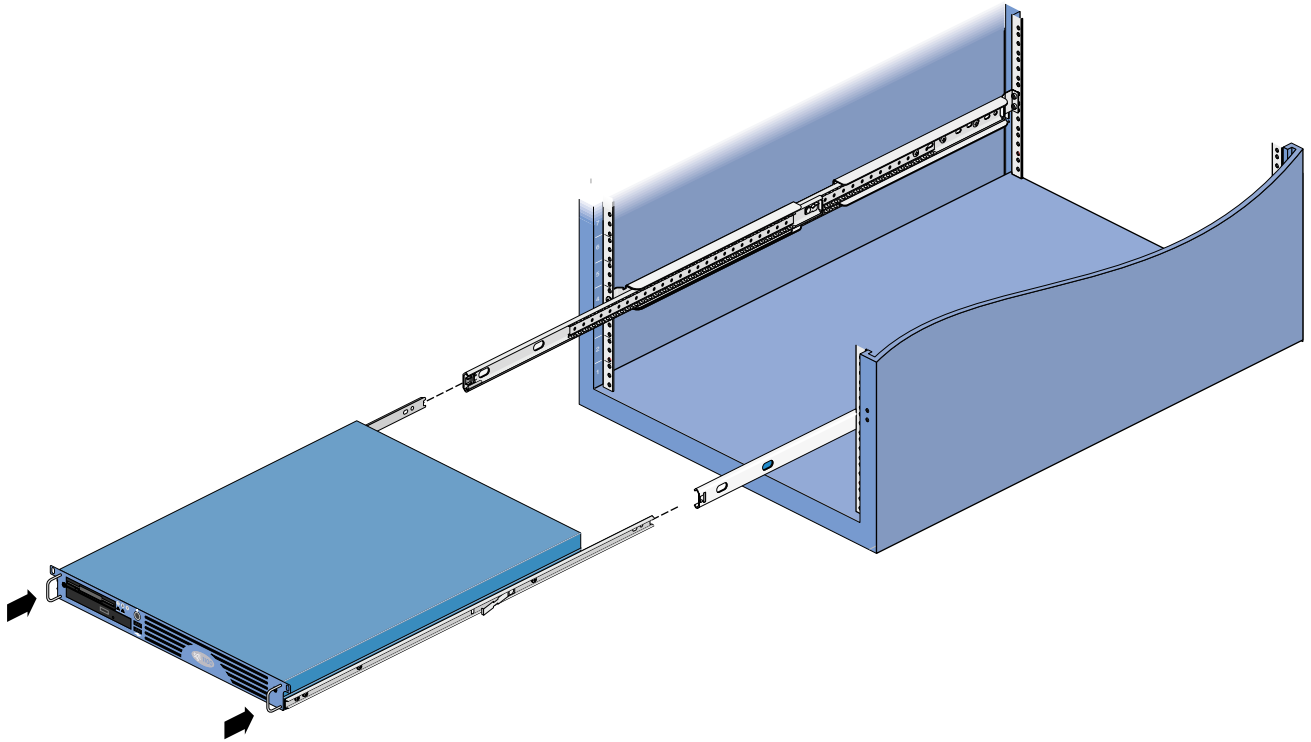
1. Fully extend both the left and the right slides from the rack (see Figure 2-9 for details). They will click and lock into place when fully extended.



**Figure 2-9** Extending Rack Slides



2. Slide the SGI 1100 server chassis fully onto the extended slides (see Figure 2-10 for details). Both slides will click and lock into place when the chassis is fully inserted.



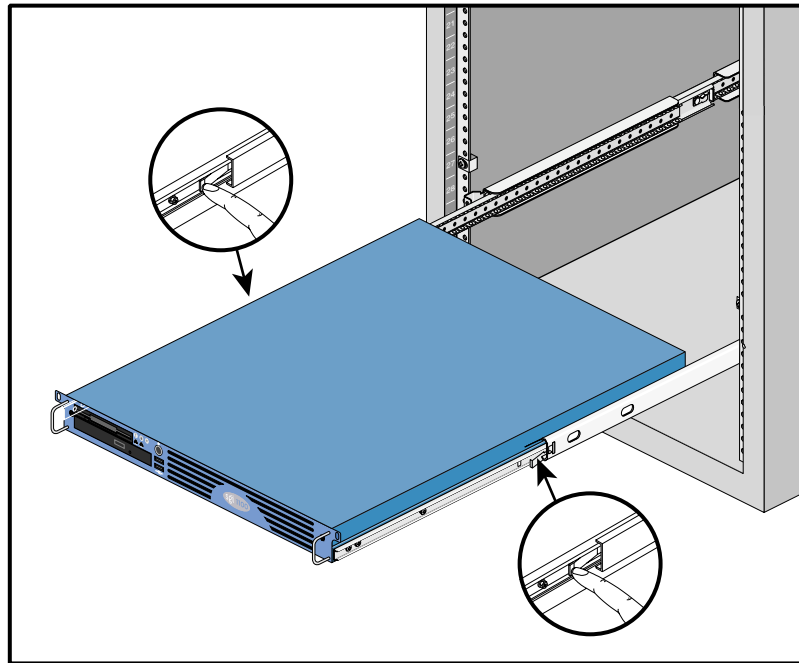
**Figure 2-10** Sliding Chassis onto Rack Rails

3. Release the slide latches on both sides of the chassis and slide the chassis into the rack (see Figure 2-11 for details). The slides will be fairly stiff the first time the chassis slides into the rack, which is due to the bearing cages not being centered in the slides. After the chassis has traveled once over its full range, the motion will be much easier.

---

**Caution:** Once the chassis is pushed to about the halfway point, the inner slide latches will resist further motion, then will disengage rather suddenly. Be prepared for this.

---



**Figure 2-11** Releasing Slide Latches

4. Using the two 10-32 x 0.5" screws (see Table 2-2), fasten the SGI 1100 server chassis to the U-nuts in the rack (as shown in Figure 2-1).

## Rack Power Distribution Units

When installed in an SGI rack, the SGI 1100 server will plug into a power distribution unit (PDU) included with the rack. Each PDU has ten IEC320-C13 10A power receptacles. Depending on configuration, the rack may be supplied with as many as four of these PDUs, for a total of up to forty IEC320-C13 10A power receptacles.



## Setup Utility

This chapter gives information about the system BIOS and tells how to configure the system by changing the settings of the BIOS parameters.

### Introduction

When you receive the system, it will already have been configured by SGI. You do not need to run Setup when starting the computer unless you get a Run Setup message.

The Setup program loads configuration values into the battery-backed nonvolatile memory called CMOS RAM. This memory area is not part of the system RAM.

---

**Note:** If you repeatedly receive Run Setup messages, the battery may be bad. In this case, the system cannot retain configuration values in CMOS. Ask a qualified technician for assistance.

---

Before you run Setup, make sure that you have saved all open files. The system reboots immediately after you exit Setup.

## Entering Setup

To enter Setup, simultaneously press the key combination **Ctrl+Alt+Esc**.

---

**Note:** To enter Setup, you must press **Ctrl+Alt+Esc** while the system is booting. This key combination does not work at any other time.

---

The system supports two Setup utility levels: Basic and Advanced.

If you are an advanced user, you may want to check the detailed configuration of your system. Detailed system configurations are contained in the Advanced Level. To view the Advanced Level, press **F8** while viewing the main menu.

Press the up and down arrow keys to move around the **Setup Utility** screen.

Press the **Page Up**, **Page Down** keys to move to the next page or to return to the previous page if the Setup screen has more than one page available.

Use the left and right arrow keys to select the options if they are available.

