Acer Altos G310

User's guide

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Acer Altos G310 series
User's guide

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Record the model number, serial number, purchase date, and place of purchase information in the space provided below. The serial number and model number are recorded on the label affixed to your computer. All correspondense concerning your unit should include the serial number, model number, and purchase information.

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Purchase Date: _____

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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 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: 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 into 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).

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1 System information

The Acer Altos G310 series server is an entry level single-processor general purpose system. The system offers a new standard for flexible productivity ideal for small business or workgroup applications.

Product briefing

This section provide basic information concerning the configuration of your Altos G310 system.

Processor

- Single 2.8 GHz Intel® Pentium® 4 processor with 533 MHZ FSB

  - or -

- Single 3.0 to 3.4 GHz Intel® Pentium® 4 processor with 800 MHz FSB
- CPU Hyper-Threading Technology support

Memory subsystem

- Four (184 - pin) DIMM slots
- DDR 333/400 MHz Unbuffered memory modules supported
- Maximum upgrade - 4 GB

Warning! Functionality issues may be encountered if mixed memory types are installed on the same server board. DIMM modules of identical type, banking and stacking technology, and vendor should be installed in the Altos G310.

Caution! When using multiple memory modules it is recommended that you AVOID using modules from different manufacturers or that run at different speeds from each other.

Note: To run 400 MHz memory at full speed requires a processor with 800 MHz system bus frequency.

Note: To run 333 MHz memory at full speed requires a processor with 533 MHz system bus frequency.

Note: 333 MHz memory will run at 320 MHz when used with a processor with 800 MHz system bus frequency.

Storage

- 5.25 inch IDE CD-ROM drive
- 3.5 inch Floppy disk drive
- Support for three (max) hard disk drives
- Four additional 5.25 Inch device bays for add-on options such as:
  - DDS4 DAT 20/40 GB tape backup drive
  - DAT72 36/72 GB tape backup drive
  - AIT1 35/91 GB tape backup drive
  - DVD-ROM, DVD-RW, DVD-Dual or other optical drive

Graphics interface

- On-board AGP 8X slot

Networking

- Single Gigabit Ethernet port

I/O ports

- Front
  - Two USB 2.0 ports
- Rear
  - Four USB 2.0 ports
  - Two PS/2 ports (keyboard/mouse)
  - One LAN port (RJ-45)
  - One parallel port
  - Two serial ports

Serial ATA ports

- Two serial ATA ports supporting RAID 0 or RAID 1
  - Serial ATA supports drivers for Windows® XP/2000 only

Caring features

Part of Acer's mission, as a company that cares about its end users, is to provide features that make operation, maintenance, and upgrading your system simpler and faster. The Altos G310 is no exception to this rule. The following features and options are provided.

- Cost efficient operation in a value oriented package.
- Tool-less design.
- Front accessible USB ports.
- Acer EasyBUILD™ (optional) for efficient system setup and installation.
- Acer Server Manager (ASM) suite (optional) of comprehensive management tools.

Product specification summary

Highlighted below are the system's key features:

- Single Intel® Pentium® 4 processor supporting Hyper-Threading Technology
- 533/800 MHz FSB supports processor speeds from 2.8 GHz to 3.4 GHz
- Intel® 875P chipset consisting of:
  - Intel® 82875P Memory Controller Hub (MCH)
  - Intel® 82801ER I/O Controller (ICH5-R)
- Intel® 82547GI 10/100/1000Base-T Gigabit LAN controller
- Five 32 bit/ 33 MHz/ 5V PCI bus slots
- AGP 8X slot for add-on video card (option)
- Four DIMM sockets supporting DDR 333/400 MHz ECC modules for a maximum memory capacity of 4 GB
- Media storage
  - One 3.5 inch, 1.44 MB floppy drive
  - One 5.25 Inch high speed CD-ROM drive
- Additional media storage capacity
  - Support for three 3.5 inch hard disk drives
  - Four additional 5.25 inch half-height bays
- External ports
  - PS/2-compatible keyboard and mouse ports
  - 6 USB 2.0 ports (2 front, 4 rear)
  - One LAN port
  - Two serial ports
  - Parallel/printer port
- Power supply unit (PSU)
  - One 300W ATX12, auto-switching power supply
- Operating Systems supported
  - Microsoft® Windows® 2000
  - Microsoft® Windows® Server 2003
  - Microsoft® Windows® XP Professional Edition
  - Red Hat® Enterprise Linux 3.0

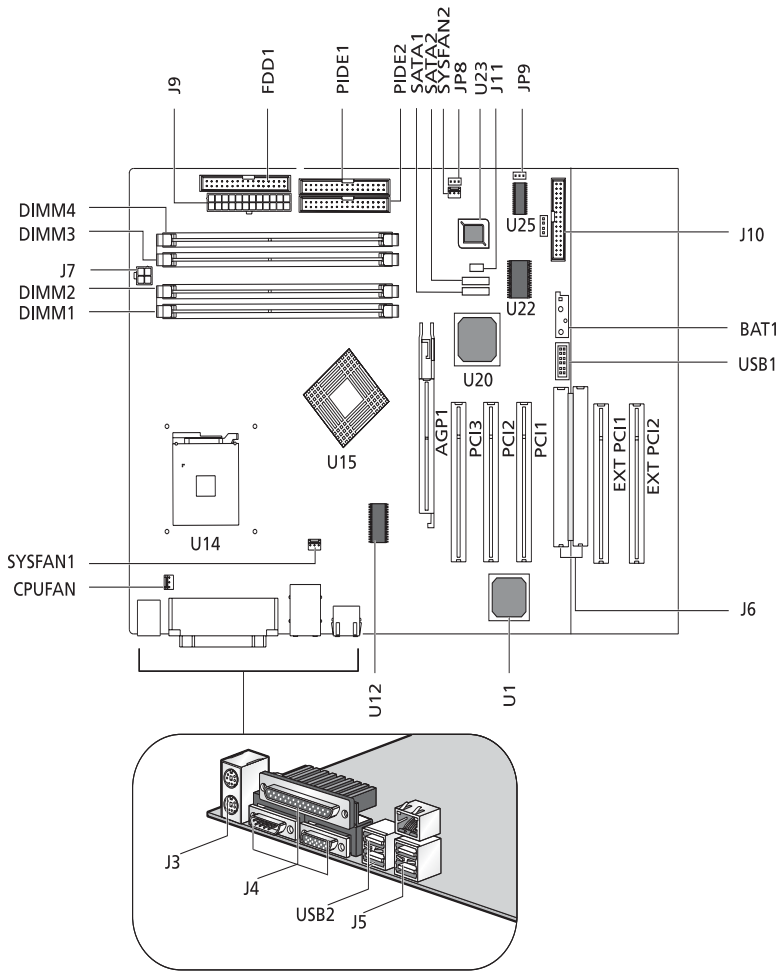
2 System tour

This chapter provides locations of various components and ports and you instructions on how to set up the system. Procedures on how to connect peripherals are also explained.

System board

Mainboard layout

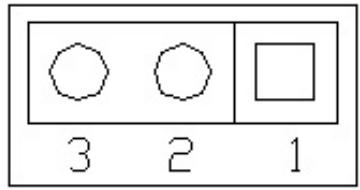
The mainboard becomes accessible once you open the system. It should look like the figure shown below



Item	Description
AGP1	AGP slot
BAT1	Battery
CPUFAN	CPU fan connector
DIMM1 DIMM2 DIMM3 DIMM4	DIMM slots
FDD1	Floppy disc drive connector
J10	Front panel header
J11	Buzzer connector
J3	PS/2 KBMS
J4	Serial and Parallel ports
J5	Dual USB and RJ45
J6	Extended interface
J7	Power port and 12V power connector
J9	Main power connector
JP8	Clear CMOS
JP9	I^2C feature connector
PCI1 PCI2 PCI3	PCI slots
EXT PCI1 EXT PCI2	Extension PCI slots
PIDE1 PIDE2	Primary IDE connector Secondary IDE connector
SATA1 SATA2	Serial ATA ports

Item	Description
SYSFAN1 SYSFAN2	System fan connectors
U1	LAN controller
U12	Clock generator
U14	CPU slot (478 pin)
U15	875P chipset
U20	ICH5R chipset
U22	I/O controller
U23	BIOS
U25	Mini-BMC
USB1	Front USB connector
USB2	Dual USB connector

Jumper settings (JP8) clear CMOS

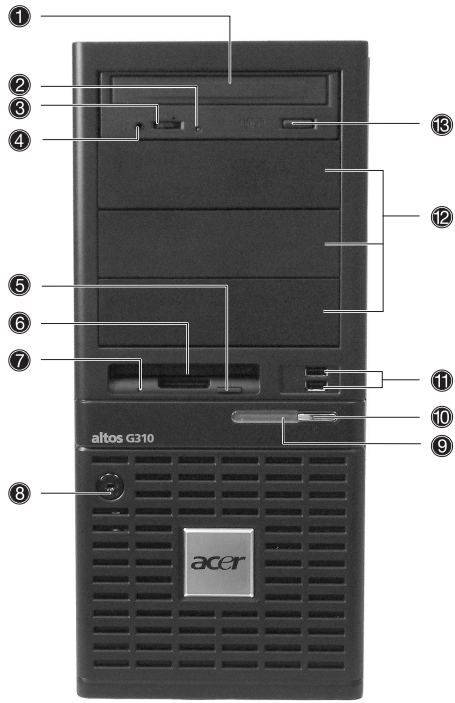


Pin Number	Pin Definition
1	Normal
2	Clear
3	Ground
1-2	Normal
2-3	Clear CMOS

External and internal structure

Front bezel

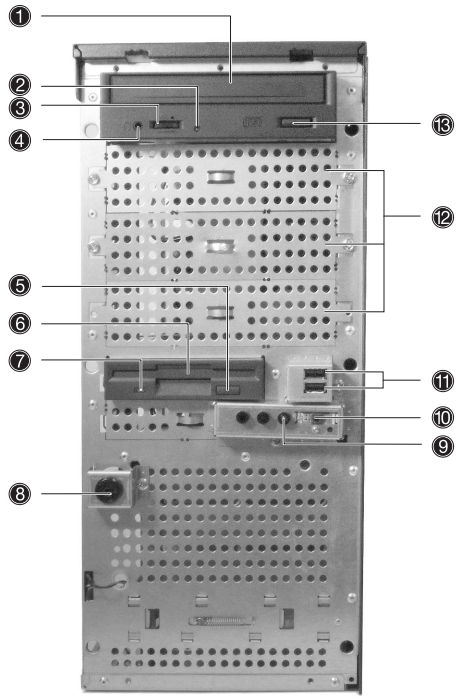
Note: One pair of system keys are provided (attached to the rear panel of the system).



No.	Description
1	CD-ROM drive
2	CD-ROM headphone port
3	CD-ROM volume control
4	CD-ROM activity indicator

No.	Description
5	FDD eject button
6	FDD (floppy disc drive)
7	FDD activity indicator
8	Security keylock
9	System power indicator
10	System power button
11	USB 2.0 ports (two)
12	5.25-inch half-height bays
13	CD-ROM stop/eject button

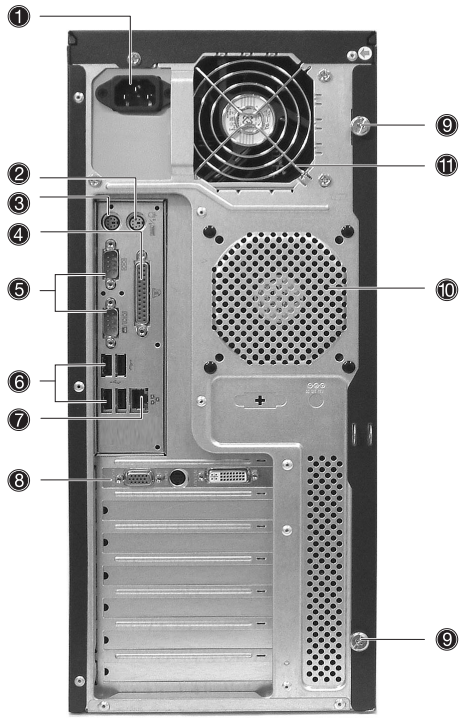
Front panel



No.	Description
1	CD-ROM drive
2	CD-ROM headphone port
3	CD-ROM volume control
4	CD-ROM activity indicator
5	FDD eject button
6	FDD (floppy disc drive)
7	FDD activity indicator

No.	Description
8	Security keylock
9	System power indicator
10	System power button
11	USB 2.0 ports (two)
12	5.25-inch half-height bays
13	CD-ROM stop/eject button

Rear panel



No.	Icon	Description
1		Main power supply unit
2		PS/2 mouse port
3		PS/2 keyboard port
4		Parallel/printer port
5		Serial ports (two)
6		USB 2.0 ports (four)

No.	Icon	Description
7		Gigabit LAN port (10/100/1000 Mbps)
8		AGP add-on card (actual ports vary by configuration)
9		Side panel tool-less screws (top and bottom)
10		System ventilation/fan exhaust
11		Main power supply fan exhaust

Internal components

No.	Description
1	Power supply unit
2	System fan
3	Mainboard
4	PCI bus slots
5	HDD bays
6	3.5” device bays
7	5.25” device bays

3 Getting Started

This chapter gives information on setting up and starting to use your system

Setting up the system

Preinstallation 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 G310 series system
- Acer Altos G310 series User's guide
- Acer Altos G310 series Accessory box
- System keys (attached to the rear panel of the system)

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

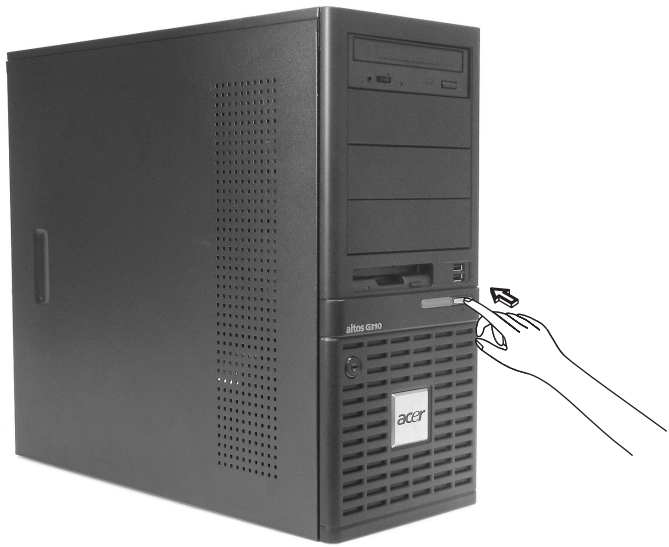
Save the boxes and packing materials for future use.

