Acer Altos G5350 Series

User's Guide

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Model Name : G535

Part Number: MU.R160E.001

Purchase Date:

Place of Purchase:

Notices

FCC notice

Class A devices do not have an FCC logo or FCC IDE on the label. Class B devices have an FCC logo or FCC IDE on the label. Once the class of the device is determined, refer to the following corresponding statement.

Class A equipment

This device has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference 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 instructions, 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 personal expense.

Class B equipment

This device has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the device 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 device and receiver

• Connect the device into an outlet on a circuit different from that to which the receiver is connected

• Consult the dealer or an experienced radio/television technician for help

Notice: Shielded cables

All connections to other computing devices must be made using shielded cables to maintain compliance with FCC regulations.

Notice: Peripheral devices

Only peripherals (input/output devices, terminals, printers, etc.) certified to comply with the Class A or Class B limits may be attached to this equipment. Operation with noncertified peripherals is likely to result in interference to radio and TV reception.

Caution! Changes or modifications not expressly approved by the manufacturer could void the user's authority, which is granted by the Federal Communications Commission, to operate this server.

Use conditions

This part 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.

Notice: Canadian users

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

Laser compliance statement

The CD-ROM drive in this server is a laser product. The CD-ROM drive's classification label (shown below) is located on the drive.

CLASS 1 LASER PRODUCT
CAUTION: INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.

Important safety instructions

Read these instructions carefully. Save these instructions for future reference.

1   Follow all warnings and instructions marked on the product.

2   Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

3   Do not use this product near water.

4   Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.

5   Slots and openings on the back or bottom side of the chassis are provided for ventilation; to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.

6   This product should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.

7   Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.

8   If an extension cord is used with this product, make sure that the total ampere rating of the equipment plugged into the extension cord does not exceed the extension cord ampere rating. Also, make sure that the total rating of all products plugged into the wall outlet does not exceed the fuse rating.

9   Never push objects of any kind into this product through chassis slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

10 Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks. Refer all servicing to qualified service personnel.

11 Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

    a   When the power cord or plug is damaged or frayed

    b   If liquid has been spilled on the product

    c   If the product has been exposed to rain or water

    d   If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal condition.

    e   If the product has been dropped or the cabinet has been damaged

    f   If the product exhibits a distinct change in performance, indicating a need for service.

12   Replace the battery with the same type as the product's battery we recommend. Use of another battery may present a risk of fire or explosion. Refer battery replacement to a qualified service technician.

13   **Warning!** Batteries may explode if not handled properly. Do not disassemble or dispose of them in fire. Keep them away from children and dispose of used batteries promptly.

14   Use only the proper type of power supply cord set (provided in your accessories box) for this unit. It should be a detachable type: UL listed/CSA certified, type SPT-2, rated 7A 125V minimum, VDE approved or its equivalent. Maximum length is 15 feet (4.6 meters).

Contents

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1 System tour

The Acer Altos G5350 server is a powerful dual-processor system loaded with a host of new and innovative features. The system offers a new standard for flexible productivity ideal for multimedia processing, intensive graphics applications, general business applications, email, web service, file clustering and print services.

Features summary

Listed below are the system's key features:

Processor
- Dual AMD Opteron™ single or dual core processors
- Supports AMD 64-Bit technology

Chipset
- AMD 8131™ (I/O bridge)
- AMD 8111™ (South bridge)

Memory
- Supports DDR-333(PC2700) or DDR-400(PC3200) registered ECC memory modules
- Four DIMM slots per processor
  - Single-processor supports memory capacity of 8 GB
  - Dual-processor supports memory capacity of 16 GB
- Supports dual-channel DDR memory per processor

Media storage
- 3.5-inch, 1.44 MB floppy drive
- Three 5.25-inch device bays supports:
  - DVD-ROM, DVD-RW, DVD combo drive
  - 5.25-inch IDE CD-ROM drive
  - DAT72 tape drive
  - AIT1 tape drive
  - LTO-2 half-height tape drive

Additional media storage
- SCSI HDD cage
  - Easy-swap
  - Hot-plug
  - Supports up to four Ultra320 SCSI hard disk drives
- SATA HDD cage

- Easy-swap
- Hot-plug
- Supports up to four SATA hard disk drives

SCSI controller (optional)
- Adaptec AIC-7902, two channel Ultra320 SCSI controller
- Supports two SCSI 68-pin connector
- Supports disk mirroring

Networking
- Intel 82541GI chipset

Baseboard Management Controller (optional)
- Onboard National Semiconductor PC87435 management controller
- IPMI (Intelligent Platform Management Interface) 1.5 compliant

PCI I/O
- Six PCI bus slots with three separate bus segments:
    - Two 64-bit/100 MHz PCI-X bus slots
    - Two 64-bit/66 MHz PCI-X bus slots
    - Two 32-bit/33 MHz PCI bus slots

Graphic interface
- ATI Rage$^®$ XL chipset with 8MB SDRAM

I/O ports
- Front
    - Two USB 1.1 ports
- Rear
    - PS/2 keyboard and mouse port
    - Two USB 1.1 ports
    - VGA/monitor port
    - Two serial ports
    - Parallel/printer port

- Gigabit LAN port (RJ-45)

Operating system and software

- Microsoft® Windows® Server 2003, X64 edition
- Microsoft® Windows® Server 2003
- Microsoft® Windows® 2000 Server (SP4)
- Red Hat Enterprise Linux 4.0
- Red Hat Enterprise Linux 4.0 X64
- Novell® NetWare® 6.5
- SUSE® Linux Enterprise Server 9.0
- SUSE® Linux Enterprise Server 9.0 X86_64

Power supply

- 610-watts (1+1) redundant power supply (optional)

External and internal structure

Front bezel
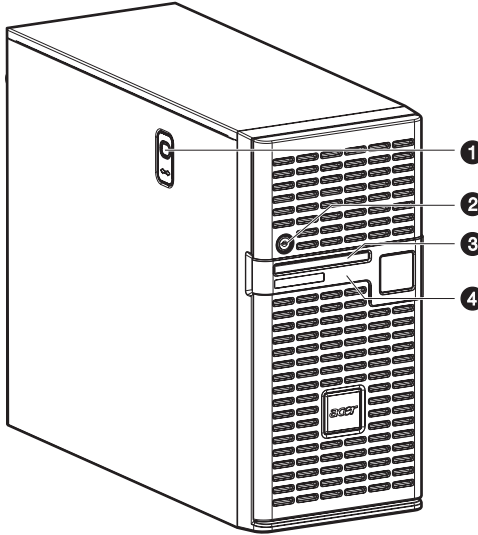
No.	Component
1	Side panel release button
2	Security keylock
3	Front panel LED indicator
4	Bezel door

Front panel
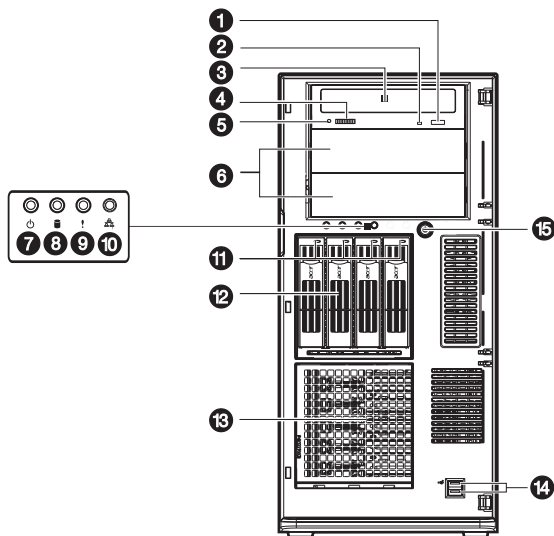
No.	Icon	Component	Description
1		CD-ROM drive Stop/ Eject button	Press this button to open the CD drive tray.
2		CD-ROM drive activity indicator	When the LED indicator is lit, there is activity in the CD drive.
3		CD-ROM drive	Disk drive for reading CD-ROMs.
4		Volume control	Adjusts the volume of the CD drive.
5		CD-ROM drive Headphone/ Earphone port	Connects to microphones or earphones.
6		5.25-inch drive bays	Two empty 5.25-inch drive bays allow installation of additional devices.
7	⏻	Power indicator [1]	Indicates AC power is present or system is turned on or off (green).

No.	Icon	Component	Description
8	🗄	Hard disk activity indicator [2]	Indicates the status of the system hard drive.
9	!	System status indicator [3]	The indicator lights up green when the system is operating normally. When the a system fault is present, the indicator blinks or lights up amber.
10	品	LAN activity indicator [4]	Indicates an active link on the LAN port (green).
11		Hot-plug HDD power indicator [5]	Indicates drive activity (green).
12		Four-bay hot-plug HDD cage	Houses four hot-swap SCSI drives.
13		HDD cage bay	For additional storage options. Supports a four-bay hot-plug HDD cage.
14		USB ports	Connects to USB devices.
15		Power button	Press to turn on the system.

1, 2, 3, 4, 5 For more information about the status of the LED indicators, see Front panel LED indicators table on page 9.

Front panel LED indicators

Below table lists the LED states on the front panel.

LED	Color	Status	Description
Power	Green	On	Power on
		Blinking	System in ACPI sleep mode.
Status [1]	Green	On	System in normal mode.
	Green	Blinking	• Defective CPU • Defective DIMM
	Amber	Blinking	• Redundant fan failure • Redundant power supply failure • Non-critical temperature and voltage failure
	Amber	On	• Critical power supply failure • Voltage power supply failure • Critical temperature and voltage failure
		Off	• POST error • NMI event • Missing CPU or terminator
HDD	Green	Blinking	HDD activity
		Off	No HDD activity
	Amber	On	HDD failure The HDD LED will light green when the four-bay hot-plug cage is installed in the chassis.

LED	Color	Status	Description
LAN	Green	On	Network is established.
		Blinking	• Network activity. • Network is established and running at its supported speed.
		Off	Network link is not established.

1 The Status LED is activated when the BMC controller is installed on the mainboard. To purchase a BMC controller, contact your local Acer representative or order directly from http://www.acer.com/.

Hot-plug HDD LED indicators

Below table lists the possible disk drive states.

HDD Status	Green	Amber	Description
HDD access	Blinking	—	HDD activity
HDD failure	—	On	Internal HDD failure, replace HDD
HDD rebuild	Blinking	Blinking	HDD rebuilding data

Rear panel

No.	Icon	Component	Description
1		Power supply module bay	Allows installation of a hot-swap redundant power supply module. The hot-swap redundant power supply module may include three LEDs that will indicate its operating status. **Note:** Though the system supports two hot-swap power supply module bays, the system comes bundled with only a single power supply module. You have the option to separately purchase an extra power supply module to provide the system with redundant power source.
2		PS/2 mouse port	Connects to a PS/2 mouse.
3		PS/2 keyboard port	Connects to a PS/2 keyboard.

No.	Icon	Component	Description
4		USB ports	Connects to USB devices.
5		Serial port	Connects to serial devices.
6		Parallel/printer port	Connects to parallel devices.
7		VGA/monitor port	Connects to monitors.
8		Gigabit LAN ports (10/100/ 1000 Mbps)	Connects to network cables.
9		Expansion slots	For installing expansion cards.
10		PCI slot lock lever	Secures the PCI card to the system.
11		Rear system fan	Optimizes system airflow.

Internal components
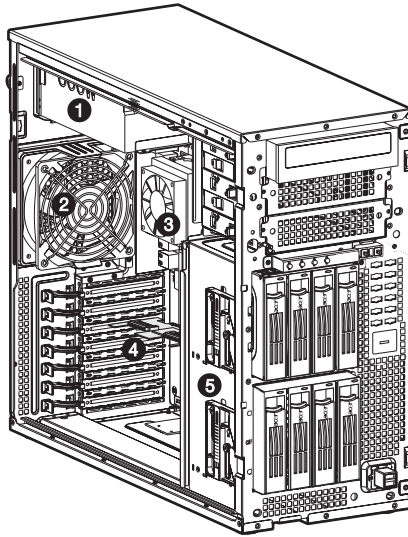
No.	Component
1	Power supply module (610-watts) [1]
2	Rear system fan
3	Mainboard, CPU and heat sink fan assembly
4	PCI bus slot
5	Four-bay hot-plug HDD cage

1 Though the system supports two hot-swap power supply modules, the system comes bundled with a single 610-watt power supply module only. You have the option to purchase an extra power supply module to provide the system with a redundant power-er source.

System boards

Mainboard layout

The mainboard becomes accessible once you open the system. It should look like the figure shown below.
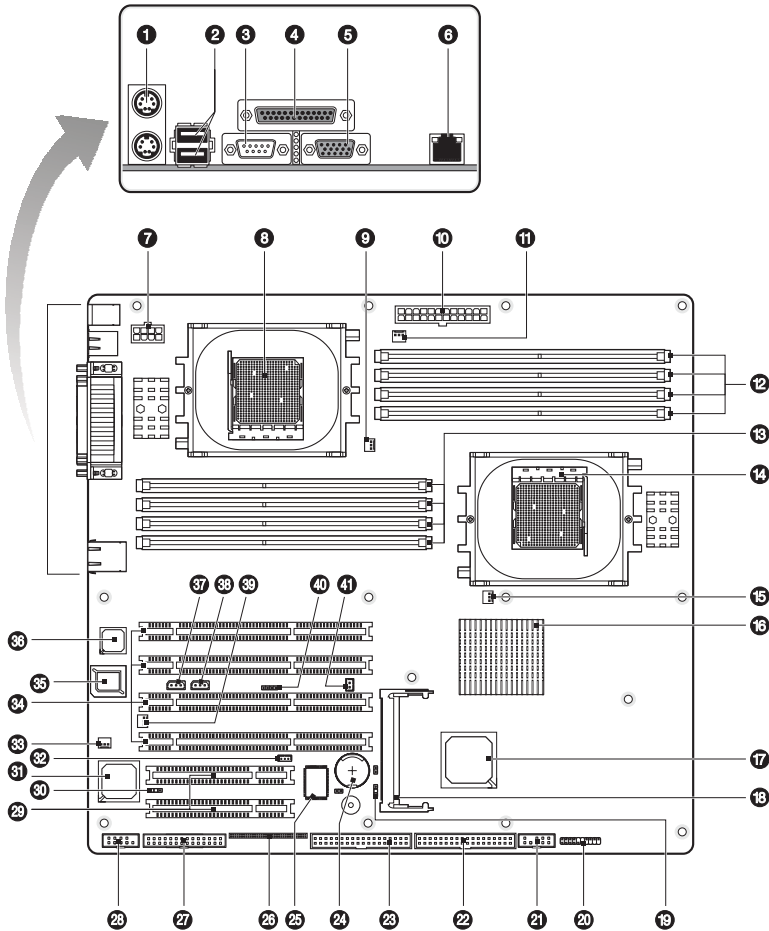
No.	Code	Description
1	CN4	Top: PS/2 mouse port Bottom: PS/2 keyboard port
2	USB3	USB ports
3	COMA1	Serial A port
4	LPT1	Parallel/printer port
5	VGA1	VGA/monitor port
6	LAN	Gigabit LAN ports (RJ-45)
7	ATX2	Power supply connector
8	CPU2	CPU 2 socket
9	CPU FAN2	CPU fan 2 connector
10	ATX1	Power supply connector
11	PWR FAN1	Power fan 1 connector
12	DIMM 1-4	DIMM slots for CPU 1
13	DIMM 5-8	DIMM slots for CPU 2
14	CPU1	CPU 1 socket
15	CPU FAN1	CPU fan 1 connector
16		AMD 8131 chipset
17		AMD 8111 chipset
18	SCSI_CON1	SCSI module connector
19	CLR_CMOS1	Clear CMOS jumper
20	F_PANEL1	Front panel LED connectors
21	USB1	Front USB connectors

No.	Code	Description
22	IDE2	Secondary IDE connector
23	IDE1	Primary IDE connector
24	BAT1	CMOS battery
25	U109	SIO (System IO) chipset
26	GSMI1	BMC (Baseboard Management Controller) connector
27	FDD1	FDD connector
28	COMB	Serial B port
29	PCI_6	PCI slot 5, 6 (PCI 32-bit/33 MHz)
30	JP3	VGA jumper (enabled/disabled)
31		ATI Rage XL VGA chipset
32	WOL1	WOL (Wake On LAN) connector
33	PWR_FAN2	Power fan 2 connector
34	PCI-X_1 - PCI-X_4	PCI-X slots 1 and 2 (64-bit/100 MHz) PCI-X slots 3 and 4 (64-bit/66 MHz)
35		BIOS Flash ROM
36		Intel 82541GI Gigabit chipset
37	IPMB2	IPMB 2 connector
38	IPMB1	IPMB 1 connector
39	SYS_FAN1	System fan 1 connector
40	SMBUS1	System Management Bus connector
41	WOM1	WOM (Wake On Modem) connector

Backplane board layout

The backplane board attached to the four-bay hot-plug HDD cage provides a convenient interface between the SCSI or SATA drives and the mainboard.

SCSI backplane board layout

Front   Rear
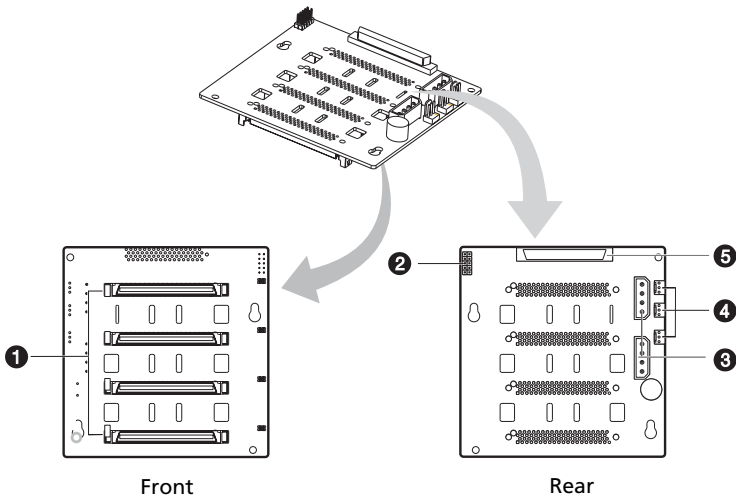
No.	Code	Description
1		SCSI HDD connectors
2		I^2C bus interface connector
3		4-pin power cable connector
4	SAF-TE ID	SAF-TE ID jumper Jumper setting: 1-2 Close — ID8 (default) 2-3 Open — ID6

No.	Code	Description
	J3	LED indicator jumper
		Jumper setting:
		SHORT 1-2 — Link LED on
		SHORT 2-3 — Link LED dark
	792D_ID1	792D_ID1 ADDR select jumper
		Close 1-2 — 5EH (default)
		Close 2-3 — 5AH
5		68-pin SCSI data cable connector

SATA backplane board layout

Front   Rear
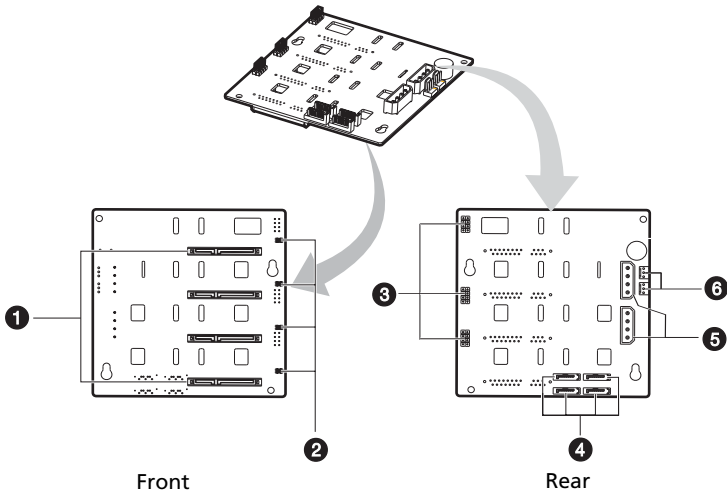
No.	Code	Description
1		SATA HDD connectors
2		SAF-TE heartbeat LED and Manufacturing function jumper
3	J1	BPB No. jumper Jumper setting: SHORT 1-2 — 1st BPB SHORT 2-3 — 2nd BPB
	J2	LED indicator Jumper setting: SHORT 1-2 — Link LED on SHORT 2-3 — Link LED dark
	792D_ID1	792D_ID1 ADDR select jumper Close 1-2 — 5EH (default) Close 2-3 — 5AH
4		SATA data cable connectors

No.	Code	Description
5		4-pin power cable connector
6		I^{2}C bus interface connector

2 System setup

This chapter gives you instructions on how to set up the system. Procedures on how to connect peripherals are also explained.