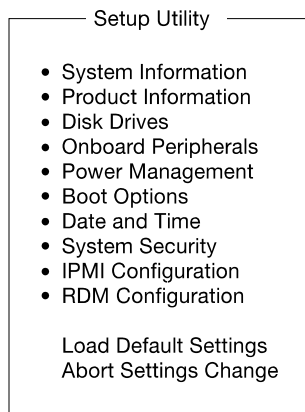
Press **Esc** to return to the main menu.

---

**Note:** The figures in this chapter show the Setup screens. A parameter with an asterisk (\*) indicates that the parameter appears only when you are in the Advanced Level. These asterisks are only shown in the figures in this guide; they do not appear on-screen. Also, grayed items on the screens have fixed settings and are not user-configurable.

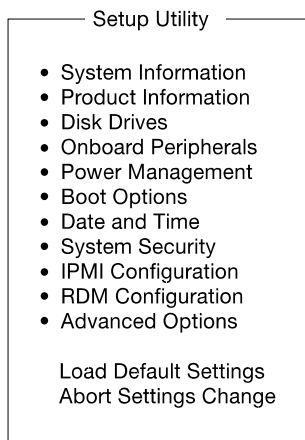
---

Figure 3-1 shows the Basic **Setup Utility** screen.



**Figure 3-1** Basic Setup Utility Screen

Figure 3-2 shows the Advanced **Setup Utility** screen.



**Figure 3-2** Advanced Setup Utility Screen

## System Information

The screen shown in Figure 3-3 appears if you select **System Information** from the main menu.

System Information	
Processor.....	Pentium® III
Processor Speed.....	xxxx MHz
Level 1 Cache.....	32 KB, Enabled
Level 2 Cache.....	256 KB, Enabled
Floppy Drive A.....	1.44MB 3.5-inch
IDE Primary Channel Master.....	Hard Disk, xxxx MB
IDE Primary Channel Slave.....	None
IDE Secondary Channel Master.....	IDE CD-ROM
IDE Secondary Channel Slave.....	None
Total Memory.....	xxxx MB
1st Bank.....	Registered SDRAM, xx MB
2nd Bank.....	Registered SDRAM, xx MB
3rd Bank.....	Registered SDRAM, xx MB
4th Bank.....	Registered SDRAM, xx MB
Serial Port 1.....	3F8h, IRQ 4
Serial Port 2.....	2F8h, IRQ 3
PS/2 Mouse.....	Installed

**Figure 3-3** System Information Screen

Table 3-1 describes the **System Information** parameters.

**Table 3-1** System Information Parameters

Parameter	Description
Processor	Type of processors currently installed in your system.
Processor speed	Clock speed of the processors currently installed in your system.
Level 1 cache size	Total amount of first-level cache (high-speed memory integrated into the CPU).
Level 2 cache size	Total amount of second-level cache (a larger block of memory, also integrated into the CPU).
Floppy drive A and B	System's current diskette drive A and B settings.



**Table 3-1 (continued)** System Information Parameters

---

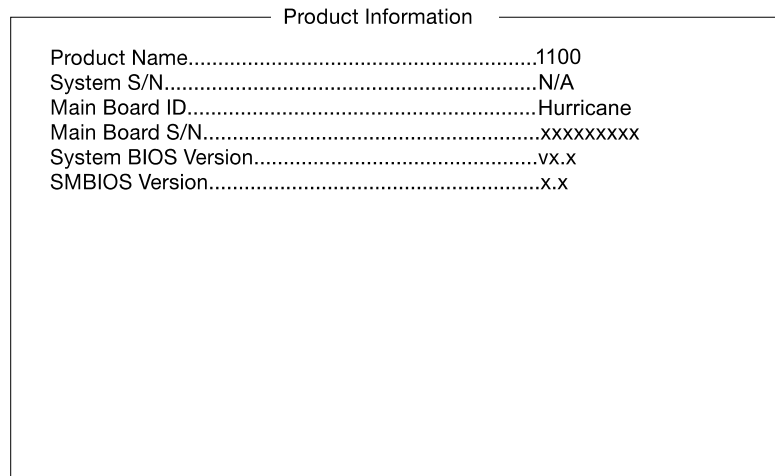
<b>Parameter</b>	<b>Description</b>
IDE primary channel master	Current configuration of the IDE device connected to the master port of the primary IDE channel.
IDE primary channel slave	Current configuration of the IDE device connected to the slave port of the primary IDE channel.
IDE secondary channel master	Current configuration of the IDE device connected to the master port of the secondary IDE channel.
IDE secondary channel slave	Current configuration of the IDE device connected to the slave port of the secondary IDE channel.
Total memory	Total amount of onboard main memory. The memory size is automatically detected by BIOS during the POST. If you install additional memory, the system automatically adjusts this parameter to display the new memory size.
1st/2nd/3rd/4th bank	Type and size of DRAM installed in DIMM sockets 1, 2, 3, and 4 respectively. The None setting indicates that there is no DRAM installed.
Serial port 1	Serial port 1 address and IRQ setting.
Serial port 2	Serial port 2 address and IRQ setting.
PS/2 mouse	Pointing device installation settings. Displays None if no pointing device is installed.

---

## Product Information

The **Product Information** screen contains the general data about the system, such as the product name, serial number, BIOS version, etc. This information is necessary for troubleshooting (and may be required when asking for technical support).

Figure 3-4 shows the **Product Information** screen.



**Figure 3-4** Product Information Screen

Table 3-2 describes the **Product Information** parameters.

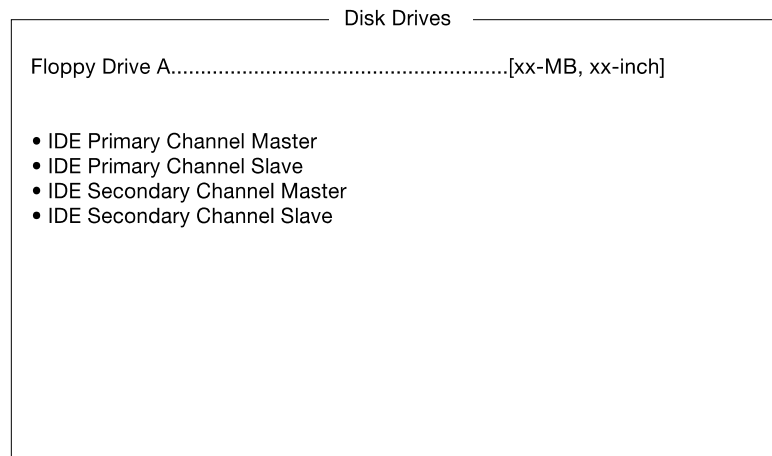
**Table 3-2** Product Information Parameters

Parameter	Description
Product name	Official name of the system
System S/N	System's serial number
Main board ID	Identification number of the main board
Main board S/N	Serial number of the main board
System BIOS version	Version of the BIOS utility
SMBIOS version	Version of the SMBIOS

## Disk Drives

Select **Disk Drives** to input configuration values for floppy disk drives and IDE disk drives.

Figure 3-5 shows the **Disk Drives** screen.



**Figure 3-5** Disk Drives Screen

Table 3-3 describes the **Disk Drives** parameters. Settings in **boldface** are the default and suggested parameter settings.

**Table 3-3** Disk Drives Parameter

Parameter	Description	Option
Floppy drive A and B	Selects the floppy disk drive type	<b>1.44 MB, 3.5-inch</b> None 360 KB, 5.25-inch 1.2 MB, 5.25-inch 720 KB, 3.5-inch 2.88 MB, 3.5-inch

## IDE Channel Type

The screen shown in Figure 3-6 appears if you select the **IDE Primary Channel Master** parameter.

```
----- IDE Primary Channel Master -----  
  
Device Detection Mode.....[Auto]  
Device Type.....Hard Disk  
  
Cylinder.....[xxxx]  
Head.....[xx]  
Sector.....[xx]  
Size.....[xxxx] M.B.  
  
Hard Disk LBA Mode.....[Auto]  
*Hard Disk Block Mode.....[Auto]  
*Hard Disk 32 Bit Access.....[Enabled]  
  
*Advanced PIO Mode.....[ Mode 4 ]  
*DMA Transfer Mode.....[ Disabled ]
```

**Figure 3-6** IDE Primary Channel Master Screen

**Note:** A parameter with an asterisk (\*) indicates that the parameter appears only when you are in the Advanced Level. See “Entering Setup” on page 32 for information about how to view the Advanced Level.

