

GS-R227E-RH

2U Rack Mount Server

System Installation Guide

Dual Intel® Xeon LGA771 Processor Serverboard
Rev. 1.0

Table of Content

Safety, Care and Regulatory Information	4
Introduction	8
Contents Packages	8
Chapter 1 Features Summary	9
Chapter 2 System Hardware Installation	11
Step 2-1: Chassis Removal and Installation	11
Step 2-2: CPU Installation	12
Step 2-3: Heat Sink Installation	13
Step 2-4: Memory Installation	14
Step 2-5: PCI Expansion Card Installation	15
Step 2-6: Hard Disk Drive Installation	16
Step 2-7: FAN Duct Removal and Installation	17
Chapter 3 Appearance of GS-R227E-RH	18
3-1: Front View of GS-R227E-RH	18
3-2: Rear View of GS-R227E-RH	19
3-3: Switch and LED Indicators Introduction	20
3-4: LAN LED Description	21
3-5: Connector Icon Description	22
Chapter 4 Motherboard Jumper Setting	23
4-1: GA-7BESV1-RH Motherboard Jumper Setting	23
Chapter 5 BIOS Setup	25
Main	27
Advanced	30
Advanced Processor Options	31
Memory Configuration	33
PCI Configuration	35
I/O Device Configuration	36
Advanced Chipset Control	39
Security	42

Server	44
Console Redirection	45
Boot	49
Exit	50

Safety, Care and Regulatory Information

🔪 Important safety information

Read and follow all instructions marked on the product and in the documentation before you operate your system. Retain all safety and operating instructions for future use.

- * The product should be operated only from the type of power source indicated on the rating label.
- * If your computer has a voltage selector switch, make sure that the switch is in the proper position for your area. The voltage selector switch is set at the factory to the correct voltage.
- * The plug-socket combination must be accessible at all times because it serves as the main disconnecting device.
- * All product shipped with a three-wire electrical grounding-type plug only fits into a grounding-type power outlet. This is a safety feature. The equipment grounding should be in accordance with local and national electrical codes. The equipment operates safely when it is used in accordance with its marked electrical ratings and product usage instructions
- * Do not use this product near water or a heat source.
- * Set up the product on a stable work surface or so as to ensure stability of the system.
- * Openings in the case are provided for ventilation. Do not block or cover these openings. Make sure you provide adequate space around the system for ventilation when you set up your work area. Never insert objects of any kind into the ventilation openings.
- * To avoid electrical shock, always unplug all power cables and modem cables from the wall outlets before removing covers.
- * Allow the product to cool before removing covers or touching internal components.

🔪 Precaution for Product with Laser Devices

Observe the following precautions for laser devices:

- * Do not open the CD-ROM drive, make adjustments, or perform procedures on a laser device other than those specified in the product's documentation.
- * Only authorized service technicians should repair laser devices.

🔪 Precaution for Product with Modems, Telecommunications, or Local Area Network Options

Observe the following guidelines when working with options:

- * Do not connect or use a modem or telephone during a lightning storm. There may be a risk of electrical shock from lightning.

- * To reduce the risk of fire, use only No. 26 AWG or larger telecommunications line cord.
- * Do not plug a modem or telephone cable into the network interface controller (NIC) receptacle.
- * Disconnect the modem cable before opening a product enclosure, touching or installing internal components, or touching an uninsulated modem cable or jack.
- * Do not use a telephone line to report a gas leak while you are in the vicinity of the leak.

📌 Federal Communications Commission (FCC) Statement

Warning

This is a class A product. In a domestic environment this product may cause radio interference

In which case the user may be required to take adequate measures.

Note: This equipment 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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Neither the provider nor the manufacturer are responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

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

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

📌 FCC part 68 (applicable to products fitted with USA modems)

The modem complies with Part 68 of the FCC Rules. On this equipment is a label that contains, among other information, the FCC registration number and Ringer Equivalence Number (REN) for this equipment. You must, upon request, provide this information to your telephone company.

If your telephone equipment causes harm to the telephone network, the Telephone Company may discontinue your service temporarily. If possible, they will notify in advance. But, if advance notice is not practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with

GS-R227E-RH Rack Mount Server

the FCC.

Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect proper operation of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

The FCC prohibits this equipment to be connected to party lines or coin-telephone service.

The FCC also requires the transmitter of a FAX transmission be properly identified (per FCC Rules Part 68, Sec. 68.381 (c) (3)).

/ for Canadian users only /

📌 Canadian Department of Communications Compliance Statement

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

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

📌 DOC notice (for products fitted with an Industry Canada-compliant modem)

The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user satisfaction.

Before installing this equipment, users ensure that it is permissible to be connected to the facilities of the local Telecommunications Company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions might not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

NOTICE: The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the sum of the Load Numbers of all the devices does not exceed 100.

/ for European users only /



CAUTION

- ❖ Danger of explosion if battery is incorrectly replaced.
- ❖ Replace only with the same or equivalent type recommended by the manufacturer.
- ❖ Dispose of used batteries according to the manufacturer's instructions.



Class A Warning statement



WARNING

This is class A products. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Introduction

Welcome to Gigabyte GS-R227E-RH Rack mount Server System Installation Guide. The guide provides instructions for configuration hardware for the GS-R227E-RH your system.

This installation guide will assist you in installing all the essential components for the sever system. For your protection, please read and undertand all of the safety and operating instructions regarding your Gigabyte Server and retain for future reference. The procedures in this guidebook assume that your are a system or network administrator experienced in installing similar hardware.

Contents Packages

When opening the package, please ensure the system components are not damaged during the shipping. Using the following checklist to verify the contents. If any component is missing or damaged in the system, please contact your vendor immediately.

- | | |
|--|--|
| <input checked="" type="checkbox"/> Chassis | <input checked="" type="checkbox"/> GA-7BESV1-RH Motherboard (Installed) |
| <input checked="" type="checkbox"/> Power Supply (Installed) | <input checked="" type="checkbox"/> FAN Duct x 1 |
| <input checked="" type="checkbox"/> CPU Heat Sink x 2 (Optional) | <input checked="" type="checkbox"/> Silm type DVD Combo (Installed) |
| <input checked="" type="checkbox"/> Case Handle Kit x 2 | |
| <input checked="" type="checkbox"/> GS-R227E-RH Quick Refernece Guide | |
| <input checked="" type="checkbox"/> Driver CD for motherboard driver & utility | |

* The items listed above are for reference only, and are subject to change without notice.

Chapter 1 Features Summary

Motherboard	<ul style="list-style-type: none"> GA-7BESV1-RH
Processor Supported	<ul style="list-style-type: none"> Supports dual Intel® Xeon® processors Intel Xeon® Dual-Core/Quad-Core processor in LGA 771 socket Supports 1066/1333MHz FSB
Chipset	<ul style="list-style-type: none"> Intel® 5000 Chipset Intel® 6321ESB
System Memory:	
Memory Capacity	<ul style="list-style-type: none"> 8 x Fully Buffered DIMM (FBD) sockets up to 32GB
Memory Type	<ul style="list-style-type: none"> Registered 667memory
DIMM Size	<ul style="list-style-type: none"> Support 256MB, 512MB, 1GB, and 2GB memory
Error Correction:	<ul style="list-style-type: none"> Single-bit Errors Correction, Multiple Bit Errors Detection
Expansion Slot	<ul style="list-style-type: none"> 1 Riser card supports 2 PCI-E x8, 2 PCI-E x4 (x1 bandwidth) and 1 PCI-X 64/100MHz add-on cards
SATA RAID controller	<ul style="list-style-type: none"> Intel® 6321ESB Supports Intel Software SW RAID 0/1/10 (Windows only)
Cooling Fans:	<ul style="list-style-type: none"> 5 X System Fan
Integrated LANs:	
Controller	<ul style="list-style-type: none"> Intel® 82563EBGbE controller
Integrated Graphics:	
Controller	<ul style="list-style-type: none"> XGI Volari Z9s
Graphics Memory	<ul style="list-style-type: none"> 16MB DDR2
Mass Storage System	<ul style="list-style-type: none"> 6 x 3.5" Hot-Swap SATA HDDs 1 x DVD Combo
Super I/O	
Controller	<ul style="list-style-type: none"> ITE IT8718F Super I/O
Built-in I/O	<ul style="list-style-type: none"> 2 x Serial port (1 at front panel) 4 x USB 2.0 dual-port connector (2 at front panel) 1 x VGA connector 2 x RJ45 LAN ports P/S 2 Keyboard and Mouse Connectors
System BIOS:	
BIOS Type	<ul style="list-style-type: none"> Phoenix BIOS on 8Mb flash ROM

Server Management Functions: (Optional device)

BMC Chip	• H8S IPMI 2.0 controller
Failure Detection	• IPMI 2.0 specification of Server management
Event Logging	• 32KB Nonvolatile Memory to Log System Failure Events
Remote Management	• Follow the IPMI 2.0 specification of Server management

Environment

Ambient Temperature	• Operating Temperature: 5°C to 35°C • Non-operating Temperature: 0°C to 50°C
Relative Humidity	• 10-80% operating Humidity at 30° C

System Dimention:	• 425mm x 710mm x 86.4mm
--------------------------	--------------------------

Electrical Power Supply	• Single Power Supply 700W
--------------------------------	----------------------------