Setting up the system

Pre-installation requirements

Selecting a site

Before unpacking and installing the system, select a suitable site for the system for maximum efficiency. Consider the following factors when choosing a site for the system:

- Near a grounded power outlet
- Clean and dust-free
- Stable surface free from vibration
- Well-ventilated and away from sources of heat
- Secluded from electromagnetic fields produced by electrical devices such as air conditioners, radio and TV transmitters, etc.

Checking the package contents

Check the following items from the package:

- Acer Altos G5350 system
- Acer EasyBUILD™
- Acer Altos G5350 accessory box
- System keys

If any of the above items are damaged or missing, contact your dealer immediately.

Save the boxes and packing materials for future use.

Connecting peripherals

Refer to the illustration below for specific connection instructions on the peripherals you want to connect to the system.
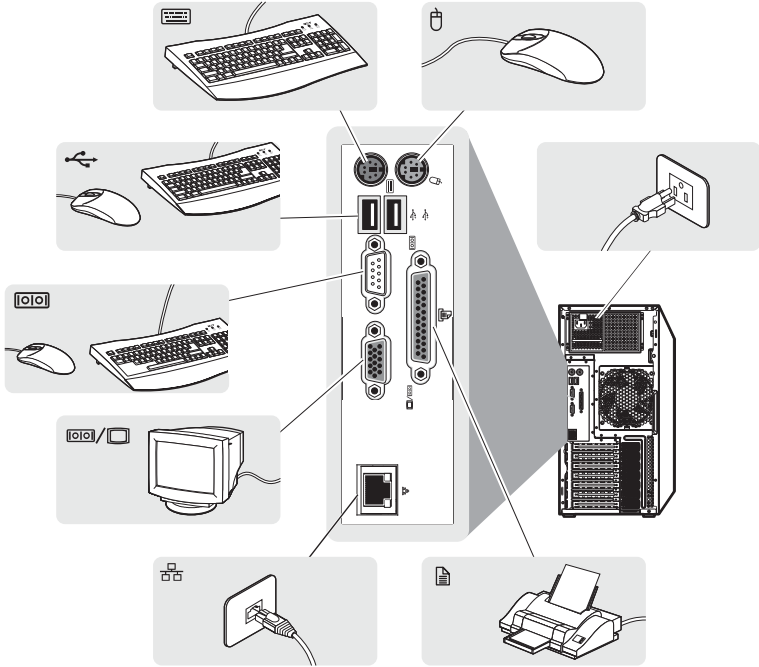
Note: Consult the operating system manual for information on how to configure the network setup.

Turning on the system

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

To power on the system:

1   Open the bezel door.
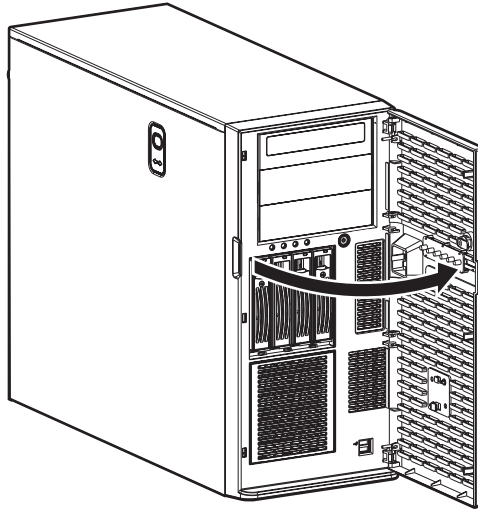
2   Press the power button.
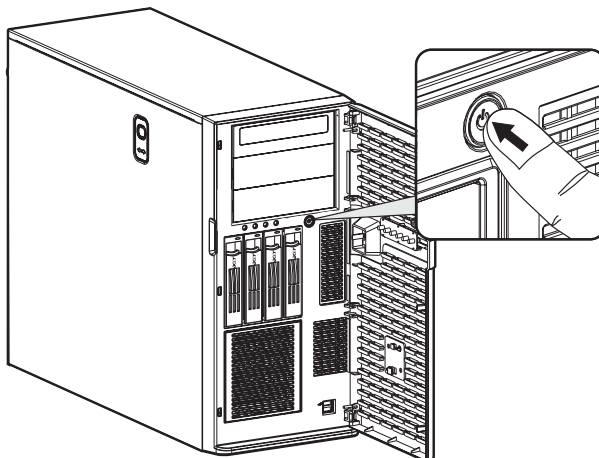
The system starts up and displays a welcome message on the monitor. After that, a series of power-on self-test (POST) messages appears. The POST messages indicate if the system is running well or not.

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

Aside from the POST messages, you can determine if the system is in good condition by checking if the following occurred:

• Power indicator on the front panel lights up (green)
• Num Lock, Caps Lock, and Scroll Lock indicators on the keyboard light up

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 cable socket on the rear panel. Make sure that the cable is properly connected to the power source and to the power cable socket.

- No power comes from the grounded power outlet.

  Have an electrician check your power outlet.

- Loose or improperly connected internal power cables.

  Check the internal cable connections. If you are not confident to perform this step, ask a qualified technician to assist you.

  Warning! Make sure all power cords are disconnected from the electrical outlet before performing this task.

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

Configuring the system OS

The Altos G5350 comes with Acer EasyBUILD™ that allows you to conveniently install your choice of operating system. To start using EasyBUILD, follow the steps below.

1   Locate the EasyBUILD System CD included in the system package.

2   With the system turned on, gently press the CD-ROM drive Stop/ Eject button.

3   When the disc tray slides open, insert the EasyBUILD System CD with the label or title side of the disc facing upward.

> **Note:** When handling the disc, hold it by the edges to avoid smudges or fingerprints.

4   Gently press the disc down to make sure that it is properly inserted.

> **Caution!** While pressing the disc, be careful not to bend the disc tray. Make sure that the disc is properly inserted before closing the disc tray. Improper insertion may damage both the disc and the CD-ROM drive.

5   Gently press the drive Stop/Eject button again to close the disc tray.

6   The Acer EasyBUILD sequence begins. Follow all onscreen instructions.

For more information, refer to the EasyBUILD Installation guide.

> **Note:** EasyBUILD System CD supports Windows 2000, Windows Server 2003 and Red Hat Linux operating system only.
>
> Windows or Linux OS CD is needed when you install the OS with the EasyBUILD System CD.

Server setup

Aside from its tower configuration, the Altos G5350 server system can also be mounted in a rack-model position. A rack mount kit is available for customers who want to convert a tower-mounted system to rack-model design. To purchase a rack mount kit, contact your local Acer representative or order directly from http://www.acer.com/.

The figure below shows the Altos G5350 server in a rack-mount position.
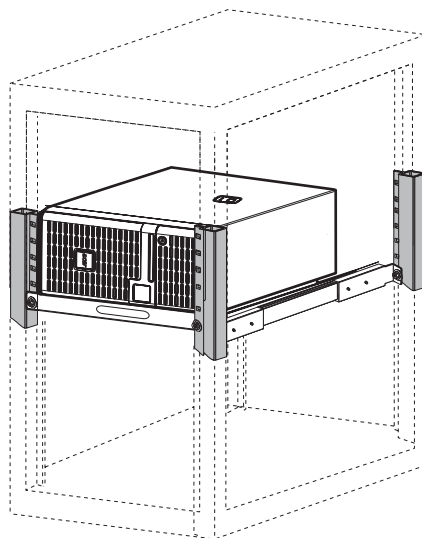
For instructions on tower-to-rack configuration, refer to "Appendix B: Acer Altos G5350 rack installation guide" on page 131.

Turning off the system

There are two ways by which you can turn off the server. These include:

To turn off the server, on the Windows taskbar click on the **Start** button, point to **Shut Down...**, select **Shut down** from the drop-down window then click on **OK**. You can then turn off all peripherals connected to your server.

If you cannot shut down the server, press the power button for at least four seconds. Quickly pressing the button may put the server in a Suspend mode only.

3 System upgrade

This chapter discusses the precautionary measures and installation procedures you need to know when upgrading the system.

Installation precautions

Before you install any server component, we recommend that you read the following sections. These sections contain important ESD precautions along with pre-installation and post-installation instructions.

ESD precautions

Electrostatic discharge (ESD) can damage the processor, disk drives, expansion boards, motherboard, memory modules and other server components. Always observe the following precautions before you install a server component:

1   Do not remove a component from its protective packaging until you are ready to install it.
2   Wear a wrist grounding strap and attach it to a metal part of the server before handling components. If a wrist strap is not available, maintain contact with the server throughout any procedure requiring ESD protection.

Pre-installation instructions

Perform the steps below before you open the server or before your remove or replace any component:

1   Turn off the system and all the peripherals connected to it.
2   Unplug all cables from the power outlets.
3   Place the system unit on a flat, stable surface.
4   Open the system according to the instructions on page 35.
5   Follow the ESD precautions described in this section when handling a server component.
6   Remove any expansion board(s) or peripheral(s) that block access to the DIMM slots or other component connector.

See the following sections for specific installation instructions on the component you want to install.

⚡ **- -**
Warning! Failure to properly turn off the server before you start installing components may cause serious damage. Do not attempt the procedures described in the following sections unless you are a qualified service technician.

Post-installation instructions

Perform the steps below after installing a server component:

1   See to it that all components are installed according to the described step-by-step instructions.
2   Reinstall any expansion board(s) or peripheral(s) that you have previously removed.
3   Reinstall the chassis panels.
4   Connect the necessary cables.
5   Turn on the system.

Opening the server

> ⊘ •
>
> **Caution!** Before you proceed, make sure that you have turned off the system and all peripherals connected to it. Read the "Pre-installation instructions" on page 33.

You need to open the server before you can install additional components. The front bezel and left-side panel are removable to allow access to the system's internal components. Refer to the following sections for instructions.

Removing the left-side panel

1   Observe the ESD precautions and pre-installation instructions described on page 33.

2   Remove the left-side panel.

    (1)   Remove the two screws located on the rear edge of the left-side panel **(1)**.

    (2)   Press the left-side panel release button **(2)**.

    (3)   Slide the left-side panel toward the rear of the chassis **(3)**.
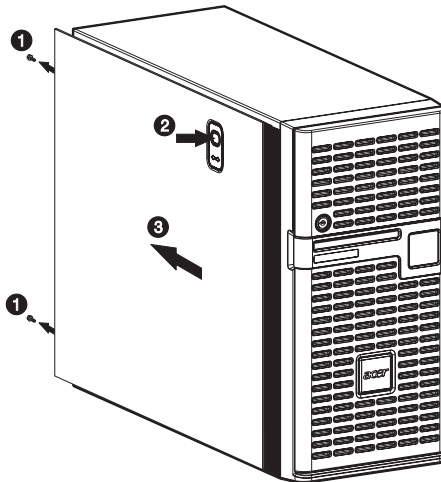
Opening the bezel door

A security lock secures the bezel door to protect the system unit from unauthorized access.

To open the bezel door:

1   Insert the key into the lock and turn it clockwise until it points to the unlock icon 🔓.

2   Pull open the bezel door.

Removing the front bezel

1   Remove the left-side panel. See page 35.

2   Slightly bend the plastic retention tabs to release the latches **(1)**.

3   Gently detach the bezel from the chassis **(2)**.
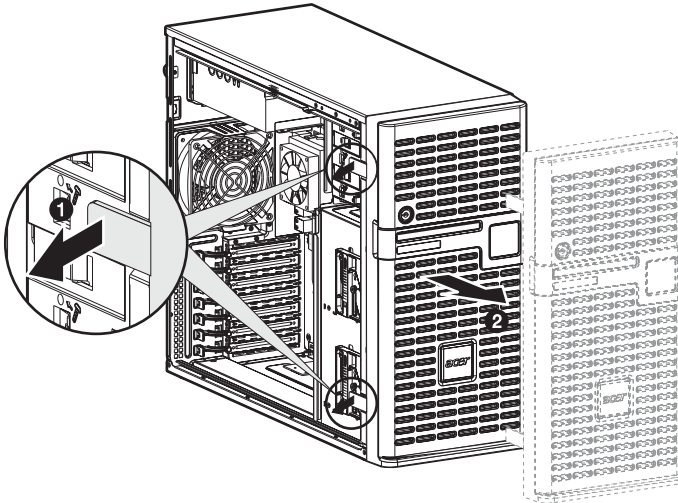
Removing the HDD cage bay cover

1   Open the bezel door.

2   Push down the HDD cage bay cover **(1)**.

3   Detach the HDD cage bay cover from the front bezel **(2)**.
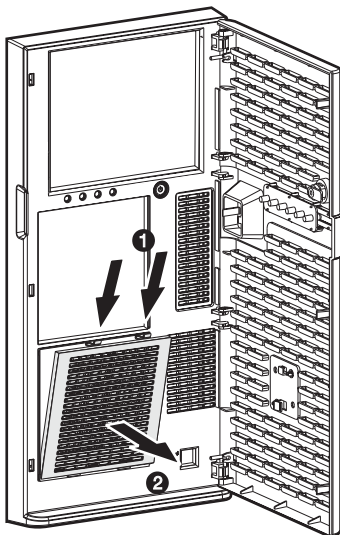
Configuring the four-bay hot-plug HDD cage

This section explains how to install a four-bay hot-plug HDD cage as well as procedures on how to install a hard disk into the cage's hard disk carrier.

Installing the four-bay hot-plug HDD cage

The Altos G5350 has two HDD cage bays that accept the following HDD cages:

- Hot-plug SCSI HDD cage
- Easy-swap SCSI HDD cage
- Hot-plug SATA HDD cage
- Easy-swap SATA HDD cage

The main difference between a hot-plug HDD cage and an easy-swap HDD cage is the presence of a backplane board on the rear side of the hot-plug HDD cage.

The system ships out with only a single four-bay SCSI or SATA HDD cage leaving one bay empty. You have the option to purchase an extra cage to provide the system with additional storage capacity and scalability. Contact your local Acer representative for more information.

Note: Before installing a hot-plug or easy-swap SCSI or SATA HDD cage in the system, make sure to install a SCSI or SATA RAID controller first. The RAID controller must be compatible with the system and OS with appropriate drivers according to the RAID controller manufacturer's installation instructions. Refer to page 69 and for intructions on how to install a RAID controller.

To purchase a SCSI or SATA RAID controller, contact your local Acer representative or order directly from http://www.acer.com/.

To install the hot-plug SCSI HDD cage:

1   Observe the ESD precautions and pre-installation instructions described on page 33.

2   Remove the HDD cage bay cover. See page 37.

3   Remove the screw that secures the cover to the empty HDD bay **(1)**, then detach the cover **(2)**.
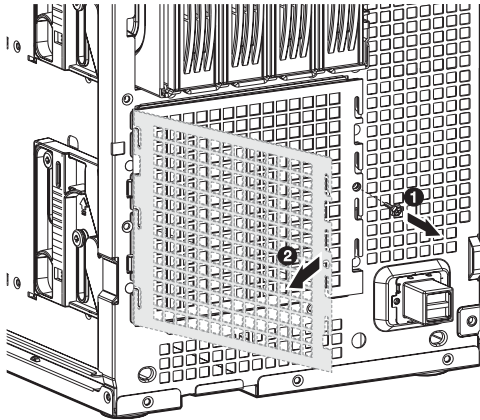
4   Install the hot-plug cage.

(1) Slide the cage into the chassis with the backplane board
     facing the rear of the chassis. The cage is locked to the chassis
     with an audible click.
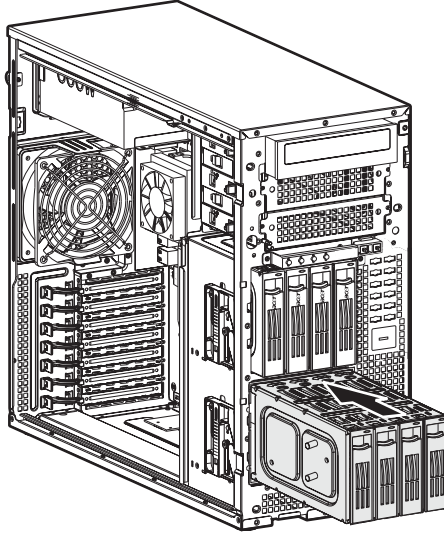
(2) Locate and attach the following cables clamped on the side of
     the chassis to their corresponding connectors on the
     backplane board:

🔑 --

Important: If a four-bay hot-plug SCSI HDD cage is already
installed in the top HDD bay, you must block the J1 jumper. Set
pins 1 and 2 to Close.

(1) SCSI data cable

(2) SCSI HDD power cables
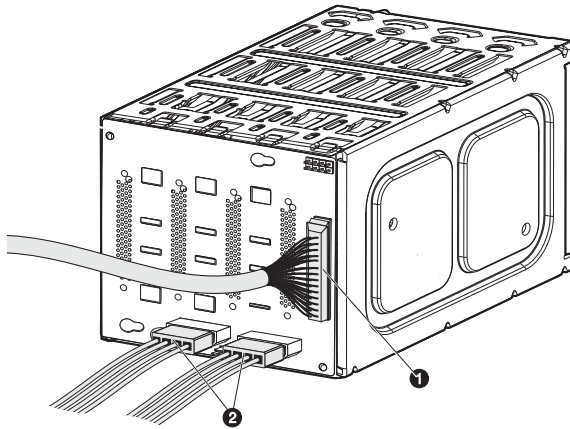
5 Observe the post-installation instructions described on page 34.

🔑 ....

Important: When you are detaching the hot-plug HDD cage from the chassis, make sure to first remove all hard disks from their carriers. For instructions, see "Installing an additional hard disk into the hot-plug HDD cage carrier" on page 51.

6 Change the RAID configuration of your hard disk. For details on how to change the RAID configuration of your hard disk, go to "Appendix C: SCSI RAID configuration" on page 147.

To install the easy-swap SCSI HDD cage:

The easy-swap SCSI HDD cage is an optional four-bay internal HDD enclosure without a SCSI backplane board.

1 Observe the ESD precautions and pre-installation instructions described on page 33.

2 Remove the HDD cage bay cover. See page 37.

3 Remove the screw that secures the cover to the empty HDD bay, then detach the cover.

4 Install the easy-swap cage.

   (1) Slide the cage into the chassis. The cage is locked to the chassis with an audible click.
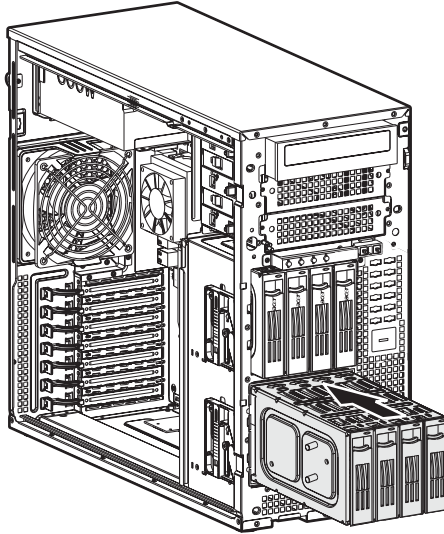
   (2) Locate and attach the following cables to their corresponding connectors on the SCSI hard drive and SCSI RAID controller. For instructions on how to install a SCSI RAID controller see page 69.