System startup

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, press the power button on the front panel. The system starts up and displays a welcome message. 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

Turning off the system

To turn off the server, on the Windows task bar 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 are unable to shutdown the server within Windows, press and hold the power button for at least four seconds to force quit all applications and shut down.

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.

BIOS POST Checkpoint Codes

Bootblock Initialization Codes

The Bootblock initialization code sets up the chipset, memory and other components before system memory is available. The following table describes the type of checkpoints that may occur during the bootblock initialization.

Checkpoint Code	Description
Before D1	Early chipset initialization is done. Early super I/O initialization is done including RTC and keyboard controller. NMI is enabled.
D1	Perform keyboard controller BAT test. Checks if waking up from power management suspend state. Save power-on CPUID value in scratch CMOS.
D0	Go to flat mode with 4 GB limit and GA20 enabled. Verify the bootblock checksum.
D2	Disable CACHE before memory detection. Execute full memory sizing module. Verify that flat mode is enabled.
D3	If memory sizing module not executed, start memory refresh and do memory sizing in Bootblock code. Do additional chipset initialization. Re-enable CACHE. Verify that flat mode is enabled.
D4	Test base 512 KB memory. Adjust policies and cache first 8 MB. Set stack.
D5	Bootblock code is copied from ROM to lower system memory and control is given to it. BIOS now executes out of RAM.
D6	Both Key sequence and OEM specific method is checked to determine if BIOS recovery is forced. Main BIOS checksum is tested. If BIOS recovery is necessary, control flows to checkpoint E0. See *Bootblock Recovery Code Checkpoints* for more information.

Checkpoint Code	Description
D7	Restore CPUID value back into register. The Boot-block-Runtime interface module is moved to system memory and control is given to it. Determine whether to execute serial flash.
D8	The Runtime module is uncompressed into memory. CPUID information is stored in memory.
D9	Store the Uncompressed pointer for future use in PMM. Copying Main BIOS into memory. Leaves all RAM below 1MB Read-Write including E000 and F000 shadow areas but closing SMRAM.
DA	Restore CPUID value back into register. Give control to BIOS POST (ExecutePOSTKernel).

Bootblock Recovery Codes

The Bootblock recovery code gets control when the BIOS determines that a BIOS recovery needs to occur because the user has forced the update or the BIOS checksum is corrupt. The following table describes the type of checkpoints that may occur during the Bootblock recovery portion of the BIOS.

Checkpoint Code	Description
E0	Initialize the floppy controller in the super I/O. Some interrupt vectors are initialized. DMA controller is initialized 8259 interrupt controller is initialized. L1 cache is enabled.
E9	Set up floppy controller and data. Attempt to read from floppy.
EA	Enable ATAPI hardware. Attempt to read from ARMD and ATAPI CDROM.
EB	Disable ATAPI hardware. Jump back to checkpoint E9.

Checkpoint Code	Description
EF	Read error occurred on media. Jump back to checkpoint EB.
E9 or EA	Determine information about root directory of recovery media.
F0	Search for pre-defined recovery file name in root directory.
F1	Recovery file not found.
F2	Start reading FAT table and analyze FAT to find the clusters occupied by the recovery file.
F3	Start reading the recovery file cluster by cluster.
F5	Disable L1 cache.
FA	Check the validity of the recovery file configuration to the current configuration of the flash part.
FB	Make flash write enabled through chipset and OEM specific method. Detect proper flash part. Verify that the found flash part size equals the recovery file size.
F4	The recovery file size does not equal the found flash part size.
FC	Erase the flash part.
FD	Program the flash part.
FF	The flash has been updated successfully. Make flash write disabled. Disable ATAPI hardware. Restore CPUID value back into register. Give control to F000 ROM at F000:FFF0h.

POST code checkpoints

The POST code checkpoints are the largest set of checkpoints during the BIOS pre-boot process. The following table describes the type of checkpoints that may occur during the POST portion of the BIOS.

Checkpoint Code	Description
03	Disable NMI, Parity, video for EGA, and DMA controllers. Initialize BIOS, POST, and Runtime data area. Also initialize BIOS modules on POST entry and GPNV area. Initialized CMOS as mentioned in the Kernel Variable "wCMOSFlags."
04	Check CMOS diagnostic byte to determine if battery power is OK and CMOS checksum is OK. Verify CMOS checksum manually by reading storage area. If the CMOS checksum is bad, update CMOS with power-on default values and clear passwords. Initialize status register A. Initializes data variables that are based on CMOS setup questions. Initializes both the 8259 compatible PICs in the system.
05	Initializes the interrupt controlling hardware (generally PIC) and interrupt vector table.
06	Do R/W test to CH-2 count reg. Initialize CH-0 as system timer. Install the POSTINT1Ch handler. Enable IRQ-0 in PIC for system timer interrupt. Traps INT1Ch vector to "POSTINT1ChHandlerBlock."
08	Initializes the CPU. The BAT test is being done on KBC. Program the keyboard controller command byte is being done after Auto detection of KB/MS using AMI KB-5.
C0	Early CPU Init Start -- Disable Cache - Init Local APIC.
C1	Set up boot strap processor Information.

Checkpoint Code	Description
C2	Set up boot strap processor for POST.
C5	Enumerate and set up application predecessors.
C6	Re-enable cache for boot strap processor.
C7	Early CPU Init Exit.
0A	Initializes the 8042 compatible Keyboard Controller.
0B	Detects the presence of PS/2 mouse.
0C	Detects the presence of Keyboard in KBC port.
0E	Testing and initialization of different Input Devices. Also, update the Kernel Variables. Traps the INT09h vector, so that the POST INT09h handler gets control for IRQ1. Uncompress all available language, BIOS logo, and Silent logo modules.
13	Early POST initialization of chipset registers.
24	Uncompress and initialize any platform specific BIOS modules.
30	Initialize System Management Interrupt.
2A	Initializes different devices through DIM.
2C	Initializes different devices. Detects and initializes the video adapter installed in the system that have optional ROMs.
2E	Initializes all the output devices.
31	Allocate memory for ADM module and uncompress it. Give control to ADM module for initialization. Initialize language and font modules for ADM. Activate ADM module.
33	Initializes the silent boot module. Set the window for displaying text information.
37	Displaying sign-on message, CPU information, setup key message, and any OEM specific information.

Checkpoint Code	Description
38	Initializes different devices through DIM.
39	Initializes DMAC-1 and DMAC-2.
3A	Initialize RTC date/time.
3B	Test for total memory installed in the system. Also, Check for DEL or ESC keys to limit memory test. Display total memory in the system.
3C	Mid POST initialization of chipset registers.
40	Detect different devices (Parallel ports, serial ports, and coprocessor in CPU, etc.) successfully installed in the system and update the BDA, EBDA, etc.
50	Programming the memory hole or any kind of implementation that needs an adjustment in system RAM size if needed.
52	Updates CMOS memory size from memory found in memory test. Allocates memory for Extended BIOS Data Area from base memory.
60	Initializes NUM-LOCK status and programs the KBD typematic rate.
75	Initialize Int-13 and prepare for IPL detection.
78	Initializes IPL devices controlled by BIOS and option ROMs.
7A	Initializes remaining option ROMs.
7C	Generate and write contents of ESCD in NVRam.
84	Log errors encountered during POST.
85	Display errors to the user and gets the user response for error.
87	Execute BIOS setup if needed / requested.
8C	Late POST initialization of chipset registers.

Checkpoint Code	Description
8D	Build ACPI tables (if ACPI is supported).
8E	Program the peripheral parameters. Enable/Disable NMI as selected.
90	Late POST initialization of system management interrupt.
A0	Check boot password if installed.
A1	Clean-up work needed before booting to OS.
A2	Takes care of runtime image preparation for different BIOS modules. Fill the free area in F000h segment with 0FFh. Initializes the Microsoft IRQ Routing Table. Prepares the runtime language module. Disables the system configuration display if needed.
A4	Initialize runtime language module.
A7	Displays the system configuration screen if enabled. Initialize the CPU before boot, which includes the programming of MTRR.
A8	Prepare CPU for OS boot including final MTRR values.
A9	Wait for user input at configure display if needed.
AA	Uninstall POST INT1Ch vector and INT09h vector. Reinitializes the ADM module.
AB	Prepare BBS for Int 19 boot.
AC	End of POST initialization of chipset registers.
B1	Save system context for ACPI.
00	Passes control to OS Loader (typically INT19h).

Beep Codes

Beep codes are used by the BIOS to indicate a serious or fatal error to the end user. Beep codes are used when an error occurs before the system video has been initialized. Beep codes are generated by the system board speaker. The following table describes the beep codes that are used by BIOS:

Number of beeps	Description
1	Memory refresh timer error.
3	Main memory read/write test error.
6	Keyboard controller BAT test error.
7	General exception error.
8	Display memory error.

4 Configuring the system

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

Upgrading the system

Certain components of the server are upgradeable such as the drives, the CPU, the memory, and the expansion cards. However, for safety purposes, we do not recommend that you perform these upgrades yourself. If you want to replace or upgrade any of these components, contact your dealer or a qualified service technician for assistance.

Important: Observe the installation precautions described in the subsequent section when installing or removing a server component.

Installation precautions

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

ESD precautions

Electrostatic discharge (ESD) can damage the processors, motherboard, disk drives, expansion boards, or other 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.

Preinstallation instructions

Always observe the following before you install any component:

1 Turn off the system and all the peripherals connected to it.

2 Unplug all cables from the power outlets.

3 Open the system according to the instructions on page 40.

4 Follow the ESD precautions described in this section when handling a server component.

5 Remove any expansion board(s) or peripheral(s) that block access to the DIMM socket 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

Observe the following 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 your system and all peripherals connected to it. Read the “Preinstallation instructions” on page 39.

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

Before opening the server

Before opening the server, observe the following precautions:

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.

Note: Because of the G310 design specification, only the side panel needs to be removed to access the system board.

To remove the side panel

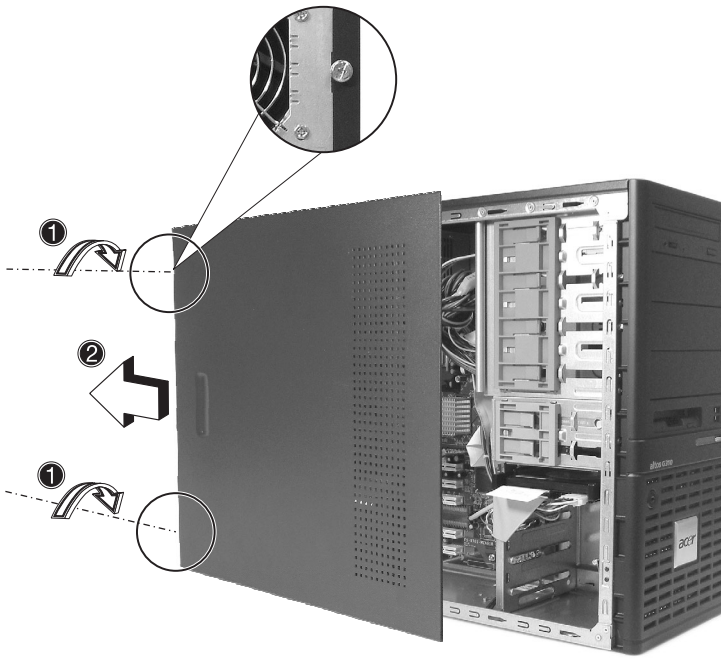
The side panel is attached to the server by two (non-removable) thumbscrews.

To remove the side panel:

1 Locate the System Keys (if necessary) and unlock the system lock on the front panel.

2 Loosen the thumbscrews located at the rear end of the left panel **(1)**.

3 Slide the left panel rearward **(2)** before detaching it from the chassis.



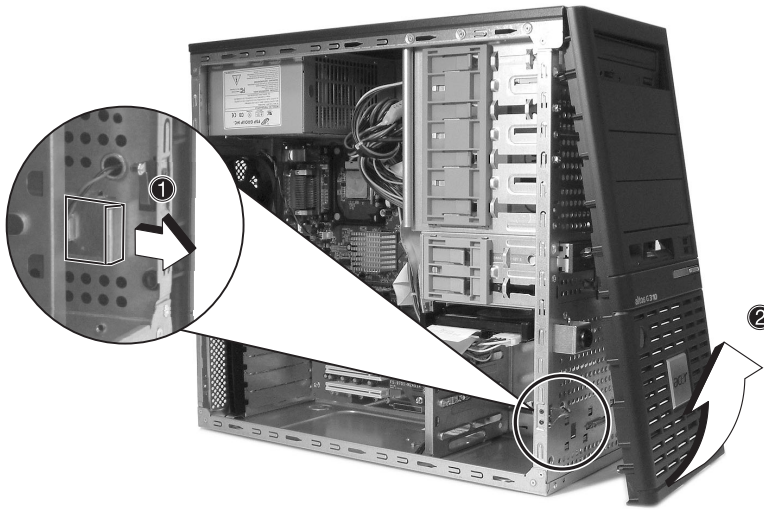
To remove the front panel

The front bezel is attached to the chassis by screwless hinges. To remove the front panel, you must remove the side panel first.

To remove the front bezel:

1 With your finger, pull the Front Panel Release lever located at the bottom front inside the chassis **(1)**.

2 Gently pull the bottom of the Front bezel away from the chassis **(2)**, lift it to approximately 45 degrees, then detach the top and move it away from the chassis.



Installing and removing storage devices

The system supports 3.5-inch and 5.25-inch internal storage devices. The system comes pre-installed with a floppy drive and a CD-ROM drive. The empty 5.25-inch half-height bays allow you to install additional drives such as another CD-ROM drive or a tape drive.

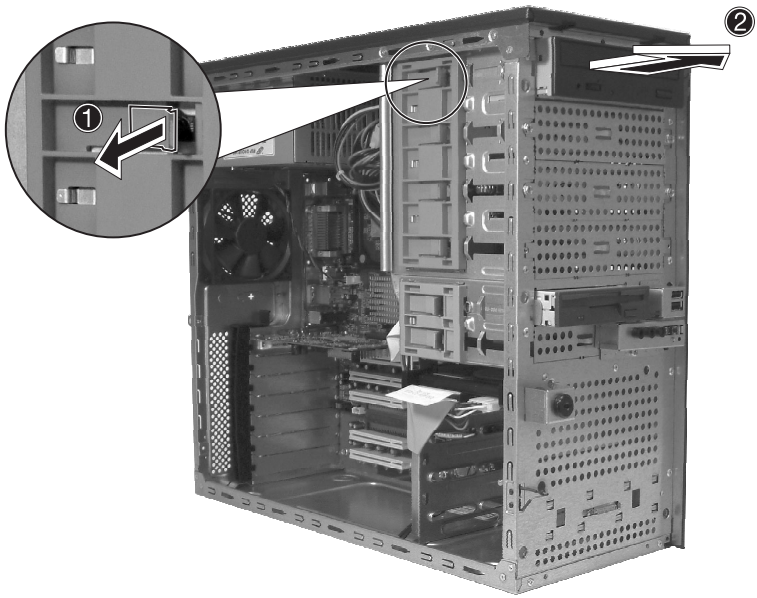
To install a 5.25-inch storage device

Note: If you are installing a new drive in an empty drive bay, skip steps 2 to 4.

