GS-R1233-RH

1U Rack Mount Server

System Installation Guide

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GS-R1233-RH Rack Mount Server

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.

◖ 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.

◖ Canadian Department of Communications Compliance Statement

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

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de Classe B prescrites dans le reglement sur le brouillage radioelectrique edicte par Industrie Canada.

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-R1233-RH Rack mount Server System Installation Guide. The guide provides instructions for configuration hardware for the GS-R1233-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.

- ☑ Chassis
- ☑ Power Supply (Installed)
- ☑ CPU Heat Sink x 2
- ☑ Case Handle Kit x 2
- ☑ GA-3CESL2-RH Motherboard (Installed)
- ☑ FAN Duct x 1
- ☑ Slim SATA DVD-ROM (Installed)

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

Chapter 1   Features Summary

Motherboard	•	GA-3CESL2-RH
Processor Supported	•	Support Dual AMD Opteron™ 2000 series Processors (Socket F)
	•	Supports AMD Opteron™ Dual-Core/ Quad-Core (Shanghai) processors (Support 75W)
	•	Supports L2/3 Cache with 2MB for Barcelona processor
	•	Supports L2 Cache with 2MB and L3 Cache with 6MB for Shanghai processor
Chipset	•	NVIDIA® nForce Professional 3600 MCP Chipset
System Memory:		
Memory Capacity	•	16 x DDR2 DIMM sockets up to 64GB
Memory Type	•	Registered 533/667 memory
DIMM Size	•	Support 512MB, 1GB, 2GB, and 4GB memory
Error Correction:	•	Single-bit Errors Correction, Multiple Bit Errors Detection
Expansion Slot	•	1 PCI-Express x16 slot
	•	1 SO-DIMM I/F
SATA RAID controller	•	Built in NVIDIA ® 3600 MCP with Software RAID 0,1,0+1, 5
	•	Supports Software RAID 0,1,0+1, 5
Cooling Fans:	•	6 FAN 40x40x56mm 2BALL 15800rpm 12V 63mm
Integrated LANs:		
Controller	•	Dual Marvell® 88E1116 GbE PHY
Integrated Graphics:		
Controller	•	XGI Volari Z9s
Graphics Memory	•	32MB DDR2
Mass Storage System	•	4 x Hot-Swap SATA HDDs
Super I/O		
Controller	•	ITE IT8716F Super I/O
Built-in I/O	•	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	•	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	•	9.216KB 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:	•	430mm x 43.5mm x 710 mm
Electrical Power Supply	•	Single Power Supply 500W

Chapter 2 System Hardware Installation

⚠ **CAUTION** 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
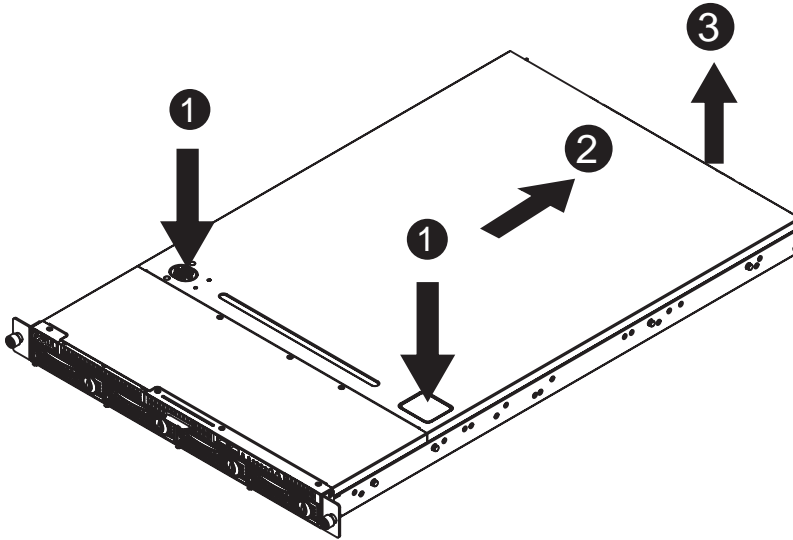
Step 2-2: CPU Installation

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.
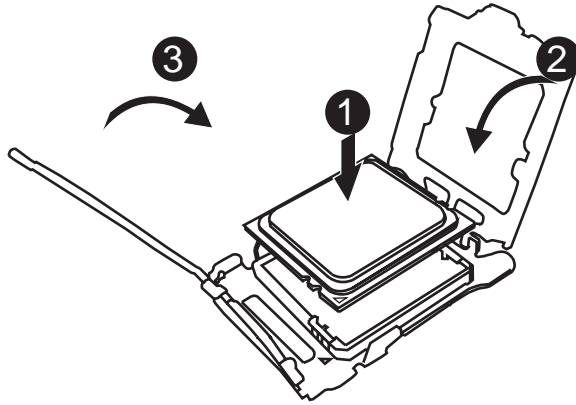
Step 2-3: Heat Sink Installation

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.
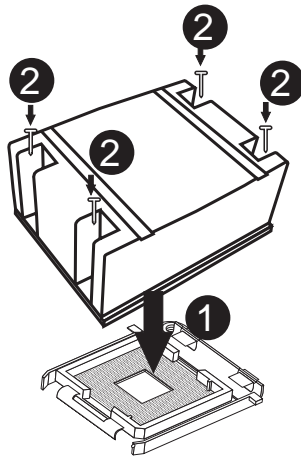
Step 2-4: Memory Installation

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.
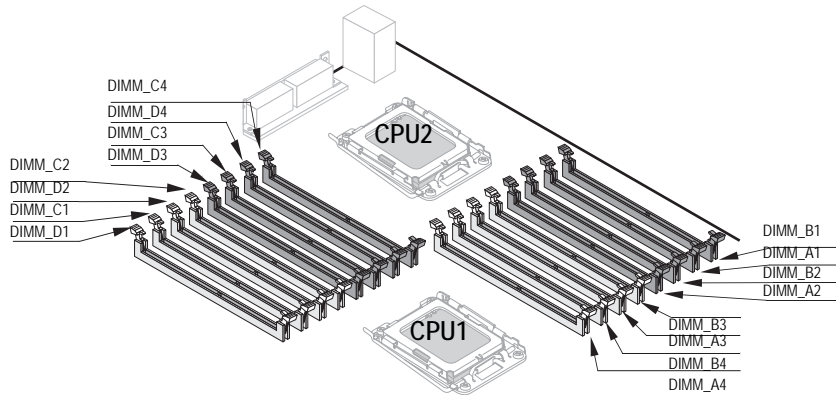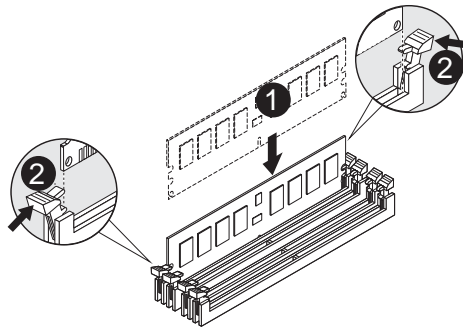
DIMM Population Table

DIMM: Single or dual Rank Max. capacity 4GB.

CPU1	DIMM_A4	DIMM_B4	DIMM_A3	DIMM_B3	DIMM_A2	DIMM_B2	DIMM_A1	DIMM_B1
Single Channel (One DIMM)							Populate	
Dual Channel (2 DIMMs)							Populate	Populate
Dual Channel (4 DIMMs)					Populate	Populate	Populate	Populate
Dual Channel (8DIMMs)	Populate	Populate	Populate	Populate	Populate	Populate	Populate	Populate

CPU2	DIMM_C4	DIMM_D4	DIMM_C3	DIMM_D3	DIMM_C2	DIMM_D2	DIMM_C1	DIMM_D1
Single Channel (One DIMM)							Populate	
Dual Channel (2 DIMMs)							Populate	Populate
Dual Channel (4 DIMMs)					Populate	Populate	Populate	Populate
Dual Channel (8DIMMs)	Populate	Populate	Populate	Populate	Populate	Populate	Populate	Populate

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.
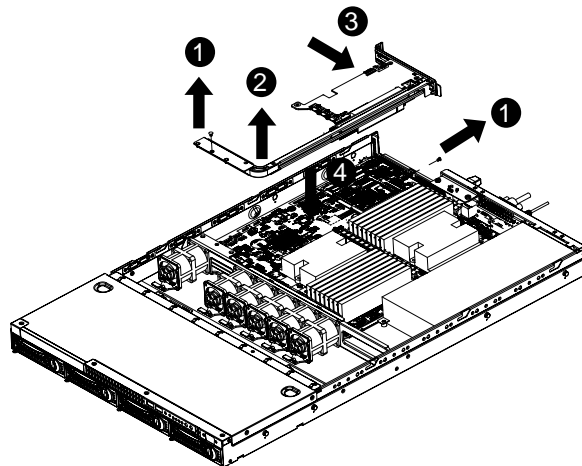
Step 2-6: Hard Disk Drive Installation