      (1) SCSI data cable

(2) SCSI HDD power cables
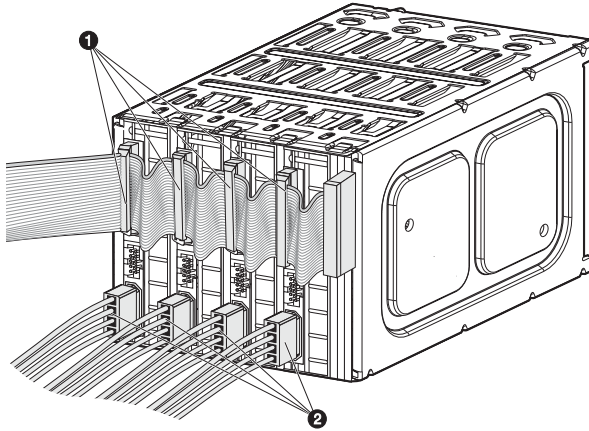
5   Observe the post-installation instructions described on page 34.

> **Important:** When you are detaching the easy-swap cage from the chassis, make sure to first remove all cables attached to the hard disks.

6   Change the RAID configuration of your hard disk. For details on how to change the RAID configuration of your hard disk, go to "Appendix C: SCSI RAID configuration" on page 147.

To install the hot-plug SATA HDD cage:

> **Note:** Before installing a hot-plug SATA HDD cage in the system, make sure you install a SATA RAID controller.

1   Observe the ESD precautions and pre-installation instructions described on page 33.

2   Remove the HDD cage bay cover. See page 37.

3   Remove the screw that secure the cover of the empty HDD bay, then detach the cover.
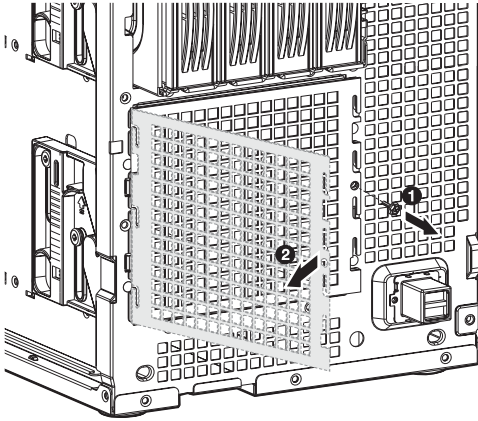
4   Install the hot-plug cage.

   (1)   Slide the cage into the chassis. The cage is locked to the chassis with an audible click.
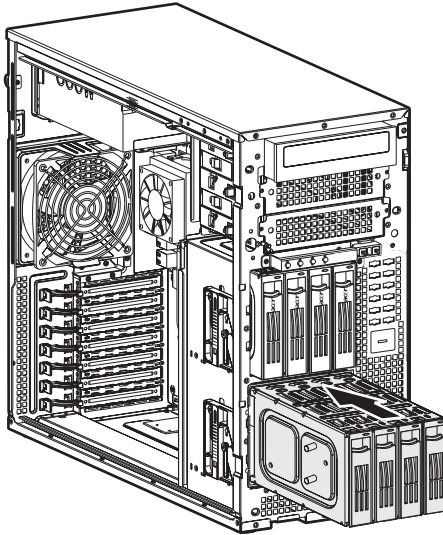
5   Connect the following cables to their corresponding connectors on the SATA RAID backplane board, mainboard and adapter:

   (1)   Attach the SATA data cable to the SATA HDD connector on the backplane board **(1)**, then connect the other end of the cable to the SATA connector on the SATA RAID controller.

   Note: SATA connectors on the controller are keyed. Make sure the SATA data cables are properly connected to its corresponding connectors on the SATA RAID controller.

(2) Attach the system's power cable to the SATA power cable
connector on the backplane board **(2)**.
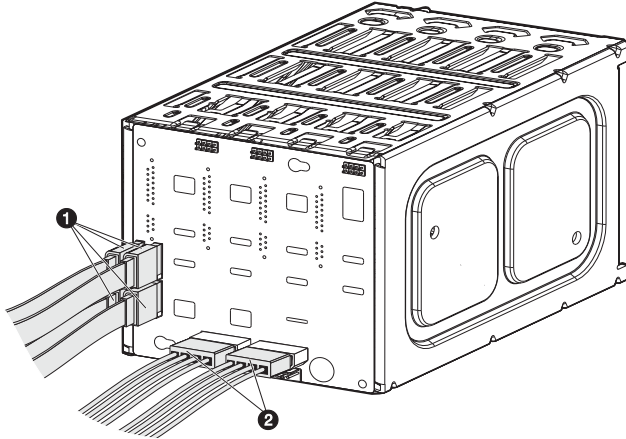
> 📝 --
>
> **Note:** The SATA RAID data cables must be installed and removed
> in the following order: SATA0, SATA1, SATA2, then SATA 3.

6   Observe the post-installation instructions described on page 34.

> 🔑 --
>
> **Important:** When you are removing the hot-plug cage from the
> chassis, make sure to first remove all hard disks from their carriers.
> For instructions, see "Installing an additional hard disk into the
> hot-plug HDD cage carrier" on page 51.

To install the easy-swap SATA HDD cage:

The easy-swap SATA HDD cage is an optional four-bay internal HDD enclosure without a SATA backplane board.

1   Observe the ESD precautions and pre-installation instructions described on page 33.

2   Remove the HDD cage bay cover. See page 37.

3   Remove the screw that secures the cover to the empty HDD bay, then detach the cover.
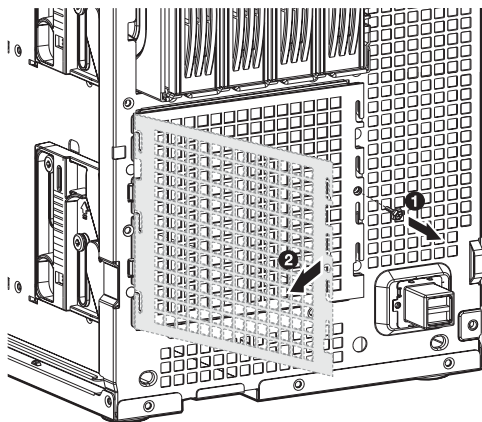
4   Install the easy-swap cage.

(1) Slide the cage into the chassis. The cage is locked to the chassis
     with an audible click.
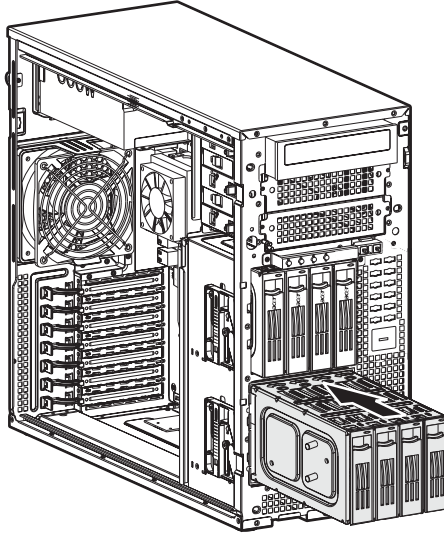
(2) Locate and attach the power **(1)** and SATA **(2)** cables to their
     corresponding connectors on the hard drives and SATA RAID
     controller.
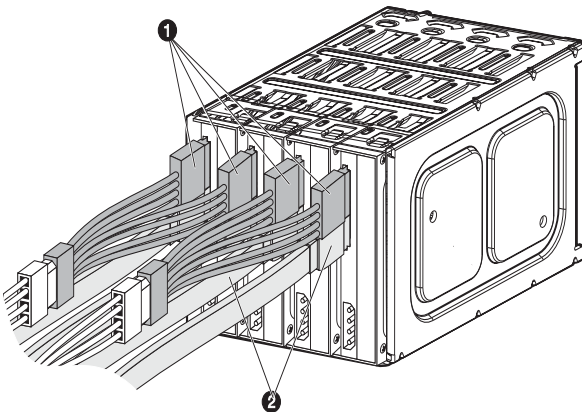
5   Observe the post-installation instructions described on page 34.

> 🔑 -
>
> **Important:** When you are removing the easy-swap cage from the chassis, make sure to first remove all cables attached to the hard disks.

6   Change the RAID configuration of your hard disk. For details on how to change the RAID configuration of your hard disk, go to "Appendix C: SCSI RAID configuration" on page 147.

Removing the four-bay hot-plug HDD cage

1   Observe the ESD precautions and pre-installation instructions described on page 33.

2   Disconnect the data and power cables from the backplane board.

3   Move the release slider all the way up to eject the hot-plug HDD cage **(1)**.

4   Remove the cage from the HDD bay **(2)**.
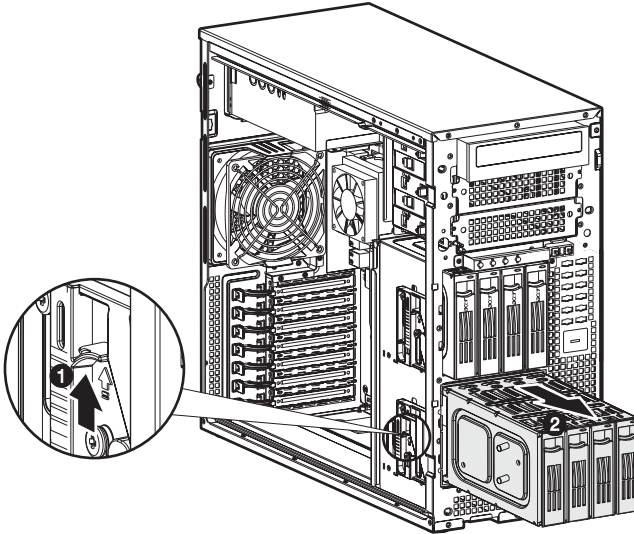
5   Observe the post-installation instructions described on page 34.

Installing an additional hard disk into the hot-plug HDD cage carrier

![Note icon] **Note:** To purchase a hard disk carrier, contact your local Acer representative or order directly from http://www.acer.com/.

![Important icon] **Important:** You need not remove the four-bay hot-plug HDD cage from the chassis to install a hard disk into its carrier.

1   Carefully pull out the hard disk carrier cover **(1)**.
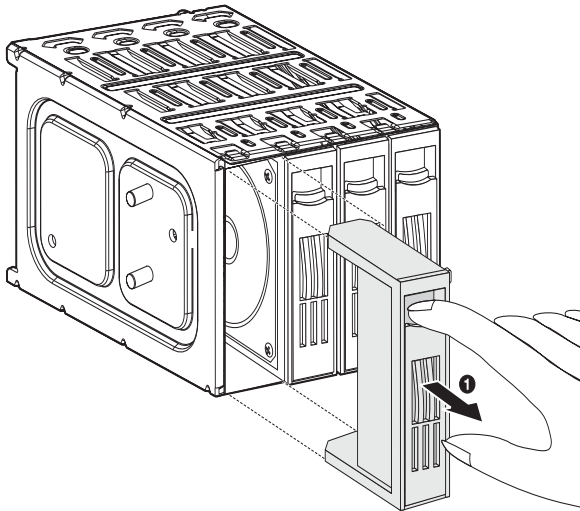
2   Install a hard disk on the hard disk carrier **(1)**, then secure it with
     the four screws that came with the hard disk carrier **(2)**.
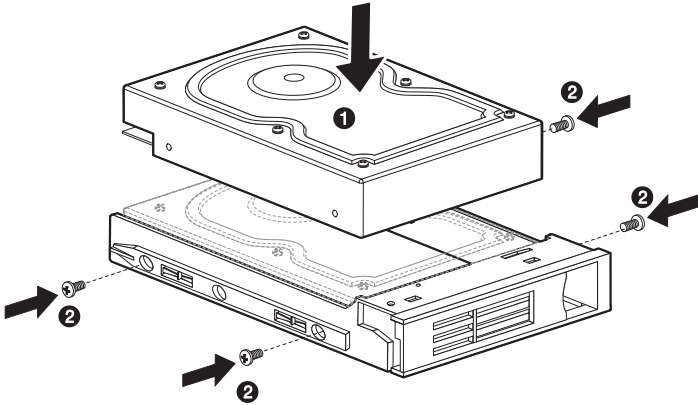
3   Insert the new hard disk carrier into the cage with the lever still
     extended **(1)**.

4   Make sure that the drive is properly inserted before closing the
     lever, then push the lever back until it clicks into place **(2)**. .
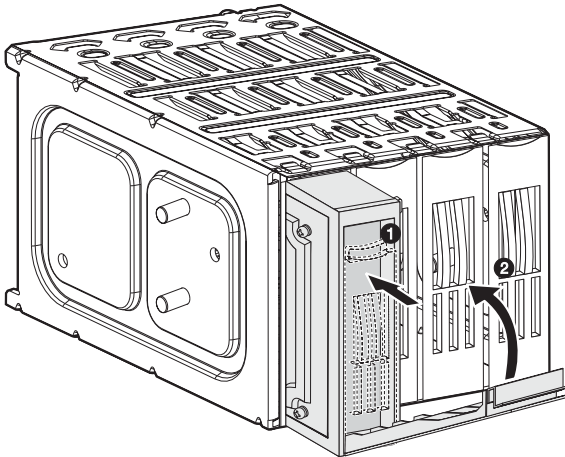
Replacing the CD-ROM drive

1   Observe the ESD precautions and pre-installation instructions
    described on page 33.

2   Disconnect the power and IDE cables from the old drive.

3   Push the lever in the direction of the unlock icon 🔓 **(1)**, then pull
    the drive out of the chassis **(2)**.
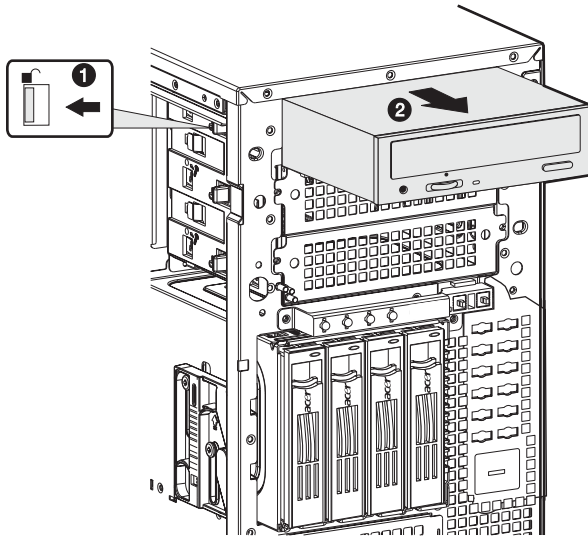
4   Install a new 5.25-inch drive into the drive bay **(1)**, then push the
     lever in the direction of the lock icon 🔒 **(2)**.
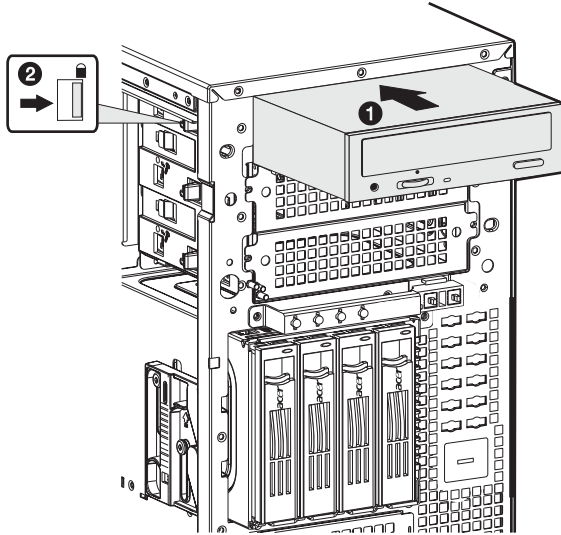
5   Connect the power and IDE cables to the new drive.
6   Observe the post-installation instructions described on page 34.

Installing 5.25-inch drives

The two empty 5.25-inch drive bays allow you to install additional drives such as another backup hard drive, CD-ROM drive, or a tape drive. These options provide the system with additional storage capacity.

To install a 5.25-inch tape drive:

1 Observe the ESD precautions and pre-installation instructions described on page 33.

2 Remove the two screws that secure the cover to the empty 5.25-inch drive bay **(1)**, then detach the cover **(2)**.
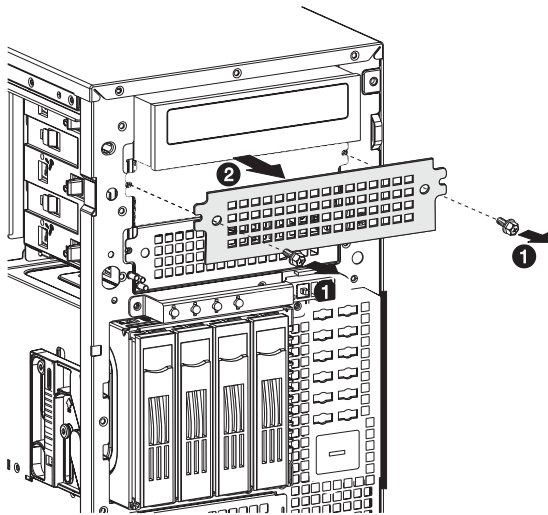
3   Install a tape drive into the drive bay **(1)**, then push the lever in
     the direction of the lock icon 🔒 **(2)**.
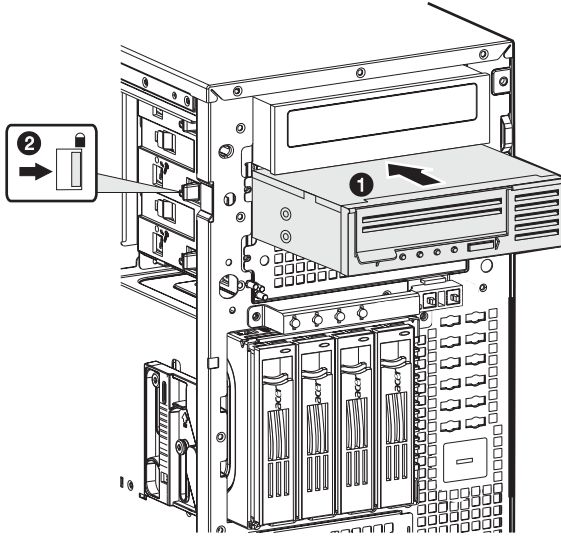
4   Connect the power and IDE cables to the tape drive.
5   Observe the post-installation instructions described on page 34.

Upgrading the processor

This section includes instructions for installing and removing a processor and heat sink fan (HSF) assembly.

To install the CPU:

The mainboard has two 940-pin processor socket that support AMD Opteron™ processors. The system ships out with only a single AMD Opteron processor installed leaving one CPU socket empty. You have the option to purchase an extra CPU for the system.

> **Important:** When installing an additional CPU, make sure the CPU has the same stepping and running at the same frequency specifications as the default CPU.

1   Observe the ESD precautions and pre-installation instructions described on page 33.

2   Locate an empty CPU socket on the mainboard.

3   Pull the CPU socket retainer lever to a fully open, upright position.

4   Remove the CPU from its protective packaging.

5   Align the CPU with the socket, making sure that pin 1 (indicated by the notched corner) of the CPU connects to hole 1 of the socket (on the bottom right corner), then insert the CPU into the socket **(1)**.