1 Observe the ESD precautions and pre-installation procedures described on page 39.

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

3 Lift the plastic tab that secures the drive in the bay **(1)** and gently pull it from the chassis **(2)**.



4 Transfer the two tool-less locking rails (on either side of the old drive) to the new drive module.

5 Insert the new CD-ROM drive into the drive bay until it locks into place with an audible “click.”

6 Connect the power and IDE cables to the new drive.

7 Observe the post-installation instructions described on page 39.

Upgrading the CPU

This section includes instructions for removing and installing a CPU.

To remove a CPU with heatsink

Before installing a new CPU in a socket, remove first any previously installed CPU from that socket.

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 procedures described on page 38.

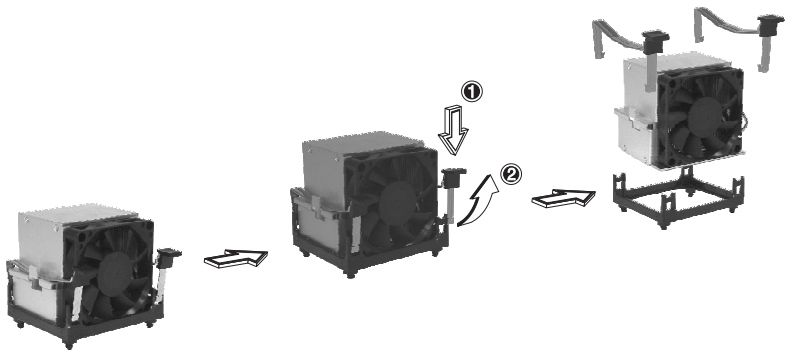
2 Locate the CPU socket on the mainboard.

3 To remove the CPU and Heatsink assembly, follow the steps below:

   a Locate the CPU FAN connector on the Mainboard and unplug the fan before continuing.

   b Release **(1)** and remove **(2)** the locking levers that secure the Heatsink assembly to the mainboard.

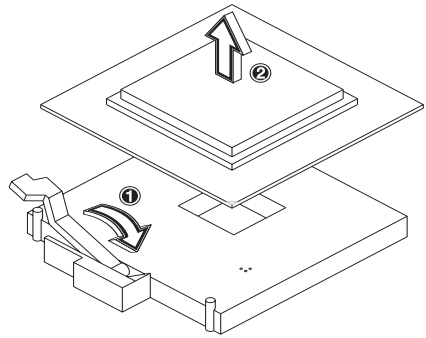
   c Remove the heatsink.



4 Follow the steps below to unlock and remove the CPU.

a Lift the CPU locking lever until it is fully extended.

b Gently unseat and pull the CPU from the socket.



Warning! The heatsink becomes very hot when the system is on. NEVER touch the heatsink with any metal or with your hands.

To install a CPU with heatsink

1 Observe the ESD precautions and pre-installation procedures described on page 38.

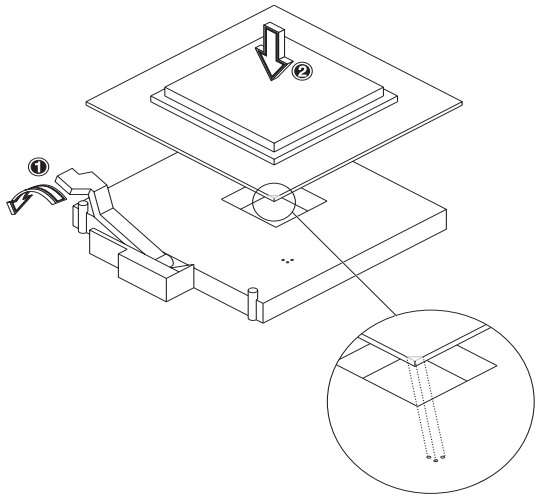
2 Locate the CPU socket on the mainboard.

3 Align the CPU to its socket, making sure that pin 1 (indicated by the notched corner) of the CPU connects to hole 1 of the socket (on the right corner in the image below).

4 To install the CPU to its socket, follow the steps below:

   a Firmly insert the CPU into the socket.

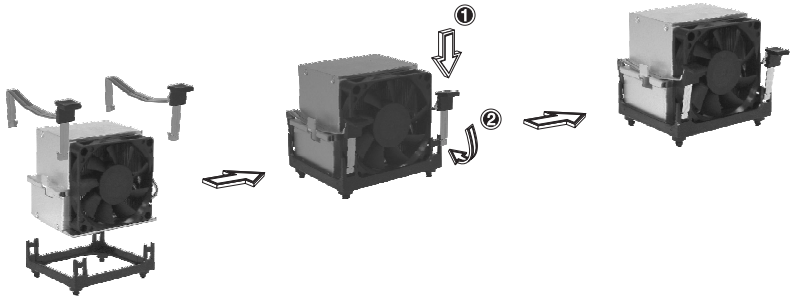
   b Lower the CPU locking lever to secure the processor.



5 After locking the CPU in place, follow the two remaining steps to replace the heatsink and fan.

   a Replace the heatsink on top of the CPU.

   b Replace the locking levers by pressing down **(1)** and securing the clips **(2)** to lock the heatsink assembly in place.



6 Reconnect the CPU FAN connector to the Mainboard. See “Mainboard layout” on page 9 if you have difficult locating the CPU FAN connector.

7 Observe the post-installation instructions described on page 39.

Upgrading the system memory

Memory configuration

This section includes instructions for removing and installing a memory module.

Memory Channel A		Memory Channel B		Memory Interleave	Dynamic Mode	Through put level
DIMM 1	DIMM 2	DIMM 3	DIMM 4			
256 MB				1-way	Yes	2
512 MB						
1 GB						
256 MB		256 MB		2-way	Yes	4
512 MB		512 MB				
1 GB		1 GB				
256 MB	256 MB	256 MB	256 MB	2-way	Yes	4
512 MB	512 MB	512 MB	512 MB			
1 GB	1 GB	1 GB	1 GB			

These tables (above and below) summarize the characteristics of 1-way and 2-way memory interleave configurations with and without use of dynamic mode.

Throughput level	Memory configuration
4 (highest)	2-way memory interleave with dynamic mode
3	2-way memory interleave without dynamic mode
2	1-way memory interleave with dynamic mode
1 (lowest)	1-way memory interleave without dynamic mode

Warning! Functionality issues may be encountered if mixed memory types are installed on the same server board. DIMM modules of identical type, banking and stacking technology, and vendor should be installed in the Altos G310.

To remove a DIMM

Before installing a new DIMM in a socket, remove first any previously installed DIMM from that socket.

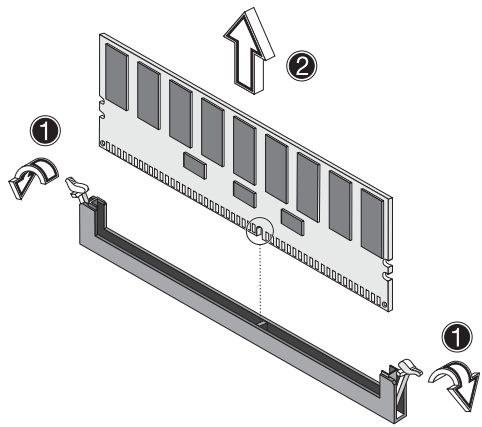
Important: Before removing any DIMM from the mainboard, make sure to create a backup file of all important data.

1 Observe the ESD precautions and pre-installation procedures described on page 39.

2 Locate the DIMM socket on the mainboard.

3 Press the holding clips on both sides of the socket outward to release the DIMM **(1)**.

4 Gently pull the DIMM upward to remove it from the socket **(2)**.



Note: Place your forefingers on the top of the DIMM before pressing the holding clips to gently disengage the DIMM from the socket.

To install a DIMM

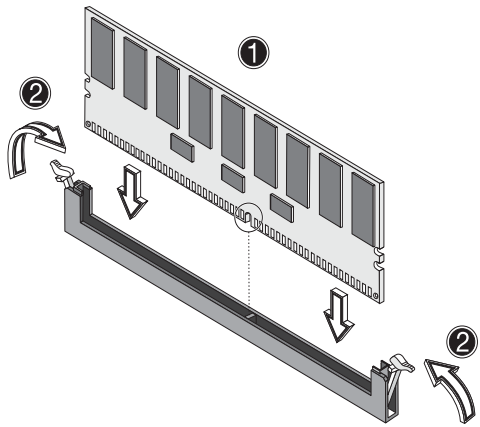
1 Observe the ESD precautions and pre-installation procedures described on page 38.

2 Locate the DIMM sockets on the mainboard.

3 Open the clips on the socket.

4 Align then insert the DIMM into the socket **(1)**.

5 Press the holding clips inward to lock the DIMM in place **(2)**.



DIMMs must be installed in the following order: DM1. DM2, DM3 and DM4

Note: The DIMM socket 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 39.

Reconfiguring 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 support PCI (Peripheral Component Interconnect) cards.

Note: The BIOS setup automatically detects and assigns resources to the new device (applicable only to Plug-and-Play expansion cards).

To install an expansion card

Note: The illustrations used in this section show the Altos G310 server chassis.

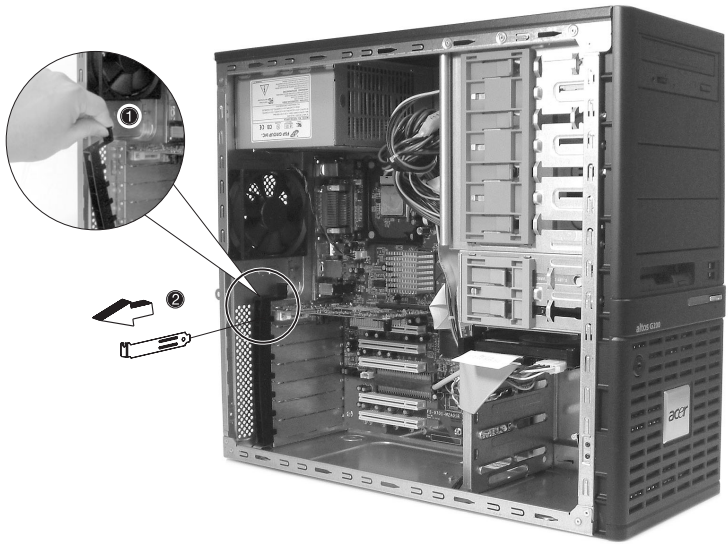
1 Observe the ESD precautions and pre-installation procedures described on page 38.

2 Remove the Side panel to access the mainboard. See page 41 for more information.

3 Locate an empty expansion slot on the mainboard.

4 Remove the tool-less the card bracket lock**(1)**.

5 Pull out the card bracket **(2)**.

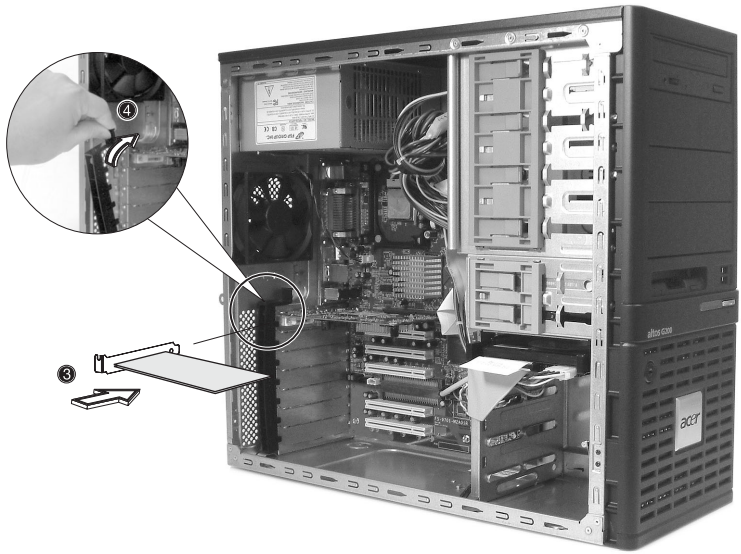


6 Remove the expansion card from its protective packaging.

7 Align the card in the empty slot on the mainboard.

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

9 Secure the card with the tool-less bracket card lock removed in step three above **(4)**.



10 Observe the post-installation instructions described on page 39.

Installing and removing a hard disk

Although the Altos G310 has four hard disk slots, the system board only supports a maximum of three.

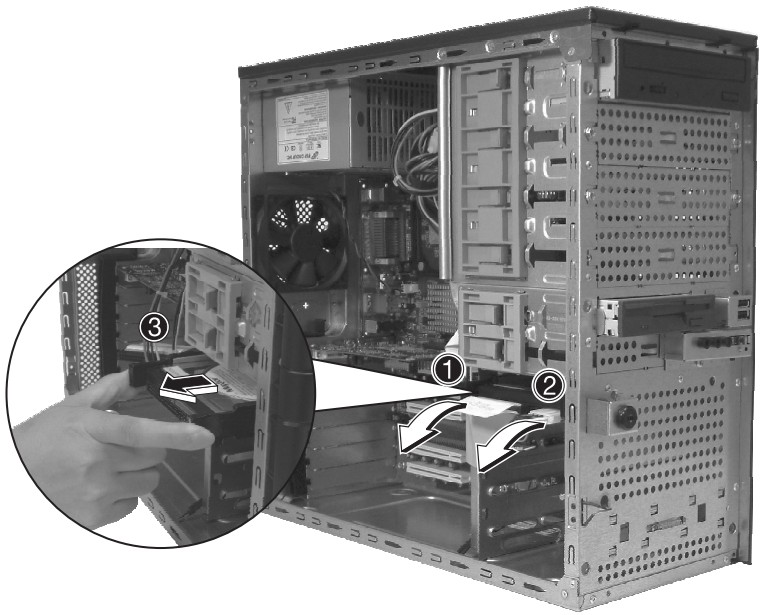
To remove a hard disk

Follow these steps to replace your computer's hard disk:

1 Remove the side and front panels (see page 41 and page 42).

2 Detach the cables from the exposed end of the HDD **(1)** and **(2)**.

3 Squeeze the two locking tabs that secure the drive to the chassis slot and gently remove the HDD from the system **(3)**.