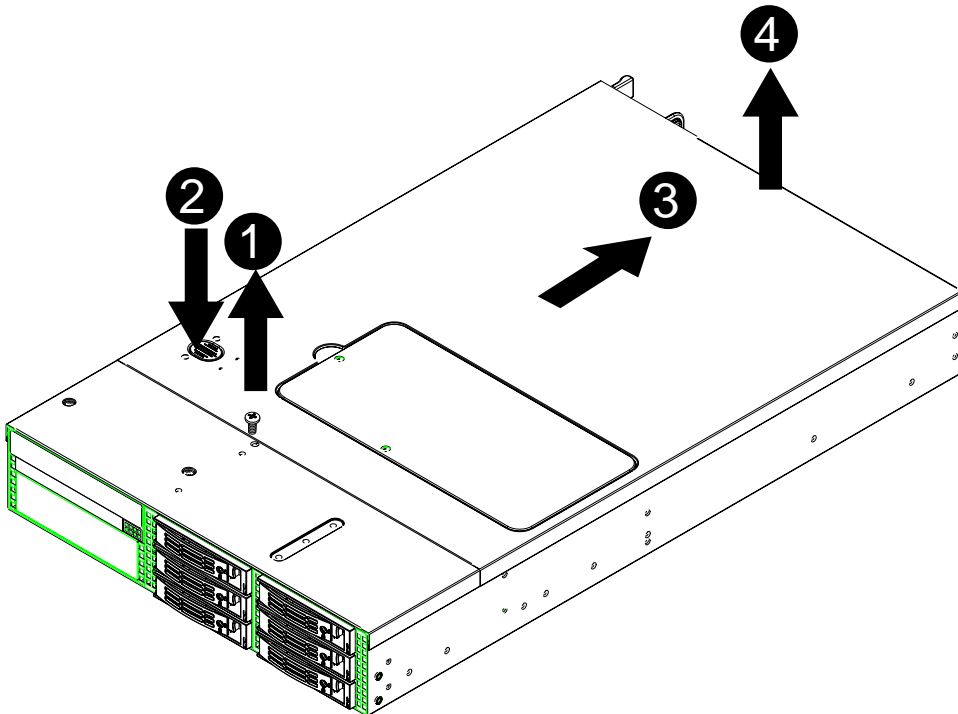
Chapter 2 System Hardware Installation



Please observe the safety information in chapter "Important Safety Information"
Do not expose the server to extreme environmental conditions. Protect it from dust, humidity, and heat.

Step 2-1: Chassis Removal and Installation

- Step 1 Loosen the screw on the front chassis cover.
- Step 2 Push down the indentation located at the side of the back chassis.
- Step 3 Slide toward the top chassis cover.
- Step 4 Lift up to remove the top chassis cover.
- Step 5 Reverse Step 1, 2, 3, 4 to replace the chassis cover

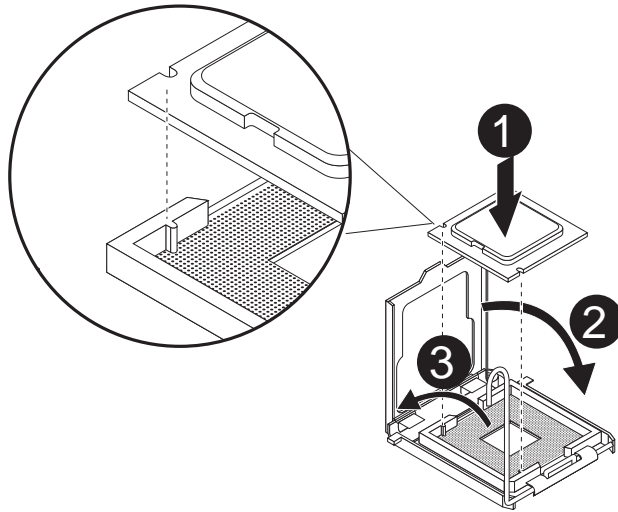


Step 2-2: CPU Installation



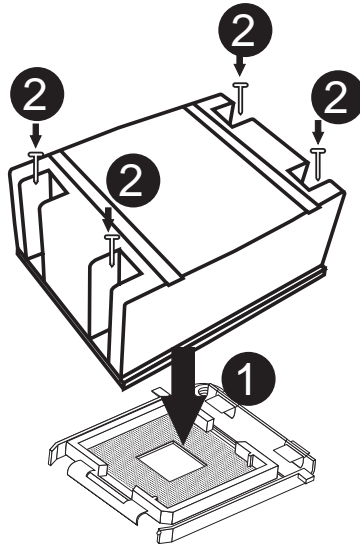
Please make sure the CPU type and speed that are supported by the motherboard.

- Step 1 Raise the metal locking lever on the socket. Insert the CPU with the correct orientation.
- Step 2 The CPU only fits in one orientation.
- Step 3 Push the metal lever back into locked position.



Step 2-3: Heat Sink Installation

- Step 1 Place the Heat Sink on the CPU. Before putting the heat sink on the CPU, please well remember to apply the thermal conductivity compound on the CPU.
- Step 2 Seat the heat sink in the retention modules with the four screws. Installation completed.



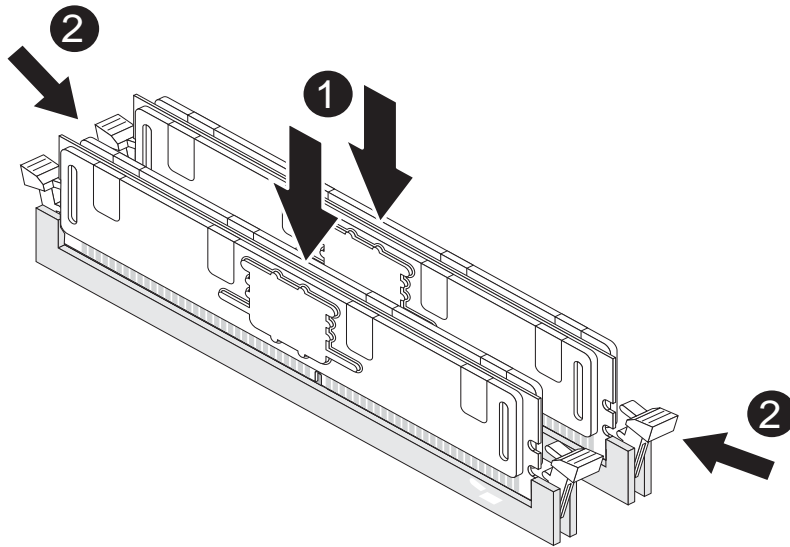
Step 2-4: Memory Installation

Step 1. Insert the DIMM memory module vertically into the DIMM slot, and push it down.

Step 2. Close the plastic clip at both edges of the DIMM slots to lock the DIMM module.

NOTE! DIMM must be populated in order starting from DIMM8 socket. For dual-channel operation, DIMMs must be installed in matched pairs.

Step 3. Reverse the installation steps when you wish to remove the DIMM module.



Step 2-5: PCI Expansion Card Installation

GS-R227E-RH provides expansion riser slots for one PCI-E x8 slot; and one with PCI-E x8 slot (at x1 bandwidth). To install the peripheral, please go through the following steps.

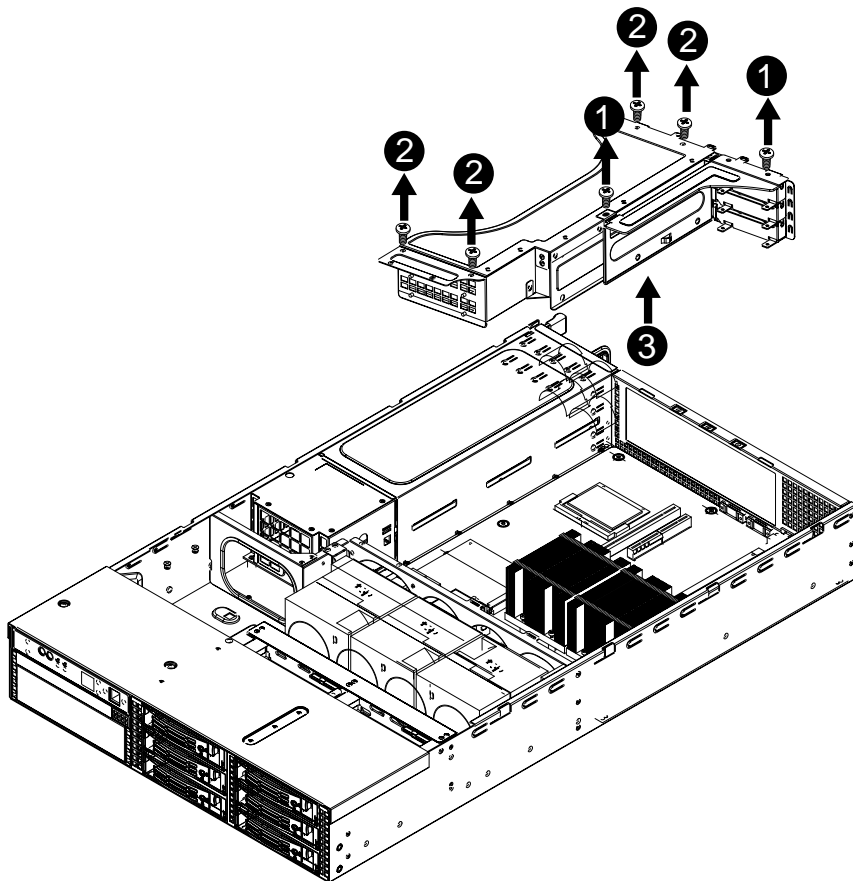
Step 1 Loosen the two riser bracket screws. (See illustrated below)

Step 2 Loosen another four riser bracket screws. (See illustrated below)

Step 3 Lift the riser bracket slightly, then pull it out from the server chassis.