6   Press the retainer lever down to lock the CPU in place **(2)**.
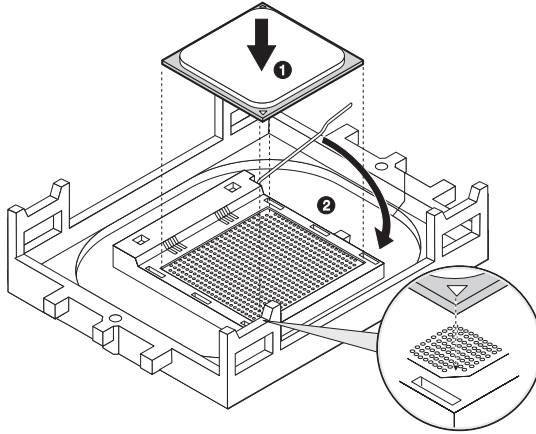
To install the HSF assembly:

1   Apply thermal grease.

     Apply approximately 0.1ml of the thermal grease compound to
     the top of the CPU.

2   Install the heat sink fan assembly

     (1) Move the handle of the retaining clip slightly in a direction
          away from the heat sink.

     (2) Align the heat sink fan assembly to the heat sink base **(1)**.

     Note: Make sure to install both sides of the retaining clips.

     (3) Secure the retaining clip to the tabs in the heat sink base by
          aligning the clip holes over the tabs **(2)**.

(4) Secure the retaining clip back toward the heat sink base **(3)**.
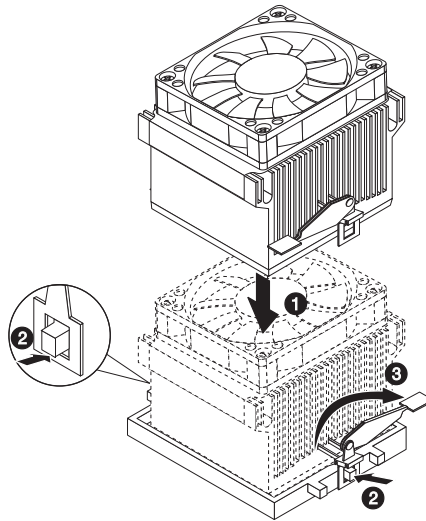
(5) Connect the CPU fan cable to its mainboard connector. Refer to "Mainboard layout" on page 14 for the location of the CPU fan connector.

3 Observe the post-installation instructions described on page 34.

To remove the HSF assembly:

> 🔑 --
> **Important:** Before removing a CPU from the mainboard, make
> sure to create a backup file of all important data.

1 Observe the ESD precautions and pre-installation instructions
   described on page 33.

> ⚡ --
> **Warning! The heat sink becomes very hot when the system
> is on. NEVER touch the heat sink with any metal or with
> your hands.**

2 Disconnect the CPU fan cable from its mainboard connector.

3 Disengage the retaining clip from the heat sink base **(1)**.

4 Release the clips from the tab on the heat sink base **(2)**.

5 Pull the heat sink fan assembly away from the CPU **(3)**.
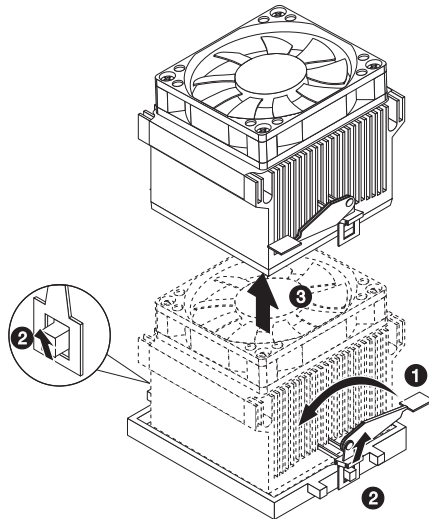
6 Place the heat sink fan assembly upside down on a flat surface.

> 🖈 --
> **Note:** Wipe off the thermal grease from both the heat sink-fan
> assembly and CPU using an alcohol pad.

To remove the CPU:

1   Pull the CPU socket retainer lever to the fully open, upright position **(1)**.

2   Pull out the CPU from the socket **(2)**.
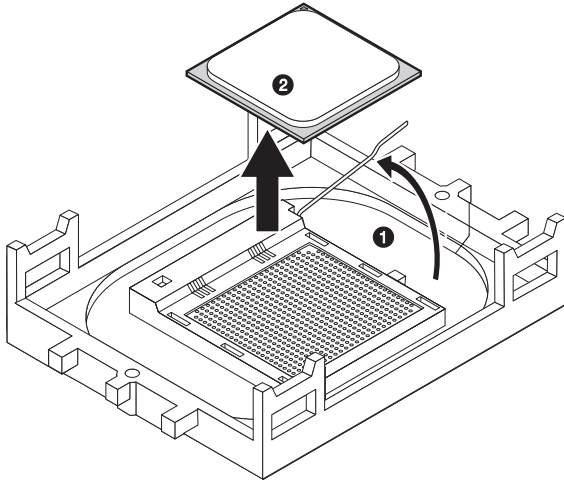
Upgrading the system memory

This section includes instructions for removing and installing a DIMM (dual in-line memory module).

Altos G5350 has eight DIMM slots. Each CPU controls four DIMM slots. The DIMM slots support dual channel DDR -33 and DDR-400 registered ECC memory modules.

Important: When you are using a single-processor server, you can install either a single DIMM into the DIMM 2 slot or a pair of identical modules into the DIMM 1 and 2 or DIMM 3 and 4 slots.

The DIMM 5 to DIMM 8 slots are enabled when a second CPU is installed on the mainboard. For instructions on how to install an additional CPU, see "To install the CPU:" on page 57.

When you are using a dual-processor server, you can employ a single DIMM configuration by installing a module in the DIMM 2 or DIMM 6 slots.

DIMM population guidelines

> **Important:** For the system to function, DIMM modules must be installed or removed in matched pairs, following the slot sequence listed below. DIMM modules of the same type, size and manufacturer must be installed in the same colored DIMM slots.

- CPU 1 — Populate DIMM slots 1 and 2 first, followed by slots 3 and 4.
- CPU 2 — Populate DIMM slots 5 and 6 first, followed by slots 7 and 8.
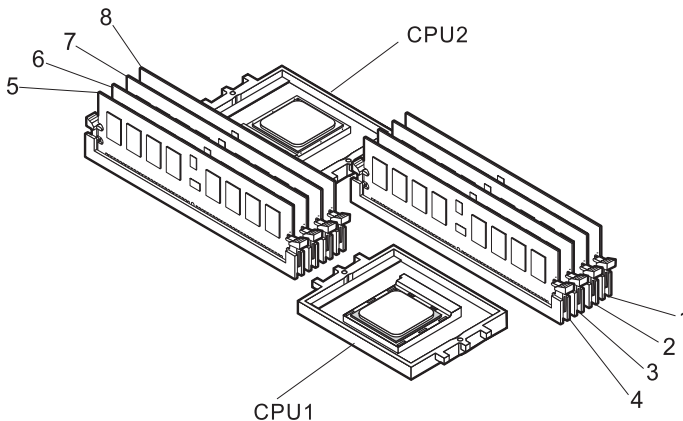
> **Note:** Refer to "Mainboard layout" on page 14 for the location of the DIMM slots for each processor.

The table below lists the supported memory installation based on the processor configuration:

Single-processor configuration

CPU 1				CPU 2 (empty)			
DIMM 1	DIMM 2	DIMM 3	DIMM 4	DIMM 5	DIMM 6	DIMM 7	DIMM 8
	512 MB			—	—	—	—
	1 GB			—	—	—	—
	2 GB			—	—	—	—
512 MB	512 MB			—	—	—	—
1 GB	1 GB			—	—	—	—
2 GB	2 GB			—	—	—	—
512 MB	512 MB	512 MB	512 MB	—	—	—	—
1 GB	1 GB	1 GB	1 GB	—	—	—	—
2 GB	2 GB	2 GB	2 GB	—	—	—	—

Dual-processor configuration

CPU 1				CPU 2			
DIMM 1	DIMM 2	DIMM 3	DIMM 4	DIMM 5	DIMM 6	DIMM 7	DIMM 8
	512 MB						
	1 GB						
	2 GB						
	512 MB				512 MB		
	1 GB				1 GB		
	2 GB				2 GB		
512 MB	512 MB				512 MB		
1 GB	1 GB				1 GB		
2 GB	2 GB				2 GB		
512 MB	512 MB			512 MB	512 MB		
1 GB	1 GB			1 GB	1 GB		
2 GB	2 GB			2 GB	2 GB		
512 MB	512 MB	512 MB	512 MB	512 MB	512 MB		

CPU 1				CPU 2			
DIMM 1	DIMM 2	DIMM 3	DIMM 4	DIMM 5	DIMM 6	DIMM 7	DIMM 8
1 GB	1 GB	1 GB	1 GB	1 GB	1 GB		
2 GB	2 GB	2 GB	2 GB	2 GB	2 GB		
512 MB	512 MB	512 MB	512 MB	512 MB	512 MB	512 MB	512 MB
1 GB	1 GB	1 GB	1 GB	1 GB	1 GB	1 GB	1 GB
2 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB

To remove a DIMM:

Before you can install a new DIMM in a socket, remove first any previously installed DIMM from that socket.

> **Important:** Before removing any DIMM from the mainboard, make sure to create a backup file of all important data.

1   Observe the ESD precautions and pre-installation instructions described on page 33.

2   Locate the DIMM slots on the mainboard.

> **Important:** Refer to DIMM population guidelines for important information about requirements for removing DIMM modules.

3   Press the holding clips on both sides of the socket outward to release the DIMM.

4   Gently pull the DIMM upward to remove it from the socket .
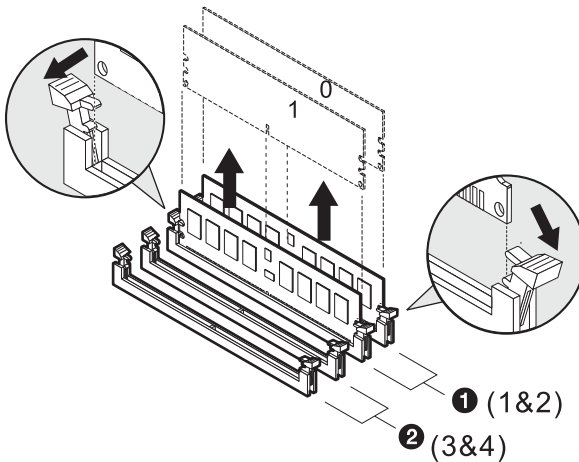
To install a DIMM:

⚡ **Warning! DIMM of the same type, size and manufacturer must be installed into the same colored DIMM slots.**

1 Observe the ESD precautions and pre-installation instructions described on page 33.

2 Locate the DIMM slots on the mainboard.

3 Open the clips on the socket.

4 Align then insert the DIMM into the socket.

5 Press the holding clips inward to lock the DIMM in place.

❶ (1&2)

❷ (3&4)
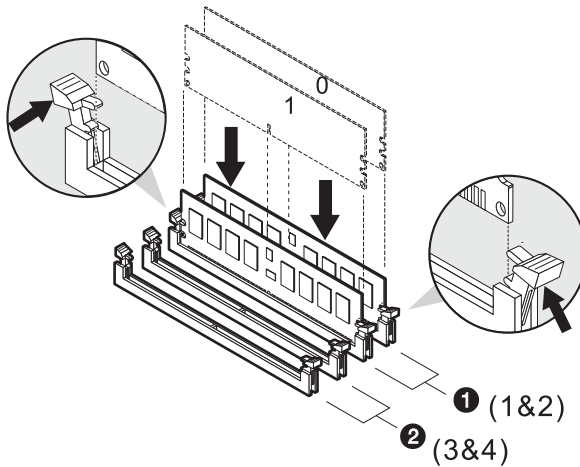
✐ **Note:** The DIMM slot is slotted to ensure proper installation. If you insert a DIMM but it does not fit easily into the socket, you may have inserted it incorrectly. Reverse the orientation of the DIMM and insert it again.

6 Observe the post-installation instructions described on page 34.

To reconfigure the system memory:

The system automatically detects the amount of memory installed. Run the BIOS setup to view the new value for total system memory and make a note of it.

Installing an expansion card

This section explains how to install an expansion card. The onboard expansion slots supports PCI (Peripheral Component Interconnect) and PCI-X cards.

To install an expansion card

1 Observe the ESD precautions and pre-installation instructions described on page 33.

2 Locate an empty expansion slot on the mainboard.

> **Note:** The SCSI RAID controller shown below is for your reference only. To purchase a SCSI RAID controller, contact your local Acer representative or order directly from http://www.acer.com/.

3 Press the slot release latch outward **(1)**.

4 Pull out the slot cover **(2)**. Store it for reassembly later.

5 Remove the expansion card from its protective packaging.

6 Align the card in the empty slot.

7 Insert the card into the selected slot **(3)**. Make sure that the card is properly seated.

8   Press the PCI slot release latch on the rear panel of the server **(4)**.
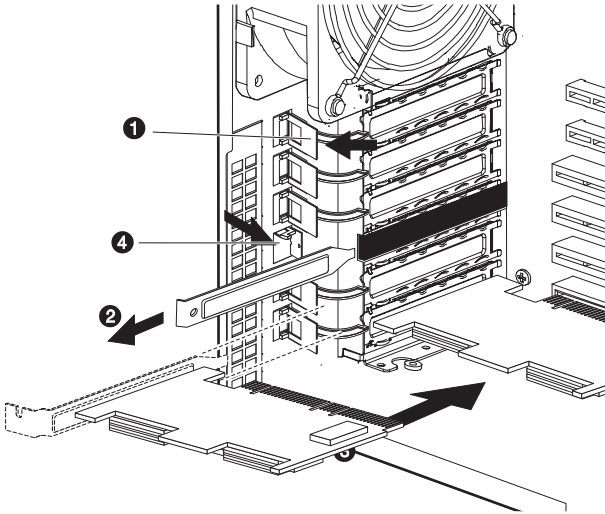
9   Observe the post-installation instructions described on page 34.

> **Note:** When you turn on the system, the BIOS setup automatically detects and assigns resources to the new device (applicable only to Plug-and-Play expansion cards).

Installing a SCSI module

This section explains how to install a SCSI module.

To install a SCSI module

1 Observe the ESD precautions and pre-installation instructions described on page 33.

2 Locate the SCSI module connector on the mainboard.

3 Remove the three SCSI module screws on the mainboard.

4 Align **(1)**, then insert **(2)** the shorter edge of the SCSI module to the connector firmly and evenly.
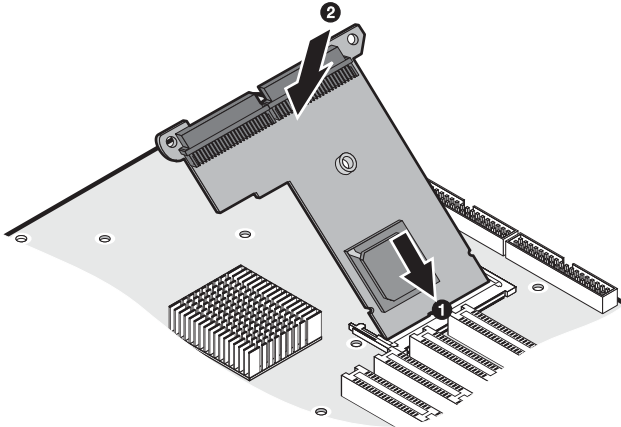
5   Secure the card to the mainboard with three screws you removed
     earlier **(3)**.
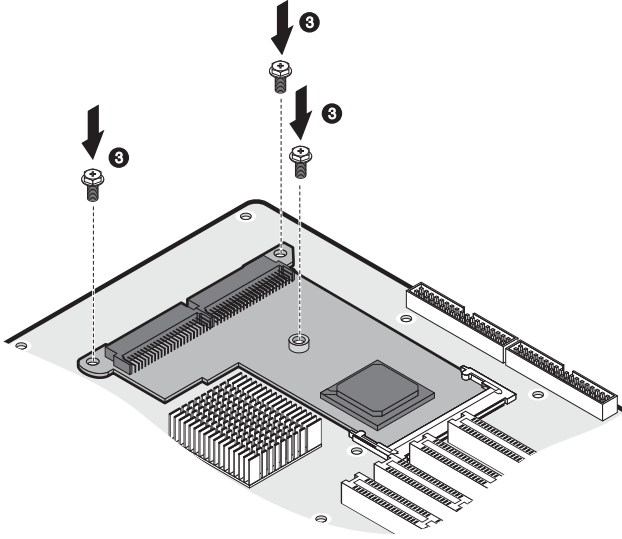
6   Observe the post-installation instructions described on page 34.

Note: When you turn on the system, the BIOS setup automatically
detects and assigns resources to the new device.

Installing a power supply module

To install a hot-swap power supply module

The Altos G5350 power subsystem consists of two hot-swap power supply module bays that accept 550-watt hot-swap redundant power supply modules. The system ships out with only a single power supply module leaving one power supply module bay empty. You have the option to purchase an extra power supply module to provide the system with a redundant power source. A redundant power configuration enables a fully-configured system to continue running even if one power supply module fails.

WARNING! To reduce the risk of personal injury or damage to the equipment, the installation of power supply modules should be referred to individuals who are qualified to service server systems and are trained to deal with equipment capable of generating hazardous energy levels.

WARNING! To reduce the risk of personal injury from hot surfaces, observe the thermal labels on each power supply module. You can also consider wearing protective gloves.

WARNING! To reduce the risk of personal injury from electric shock hazards, do not open the power supply modules. There are no serviceable parts inside the module.

Caution! Electrostatic discharge can damage electronic components. Make sure that you are properly grounded before handling a power supply module.

1   Remove the securing the cover of the empty power supply module
     bay.

     Note: if the system ships out with a screw on the securing cover,
     remove the screw first then detach the cover.
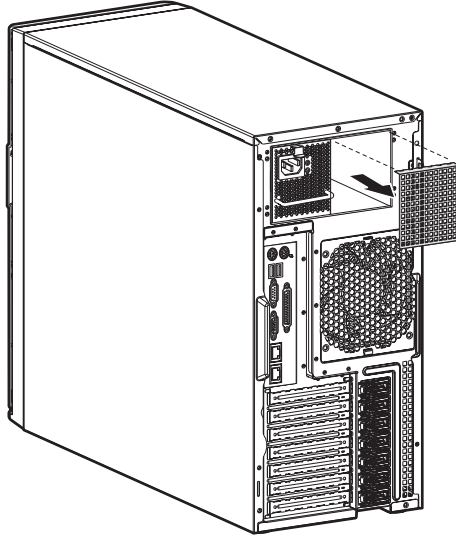
2   Hold the handle on front of the power supply module while
     pressing your thumb on the release latch. Slide the power supply
     module into the empty bay until you feel resistance.
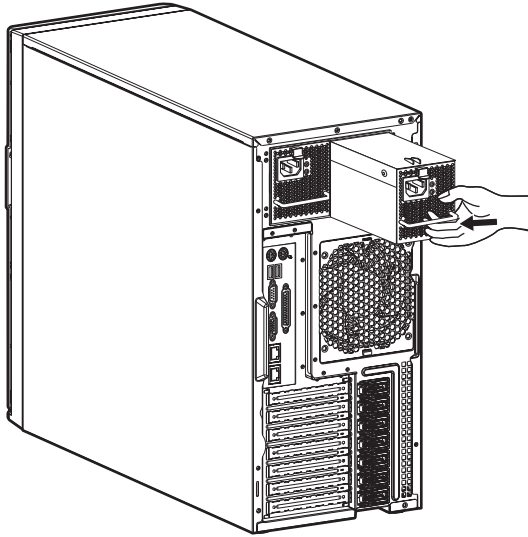
3   Press the module handle to secure the power supply module to its
     bay.

4   Verify that the power indicators on the main power supply and on
     the newly installed redundant power supply are illuminated
     (green).

4 BIOS setup

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

BIOS setup

BIOS setup is a hardware configuration program built into the system's Basic Input/Output System (BIOS). Since most systems are already properly configured and optimized, there is no need to run this utility. You will need to run this utility under the following conditions:

• When changing the system configuration

• When a configuration error is detected by the system and you are prompted ("Run Setup" message) to make changes to the BIOS setup

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.