Table 3-4 describes the **IDE Drive** parameters. Settings in **boldface** are the default and suggested parameter settings.

**Table 3-4** IDE Drive Parameters

<b>Parameter</b>	<b>Description</b>	<b>Option</b>
Device detection mode	Lets you specify the type of hard disk installed in your system. If you want BIOS to automatically configure your hard disk, select Auto. If you know your hard disk type, you can enter the setting manually.	<b>Auto</b> User None
Device type	Indicates a hard disk type device.	
Cylinder	Specifies the number of cylinders of your hard disk, and is automatically set depending on your Type parameter setting.	User input
Head	Specifies the number of heads of your hard disk, and is automatically set depending on your Type parameter setting.	User input
Sector	Specifies the number of sectors of your hard disk, and is automatically set depending on your Type parameter setting.	User input
Size	Specifies the size of your hard disk, in MB.	User input
Hard disk LBA mode	This enhanced IDE feature allows the system to use a hard disk with a capacity of more than 528 MB. This is made possible through Logical Block Address (LBA) mode translation. LBA is now a standard feature of current IDE hard disks because it can support capacities larger than 528 MB. Note that if your HDD is formatted with LBA On, it cannot boot with LBA Off.	<b>Auto</b> Disabled
Hard disk block mode	This function enhances disk performance depending on the hard disk in use. If you set this parameter to Auto, the BIOS utility automatically detects if the installed hard disk drive supports the lock mode function. If supported, it allows data transfer in blocks (multiple sectors) at a rate of 256 bytes per cycle. To disregard the feature, change the setting to Disabled. This parameter appears only when you are in the Advanced Level.	<b>Auto</b> Disabled

**Table 3-4 (continued)** IDE Drive Parameters

<b>Parameter</b>	<b>Description</b>	<b>Option</b>
Hard disk 32-bit access	Enabling this parameter improves system performance by allowing the use of the 32-bit hard disk access. This enhanced IDE feature works only with certain operating systems. This parameter appears only when you are in the Advanced Level.	<b>Enabled</b> Disabled
Advanced PIO mode	When set to Auto, the BIOS utility automatically detects if the installed hard disk supports the function. If supported, it allows for faster data recovery and read/write timing that reduces hard disk activity time. This results in better hard disk performance. To disregard the feature, change the setting to Disabled. This parameter appears only when you are in the Advanced Level.	Auto Mode 0 Mode 1 Mode 2 Mode 3 <b>Mode 4</b> Disabled
DMA transfer mode	The Ultra DMA and Multi-DMA modes enhance hard disk performance by increasing the transfer rate. However, besides enabling these features in the BIOS Setup, both the Ultra DMA and Multi-DMA modes require the DMA driver to be loaded. This parameter appears only when you are in the Advanced Level.	Auto Multi word mode 0, 1, 2 Ultra Mode 0, 1, 2, 3, 4 <b>Disabled</b>

The screen shown in Figure 3-7 appears if you select the **IDE Primary Channel Slave** parameter. The parameters are the same as those described in Table 3-4.

```
IDE Primary Channel Slave
Device Detection Mode..... [Auto]
Device Type..... None

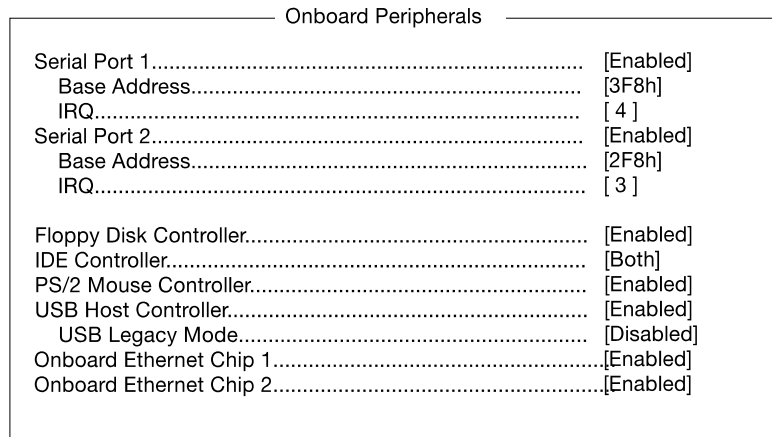
Cylinder..... [xxxx]
Head..... [xx]
Sector..... [xx]
Size..... [xxxx] M.B.
```

**Figure 3-7** IDE Primary Channel Slave Screen

The **IDE Secondary Channel Master** and **IDE Secondary Channel Slave** screens are similar to those shown in Figures 3-6 and 3-7, and the parameters are the same as those described in Table 3-4.

## Onboard Peripherals

The **Onboard Peripherals** screen in Figure 3-8 allows you to configure the onboard communication ports and the onboard devices.



**Figure 3-8** Onboard Peripherals Screen

Table 3-5 describes the **Onboard Peripherals parameters**. Settings in **boldface** are the default and suggested parameter settings.

**Table 3-5** Onboard Peripherals Parameters

Parameter	Description	Option
Serial port 1	Enables or disables serial port 1.	<b>Enabled</b> Disabled
Base address	Sets the I/O base address of serial port 1.	<b>3F8h</b> 2F8h 3E8h 2E8h
IRQ	Sets the IRQ (interrupt request) channel of serial port 1.	<b>4</b> 11



**Table 3-5 (continued)** Onboard Peripherals Parameters

<b>Parameter</b>	<b>Description</b>	<b>Option</b>
Serial port 2	Enables or disables serial port 2.	<b>Enabled</b> Disabled
Base address	Sets the I/O base address of serial port 2.	<b>2F8h</b> 3F8h 3E8h 2E8h
IRQ	Sets the IRQ (interrupt request) channel of serial port 2.	<b>3</b> 10
Floppy disk controller	Enables or disables the onboard floppy disk controller.	<b>Enabled</b> Disabled
IDE controller	Enables or disables the onboard IDE controller.	<b>Both</b> Primary Disabled
PS/2 mouse controller	Enables or disables the onboard PS/2 mouse controller.	<b>Enabled</b> Disabled
USB host controller	Enables or disables the onboard USB controller.	<b>Enabled</b> Disabled
USB legacy mode	When enabled, allows you to use a USB keyboard in DOS. Set this to Disabled to deactivate the USB keyboard function in DOS.	<b>Disabled</b> Enabled
Onboard Ethernet chip 1	Enables or disables the first onboard network feature.	<b>Enabled</b> Disabled
Onboard Ethernet chip 2	Enables or disables the second onboard network feature.	<b>Enabled</b> Disabled

## Power Management

The **Power Management** screen allows you to configure the system power management features. Figure 3-9 shows the **Power Management** parameters and their default settings.

Power Management	
Power Management Mode.....	[Enabled]
IDE Hard Disk Standby Timer.....	[Off]
System Sleep Timer.....	[Off]
Sleep Mode.....	[-----]
Power Switch <4 sec. ....	[Power Off]
System wake-up event	
Modem Ring Indicator.....	[Disabled]
PCI Power Management.....	[Enabled]
RTC Alarm.....	[Disabled]
Resume Day.....	[-]
Resume Time.....	[-:-:-]
Restart on AC Power Failure.....	[Pre-state]

**Figure 3-9** Power Management Screen

Table 3-6 describes the **Power Management** parameters. Settings in **boldface** are the default and suggested parameter settings.

