

GS-R1231-RH

1U Rack Mount Server

System Installation Guide

AMD Opteron™ Socket F Dual Processor Motherboard
Rev. 1.0

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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

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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.



Introduction

Welcome to Gigabyte GS-R1231-RH Rack mount Server System Installation Guide. The guide provides instructions for configuration hardware for the GS-R1231-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 you 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-3CESL1-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 | <input checked="" type="checkbox"/> Cables (RJ45) |
| <input checked="" type="checkbox"/> Case Handle Kit x 2 | |
| <input checked="" type="checkbox"/> GS-R1231-RH Quick Referenece 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-3CESL1-RH
Processor Supported	<ul style="list-style-type: none"> Support Dual AMD Opteron™ 2000 series Processors (Socket F) Supports AMD Opteron™ Dual-Core/ Quad-Core (Barcelona) processors Supports L2/3 Cache with 1MB/2MB
Chipset	<ul style="list-style-type: none"> NVIDIA® nForce Professional 3600 MCP Chipset
System Memory:	
Memory Capacity	<ul style="list-style-type: none"> 16 x DDR2 DIMM sockets up to 64GB
Memory Type	<ul style="list-style-type: none"> Registered 533/667 memory
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 PCI-Express x16 slot 1 SO-DIMM I/F
SATA RAID controller	<ul style="list-style-type: none"> Built in NVIDIA® 3600 MCP with Software RAID 0,1,0+1, 5 Supports Software RAID 0,1,0+1, 5
Cooling Fans:	<ul style="list-style-type: none"> 6 X System Fan
Integrated LANs:	
Controller	<ul style="list-style-type: none"> Dual Marvell® 88E1116 GbE PHY
Integrated Graphics:	
Controller	<ul style="list-style-type: none"> XGI Volari Z9s
Graphics Memory	<ul style="list-style-type: none"> 32MB DDR2
Mass Storage System	<ul style="list-style-type: none"> 4 x Hot-Swap SATA HDDs
Super I/O	
Controller	<ul style="list-style-type: none"> ITE IT8716F Super I/O
Built-in I/O	<ul style="list-style-type: none"> 1 x Serial port (COM) 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)	

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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 40°C
	• Non-operating Temperature: 0°C to 50°C
Relative Humidity	• 10-80% operating Humidity at 30°C

System Dimension:	• 430mm x 43mm x 675 mm
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Electrical Power Supply	• Single Power Supply 500W
--------------------------------	----------------------------

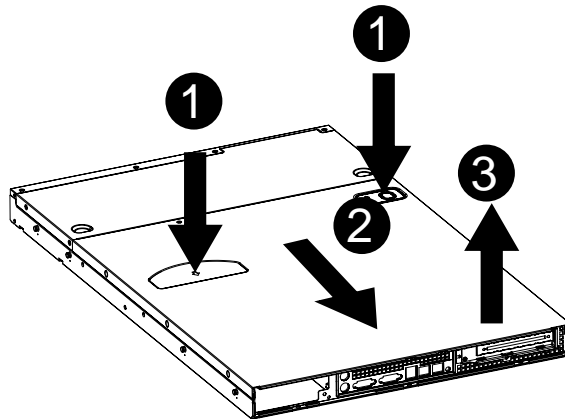
Chapter 2 System Hardware Installation



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 Push down the indentation located at two sides of the chassis.
- Step 2 Slide toward the top chassis cover.
- Step 3 Lift up to remove the top chassis cover.
- Step 4 Reverse Step 1, ,2, 3 to replace the chassis cover

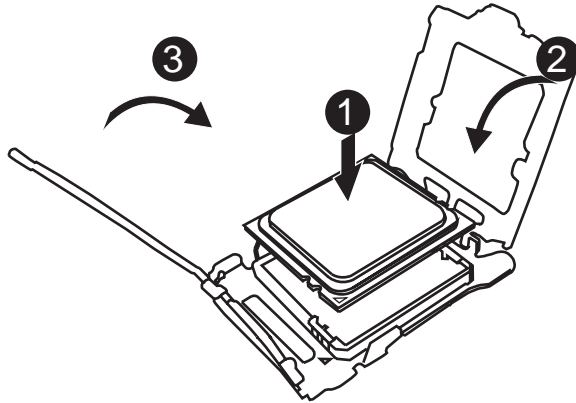


Step 2-2: CPU Installation



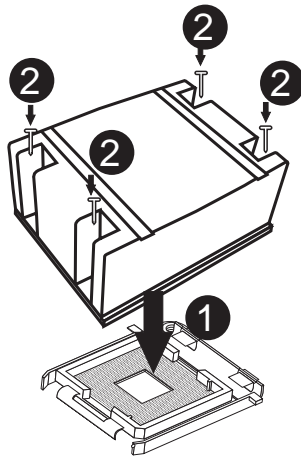
Please make sure the CPU type and speed that are supported by the motherboard.

- 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.



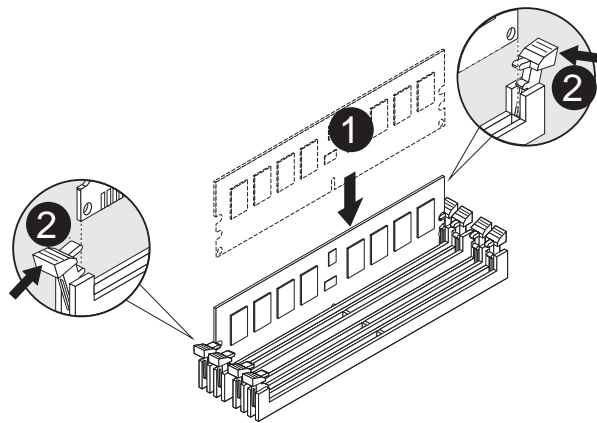
Step 2-4: Memory Installation

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 DIMM_A1 or DIMM_C1 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-R1231-RH provides expansion riser slots for two PCI-E x16 slot. To install the peripheral, please go through the following steps.

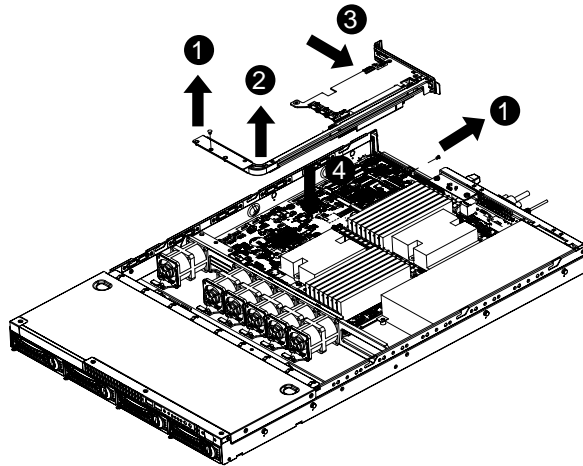
Note!! Before installing the expansion card, please check the card size limitation. Size limitation for standard riser card is 182mm; and the size limitation for low profile riser card is 182mm.

Step 1 Loosen the riser bracket screws.

Step 2 Lift the riser bracket slightly, then pull it out from the server chassis.

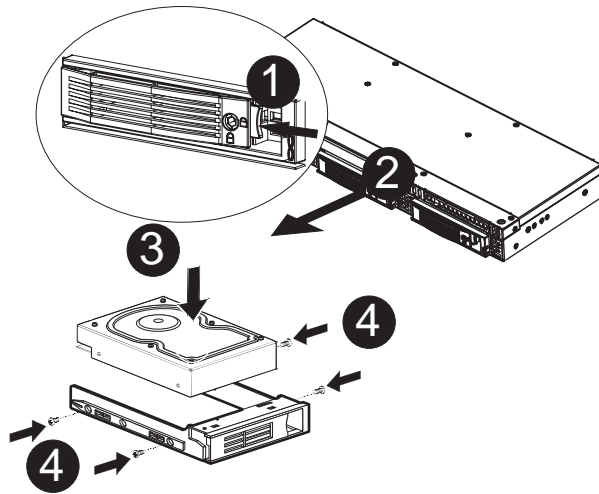
Step 3 Align the expansion card with the guiding groove. Slide the expansion card into the slot until the card firmly seats.

