

Asus 1U Rackmount Barebone Server RS160-E3/PS4 User Manual

Asus rs160-e3/ps4 1u rackmount barebone server user guide

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Summary of Contents for Asus 1U Rackmount Barebone Server RS160-E3/PS4

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Page 2 (including damages for loss of profits, loss of business, loss of use or data, interruption of business and the like), even if ASUS has been advised of the possibility of such damages arising from any defect or error in this manual or product.

Page 3: Table Of Contents

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Page 7: Notices

Notices Federal Communications Commission Statement This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: • This device may not cause harmful interference, and •...

Page 8: Safety Information

Safety information Electrical Safety electrical solution of the system unit and all attached devices are unplugged. • To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.

Page 9: About This Guide

About this guide Audience Audience Audience Audience Audience This user guide is intended for system integrators and experienced users with at least basic knowledge of configuring a server. Contents Contents Contents Contents Contents This guide contains the following parts: 1 . 1 . C h a pter1: ProductIntroduction C h a pter1: ProductIntroduction n C h a pter1: ProductIntroduction...

Page 10: Management Utility

A S U S S e r v e r W e b - b a s e d M a n a g e m e n t (A S W M) u s e r g u i d e This manual tells how to set up and use the proprietary ASUS server management utility.

<u>Page 11</u> Chapter 1 This chapter describes the general features of the chassis kit. It includes sections on front panel and rear panel specifications.

Page 12: System Package Contents

1 - 2 1 - 2 1 - 2 1 - 2 1 - 2 ASUS AR11 1U rackmount chassis ASUS PVL-D/1U/SCSI motherboard 650W Single power supply, 115V~230V Slim optical drive| Chassis fan HDD fan Hot-swap SCSI HDD trays...

Page 13: System Specifications

System specifications The ASUS RS160-E3/PS4 is a 1U barebone server system featuring the ASUS PVL-D/2U/SCSI motherboard. The server supports dual Intel processors with EM64T technology, plus other latest technologies through the chipsets onboard. C h a s s i s...

Page 14 1 x VGA port 2 x USB 2.0 ports 2 x RJ-45 ports (with LEDs) 1 x external SCSI port ASUS Server Web-based Management (ASWM) Voltage, temperature, and fan speed monitoring Automatic System Restart (ASR) feature 650W single power supply, 115V~230V, 50Hz~60Hz

Page 15: Front Panel Features

Front panel features The barebone server displays a simple yet stylish front panel with easily accessible features. The power and reset buttons, LED indicators, location switch, optical drive, and two USB ports are located on the front panel. Refer to section "1.6.1 Front panel LEDs" for the LED descriptions. H o t - s w a p H o t - s w a p H o t - s w a p...

Page 16: Internal Features

Internal features The barebone server includes the basic components as shown. PCI-X riser card bracket Rear fans ASUS PVL-D/1U/SCSI motherboard Power supply Device fan System fans (4 fans) 1 - 6 1 - 6 1 - 6 1 - 6 ...

Page 17: Led Information

LED information 1.6.1 1.6.1 Front panel LEDs Front panel LEDs 1.6.1 1.6.1 1.6.1 Front panel LEDs Front panel LEDs U S B p o r t s U S B p o r

Page 18: Rear Panel Leds

1.6.3 1.6.3 1.6.3 Rear panel LEDs Rear panel LEDs Rear panel LEDs 1.6.3 1.6.3 Rear panel LEDs Rear panel LEDs A C T / L I N K L E D A C T / L I N K L E D A C T / L I N K L E D A C T / L I N K L E D...

<u>Page 19</u> Chapter 2 This chapter lists the hardware setup procedures that you have to perform when installing or removing system components.

Page 20: Chassis Cover

Chassis cover 2.1.1 2.1.1 2.1.1 Removing the front cover Removing the front cover Removing the front cover 2.1.1 2.1.1 Removing the front cover Removing the front cover Use a Phillips screwdriver to remove the screw on each front end of the top cover.

Page 21: Installing The Cover

Firmly hold the cover and slide it toward the rear panel for about half an inch until it is disengaged from the chassis. 1/2 i n c h 1/2

Page 22: Central Processing Unit (Cpu)

Central Processing Unit (CPU) The motherboard comes with surface mount 604-pin Zero Insertion Force (ZIF) sockets. The sockets are designed for the Intel 604-pin package with 2 MB L2 cache. The new generation Xeon[™] processor supports 800 MHz system bus and Extended Memory 64-bit Technology (EM64T).