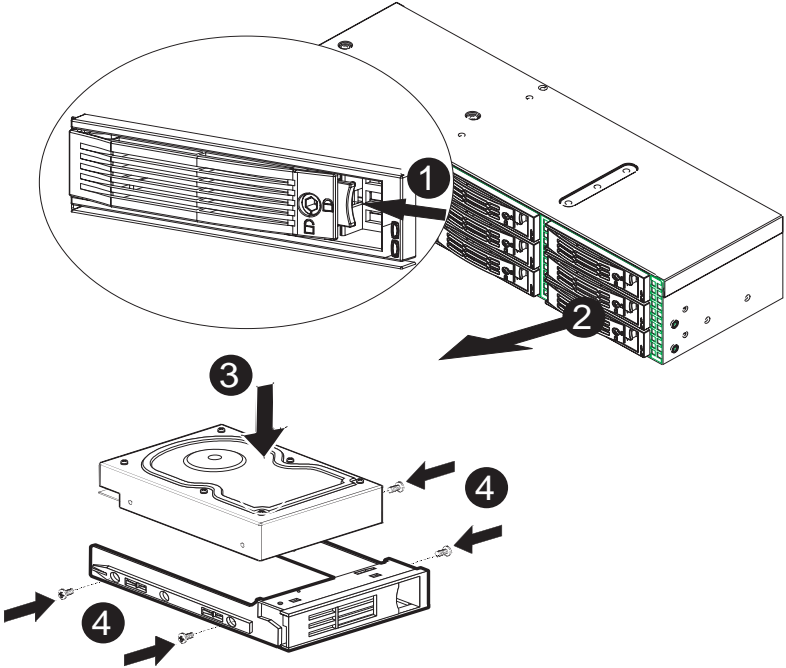
Align the expansion card with the guiding groove. Slide the expansion card into the slot until the card firmly seats.

Step 4 Align the riser bracket to the system module.



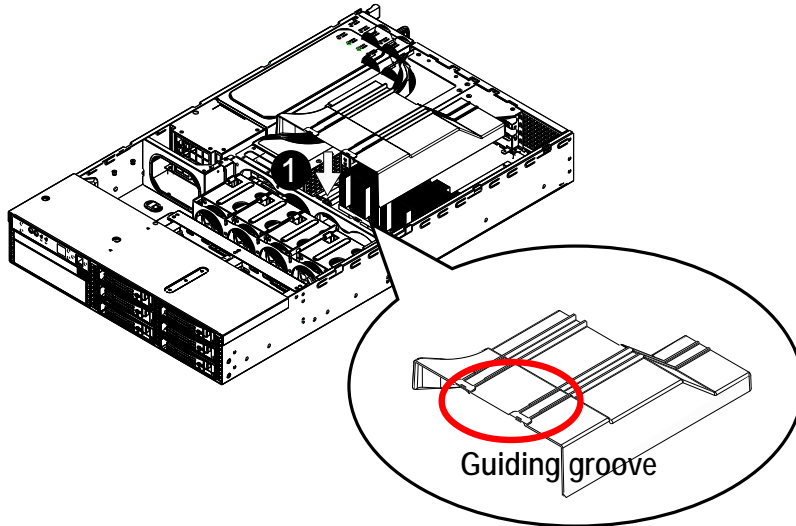
Step 2-6: Hard Disk Drive Installation

- Step 1 Press the release button.
- Step 2 Pull the blank out of the drive bay.
- Step 3 Slide hard disk into blank.
- Step 4 Secure it with screws.
- Step 5 Slide the blank into the bay until it locks into place. Connect cable and power.



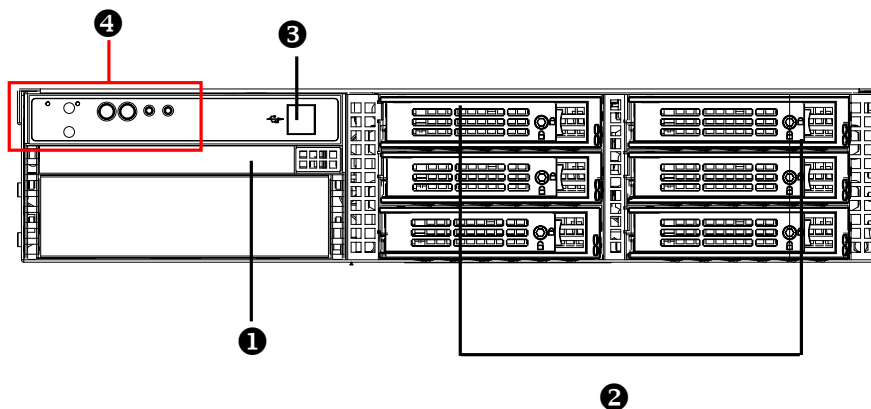
Step 2-7: FAN Duct Removal and Installation

Step 1 Align the fan duct with the guiding groove. Push down the fan duct into system until it firmly seats.



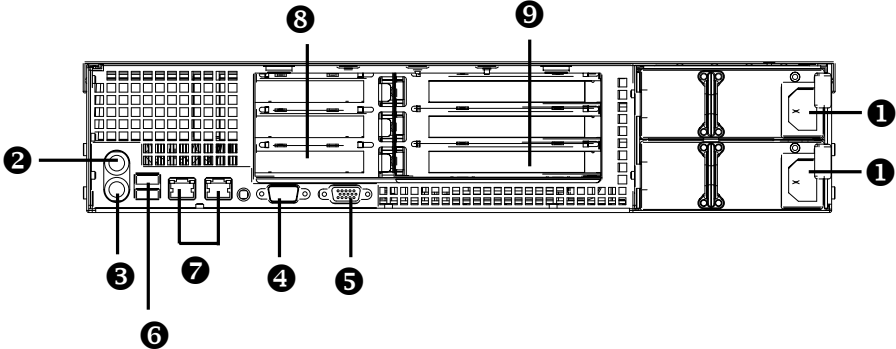
Chapter 3 Appearance of GS-R227E-RH

3-1: Front View of GS-R227E-RH



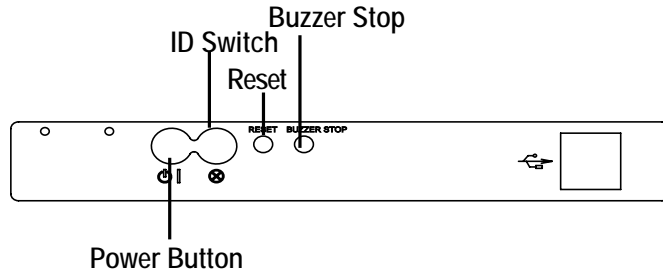
①	DVD-COMBO
②	Hot-Swap SATA HDDs
③	USB connectors
④	Front panel switch and LEDs

3-2: Rear View of GS-R227E-RH



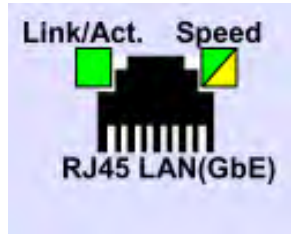
①	Power
②	Mouse connector
③	Keyboard connector
④	COM port
⑤	VGA port
⑥	USB connectors
⑦	RJ45 LAN ports
⑧	Low-profile riser slot
⑨	Full-Height riser slot

3-3: Switch and LED Indicators Introduction









Name	Color	Condition	Description
Power	Green	On	Power On
	Green	Blink	Sleep (S1)
	--	Off	Power Off (S4/S5)
ID (Identification)	Blue	On	Unti selected for identification
	--	Off	No identification