Step 4 Align the riser bracket to the system module.



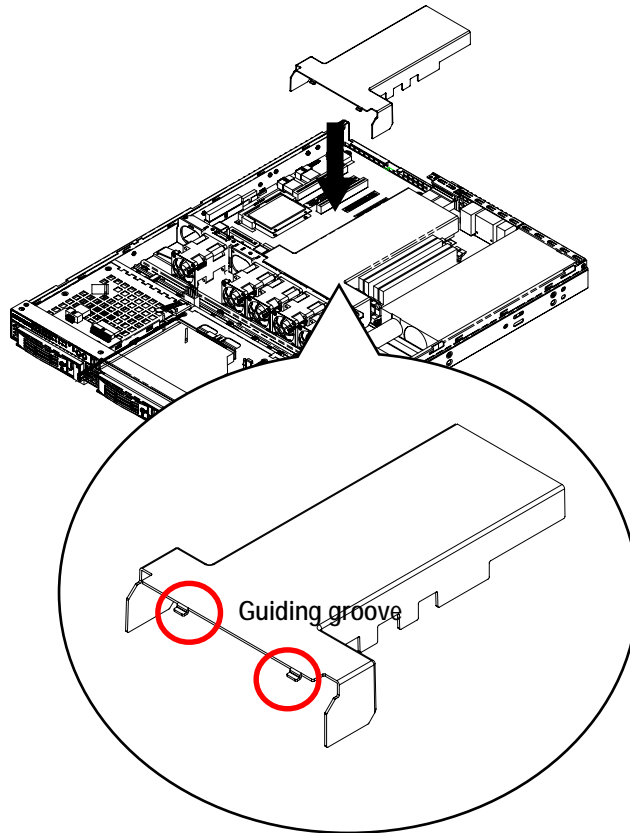
Step 2-6: Hard Disk Drive Installation

- 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.



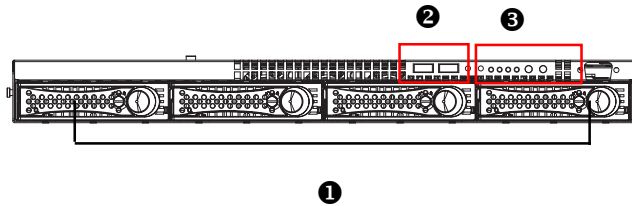
Step 2-7: FAN Duct Removal and Installation

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



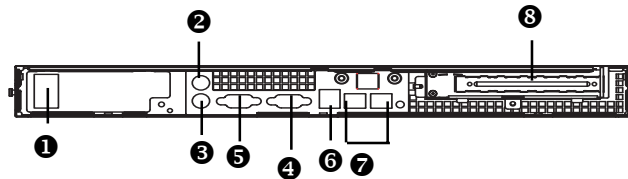
Chapter 3 Appearance of GS-R1231-RH

3-1: Front View of GS-R1231-RH



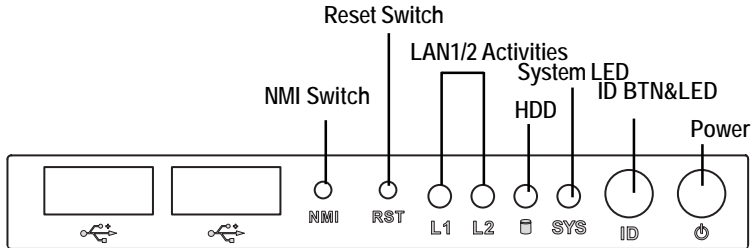
①	Hot-Swap SATA HDDs
②	USB connectors
③	Front panel switch and LEDs

3-2: Rear View of GS-R1231-RH



①	Power cord
②	Mouse connector
③	Keyboard connector
④	COM port
⑤	VGA port
⑥	USB connectors
⑦	RJ45 LAN ports
⑧	Low-profile 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)
SYS (System)	Amber	Blink	System Ready but degraded, CPU Failed, DIMM Killed
	Amber	On	Critical Alarm: Critical Power Module Failure, Critical FANs Failure, Voltage (Power Supply) Critical Teemperature and Voltage
	--	Off	System healthy.
HDD	Green	Blink	Hard Disk Drive Access
	--	Off	No Access and No HDD Fault
LAN1 Activity	Green	On	LAN Link / No access
	Green	Blink	LAN access
	--	Off	Idle
LAN2 Activity	Green	On	LAN Link / No access
	Green	Blink	LAN access
	--	Off	Idle
ID (Identification)	Blue	On	Unti selected for identification
	--	Off	No identification

3-4: LAN LED Description



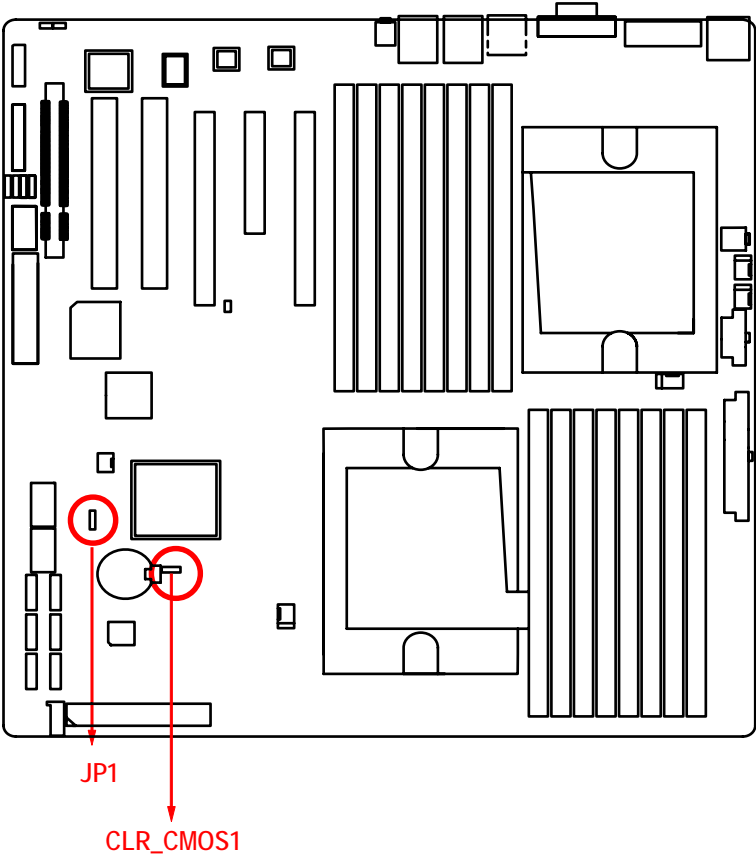
Name	Color	Condition	Description
LAN Link/Activity	Green	ON	LAN Link / no Access
	Green	BLINK	LAN Access
	-	OFF	Idle
10 LAN Speed	-	OFF	10Mbps connection
100 LAN Speed	Green	ON	100Mbps connection
	Green	BLINK	Port identification with 10 or 100Mbps connection
GbE LAN Speed	Yellow	ON	1Gbps connection
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

3-5: Connector Icon Description

Suggest Icon	Description
	Keyboard
	Mouse
	VGA
	COM
	LAN
	USB

Chapter 4 Motherboard Jumper Setting

4-1: GA-3CESL1-RH Motherboard Jumper Setting




GS-R1231-RH Rack Mount Server

1. CLR_CMOS (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 1-2 pin.**

1  1-2 Close: Clear CMOS

1  2-3 Close: Normal operation (Default setting)

2. JP1 (BIOS Recovery jumper)

1  1-2 Close: Enable BIOS Recovery function.

1  2-3 Close: Normal operation(Default setting)

Chapter 5 BIOS Setup

BIOS Setup is an overview of the BIOS Setup Program. The program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

ENTERING SETUP

Power ON the computer and press <F2> immediately will allow you to enter Setup.