**Table 3-6** Power Management Parameters

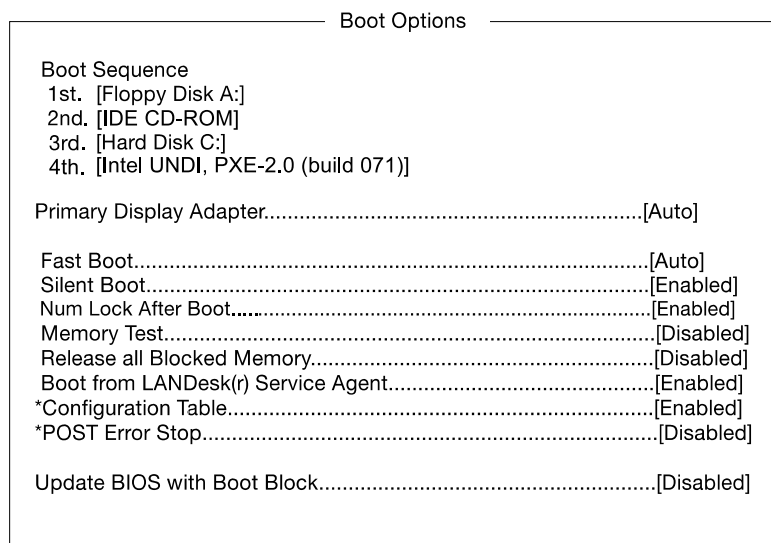
<b>Parameter</b>	<b>Description</b>	<b>Option</b>
Power management mode	Allows you to reduce power consumption. When this parameter is set to Enabled, you can configure the IDE hard disk and system timers. Setting it to Disabled deactivates the power-management feature and its timers.	<b>Enabled</b> Disabled
IDE hard disk standby timer	Allows the hard disk to enter standby mode after inactivity of 1 to 15 minutes, depending on your setting. When you access the hard disk again, allow 3 to 5 seconds (depending on the hard disk) for the disk to return to normal speed. Set this parameter to Off if your hard disk does not support this function.	<b>Off</b> 1 - 15 minutes
System sleep timer	This parameter sets the system to the lowest power-saving mode after a specified period of inactivity. Any keyboard or mouse action or any activity detected from the IRQ channels resumes system operation.	<b>Off</b> 2 - 120 minutes
Sleep mode	Lets you specify the power-saving mode that the system will enter after a specified period of inactivity. This parameter becomes configurable only if the system sleep timer is on. Any keyboard or mouse action, or any enabled monitored activities occurring through the IRQ channels, resume system operation.	<b>Standby</b> Suspend
Power switch < 4 sec.	When set to Power Off, the system automatically turns off when the power switch is pressed for fewer than 4 seconds. When set to Suspend, the system enters the suspend mode when the power switch is pressed for fewer than 4 seconds.	<b>Power off</b> Suspend
System wake-up event	The system wake-up event allows the system to resume operation when the modem ring indicator is enabled.	
Modem ring indicator	When set to Enabled, any fax/modem activity wakes up the system from suspend mode.	<b>Disabled</b> Enabled

**Table 3-6 (continued)** Power Management Parameters

<b>Parameter</b>	<b>Description</b>	<b>Option</b>
PCI power management	Enables or disables the PCI power management function.	<b>Enabled</b> Disabled
RTC alarm	Allows you to set a certain time on a certain day to wake up your system from suspend mode.	<b>Disabled</b> Enabled
Resume day	If RTC alarm is enabled, the system will resume operation on the day indicated here.	User input
Resume time	If RTC alarm is enabled, the system will resume operation at the time indicated here.	User input
Restart on AC power failure	Reboots the system when a power failure occurs. If disabled, the system does not automatically reboot from a power failure.	<b>Pre-state</b> Enabled Disabled

## Boot Options

The **Boot Options** selection allows you to specify your preferred settings for bootup. The screen shown in Figure 3-10 appears if you select **Boot Options** from the main menu.



**Figure 3-10** Boot Options Screen

**Note:** A parameter with an asterisk (\*) indicates that the parameter appears only when you are in the Advanced Level. See “Entering Setup” on page 32 for information about how to view the Advanced Level.

Table 3-7 describes the **Boot Options** parameters. Settings in **boldface** are the default and suggested parameter settings.

**Table 3-7** Boot Options Parameters

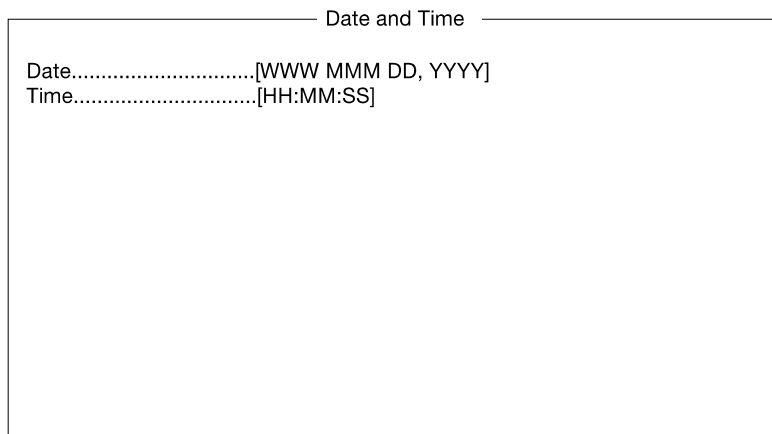
<b>Parameter</b>	<b>Description</b>	<b>Option</b>
Boot sequence	<p>This parameter allows you to specify the boot search sequence during POST.</p> <p><b>1st.</b> The system checks this drive first.</p> <p><b>2nd.</b> If the system is unable to boot from the 1st drive, it tries this drive.</p> <p><b>3rd.</b> If the system is unable to boot from the 1st and 2nd drives, it next tries this drive.</p> <p><b>4th.</b> If the system is unable to boot from the 1st, 2nd, and 3rd drives, it next tries this drive.</p> <p>BIOS will display an error message if all of the drives specified are not bootable.</p>	
Primary display adapter	Lets you activate the onboard video controller as your primary display adapter, or automatically disable it if BIOS detects that a video card is installed in your system.	Onboard <b>Auto</b>
Fast boot	Allows the system to boot faster by skipping some POST routines.	Disabled <b>Auto</b>
Silent boot	<p>Enables or disables the Silent boot function. When set to Enabled, BIOS is in graphical mode and displays only an identification logo during POST and while booting. After booting, the screen displays the operating system prompt (such as DOS) or logo (such as Windows NT). If any error occurs while booting, the system automatically switches to the text mode.</p> <p>Even if your setting is Enabled, you may also switch to the text mode while booting by pressing the Delete key when you see the "Press DELETE key to enter Setup" message on the screen.</p> <p>When set to Disabled, BIOS is in the conventional text mode in which you see the system initialization details on the screen.</p>	<b>Enabled</b> Disabled
Num Lock after boot	Activates the Num Lock function upon booting.	<b>Enabled</b> Disabled

**Table 3-7 (continued)** Boot Options Parameters

<b>Parameter</b>	<b>Description</b>	<b>Option</b>
Memory test	When set to Enabled, this parameter allows the system to perform a RAM test during the POST routine. When set to Disabled, the system detects only the memory size and bypasses the test routine.	<b>Disabled</b> Enabled
Release all blocked memory	When set to Enabled, this parameter allows the system to bypass testing any defective memory banks detected earlier.	<b>Disabled</b> Enabled
Boot from LANDesk service agent	When set to Enabled, the system boots from a LANDesk service agent network instead of your desktop system. The LANDesk service agent is IEEE standards-based code that intervenes in the boot process. See your LANDesk manual for more information.  When set to Disabled, the system boots from the drive specified in the Boot sequence parameter.	<b>Enabled</b> Disabled
Configuration table	Displays preboot system configuration table when enabled.	<b>Enabled</b> Disabled
Post error stop	When enabled, the system automatically stops when an error occurs during POST. Press F1 to continue. If disabled, the system does not stop even when an error occurs during the POST.	<b>Disabled</b> Enabled
Update BIOS with boot block	When enabled, it automatically flashes (i.e., reprograms) the BIOS file from the hard disk drive if the system fails to boot.	<b>Disabled</b> Enabled

## Date and Time

The real-time clock keeps the system date and time. After setting the date and time, you do not need to enter them every time you turn on the system. As long as the internal battery remains good (approximately seven years) and connected, the clock continues to keep the date and time accurately even when the system power is off. Figure 3-11 shows the **Date and Time** screens.