To install a hard disk

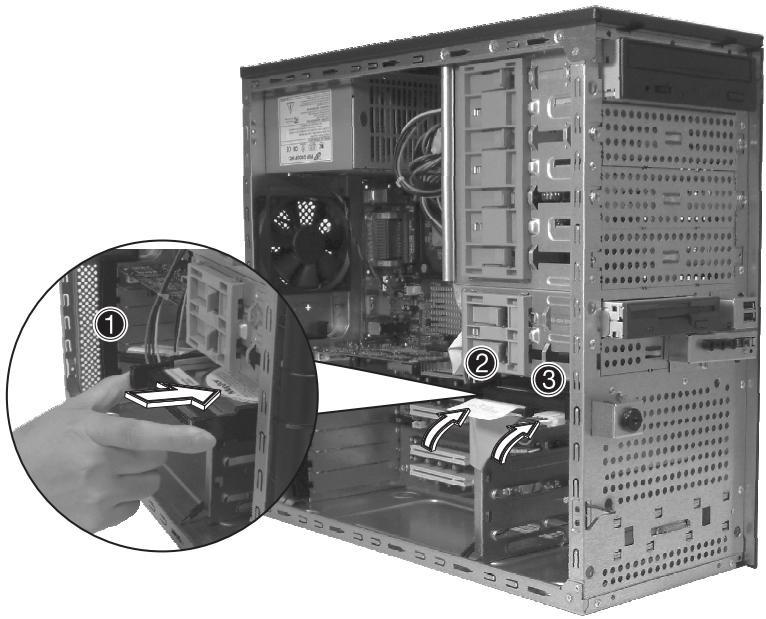
Observe the pre-installation and ESD precautions on page 38. Follow these steps to replace your computer's hard disk:

1 Remove the side panel (see page 41).

2 Attach the HDD rails to the sides of the drive housing.

3 Insert the drive into an empty HDD slot (slot 1 or slot 3) until it locks into place with an audible "click" **(1)**.

4 Attach the power and IDE cables to the HDD **(2)** and **(3)**.



5 Replace the side cover and observe post-installation instructions as explained on page 39.

Configuring the SCSI/SCSI RAID HBA

This section briefly shows how to create a RAID 1 (mirror) volume. This feature requires installation/presence of LSI Logic 20320-R or LSI Logic 22320-R U32 SCSI controllers.

How to use SCSI HBA setup utility

During the Power-On Self Test (POST), press <Ctrl > + <C> to enter the LSI Logic Configuration Utility.

Loading HBA Default Settings

1 In the LSI Logic MPT SCSI Setup Utility, please press F2 and select Global Properties. Then, select <Restore Defaults>.

2 Press ESC, then select <Save changes then exit this menu>.

3 Move cursor to <53C1020/1030> and press Enter.

4 Move cursor to <Restore Defaults> and press Enter.

5 Press ESC, then select <Save changes then exit this menu>.

How to use SCSI RAID HBA setup utility

How To Create RAID 1 (Mirror) volume with a Hot Spare Disk

1 In the LSI Logic MPT SCSI Setup Utility, please select <53C1020/1030> and press Enter.

2 Move cursor to <RAID Properties> and press Enter.

3 In Array Disk field, press Space key to change the hard disk to [Yes].

Note: In the Array Disk field, if you change settings, you will see the following messages. Press the DELETE key to erase data.

F3 - keep Data (Create 2 disk array)

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

4 In Hot Spare field, press Space key to change the hard disk to [Yes].

Note: In the Hot Spare field, if you change settings, you will see the following messages. Press the DELETE key to ignore it.

WARNING: Data on drive will be LOST!

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

5 Press ESC, then select <Save changes then exit this menu>.

RAID Volume Initialization

After you create RAID volume and save the changes, the disk controller will initialize RAID volume automatically. As LSI Logic 20320-R/22320-R can support background initialization, you don't have to wait for the initialization to complete. Now, you can exit LSI Logic Configuration Utility.

Exit and Restart the server

1 Press ESC, then select <Exit the Configuration Utility>. Then, you will see a [Global properties saved. Hit any key to reboot.] message.

2 Press a key to reboot system.

MegaRAID Configuration Utility

Turn on the system power. When prompted, press <Ctrl> + <M> to enter the MegaRAID Configuration Utility. After entering the MegaRAID Configuration Utility, you will see the Management Menu on the screen.

Load RAID Card Default Setting

1 Select Objects from Management menu.

2 Select Adapter from Objects. The adapter setting will be shown on the screen. You can change the setting from this menu.

3 Select Factory Default and YES to load the default settings.

4 Press <Ctrl> + <Alt> + <Del> to reboot the server.

Create RAID1 Volume

1 After the server has rebooted, press <Ctrl> + <M> to enter the MegaRAID Configuration Utility again.

2 Select Configuration from Management Menu.

3 Select New Configuration from the Configuration menu and select YES to continue. An array selection window displays the devices connected to the current controller.

4 Press the arrow keys to choose specific physical drives and press spacebar to associate the selected drive with the current array. The indicator for selected drive change from READY to ONLINE A[array number]-[drive number]. For example, ONLINE A1-2 means disk drive 2 in array 1.

5 Add 2 drives to current array and press <Enter> to finish creating current array.

6 Press <F10> to configure the logical drives.

7 The default RAID level for 2 disk drives is RAID1. Just select Accept to use the default setting and press <Enter> to return to the ARRAY SELECTION MENU.

8 Press <Enter> to end the array configuration.

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

Assign Hot Spare Disk

1 Select Add/View Configuration from Configuration menu.

2 Press arrow keys to choose specific physical drives and press <F4> to set the drive as Hot Spare Disk. Select YES to confirm and the indicator for selected drive change from READY to HOTSP.

3 Press <Esc> to end the array configuration.

4 Select YES to Save Configuration and press any key to return to the Configure menu.

Initialize RAID Volume

1 Press <Esc> to return to the Management Menu.

2 Select Initialize from Management menu. All logical drives should be listed under Logical Drives.

3 Press <Spacebar> to select drives for initialization. The selected drive will be shown in yellow.

4 After selecting the drives, press <F10> and select YES to start the initialization process.

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

6 Press <Esc> to return to the Management Menu.

Save And Exit MegaRAID Configuration Utility

1 When RAID configuration and initialization is complete, press <Esc> in the Management Menu and select YES to exit the MegaRAID Configuration Utility.

2 Press <Ctrl> + <Alt> + <Del> to reboot the server. Now you can start installing an OS on the RAID array.

Configuring Parallel ATA and Serial ATA devices

ATA Operate Mode

There are two modes to choose from: Legacy mode and Native mode.

1 Legacy Mode

- System BIOS assigns 14 and 15 IRQs for HDD use
- Older OSs that do not support Native Mode (DOS, Win2K, Win98/ME...) should set S-ATA and P-ATA to Legacy Mode
- Maximum 4 ATA devices to connect under Combined mode or Non-Combined mode

a Non-Combined Mode: S-ATA devices only - Maximum of 2 devices

b Non-Combined Mode: P-ATA devices only - Maximum of 4 devices

c Combined Mode: S-ATA devices and P-ATA devices - 2 devices each (Maximum of 4 devices)

2 Native Mode

- System BIOS will search all available IRQs for HDD use
- New OSs that support Native Mode (Windows® XP Professional, Windows® 2000) can set S-ATA and P-ATA to Native Mode
- Comprehend both Legacy and/or Native Modes
- Maximum of 6 devices can be connected (4 P-ATA and 2 S-ATA)

Note: Proper support; BIOS provides a BIOS setup option for user selection of Native Mode or Legacy Mode.

Intel ICH5R Serial ATA RAID introduction

The south bridge ICH5R provides a hybrid solution that combines two independent SATA ports for support of up to two Serial ATA (Serial ATA RAID) drives.

Serial ATA (SATA) is the latest generation of the ATA interface. SATA hard drives deliver transfer speeds of up to 150 MB/sec.

- Supports 150 MB/sec transfers with CRC error checking
- Data handling optimization including tagged command queuing, elevator seek and packet chain command

Parallel ATA and Serial ATA device configurations supported by Intel ICH5R

ATA Operate Mode BIOS configuration

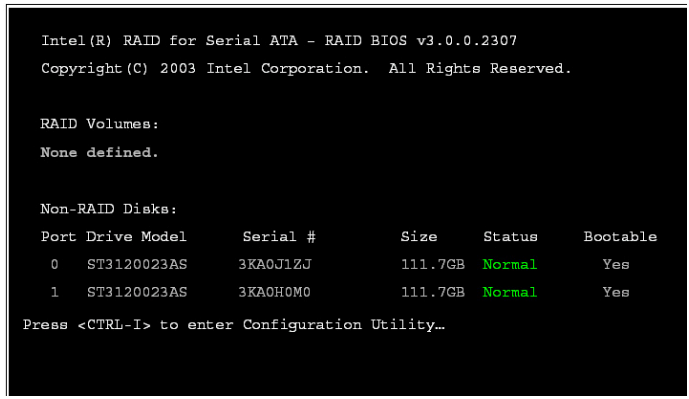
The Intel RAID Option ROM should be integrated with the system BIOS on all motherboards with a supported Intel chipset. Press <Ctrl> + <I> to enter the Intel RAID for Serial ATA status screen, which should appear early in system boot-up, during the POST (Power-On Self Test).

Using the Intel RAID Option ROM

Creating, Deleting and Resetting RAID Volumes

The Serial ATA RAID volume may be configured using the RAID Configuration utility located on the Intel RAID Option ROM. During

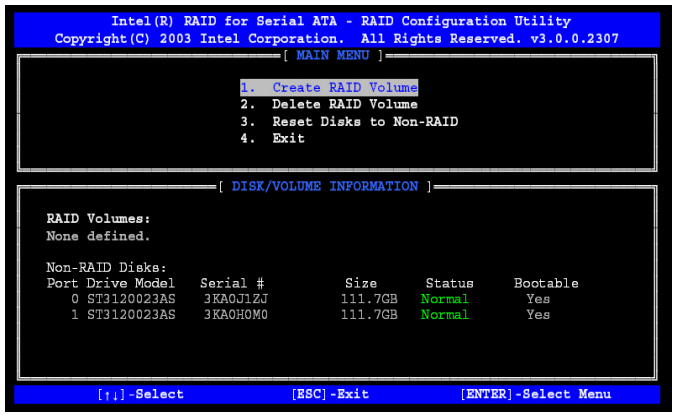
the Power-On Self Test (POST), the following screen will appear for a few seconds:



Note: The “Drive Model,” “Serial #,” and “Size” shown in the above example may differ from your system configuration.

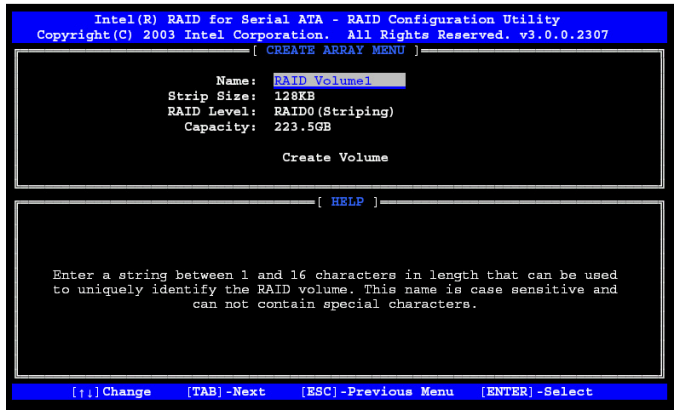
When the above message appears, press <Ctrl> + <I> simultaneously to enter the RAID Configuration Utility.

After pressing the <Ctrl> + <I> keys simultaneously, the following window will appear:



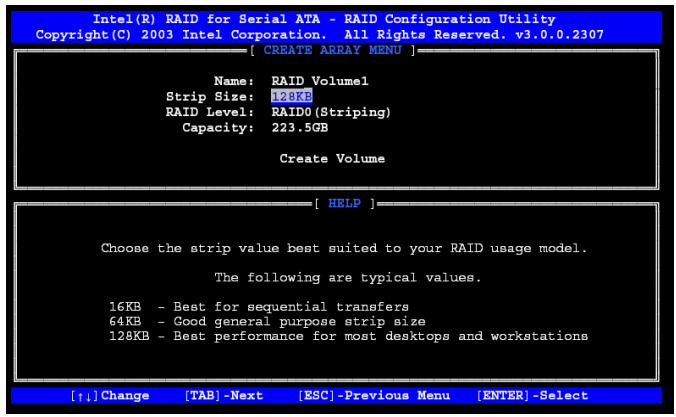
Option 1: Create RAID Volume

To create a RAID volume, select this option on the screen and press <Enter>. The following screen will appear:



Note: The following procedure is only available with a newly-built system or if you are reinstalling your OS. It should not be used to migrate an existing system to RAID 0.

Specify a RAID Volume name and then press the <TAB> or <Enter> key to go to the next field.



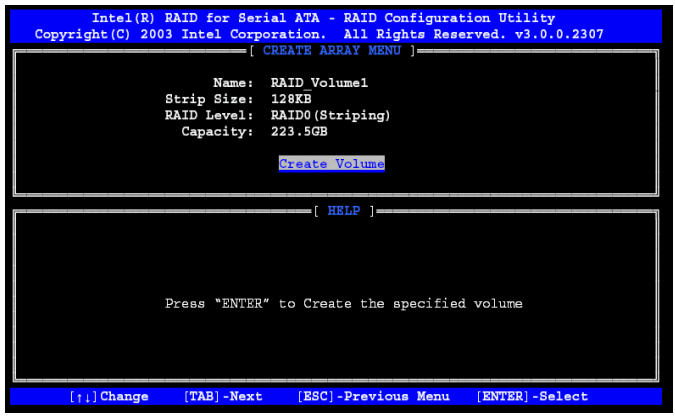
Select the strip value for the RAID 0 array by scrolling through the available values by using the “up arrow” or “down arrow” keys. Press the <Enter> key to select and advance to the next field.