• When redefining the communication ports to prevent any conflicts

• When making changes to the Power Management configuration

• When changing the password or making other changes to the security setup

BIOS setup loads the configuration values in a battery-backed nonvolatile memory called CMOS RAM. This memory area is not part of the system RAM which allows configuration data to be retained when power is turned off.

Before you run BIOS setup, make sure that you have saved all open files. The system reboots immediately after you close the setup.

Entering BIOS setup

Power on the server to start the system POST process. During bootup, press **F2** to enter the BIOS setup screen.

📝 --
Note: You must press **F2** while the system is booting. This key combination does not work during any other time.

There are several tabs on the setup screen corresponding to the six major BIOS menus:

- Main
- Advanced
- Power
- Boot
- Security
- Exit

The parameters on the screens shown in this User's Guide display default system values. These values may not be the same as those in the system.

Note the following reminders when moving around the setup screen:

- Use the **Left** and **Right** arrow keys to move to the next page or to return to the previous screen.
- Use the **Up** and **Down** arrow keys to select an item.
- Use the **+** and **-** keys to select an option.

📝 --
Note: You can configure a parameter that is enclosed in square brackets. Grayed-out items have fixed settings and are not user-configurable.

- Use the **Tab** key to select a field.

- Use the **Enter** key to display a submenu screen.

    🔘 --

    Note: When a parameter is preceeded by a **>**, it means that a submenu screen is available.

- Press **F1** for General Help on using the BIOS setup.
- Press **F10** to save changes and close the BIOS setup.
- Press **Esc** to close the BIOS setup.

In the descriptive table following each of the screen illustrations, settings in **boldface** are the default and suggested parameter settings.

Main

The Main menu displays basic and important information about the system. These information are necessary for troubleshooting and may be required when asking for technical support. These entries are for your reference only and are not user-configurable.

The last two parameters on the screen lets you define the sytem's time and date settings. 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 and connected, the clock continues to keep the date and time accurately even when the power is off.

```
                         PhoenixBIOS Setup Utility
   Main    Advanced    Power    Boot    Security    Exit
+---------------------------------------------+---------------------------+
|                                             |    Item Specific Help     |
|   BIOS Date      05/12/05                    |---------------------------|
|   BIOS Version   D4a                         |                           |
|                                             |  <Tab>, <Shift-Tab>, or   |
|   Processor                                  |  <Enter> selects field.   |
|   Type           AMD Opteron(tm) Processor 240|                          |
|   Speed          1400 MHz                     |                          |
|   Count          2                            |                          |
|                                             |                           |
|   System Memory                              |                          |
|   Size:          2048 MB                      |                          |
|                                             |                           |
|                                             |                           |
|   System Time:   [07:07:40]                   |                          |
|   System Date:   [01/08/2001]                 |                          |
|                                             |                           |
|                                             |                           |
|                                             |                           |
|                                             |                           |
+---------------------------------------------+---------------------------+
  F1   Help   ^v  Select Item   -/+   Change Values    F9   Setup Defaults
  Esc  Exit   <>  Select Menu   Enter Select > Sub-Menu F10  Save and Exit
```

Parameter	Description
BIOS Date	Date when the BIOS setup was created.
BIOS Version	Version of the BIOS setup utility.
Processor Type	Type of processor currently installed in the server.

Parameter	Description
Processor Speed	The processor speed is the speed at which a microprocessor executes instructions. Clock speeds are expressed in megahertz (MHz), with 1 MHz being equal to 1 million cycles per second. The faster the clock, the more instructions the CPU can execute per second.
Processor Count	Indicates the number of processors currently installed in the server.
System Memory Size	Indicates the total amount of onboard 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.
System 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 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

Advanced

The Advanced menu contains parameter values that define how the
system behaves on startup.

⚡ -
**Warning! Be cautious in setting parameter values in the
Advanced menu as any incorrect value may cause the
system to malfunction.**

Press **Enter** to enter the submenu screen of the parameters shown in
the screen below.

```
                      PhoenixBIOS Setup Utility
     Main     Advanced     Power     Boot     Security     Exit
   +------------------------------------+-------------------------+
   |                                    |   Item Specific Help    |
   | > CPU Configuration                |-------------------------|
   | > Memory Configuration             |                         |
   | > IDE Configuration                |                         |
   | > Floppy Configuration             |                         |
   | > Chipset Configuration            |                         |
   | > I/O Device Configuration         |                         |
   | > PCI Configuration                |                         |
   | > USB Configuration                |                         |
   | > Server Management Configuration  |                         |
   | > Event Log Configuration          |                         |
   | > Serial Console Configuration     |                         |
   |                                    |                         |
   |                                    |                         |
   |                                    |                         |
   |                                    |                         |
   |                                    |                         |
   |                                    |                         |
   |                                    |                         |
   +------------------------------------+-------------------------+
    F1   Help    ^v  Select Item  -/+    Change Values   F9   Setup Defaults
    Esc  Exit    <>  Select Menu  Enter  Select > Sub-Menu  F10  Save and Exit
```

CPU Configuration

The CPU Configuration submenu displays CPU settings such as type, actual speed, cache size and other CPU related settings.

```
                      PhoenixBIOS Setup Utility
         Advanced
+-----------------------------------------+---------------------------+
|             CPU Configuration           |    Item Specific Help     |
|-----------------------------------------+---------------------------|
|                                         |                           |
|   Processor Type    AMD Opteron(tm) Processor 24| Configures the MP  |
|   Processor Speed   1400 MHz            | Specification revision    |
|                                         | level.  Some operating    |
|   CPU Socket 1                          | systems will require      |
|   CPU ID            0F58                | 1.1 for compatibility     |
|   Level 1 Cache     128 KB              | reasons.                  |
|   Level 2 Cache     1024 KB             |                           |
|   CPU Socket 2                          |                           |
|   CPU ID            0F58                |                           |
|   Level 1 Cache     128 KB              |                           |
|   Level 2 Cache     1024 KB             |                           |
|                                         |                           |
|   Multiprocessor Spec   [1.4]           |                           |
|   Power Now         [Enabled]           |                           |
|   NX Support        [Enabled]           |                           |
|                                         |                           |
+-----------------------------------------+---------------------------+
  F1   Help   ^v  Select Item  -/+   Change Values     F9   Setup Defaults
  Esc  Exit   <>  Select Menu  Enter Select > Sub-Menu  F10  Save and Exit
```

Parameter	Description	Option
Processor Type	Type of processor currently installed in the server.	
Processor Speed	The processor speed is the speed at which a microprocessor executes instructions. Clock speeds are expressed in megahertz (MHz), with 1 MHz being equal to 1 million cycles per second. The faster the clock, the more instructions the CPU can execute per second.	
CPU Socket1	Indicates a processor is currently installed in the CPU 1 socket. Refer to "Mainboard layout" on page 14 for the location of the CPU 1 socket.	

Parameter	Description	Option
CPU ID	ID number of the CPU.	
Level 1 Cache	Total amount of first-level cache memory or the internal fast-accessed memory size (i.e., the memory integrated into the CPU).	
Level 2 Cache	Total amount of the second-level cache memory that comes with the CPU. The available cache sizes are 256 and 512 KB.	
CPU Socket2	Indicates a processor is currently installed in the CPU 2 socket. Refer to "Mainboard layout" on page 14 for the location of the CPU 2 socket.	
CPU ID	ID number of the CPU.	
Level 1 Cache	Total amount of first-level cache memory or the internal fast-accessed memory size (i.e., the memory integrated into the CPU).	
Level 2 Cache	Total amount of the second-level cache memory that comes with the CPU. The available cache sizes are 256 and 512 KB.	
Multiprocessor Spec	Select a version of the multiprocessor specifications.	**1.4** 1.1
Power Now	Enables or disables the processor power management feature.	**Enabled** Disabled
NX Support	The no execute bit parameter allows you to enable or disable the DEP (data execution prevention).	**Enabled** Disabled

Memory Configuration

The Memory Configuration submenu displays the type and size of DRAM installed in DIMM slots 1, 2, 3, 4, 5, 6, 7, and 8. The Not Installed setting indicates that there is no DDR DRAM installed.

```
                    PhoenixBIOS Setup Utility
      Advanced
+-------------------------------------------+----------------------+
I              Memory Configuration          I   Item Specific Help I
I-------------------------------------------I----------------------I
I                                           I                      I
I   DIMM 1:  1024 MB                         I All items on this menu I
I   DIMM 2:  1024 MB                         I cannot be modified in I
I   DIMM 3:  Not Install                     I user mode.  If any    I
I   DIMM 4:  Not Install                     I items require changes, I
I   DIMM 5:  Not Install                     I please consult your   I
I   DIMM 6:  Not Install                     I system Supervisor.    I
I   DIMM 7:  Not Install                     I                      I
I   DIMM 8:  Not Install                     I                      I
I                                           I                      I
+-------------------------------------------+----------------------+
 F1   Help  ^v  Select Item  -/+  Change Values    F9   Setup Defaults
 Esc  Exit  <>  Select Menu  Enter  Select > Sub-Menu  F10  Save and Exit
```

IDE Configuration

The IDE Configuration submenu lets you define the parameter settings related to the hard disk/s.

```
                      PhoenixBIOS Setup Utility
          Advanced
+---------------------------------------------+------------------------+
|              IDE Configuration              |   Item Specific Help   |
|---------------------------------------------+------------------------|
|                                             |                        |
|  > Primary Master     [None]                |                        |
|  > Primary Slave      [None]                |                        |
|  > Secondary Master   [None]                |                        |
|  > Secondary Slave    [None]                |                        |
|                                             |                        |
|                                             |                        |
|                                             |                        |
|                                             |                        |
|                                             |                        |
|                                             |                        |
|                                             |                        |
|                                             |                        |
|                                             |                        |
|                                             |                        |
|                                             |                        |
+---------------------------------------------+------------------------+
  F1   Help   ↑↓  Select Item  -/+   Change Values    F9   Setup Defaults
  Esc  Exit   ◇   Select Menu  Enter Select > Sub-Menu F10  Save and Exit
```
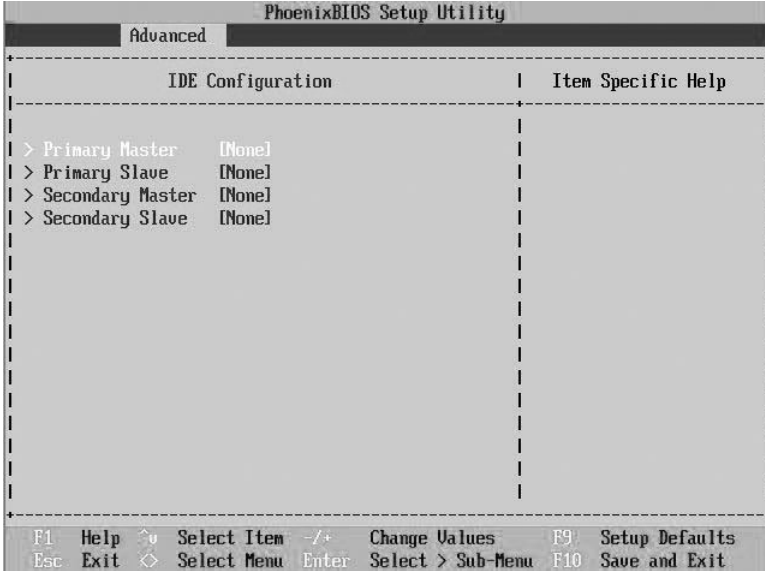
Parameter	Description	Option
Primary IDE Master	Specifies the current configuration of the IDE device connected to the master port of the primary IDE channel. Press **Enter** to access the Primary Master submenu.	
Primary IDE Slave	Specifies the current configuration of the the IDE device connected to the slave port of the primary IDE channel. Press **Enter** to access the Primary Slave submenu.	

Parameter	Description	Option
Secondary IDE Master	Specifies the current configuration of the IDE device connected to the master port of the secondary IDE channel. Press **Enter** to access the Secondary Master submenu.	
Secondary IDE Slave	Specifies the current configuration of the IDE device connected to the slave port of the secondary IDE channel. Press **Enter** to access the Secondary Slave submenu.	

Primary/Secondary/Third/Fourth IDE Master/Slave

These items let you select the IDE hard disk parameters that the system supports.

```
                        PhoenixBIOS Setup Utility
        Advanced
+-------------------------------------------+---------------------------+
|         Primary Master  [None]            |    Item Specific Help     |
|-------------------------------------------+---------------------------|
|                                           |                           |
| Type:                       [Auto]        | User = you enter          |
|                                           | parameters of hard-disk   |
| Multi-Sector Transfers:     [Disabled]    | drive installed at this   |
| LBA Mode Control:           [Disabled]    | connection.               |
| 32 Bit I/O:                 [Disabled]    | Auto = autotypes          |
| Transfer Mode:              [Standard]    | hard-disk drive           |
| Ultra DMA Mode:             [Disabled]    | installed here.           |
| SMART Device Monitoring:    [Enabled]     | 1-39 = you select         |
|                                           | pre-determined  type of   |
|                                           | hard-disk drive           |
|                                           | installed here.           |
|                                           | CD-ROM = a CD-ROM drive   |
|                                           | is installed here.        |
|                                           | ATAPI Removable =         |
|                                           | removable disk drive is   |
|                                           | installed here.           |
+-------------------------------------------+---------------------------+
  F1   Help   ^v  Select Item  -/+   Change Values     F9    Setup Defaults
  Esc  Exit   <>  Select Menu  Enter Select > Sub-Menu  F10  Save and Exit
```

Parameter	Description	Option
Type	Selects the drive type.	**Auto** None CD-ROM ATAPI Removable IDE Removable User
Multi-Sector Transfers	Selects the Multi-Sector transfer mode.	**16 Sectors** Disabled 2 Sectors 4 Sectors 8 Sectors

Parameter	Description	Option
LBA Mode Control	Selects the hard disk drive translation method. For drivers with more than 504 MB, LBA mode is necessary.	**Enabled** Disabled
32-bit I/O	Enables or disables the 32-bit data transfer function	**Disabled** Enabled
Transfer Mode	Select a transfer mode to enhance hard disk performance.	**Fast PIO 4** Standard Fast PIO 1 Fast PIO 2 Fast PIO 3 FPIO 3/DMA 1 FPIO 4/DMA 2
Ultra DMA Mode	Selects DMA (Direct Memory Access) mode.	**Mode 6** Disabled Mode 0 Mode 1 Mode 2 Mode 3 Mode 4 Mode 5
SMART Device Monitoring	Enables or disables the SMART (Self-Monitoring, Analysis and Reporting Technology) function of the internal hard disk. If Auto is selected, BIOS setup will enable the S.M.A.R.T function if the drive supports it.	**Enabled** Disabled

Floppy Configuration

The Floppy Configuration submenu displays the type of floppy drive installed in the server.

```
                      PhoenixBIOS Setup Utility
            Advanced
+----------------------------------------+-------------------------+
|         Floppy Configuration           |   Item Specific Help    |
|----------------------------------------|-------------------------|
|                                        |                         |
| Legacy Diskette A:    [1.44/1.25 MB  3/"] | Selects floppy type. |
|                                        | Note that 1.25 MB 3/"   |
|                                        | references a 1024 byte/ |
|                                        | sector Japanese media   |
|                                        | format.  The 1.25 MB,   |
|                                        | 3/" diskette requires   |
|                                        | a 3-Mode floppy-disk    |
|                                        | drive.                  |
|                                        |                         |
|                                        |                         |
|                                        |                         |
|                                        |                         |
|                                        |                         |
|                                        |                         |
|                                        |                         |
|                                        |                         |
+----------------------------------------+-------------------------+
 F1   Help   ^v  Select Item  -/+   Change Values    F9   Setup Defaults
 Esc  Exit   <>  Select Menu  Enter Select > Sub-Menu F10  Save and Exit
```

Parameter	Description	Option
Legacy Diskette A	Floppy disk drive type	**1.44/1.25 MB, 3.5-inch** Disabled

Chipset Configuration

The Chipset Configuration submenu lets you set the memory interleave and node interleave settings.

```
                      PhoenixBIOS Setup Utility
          +-----------+
          | Advanced  |
+---------+-----------+-------------------------------------------------+
|                                         |                             |
|         Chipset Configuration           |     Item Specific Help      |
|-----------------------------------------|-----------------------------|
|                                         |                             |
| Dram Bank Interleave:      [Auto]       | Interleave memory blocks    |
| Node Memory Interleave:    [Disabled]   | across dram chip            |
| NMI Assert                 [Enabled]    | selects.                    |
|                                         | BIOS will AUTO detect       |
|                                         | capability on each Node.    |
|                                         |                             |
|                                         |                             |
|                                         |                             |
|                                         |                             |
|                                         |                             |
|                                         |                             |
|                                         |                             |
|                                         |                             |
|                                         |                             |
|                                         |                             |
+-----------------------------------------------------------------------+
  F1   Help   ↑↓  Select Item   -/+    Change Values    F9   Setup Defaults
  Esc  Exit   ◇   Select Menu   Enter  Select > Sub-Menu  F10  Save and Exit
```
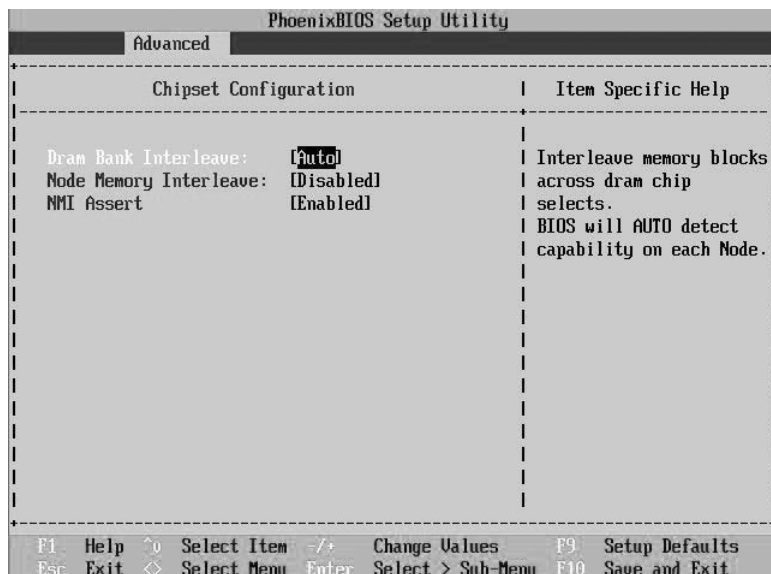
Parameter	Description	Option
DRAM Bank Interleave	Bank Interleave allows the memory controller to group two DIMM banks into one large array. If set to Auto, each node with two identical DIMMs is set up to use bank interleave.	**Auto** Disabled
Node Memory Interleave	Node based interleaving causes the system to group even numbers of nodes into one large array. If set to Auto and if all loaded nodes have the same amount of memory, the system is setup to use node interleave.	**Disabled** Auto

Parameter	Description	Option
NMI Asset	Enables or disables the PCI bus parity error support.	**Enabled** Disabled

I/O Device Configuration

The I/O Device Configuration submenu lets you define the parameter settings for the system's parallel and serial ports.

```
                    PhoenixBIOS Setup Utility
        Advanced
+------------------------------------------+---------------------------+
|      I/O Device Configuration            |    Item Specific Help     |
|------------------------------------------+---------------------------|
|                                          |                           |
| Serial port A:          [Enabled]        | Configure serial port A   |
|    Base I/O address/IRQ: [3F8/IRQ 4]     | using options:            |
| Serial port B:          [Auto]           |                           |
|                                          | [Disabled]                |
| Parallel port:          [Auto]           |    No configuration       |
|   Mode:                 [Output only]    |                           |
|                                          | [Enabled]                 |
|                                          |    User configuration     |
|                                          |                           |
|                                          | [Auto]                    |
|                                          |    BIOS or OS chooses      |
|                                          |    configuration          |
|                                          |                           |
|                                          | (OS Controlled)           |
|                                          |    Displayed when         |
|                                          |    controlled by OS       |
+------------------------------------------+---------------------------+
  F1   Help  ^v  Select Item  -/+  Change Values   F9   Setup Defaults
  Esc  Exit  <>  Select Menu  Enter  Select > Sub-Menu  F10  Save and Exit
```