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.
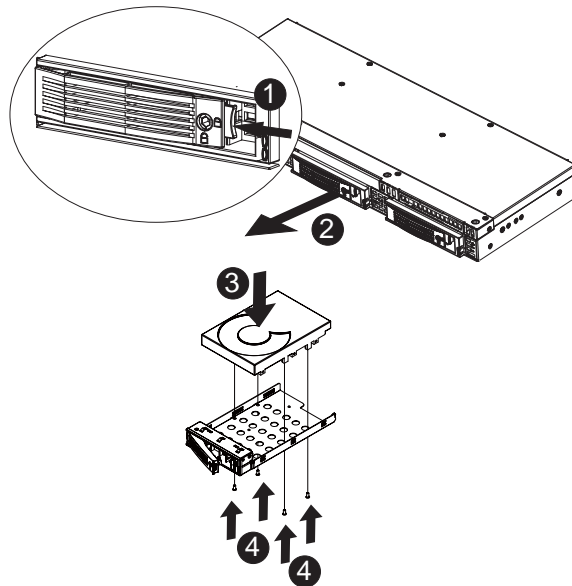
Step 2-7: FAN Duct Removal and Installation

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

Guiding groove
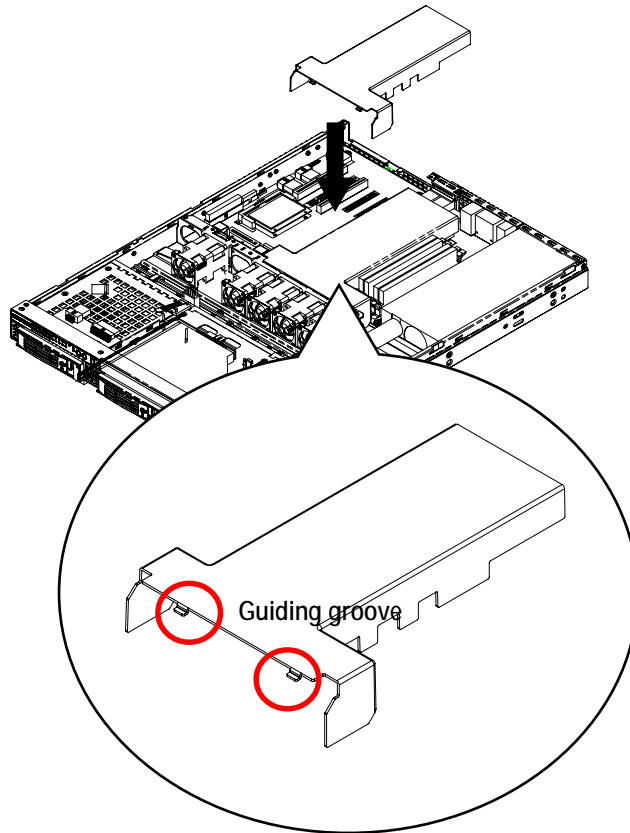
Chapter 3 Appearance of GS-R1233-RH

3-1: Front View of GS-R1233-RH
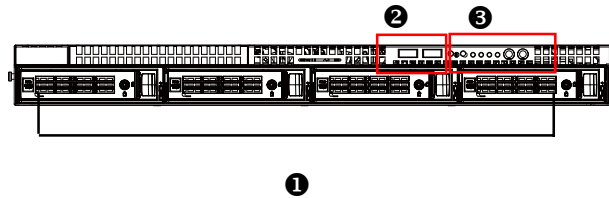
❶	Hot-Swap SATA HDDs
❷	USB connectors
❸	Front panel switch and LEDs

3-2: Rear View of GS-R1233-RH
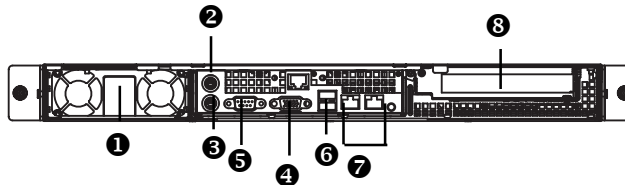
❶	Power cord
❷	Mouse connector
❸	Keyboard connector
❹	COM port
❺	VGA port
❻	USB connectors
❼	RJ45 LAN ports
❽	Low-profile riser slot

3-3: Front Bazel Switch and LED Indicators Introduction
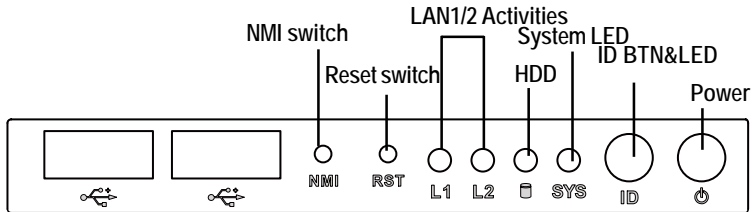
Name	Color	Condition	Description
Power	Green	On	Power On
	Green	Blink	Sleep (S1)
	--	Off	Power Off (S4)
SYS (System)	Amber	Blink	System Ready but degraded, CPU Failed, DIMM Killed
	Amber	On	Critical Alarm: Critical Power Module Failure, Critical FANs Failure, Voltage (Power Supply) Critical Teemperature 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	Green	ON	LAN Link / no Access
Link/Activity	Green	BLINK	LAN Access
	-	OFF	Idle
10 LAN Speed	-	OFF	10Mbps connection
100 LAN	Green	ON	100Mbps connection
Speed	Green	BLINK	Port identification with 10 or 100Mbps connection
GbE LAN	Yellow	ON	1Gbps connection
Speed	Yellow	BLINK	Port identification with 1Gbps connection

3-5: Back plane board Information

Hard Disk Drive 4 Hard Disk Drive 3 Hard Disk Drive 2 Hard Disk Drive 1
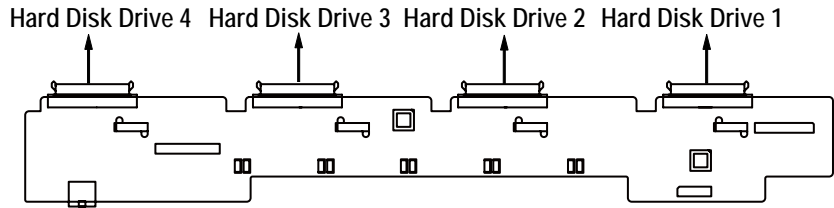
3-6: Hard Disk Drive LED Description
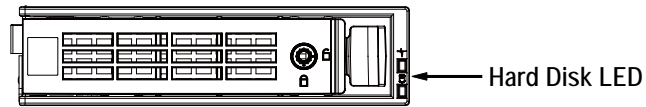
Hard Disk LED

Color	Condition	Description
Green	Blink	Hard Disk Drive Access
--	Off	No Access and No HDD Fault

3-7: Connector Icon Description

Suggest Icon	Description
	Keyboard
	Mouse
	VGA
	COM
	LAN
	USB

Chapter 4   Motherboard Connectors Introduction and Jumper Setting

1. ATX_L1
2. ATX_12V1
3. F_USB1 (Front USB cable connector)
4. SATA0 (SATA data cable connector)
5. SATA1 (SATA data cable connector)
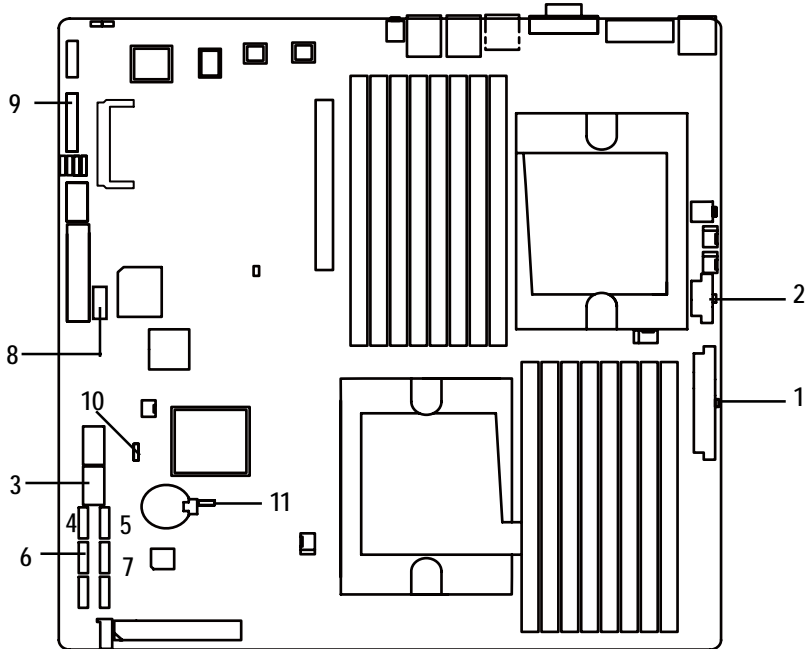
6. SATA3 (SATA data cable connector)
7. SATA2 (SATA data cable connector)
8. BP2
9. F_PANEL1
10. JP1 (Jumper Block)
11. CLR_CMOS1 (Jumper Block)

1/2) ATX_L1/ATX_12V1 (24-pin/8-pin ATX power connectors)

With the use of the power connector, the power supply can supply enough stable power to all the components on the motherboard. Before connecting the power connector, please make sure that all components and devices are properly installed. Align the power connector with its proper location on the motherboard and connect tightly.