The available values range from 4KB to 128 KB in power of 2 increments. The strip value should be chosen based on the planned drive usage. Here are some suggested selections:

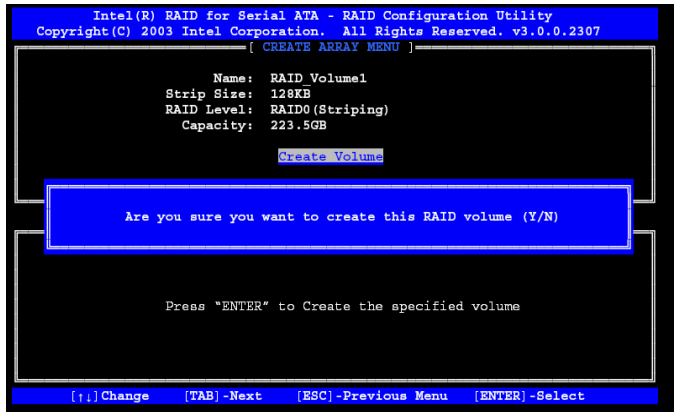
- 16 KB - Best for sequential transfers
- 64 KB - Good general purpose strip size
- 128 KB - Best performance for most desktops and workstations

The default strip size is 128 KB.

From the Strip size, press the <Tab> or <ENTER> key to advance to the Create Volume prompt. The window will appear as follows:

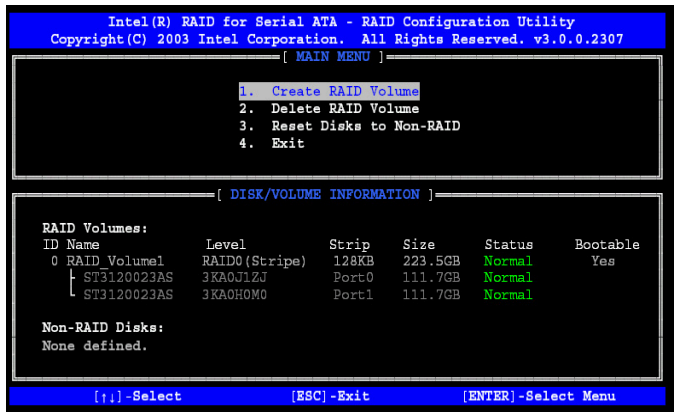


Press <Enter> to create the specified volume and the following prompt will show:

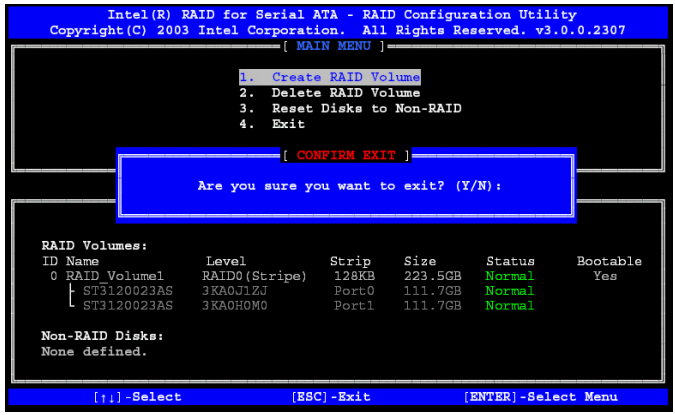


Press <Y> to confirm the selection or press <N> to previous screen to create the RAID volume again.

Then you will return to the main menu with an updated status as shown below:



Scroll to option 4 (Exit) and press <Enter> to exit the RAID Configuration utility. The following prompt appears:



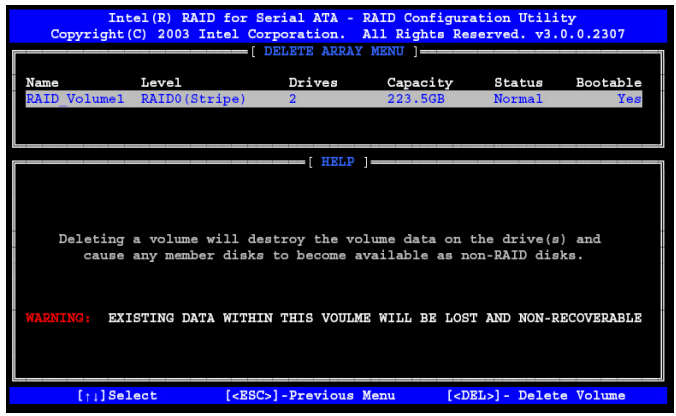
Press <Y> to confirm and exit or <N> to previous screen.

Option 2: Delete RAID Volume

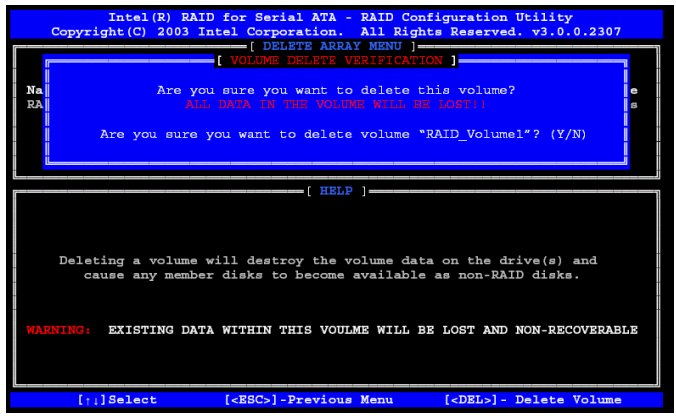
Here you can delete the RAID volume, but please note that all data including settings on RAID drives will be lost.

Note: If your system currently boots to RAID and you delete the RAID volume in the Intel RAID Option ROM, your system will become unbootable.

Select option 2 Delete RAID Volume from the main menu window and press <Enter> to select a RAID volume for deletion. The following window will appear:



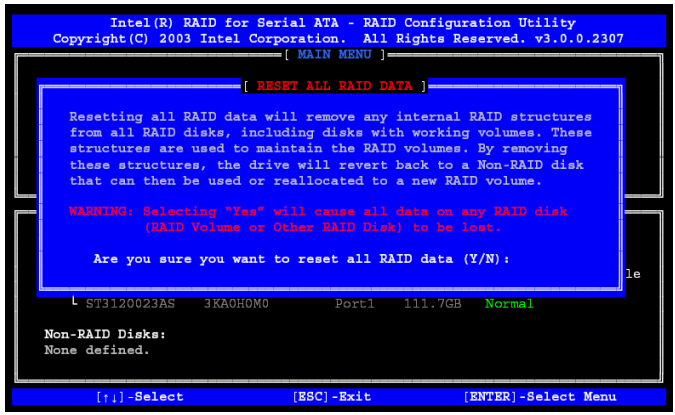
Select a volume and press <Del> to delete the RAID volume. The following prompt appears:



Press <Y> to delete the selected volume.

Option 3: Reset Disks to Non-RAID

Select option 3 Reset Disks to Non-RAID and press <Enter> to delete the RAID volume and remove any RAID structures from the drives. The following screen appears:



Press <Y> key to accept the selection.

Note: You will lose all data on the RAID drives and any internal RAID structures when you perform this operation.

Note: This operation may cause some issues such as incompatible RAID configuration, a failed volume or failed disk.

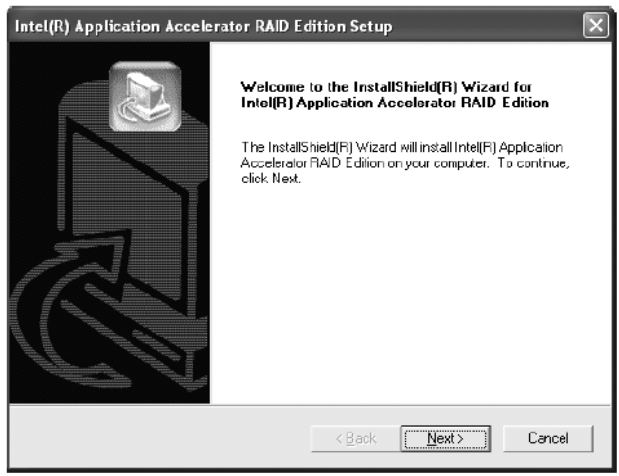
Installation of Intel Application Accelerator RAID Utility

The Intel® Application Accelerator RAID Edition is the software package that enables high-performance RAID 0 or RAID 1 arrays in Windows® XP. This version of Intel® Application Accelerator contains the following key features:

- Serial ATA RAID driver for Windows® XP/2000
- Intel® Application Accelerator RAID Edition utility
- Migration Feature

Insert the Acer System CD and click on the "Intel IAA RAID Edition" to install the software.

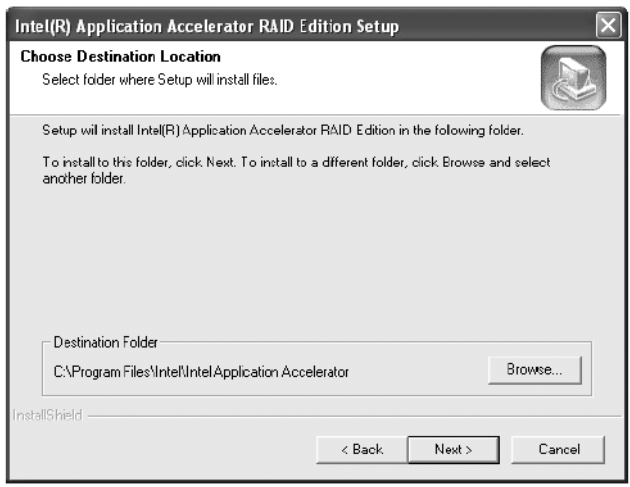
The InstallShield Wizard will automatically begin the installation process.



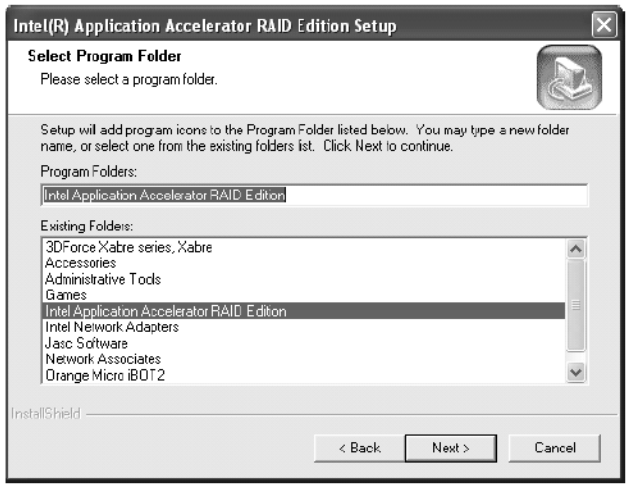
Click on the Next button to proceed from the installation welcome window.

After reading the license agreement in the following window, click Yes button to continue.

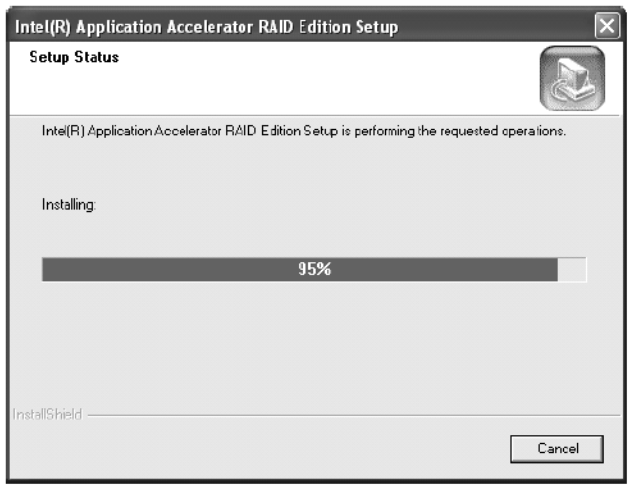
Select the folder in which you want the program to be installed in the following window, and click Next button to start installation.



Select a program folder in the following window where you want Setup to add the program icon. Default is "Intel Application Accelerator RAID Edition."



The following window appears to show the Intel Application Accelerator RAID Edition Setup installation progress.



Once the installation is complete, the following window appears.

Click the Finish button to end the installation and exit the setup utility.

RAID Migration Instructions

The Intel Application Accelerator RAID Edition offers the flexibility to upgrade from a single Serial ATA (SATA) hard drive to a two drive RAID-0 configuration when an additional SATA hard drive is added to the system. This process will create a new RAID volume from an existing disk. However, several important steps must be followed at the time the system is first configured in order to take advantage of RAID when upgrading to a second SATA hard drive.

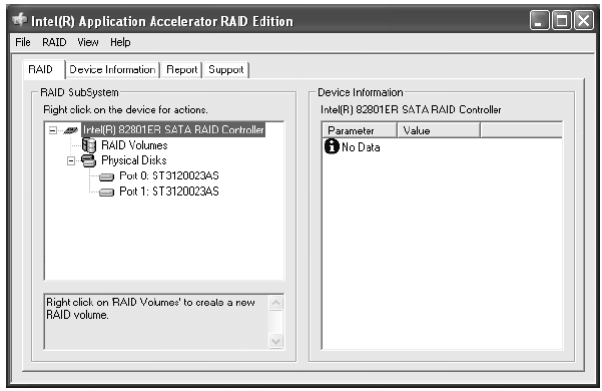
- BIOS must be configured for RAID before installing Windows XP / 2000 on the single SATA hard drive.
- Install the Intel Application Accelerator RAID driver during Windows Setup.
- Install the Intel Application Accelerator RAID Edition after the operating system is installed.

Note: A **Create from Existing Disk** operation will delete all existing data from the added disk and the data cannot be recovered. It is critical to backup all important data on the added

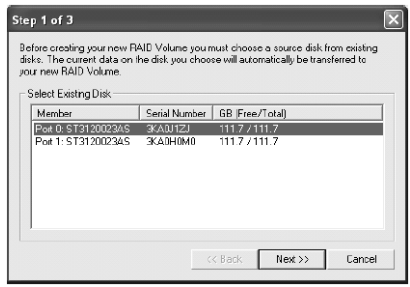
disk before proceeding. During the migration process, the data on the source disk will be preserved.

Create RAID Volume from Existing Disk

To create a RAID volume from an existing disk, right-click on "RAID Volume" and select "Create From Existing Disk" to create a new RAID volume as shown in the screen below. You may also use the RAID drop-down menu and click on "Create Volume from Existing Disk."



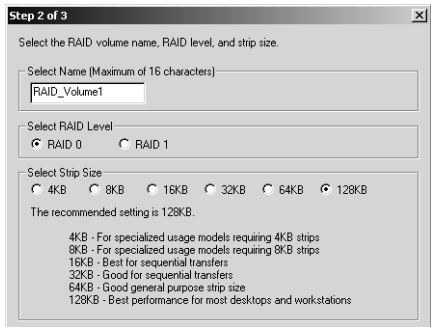
1 Select the source disk that you wish to use and then click Next.



Important: It is very important to note which disk is the source disk (the one containing all of the information to be migrated) and which one is the target disk. On a RAID Ready system, this can be determined by making a note during POST of which port (e.g. Port 0 or Port 1) the single disk is attached to. You can also use the Intel

Application Accelerator RAID Edition utility before the second disk is installed to verify the Port and serial number of the drive that contains all the data.