CONTROL KEYS

<↑>	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>.

- **Main**
This setup page includes all the items in standard compatible BIOS.
- **Advanced**
This setup page includes all the items of AMI 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.

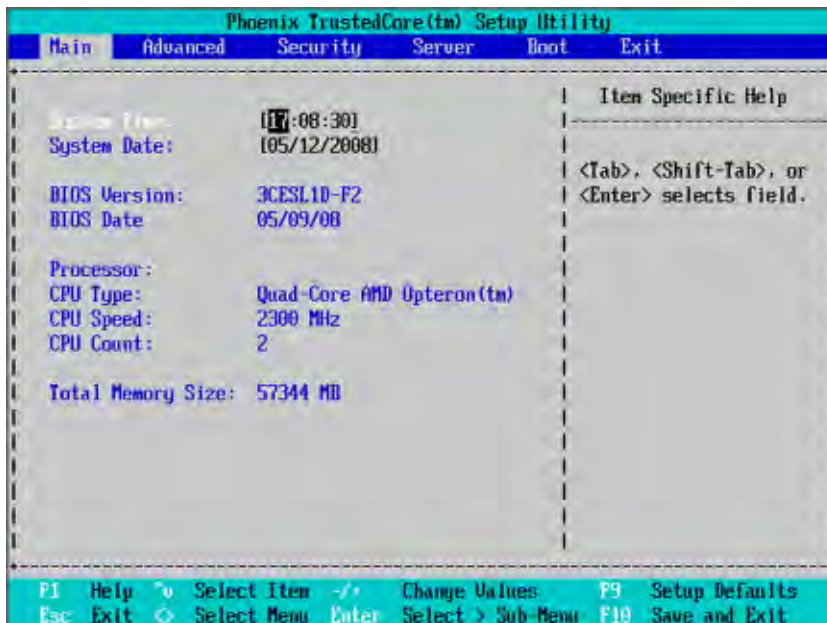


Figure 1: Main

🔗 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)

🔗 BIOS Version/BIOS Date

These two fields indicate the main board BIOS version and release date.

☞ **Processor Information**

These following items display all information of current **CPU Type**, **CPU Speed**, and **CPU Count**. These items are display-only which is determined by POST (Power On Self Test) of the BIOS.

☞ **Total Memory Size**

This item identifies the total memory size.

Advanced

About This Section: Advanced

With this section, allowing user to configure your system for basic operation. User can change the processor options, chipset configuration, PCI configuration and chipset control.

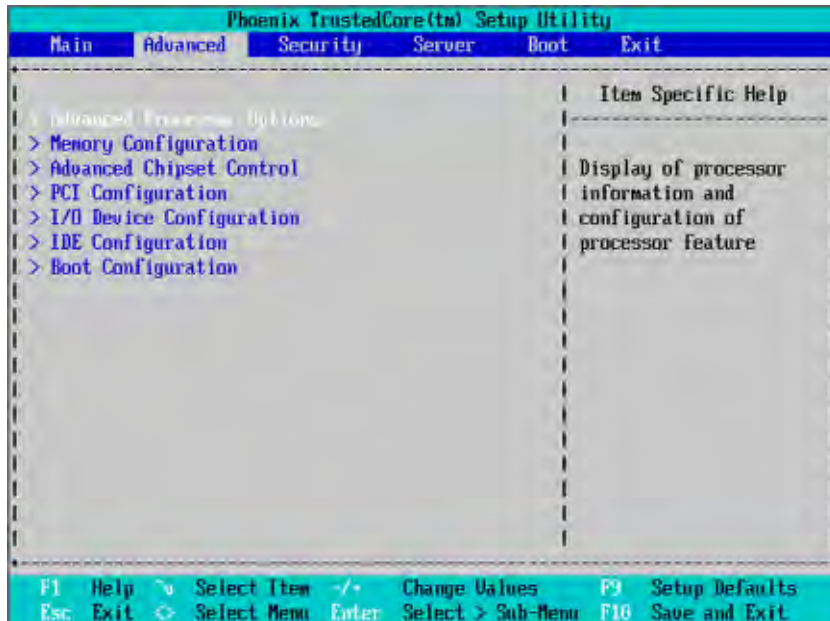


Figure 2: Advanced

Advanced Processor Options

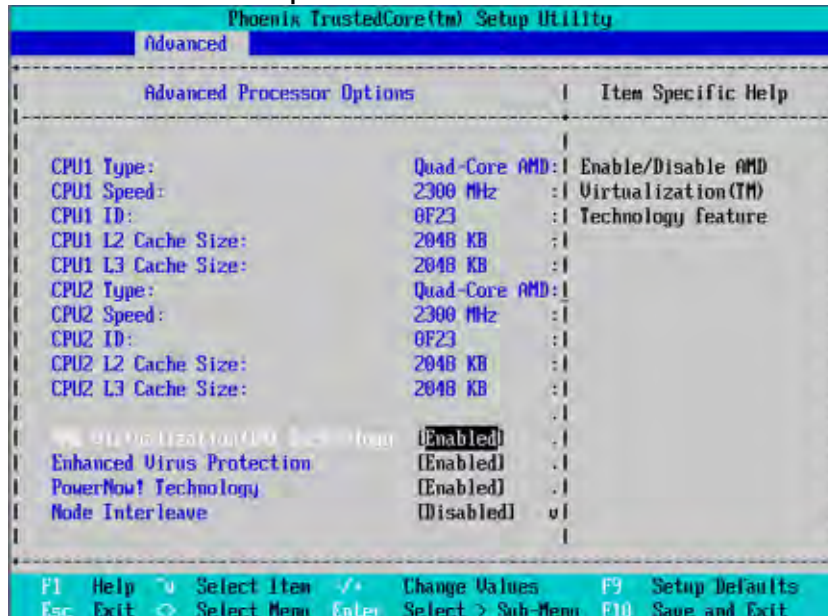


Figure 2-1: Advanced Processor Option

Advanced Processor Option

This category includes the information of CPU Type, CPU Speed, CPU1/CPU2 ID, CPU1/CPU2 L2/L3 Cache, CPU Type, CPU Speed. Setup menu for AMD Virtualization (TM) Technology, Enhanced Virus Protection, Power Now Technology, Node Interleave, and ACPI SRAT Table.

AMD Virtualization (TM) Technology

AMD 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 AMD Virtualization Technology Feature.
- ▶▶ Disabled Disable AMD Virtualization Technology Feature. (Default setting)

☞ **Enhanced Virtus Protection**

- ▶▶ Enabled Enabled AMD No-execute page protection feature. (Default setting)
- ▶▶ Disabled Disables AMD No-execute page protection feature.

☞ **Power Now! Technology**

AMD PowerNow!™ Technology allows the processor to dissipate less heat under normal operating conditions, providing a cooler and quieter-running system. It also provides performance on demand when required by the application.

- ▶▶ Enabled Enable Power Now! Technology feature. (Default setting)
- ▶▶ Disabled Disables Power Now! Technology feature.

☞ **Node Interleave**

Interleave memory blocks across nodes.

- ▶▶ Auto Enable node interleave function.
- ▶▶ Disabled Disable this function. (Default setting)

☞ **DRAM Bank Interleave**

- ▶▶ Auto Enable DRAM bank interleave function.
- ▶▶ Disabled Disable this function. (Default setting)

☞ **ACPI SRAT Table**

- ▶▶ Enabled Enable ACPI 2.0 static resources affinity table for ccNUMA systems.
(Default setting)
- ▶▶ Disabled Disable this function.

☞ **Optimize Performance**

- ▶▶ Unganged Select Unganged mode as optimize performance. (Default setting)
- ▶▶ Ganged Select Ganged mode as optimize performance.

☞ **DRAM ECC Scrub Control**

- ▶▶ Auto Enable DRAM ECC scrub control function.
- ▶▶ Disabled Disable this function. (Default setting)

☞ **L2 ECC Scrub Control**

Sets the rate of background scrubbing for the L2 cache.