Page 23 Position the CPU above the socket as shown. Carefully insert the CPU into the socket until it fits in place. The CPU fits only in one correct orientation. DO NOT force the CPU into the socket to prevent bending the pins and damaging the CPU! Carefully push down the socket lever to secure the CPU.

Page 24: Installing The Cpu Heatsink

2.2.2 2.2.2 2.2.2 Installing the CPU heatsink Installing the CPU heatsink Installing the CPU heatsink 2.2.2 2.2.2 Installing the CPU heatsink Installing the CPU heatsink. To install the CPU heatsink: Carefully place the heatsink on top of the installed CPU. Twist each of the four screws with a Philips (cross) screwdriver just enough to attach the heatsink to...

Page 25: System Memory

Always install DIMMs with the same CAS latency. For optimum compatibility, we recommend that you obtain memory modules from the same vendor. Refer to the DDR2 Qualified Vendors List on the ASUS web site. • Due to chipset resource allocation, the system may detect less than 16 GB system memory when you installed eight 2 GB DDR2 memory modules.

Page 26: Installing A Dimm

2.3.3 2.3.3 2.3.3 Installing a DIMM Installing a DIMM Installing a DIMM 2.3.3 2.3.3 Installing a DIMM Installing a DIMM Make sure to unplug the power supply before adding or removing DIMMs or other system components. Failure to do so may cause severe damage to both the motherboard and the components.

Page 27: Hot-Swap Hard Disk Drives

Hot-swap hard disk drives To install a hot-swap HDD: Release a drive tray by pushing the spring lock to the right, then pulling the tray lever outward. The drive tray ejects slightly after you pull out the lever. Firmly hold the tray lever and pull the drive tray out of the bay.

Page 28 Carefully insert the drive tray and push it all the way to the depth of the bay until just a small fraction of the tray edge protrudes. When installed, the SCSI connector on the drive connects to the SCSI connector on the backplane. Refer to section "2.7.2 SCSI backplane" for illustration.

Page 29: Expansion Slot

Expansion slot The barebone server comes with a riser card bracket installed on the 64-bit expansion slot. You need to remove the bracket if you wish to install a PCI-X expansion card. 2.5.1 2.5.1 2.5.1 2.5.1 2.5.1 1.5.1 Installing expansion cards Installing expansion cards Installing expansion cards...

<u>Page 30</u> Take note of the holes on the riser card bay. The two pegs on the riser card bracket should match these holes to ensure that the bracket is properly in place. Install the riser card bracket with the card into the PCI-X slot on the motherboard.

Page 31: Configuring An Expansion Card

2.5.2 2.5.2 2.5.2 Configuring an expansion card Configuring an expansion card Configuring an expansion card 2.5.2 2.5.2 Configuring an expansion card Configuring an expansion card After installing the expansion card, configure the it by adjusting the software settings. Turn on the system and change the necessary BIOS settings, if any. See Chapter 5 for information on BIOS setup.

Page 32: Cable Connections

Cable connections Pre-connected system cables Description 1. Backplane SMBus cable 2. LAN activity LED / Locator LED cable 3. USB cable 4. SCSI cable 5. External SCSI connector 6.

Page 33: Motherboard

2.6.1 2.6.1 2.6.1 Motherboard Motherboard Motherboard 2.6.1 2.6.1 Motherboard Motherboard The following illustration describes the cables for the specific connectors on the motherboard. LED cable to front panel board SMBus cable to SCSI BP board USBPW34 SCSI cable to BP board 20-pin front panel cable to front panel board USB 2.0 cable to front panel board A S U S R S 1 6 0 - E 3 / P S 4...

Page 34: Scsi Backplane

2.6.2 2.6.2 SCSI backplane SCSI backplane SCSI backplane 2.6.2 2.6.2 SCSI backplane SCSI backplane The following illustration describes the cables/devices that are connected to the SCSI backplane board. Cable from device fan 8-pin plug from power supply Cable from system fan Cable from system fan Cable from system fan ...