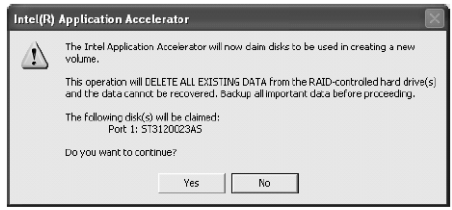
2 Select the RAID volume name and strip size, and click Next.

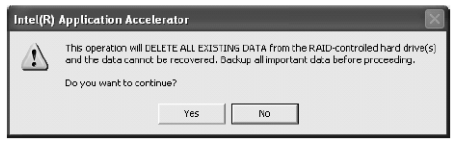


- **RAID Volume Name** - A desired RAID volume name needs to be typed in where the RAID_Volume1 text is shown above. The RAID volume name has a maximum limit of 16 characters. The RAID volume name must be in English alphanumeric ASCII characters.
- **Strip Size** - Select the desired strip size setting. As indicated, the optimal setting is 128KB. Selecting any other option may result in performance degradation. Even though 128KB is the recommended setting for most users, you should choose the strip size value which is best suited to your specific RAID usage model. The most typical strip size settings are:
  - 4KB: For specialized usage models requiring 4KB strips
  - 8KB: For specialized usage models requiring 8KB strips
  - 16KB: Best for sequential transfers
  - 32KB: Good for sequential transfers
  - 64KB: Good general purpose strip size
  - 128KB: Best performance for most desktops and workstations

Before you continue to Step 3 (by clicking Next in Step 2), read the next 2 dialog boxes carefully. Please note that once you have selected Migrate in Step 3, the Intel Application Accelerator RAID Edition will have claimed the disks to be used in creating a new volume and this

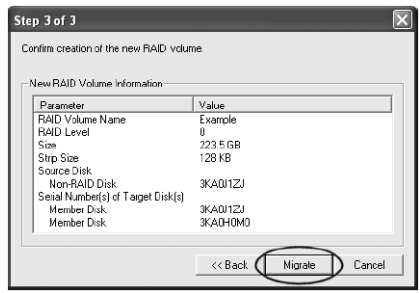
operation cannot be undone. It is critical that you backup all important data before selecting Yes to these dialog boxes:





3 Confirm the creation of new RAID volume

In Step 3, confirm the creation of the new RAID volume and then click Migrate:



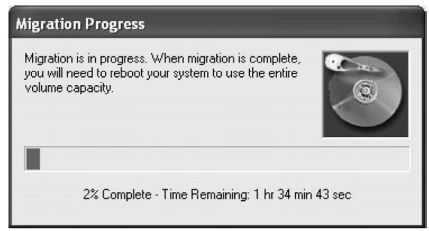
Migration Process

The migration process may take up to two hours to complete depending on the size of the disks being used and the strip size selected.

A dialog window will appear stating that the migration process may take considerable time to complete and you must click Yes in order to start the migration.

While you can still continue using your computer during the migration process, once the migration process starts, it cannot be stopped. If the migration process gets interrupted and your system is rebooted for any reason, it will pick up the migration process where it left off.

You will be provided with an estimated completion time (the remaining time will depend on your system) once the migration process starts as illustrated in the following example:



The following screen appears if the migration process is completed successfully. Then you have to reboot your system to use the full capacity of the new volume.

5 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 your 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 setup.

Entering BIOS setup

Power on the server to start the system POST (Power On Self Test) 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 your 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 preceded by a (**>**), it means that a submenu screen is available.

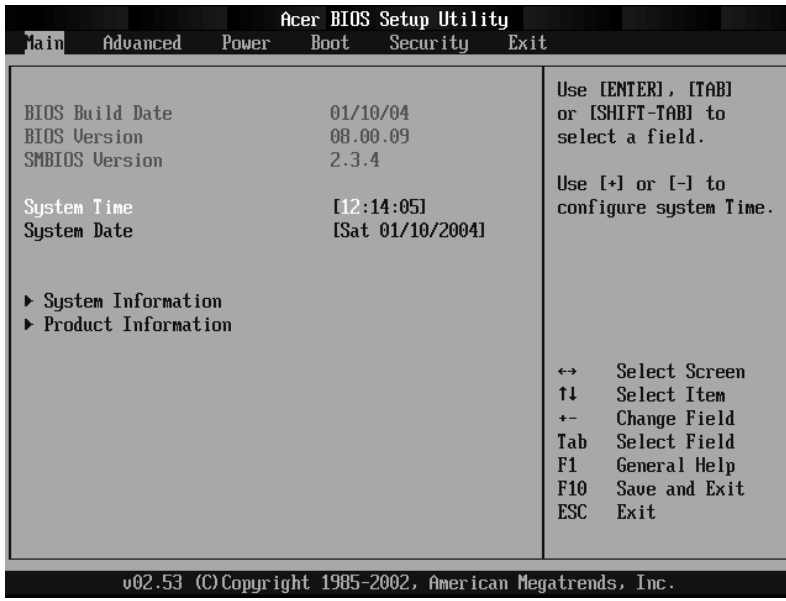
- Press **F1** for General Help on using the BIOS setup.
- Press **F10** to save changes and close the BIOS setup.
- Press **Esc** to close the BIOS setup.

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 is necessary for troubleshooting and may be required when asking for technical support.

The last two parameters on the screen lets you define the system'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.



Parameter	Description
BIOS Build Date	Date BIOS setup was created
BIOS Version	ID number of BIOS setup
SMBIOS Version	SMBIOS version of BIOS

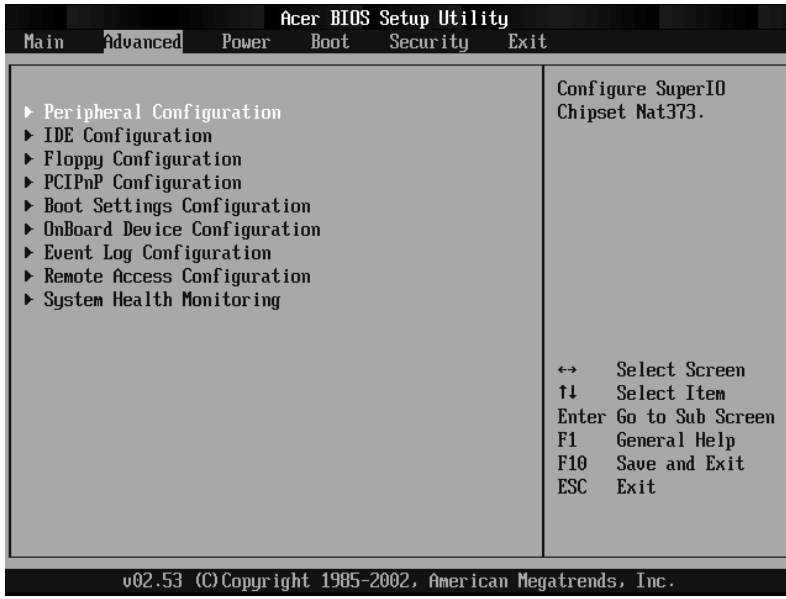
Parameter	Description
System Time	Sets the time following the hour-minute-second format. Valid values for hour, minute, and second are: Hour: 00 to 23 Minute: 00 to 59 Second: 00 to 59
System Date	Sets the date following the weekday-month-day-year format. Valid values for weekday, month, day, and year are: Weekday: Sun, Mon, Tue, Wed, Thu, Fri, Sat Month: 1 to 12. Day: 1 to 31 Year: 1980 to 2079

Advanced

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

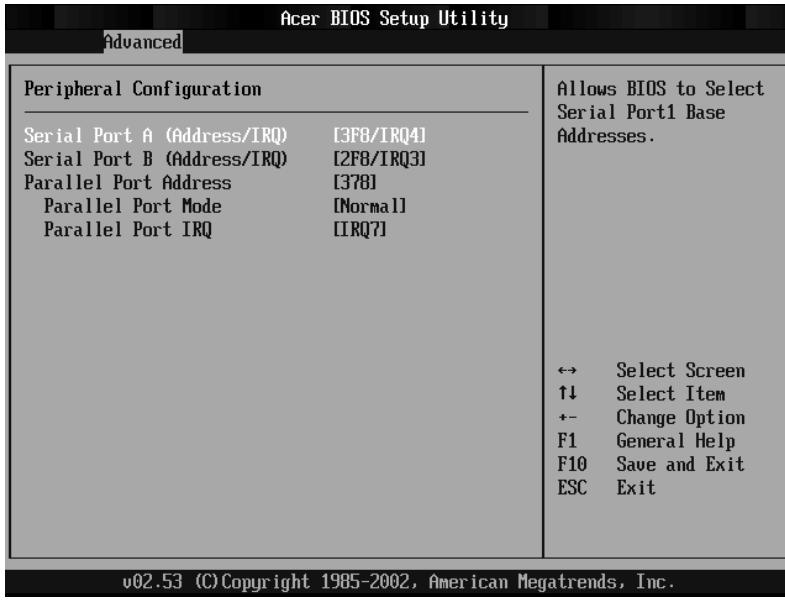
Warning! Be cautious in setting parameter values in the Advanced menu as any incorrect value may cause the system to malfunction.

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



Peripheral Configuration

The Peripheral Configuration submenu lets you define the parameter settings for the system's parallel and serial ports.

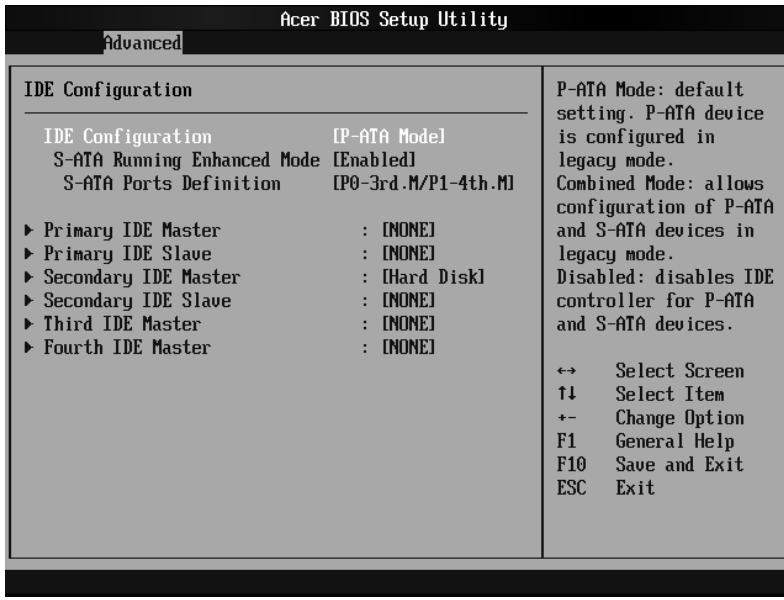


Parameter	Description
Serial Port A (Address/IRQ)	Serial port 1 address and IRQ (interrupt request) setting.
Serial Port B (Address/IRQ)	Serial port 2 address and IRQ (interrupt request) setting.
Parallel Port Address	Sets a logical base address for the parallel port.
Parallel Port Mode	Sets the operation mode for the parallel port.

Parameter	Description
Parallel Port IRQ	Assigns an IRQ for the parallel port. If you install an add-on card that has a parallel port whose address conflicts with the onboard parallel port, a warning appears on the screen. Check the parallel port address of the add-on card and change the address to one that does not conflict.

IDE Configuration

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

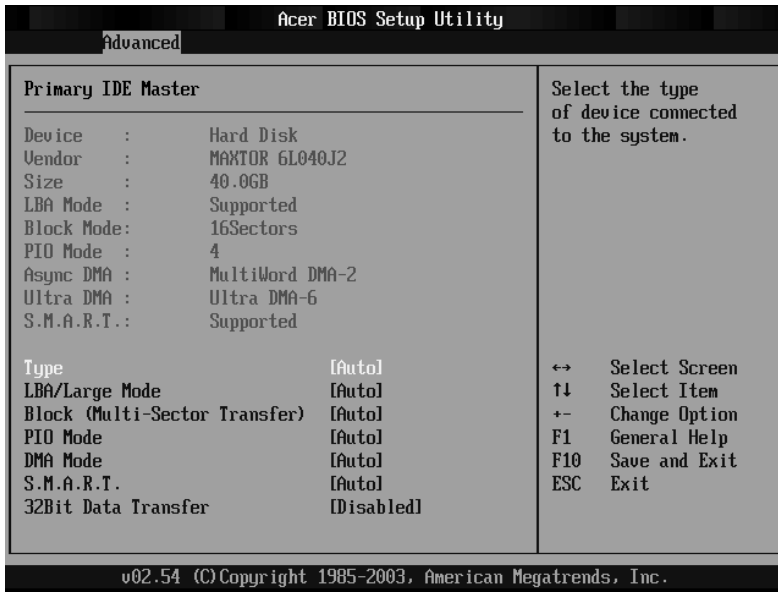


Parameter	Description
IDE Configuration	**P-ATA Mode:** default setting. P-ATA device is configured in legacy mode. **Combined Mode:** allows configuration of P-ATA and S-ATA devices in legacy mode. **Disabled:** disables IDE controller for P-ATA and S-ATA devices.
S-ATA Running Enhanced Mode	**Enabled:** default setting IF IDE Configuration is set to P-ATA Mode. S-ATA devices are configured in Normal Mode and P-ATA devices in Legacy Mode. **Disabled:** disables this feature.

Parameter	Description
Primary IDE Master	Display detected device type (if any present). Display **NONE** (if none detected). Press **Enter** to access submenu.
Primary IDE Slave	Display detected device type (if any present). Display **NONE** (if none detected). Press **Enter** to access submenu.
Secondary IDE Master	Display detected device type (if any present). Display **NONE** (if none detected). Press **Enter** to access submenu.
Secondary IDE Slave	Display detected device type (if any present). Display **NONE** (if none detected). Press **Enter** to access submenu.
Third IDE Master	Display detected device type (if any present). Display **NONE** (if none detected). Press **Enter** to access submenu.
Fourth IDE Master	Display detected device type (if any present). Display **NONE** (if none detected). Press **Enter** to access submenu.