- ▶▶ Options Disabled/1.28us/2.56us/5.12us/10.2us/20.5us/41us/81.9us/163.8us/
327.7us/655.4us/1.31ms/2.62ms/5.24ms/10.49ms/20.97ms/42ms/84ms
Default setting is disabled.

☞ **L3 ECC Scrub Control**

Sets the rate of background scrubbing for the L3 cache.

- ▶▶ Options Disabled/40ns/80ns/160ns/320ns/640ns/1.28us/2.56us/5.12us/10.2us/20.5us/41us/81.9us/163.8us/327.7us/655.4us/1.31ms/2.62ms/5.24ms/10.49ms/20.97ms/42ms/84ms
Default setting is disabled.

☞ **DCache ECC Scrub Control**

Sets the rate of background scrubbing for the DCache cache.

- ▶▶ Options Disabled/1.28us/2.56us/5.12us/10.2us/20.5us/41us/81.9us/163.8us/
327.7us/655.4us/1.31ms/2.62ms/5.24ms/10.49ms/20.97ms/42ms/84ms
Default setting is disabled.

☞ **ECC Scrub Redirection**

- ▶▶ Enabled Enable the northbridge to force a write to dram with corrected data when a correctable error on the dram bus is detected during a normal CPU or bus master read request.
- ▶▶ Disabled Disable this function. (Default setting)

☞ **Bank Swizzle Mode**

- ▶▶ Enabled Enable Bank Swizzle Mode. (Default setting)
- ▶▶ Disabled Disable this function.

☞ **Ecc error reporting**

If all memory modules in the system support parity this enables ECC mode.

- ▶▶ Enable Enable Ecc error reporting function. (Default setting)
- ▶▶ Disabled Disable this function.

Memory Configuration

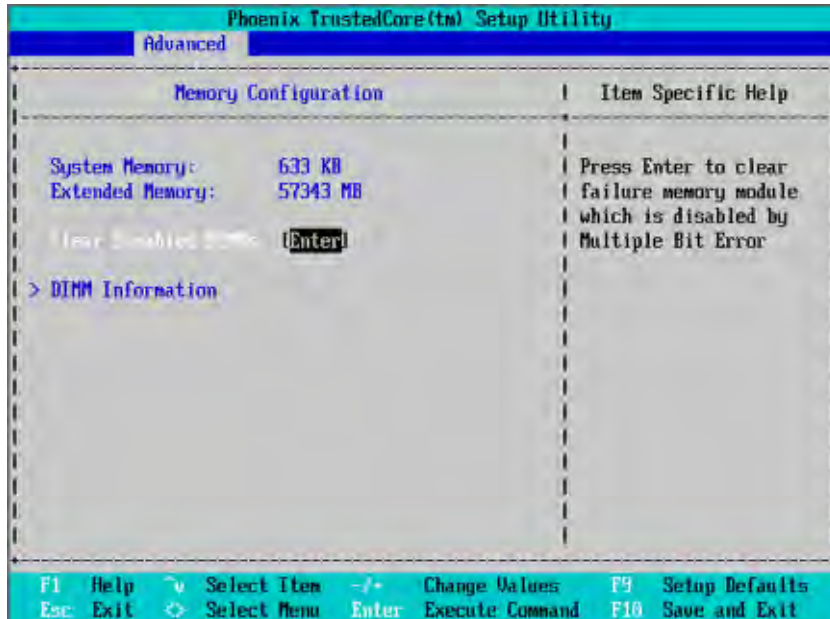


Figure 2-2: Memory Configuration

System Memory/Extended Memory/DIMM Information

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

Clear Disabled DIMMs

Press [Enter] to clear the memory error status. Save the changes and restart system.

DIMM Information

This category is display-only which is determined by POST (Power On Self Test) of the BIOS. Press [Enter] to view all the installed DIMMs information.

Advanced Chipset Control

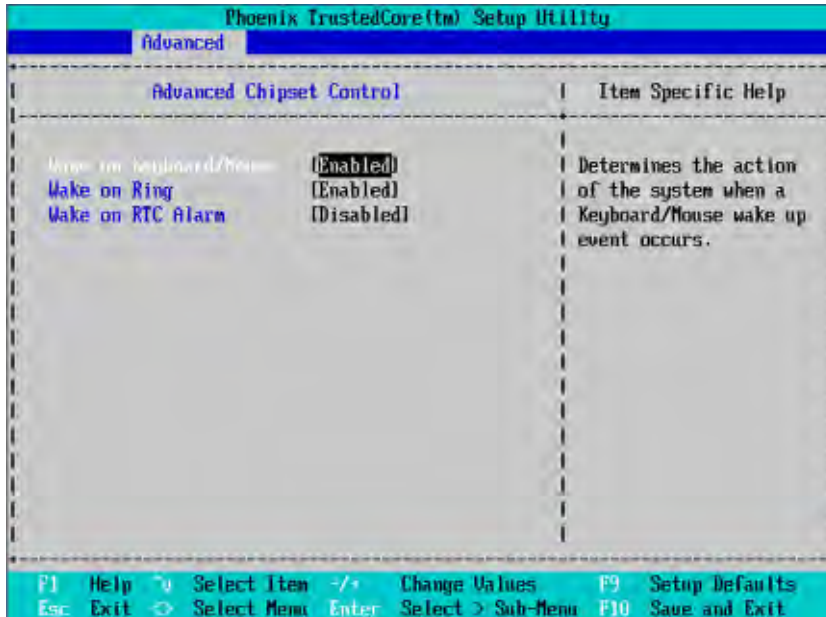


Figure 2-3: Advanced Chipset Control

☞ Wake on Keyboard/Mouse

This item allows you to set the enable/disable for powering-on the system by keyboard and mouse.

- ▶▶ Enabled Wake on Keyboard/Mouse. (Default setting)
- ▶▶ Disabled Disable this function.

Note: This item must be enabled if you're running under Windows operating system.

☞ Wake On Ring

This item allows user to determine the action of the system power is off via modem.

- ▶▶ Enabled Enable Wake On Ring. (Default setting)
- ▶▶ Disabled Disable this function.

Note: This item must be enabled if you're running under Windows operating system.

☞Wake On RTC Alarm

You can set "RTC" items to enabled and key in Data/time to power on system.

- ▶▶Enabled Enable alarm function to POWER ON system.
- ▶▶Disabled Disable this function. (Default setting)

PCI Configuration

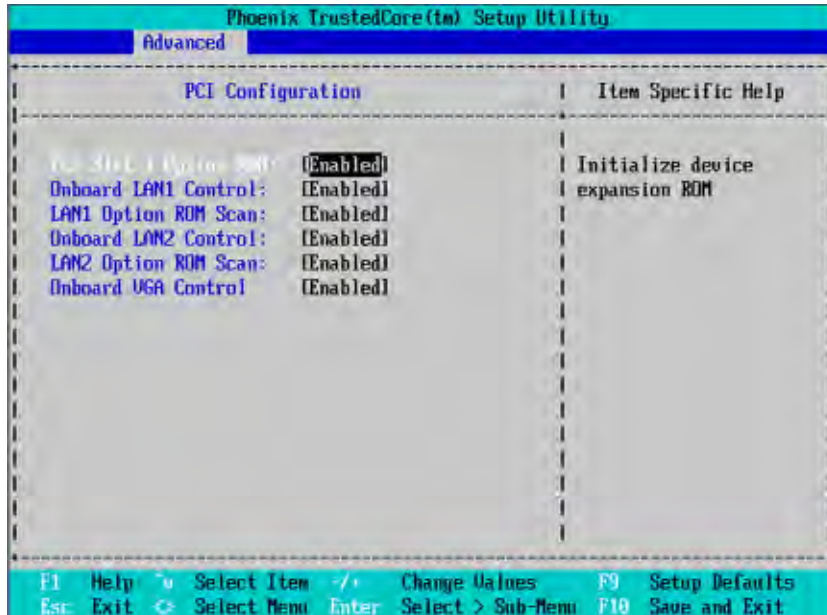


Figure 2-4: PCI Configuration

☞ PCI Slot 1 Option ROM

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

☞ Onboard LAN1 Control

- ☞ Enabled Enable onboard LAN1 device. (Default setting)
- ☞ Disabled Disable this function.