Page 35: Removable Components

Removable components You may need to remove previously installed system components when installing or removing system devices, or when you need to replace defective components. This section tells how to remove the following components: System/Device fans Power supply module Optical drive 2.7.1 2.7.1 System/Device fans...

Page 36: Power Supply Module

2.7.2 2.7.2 2.7.2 Power supply module Power supply module Power supply module 2.7.2 2.7.2 Power supply module Power supply module To remove the power supply module: Disconnect all

the power supply plugs connected to all the system devices. Refer to section "2.7 Cable connections" for the locations of pre- connected cables.

Page 37: Optical Drive

2.7.3 2.7.3 2.7.3 Optical drive Optical drive Optical drive 2.7.3 2.7.3 Optical drive Optical drive To uninstall the slim optical drive: Use a Phillips screwdriver (cross) to remove the screw on each end of the top cover. Loosen the two thunbscrews on the rear panel to release the top cover from the chassis.

Page 38: Front Cover

Then push the front cover as arrow show. Disconnect the LAN activity LED/ Locator LED cable and USB cable from the connectors under the top front cover. Disconnect the IDE cable and the power plug from the connectors on the back of the drive. Then leave the cover as side.

Page 39 Use a Phillips screwdriver (cross) to remove the screw that secures the drive. Carefully slide the optical drive inward for about half an inch, then lift it out of the bay. Remove the screws that secure the optical drive to its metal bracket.

Page 40 2 - 2 2 2 - 2 2 2 - 2 2 2 - 2 2 2 - 2 2 C hapter 2 : Hardwaresetup ...

<u>Page 41</u> Chapter 3 This chapter describes how to install the optional components and devices into the barebone server.

Page 42: Chapter 3: Installation Options

Rackmount rail kit items If you have the rackmount rail kit, it contains two pairs of rails (one pair for each side of the barebone system), and eight (8) pairs of nut-and-bolt type screws. N u t s N u t s N u t s N u t s N u t s N u t s ...

Page 43: Attaching The Rails To The Rack

Attaching the rails to the rack To attach the rails to the rack: Select one unit of space (1U) on the rack where you wish to install the barebone server. Remove the screws from the 1U space on the rack front. Align the front end holes of a rack rail pair to the 1U space.

Page 44: Rackmounting The Server

Rackmounting the server To mount the server to the rack: Firmly hold the server on both sides and insert the rear panel side to the front end of the rack rail, then carefully push the server all the way to the back until the front panel fits the front end of the rack, and the rack screws on the server match the middle hole on the rack.

Page 45 Chapter 4 This chapter includes the motherboard layout, and brief descriptions of the jumpers and internal connectors.

Page 46: Motherboard Layout

Motherboard layout ATXPWR1 PS/2 T: Mouse B: Keyboard REAR_FAN2 DDR DIMM_B4 (64/72 bit, 240-pin module) USB1 KBPWR1 USB2 DDR DIMM_A4 (64/72 bit, 240-pin module) DDR DIMM_B3 (64/72 bit, 240-pin module) USBPW12 COM1 DDR DIMM_A3 (64/72 bit, 240-pin module) DDR DIMM_B2 (64/72 bit, 240-pin module) DDR DIMM_A2 (64/72 bit, 240-pin module) DDR DIMM_B1 (64/72 bit, 240-pin module) DDR DIMM_A1 (64/72 bit, 240-pin module) DDR DIMM_B1 (64/72 bit, 240-pin module) DDR DIMM_A1 (64/72 bit, 240-pin module)

Page 47 Layout contents Layout contents Layout contents Layout contents S lots/SocketsSlots/Sock

Page 48: Jumpers

Jumpers The grayed out components in the illustrations are present only in PVL-D/SCSI model. 1 . 1. ClearRTCRAM(CLRTC1)ClearRTCRAM(CLRTC1)ClearRTCRAM(CLRTC1)ClearRTCRAM(CLRTC1)ClearRTCRAM(CLRTC1)

Page 49 2.2.CPUfanpinselection(3-pinFM_CPU1,FM_CPU2)CPUfa

npinselection(3-pinFM_CPU1,FM_CPU2)CPUfanpinselection(3pinFM_CPU1,FM_CPU2)CPUfanpinselection(3-pinFM_CPU1,FM_ CPU2)