Parameter	Description	Option
Serial Port A	When Enabled allows you to configure the serial port settings. When set to Auto allows the server's BIOS or OS to select a configuration. When set to Disabled, displays no configuration for the serial port.	**Enabled** Disabled Auto

Parameter	Description	Option
Base I/O address/IRQ	Indicates the serial port 1 address and IRQ setting.	**3F8/IRQ4** 2F8/IRQ3 3E8/IRQ4 2E8/IRQ3
Serial Port B	Indicates the serial port 2 address and IRQ setting.	**Auto** Disabled Enabled
Parallel Port	Indicates the parallel port address.	**Auto** Disabled Enabled
Mode	Sets the operation mode for the parallel port. When Bi-Directional, allows normal speed operation in a two way mode. EPP (Enhanced Parallel Port) allows bi-directional parallel port operation at maximum speed. ECP (Extended Capabilities Port) allows parallel port to operate in bi-directional mode and at a speed higher than the maximum data transfer rate.	**Output only** Bi-Directional EPP ECP

PCI Configuration

The PCI Configuration submenu lets you specify settings that are
related to the onboard controllers.

```
                        PhoenixBIOS Setup Utility
          Advanced
+------------------------------------------------------------------+
I                PCI Configuration            I   Item Specific Help I
I------------------------------------------I-------------------------I
I                                          I                         I
I  Onboard NIC ROM:    [Enabled]           I  Set Onboard LAN        I
I  Onboard SCSI ROM:   [Enabled]           I  PXE Function           I
I                                          I  Disable/Enable         I
I                                          I                         I
I                                          I                         I
I                                          I                         I
I                                          I                         I
I                                          I                         I
I                                          I                         I
I                                          I                         I
I                                          I                         I
I                                          I                         I
I                                          I                         I
I                                          I                         I
I                                          I                         I
+------------------------------------------------------------------+
  F1   Help   ^v  Select Item   -/+   Change Values    F9   Setup Defaults
  Esc  Exit   <>  Select Menu  Enter  Select > Sub-Menu  F10  Save and Exit
```
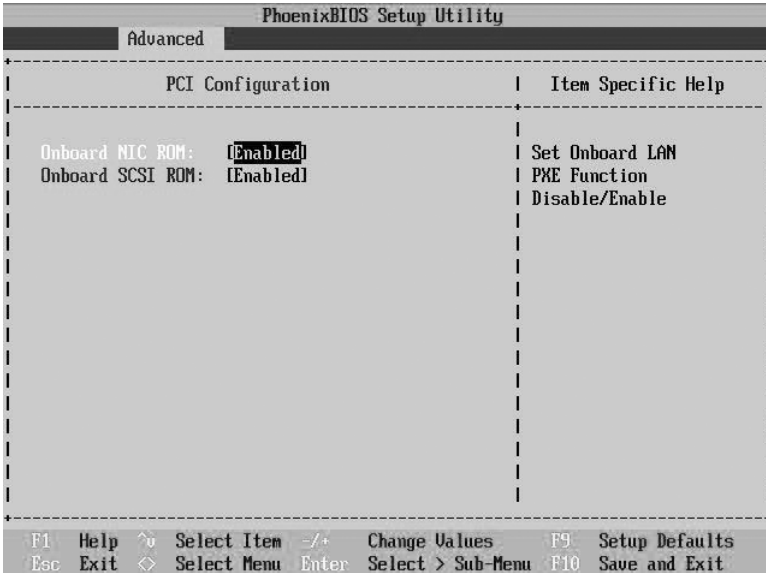
Parameter	Description	Option
Onboard NIC ROM	Enables or disables the onboard LAN PXE function.	**Disabled** Enabled
Onboard SCSI Device	Enables or disables the onboard SCSI controller.	**Enabled** Disabled

USB Configuration

The USB Configuration submenu lets you specify settings for USB devices.

```
                    PhoenixBIOS Setup Utility
        +----------+
        | Advanced |
+-------+          +----------------------------------------------------+
|               USB Configuration         |    Item Specific Help     |
|-----------------------------------------|                           |
|                                         |                           |
| Onboard USB controller    [Enabled]     | Enables or Disables the   |
| USB BIOS Legacy Support:   [Enabled]    | USB hardware (Disabled    |
|                                         | resources will be freed   |
|                                         | up for other uses)        |
|                                         |                           |
|                                         |                           |
|                                         |                           |
|                                         |                           |
|                                         |                           |
|                                         |                           |
|                                         |                           |
|                                         |                           |
|                                         |                           |
|                                         |                           |
|                                         |                           |
|                                         |                           |
+-----------------------------------------+---------------------------+
| F1   Help   ↑↓  Select Item   -/+   Change Values    F9   Setup Defaults  |
| Esc  Exit   ◇   Select Menu  Enter  Select > Sub-Menu F10  Save and Exit   |
```
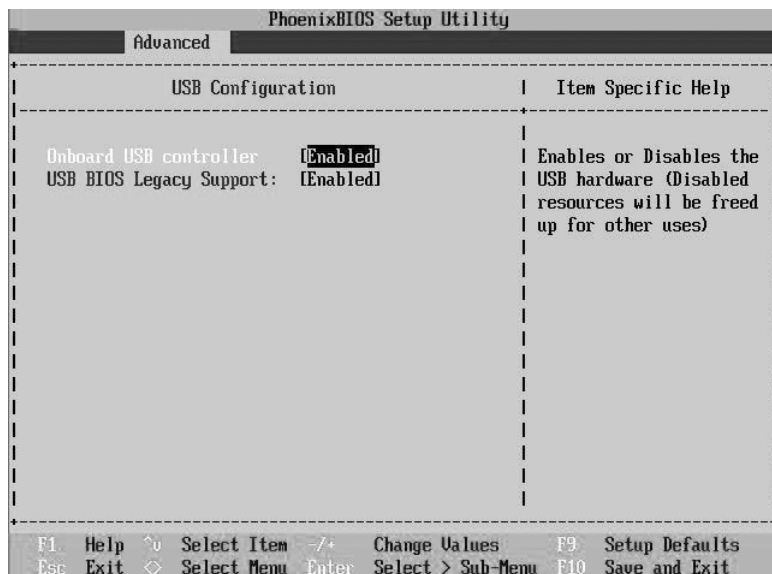
Parameter	Description	Option
Onboard USB controller	Enables or disables the onboard USB controller.	**Enabled** Disabled
USB BIOS Legacy Support	Enable this parameter when you intend to use a USB device in a Non-Plug and Play operating system, such as DOS.	**Enabled** Disabled

Server Management Configuration

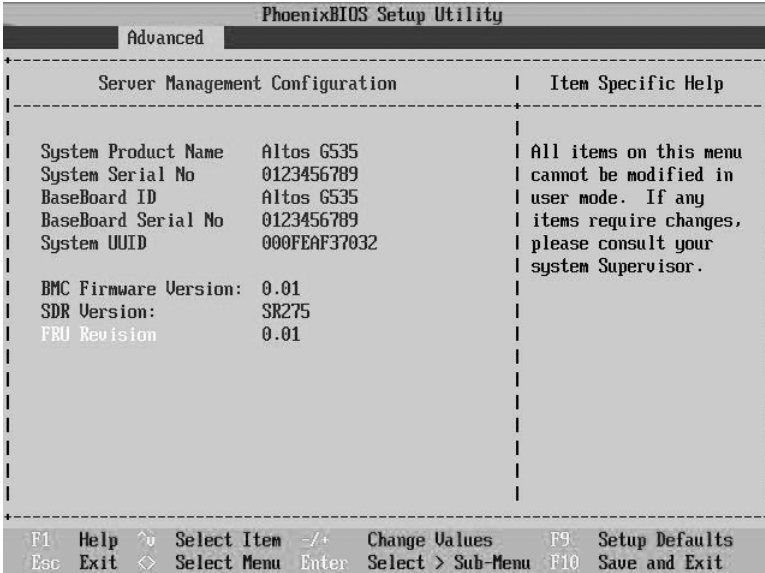The Server Management Configuration submenu lets you specify the appropriate settings for the system's event handling function.

The system event log enables you to record and monitor events that occur in the system (eg., system temperature changes, fan stops, etc.).
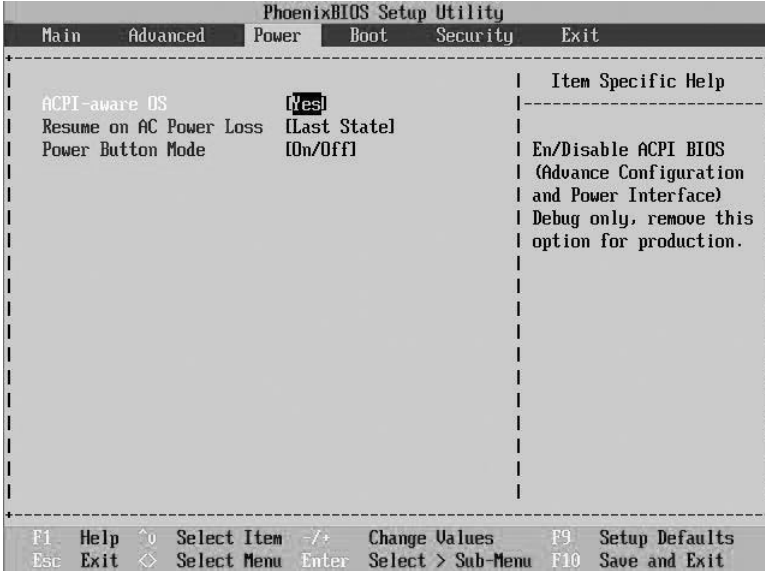
```
                    PhoenixBIOS Setup Utility
         Advanced
+-----------------------------------------------+---------------------------+
I     Server Management Configuration          I   Item Specific Help     I
I-----------------------------------------------+---------------------------I
I                                               I                           I
I    System Product Name    Altos G535          I All items on this menu    I
I    System Serial No       0123456789          I cannot be modified in     I
I    BaseBoard ID           Altos G535          I user mode.  If any        I
I    BaseBoard Serial No    0123456789          I items require changes,    I
I    System UUID            000FEAF37032         I please consult your       I
I                                               I system Supervisor.        I
I    BMC Firmware Version:  0.01                I                           I
I    SDR Version:           SR275               I                           I
I    FRU Revision           0.01                I                           I
I                                               I                           I
I                                               I                           I
I                                               I                           I
I                                               I                           I
I                                               I                           I
I                                               I                           I
I                                               I                           I
+-----------------------------------------------+---------------------------+
 F1   Help  ^v  Select Item  -/+   Change Values     F9    Setup Defaults
 Esc  Exit  <>  Select Menu  Enter  Select > Sub-Menu  F10  Save and Exit
```

Parameter	Description
System Product Name	System's model name.
System Serial No	System's serial number.
Baseboard ID	System board's identification number.
Baseboard Serial No	System board's serial number.
System UUID	When this parameter is enabled, only the the system's healthy memory size is displayed during the POST process.

Parameter	Description
BMC Firmware Version	Version of the BMC (Baseboard Management Controller) firmware.
SDR Version	Version of the SRDR (Spatial Data Repository) firmware.
FRU Version	Displays the field replacement unit information.

Power

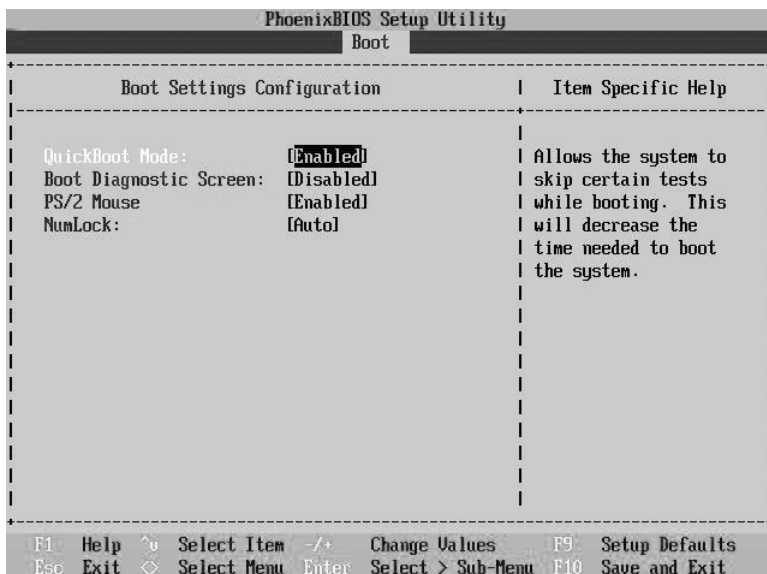The Power menu allows you to configure the system's power management feature.

```
                         PhoenixBIOS Setup Utility
   Main      Advanced      Power      Boot      Security      Exit
  +-------------------------------------------+-------------------------+
  |                                           |   Item Specific Help    |
  |  ACPI-aware OS              [Yes]         |-------------------------|
  |  Resume on AC Power Loss   [Last State]   |                         |
  |  Power Button Mode         [On/Off]       |  En/Disable ACPI BIOS   |
  |                                           |  (Advance Configuration |
  |                                           |  and Power Interface)   |
  |                                           |  Debug only, remove this |
  |                                           |  option for production.  |
  |                                           |                         |
  |                                           |                         |
  |                                           |                         |
  |                                           |                         |
  |                                           |                         |
  |                                           |                         |
  |                                           |                         |
  |                                           |                         |
  |                                           |                         |
  |                                           |                         |
  |                                           |                         |
  +-------------------------------------------+-------------------------+
   F1   Help  ^o  Select Item  -/+   Change Values    F9   Setup Defaults
   Esc  Exit  <>  Select Menu  Enter Select > Sub-Menu F10  Save and Exit
```

Parameter	Description	Option
ACPI-aware OS	Indicates whether the system's OS supports the ACPI standard of power management.	**Yes** No
Resume on AC Power Loss	Defines the power state to resume to after a system shutdown that is due to an interruption in AC power. When set to Last State, the system will return to the active power state prior to shutdown. When set to Stay Off, the system remains off after power shutdown. When set to Power On, the system will be turned on from a power failure.	**Last State** Stay Off Power On

Parameter	Description	Option
Power Button Mode	When set to On/Off, the system automatically turns off when the power button is pressed for less than 4 seconds. When set to Wake/Sleep, the system enters the suspend mode when the power button is pressed for less than 4 seconds.	**On/Off** Wake/Sleep

Boot

The Boot menu allows you to set the drive priority during system bootup. It also displays information about the installed storage devices.

Press **Enter** to enter the submenu screen of the parameters shown in the screen below.

```
                    PhoenixBIOS Setup Utility
     Main     Advanced    Power     Boot    Security     Exit
+-----------------------------------------+-------------------------+
|                                         |    Item Specific Help   |
| > Boot Settings Configuration           |-------------------------|
| > Boot Device Priority                  |                         |
|                                         |                         |
|                                         |                         |
|                                         |                         |
|                                         |                         |
|                                         |                         |
|                                         |                         |
|                                         |                         |
|                                         |                         |
|                                         |                         |
|                                         |                         |
|                                         |                         |
|                                         |                         |
|                                         |                         |
|                                         |                         |
|                                         |                         |
+-----------------------------------------+-------------------------+
  F1  Help  ^v  Select Item  -/+  Change Values    F9   Setup Defaults
  Esc Exit  <>  Select Menu  Enter Select > Sub-Menu F10  Save and Exit
```

Boot Settings Configuration

The Boot Settings Configuration submenu lets you specify the preferred settings for system bootup.

```
                    PhoenixBIOS Setup Utility
                              Boot
+-----------------------------------------+-----------------------------+
I        Boot Settings Configuration      I     Item Specific Help      I
I-----------------------------------------I-----------------------------I
I                                         I                             I
I  QuickBoot Mode:           [Enabled]    I Allows the system to        I
I  Boot Diagnostic Screen:   [Disabled]   I skip certain tests          I
I  PS/2 Mouse                [Enabled]    I while booting.  This        I
I  NumLock:                  [Auto]       I will decrease the           I
I                                         I time needed to boot         I
I                                         I the system.                 I
I                                         I                             I
I                                         I                             I
I                                         I                             I
I                                         I                             I
I                                         I                             I
I                                         I                             I
I                                         I                             I
I                                         I                             I
I                                         I                             I
I                                         I                             I
I                                         I                             I
+-----------------------------------------+-----------------------------+
 F1   Help   ^v  Select Item  -/+   Change Values    F9   Setup Defaults
 Esc  Exit   <>  Select Menu  Enter Select > Sub-Menu F10  Save and Exit
```

Parameter	Description	Option
Quick Boot Mode	Allows the system to boot faster by skipping some POST routine.	**Enabled** Disabled
Boot Diagnostic Screen	When this parameter is enabled, it allows some OS, such as Windows 95/98, to implement APM (Advanced Power Management) functions.	**Disabled** Enabled
PS/2 Mouse	Enable this parameter if you intend to use a mouse or trackball with a PS/2 interface.	**Enabled** Disabled
NumLock	Activates the Numeric Lock function upon booting.	**Auto** On Off

Boot Device Priority

The Boot Device Priority submenu lets you specify the boot search sequence during the POST process.

BIOS setup will display an error message if the drive(s) specified is not bootable.

```
                   PhoenixBIOS Setup Utility
                              Boot
+----------------------------------------+-------------------------+
|        Boot Device Priority            |   Item Specific Help    |
|----------------------------------------+-------------------------|
|                                        |                         |
|     Removable Devices                  | Keys used to view or    |
|     CD-ROM Drive                       | configure devices:      |
|    -Hard Drive                         | <Enter> expands or      |
|        USB Flash Drive-(USB)           | collapses devices with  |
|        Bootable Add-in Cards           | a + or -                |
|     IBA GE Slot 0118 v1226             | <Ctrl+Enter> expands    |
|                                        | all                     |
|                                        | <Shift + 1> enables or  |
|                                        | disables a device.      |
|                                        | <+> and <-> moves the   |
|                                        | device up or down.      |
|                                        | <n> May move removable  |
|                                        | device between Hard     |
|                                        | Disk or Removable Disk  |
|                                        | <d> Remove a device     |
|                                        | that is not installed.  |
+----------------------------------------+-------------------------+
 F1   Help   ^o  Select Item  -/+   Change Values   F9   Setup Defaults
 Esc  Exit   <>  Select Menu  Enter Select > Sub-Menu F10  Save and Exit
```

Parameter	Description
1st Boot Device	Sets the device from which the system will first attempt to boot up.
	Press **Enter** to access the Removable Devices submenu. The Removable Devices submenu displays the type of removable devices installed on the system.
2nd Boot Device	Sets the device from which the system will attempt to boot up when the first attempt failed.
	Press **Enter** to access the CD-ROM Devices submenu. The CD-ROM Devices submenu displays the type of ATAPI CD-ROM installed on the system.

Parameter	Description
3rd Boot Device	Sets the device from which the system will attempt to boot up when the first and second attempts failed. Press **Enter** to access the Hard Disk Drives submenu. The Hard Disk Drives submenu lets you specify the devices that will be considered as the primary and secondary hard drives.
4th Boot Device	Sets the device from which the system will attempt to boot up when the first, second and third attempts failed.