3-4: LAN LED Description



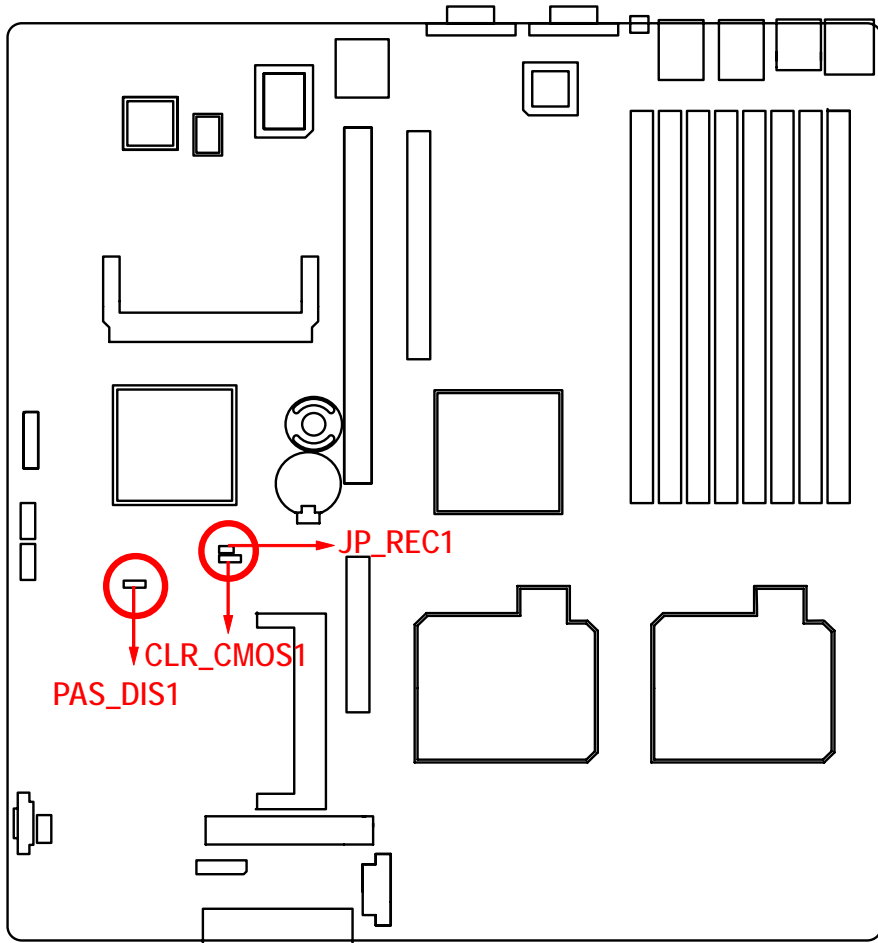
Name	Color	Condition	Description
LAN Link/Activity	Green	ON	LAN Link / no Access
	Green	BLINK	LAN Access
	-	OFF	Idle
GbE LAN Speed	Yellow	ON	1Gbps connection
	Yellow	BLINK	Port identification with 1Gbps connection
	Green	ON	100Mbps connection
	Green	BLINK	Port identification with 10 or 100Mbps connection
	-	OFF	10Mbps connection

3-5: Connector Icon Description

Suggest Icon	Description
	Keyboard
	Mouse
	VGA
	COM
	LAN
	USB

Chapter 4 Motherboard Jumper Setting

4-1: GA-7BESV1-RH Motherboard Jumper Setting




1. CLR_CMOS1 (Clear CMOS jumper)

You may clear the CMOS data to its default values by this jumper.

Default value doesn't include the "Shunter" to prevent from improper use this jumper.

To clear CMOS, temporarily short 2-3 pin.

1  1-2 Close: Normal operation (Default setting)

1  2-3 Close: Clear CMOS

2. JP_REC1 (BIOS Recovery jumper)

 Open: Normal operation (Default setting)

 Close: Enable BIOS Recovery function.

3. PAS_DIS1 (Skip password jumper)

1  1-2 Close: Normal operation (Default setting)

1  2-3 Close: Skip supervisor password.

Chapter 5 BIOS Setup

BIOS (Basic Input and Output System) includes a CMOS SETUP utility which allows user to configure required settings or to activate certain system features.

The CMOS SETUP saves the configuration in the CMOS SRAM of the motherboard.

When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS SRAM.

ENTERINGSETUP

When the power is turned on, press the <F2> button during the BIOS POST (Power-On Self Test) will take you to the CMOS SETUP screen. You can enter the BIOS setup screen by pressing "Ctrl + F1".

CONTROLKEYS

<↑>	Move to previous item
<↓>	Move to next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Esc>	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
<+/PgUp>	Increase the numeric value or make changes
<-/PgDn>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Reserved
<F3>	Reserved
<F4>	Reserved
<F6>	Reserved
<F7>	Reserved
<F8>	Reserved
<F9>	Load the Optimized Defaults
<F10>	Save all the CMOS changes, only for Main Menu

GETTINGHELP

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu / Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

Select the **Load Setup Defaults** item in the BIOS Exit Setup menu when somehow the system is not stable as usual. This action makes the system reset to the default settings for stability.

- **Main**
This setup page includes all the items in standard compatible BIOS.
- **Advanced**
This setup page includes all the items of Phoenix BIOS special enhanced features.
(ex: Auto detect fan and temperature status, automatically configure hard disk parameters.)
- **Security**
Change, set, or disable password. It allows you to limit access the system and setup.
- **Server**
Server additional features enabled/disabled setup menus.
- **Boot**
This setup page include all the items of first boot function features.
- **Exit**
There are five options in this selection: Exit Saving Changes, Exit Discarding Changes, Load Optimal Defaults, Load Failsafe Defaults, and Discard Changes.

Main

Once you enter Phoenix BIOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

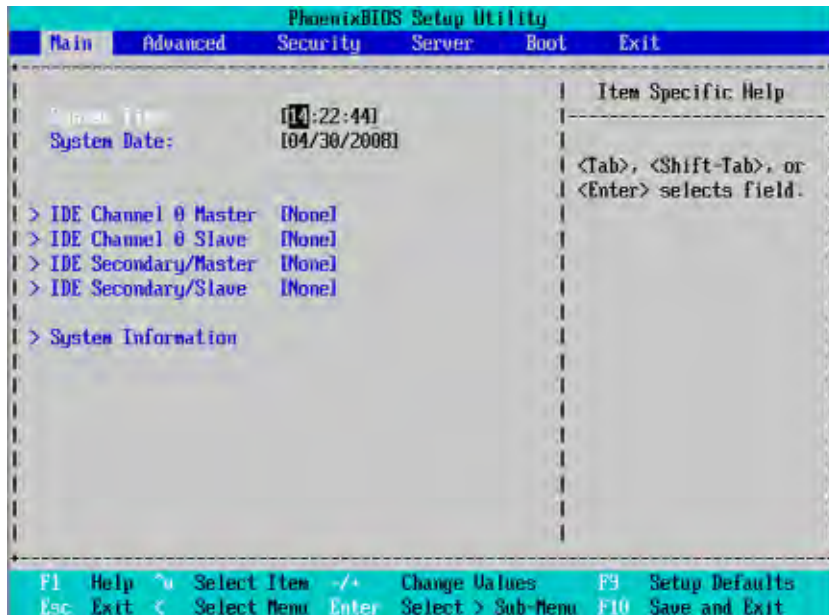


Figure 1: Main

⌘ System Time

The time is calculated based on the 24-hour military time clock. Set the System Time (HH:MM:SS)

⌘ System Date

Set the System Date. Note that the "Day" automatically changed after you set the date. (Weekend: DD: MM: YY) (YY: 1099-2099)

☞ **IDE Channel 0 Master, Slave/Secondary Master, Slave**

The category identifies the types of hard disk from drives that have been installed in the computer. System will automatically detect HDD type.

Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category.

Hard drive information should be labeled on the outside device casing. Enter the appropriate option based on this information.

▶▶ **TYPE**

1-39: Predefined types.

Users: Set parameters by User.

Auto: Set parameters automatically. (Default setting)

CD-ROM: Use for ATAPI CD-ROM drives or double click [Auto] to set all HDD parameters automatically.

ATAPI Removable: Removable disk drive is installed here.

▶▶ **Multi-Sector Transfer**

This field displays the information of Multi-Sector Transfer Mode.

Disabled: The data transfer from and to the device occurs one sector at a time.

Auto: The data transfer from and to the device occurs multiple sectors at a time if the device supports it.

▶▶ **LBA Mode** This field shows if the device type in the specific IDE channel support LBA Mode.

▶▶ **32-Bit I/O** Enable this function to maximize the IDE data transfer rate.

▶▶ **Transfer Mode** This field shows the information of Transfer Mode.

▶▶ **Ultra DMA Mode** This field displays the DMA mode of the device in the specific IDE channel.

 **System Information**

This category includes the information of BIOS version, Product Name, System version, System Serial Number, Main Board Product Name, Main Board Serial Number, LAN1/2 Mac Address, and Reduced Processor.

Advanced

About This Section: Advanced

With this section, allowing user to configure your system for advanced operation. User can set the Advanced Processor Options, Memory configuration, I/O configuration, and Advanced chipset control.