The ATX_12V power connector mainly supplies power to the CPU. If the ATX_12V power connector is not connected, the system will not start.

Caution! Please use a power supply that is able to support the system voltage requirements. It is recommended that a power supply that can withstand high power consumption be used (300W or greater). If a power supply is used that does not provide the required power, the result can lead to an unstable system or a system that is unable to start. If you use a power supply that provides a 24-pin ATX power connector, please remove the small cover on the power connector on the motherboard before plugging in the power cord; otherwise, please do not remove it.
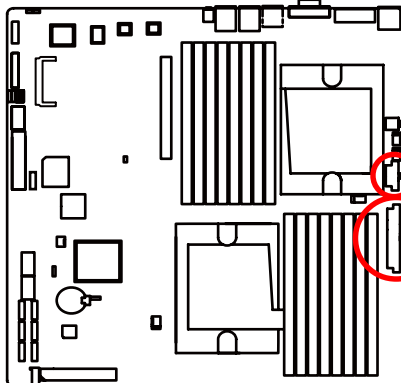
Pin No.	Definition
1	GND
2	GND
3	GND
4	GND
5	P12V_CPU1
6	P12V_CPU1
7	P12V_CPU0
8	P12V_CPU0

Pin No.	Definition	Pin No.	Definition
1	3.3V	13	3.3V
2	3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON(soft On/Off)
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	Power Good	20	-5V
9	5V SB(stand by +5V)	21	+5V
10	+12V	22	+5V
11	+12V(Only for 24-pin ATX)	23	+5V (Only for 24-pin ATX)
12	3.3V(Only for 24-pin ATX)	24	GND(Only for 24-pin ATX)

24

3) F_USB1 (Front USB Connectors)

Be careful with the polarity of the front USB connector. Check the pin assignment carefully while you connect the front USB cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional front USB cable, please contact your local dealer.

1 2

9 10
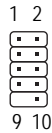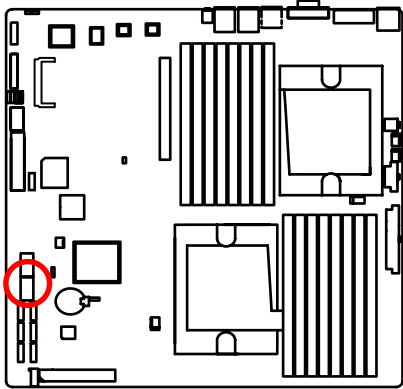
Pin No.	Definition
1	Power
2	Power
3	USB Dx-
4	USB Dy-
5	USB Dx+
6	USB Dy+
7	GND
8	GND
9	No Pin
10	NC

4/5/6/7) SATA 0~4 (Serial ATA cable connectors)

SATA 3Gb/s can provide up to 300MB/s stransfer rate. Please refer to the BIOS setting for the SATA 3Gb/s and install the proper driver in order to work properly.

1

7
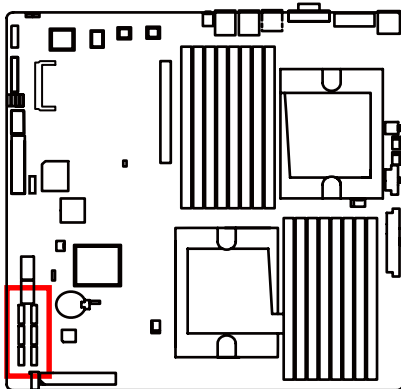
Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

8)BP2 (SMBus connector for backplane board)

6

1
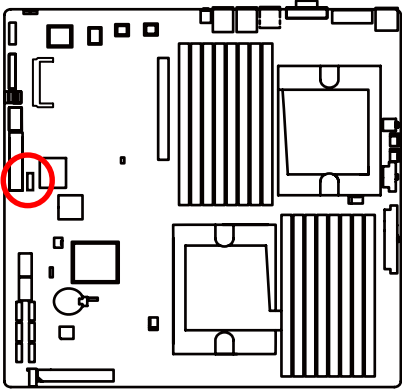
Pin No.	Definition
1	BP_SMBCLK
2	BP_SMBDAT
3	BPFAN_PWM
4	BP_HDLED
5	-EXT_SMI
6	GND

9) F_Panel (2X12 Pins Front Panel connector)

Please connect the power LED, PC speaker, reset switch and power switch of your chassis front panel to the F_PANEL connector according to the pin assignment above.

1 2

23 24
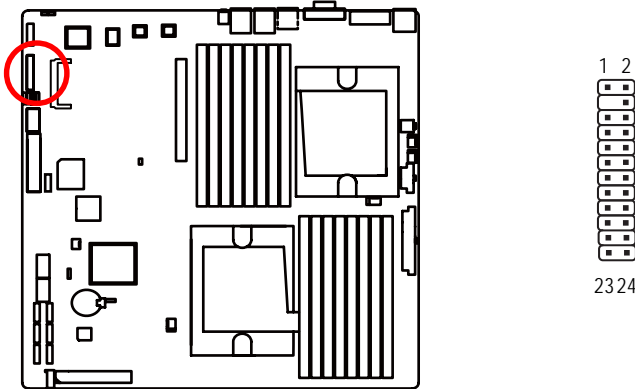
Pin No.	Signal Name	Description
1.	PWLED+	Power LED Signal anode (+)
2.	5VSB	P5V Stand By Power
3.	KEY	Pin Removed
4.	ID_LED+	ID LED Signal anode (+)
5.	PWLED-	Power LED Signal cathode(-)
6.	ID_LED-	ID LED Signal cathode(-)
7.	HD+	Hard Disk LED Signal anode (+)
8.	F_SYSRDY	System Fan Fail LED Signal
9.	HD-	Hard Disk LED Signal cathode(-)
10.	F_SYSTATUS	System Status LED Signal
11.	PWB+	Power Button Signal anode (+)
12.	L1_ACT	LAN1 access LED Signal
13.	PWB+_GND	Power Button Ground
14.	L1_LNK-	LAN1 linked LED Signal cathode(-)
15.	RST_BTN-	Reset Button cathode(-)
16.	SENSOR_SDA	SMBus Data
17.	RST_BTN_GND	Reset Button Ground
18.	SENSOR_SCL	SMBus Clock
19.	ID_SW-	ID Switch Signal cathode(-)
20.	CASE_OPEN-	Chassis intrusion Signal
21.	ID_SW-_GND	ID Switch Ground
22.	L2_ACT	LAN2 access LED Signal
23.	NMI_SW-	NMI Switch cathode(-)
24.	L2_LNK-	LAN2 linked LED Signal cathode(-)

10)JP1 (BIOS Recovery Jumper)
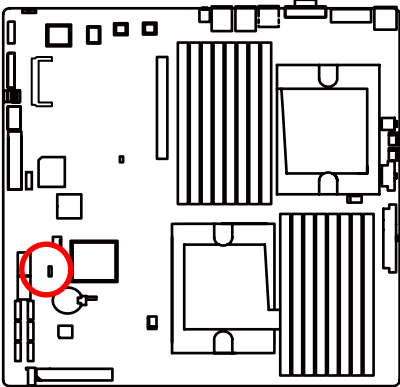
1   1-2 Close: Enable BIOS recovery function

1   2-3 Close: Disabe this function (Default setting)

11)CLR_CMOS1 (Clear CMOS Jumper)

You may clear the CMOS data to restore 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.
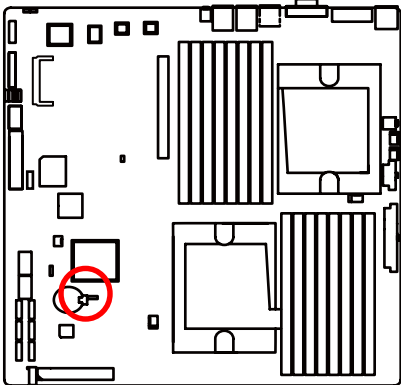
1   1-2 Close: Clear CMOS

1   2-3 Close: Normal (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.