☞ LAN1 Optiona ROM Scan

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

☞ Onboard LAN2 Control

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

☞ LAN2 Optiona ROM Scan

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

☞ Onboard VGA Control

- ▶▶ Enabled Enable onboard VGA device. (Default setting)
- ▶▶ Disabled Disable this function.

I/O Device Configuration

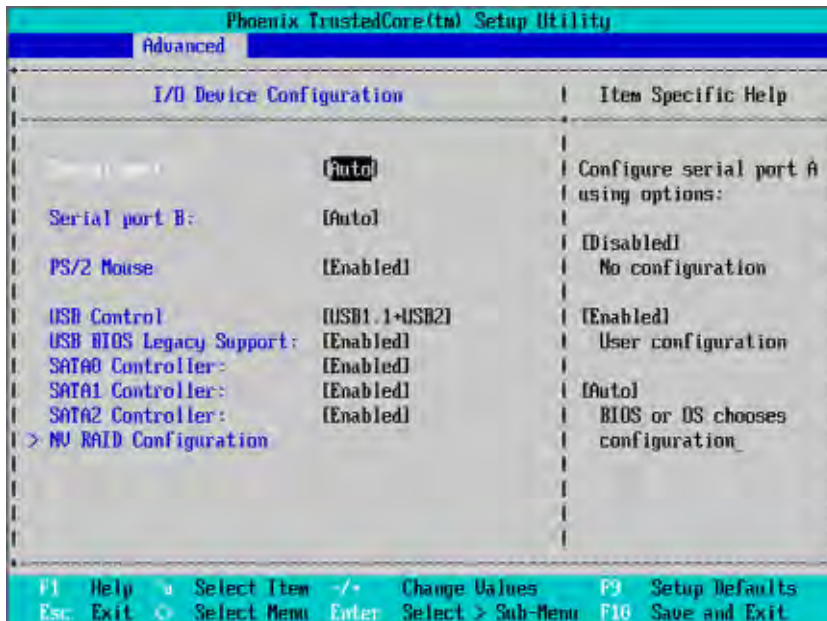


Figure 2-5: I/O Device Configuration

Serial Port A

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

- ▶▶ Enabled Set serial port A address to 3F8/IRQ4.
- ▶▶ Disabled No configuration.
- ▶▶ Auto Auto-detection. (Default setting)

Serial Port B

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

- ▶▶ Enabled Set serial port 2 address to 2F8/IRQ3.
- ▶▶ Disabled No configuration.
- ▶▶ Auto Auto-detection. (Default setting)

☞ 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 'Disabled' prevents any installed PS/2 mouse from functioning, but frees up IRQ12.

☞ USB Control

- ▶▶ USB1.1 Enable the USB 1.1 device.
- ▶▶ USB1.1+USB2 Enable the USB 1.1 and USB2 devices. (Default setting)
- ▶▶ Disabled Disables both USB device.

☞ USB BIOS Legacy Support

This option allows user to function support for legacy USB.

- ▶▶ Enabled Enable the USB BIOS legacy support. (Default setting)
- ▶▶ Disabled Disables support for legacy USB.

☞ SATA0 Controller

- ▶▶ Enabled Enable Serial ATA0 device. (Default setting)
- ▶▶ Disabled Disable the Serial ATA0 device.

☞ SATA1 Controller

- ▶▶ Enabled Enable Serial ATA 1 device. (Default setting)
- ▶▶ Disabled Disable the Serial ATA0 device.

☞ SATA2 Controller

- ▶▶ Enabled Enable Serial ATA 2 device. (Default setting)
- ▶▶ Disabled Disable the Serial ATA0 device.

🔓 **NV RAID Configuration**

- ▶▶ Enabled Enable nVIDIA RAID control. (Default setting)
- ▶▶ Disabled Disable the Serial ATA0 device.

🔓 **SATA0~5**

- ▶▶ Enabled Enable SATA 0~5 RAID control (Default setting)
- ▶▶ Disabled Disable SATA 0~5 RAID control.

IDE Configuration

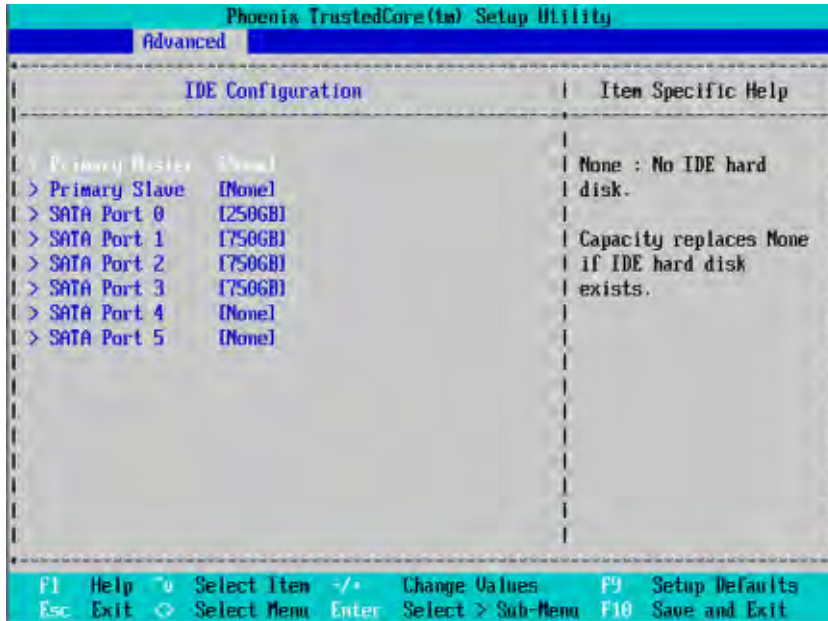


Figure 2-6: IDE Configuration

☞ Primary Master, Slave/SATA0-5

The category identifies the types of hard disk from drive C to F and SATA0-SATA5 are 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.

If you select User Type, related information will be asked to enter to the following items. Enter the information directly from the keyboard and press <Enter>. Such information should be provided in the documentation form your hard disk vendor or the system manufacturer.

▶▶ **TYPE**

Auto: Set parameters automatically. (Default setting)

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

Clear: Removable disk drive is installed here.

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/Large 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.

Boot Configuration

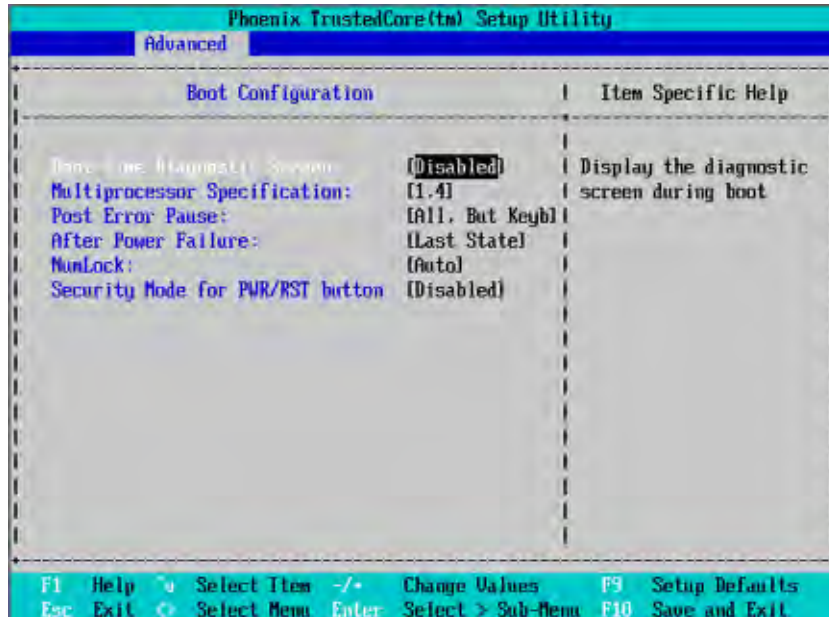


Figure 2-7: Boot Configuration

☞ Boot -time Diagnostic Screen

When this item is enabled, allows BIOS to skip certain tests while booting.