Security

The Security menu allows you to safeguard and protect the system from unauthorized use by setting up access passwords.

```
                    PhoenixBIOS Setup Utility
      Main     Advanced     Power     Boot     Security     Exit
   +------------------------------------------+------------------------+
   |                                          |   Item Specific Help   |
   |  Supervisor Password Is:   Clear         |------------------------|
   |   ser Password Is:         Clear         |                        |
   |  Set Supervisor Password   [Enter]       |  Supervisor Password   |
   |  Set User Password         [Enter]       |  controls access to the|
   |                                          |  setup utility.        |
   |  Password on boot:         [Disabled]    |                        |
   |  Fixed disk boot sector:   [Normal]      |                        |
   |  Diskette access:          [Supervisor]  |                        |
   |                                          |                        |
   |                                          |                        |
   |                                          |                        |
   |                                          |                        |
   |                                          |                        |
   |                                          |                        |
   |                                          |                        |
   |                                          |                        |
   +------------------------------------------+------------------------+
    F1   Help   ^v  Select Item  -/+  Change Values    F9   Setup Defaults
    Esc  Exit   <>  Select Menu  Enter Select > Sub-Menu F10  Save and Exit
```

Parameter	Description	Option
Supervisor Password	Prevents unauthorized access to the BIOS setup utility.	**Clear**
User Password	Secures the system against unauthorized use. Once you set this password, you have to type it whenever you boot the system. User password is available only when a Supervisor password is set.	**Clear**
Set Supervisor Password	Press **Enter** to change the Supervisor password.	
Set User Password	Press **Enter** to change the User password.	

Parameter	Description	Option
Password on boot	Select Enabled to activate security check during POST.	**Disabled** Enabled
Fixed disk boot sector	Sets the control level of the hard disk drive.	**Normal** Write Protect
Diskette access	Sets the control level of the floppy drive.	**Supervisor** Normal

To set a Supervisor/User password

1   Use the up/down keys to highlight a password parameter (Supervisor Password or User Password) then press **Enter**.

   A password box will appear.

2   Type a password then press **Enter**.

   The password may consist of up to six alphanumeric characters (A-Z, a-z, 0-9).

3   Retype the password to verify the first entry then press **Enter** again.

   After setting the password, the system automatically sets the chosen password parameter to Installed.

To change the Supervisor/User password

1   Use the up/down keys to highlight either change password parameters (Change Supervisor Password or Change User Password) then press **Enter**.

2   Type the original password then press **Enter**.

3   Type a new password then press **Enter**.

4   Retype the password to verify the first entry then press **Enter** again.

To remove the User password

1   Use the up/down keys to highlight the Clear User Password parameter then press **Enter**.

2   Enter the current password then press **Enter**.

3   Press **Enter** twice without entering anything in the new and
     confirm password fields.

     After doing this, the system automatically sets the User password
     parameter to Not Installed.

Exit

The Exit menu displays the various options to quit from the BIOS setup.
Highlight any of the exit options then press **Enter**.

```
                        PhoenixBIOS Setup Utility
    Main      Advanced     Power      Boot     Security     Exit
+-----------------------------------------------+-----------------------+
|                                               |  Item Specific Help   |
|   Exit Saving Changes                         |-----------------------|
|   Exit Discarding Changes                     |                       |
|   Load Setup Defaults                         |  Exit System Setup and|
|   Discard Changes                             |  save your changes to |
|   Save Changes                                |  CMOS.                |
|                                               |                       |
|                                               |                       |
|                                               |                       |
|                                               |                       |
|                                               |                       |
|                                               |                       |
|                                               |                       |
|                                               |                       |
|                                               |                       |
|                                               |                       |
|                                               |                       |
|                                               |                       |
+-----------------------------------------------+-----------------------+
   F1   Help    ^v  Select Item   -/+   Change Values    F9   Setup Defaults
   Esc  Exit    <>  Select Menu   Enter Execute Command   F10  Save and Exit
```
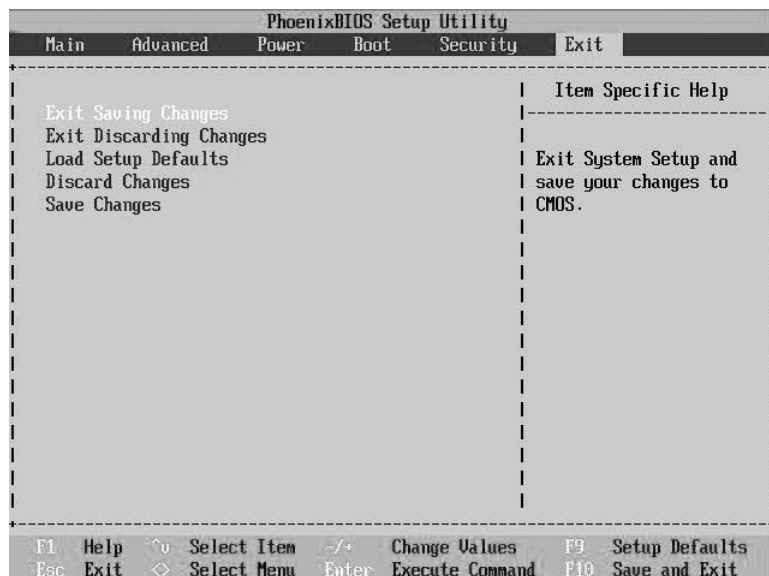
Parameter	Description
Exit Saving Changes	Saves changes made and close the BIOS setup.
Exit Discarding Changes	Discards changes made and close the BIOS setup.
Load Setup Defaults	Loads the default settings for all BIOS setup parameters. Setup Defaults are quite demanding in terms of resources consumption. If you are using low-speed memory chips or other kinds of low-performance components and you choose to load these settings, the system might not function properly.
Discard Changes	Discards all changes made in the BIOS setup.

Parameter	Description
Save Changes	Saves changes made in the BIOS setup.

5 Troubleshooting

This chapter provides possible solutions for specific problems. If you cannot correct the problem, contact your local Acer representative or authorized dealer for assistance.

Resetting the system

Before going through in-depth troubleshooting, attempt first to perform reset the system using one of the methods below.

To do this	Press
Soft boot reset to clear the system memory and reload the operating system.	Ctrl+Alt+Del
Cold boot reset. Turn the system power off and then on. This clears system memory, restarts POST, reloads the operating system and halts power to all peripherals.	Power off/on

Problems following initial system installation

Problems that occur at initial system startup are usually caused by an incorrect installation or configuration. Hardware failure is a less frequent cause. If the problem you are experiencing is with a specific software application, see "There is problem with the application software" on page 120.

First steps checklist

- AC power available at the wall outlet?

- Are the power supplies plugged in? Check the AC cable(s) on the back of the chassis and at the AC source.

- Are all cables correctly connected and secured?

- Are the processors fully seated in their sockets on the server board?

- Are all standoffs in the proper location and not touching any components, causing a potential short?

- Are all add-in PCI boards fully seated in their slots on the server board?

- Are all jumper settings on the server board correct?

- Are all jumper and switch settings on add-in boards and peripheral devices correct? To check these settings, refer to the manufacturer's documentation that comes with them. If applicable, ensure that there are no conflicts - for example, two add-in boards sharing the same interrupt.

- Are all peripheral devices installed correctly?

- If the system has a hard disk drive, is it properly formatted or configured?

- Are all device drivers properly installed?

- Are the configuration settings made in Setup correct?

- Is the operating system properly loaded? Refer to the operating system documentation.

- Did you press the system power on/off switch on the control panel to turn the server on (power on light should be lit)?

- Is the system power cord properly connected to the system and plugged into a NEMA 5-15R outlet for 100-120 V or a NEMA 6-15R outlet for 200-240 V?

- Are all integrated components from the tested components lists? Check the tested memory, and chassis lists, as well as the supported hardware and operating system list.

Hardware diagnostic testing

This section provides a more detailed approach to identifying a hardware problem and locating its source.

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>
> **Caution!** Turn off devices before disconnecting cables: Before disconnecting any peripheral cables from the system, turn off the system and any external peripheral devices. Failure to do so can cause permanent damage to the system and/or the peripheral devices.

1　Turn off the system and all external peripheral devices. Disconnect each of device from the system, except for the keyboard and the video monitor.

2　Make sure the system power cord is plugged into a properly grounded AC outlet.

3　Make sure your video display monitor and keyboard are correctly connected to the system. Turn on the video monitor. Set its brightness and contrast controls to at least two thirds of their maximum ranges (see the documentation supplied with your video display monitor).

4　If the operating system normally loads from the hard disk drive, make sure there is no diskette in drive A and no CD-ROM disk in the CD-ROM drive.

5　If the power LED does light, attempt to boot from a floppy diskette or from a CD-ROM disk.

6　Turn on the system. If the power LED does not light, see "Power indicator does not light" on page 117.

Verifying proper operation of key system lights

As POST determines the system configuration, it tests for the presence of each mass storage device installed in the system. As each device is checked, its activity light should turn on briefly. Check for the following:

Does the diskette drive activity light turn on briefly? If not, see "FDD activity indicator does not light." on page 117.

Confirming loading of the OS

Once the system boots up, the operating system prompt appears on the screen. The prompt varies according to the operating system. If the operating system prompt does not appear, see "No Characters Appear on Screen" on page 120.

Specific problems and corrective actions

The following contains specific problems that may arise during the use of your server. Possible solutions are listed for each problem.

Power indicator does not light.

Do the following:

- Make sure the power button on the front panel is turned on.
- Make sure the hot-swap power supply module is propely installed.

  Refer to "Installing a power supply module" on page 73 for instructions.
- Make sure the power cable is connected correctly.
- Make sure that the wall outlet has power. Test it by plugging another device.
- Remove all add-in cares and see if the system boots. If successful, add the cards back in one at a time with a reboot between each addition.
- Make sure the memory modules comply with the system requirements.
- Make sure the memory modules have been populated according to the system requirements.
- Remove the memory modules and reseat them.
- Make sure the CPU(s) comply with the system requirements.
- Make sure the CPU(s) have been populated according to the system requirements.

FDD activity indicator does not light.

Do the following:

- Make sure the FDD and signal cables are properly connected.
- Check that relevant switches and jumpers for the FDD are set correctly.
- Check that FDD is properly configured.
- If you are using the onboard diskette controller, use BIOS setup on page 79 to make sure that onboard "Floppy A" is set to **1.44 MB, 3.5-inch**.

HDD activity indicator does not light.

If you have installed one or more hard drives in the system, do the following:

- Make sure the power and signal cables are connected correctly.
- Check that relevant switches and jumpers on the hard drive and SCSI or SATA backplane board are set correctly.

CD drive activity indicator does not light.

Do the following:

- Make sure the power and signal cables are properly installed.
- Check that relevant switched and jumpers on the drive are set correctly.
- Check that drive is properly configured.
- Check that onboard IDE controller is enabled in the BIOS setup.

CD tray cannot be ejected.

Do the following:

- Insert the tip of a paperclip into the small hole on the CD drive. Slowly pull the tray out from the drive until the tray is fully extended then remove the disc.

CD drive cannot read a CD.

Do the following:

- Make sure you are using the correct type of CD.
- Make sure the CD is properly seated in the drive.
- Make sure the disc is unscratched.
- Make sure all cables are connected to the CD drive.

New memory modules installed are not detected.

Do the following:

- Make sure the memory modules are properly seated on the DIMM slots.
- Make sure the memory modules comply with the system requirements.
- Make sure the memory modules have been populated according to the system requirements.
- Make sure that they are installed in pairs. Refer to "DIMM population guidelines" on page 63.

Network status indicator does not light.

Do the following:

- Check the cabling and network equipment to make sure that all cables are properly connected.
- Reinstall the network drivers.
- Try another port or hub on the switch.

Network activity indicator does not light.

Do the following:

- Make sure the correct network drivers are loaded on the system.
- Network might be idle. Try accessing the server.

Server hangs when the drivers are loaded.

- Change the PCI interrrupt settings.

External device connected to a USB connector does not work.

Do the following:

- Reduce the number of external devices connected to a USB hub.
- Refer to the documentation that comes with the device.

There is problem with the application software.

Do the following:

- Verify that the software is properly configured for the system. Refer to the software installation and operation documentation for instructions on setting up and using the software.
- Try a different version of the software to see if the problem is with the copy you are using.
- Make sure all cables are properly connected.
- If other software runs correctly on the system, contact your vendor about the defective software.

No characters appear on the screen.

Check the following:

- Is the keyboard functioning? Test it by turning the "Num Lock" function on and off to make sure the Num Lock light is functioning.
- Is the video monitor plugged in and turned on? If you are using a switch box, is it switched to the correct system?
- Are the brightness and contrast controls on the video monitor properly adjusted?
- Is the video monitor signal cable properly installed?
- Does this video monitor work correctly if plugged into a different system?
- Is the onboard video controller enabled in the BIOS?

- Remove all add-in cares and see if the system boots. If successful, add the cards back in one at a time with a reboot between each addition.
- Make sure the memory modules comply with the system requirements.
- Make sure the memory modules have been populated according to the system requirements.
- Remove the memory modules and reseat them.
- Make sure the CPU(s) comply with the system requirements.
- Make sure the CPU(s) have been populated according to the system requirements.

If you are using an add-in video controller board, do the following:

1   Verify that the video works using the onboard video controller.
2   Verify that the video controller board is fully seated in the server board connector.
3   Reboot the system for changes to take effect.
4   If there are still no characters on the screen after you reboot the system and POST emits a beep code, write down the beep code you hear. This information is useful for your service representative.
5   If you do not receive a beep code and characters do not appear, the video display monitor or video controller may have failed. Contact your service representative or authorized dealer for help.

Appendix A: System management utility

This appendix shows you how to install the ASM software package and gives information about the software program and utilities bundled with your server.

Your Altos G5350 server supports the following system management utilities:

- ASM (Acer Server Management)

  This utility allows you to spot errors or potential trouble spots in the network servers through a single management station. For details go to page 127.

- RAID configuration

  The system may be bundled with a SCSI RAID configuration utility. This utility lets you change the RAID configuration of your hard disk. For details go to page 129.

ASM

Acer Server Management is a server management tool. It is specially designed to help spot errors or potential trouble spots in the network servers through a single management station. ASM can send a query to a remote server over the network to request information such as system hardware and software configuration, system resource usage, and system performance.

The complete ASM package consists of two major components — the ASM Agent and the ASM Console. The ASM Agent are the servers to be managed on the network. The ASM Console is a Windows-based monitoring station that communicates with the ASM Agents and can be installed on any agent's workstation on the network.

System requirements

ASM requires TCP/IP connectivity between the ASM Agent and the ASM Console.

ASM Agent
- Intel Pentium III (500 MHz) or higher processor
- 128 MB of RAM
- SCSI/IDE hard drive with at least 100 MB free hard disk space
- Microsoft Windows NT 4.0 or Windows 2000 Server/Advanced Server operating system

ASM Console
- Intel Pentium III (500 MHz) or higher processor
- 128 MB of RAM
- SCSI/IDE hard drive with at least 100 MB free hard disk space
- Microsoft Windows 2000 Professional/XP/Server/Advanced Server operating system
- Ethernet card

System setup

Make sure that the system meets the requirements listed above before proceeding. You may also want to change your screen resolution to 800 x 600 or higher for optimum viewing.

Installing ASM Agent

Follow the steps below:

1   Log in to the managed server using the Administrator account.

2   Insert the EasyBUILD Management CD into the server's CD-ROM drive. The installation sequence will automatically be displayed.

3   Select the option for ASM installation. The installation wizard will be initialized.

4   Follow all onscreen instructions to complete the installation.

     For detailed instructions on installing ASM Agent, refer to the ASM User's manual.

To launch the program, on the Windows taskbar click on the **Start** button, point to **Programs**, select **Acer Server Management Suite** then click **ASM Agent**.

Installing ASM Console

Follow the steps below:

1   Log in to the target Windows-based PC using the Administrator account.

2   Insert the EasyBUILD Management CD into the computer's CD-ROM drive. The installation sequence will automatically be displayed.

3   Select the option for ASM installation. The installation wizard will be initialized.

4   Follow all onscreen instructions to complete the installation.

     For detailed instructions on installing ASM Console, refer to the ASM User's manual.

To launch the program, on the Windows taskbar click on the **Start** button, point to **Programs**, select **Acer Server Management Suite** then click **ASM Console**.

RAID configuration

The SCSI RAID configuration utility allows you to change the default RAID configuration, such as the system volume of your hard disk.

> ⚠ **• •**
>
> **Caution!** Using the RAID Configuration utility erases all data previously saved in the hard drives. Make sure that you backup important files before starting the configuration process.

For detailed information on how to use the SCSI RAID configuration utility, refer to "Appendix C: SCSI RAID configuration" on page 147.

Appendix B: Acer Altos G5350
rack installation guide

This appendix shows you how to set up the Altos G5350 server in a rack mount configuration.

Setting up the system rack

Important! Observe the electrostatic discharge (ESD) precautions indicated on page 33 when perfoming the following procedures. Do not attempt the procedures described in the following sections unless you are a qualified technician.

Equipment rack precautions

Follow the rack manufacturer's safety and installation instructions for proper rack installation.

The following additional rack safety installation measures should be considered:

- Anchor the equipment rack

  The equipment rack must be anchored to an unmovable suitable support to prevent the rack from falling over when one or more systems are fully extended out of the rack assembly. You must also consider the weight of any other devices installed in the rack assembly. The equipment rack must be installed according to the manufacturer's instructions.

- Main AC power disconnect

  You are responsible for installing an AC power disconnect for the entire rack unit. This main disconnect must be readily accessible, and it must be labeled as controlling power to the entire unit, not just to the system(s).

- Earth ground the rack installation

  To avoid the potential for an electrical shock hazard, the rack assembly itself must be suitably earth grounded, according to your local regional electrical codes. This typically will require the rack to have its own separate earth ground. We recommend you consult your local approved electrician.

- Elevated operating ambient temperature

  The maximum operating temperature of the system is 35 °C (95°F). Careful consideration should be given to installing the system in an environment compatible with the 35 °C (95°F) maximum ambient temperature.

- Reduced airflow

  The amount of airflow required for the safe operation of the equipment should not be compromised when installing the system in a rack.

- Mechanical loading

  Exercise care when mounting the system in a rack to avoid any accidents.

- Circuit overloading

  Appropriate consideration should be given when connecting the supply circuit to the system to avoid any circuit overload. The system name plate rating should be used when addressing concerns about circuit overload.

System rack installation

The Altos G5350 server system can also be mounted in a rack-model position. A rack mount kit is available for customers who want to convert a tower-mounted system to rack-model design. To purchase a rack mount kit, contact your local Acer representative or order directly from http://www.acer.com/.

The figure below shows the Altos G5350 server in a rack-mount position.
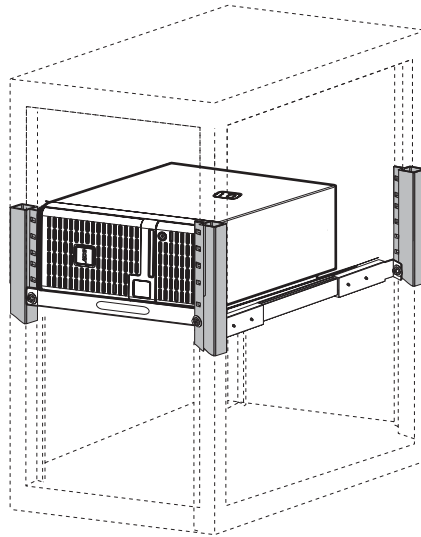
Vertical mounting hole pattern

The four vertical rails of the system rack contain mounting holes arranged in a manner shown in the figure below:
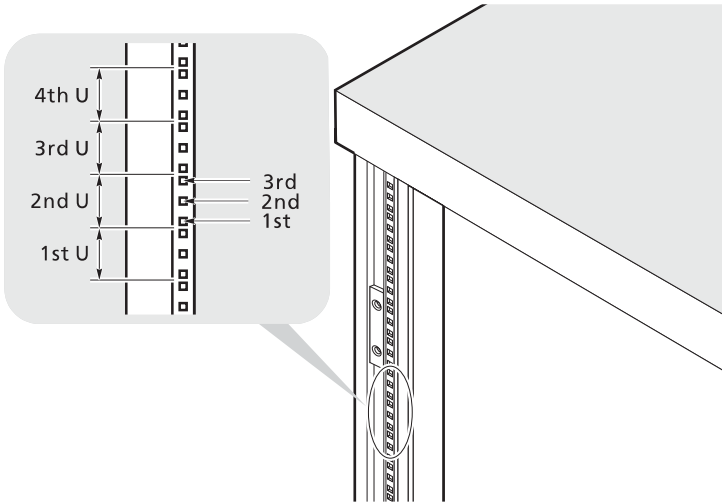
The system occupies 5U in the rack. Count the U positions and hole numbers from the bottom up.