ENTERINGSETUP

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

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

GETTING HELP

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.
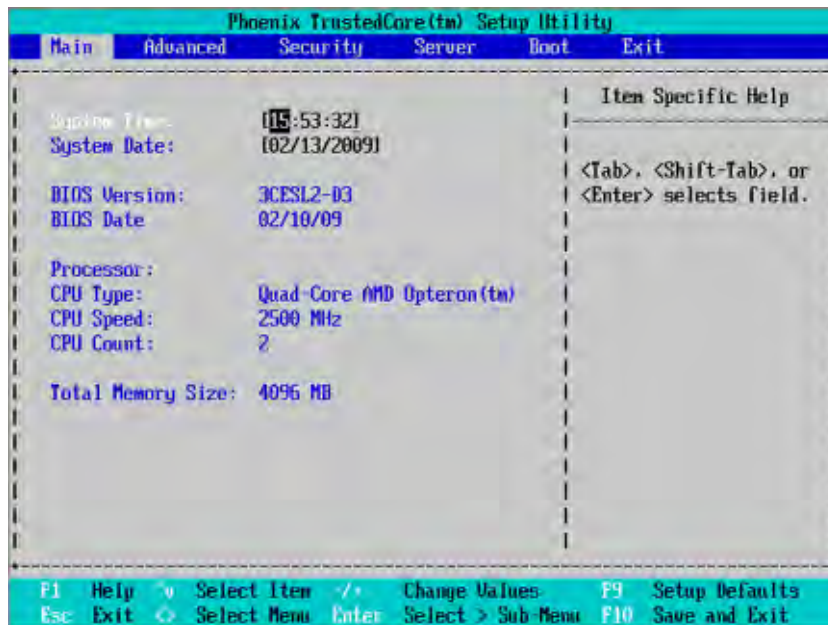
Figure 1: Main

☞ **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 Verison/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.
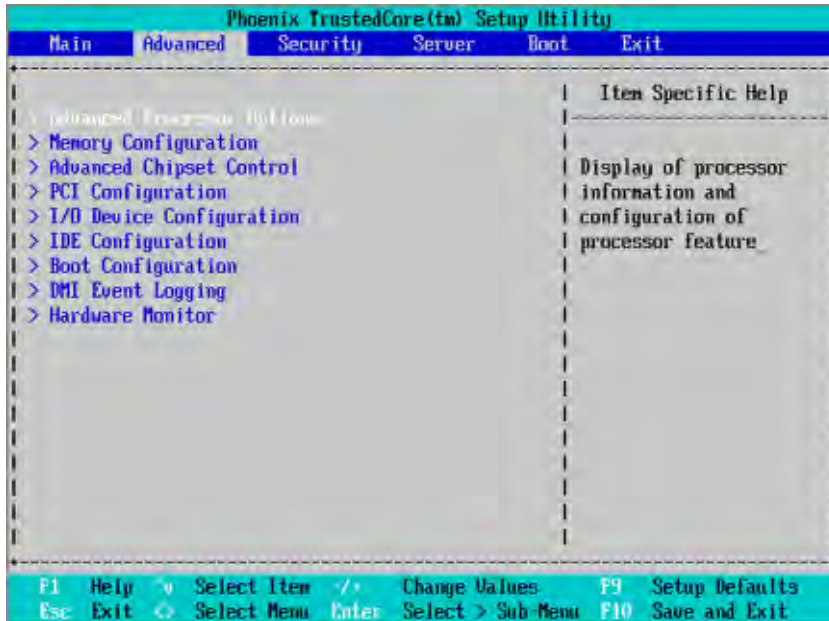
Figure 2: Advanced

Advanced Processor Options
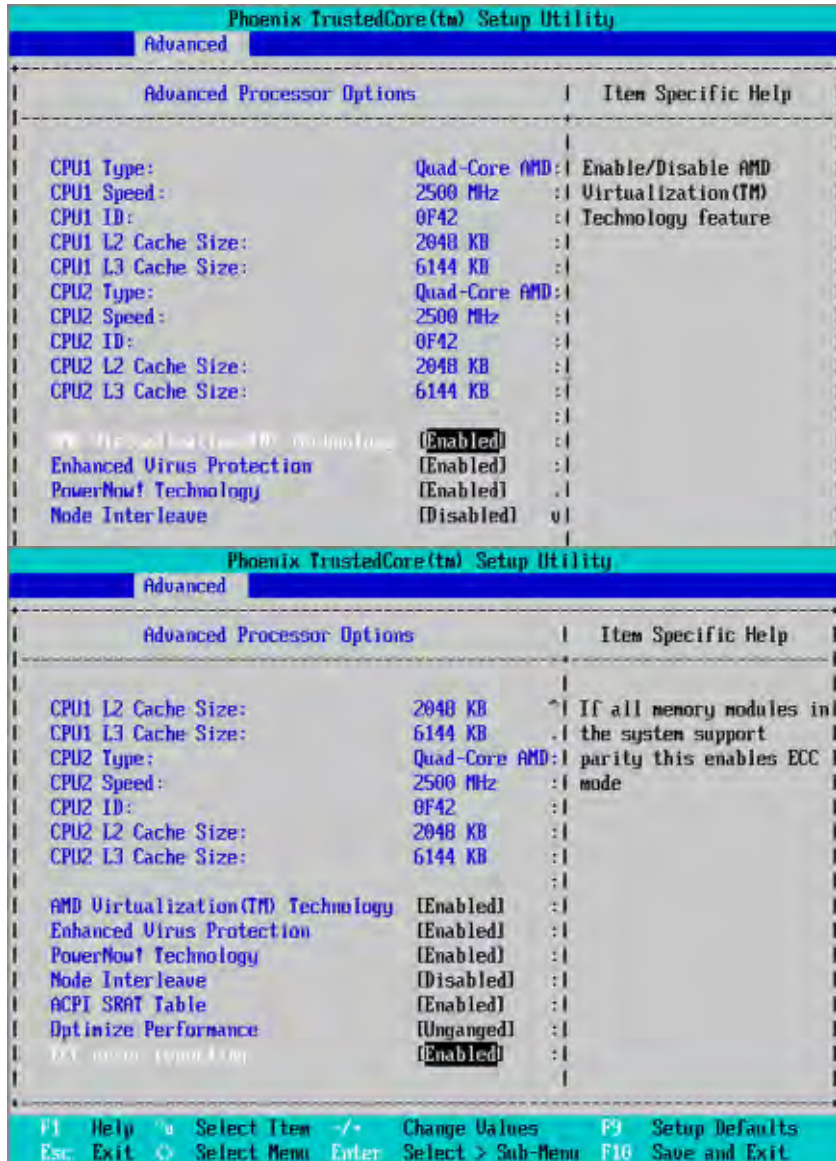
Figure 2-1: Advanced Processor Option

☞ **Advanced Processor Option**

This category includes the information of **CPU Type, CPU Speed, CPU1/CPU2 ID, CPU1/CPU2 L2 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)

☞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.

☞ECC Error Reporting

   ▸Enabled   Enable ECC Error Reporting. (Default setting)

   ▸Disabled   Disable this function.

Memory Configuration
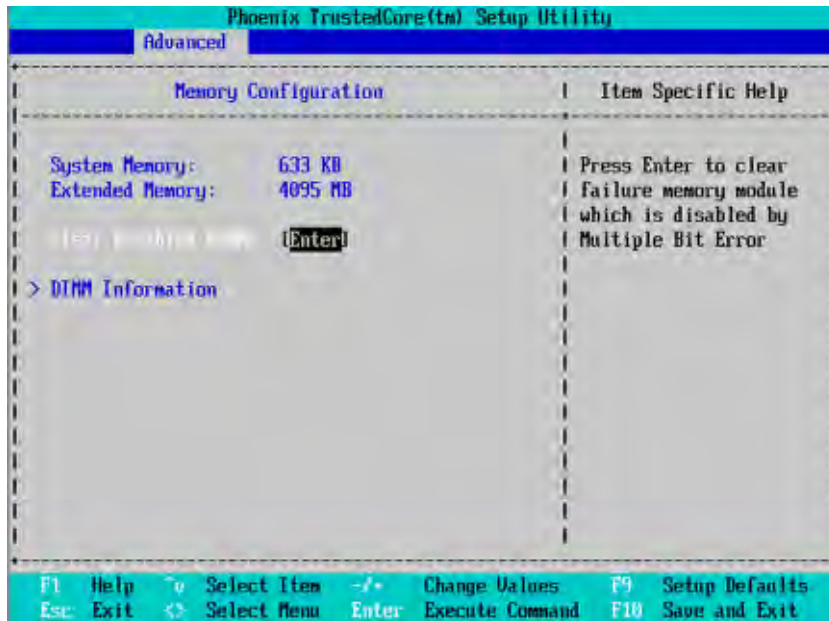
Figure 2-2: Memory Configuration

❧ **Syetem Memory/Extended Memory**

These 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**

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

Advanced Chipset Control
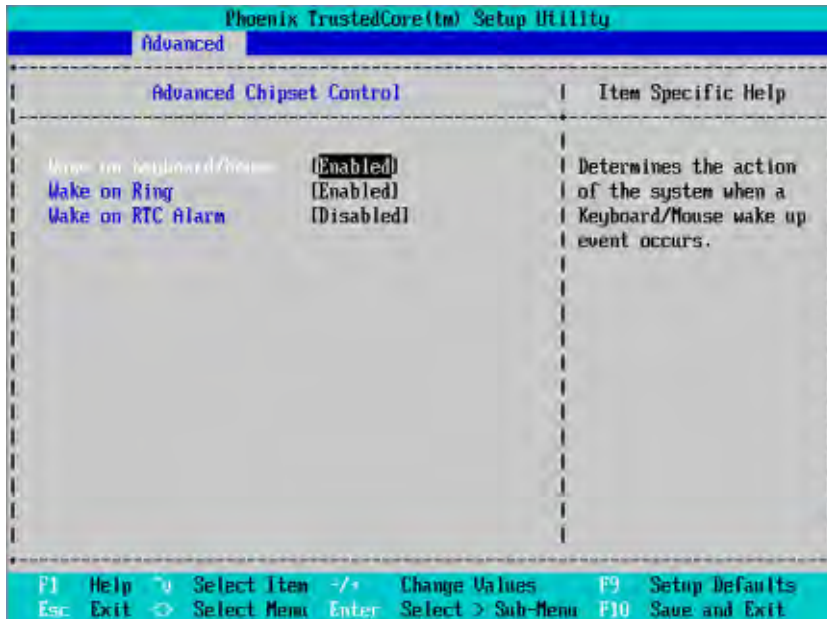
Figure 2-3: Advanced Chipset Control

☞**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 enabled if you're running under Windows operating system.