**Figure 3-11** Date and Time Screen



---

Table 3-8 describes the **Date and Time** parameters.

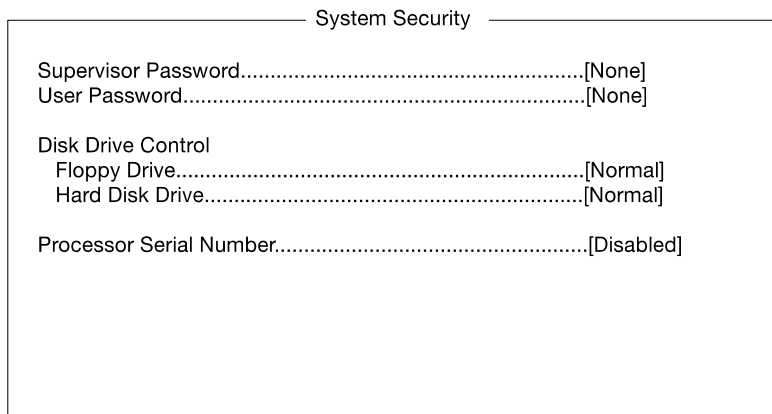
**Table 3-8** Date and Time Parameters

<b>Parameter</b>	<b>Description</b>
Date	Sets the date following the weekday-month-day-year format. Valid values for weekday, month, day, and year are: Weekday: Sun, Mon, Tue, Wed, Thu, Fri, Sat Month: Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec Day: 1 to 31 Year: 1980 to 2079
Time	Sets the time following the hour-minute-second format. Valid values for hour, minute, and second are: Hour: 00 to 23 Minute: 00 to 59 Second: 00 to 59

---

## System Security

The Setup program has a number of security features to prevent unauthorized access to the system and its data. Figure 3-12 shows the screen that appears if you select **System Security** from the **Setup Utility** screen.



**Figure 3-12** System Security Screen

## Supervisor Password

The supervisor password prevents unauthorized access to the BIOS utility.

---

**Note:** The supervisor password should be modified only by trained service personnel, or by a system administrator.

---

## Setting and Changing a Password

To set or change a password, follow these steps:

1. Make sure that jumper JP8 is set to 1-2 (bypass password). Changing the jumper setting requires that the chassis be opened. This task should therefore be performed only by trained service personnel, and is detailed in the *SGI 1100 Server Maintenance and Upgrades Guide* (007-4047-001).

---

**Note:** You cannot enter the BIOS utility if a Setup password does not exist and jumper JP8 is set to 2-3 (password check enabled). By default, jumper JP8 is set to 1-2 (bypass password).

---

2. Enable the **Supervisor Password** parameter in the **System Security** menu by pressing the left or right arrow keys. The **Supervisor Password** window shown in Figure 3-13 appears.

Supervisor Password

Enter your new Supervisor Password twice. Supervisor Password may be up to 7 characters long.

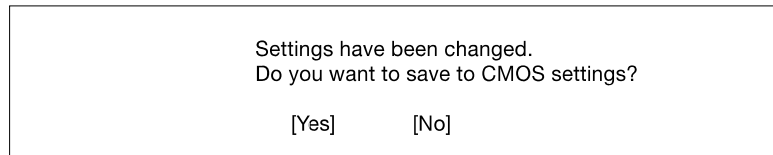
Enter Password.....[xxxxxxx]  
 Enter Password again.....[xxxxxxx]

Set or Change Password

**Figure 3-13** Supervisor Password Screen

3. Type a password in the **Enter Password** field. The password may consist of as many as seven characters.
4. Press the **Enter** key. Retype your password in the **Enter Password** field to verify your first entry.
5. Highlight **Set or Change Password** and press the **Enter** key.

6. Press the **Esc** key to return to the **System Security** menu and then press the **Esc** key again to exit Setup. The **Exit Setup** screen, shown in Figure 3-14, appears.



**Figure 3-14** Exit Setup Screen

7. Select **Yes** to save your settings and exit the Setup utility. Your password will be saved to CMOS.

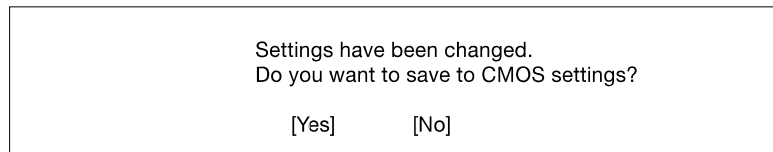
For the password to take effect, jumper JP8 must be set to 2-3 (check password). Changing the jumper setting requires that the chassis be opened. This task should therefore be performed only by trained service personnel, and is detailed in the *SGI 1100 Server Maintenance and Upgrades Guide* (007-4047-001).

The next time you want to enter the BIOS utility, you must key in your supervisor password.

## Removing a Password

To remove your supervisor password, follow these steps:

1. Disable the **Supervisor Password** parameter in the **System Security** menu by pressing the left or right arrow key to select **None**.
2. Press the **Esc** key to return to the **System Security** menu and then press the **Esc** key again to exit Setup. The **Exit Setup** screen, shown in Figure 3-15, appears.



**Figure 3-15** Exit Setup Screen

3. Select **Yes** to save your settings and exit Setup. Your previous password will be removed from CMOS.

---

**Note:** When removing the supervisor password, it is important that jumper JP8 be set to 1-2 (bypass password). This is because you cannot access Setup if a supervisor password does not exist and jumper JP8 is set to 2-3 (check password). Changing the jumper setting should be performed only by trained service personnel.

---

### **Bypassing a Supervisor Password**

If you forget your supervisor password, the password security feature can be bypassed by changing the setting of jumper JP8 to 1-2 (bypass password). Changing the jumper setting requires that the chassis be opened. This task should therefore be performed only by trained service personnel, and is detailed in the *SGI 1100 Server Maintenance and Upgrades Guide* (007-4047-001).

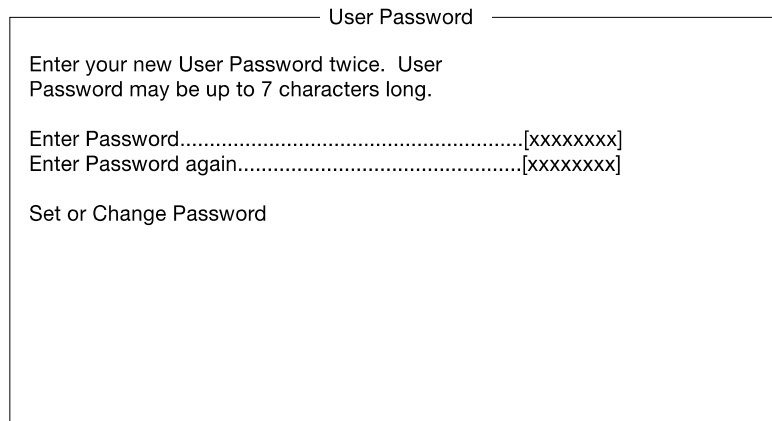
## User Password

The **User Password** secures your system against unauthorized use. Once you set this password, you have to type it whenever you boot the system. To set this password, enter the Setup utility, select **System Security**, and then highlight the **User Password** parameter. See Figure 3-16, and follow the same procedure as for setting the “Supervisor Password” on page 52.