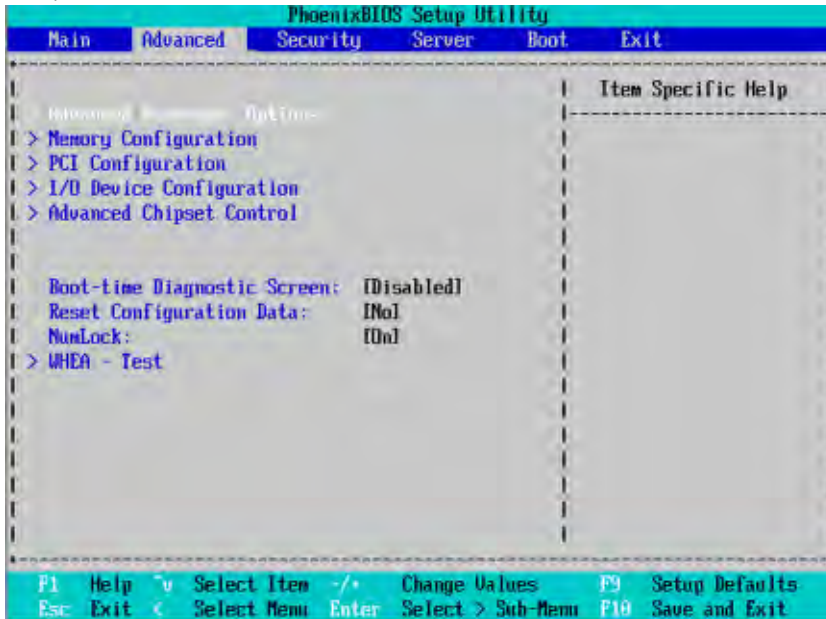


Figure 2: Advanced

Advanced Processor Options

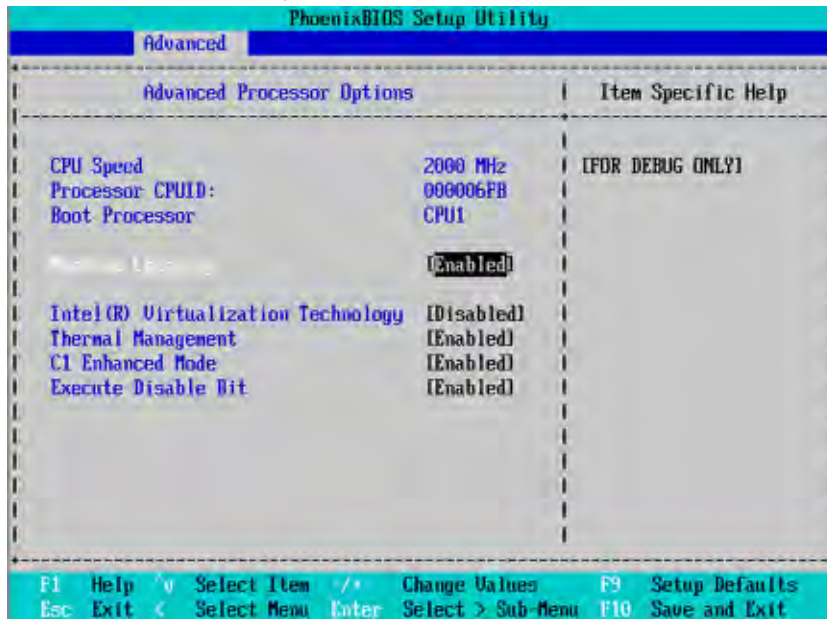


Figure 2-1: Advanced Processor Options

Advanced Processor Option

This category includes the information of CPU Speed, Processor ID and Boot Processor. And setup menu for Intel Virtualizational Technology, Thermal Management, C1 Enhanced Mode, and Execute Disable Bit.

Please note that setup menu options will be variable depends on the type of CPU.

Intel (R) Virtualization Technology

Intel(R) Virtualization Technology will allow a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple "virtual" systems. With processor and I/O enhancements to Intel's various platforms, Intel Virtualization Technology can improve the performance and robustness of today's software-only virtual machine solutions.

►► Enabled Enable Intel Virtualization Technology. (Default setting)

GS-R227E-RH Rack Mount Server

▶▶ Disabled Disable this function.

🔗 **Thermal Management**

If enabled, when the thermal sensor indicates that the die temperature is at the pre-determined threshold, the processor will reduce the bus to core ratio and operating voltage.

▶▶ Enabled Enable Thermal Management function.

▶▶ Disabled Disable this function. (Default setting)

🔗 **C1 Enhanced Mode**

With enabling C1 Enhanced Mode, all logical processors in the physical processor have entered the C1 state, the processor will reduce the core clock frequency to system bus ratio and VID.

▶▶ Enabled Enable C1 Enhanced Mode.

▶▶ Disabled Disable C1 Enhanced Mode. (Default setting)

🔗 **Execute Disable Bit**

▶▶ Enabled Enable Execute Disable Bit. (Default setting)

▶▶ Disabled Disable this function.

Memory Configuration

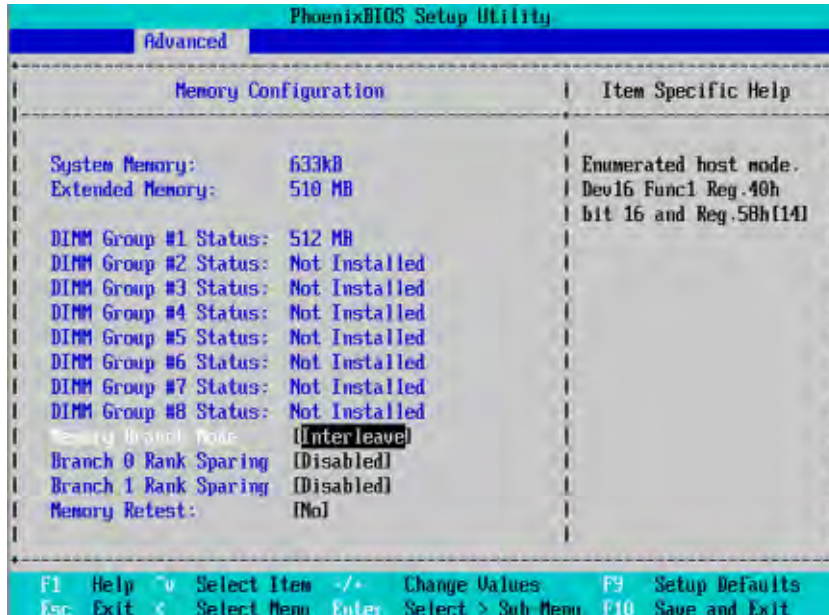


Figure 2-2: Memory Configuration

System Memory/Extended Memory/DIMM Group #1,2,3,4,5,6,7,8 Status

This category is display-only which is determined by POST (Power On Self Test) of the BIOS.

Memory Branch Mode

- ▶▶ Sequential Memory will use sequential mode to save date.
- ▶▶ Interleave Memory will use Interleave mode for to distribute every one memory to save date. (Default setting)
- ▶▶ Mirror Mirror will use backup date by image. Only half of the total memory is report to OS.
- ▶▶ Single Channel 0 Disable Default operate Dual channel Mode. Only Single channel 0 will be detected.

☞ **Branch 0 Rank Sparing**

- ▶▶ Enabled Enable this item, memory will spare two(dual channel) of all slots.
- ▶▶ Disabled Disable this function. (Default setting)

☞ **Branch 1 Rank Sparing**

- ▶▶ Enabled Enable this item, memory will spare two(dual channel) of all slots.
- ▶▶ Disabled Disable this function. (Default setting)

☞ **Memory Reset**

- ▶▶ Yes Select 'Yes', system will clear the memory error status. Save the changes and restart system. After rebooting system, the Memory Reset item will set to 'No' automatically.
- ▶▶ No Disable this function. (Default setting)

PCI Configuration

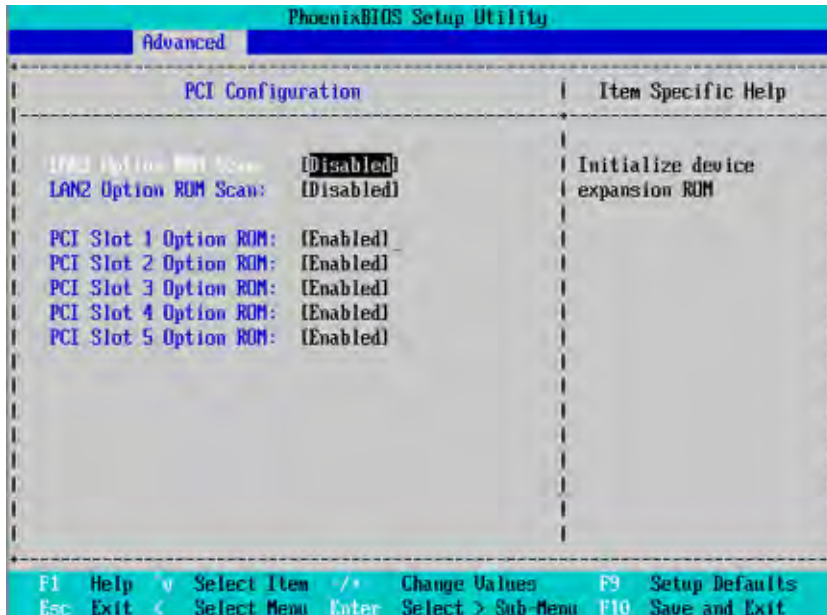


Figure 2-3: PCI Configuration

☞ LAN1 Option ROM Scan

- ▶▶ Enabled Enable onboard LAN1 device and initialize device expansion ROM.
- ▶▶ Disabled Disable this function. (Default setting)

☞ LAN2 Option ROM Scan

- ▶▶ Enabled Enable onboard LAN2 device and initialize device expansion ROM.
- ▶▶ Disabled Disable this function. (Default setting)

☞ PCI Slot 1/2/3/4/5 Option ROM

- ▶▶ Enabled Enabling this item to initialize device expansion ROM. (Default setting)
- ▶▶ Disabled Disable this function.