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

☞ Multiprocessor Specification

This option allows user to configure the multiprocessor(MP) specification revision level.

Some operating system will require 1.1 for compatibility reasons.

- ▶▶ 1.4 Support MPS Version 1.4 . (Default setting)
- ▶▶ 1.1 Support M PS Version 1.1.

☞ **Post Error Pause**

- ▶▶ All Errors Whenever the BIOS detects a non-fatal error the system will be stopped.
- ▶▶ All, But Keyboard The system boot will not stop for a keyboard error; it will stop for all other errors. (Default setting)
- ▶▶ No Errors The system boot will not stop for any error that may be detected and you will be prompted.

☞ **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 state when AC power is removed. Do not power on system when AC power is back. (Default setting)

☞ **NumLock**

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

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

☞ **Security Mode for PWR/RST button**

- ▶▶ Enabled Enable Security Mode for PWR/RST button function.
- ▶▶ 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.

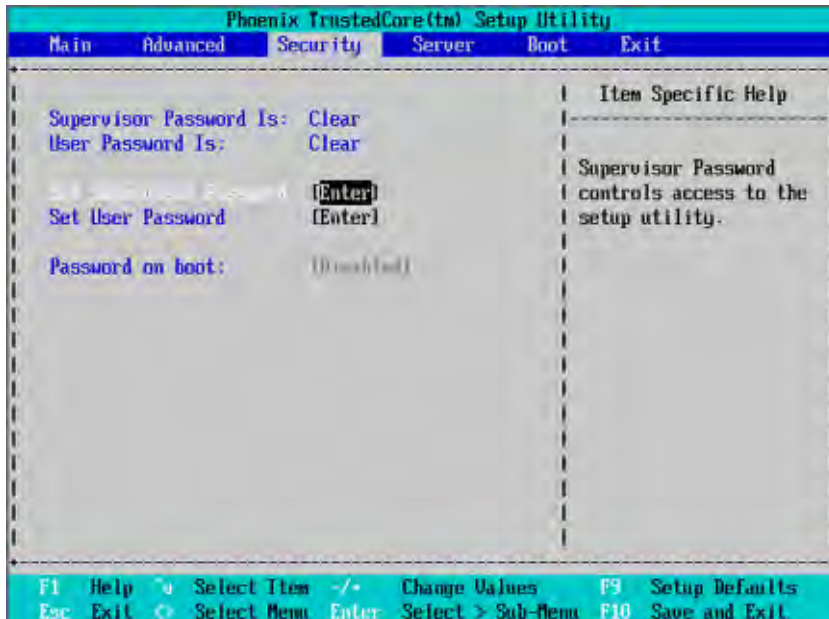


Figure 3: Security

🔑 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

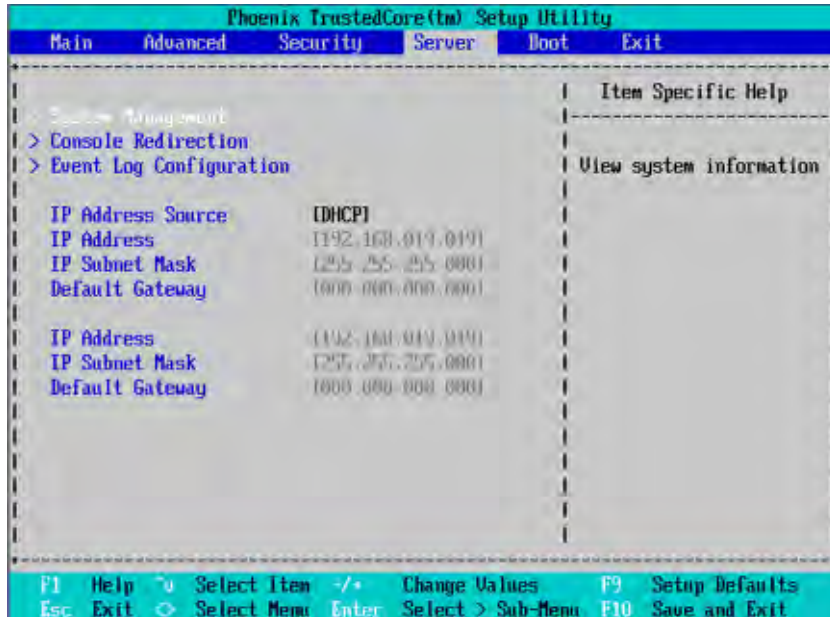


Figure 4: Server

System Management

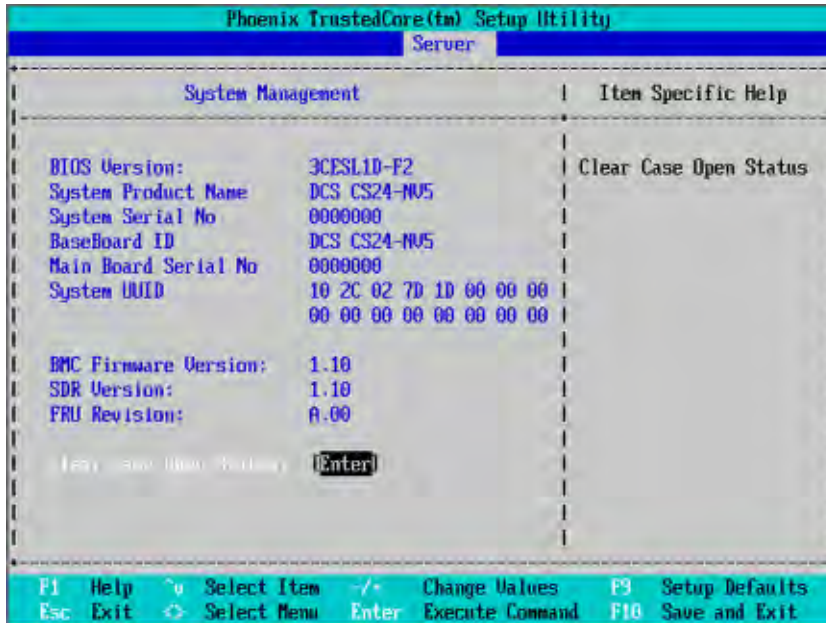


Figure 4-1: System Management

Server Management

This category allows user to view the server management features. Including information of BIOS Version, System Product Name, System Serial Number, BaseBoard ID, Main Board Serial Number, System ID, BMC Firmware Version, and, FRU Revision. All items in this menu cannot be modified, display only.

Clear Case Open Status

Press [Enter] to clear the Case Open Status.