---

**Note:** The user password should be modified only by trained service personnel, or by a system administrator.

---



**Figure 3-16** User Password Screen

---

**Note:** Jumper JP8 must be set to 2-3 to enable the user password. Changing the jumper setting requires that the chassis be opened. This task should therefore be performed only by trained service personnel, and is detailed in the *SGI 1100 Server Maintenance and Upgrades Guide* (007-4047-001).

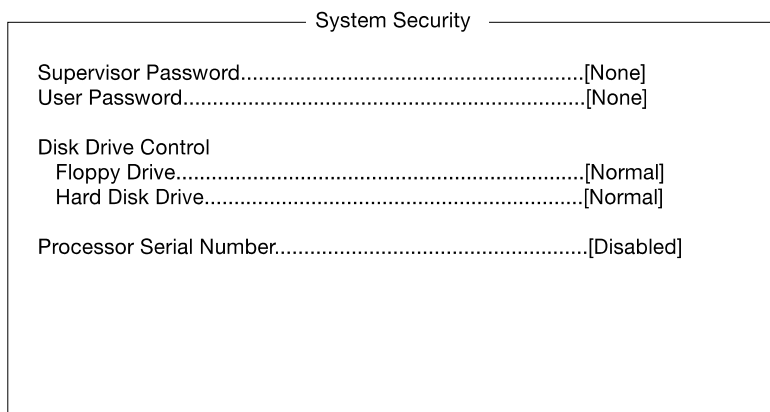
---

## Disk Drive Control

The **Disk Drive Control** features allow you to control the floppy drive or the hard disk drive boot function to prevent loading operating systems or other programs from a certain drive while the other drives are operational (under DOS mode only).

### Floppy Drive and Hard Disk Drive

To change the **Disk Drive Control** settings, highlight the **Floppy Drive** or the **Hard Disk Drive** parameter in the **System Security** menu. Figure 3-17 shows the **System Security** screen. Press the left or right arrow keys to select one of the three settings described in Table 3-9.



**Figure 3-17** System Security Screen

Table 3-9 describes the **Disk Drive Control** settings.

**Table 3-9** Disk Drive Control

Setting	Description
Normal	Floppy drive or hard disk drive functions normally.
Write protect all sectors	Disables the write function on all sectors.
Write protect boot sector	Disables the write function only on the boot sector.

## Processor Serial Number

The Pentium III processor incorporates an individual serial number in each chip that can identify individual CPUs. When enabled, CPUs can be identified by processor serial number. Disable this parameter to deactivate this feature.

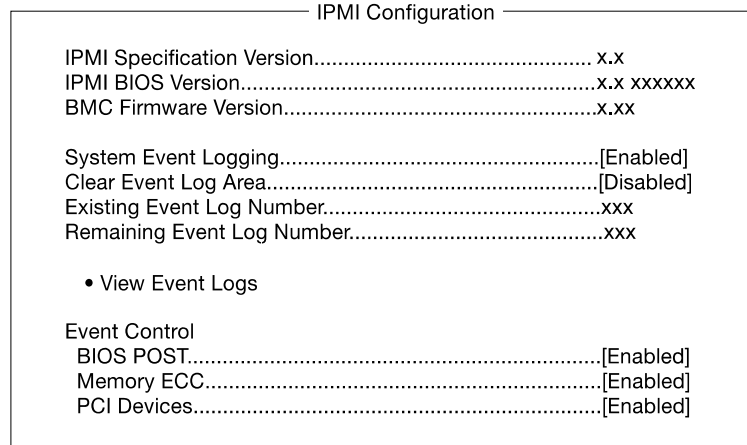
To enable or disable the **Processor Serial Number** parameter, highlight it in the **System Security** menu. Figure 3-17 shows the **System Security** screen. Press the left or right arrow key to select the desired setting.



## IPMI (Intelligent Platform Management Interface) Configuration

The system event log enables you to record and monitor events that occur in your system, such as system temperature changes, fan stops, and others. This feature also allows you to specify the appropriate settings for your system's event handling.

Figure 3-18 shows the **IPMI Configuration** screen.



**Figure 3-18** IPMI Configuration Screen

Table 3-10 describes the **IPMI configuration** parameters. Settings in **boldface** are the default and suggested parameter settings.

**Table 3-10** IPMI Configuration Parameters

<b>Parameter</b>	<b>Description</b>	<b>Option</b>
IPMI specification version	Specifies the version of Intelligent Platform Management Interface (IPMI).	
IPMI BIOS version	Shows the version of IPMI BIOS.	
BMC firmware version	Specifies the version of BaseBoard Management Controller (BMC) firmware.	

**Table 3-10 (continued)** IPMI Configuration Parameters

Parameter	Description	Option
System event logging	Enables or disables the event logging function of your system.	<b>Enabled</b> Disabled
Clear event log area	Clears the event log whenever the event log area is full.	<b>Disabled</b> Enabled
Existing event log number	Number of events currently located in the event log area.	
Remaining event log number	Number of spaces that are still available for logging system events.	
View event logs	Opens the system event log file for viewing.	
Event control		
BIOS POST	BIOS checks for bad processors and memory modules during POST. When this parameter is enabled, BIOS will stop POST operation whenever it finds a bad processor or memory. Otherwise, if disabled, the system continues running.	<b>Enabled</b> Disabled
Memory ECC	ECC or error-correcting code tests the accuracy of data as it passes in and out of memory. This parameter enables or disables the monitoring of this function.	<b>Enabled</b> Disabled
PCI devices	PCI or Peripheral Component Interconnect is a 32-bit bus that supports a 64-bit extension for new processors, such as the Pentium III. It can run at clock speeds of 33 or 66 MHz. This parameter monitors the activity of this bus when set to Enabled.	<b>Enabled</b> Disabled

## RDM Configuration

Figure 3-19 shows the **RDM Configuration** screen.

```

RDM Configuration
-----
RDM v4.3 BIOS Version.....xxxxxx
Console Redirection.....[Disabled]

Hidden Partition.....[Disabled]

Communication Protocol.....[N, 8, 1]
COM Port Baud Rate.....[57600]
*Detect Tone.....[Enabled]
Remote Console Phone No.....[xxxxxx]
Dial Out Retry Times.....[Infinite]

*Modem Initial Command.....[xxxxxx]

Emergency Management
RDM Work Mode.....[Disabled]
Connect-in Password.....[xxxxxx]
Paging Times.....[4]
Paging No.:
1. ....[xxxxxxxxxxxx]
2. ....[xxxxxxxxxxxx]

```

**Figure 3-19** RDM Configuration Screen

**Note:** A parameter with an asterisk (\*) indicates that the parameter appears only when you are in the Advanced Level. See “Entering Setup” on page 32 for information about how to view the Advanced Level.

Table 3-11 describes the **RDM Configuration** parameters. Settings in **boldface** are the default and suggested parameter settings.