Page 50 4.4.Keyboardpower(3-pinKBPWR1)Keyboardpower(3-pinKBPWR1)Keyboardpower(3-pinKBPWR1)Keyboardpower(3-pinKBPWR1)Keyboardpower(3-pinKBPWR1)

Page 51 6.6.GigabitLANcontrollersetting(3-pinLAN1_EN1)Giga bitLANcontrollersetting(3-pinLAN1_EN1)GigabitLANcontroller setting(3-pinLAN1_EN1)GigabitLANcontrollersetting(3-pinLA N1_EN1)

Page 52 8.8.SCSIcontrollersetting(3-pinSCSI_EN1)SCSIcontroll ersetting(3-pinSCSI_EN1)SCSIcontrollersetting(3-pinSCSI_EN 1)SCSIcontrollersetting(3-pinSCSI_EN1)

Page 53: Connectors

Connectors 1.1.Floppy disk drive connector (34-1pinFLOPPY1) Flopp y disk drive connector (34-1pinFLOPPY1) Floppy disk drive connec tor (34-1pinFLOPPY1) Floppy disk drive connector (34-1pinFLOPP Y1)

Page 54: Hard Disk Drives

3.3.SerialATAconnectors(7-pinSATA1,SATA2)SerialATAconnectors(7-pinSATA1,SATA2)SerialATAconnectors(7-pinSATA1,SATA2)SerialATAconnectors(7-pinSATA1,SATA2)

Page 55 4.4. Ultra 320 SCSI connectors (two 68 - pin SCSIA1, SCSIB1)) Ultra 320 SCSI connectors (two 68 - pin SCSIA1, SCSIB1) Ultra 320 S CSI connectors (two 68 - pin SCSIA1, SCSIB1) Ultra 320 SCSI connect ors (two 68 - pin SCSIA1, SCSIB1)

Page 56 5.5.HarddiskactivityLEDconnector(4-pinHDLED1)Hard diskactivityLEDconnector(4-pinHDLED1)HarddiskactivityLEDc onnector(4-pinHDLED1)HarddiskactivityLEDconnector(4-pinH DLED1)

Page 57 7.7.Serialportconnector(10-1pinCOM2)Serialportconn ector(10-1pinCOM2)Serialportconnector(10-1pinCOM2)Serial portconnector(10-1pinCOM2)Serialportconnector(10-1pinCOM 2)

Page 58 B M C c o n n e c t o r (16 - p i n B M C C O N N 1) This connector is for the ASUS server management card, if available. PVL-D/1U/SCSI BMC connector 10.

Page 59 12.12.ATX12.12.12.ATXATXATXATX power connectors (24-pin ATXPWR1, ATX power connectors (24-pin ATXPWR1, power connectors (24-pin ATXPWR1, 8 8 8 8 - p i n power connectors (24-pin ATXPWR1, These connectors are for SSI power supply plugs.

Page 60 13.13.13.13.Systempanelconnector(20-pinPANEL1)13.

Page 61 14.14.Auxiliarypanelconnector(20-pinAUX_PANEL1)14

Page 62 4 - 184 - 184 - 184 - 184 - 184 - 18Chapter4: Motherboardinformation Chapter4: Motherboardinformation Chapter4: Motherboardin formation Chapter4: Motherboardinformation...

<u>Page 63</u> Chapter 5 This chapter lists the hardware setup procedures that you have to perform when installing or removing system components.

Page 64: Chapter 5: Bios Setup

Save a copy of the original motherboard BIOS file to a bootable floppy disk in case you need to restore the BIOS in the future. Copy the original motherboard BIOS using the ASUS Update or AFUDOS utilities. 5 - 2...

Page 65: Afudos Utility

M a i n f i l e n a m e Press <Enter>. The utility copies the current BIOS file to the floppy disk. A:\>afudos /oOLDBIOS1.rom AMI Firmware Update Utility - Version 1.19(ASUS V2.07(03.11.24BB)) Copyright (C) 2002 American Megatrends, Inc. All rights reserved. Reading flash ... done Write to file...

Page 66: Floppy Disk

Updating the BIOS file To update the BIOS file using the AFUDOS utility: Visit the ASUS website (www.asus.com) and download the latest BIOS file for the motherboard. Save the BIOS file to a bootable floppy disk. Write the BIOS filename on a piece of paper. You need to type the exact BIOS filename at the DOS prompt.