☞**Wake On Ring**

This item allow 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 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)

BIOS Setup
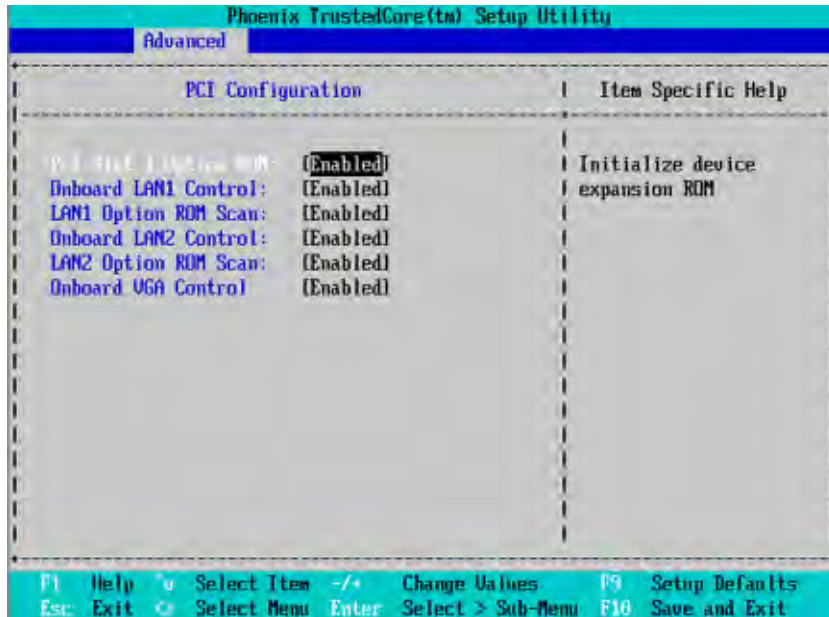
PCI Configuration

Figure 2-4: PCI Configuration

☞PCI Slot 1Option ROM

    ▸Enabled   Enable this item to initialize device expansion ROM.

                           (Defualt setting)

    ▸Disabled   Disable this function.

☞Onboard LAN1 Control

    ▸Enabled   Enable onboard LAN1 device. (Defualt setting)

    ▸Disabled   Disable this function.

☞LAN1 Optiona ROM Scan

    ▸Enabled   Enableing this item to initialize device expansion ROM.

                           (Defualt setting)

    ▸Disabled   Disable this function.

☞Onboard LAN2 Control

    ▶Enabled   Enable onboard LAN1 device. (Defualt setting)

    ▶Disabled   Disable this function.

☞LAN2 Optiona ROM Scan

    ▶Enabled   Enableing this item to initialize device expansion ROM.

                             (Defualt setting)

    ▶Disabled   Disable this function.

☞Onboard VGA Control

    ▶Enabled   Enable onboard VGA device. (Defualt setting)

    ▶Disabled   Disable this function.

I/O Device Configuration
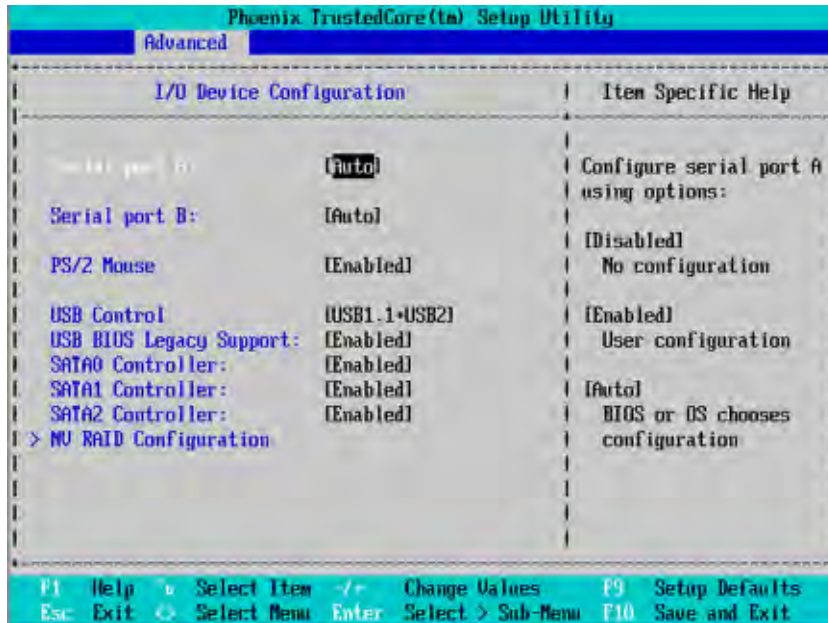
Figure 2-5: I/O Device Configuration

✆Serial Port A

> This allows users to configure serial prot 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 prot 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 ATA 0 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.

IDE Configuration
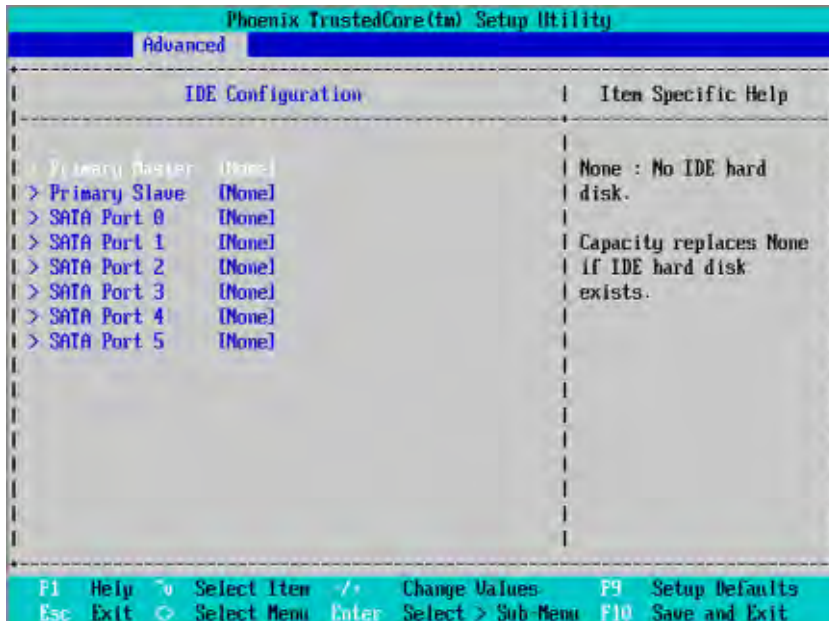
Figure 2-6: IDE Configuration

☞**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 fo 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 max imize the IDE data transfer rate.

▸▸ **Transfer Mode**   This field shows the information of Teansfer Mode.

▸▸ **Ultra DMA Mode**   This filed displays the DMA mode of the device in the specific IDE channel.

Boot Configuration
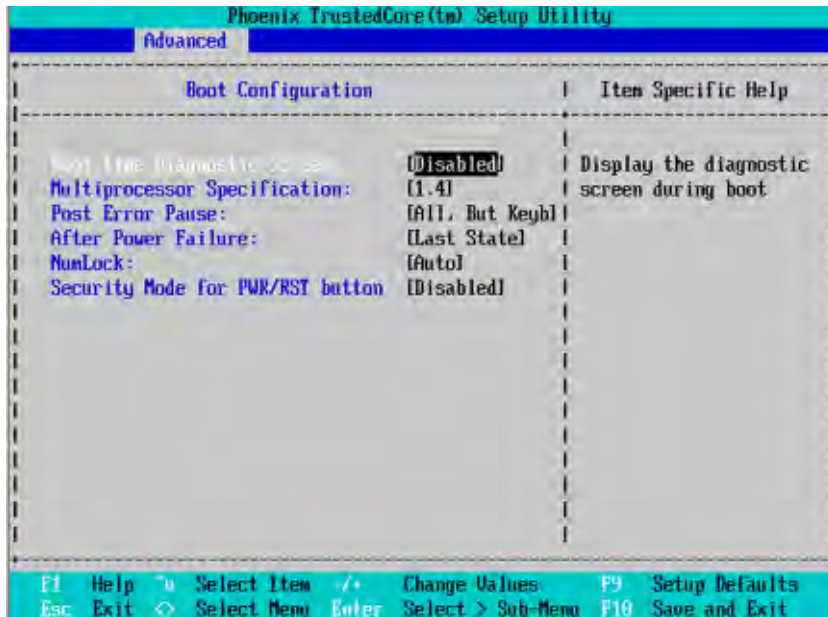
Figure 2-7: Boot Configuration

☞ 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.