**Table 3-11** RDM Configuration Parameters

Parameter	Description	Option
RDM 4.3 BIOS version	Shows the version number of the RDM BIOS.	
Console redirection	This parameter lets you enable or disable the connection to the RDM manager station. If enabled and conditions are met, the RDM-enabled server automatically dials the RDM manager station using the phone number specified in the remote Console phone no. parameter when the server reboots. Once the connection is established, both the RDM server and RDM manager station display the same screen that enables the RDM manager station to function the same as the server console. Setting this to Disabled deactivates the RDM manager station.	<b>Disabled</b> Enabled
Hidden partition	If you want the hidden partition to become accessible, set this parameter to Enabled. When enabled, the server boots to the hidden partition.	<b>Disabled</b> Enabled
Communication protocol	This parameter specifies the parity, stop bits, and data length for the COM port to be used for the RDM connection. This is fixed at N (none), 8, or 1 and is non-configurable.	<b>N</b> , 8, or 1
COM port baud rate	This parameter lets you set the transfer rate of the COM port for the RDM connection. The parameter setting depends on your modem specification; therefore, before you change the setting of this parameter, check your modem user guide.	9600 <b>57600</b>
*Detect tone	When enabled, RDM checks for the existence of the telephone tone before it dials out. When disabled, RDM proceeds with the dialing process without checking for the telephone tone.  This parameter appears only when you are in the Advanced Level.	<b>Enabled</b> Disabled

**Table 3-11 (continued)** RDM Configuration Parameters

Parameter	Description	Option
Remote console phone no.	<p>This parameter allows you to set the phone number of the RDM manager station that the RDM module must dial once RDM is activated and the remote console is enabled. To set it, simply highlight the parameter and enter the remote console phone number.</p> <p>If the remote console phone number is using an extension line, then you must enter six commas (,) after the phone number and before the extension number, if any. When entering the extension number, we recommend that you insert a comma after each number. The commas specify delay.</p> <p>If this parameter is left blank, the Remote Console calling function is disregarded.</p>	User input
Dial out retry times	<p>This parameter lets you specify the maximum number of times the RDM server must retry to connect to the RDM manager station once the server fails and RDM is activated. If the server has completed the specified number of tries and the connection still fails, the server bypasses RDM and goes into normal mode.</p>	<p>2 4 8 Infinite</p>
*Modem initial command	<p>Some modems require specific commands for initialization. This parameter allows you to specify the required command to enable your system to support special types of modems. If you do not specify any command, BIOS uses the default method to initialize the modem.</p> <p><b>Note:</b> Specify an initialization command only when you receive a Modem Initial Command Fail error message. Otherwise, leave this parameter blank.</p> <p>This parameter appears only when you are in the Advanced Level.</p>	User input
Emergency management		

**Table 3-11 (continued)** RDM Configuration Parameters

Parameter	Description	Option
RDM work mode	When detecting system failure, the RDM module acts according to the following mode: Disabled: No action Waiting: Paging and waiting RDM station to call in Reboot: Paging, then reboot <b>Note:</b> If Waiting is selected, password must be set to at least 3 characters.	<b>Disabled</b> Waiting Reboot
Connect-in password	Prevents unauthorized access to the server.	User input
Paging times	Allows you to set the number of times that the RDM module must dial when the server fails or hangs.	1, 2, 4, or 8
Paging No.	Allows you to set the pager number that the RDM module must dial when the server fails or hangs.	User input

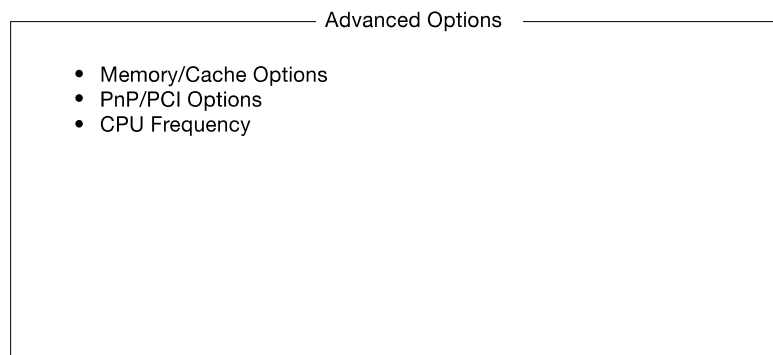
## Advanced Options

---

**Note:** To avoid damaging the system, do not change any settings in the **Advanced Options** screen if you are not a qualified technician.

---

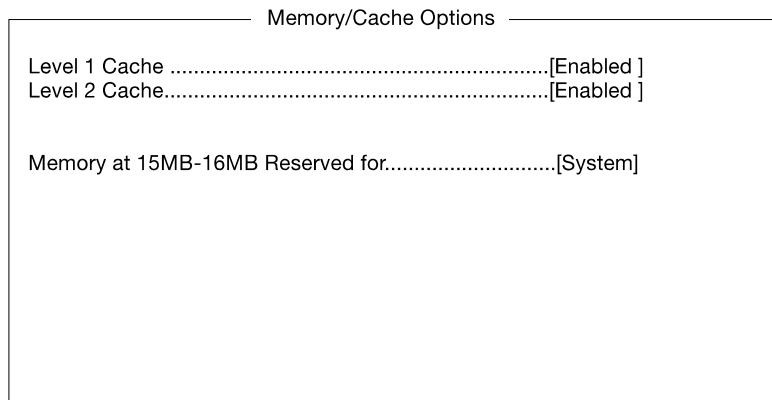
Figure 3-20 shows the **Advanced Options** parameters.



**Figure 3-20** Advanced Options Screen

## Memory/Cache Options

The **Memory/Cache Options** screen in Figure 3-21 allows you to configure the advanced system memory functions.



**Figure 3-21** Memory/Cache Options Screen

Table 3-12 describes the **Memory/Cache Options** parameters. Settings in **boldface** are the default and suggested parameter settings.

**Table 3-12** Memory/Cache Options Parameters

Parameter	Description	Option
Level 1 cache	Enables or disables the first-level or internal memory, that is, the memory integrated into the CPU.	<b>Enabled</b> Disabled
Level 2 cache	Enables or disables the second-level cache memory which is incorporated in the CPU module.	<b>Enabled</b> Disabled
Memory at 15 MB - 16 MB reserved for	To prevent memory address conflicts between the system and expansion boards, reserve this memory range for the use of either the system or an expansion board.	<b>System</b> Add-on card



## PnP/PCI Options

The **PnP/PCI Options** screen in Figure 3-22 allows you to specify the settings for your PCI devices.

```

PnP/PCI Configuration
-----
PCI IRQ Setting.....[ Auto ]

                                INTA INTB INTC INTD
PCI Slot 1.....[--]  [--]  [--]  [--]
Onboard VGA.....[--]
Onboard LAN.....[--]
USB Host Controller.....[--]

PCI IRQ Sharing.....[Yes]
VGA Palette Snoop.....[Disabled]
Plug and Play OS.....[No ]
Reset Resource Assignments.....[No ]

```

**Figure 3-22** PnP/PCI Options Screen

Table 3-13 describes the **PnP/PCI Options** parameters. Settings in **boldface** are the default and suggested parameter settings

**Table 3-13** PnP/PCI Options Parameters

Parameter	Description	Option
PCI IRQ setting	Select Auto to let BIOS automatically configure the plug-and-play (PnP) devices installed on your system; otherwise, select Manual. <b>Note:</b> See your manual for technical information about the PCI card.	<b>Auto</b> Manual
PCI slot 1	When you set the PCI IRQ setting parameter to Auto, this parameter specifies the auto-assigned interrupt for the PCI device. If you set the PCI IRQ setting parameter to Manual, you need to specify the interrupt that you want to assign for the PCI device installed in your system.	User input