Page 67 The utility returns to the DOS prompt after the BIOS update process is completed. Reboot the system from the hard disk drive. A:\>afudos /il8021A00.100 AMI Firmware Update Utility - Version 1.19(ASUS V2.07(03.11.24BB)) Copyright (C) 2002 American Megatrends, Inc. All rights reserved. WARNING!! Do not turn off power during flash BIOS Reading file ...

Page 68: Asus Crashfree Bios 2 Utility

ASUS CrashFree BIOS 2 utility ASUS CrashFree BIOS 2 utility The ASUS CrashFree BIOS 2 is an auto recovery tool that allows you to restore the BIOS file when it fails or gets corrupted during the updating process. You can update a corrupted BIOS file using the motherboard support CD or the floppy disk that contains the updated BIOS file.

Page 69 Restart the system after the utility completes the updating process. The recovered BIOS may not be the latest BIOS version for this motherboard. Visit the ASUS website (www.asus.com) to download the latest BIOS file. A S U S R S 1 6 0 - E 3 / P S 4...

Page 70: Asus Update Utility

ASUS Update utility ASUS Update utility 5.1.3 5.1.3 ASUS Update utility ASUS Update utility The ASUS Update is a utility that allows you to manage, save, and update the motherboard BIOS in Windows you to: • Save the current BIOS file •...

<u>Page 71</u> Updating the BIOS through the Internet Updating the BIOS through the Internet To update the BIOS through the Internet: Launch the ASUS Update utility from the Windows S t a r t S t a r t P r o g r a m s...

<u>Page 72</u> Updating the BIOS through a BIOS file Updating the BIOS through a BIOS file To update the BIOS through a BIOS file: Launch the ASUS Update utility from the Windows S t a r t S t a r t...

Page 73: Bios Setup Program

 \cdot Visit the ASUS website (www.asus.com) to download the latest BIOS file for this motherboard. A S U S R S 1 6 0 - E 3 / P S 4...

Page 74: Bios Menu Screen

Security Boot [Thu 09/22/2005] [11:10:19] [1.44M, 3.5 in] [ST32122A] [ASUS CD-S520A] [Not Detected] [Not Detected] [Not Detected] [Not Detected] G e n e r a | h e | p G e n e r a | h e | p...

Page 75: Menu Items

5.2.4 5.2.4 S.2.4 Menu items Menu items Menu items 5.2.4 S.2.4 Menu items Menu items The highlighted item on the menu bar displays the specific items for that menu. For example, selecting M a i n shows the Main menu items. The other items (Advanced, Power, Boot, and Exit) on the menu bar have their respective menu items.

Page 76: Main Menu

BIOS SETUP UTILITY Server Security Boot [11:10:19] [Mon 09/22/2005] [Disabled] [ST32122A] [ASUS CD-S520A] [Not Detected] [Not Detected] [Not Detected] M a i n

Page 77: Ide Configuration

5.3.4 5.3.4 5.3.4 IDE Configuration IDE Configuration IDE Configuration 5.3.4 5.3.4 IDE Configuration IDE Configuration The items in this menu allow you to set or change the configurations for the IDE devices installed in the system. Select an item then press <Enter> if you wish to configure the item.

Page 78: Primary/Secondary Ide Master/Slave, Third, And Fourth Ide

5.3.5 5.3.5 Primary/Secondary IDE Master/Slave, Primary/Secondary IDE Master/Slave, Primary/Secondary IDE Master/Slave, 5.3.5 5.3.5 Primary/Secondary IDE Master/Slave, Primary/Secondary IDE Master/Slave, Third, and Fourth IDE Master The BIOS automatically detects the connected IDE devices.

Page 79: System Information

(C)Copyright 1985-2004, American Megatrends, Inc. Model Name Model Name Model Name Model Name Displays the auto-detected ASUS motherboard model. Model ID Model ID Model ID Model ID Displays the auto-detected identification number of the motherboard.

Page 80 Processor Information Processor Information Processor Information Processor Information Processor Information Displays the auto-detected information about the installed CPU or CPUs. Main Processor Information *** CPU1 : Brand Genuine Intel(R) CPU 2.80GHz ID/uCode 0F34h/07h Ratio Value Actual 14 Max 14 Cache Value L1/16KB *** CPU2 : Brand...