I/O Device Configuration

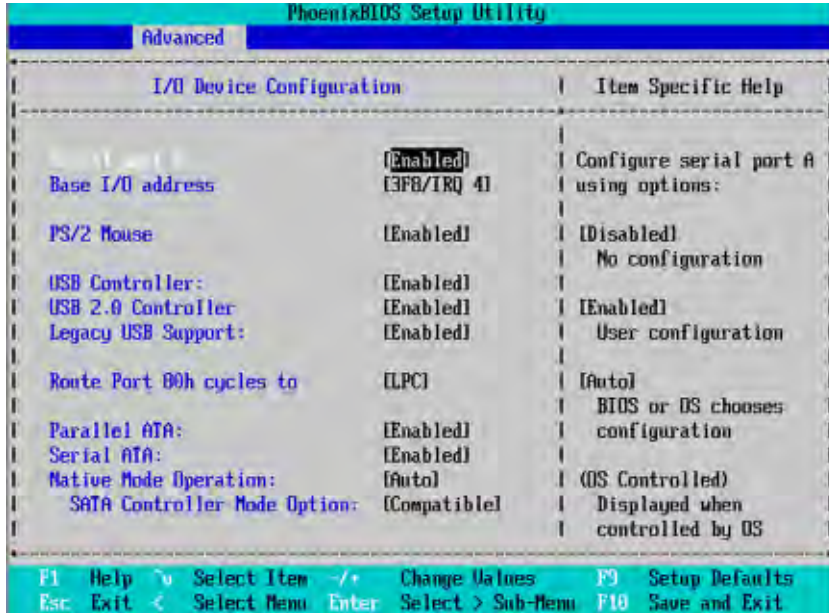


Figure 2-4: I/O Device Configuration

Serial Port A

This allows users to configure serial port A by using this option.

- ▶▶ Enabled Enable the configuration (Default setting)
- ▶▶ Disabled Disable the configuration.
- ▶▶ Base I/O Address/IRQ
 - ▶▶ 3F8/IRQ4 Set IO address to 3F8/IRQ4. (Default setting)
 - ▶▶ 2F8/IRQ3 Set IO address to 2F8/IRQ3.
 - ▶▶ 3E8/IRQ4 Set IO address to 3E8/IRQ4.
 - ▶▶ 2E8/IRQ3 Set IO address to 2E8/IRQ3.

☞ **PS/2 Mouse**

Set this option 'Enabled' to allow BIOS support for a PS/2 - type mouse.

- ▶▶ Enabled 'Enabled' forces the PS/2 mouse port to be enabled regardless if a mouse is present. (Default setting)
- ▶▶ Disabled Disable this function.

☞ **USB Controller**

This item allows users to enable or disable the USB device by setting item to the desired value.

- ▶▶ Enabled Enable USB controller. (Default setting)
- ▶▶ Disabled Disable this function.

☞ **USB 2.0 Controller**

This item allows users to enable or disable the USB 2.0 device by setting item to the desired value.

- ▶▶ Enabled Enable USB 2.0 controller. (Default setting)
- ▶▶ Disabled Disable this function.

☞ **Legacy USB Support**

This option allows user to function support for legacy USB.

- ▶▶ Enabled Enables support for legacy USB (Default setting)
- ▶▶ Disabled Disable this function.

☞ **Route Port 80h cycles to**

Set route port 80h cycles to either PCI or LPC bus.

- ▶▶ PCI Set Route Port 80h I/O cycles to the PCI bus.
- ▶▶ LPC Set Route Port 80h I/O cycles to the LPC bus. (Default setting)

☞ **Serial ATA**

- ▶▶ Enabled Enables on-board serial ATA function. (Default setting)
- ▶▶ Disabled Disables on-board serial ATA function.

▶▶ **Native Mode Operation**

This option allows user to set the native mode for Serial ATA function.

- ▶▶ Auto Auto detected. (Default setting)
- ▶▶ Serial ATA Set Native mode to Serial ATA.

GS-R227E-RH Rack Mount Server

▶▶ **SATA Controller Mode Option**

- ▶▶ Compatible Mode SATA and PATA drives are auto-detected and placed in Legacy mode. (Default setting)
- ▶▶ Enhanced Mode SATA and PATA drives are auto-detected and placed in Native mode.

Note: Pre-Win2000 operating system do not work in Enhanced mode.

▶▶ **SATA RAID Enable**

- ▶▶ Enabled Enabled SATA RAID function.
- ▶▶ Disabled Disable this function. (Default setting)

▶▶ **SATA AHCI Enable**

- ▶▶ Enabled Set this item to enable SATA AHCI function for WinXP-SP1+IAA driver supports AHCI mode.
- ▶▶ Disabled Disabled this function. (Default setting)

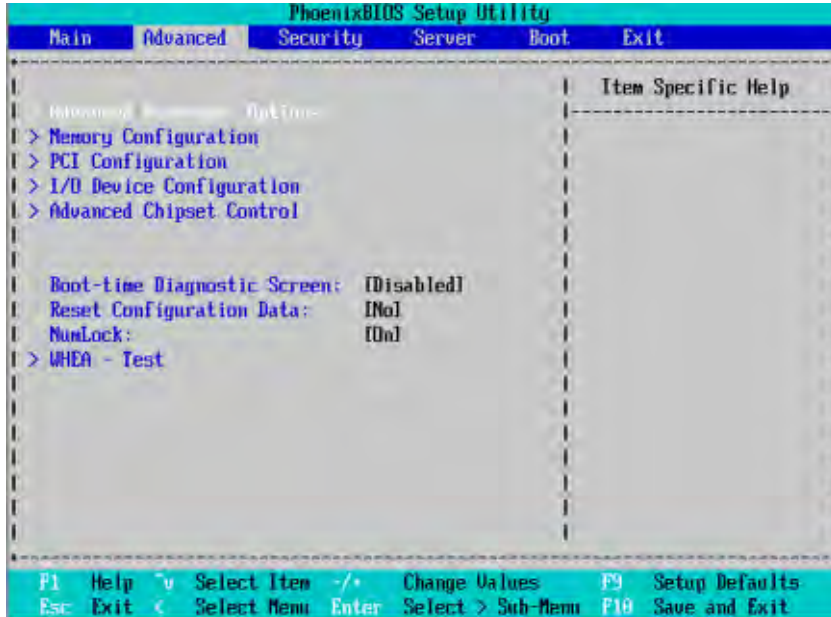
Advanced Chipset Control



Figure 2-5: Advanced Chipset Control

☞ Enable Multimedia Timer

- ▶▶Yes Enable Multimedia Timer support. (Default setting)
- ▶▶No Disable this function.



☞ **Boot-time Diagnostic**

When this item is enabled, system will shows Diagnostic status when system boot.

- ▶▶ Enabled Enable Boot-time Diagnostic. (Default setting)
- ▶▶ Disabled Disable this function.

☞ **Reset Configuration Data**

- ▶▶ Yes Reset all configuration data.
- ▶▶ No Do not make any changes. (Default setting)

☞ **NumLock**

This option allows user to select power-on state for NumLock.

- ▶▶ On Enable NumLock. (Default setting)
- ▶▶ Off Disable this function.

☞ **WHEA Test**

☞ **Generate Processor Error**

- ▶▶ Enabled Enable Generate Processor Error.
- ▶▶ Disabled Disable this function. (Default setting)

☞ **Generate PCI Error**

- ▶▶ Enabled Enable Generate PCI Error.
- ▶▶ Disabled Disable this function. (Default setting)

Security

About This Section: Security

In this section, user can set either supervisor or user passwords, or both for different level of password securities. In addition, user also can set the virus protection for boot sector.

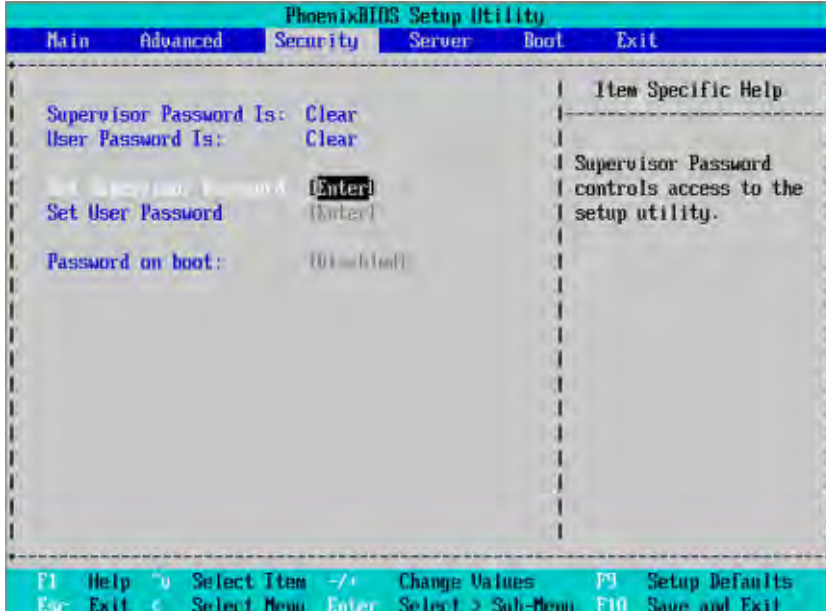


Figure 3: Security

Set Supervisor Password

You can install and change this options for the setup menus. Type the password up to 6 characters in length and press <Enter>. The password typed now will clear any previously entered password from the CMOS memory. You will be asked to confirm the entered password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a specified password or press <Enter> key to disable this option.

☞ **Set User Password**

You can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

Type the password up to 6 characters in length and press <Enter>. The password typed now will clear any previously entered password from the CMOS memory. You will be asked to confirm the entered password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a specified password.

☞ **Password on boot**

Password entering will be required when system on boot.