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☞ **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 sate 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.

   ▸Disabled   Disable this function. (Default setting)

DMI Event Logging
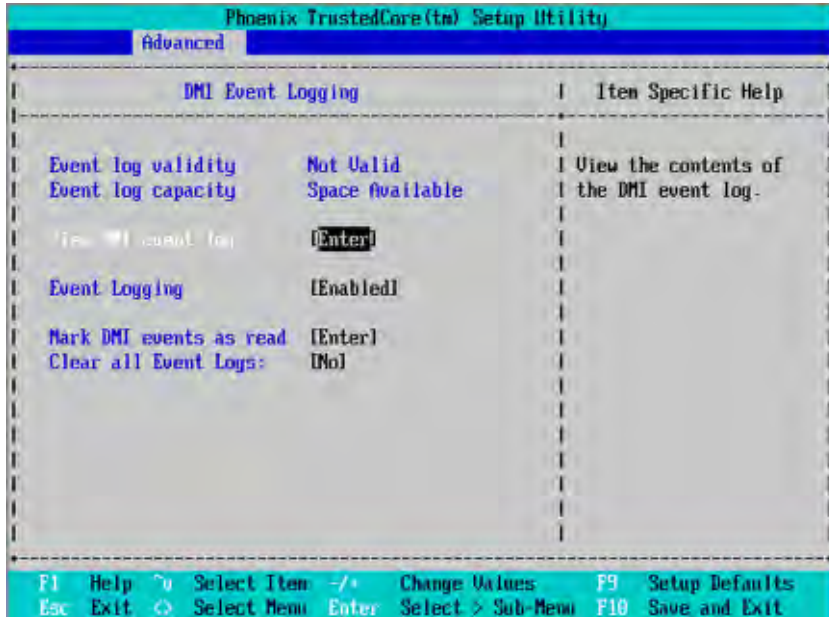
Figure 2-8: DMI Event Logging

☞**Event log vaildity/Event log capacity**

These two items display the current status of Event log vaildity and Event log capacity.

☞**View DMI event log**

Press **[Enter]** to view DMI event log.

☞**Event Logging**

▶▶ Enabled   Select Enabled to allow logging of DMI events. (Default setting)

▶▶ Disabled   Disable this function.

ECC Memory Logging

▶ Enabled   Select Enabled to allow logging of killed memory. (Default setting)

▶ Disabled   Disable this function.

Mark DMI events as read

Press [Enter] to mark all DMI events in the event log as read.

Clear all Event Logs

▶ Yes   Clear all event logs.

▶ No   Disable this function. (Default setting)

Hardware Monitor


```
              Phoenix TrustedCore(tm) Setup Utility
          Advanced

             Hardware Monitor              |    Item Specific Help
                                           |
                                           |
      CPU1 Temperature     34 C/093F       |  Voltage Monitor
      CPU2 Temperature     29 C/084F       |
      System Temperature   40 C/104F       |
         Voltage Monitor                   |
    > Fan Monitor                          |
                                           |
                                           |
                                           |
                                           |
                                           |
                                           |
                                           |
                                           |
                                           |
                                           |

    F1   Help    ^v  Select Item   -/+   Change Values      F9    Setup Defaults
    Esc  Exit    <>  Select Menu  Enter  Select > Sub-Menu  F10   Save and Exit
```
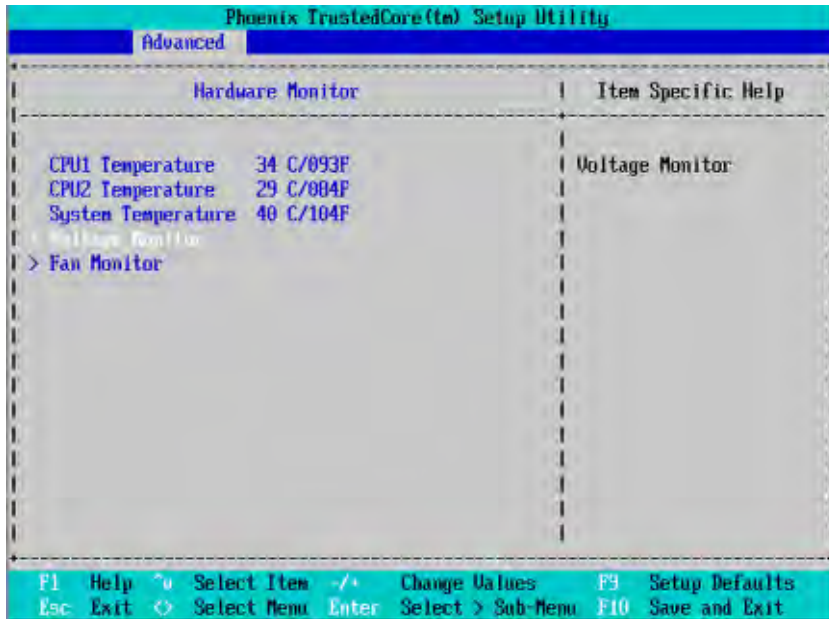
Figure 2-9: Hardware Monitor

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```
                    Phoenix TrustedCore(tm) Setup Utility
            Advanced

+---------------------------------------------------+-------------------------+
|               Voltage Monitor                     |    Item Specific Help   |
|-------------------------------------------------- +-------------------------|
|                                                   |                         |
|   VCORE1    1.260 V                               |  All items on this menu |
|   VCORE2    1.208 V                               |  cannot be modified.    |
|   3.3V      3.344 V                               |                         |
|   5V        5.056 V                               |                         |
|   -12V      -18.47 V                              |                         |
|   12V       11.75 V                               |                         |
|   1.5V      1.461 V                               |                         |
|   P1 1.8V   1.782 V                               |                         |
|   P2 1.8V   1.799 V                               |                         |
|   P1 0.9V   0.899 V                               |                         |
|   P2 0.9V   0.915 V                               |                         |
|                                                   |                         |
|                                                   |                         |
|                                                   |                         |
|                                                   |                         |
|                                                   |                         |
+---------------------------------------------------+-------------------------+
  F1   Help      Select Item   -/+   Change Values      F9    Setup Defaults
  Esc  Exit      Select Menu   Enter Select > Sub-Menu  F10   Save and Exit
```

```
                    Phoenix TrustedCore(tm) Setup Utility
            Advanced

+---------------------------------------------------+-------------------------+
|                 Fan Monitor                       |    Item Specific Help   |
|-------------------------------------------------- +-------------------------|
|                                                   |                         |
|   SYS_Fan1A   4218 RPM                            |  All items on this menu |
|   SYS_Fan1B   4218 RPM                            |  cannot be modified.    |
|   SYS_Fan2A   4218 RPM                            |                         |
|   SYS_Fan2B   4218 RPM                            |                         |
|   SYS_Fan3A   4218 RPM                            |                         |
|   SYS_Fan3B   4218 RPM                            |                         |
|   SYS_Fan4A   4218 RPM                            |                         |
|   SYS_Fan4B   4218 RPM                            |                         |
|   SYS_Fan5A   4218 RPM                            |                         |
|   SYS_Fan5B   4218 RPM                            |                         |
|   SYS_Fan6A   4218 RPM                            |                         |
|   SYS_Fan6B   4218 RPM                            |                         |
|                                                   |                         |
|                                                   |                         |
|                                                   |                         |
|                                                   |                         |
+---------------------------------------------------+-------------------------+
  F1   Help      Select Item   -/+   Change Values      F9    Setup Defaults
  Esc  Exit      Select Menu   Enter Select > Sub-Menu  F10   Save and Exit
```

☞ **CPU1/CPU 2/ SystemTemperature**

　▸Display the current CPU1/2 temperature and system temperature.

☞ **Voltage Monitor: VCORE1/2, 3.3V, 5V, -12V, +12V, 1.5V, P1 1.8V, P2 1.8V, P1 0.9V, P2 0.9V**

　▸Detect system's voltage status automatically.

☞ **FAN Monitor: SYS FAN1A/1B,SYS FAN2A/2B,SYS FAN3A/3B, SYS FAN4A/4B,SYS FAN5A/5B,SYS FAN6A/6B**

　▸Display the current system fan speed.

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.