**Table 3-13 (continued)** PnP/PCI Options Parameters

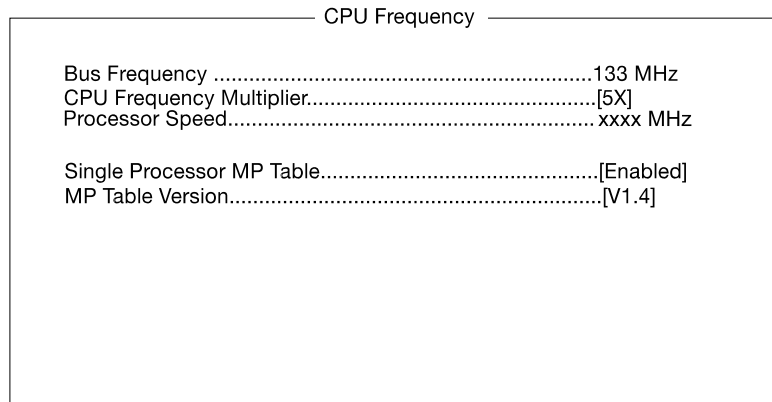
Parameter	Description	Option
Onboard VGA	Allows you to manually assign the interrupt for the onboard VGA when the PCI IRQ setting parameter is set to Manual. This parameter is grayed and not user-configurable when the PCI IRQ setting is set to Auto.	User input
Onboard LAN	When you set the PCI IRQ setting parameter to Auto, this parameter specifies the auto-assigned interrupt for the onboard LAN. If you set the PCI IRQ setting parameter to Manual, you need to specify the interrupt that you want to assign for the onboard LAN installed in your system.	User input
USB host controller	Allows you to manually assign the interrupt for the USB host controller when the PCI IRQ setting parameter is set to Manual. This parameter is grayed and not user-configurable when the PCI IRQ setting is set to Auto.	User input
PCI IRQ sharing	Setting this parameter to Yes allows you to assign the same IRQ to two different devices. To disable the feature, select No.  <b>Note:</b> If no IRQs are available to assign for the remaining device function, it is recommended that you enable this parameter.	Yes No
VGA palette snoop	This parameter permits you to use the palette snooping feature if you installed more than one VGA card in the system.  The VGA palette snoop function allows the control palette register (CPR) to manage and update the VGA RAMDAC (Digital Analog Converter, a color data storage) of each VGA card installed in the system. The snooping process lets the CPR send a signal to all the VGA cards so that they can update their individual RAMDACs. The signal goes through the cards continuously until all RAMDAC data has been updated. This allows the display of multiple images on the screen.  <b>Note:</b> Some VGA cards have required settings for this feature. Check your VGA card manual before setting this parameter.	<b>Disabled</b> Enabled

**Table 3-13 (continued)** PnP/PCI Options Parameters

Parameter	Description	Option
Plug and play OS	<p>When this parameter is set to Yes, BIOS initializes only PnP boot devices such as SCSI cards. When set to No, BIOS initializes all PnP boot and non-boot devices such as sound cards.</p> <p><b>Note:</b> Set this parameter to Yes only if you are using a plug-and-play-aware operating system, such as Windows 2000.</p>	Yes No
Reset resource assignments	<p>Set this parameter to Yes to avoid IRQ conflicts when installing non-PnP or PnP ISA cards. This clears all resource assignments and allows BIOS to reassign resources to all installed PnP devices the next time the system boots. After clearing the resource data, the parameter resets to No.</p>	No Yes

## CPU Frequency

The **CPU Frequency** screen in Figure 3-23 displays your CPU's speed and bus frequency.



**Figure 3-23** CPU Frequency Screen

Table 3-14 describes the **CPU Frequency** parameters. Settings in **boldface** are the default and suggested parameter settings.

**Table 3-14** CPU Frequency Parameters

<b>Parameter</b>	<b>Description</b>	<b>Option</b>
Bus frequency	The bus frequency refers to the speed by which data is transferred between internal computer components and the CPU (sometimes called Front Side Bus, or FSB). Clock speeds are expressed in megahertz (MHz), with 1 MHz being equal to 1 million cycles per second. A fast bus allows data to be transferred faster, which makes applications run faster.	Options
CPU frequency multiple	This column shows the CPU core/bus ratio of your system. This ratio determines the clock speed of the CPU core as a multiple of the bus speed. System BIOS automatically detects CPU frequency multiple.	3X, 3.5X, 4X, 4.5X, 5X, 5.5X, 6X, 6.5X, 7X, 7.5X, 8X

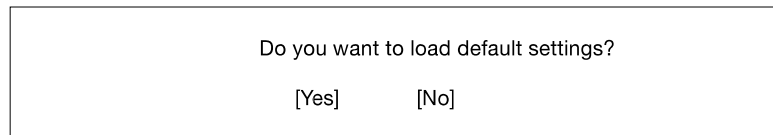
**Table 3-14 (continued)** CPU Frequency Parameters

Parameter	Description	Option
Processor speed	The processor speed is the bus frequency multiplied by the CPU frequency multiple, and is set automatically by BIOS. The faster the clock, the more instructions the CPU can execute per second. When two CPUs are installed, they will both run at the same frequency.	
Single processor MP table	Enabling this parameter allows BIOS to create a multiprocessor (MP) table for Windows NT use. In a single-processor system running Windows NT, you may disable this parameter to enhance system performance. If you install another CPU for a dual system, enable this parameter and then re-install Windows NT.  In cases when this parameter is enabled before installing Windows NT in a single-processor system, you may upgrade to a multiprocessor system without reinstalling Windows NT.	<b>Enabled</b> Disabled
MP table version	Version number of the MP table.	

## Load Default Settings

Use this option to load the default settings for the optimized system configuration. When you load the default settings, some of the parameters are grayed-out with their fixed settings. These grayed parameters are not user-configurable.

The dialog box in Figure 3-24 appears when you select **Load Default Settings** from the main menu.



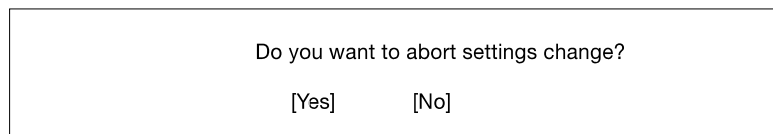
**Figure 3-24** Load Default Settings Screen

Select **Yes** to load the default settings.

Select **No** to ignore the message and return to the BIOS utility.

## Abort Settings Change

Use this option to disregard your changes to the BIOS and reload your previous settings. The dialog box in Figure 3-25 appears when you select **Abort Settings Change** from the main menu.



**Figure 3-25** Abort Settings Change Screen

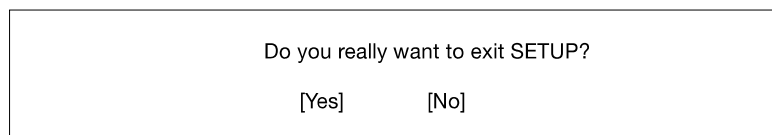
Select **Yes** to disregard your changes and reload your previous settings. After reload, the main menu appears on the screen.

Select **No** to ignore the message and return to the BIOS utility.

## Exit Setup

Examine the system configuration values. When you are satisfied that all the values are correct, write them down. Store the recorded values in a safe place. In the future, if the battery loses power or the CMOS chip is damaged, you will know what values to enter when you rerun Setup.

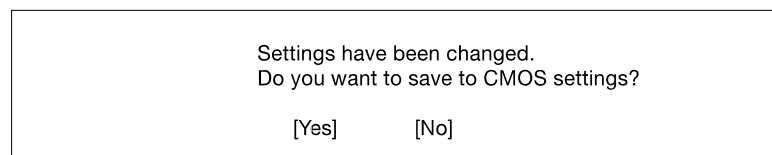
Press the **Esc** key to exit Setup. The dialog box shown in Figure 3-26 appears.



**Figure 3-26** Exit Setup Screen

Use the arrow keys to select your response. Press the **Enter** key.

If you made any changes to the Setup utility, the dialog box shown in Figure 3-27 is displayed.



**Figure 3-27** Save Settings Screen

Use the arrow keys to select your response. Select **Yes** to save the changes in CMOS. Select **No** to retain the previous configuration values. Press the **Enter** key to exit.





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