- | | |
|-------------|---|
| ▶▶ Enabled | Requires entering password when system on boot. |
| ▶▶ Disabled | Disable this function. (Default setting) |

Server

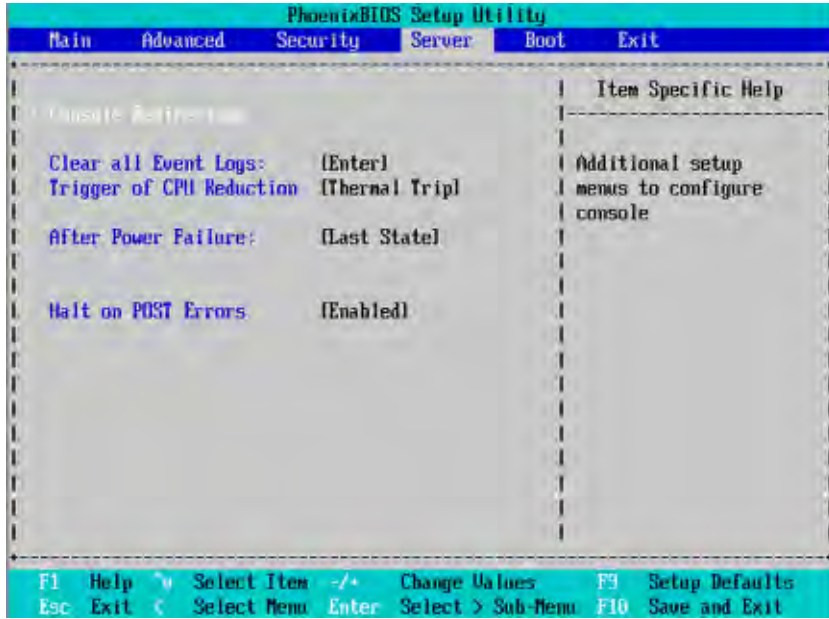


Figure 4: Server

Console Redirection

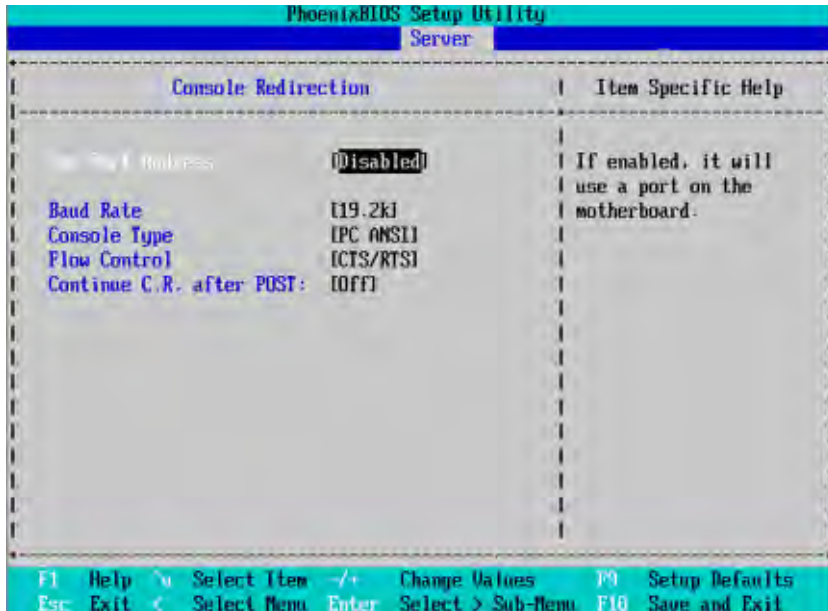


Figure 4-1: Console Redirection

☞ COM Port Address

If this option is set to enabled, it will use a port on the motherboard to run console redirection function.

- ▶▶ Onboard Serial Port A Use Serial Port A as the COM port address.
- ▶▶ Onboard Serial Port B Use Serial Port B as the COM port address.
- ▶▶ Disabled Disable this function. (Default setting)

☞ Baud Rate

This option allows user to set the specified baud rate.

- ▶▶ Options 300, 1200, 2400, 9600, 19.2K, 38.4K, 57.6K, 115.2K.

☞ Console Type

GS-R227E-RH Rack Mount Server

This option allows user to select the specified terminal type. This is defined by IEEE.

▶▶ Options VT100, VT100 8bit, PC-ANSI 7bit, VT100+, VT-UTF8

🔑 **Flow Control**

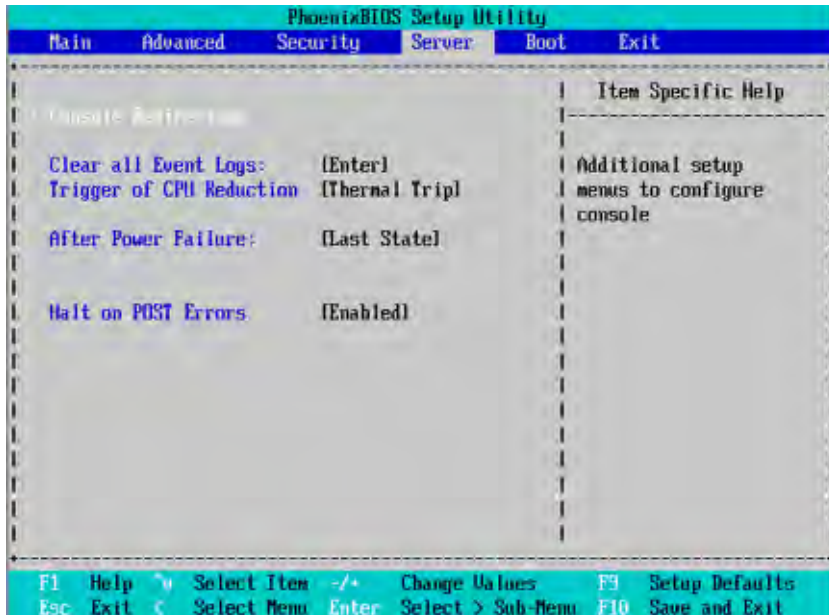
This option provide user to enable the flow control function.

▶▶ None Not supported.
▶▶ XON/OFF Software control.
▶▶ CTS/RTS Hardware control. (Default setting)

🔑 **Continue C.R. after POST**

This option allows user to enable console redirection after O.S has loaded.

▶▶ On Enable console redirection after O.S has loaded.
▶▶ Off Disable this function. (Default setting)



☞ Clear all Event Log

Press [Enter] to clear all IPMI event logs.

☞ Trigger of CPU Reduction

This function provide user to select the CPU reduction situation. This function is supported when dual CPUs operating.

- ▶▶ Thermal Trip CPU reduction when system overheat. (Default setting)
- ▶▶ IERR CPU reduction when IERR occurs.
- ▶▶ IERR & Thermal Trip CPU reduction when IERR occuring and system overheating.
- ▶▶ Disabled Disable this function.

☞ After Power Failure

This option provides user to set the mode of operation if an AC / power loss occurs.

- ▶▶ Power On System power state when AC cord is re-plugged.
- ▶▶ Stay Off Do not power on system when AC power is back.
- ▶▶ Last State Set system to the last sate when AC power is removed. Do not power on system when AC power is back. (Default setting)

GS-R227E-RH Rack Mount Server

 **Halt on POST Error**

The category determines whether the computer will stop if an error is detected during power up.

- ▶▶ Enabled Enable Halt on POST Error. (Default setting)
- ▶▶ Disabled Disable this function.

Boot



Figure 5: Boot

☞ Boot Priority Order

This field determines which type of device the system attempt to boot from after **PhoenixBIOS Post** completed. Specifies the boot sequence from the available devices. If the first device is not a bootable device, the system will seek for next available device.

Keys used to view or configure devices:

Up and Down arrows select a device.

<+> and <-> moves the device up or down.

<f> and <r> specifies the device fixed or removable.

<x> exclude or include the device to boot.

<Shift + 1> Enable or disable a device.

<1-4> Loads default boot sequence.

Exit

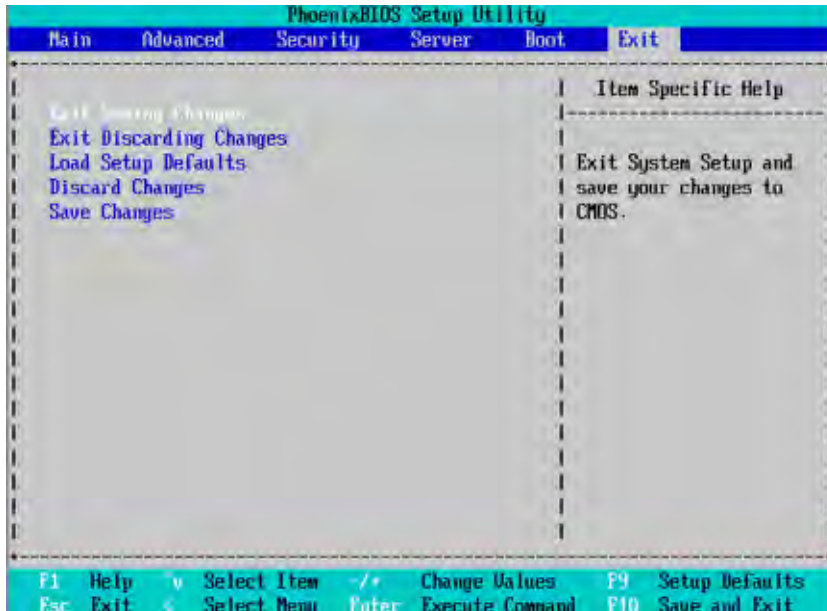


Figure 6: Exit

🔑 About This Section: Exit

Once you have changed all of the set values in the BIOS setup, you should save your changes and exit BIOS setup program. Select "Exit" from the menu bar, to display the following sub-menu.