```
              Phoenix TrustedCore(tm) Setup Utility
   Main    Advanced   Security   Server   Boot    Exit
 ┌─────────────────────────────────────┬──────────────────────────┐
 │                                      │    Item Specific Help    │
 │  Supervisor Password Is:  Clear      │--------------------------│
 │  User Password Is:        Clear      │                          │
 │                                      │  Supervisor Password     │
 │                          [Enter]     │  controls access to the  │
 │  Set User Password       [Enter]     │  setup utility.          │
 │                                      │                          │
 │  Password on boot:       [Disabled]  │                          │
 │                                      │                          │
 │                                      │                          │
 │                                      │                          │
 │                                      │                          │
 │                                      │                          │
 │                                      │                          │
 │                                      │                          │
 │                                      │                          │
 │                                      │                          │
 └─────────────────────────────────────┴──────────────────────────┘
   F1   Help      Select Item   -/+   Change Values    F9   Setup Defaults
   Esc  Exit      Select Menu   Enter Select > Sub-Menu P10  Save and Exit
```

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 lengh 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 lengh 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   Requries entering password when system on boot.

➤Disabled   Disable this function. (Default setting)

Server
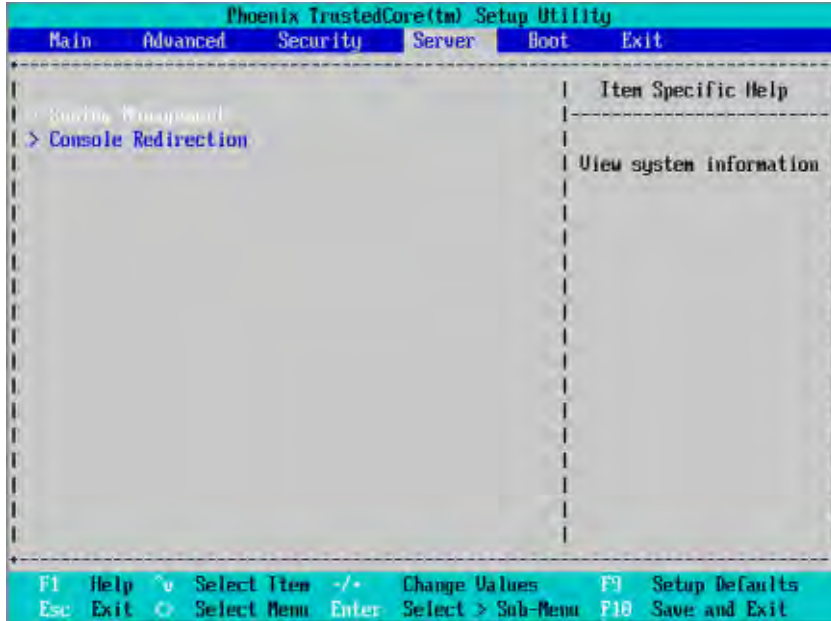
Figure 4: Server

System Management

```
                   Phoenix TrustedCore(tm) Setup Utility
                                  Server
.....................................................................
|          System Management            |      Item Specific Help     |
|--------------------------------------+                              |
|                                       |                             |
|  BIOS Version:          3CESL2-D3     | Clear Case Open Status      |
|  System Product Name    GS-R1233-RH   |                             |
|  System Serial No       01234567890123456789012301 |               |
|  BaseBoard ID           GA-3CESL2-RH  |                             |
|  Main Board Serial No   01234567890123456789012301 |               |
|  System INITD           DE 09 AD D0 1F 00 00 00 |                   |
|                         00 00 00 00 00 00 00 00 |                   |
|                                       |                             |
|                                       |                             |
|  Clear Case Open Status: [Enter]      |                             |
|                                       |                             |
|                                       |                             |
|                                       |                             |
|                                       |                             |
|                                       |                             |
|                                       |                             |
|                                       |                             |
.....................................................................
 F1   Help     ↑↓  Select Item   -/+    Change Values   F9   Setup Defaults
 Esc  Exit     ↔   Select Menu   Enter  Execute Command  F10  Save and Exit
```

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,** and, **System ID**. All items in this menu cannot be modified, display only.

☞ **Clear Case Open Status**

Press [Enter] to clear the Case Open Status.

Console Redirection
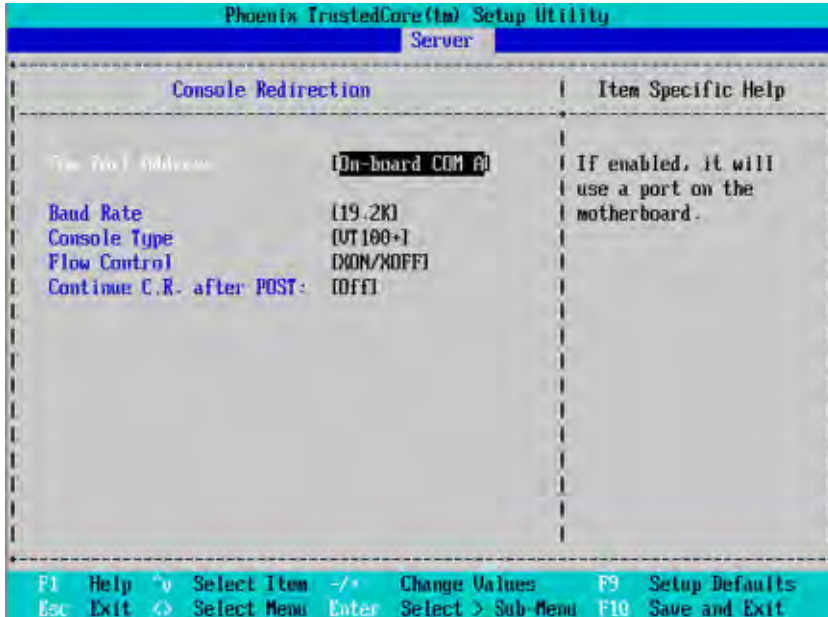
Figure 4-2: Remote Access Configuration

☞ **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)

Boot
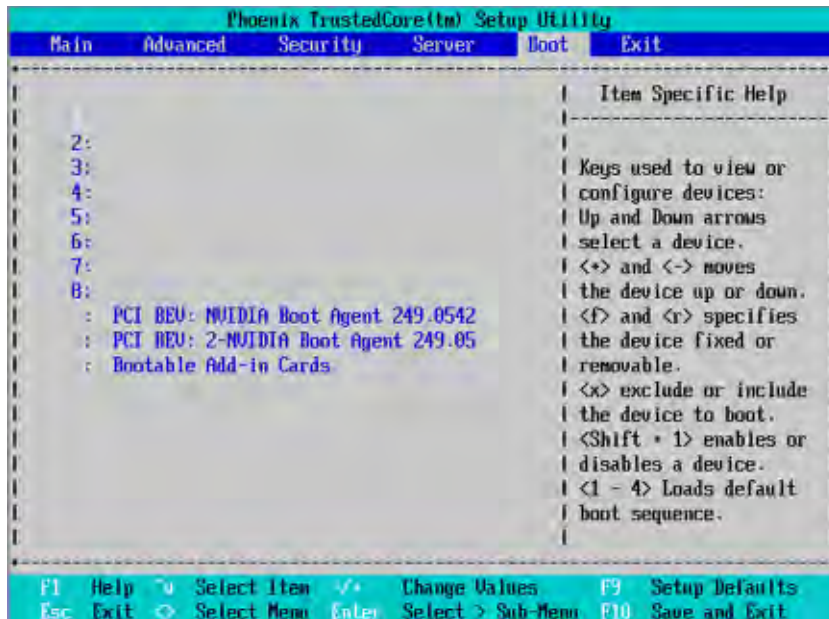
Figure 5: Boot

☞ 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 ot 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 secquence.

Exit

```
                    Phoenix TrustedCore(tm) Setup Utility
    Main     Advanced     Security     Server     Boot     Exit
  .-----------------------------------------------------+--------------------------.
  |                                                      |    Item Specific Help    |
  |  Exit Saving Changes        [Enter]                  |--------------------------|
  |  Exit Discarding Changes    [Enter]                  |                          |
  |  Load Setup Defaults        [Enter]                  |  Exit System Setup and   |
  |  Discard Changes            [Enter]                  |  save your changes to    |
  |  Save Changes               [Enter]                  |  CMOS.                   |
  |                                                      |                          |
  |                                                      |                          |
  |                                                      |                          |
  |                                                      |                          |
  |                                                      |                          |
  |                                                      |                          |
  |                                                      |                          |
  |                                                      |                          |
  |                                                      |                          |
  |                                                      |                          |
  |                                                      |                          |
  |                                                      |                          |
  .-----------------------------------------------------+--------------------------.
  F1   Help    ^v  Select Item   -/+   Change Values     F9   Setup Defaults
  Esc  Exit    <>  Select Menu   Enter Execute Command   F10  Save and 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