The distance from the center of two holes with closer spacing to the center of the next pair is equivalent to 1U.
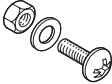
Note: The unit of measurement used in this guide is "U" (1U = 1.75 inches or 44.45 mm). The total sum of the heights of all components in the rack measured in "U" cannot exceed the height of the rack. For more information, refer to the documentation that came with the system rack.

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 those on the rack.

Screw types used

The following screws are used in the assembly of the Altos G5350 system and bundled rack-mountable components:

Screw type and part number	Figure	Usage
#8-32 x 0.25 inch		Securing the inner mounting rails to the system
Hex head #6-32 0.25 inch		Securing the side handles to the server
M4 x L8 M4 nut		Securing the mounting brackets to the inner sliding piece
M6 x L10 M6 cage nut		• Securing the cable arm to the rack • Securing the component rail to the rack • Securing the system components to the rack
		Supports the M6 metal screws for securing system components to the rack

Installing the system into the rack

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Caution! To minimize the chances of injuries, make sure that two or more people help in installing the server.

To install the system into a four-post rack

1   Remove the foot stands from the server.

(1) Lay the server on its side on a flat, stable surface **(1)**.

(2) Remove the screws that hold the foot stands to the bottom of the chassis **(2)**. Keep these for later use.

(3) Pull the stands from the server.
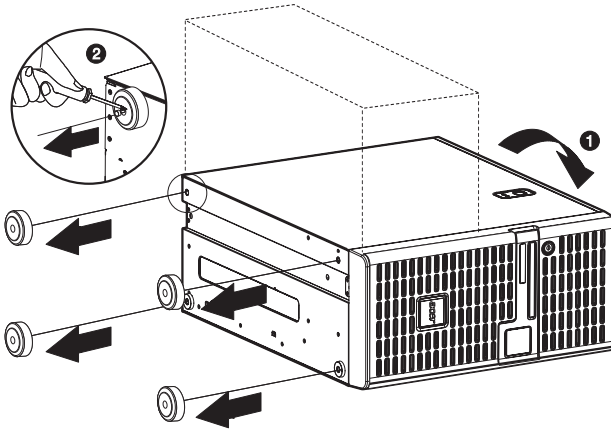
2   Remove the inner rails from the mounting rails.

> **Note:** The rack mount kit contains a pack of screws, two sets of side handles, rack brackets and mounting rails. The side handles are attached to the sides of the server. The rack brackets attach the mounting rails to the server. The mounting rails allow the server to slide in and out of the rackmount for maintenance purposes. Each mounting rail consists of: an inner rail, a middle slide, and a fixed outer rail. The fixed outer piece is screwed onto the rack bracket with a M4 x L8 metal screw and nut, the inner rail is attached to the sides of the server with the #8-32 screws and the middle sliding piece controlled by a steel ball gearing movement.

(1) Extend the inner rail from the mounting rail until the rail release latch clicks.

(2) Depress the release latch **(1)** and slip the inner rail out **(2)**.
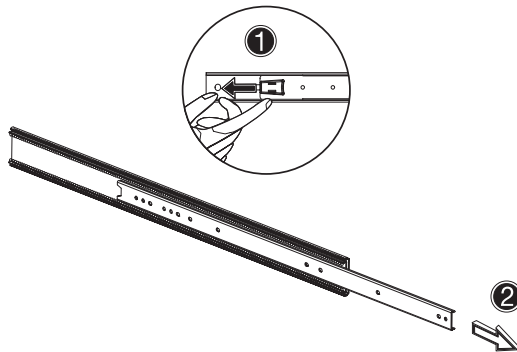
(3) Do the same thing to the other mounting rail.

3   Attach the inner rails to the mounting shelf.

   (1) Align the inner rails to both sides of the mounting shelf **(1)**.

   (2) Secure the rails to the mounting shelf using ten #8-32 screws
        (see page 137) **(2)**.
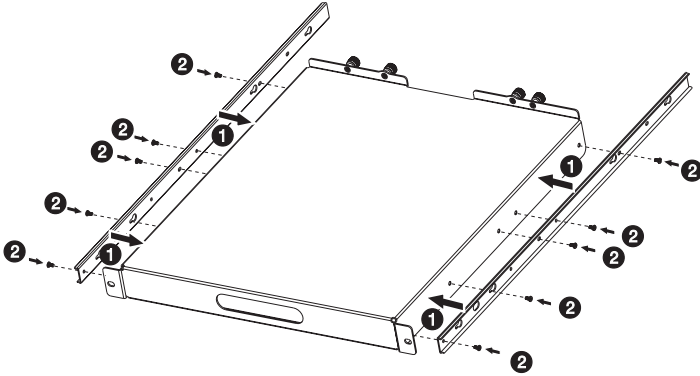
4   Install the server into the mounting shelf.

> **Caution!** To avoid personal injury, care should be taken when
> pressing the inner rail release latches and sliding the component
> into the rack.

   (1) Place the server on the mounting shelf **(1)**.

(2) Tighten the four thumbscrews on the rear of the mounting shelf **(2)**.
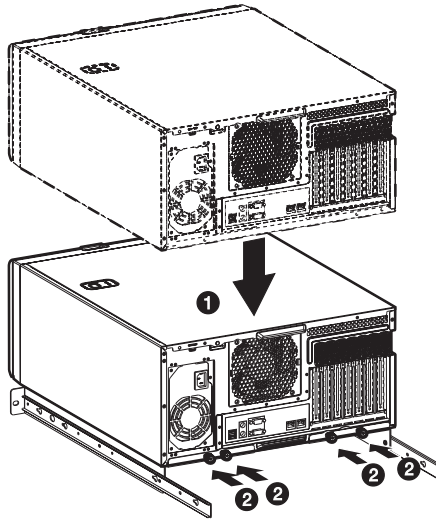
5   Install the rack brackets to the rack by following the steps below:

(1) Align the rack brackets to the mounting rail until the six screw holes become visible.

(2) Secure the rack brackets to the mounting rails using six M4 x L8 metal screws and nuts (see page 137).

Tighten the screws but leave them loose enough to allow length adjustment when installing the mounting rails to the rack.
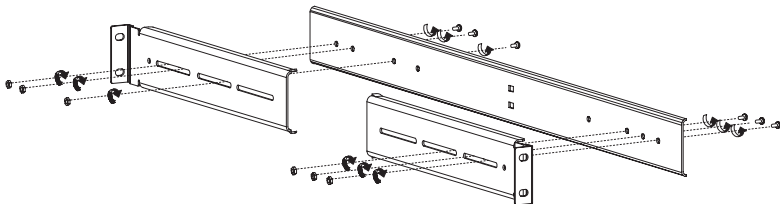
(3) Attach the other rack brackets to the remaining mounting rail.

6   Install the M6 cage nuts (see page 137) into the rail.

  (1)   Insert the lower lip of the cage nut over the bottom of the
        opening at the back of a rail.

  (2)   With your fingers, pinch the cage nut rack fastener and push
        in until the top lip locks into position.

  (3)   Repeat this process to install the other cage nuts in their
        appropriate locations.
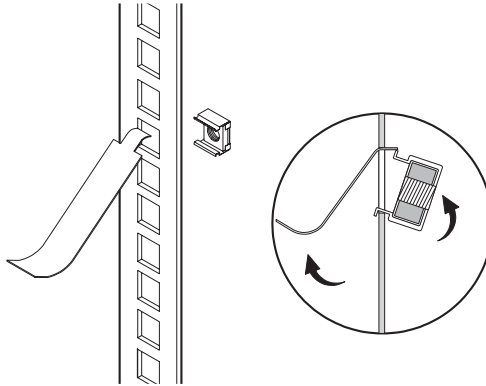
7   Install the mounting rails to the rack by using four M6 x L10 metal screws (see page 137) for each mounting rail.
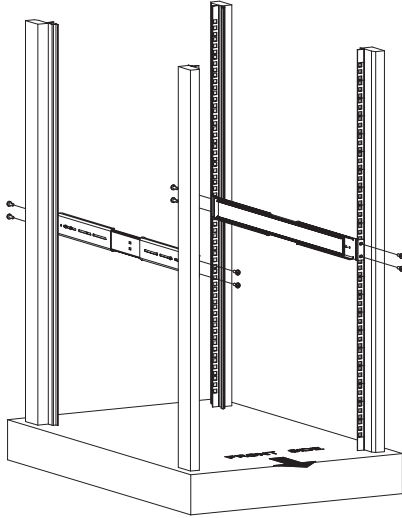
8   Extend the middle sliding piece of each mounting rail forward until you hear a click sound.
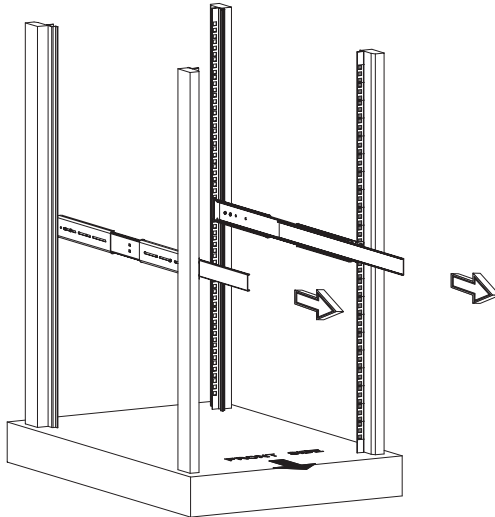
9   Install the server shelf assembly into the rack.

⚠ --

Caution! To avoid personal injury, care should be taken when pressing the inner rail release latches and sliding the component into the rack.

(1) Carefully align the inner rails attached to the mounting shelf with the fully extended mounting rails on the rack.

(2) Press the release latch on both sides of the mounting shelf **(1)**.

(3) Slide the mounting shelf into the rack, then push the mounting shelf into the rack until you hear a click sound **(2)**.
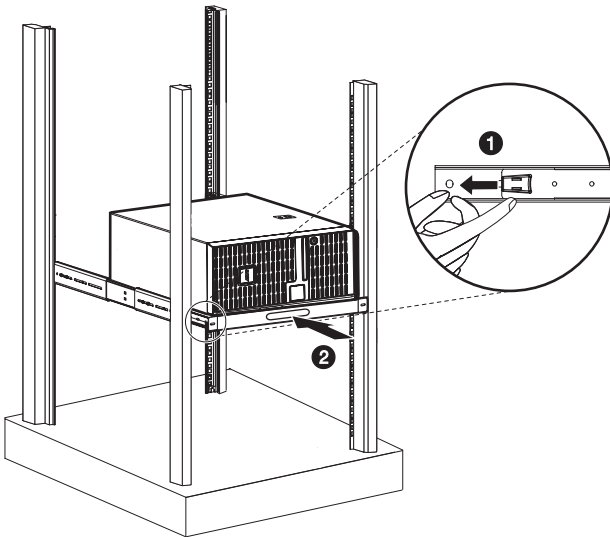
10 Attach the cable arm to the system.

The optional cable carm allows you to tie-wrap all cables to and from the system. As you slide the system in and out of the rack, the cable arm collapses and extends, keeping the cables untangled and attached to the system.

(1) Attach the cable arm to the rear of the system using two M4 x L8 metal screws and nuts (see page 137).
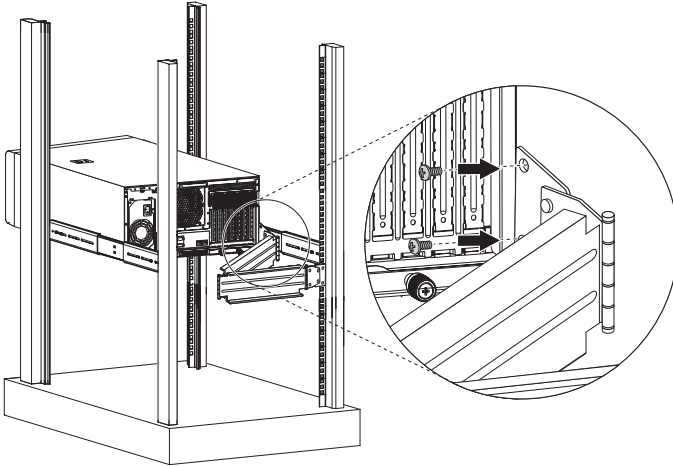
(2) Install two cage nuts into the rail to which the cable arm is to be attached.

(3) Extend the cable arm enough to attach it to the rail using two M6 x L10 metal screws (see page 137).
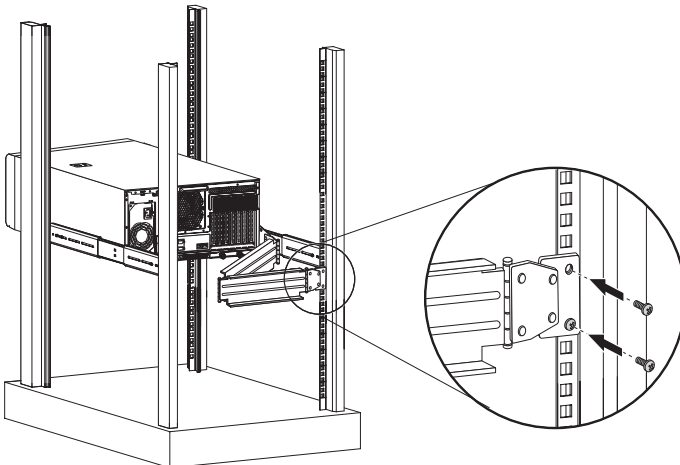
(4) Connect the power, peripheral and networking cables into their appropriate ports **(1)**.
Refer to "Connecting peripherals" on page 24 for detailed instructions.

(5) Bundle all cables to the cable arm using the cable clamps **(2)**.
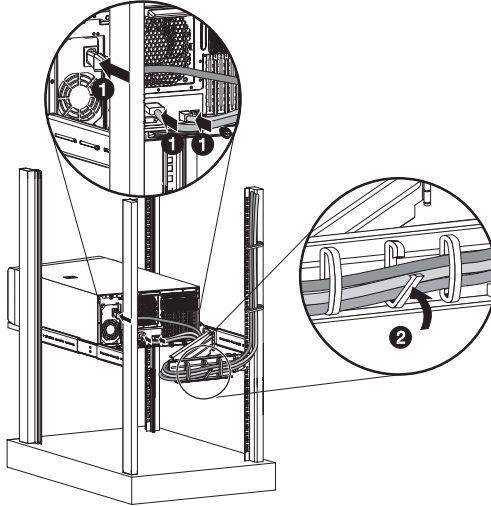
Appendix C: SCSI
RAID configuration

This appendix shows you how to create a
RAID volume in your SCSI drives.

Configuring the SCSI/SCSI RAID HBA

This section shows how to create a RAID 1 (mirror) volume. This feature requires the installation or presence of a LSI Logic 53C1030 SCSI controller.

Using the SCSI HBA setup utility

During bootup, press **Ctrl+C** to enter the LSI Logic Configuration screen.

Loading the HBA default settings

1   In the LSI Logic MPT SCSI setup screen, press **F2**.

2   Select **Global Properties**, then select **Restore Defaults**.

3   Press **Esc**, then select **Save changes then exit this menu**.

4   Select **53C1020/53C1030**, then press **Enter**.

5   Select **Restore Defaults**, then press **Enter**.

6   Press **Esc**, then select **Save changes then exit this menu**.

Using the SCSI RAID HBA setup utility

Creating a RAID 1 volume with a hot spare disk

1   In the LSI Logic MPT SCSI setup screen, select **53C1020/53C1030**, then press **Enter**.

2   Select **RAID Properties**, then press **Enter**.

3   In the Array Disk field, press the spacebar.

    If you change the settings in the Array Disk field, the following messages appear:

    F3 - Keep Data (Create 2 disk arrays)

    Delete - Erase Disk (Create 2 to 6 disk arrays)

4   Press the **Delete** key to erase all data on the screen.

5   In the Hot Spare field, press the spacebar.

If you change the settings in the Hot Spare field, the following messages appear:

WARNING: Data on drive will be LOST!

Press DELETE if data loss OK or any other key to cancel.

6   Press the **Delete** key to ignore.

7   Press **Esc**, then select **Save changes then exit this menu**.

8   To close the utility and reboot the server, follow the steps below:

(1)   Press **Esc**, then select **Exit the Configuration Utility**. The *Global properties saved. Hit any key to reboot* message appears.

(2)   Press any key to reboot the server.

RAID volume initialization

After you create the RAID volume and saved the changes, the disk controller will automatically initialize the RAID volume. LSI Logic 53C1030 supports background initialization, there's no need to wait for the initialization to complete. Close the LSI Logic Configuration Utility after saving the changes.

Using the MegaRAID configuration utility

Turn on the system. When prompted, press **Ctrl+M** to enter the MegaRAID configuration utility. After a few seconds, the Management menu appears.

Loading the RAID card default setting

1   In the Management menu, select **Objects**, then select **Adapter**. The current adapter settings appear.

2   Select **Factory Default**, then **Yes** to load the default settings.

3   Press **Ctrl+Alt+Del** to reboot the server.

Creating a RAID 1 volume

1   After rebooting the server, press **Ctrl+M** to enter the MegaRAID Configuration screen. The Management menu appears.

2   Select **Configuration**. The Configuration menu appears.

3   Select **New Configuration**, then select **YES**. An array selection window displays the devices connected to the current controller.

4   Use the arrow keys to select a specific drive, then press the spacebar to associate the selected drive with the current array.

    In the menu, the selected drive's indicator will change from READY to ONLINE A[array number]-[drive number].
    For example ONLINE A1-2 means disk drive 2 in array 1.

5   Add two drives to the current array, then press **Enter**.

6   Press **F10** to configure the logical drives. The default RAID level for 2 disk drives is RAID 1.

7   Select **Accept** to use the default setting, then press **Enter**.

8   Press **Enter** again to end the array configuration.

9   Select **YES to Save Configuration**, and press any key to return to the Configuration menu.

Assigning a hot spare disk

1   In the Configuration menu, select **Add/View Configuration**.

2   Use the arrow keys to select a specific drive, then press **F4** to set the drive as a hot spare disk.

3   Select **YES**. In the menu, the selected drive's indicator will change from *READY* to *HOTSP*.

4   Press **Esc** to end the array configuration.

5   Select **YES to Save Configuration**, then press any key to return to the Configuration menu.

Initializing a RAID volume

1   Press **Esc** to return to the Management menu.

2   Select **Initialize**. All logical drives will appear under Logical Drives.

3   Using the spacebar, select the drive that you want to initialize. The selected drive becomes yellow.

4   Press **F10**, then select **YES** to start initialization.

5   When initialization is complete, press any key to continue.

6   Press **Esc** to return to the Management menu.

7   To exit the utility and reboot the server, follow the steps below:

   (a) In the Management menu, press **Esc**.

   (b) Select **YES**.

   (c) Press **Ctrl+Alt+Del** to reboot the server.

8   Install an Operating System to the RAID array.

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