- Exit Saving Changes
- Exit Discarding Changes
- Load Setup Default
- Discard Changes
- Save Changes

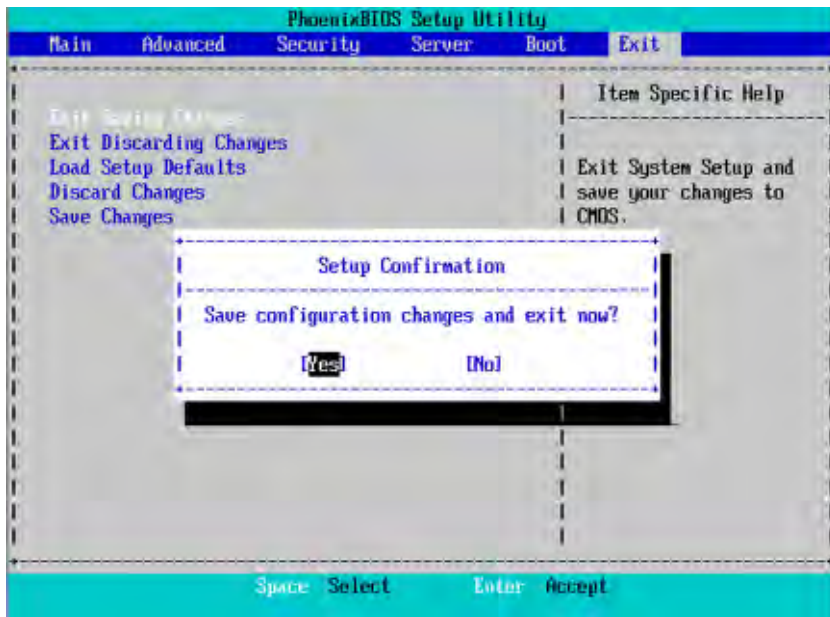
Exit Saving Changes

This option allows user to exit system setup with saving the changes.

Press <Enter> on this item to ask for the following confirmation message:

Pressing 'Y' to store all the present setting values tha user made in this time into CMOS.

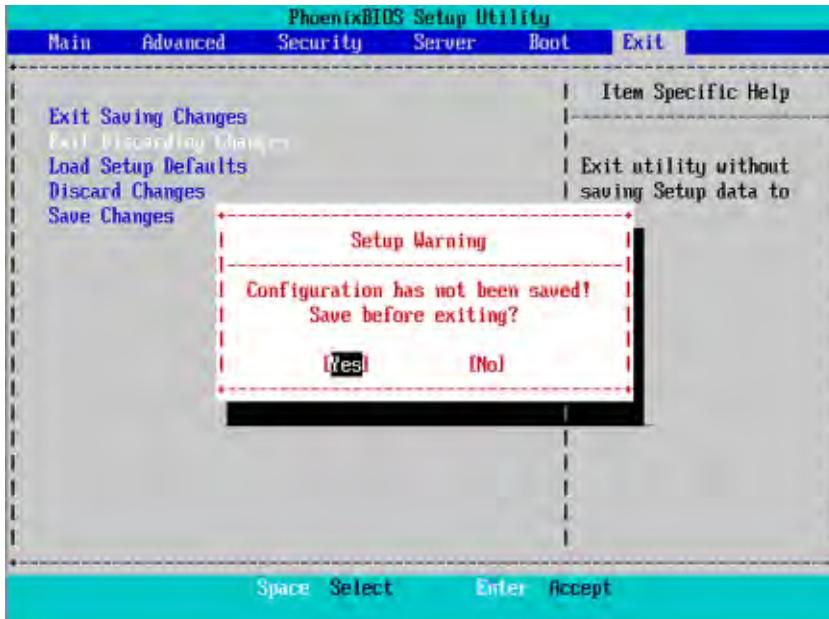
Therefore, whenyou boot up your computer next time, the BIOS will re-configure your system according data in CMOS.



☞ **Exit Discarding Changes**

This option allows user to exit system setup without changing any previous settings values in CMOS. The previous selection remain in effect.

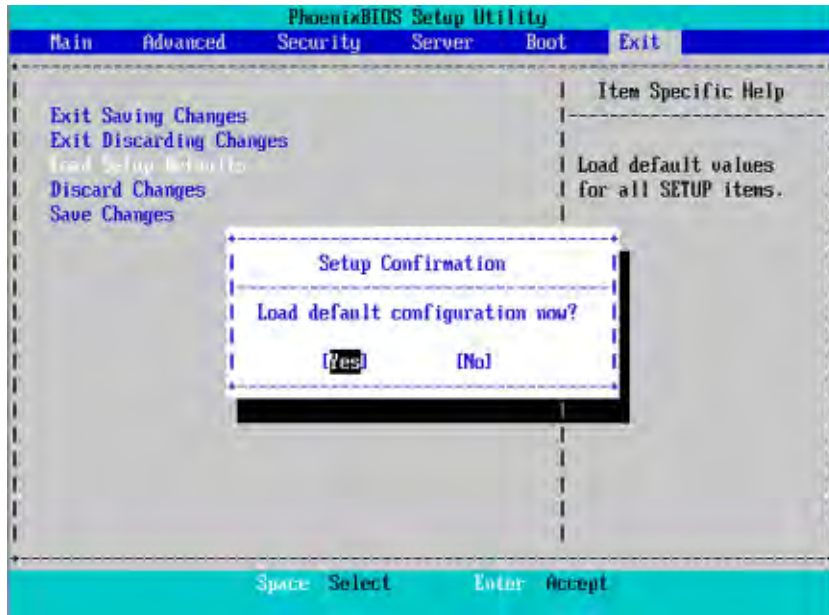
This will exit the Setup Utility and restart your computer when selecting this option.



☞ Load Setup Default

This option allows user to load default values for all setup items.

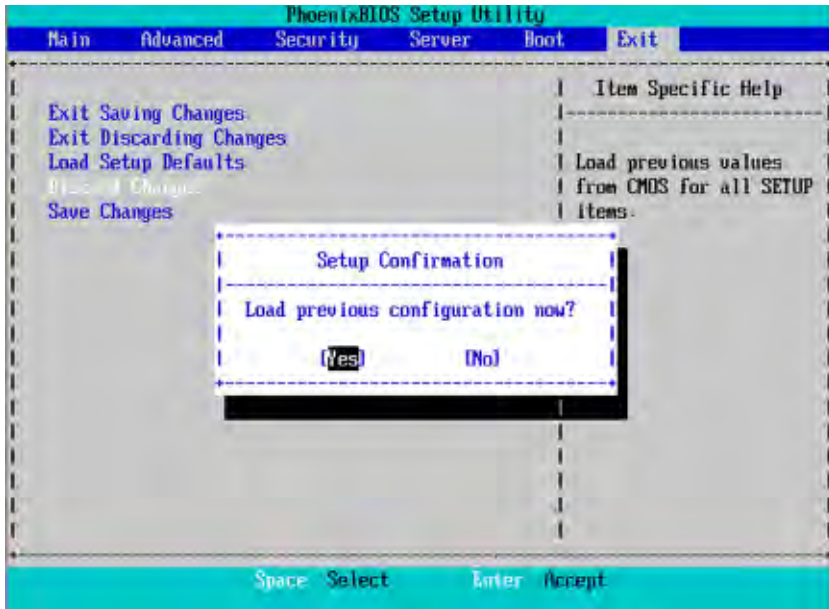
When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:



🔗 **Discard Changes**

This option allows user to load previous values from CMOS for all setup item.

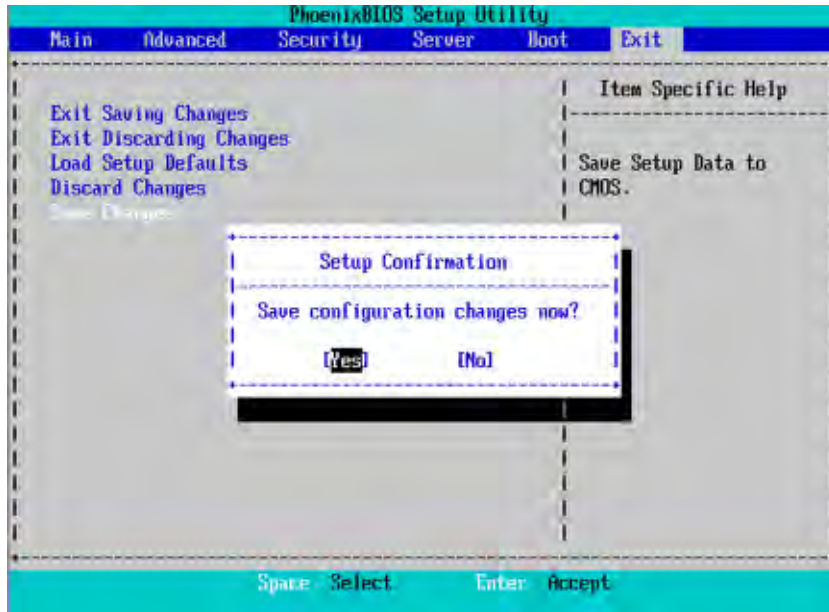
When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:



Save Changes

This option allows user to save setup data to CMOS.

When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:



Press [Yes] to save setup data to CMOS.