Page 81: Advanced Menu

Advanced menu The Advanced menu items allow you to change the settings for the CPU and other system devices. Take caution when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction. Advanced Advanced Settings CPU Configuration Chipset Configuration...

Page 82 Single Logical Processor Mode [Disabled] Allows you enabled or disabled the single logical processor mode for dual- core CPUs. Configuration options: [Disabled] [Enabled] Hyper-Threading Technology [Enabled] Hyper-Threading Technology [Enabled]...

Page 83: Chipset Configuration

5.4.2 5.4.2 5.4.2 Chipset Configuration Chipset Configuration Chipset Configuration 5.4.2 5.4.2 Chipset Configuration Chipset Configuration The Chipset Configuration menu allows you to change the advanced chipset settings. Select an item then press <Enter> to display the submenu. Advanced Advanced Chipset Settings WARNING: Setting wrong values in below sections may cause system to malfunction.

Page 84 NorthBridge Configuration NorthBridge Configuration NorthBridge Configuration NorthBridge Configuration NorthBridge Configuration The NorthBridge Configuration menu allows you to change the Northbridge related settings. Advanced NorthBridge Chipset Configuration DIMM SPEED: DDR2 400 Memory Remap Feature Memory Mirroring/Sparing v02.58 (C)Copyright 1985-2004, American Megatrends, Inc. DIMM Speed DIMM Speed DIMM Speed...

Page 85: Onboard Devices Configuration

5.4.3 5.4.3 Onboard Devices Configuration Onboard Devices Configuration Onboard Devices Configuration 5.4.3 5.4.3 Onboard Devices Configuration Onboard Devices Configuration Advanced Advanced Onboard Devices Settings USB Configuration Super IO Configuration v02.58 (C)Copyright 1985-2004, American Megatrends, Inc. USB Configuration USB Configuration USB Configuration USB Configuration...

<u>Page 86</u> Legacy USB Support [Auto] Allows you to enable or disable support for legacy USB devices. Setting to [Auto] allows the system to detect the presence of legacy USB devices at startup.

Page 87 Super IO Configuration Advanced Configure Win83627THF Super IO Chipset Serial Port1 Address Serial Port2 Address Serial Port2 Mode v02.58 (C)Copyright 1985-2004, American Megatrends, Inc. Serial Port1 Address [3F8/IRQ4] Serial Port1 Port1 Address [3F8/IRQ4] Serial Port1 Port1 Port1

Page 88 The following items appear only when the P a r a I I e I P o r t A d d r e s s item is set to [378], [278], or [3BC]. Parallel Port Mode [Normal] Parallel Port Mode [Normal] Parallel Port Mode [Normal] Parallel Port Mode [Normal]...

Page 89: Pci/Pnp Configuration

5.4.4 5.4.4 PCI/PnP Configuration PCI/PnP Configuration PCI/PnP Configuration 5.4.4 5.4.4 PCI/PnP Configuration PCI/PnP Configuration The PCI/PnP Configuration menu items allow you to change the advanced settings for PCI/PnP devices. The menu includes setting the IRQ and DMA channel resources for either PCI/PnP or legacy ISA devices, and setting the memory size block for legacy ISA devices.

Page 90: Power Configuration

5.4.5 5.4.5 Power Configuration Power Configuration Power Configuration 5.4.5 5.4.5 Power Configuration Power Configuration The Power Configuration menu items allow you to change the settings for the ACPI and Advanced Power Management (APM) features. Select an item then press <Enter> to display the configuration options. Advanced Power Configuration ACPI APIC Support...

Page 91 APM Configuration APM Configuration APM Configuration APM Configuration APM Configuration Advanced APM Configuration Power Management/APM Video Power Down Mode Hard Disk Power Down Mode Suspend Time Out (Minute) Throttle Slow Clock Ratio Power Button Function Restore on AC Power Loss Power On By PS/2 Keyboard Power On By PS/2 Mouse Power On Ring...

Page 92 Restore on AC Power Loss [Last State] When set to Power Off, the system goes into off state after an AC power loss.