Primary IDE Master

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

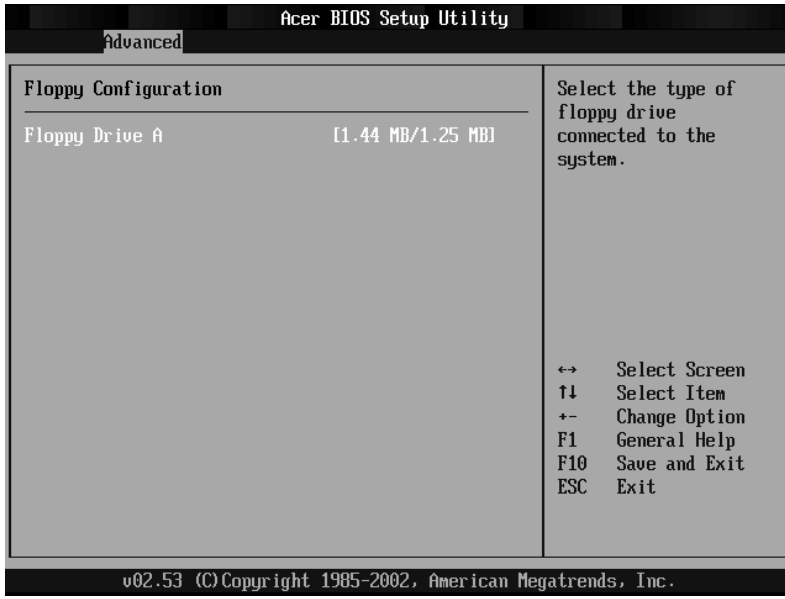


Parameter	Description	Option
Device	Type of IDE device	
Vendor	Vendor of the selected IDE device	
Size	Size of the selected device	
Type	Driver type	**Auto** CD-ROM ARMD Not Installed
LBA/Large Mode	Selects the hard disk drive translation method. For drivers with more than 504 MB, the LBA mode is necessary.	**Auto** Disabled

Parameter	Description	Option
Block Mode	Enhances disk performance depending on the hard disk in use. If you set this parameter to Auto, BIOS setup automatically detects if the installed hard disk drive supports the Block Mode function. If supported, it allows data transfer in blocks (multiple sectors) at a rate of 256 bytes per cycle. If you set this parameter to Disabled, data transfer from and to the device occurs one sector at a time.	**Auto** Disabled
PIO Mode	When set to **Auto**, BIOS setup automatically detects if the installed hard disk supports the function. If supported, it allows for faster data recovery and read/ write timing that reduces hard disk activity time. This results in better hard disk performance. Mode 0 to 4 provide successive increases in performance.	**Auto** 0 1 2 3 4
DMA Mode	Selects DMA (Direct Memory Access) mode. Options include: Auto: Auto detected SWDMAn: SingleWordDMAn MWDMAn: MultiWordDMAn UDMAn: UltraDMAn	**Auto** SWDMAn MWDMAn UDMAn
S.M.A.R.T	Enables or disables the S.M.A.R.T (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 driver supports it.	**Auto** Disabled Enabled
32-bit Data Transfer	Enables or disables the 32-bit data transfer function.	**Disabled** Enabled

Floppy Configuration

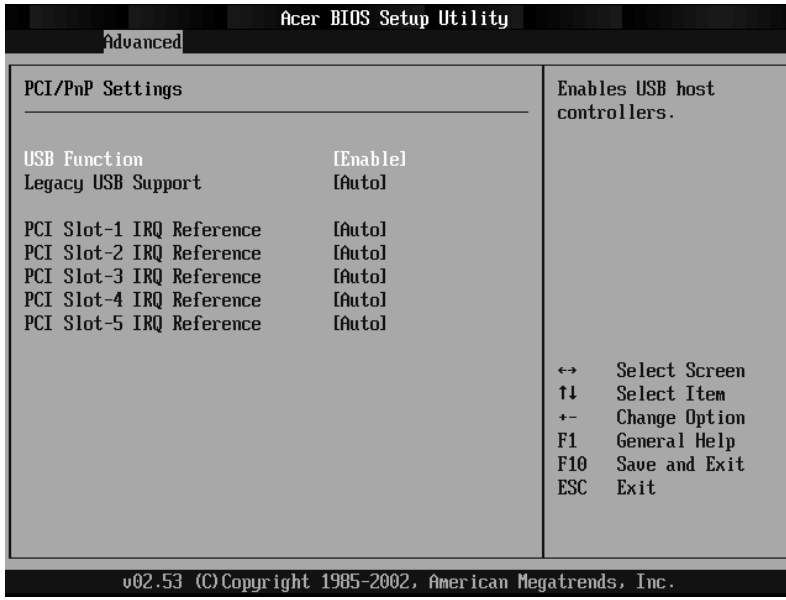
The Floppy Configuration submenu displays the type of floppy drive installed in the server.



Parameter	Description	Option
Floppy Drive A	Floppy disk drive type	**1.44 MB/1.25 MB** None

PCI/PnP Configuration

The PCI/PnP Configuration submenu lets you specify the settings for the PCI devices.

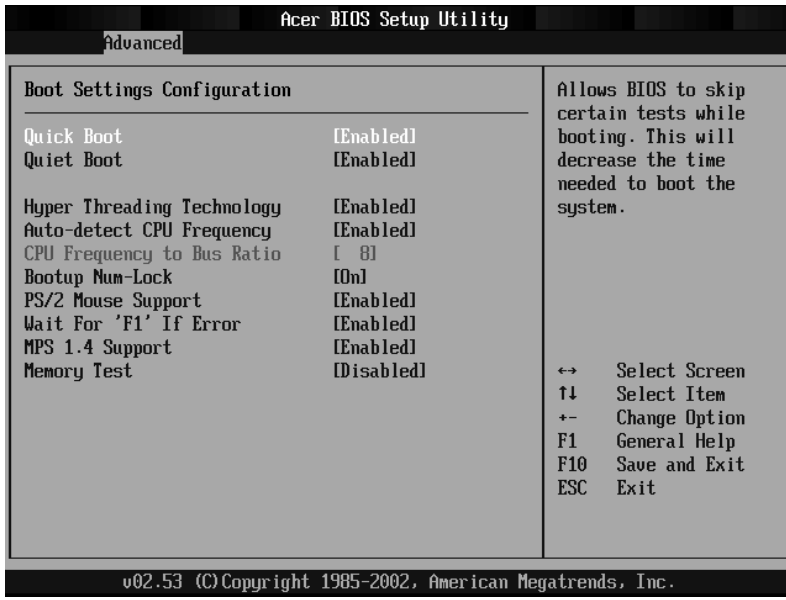


Parameter	Description	Option
USB Function	Enables the system's USB ports.	**Enabled** Disabled
Legacy USB Support	Enable this parameter when you intend to use a USB device and are using a non-Plug and Play operating system, such as DOS.	**Disabled** Auto

Parameter	Description	Option
PCI Slot-1 IRQ Reference thru PCI Slot-5 IRQ Reference	Sets a parameter for the PCI buses.	**Auto**

Boot Settings Configuration

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



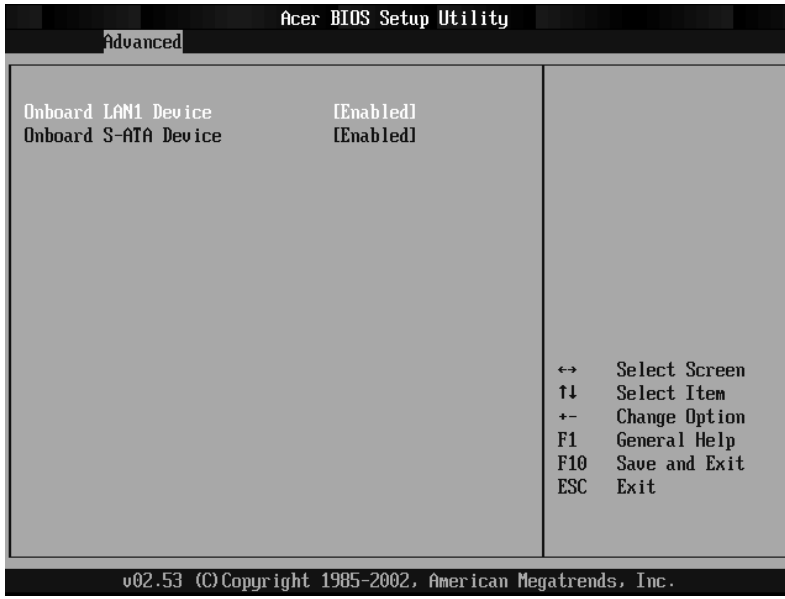
Parameter	Description	Option
Quick Boot	Allows the system to boot faster by skipping some POST routines.	**Enabled** Disabled

Parameter	Description	Option
Quiet Boot	Enables or disables the Quiet Boot function. When set to Enabled, BIOS setup is in graphical mode and displays only an identification logo during POST and while booting. After booting, the screen displays the operating system prompt (such as DOS) or logo (such as Windows). If any error occurs while booting, the system automatically switches to text mode. Even if your setting is Enabled, you may still switch to text mode while booting by pressing the **F2** key when you see the "Press F2 key to enter setup" message on the screen. When set to Disabled, BIOS setup is in the conventional text mode where you see the system initialization details on the screen.	**Enabled** Disabled
Hyperthreading Technology	Enable or disables the hyperthreading function of the processor. When enabled, one physical processor acts as two logical processors by "threading" two sets of data instructions in parallel streams for processing. The processor can then simultaneously manage incoming data from different applications without losing track of the data processing status of each.	**Enabled** Disabled
Auto-Detect CPU Frequency	BIOS will set the CPU optimal speed to its highest speed without re-entering BIOS Setup to load default settings.	**Enabled**
CPU Frequency to Bus Ratio	CPU/bus ratio of the system. The clock speed of the bus does not necessarily equal the CPU's. Mostly, the bus clock speed is slower than the CPU clock speed. Gray coloured with optimal value displayed if Auto-Detect CPU Frequency is Enabled.	XX
Boot up Num Lock	Activates the Num Lock function upon booting.	**On** Off

Parameter	Description	Option
PS/2 Mouse Support	Enable this parameter if you intend to use a mouse or trackball with a PS/2 interface.	**Enabled** Disabled
Wait for 'F1' if Error	When this item is enabled you will be prompted to press **F1** when an error is detected during boot up.	**Enabled** Disabled
MPS 1.4 Support	If you enable this item, the system BIOS MP table will be compatible with MultiProcessor Specification version 1.4 .	**Enabled** Disabled
Memory Test	Allows BIOS to skip certain tests while booting. Decreases the time needed to boot the system.	**Enabled** Disabled

OnBoard Device Configuration

The OnBoard Configuration submenu displays the types of devices the system board can support.

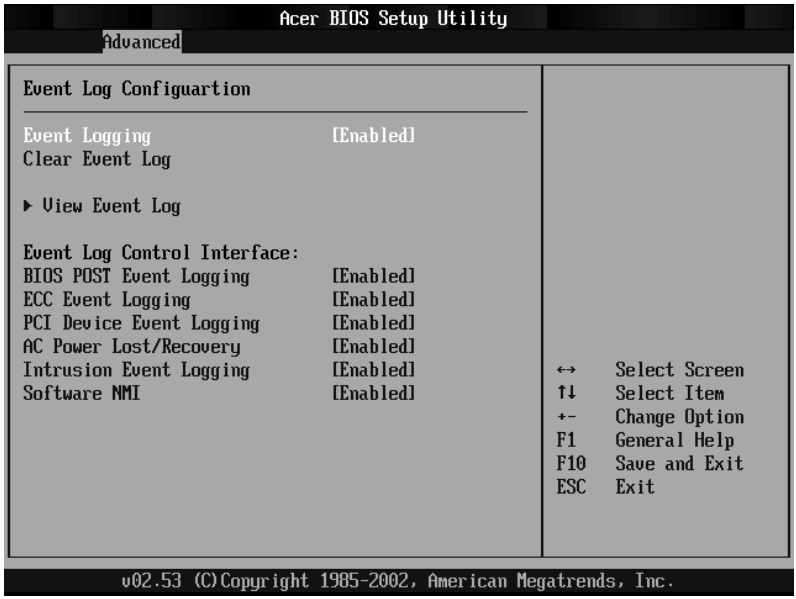


Parameter	Description	Option
OnBoard LAN	Gigabit ethernet support	**Enabled** Disabled
OnBoard S-ATA	Serial ATA drive support	**Enabled** Disabled

Event Log Configuration

The Event Log 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 (e.g., system temperature changes, fan stops, etc.).

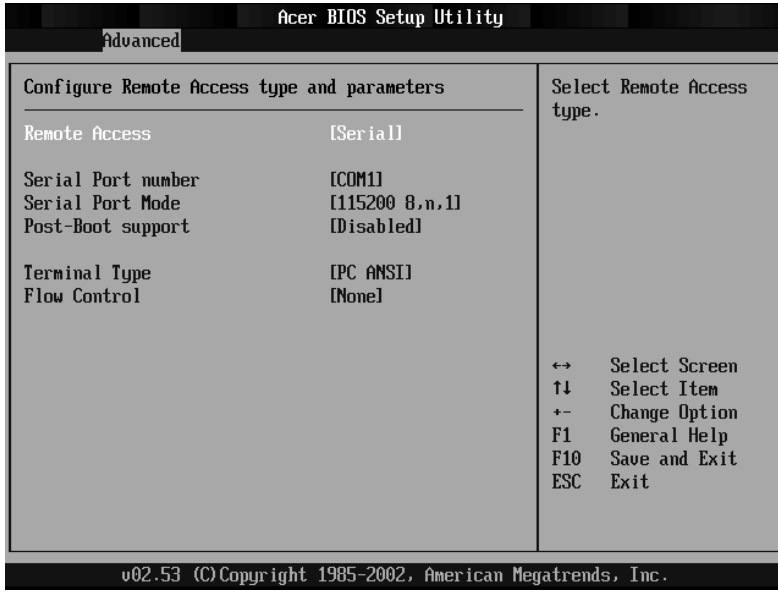


Parameter	Description	Option
Event Logging	Enables or disables the event logging function of the system.	**Enabled** Disabled
Clear All Event Log	When this item is set to Enabled, the event log is cleared and this parameter is set to Disabled for the next system bootup.	**No** Yes
View Event Logs	Opens the system event log file for viewing.	

Parameter	Description	Option
BIOS POST Event Logging	BIOS checks the bad processors and memory modules during the POST process. When this parameter is enabled, it will make a log of this operation.	**Enabled** Disabled
ECC Event Logging	ECC (Error Correcting Code) tests the accuracy of data as it passes in and out of memory. When this parameter is enabled, single-bit and multi-bit memory errors will be recorded in the event log.	**Enabled** Disabled
PCI Device Event Logging	PCI (Peripheral Component Interconnect) is a 32-bit bus that supports a 64-bit extension for new processors, such as Pentium processors. It can run at clock speeds of 33 or 66 MHz. When this parameter is enabled, any PCI device error will be recorded in the event log.	**Enabled** Disabled
AC Power Lost/Recovery	When this parameter is enabled, any instance of AC power lost will be monitored and logged in the event log.	**Disabled** Enabled
Intrusion Event Logging	Allow logging of chassis intrusion events.	**Enabled** Disabled
Software NMI	Enabled is the default setting.	**Enabled** Disabled

Remote Access Configuration

The Remote Access Configuration submenu lets you specify settings related to the system's remote management features.