Console Redirection

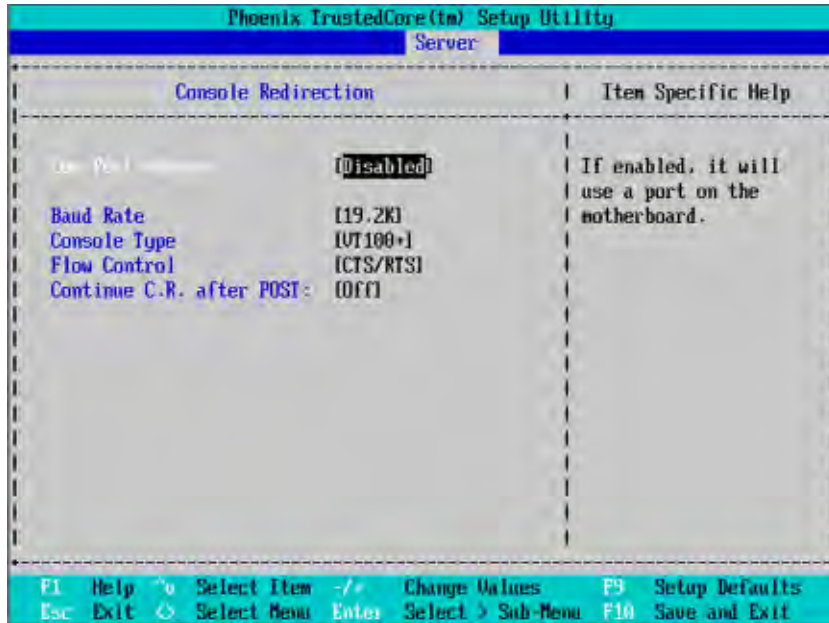


Figure 4-2: Remote Access Configuration

☞ COM Port Adress

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

- ▶▶ On-board COM A Use Serial Port A as the COM port address.
- ▶▶ On-board COM 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

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)

Event Log Configuration

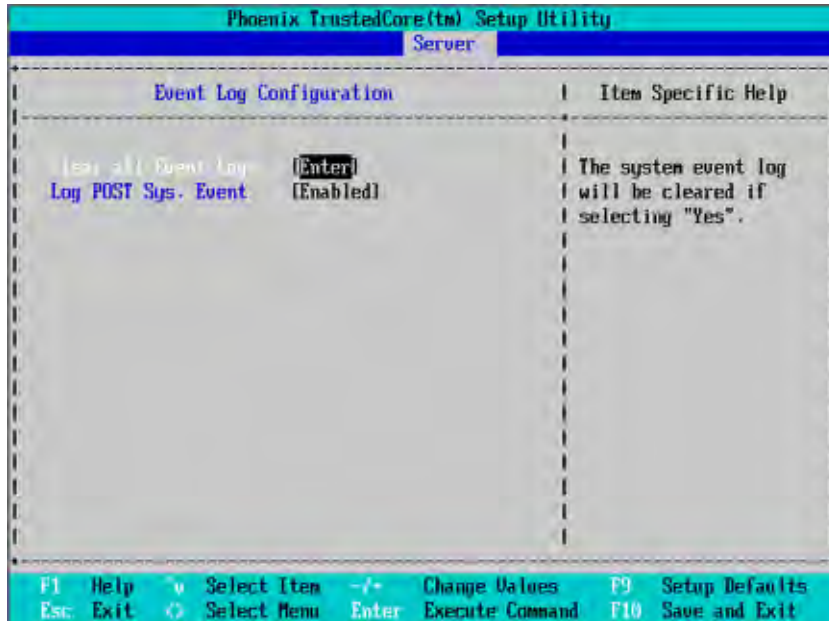


Figure 4-3: Event Log Configuration

☞ Clear all Event Logs

Press [Enter] to clear all IPMI Event logs.

☞ Log POST Sys. Event

- ▶▶ Enabled Enable Log POST Sys. Event function. (Default setting)
- ▶▶ Disabled Disable this function.

Boot

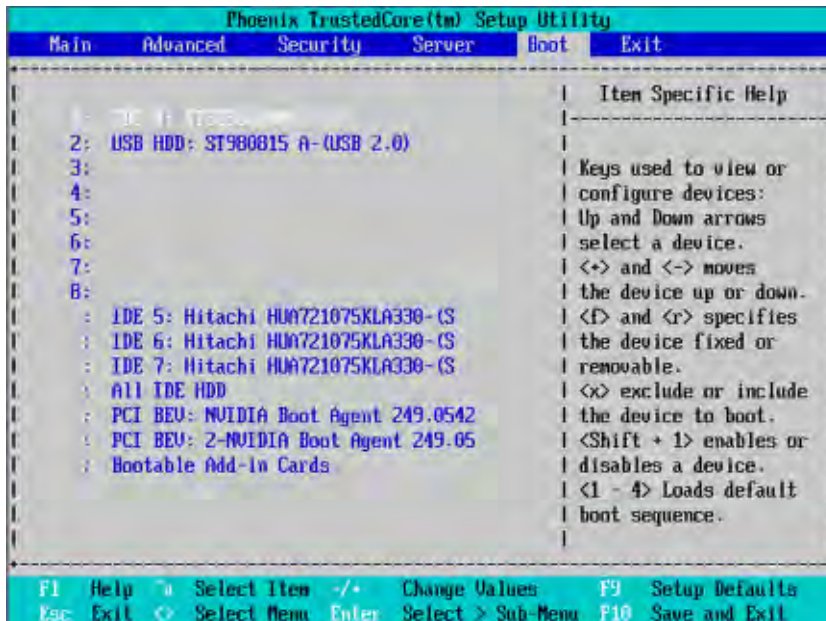


Figure 5: Boot

☞ Boot Device Priority

This field determines which type of device the system attempt to boot from after BIOS 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.

Key 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.

<1-4> Loads default boot sequence.

Exit

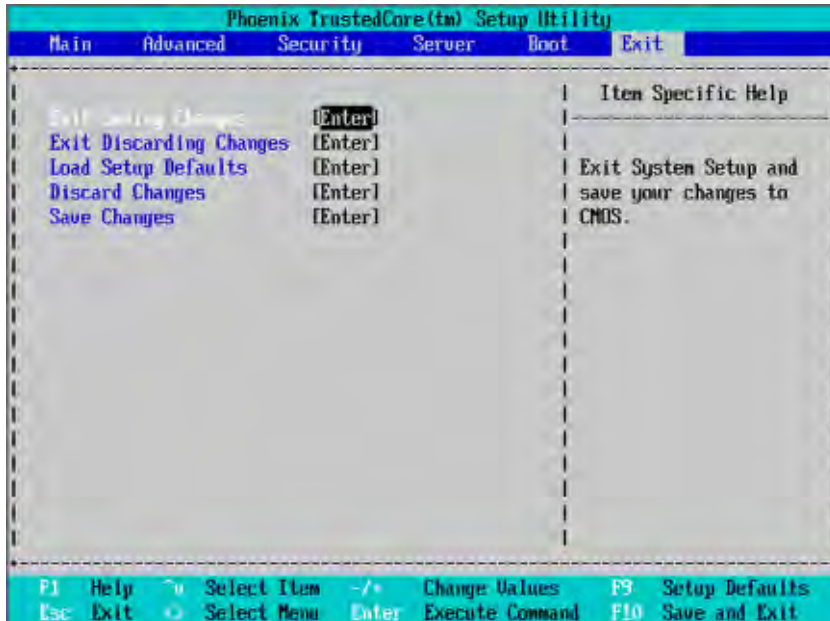


Figure 6: Exit

⚡ About This Section: Exit

Once you have made the changes in the BIOS setup items, you have to save your changes and exit BIOS setup program. Select "Exit" from the menu bar, to display the following sub-menu.

- ⚡ Save Changes and Exit
- ⚡ Discard Changes and Exit
- ⚡ Discard Changes
- ⚡ Load Optimal Defaults
- ⚡ Load Failsafe Defaults

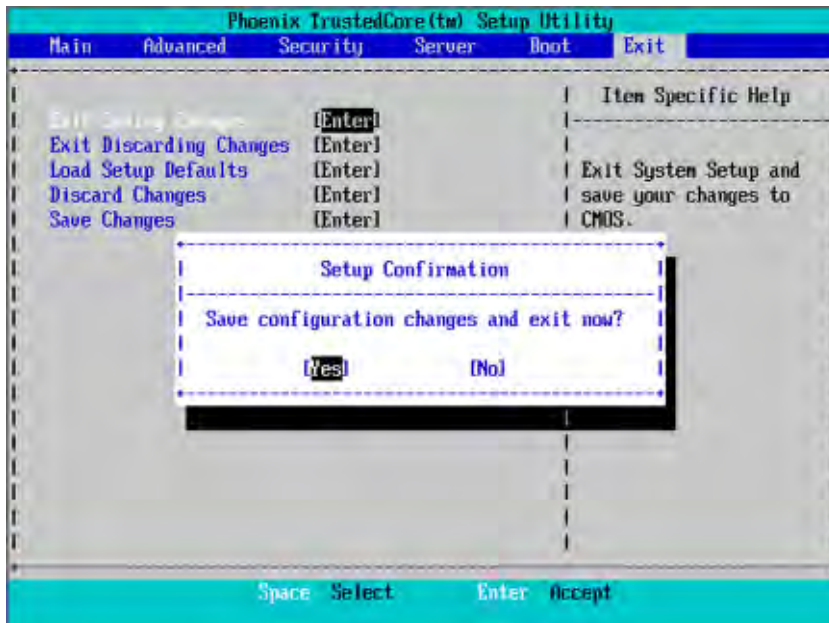
☞ Exit Saving Changes

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.