Page 93: Hardware Monitor

5.4.6 5.4.6 5.4.6 Hardware Monitor Hardware Monitor Hardware Monitor 5.4.6 5.4.6 Hardware Monitor Hardware Monitor Advanced Hardware Monitor CPU1 Temperature CPU2 Temperature MB Temperature CPU1 Fan Speed CPU2 Fan Speed Front1 Fan Speed Front2 Fan Speed Rear1 Fan Speed Rear2 Fan Speed Smart Fan Control CPU1 Temperature CPU2 Temperature...

Page 94 Smart Fan Control [Smart Fan II] Smart Fan Control [Smart Fan II] Allows you to enable or disable the ASUS Q-Fan feature that smartly adjusts the fan speeds for more efficient system operation. Configuration options: [Smart Fan] [Smart Fan II]...

Page 95: Server Menu

Server menu The Server menu items allow you to customize the server features. Main Advanced Server Server Features Remote Access Configuration v02.58 (C)Copyright 1985-2004, American Megatrends, Inc. Remote Access Configuration Remote Access Configuration Remote Access Configuration Remote Access Configuration The items in this menu allows you to configure the Remote Access features.

<u>Page 96</u> Remote Access [Disabled] Enables or disables the remote access feature. Configuration options: [Disabled] [Enabled] When the R e m o t e A c c e s s items appear.

Page 97: Security Menu

Security The Security menu items allow you to change the system security settings. Select an item then press <Enter> to display the configuration options. Main Advanced Server Security Settings Supervisor Password : Not Installed User Password : Not Installed Change Supervisor Password v02.58 (C)Copyright 1985-2004, American Megatrends, Inc.

Page 98 After you have set a supervisor password, the other items appear to allow you to change other security settings. Main Advanced Security Settings Supervisor Password User Password Change Supervisor Password User Access Level Change User Password Clear User Password Password Check v02.58 (C)Copyright 1985-2004, American Megatrends, Inc.

Page 99 Clear User Password Select this item to clear the user password. Password Check [Setup] When set to [Setup], BIOS checks for user password when accessing the Setup utility.

Page 100: Boot Menu

5 - 3 8 BIOS SETUP UTILITY Server Security Boot BIOS SETUP UTILITY Server Security Boot [1st FLOPPY DRIVE] [PS-ASUS CD-S520/A] [PM-ST32122A] Exit Specifies the Boot Device Priority sequence. Select Screen Select Item Change Option General Help F10 Save and Exit...

Page 101: Boot Settings Configuration

Full Logo display [Enabled] Allows you to enable or disable the full screen logo display feature. Configuration options: [Disabled] [Enabled] Set this item to [Enabled] to use the ASUS MyLogo2[™] feature. Bootup Num-Lock [On] Bootup Num-Lock [On] Bootup Num-Lock [On]...

Page 102 Wait for 'F1' If Error [Enabled] When set to Enabled, the system waits for the F1 key to be pressed when error occurs.

Page 103: Exit Menu

Exit menu The Exit menu items allow you to load the optimal or failsafe default values for the BIOS items, and save or discard your changes to the BIOS items. Main Advanced Server Exit Options Exit & Save Changes Exit & Discard Changes Discard Changes Load Setup Defaults v02.58 (C)Copyright 1985-2004, American Megatrends, Inc.

Page 104 Load Setup Defaults Select this option then press <Enter> to load the optimized settings for each of the Setup menu items. When a confirmation window appears, select [O K] load the default settings.

Page 105 Chapter 6 This chapter provides instructions for setting up, creating, and configuring RAID sets using the available utilities.

Page 106: Raid Configurations

Setting up RAID The motherboard comes with the following RAID solutions: PVL-D/1U/SCSI model PVL-D/1U/SCSI model PVL-D/1U/SCSI model PVL-D/1U/SCSI model • A d a p t e c A d a p t e c A d a p t e c A d a p t e c ®...

Page 107: Installing Hard Disk Drivers

6.1.2 6.1.2 6.1.2 Installing hard disk drives Installing hard disk drives Installing hard disk drives 6.1.2 6.1.2 Installing hard disk drives Installing hard disk drives The motherboard supports SCSI hard disk drives for RAID set configuration. For optimal performance, install identical drives of the same model and capacity when creating a disk array.