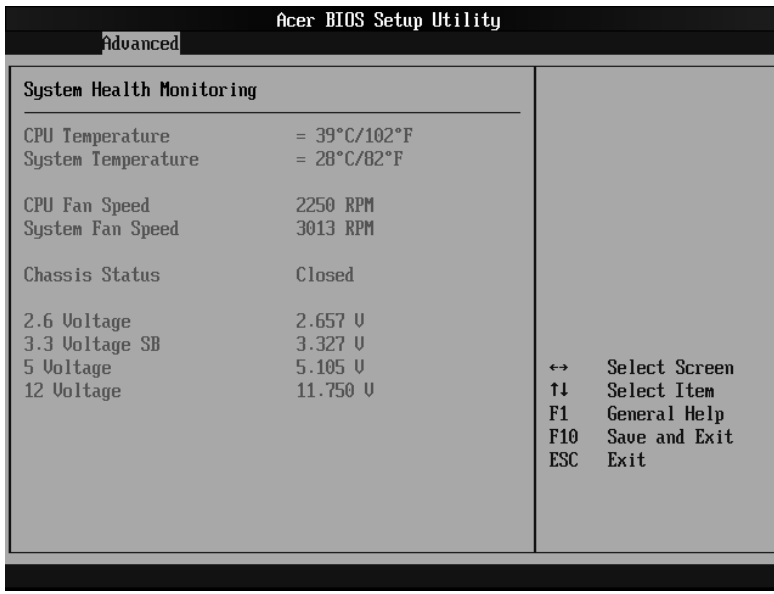


Parameter	Description	Option
Remote Access	Enables or disables remote access. Selecting Serial enables remote access and opens a submenu to configure system parameters.	**Disabled** Serial
Serial Port Number	Default is COM1 when Remote Access is set to Serial.	**COM1** COM2
Serial Port Mode	COM1 default is 115.2K COM2 default is 19.2K	115200 8,n,1 57600 8,n,1 19200 8,n,1

Parameter	Description	Option
Post-Boot Support	Default is Disabled. If Enabled, system will keep redirection connection active after booting to OS. If Disabled, the connection will be deactivated.	**Disabled** Enabled
Terminal Type	Default is PC-ANSI, which is the standard PC-type terminal. VT100 works for English as the select language. VT-UTF8 uses Unicode.	**PC ANSI** VT100 VT-UTF8
Flow Control	Selecting Hardware enables flow control of remote access.	**None** Hardware

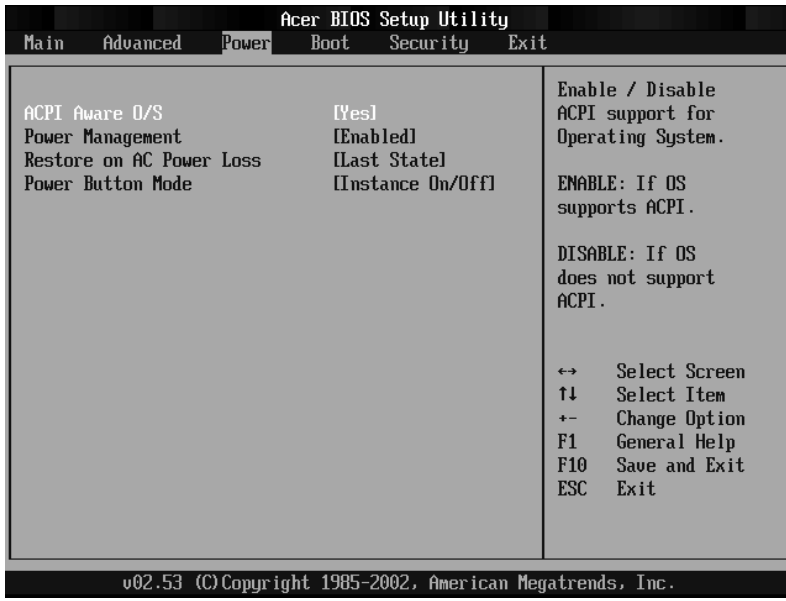
System Health Monitoring

The System Health Monitoring submenu lets you check various system parameters. This information is for reference only, no parameters in this submenu can be changed.



Power

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



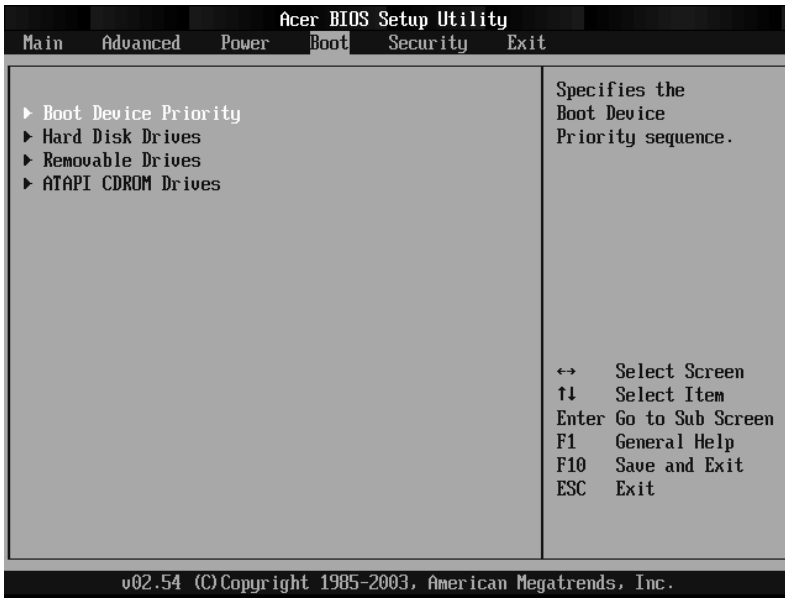
Parameter	Description	Option
ACPI-aware O/S	This parameter indicates whether the system's OS support the ACPI (Advanced Configuration and Power Interface) standard of power management.	**Yes** No
Power Management	When this parameter is enabled, it allows some OS, such as Windows 95/98, to implement APM (Advanced Power Management) functions.	**Enabled** Disabled

Parameter	Description	Option
Restore 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.	**Last State** Always On Off
Power Button Mode	When set to Instant On/Off, the power button serves as a standard on/off button. When set to Suspend, pressing the power button will activate the power-saving suspend mode.	**Instant On/Off** 4-Sec Overwrite

Boot

The Boot menu allows you to specify the preferred settings during system bootup.

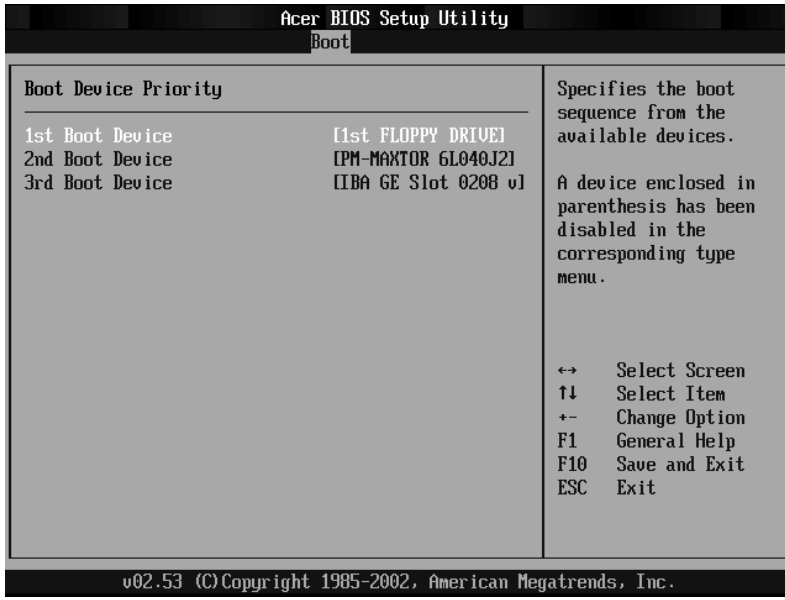
Press **Enter** to enter the submenu screen of the parameters shown in the screen below.



Boot Device Priority

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

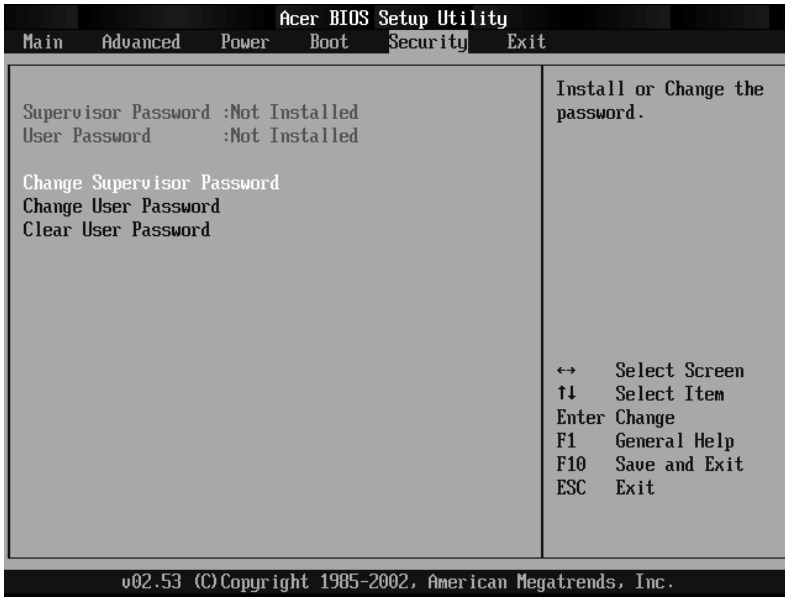
BIOS setup will display an error message if the drive(s) specified is not bootable.



Parameter	Description
1st Boot Device	Sets the device from which the system will first attempt to boot up.
2nd Boot Device	Sets the device from which the system will attempt to boot up when the first attempt failed.
3rd Boot Device	Sets the device from which the system will attempt to boot up when the first and second attempts failed.

Security

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

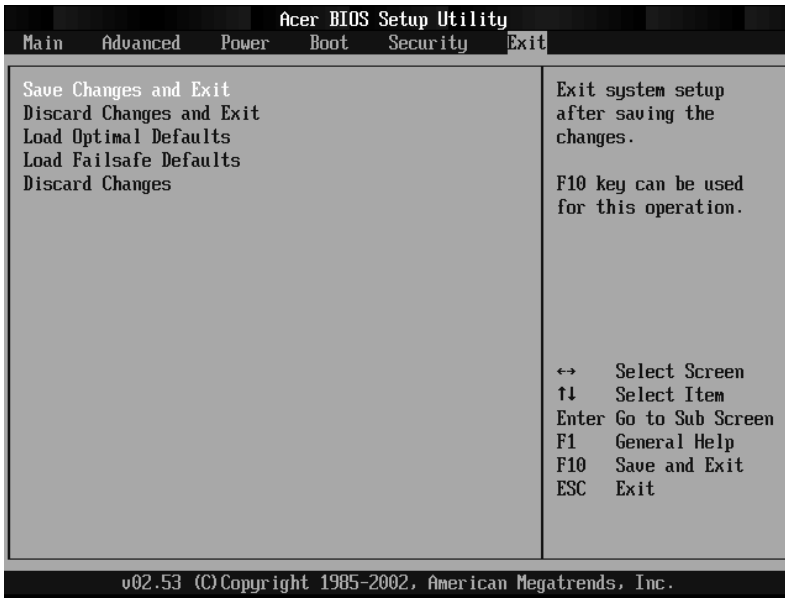


Parameter	Description	Option
Supervisor Password	Prevents unauthorized access to the BIOS setup.	**Not Installed** Installed
User Password	Secures your system against unauthorized use. Once you set this password, you have to type it whenever you boot the system. User password is available only when a Supervisor password is set.	**Not Installed** Installed
Change Supervisor Password	Press **Enter** to change the Supervisor password.	

Parameter	Description	Option
Change User Password	Press **Enter** to change the User password.	
Clear User Password	Press **Enter** to remove the User password.	

Exit

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



Parameter	Description
Save Changes and Exit	Saves changes made and close the BIOS setup.
Discard Changes and Exit	Discards changes made and close the BIOS setup.
Load Optimal Defaults	Loads the optimal settings for all BIOS setup parameters. Optimal settings 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.

Parameter	Description
Load Failsafe Defaults	Loads the failsafe settings for all BIOS parameters. Failsafe settings, compared to the optimal settings, are not quite as demanding in terms of resources consumption so you can be sure to have a stable system performance even if you are using low-grade components.
Discard Changes	Discards all changes made on the BIOS setup.

Appendix A: Management software installation

This appendix shows you how to install the ASM and EasyBUILD™ software packages.

Installing ASM

Acer Server Manager (ASM) consists of the ASM Console and the ASM Agent. These two components are both required to perform server management tasks.

System requirements

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

ASM Agent

- Altos Server System
- Min. of 128 MB RAM
- SCSI/IDE hard drive with at least 100 MB free hard disk space
- Windows 2000 server/advanced server, Windows server 2003 web/ standard/Enterprise editions. RedHat Linux 7.3/8.0

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
- Windows 2000 professional, Windows XP, Windows 2000 server/ advanced server, Windows server 2003 web/standard/Enterprise editions

System setup

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

Installing ASM Agent (Windows version)

To install ASM Agent:

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 installation.

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

ASM Agent will auto-launch as Windows service after rebooting the system.

Installing ASM Console (Windows version)

To install ASM Console:

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 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 Manager** then click **Acer Server Manager**

Installing ASM Agent (Linux version)

To install the ASM6 Agent on RedHat Linux 8.0

1 Insert the ASM6 installation CD into your computer's optical drive.

2 Mount the CD-ROM drive with "mount /dev/cdrom /mnt/cdrom" command. For more information on mount command and the options, please refer to RedHat Linux user's guide.

3 Change the working directory to ASM6 Linux Agent subdirectory with the command "cd /mnt/cdrom/LinuxAgent".

4 Type in the command "./asmsetup install" to install the ASM6 Linux Agent. Follow the prompted installation guide, and you can install the ASM6 Linux Agent with ease.

5 Umount the CD-ROM Drive with "umount /mnt/cdrom" command.

ASM agent will auto-launch demon service after rebooting the system. There is no Linux version of ASM Console.

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