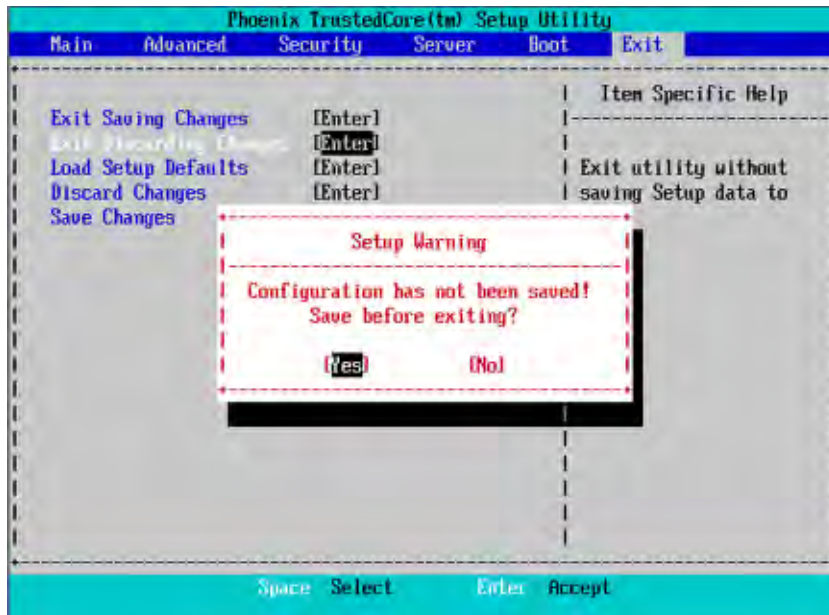
Therefore, whenyou boot up your computer next time, the BIOS will re-configure your system according data in CMOS.



☞ 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.

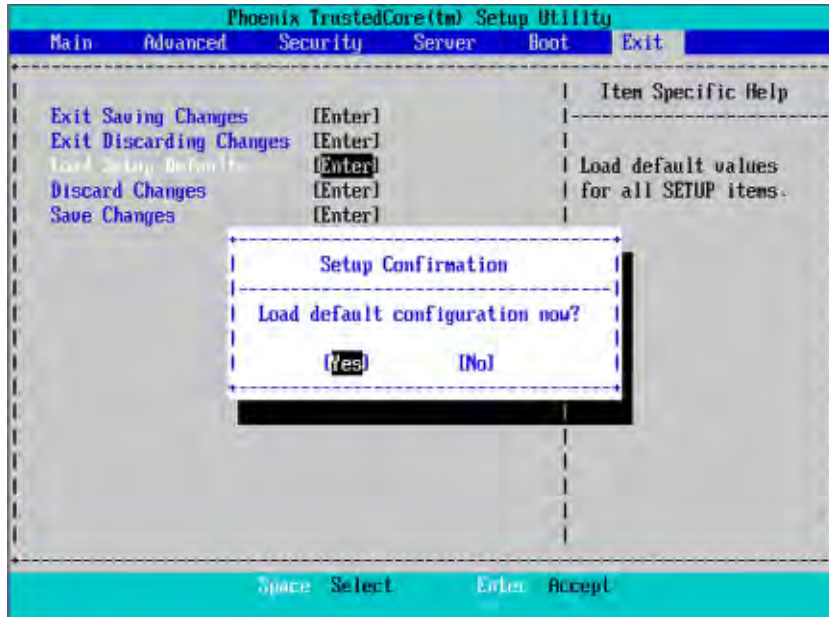
This will exit the Setup Utility and restart your computer when selecting this option.



☞ Load Setup Default

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

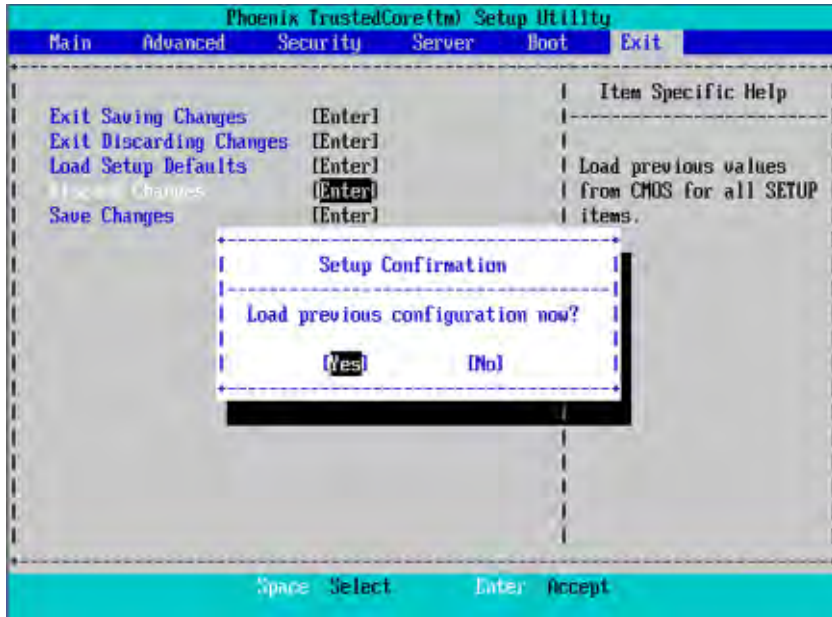
When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:



Discard Changes

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

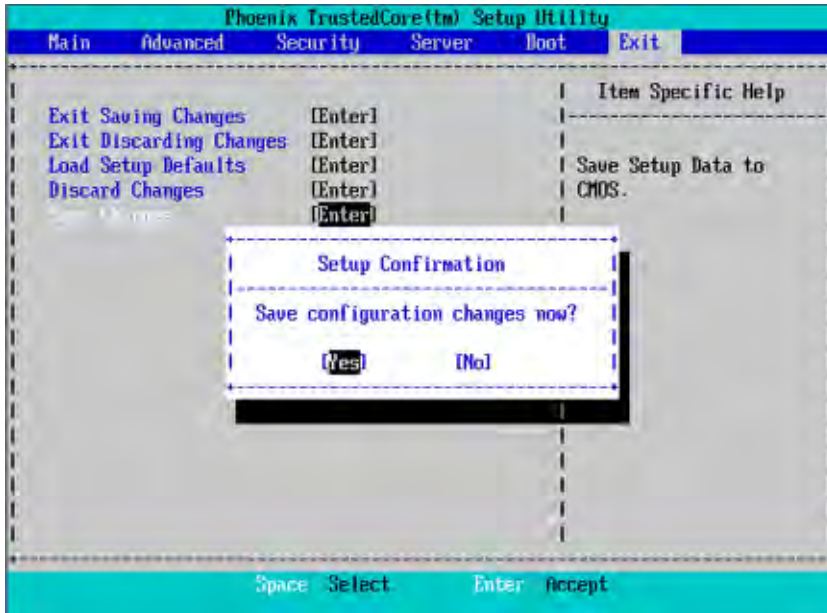
This will exit the Setup Utility and restart your computer when selecting this option.



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.