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☞**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.

```
            Phoenix TrustedCore(tm) Setup Utility
 Main    Advanced    Security    Server    Boot    Exit

                                      | Item Specific Help  |
  Exit Saving Changes    [Enter]      |---------------------|
  Exit Discarding Changes [Enter]     |                     |
  Load Setup Defaults    [Enter]      | Exit System Setup and |
  Discard Changes        [Enter]      | save your changes to |
  Save Changes           [Enter]      | CMOS.               |
           +----------------------------------+
           |        Setup Confirmation        |
           |----------------------------------|
           | Save configuration changes and exit now? |
           |                                  |
           |        [Yes]          [No]       |
           +----------------------------------+

           Space  Select      Enter  Accept
```
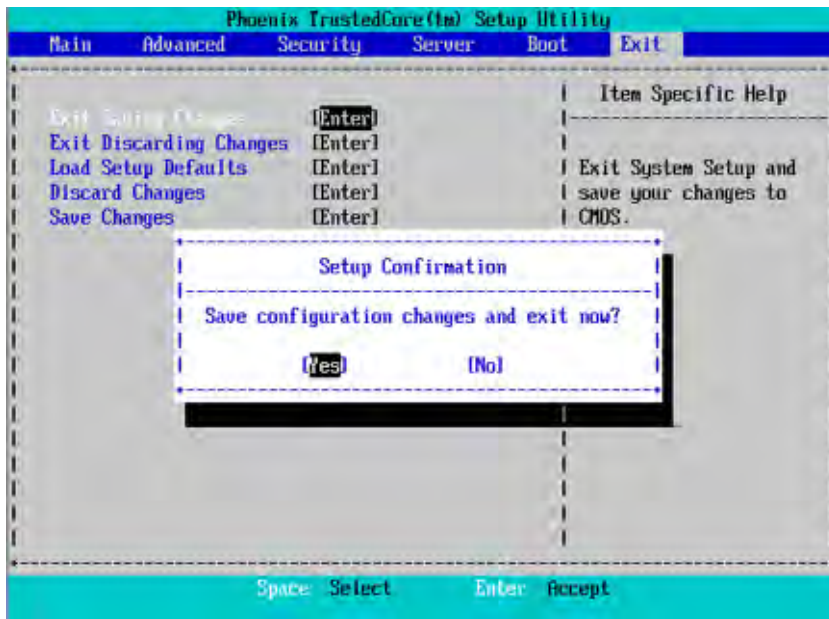
☞Exit Discarding Changes

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 compuetr 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:

```
                   Phoenix TrustedCore(tm) Setup Utility
   Main    Advanced    Security    Server    Boot    Exit

                                              | Item Specific Help |
   Exit Saving Changes      [Enter]           |--------------------|
   Exit Discarding Changes  [Enter]           |                    |
   Load Setup Defaults      [Enter]           | Load default values |
   Discard Changes          [Enter]           | for all SETUP items. |
   Save Changes             [Enter]           |                    |
                  +-------------------------------+
                  |      Setup Confirmation       |
                  |-------------------------------|
                  | Load default configuration now? |
                  |                               |
                  |      [Yes]        [No]        |
                  |                               |
                  +-------------------------------+

                  Space  Select      Enter  Accept
```
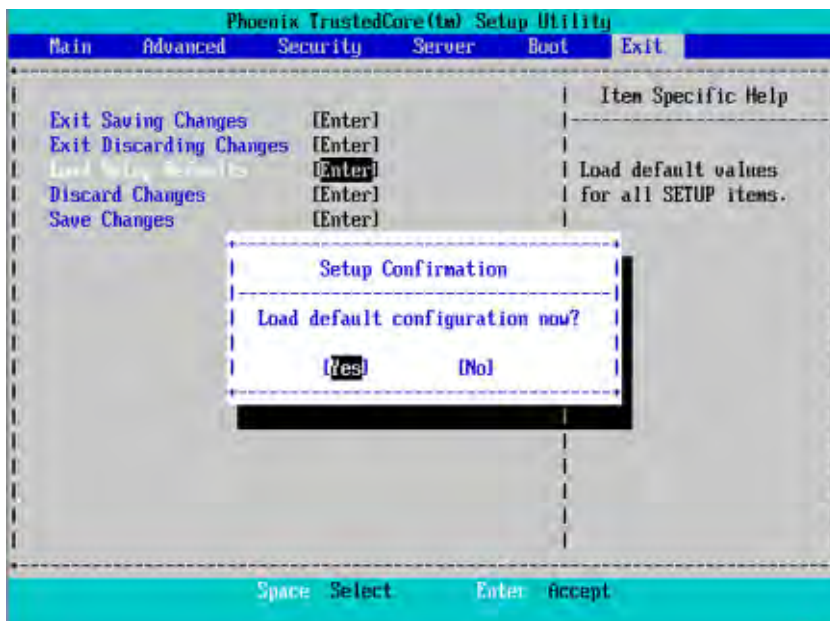
☞**Discard Changes**

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 compuetr when selecting this option.
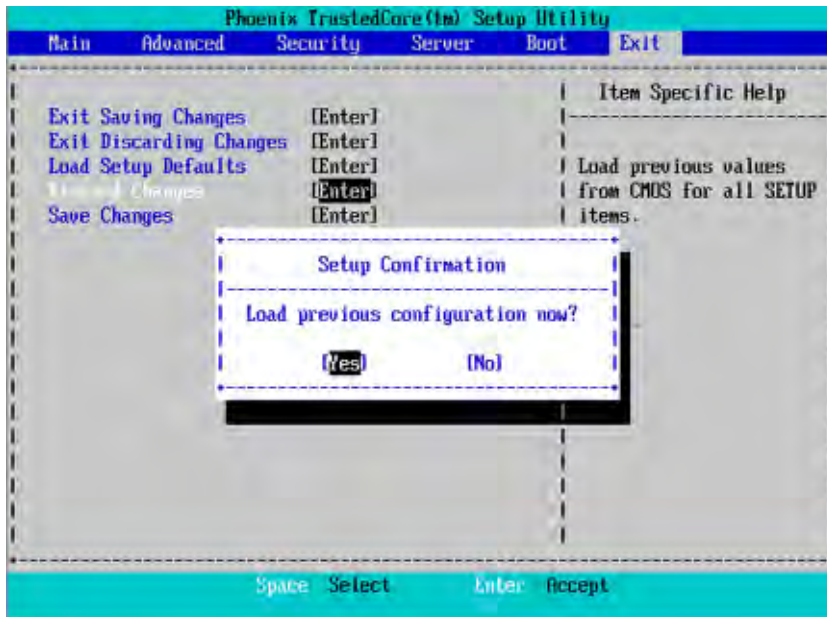
☞**Save Changes**
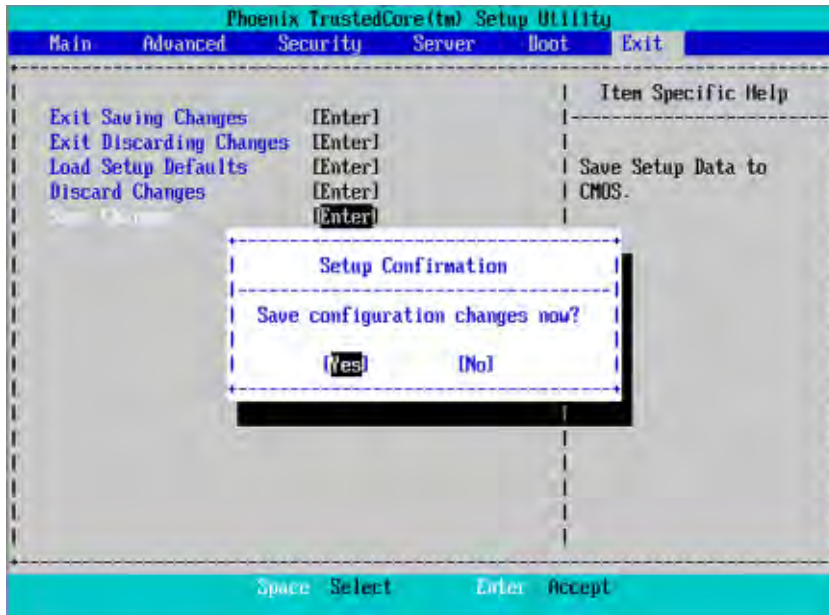
This option allows user to save setup dat ato CMOS.

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

```
              Phoenix TrustedCore(tm) Setup Utility
  Main    Advanced    Security    Server    Boot    Exit
+------------------------------------------------------------+
|                                      |  Item Specific Help  |
|  Exit Saving Changes      [Enter]    |----------------------|
|  Exit Discarding Changes  [Enter]    |                      |
|  Load Setup Defaults      [Enter]    |  Save Setup Data to  |
|  Discard Changes          [Enter]    |  CMOS.               |
|                           [Enter]    |                      |
|          +--------------------------------------+           |
|          |        Setup Confirmation            |           |
|          |--------------------------------------|           |
|          |  Save configuration changes now?     |           |
|          |                                      |           |
|          |       [Yes]        [No]              |           |
|          +--------------------------------------+           |
|                                      |                      |
|                                      |                      |
|                                      |                      |
|                                      |                      |
+------------------------------------------------------------+
              Space  Select       Enter  Accept
```

Press [Yes] to save setup daya to CMOS.