Page 108: Adaptec Scsiselect (Tm) Utility

Adaptec SCSISelect(TM) Utility! The Adaptec SCSISelect(TM) Utility allows you to create RAID 0, 1, and 0+1 set(s) from SCSI hard disk drives connected to the SCSI connector supported by the Adaptec embedded SCSI controller. To enter the Adaptec SCSISelect(TM) Utility!: Turn on the system after installing all the SCSI hard disk drives.

Page 109: Configuring The Scsi Controller

6.2.1 6.2.1 6.2.1 Configuring the SCSI controller Configuring the SCSI controller Configuring the SCSI controller 6.2.1 6.2.1 Configuring the SCSI controller Configuring the SCSI controller You need to configure the SCSI controller before creating a RAID set. After selecting the SCSI channel to use, the utility prompts you to select from the available options.

Page 110: Creating A Raid 0 Set (Stripe)

The screen returns to the options menu. 6.2.3 6.2.3 6.2.3 Creating a RAID 0 set (Stripe) Creating a RAID 0 set (Stripe) Creating a RAID 0 set (Stripe) 6.2.3 6.2.3 Creating a RAID 0 set (Stripe) Creating a RAID 0 set (Stripe) To create a RAID 0 set for Performance: After enabling the HostRAID, the utility returns to the initial menu.

Page 111 The utility displays the installed SCSI hard disk drives status and menu options. When available, the HDD status shows F r e e The utility does not display an installed SCSI HDD(s) with an existing RAID condiguration or is part of an existing RAID set. Use the SCSI Disk Utilities to reformat the HDD(s), or use the previous RAID card to clear the RAID configuration on the HDD(s).

Page 112 Use the arrow keys to select a RAID set member, then press <SpaceBar> to mark. An X X X X Mark appears after the selected HDD. Follow the step 4 to select the other members of the RAID set, then press <Enter>...

Page 113 If you want to make the array Y e s Y e s bootable, select Y e s Y e s from the Y e s menu, then press <Enter>. When prompted to create the RAID 0 set, select <Yes>, then press <Enter>.

Page 114: Creating A Raid 1 Set (Mirror)

6.2.4 6.2.4 Creating a RAID 1 set (Mirror) Creating a RAID 1 set (Mirror) Creating a RAID 1 set (Mirror) 6.2.4 6.2.4 Creating a RAID 1 set (Mirror) Creating a RAID 1 set (Mirror) To create a RAID 1 set for Fault Tolerance: Follow steps 1 to 2 of the C r e a t i n g a R A I D 0 s e t RAID-1 (Fault Tolerance) RAID-1 (Fault Tolerance)

Page 115 Select Createnew RAID-1Createnew RAID-1 from the RAID-1 Build Option menu, then Createnew RAID-1Createnew RAID-1Createnew RAID-1Createnew RAID-1 press <Enter>.

Page 116 11. The utility builds the RAID 1 set and displays a progress bar at the center of the screen. Press <Esc> if you want to stop the building process. A B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o m p | e t e B u i | d C o

Page 117: Creating A Raid 10 Set (Stripe+Mirror)

6.2.5 6.2.5 Creating a RAID 10 set (Stripe+Mirror) Creating a RAID 10 set (Stripe+Mirror) Creating a RAID 10 set (Stripe+Mirror) 6.2.5 6.2.5 Creating a RAID 10 set (Stripe+Mirror) Creating a RAID 10 set (Stripe+Mirror) To create a RAID 10 set for Fault Tolerance and Performance: After enabling the HostRAID, the utility returns to the initial menu.

Page 118 Select RAID - 10 (Fault Tolerance, High Performance) from the...

Page 119 Select the stripe size from the menu, then press <Enter>. For server systems, we recommend that you use a lower array block size. For multimedia computer systems used mainly for audio and video editing, we recommend a higher array block size for optimum performance. When prompted, use the keyboard to assign a name for the RAID 10 set, then press <Enter>.

Page 120 10. The screen displays the information on the created RAID set. Press < Esc> to exit the utility. 6 - 1 6 6 - 1 6 6 - 1 6 6 - 1 6 6 - 1 6 C h a pter 6 : R A I D c on figuration C h a pter 6 : R A I D c on figuration C h a pter 6 : R A I D c on figuration C h a pter 6 : R A I D c on figuration...

Page 121: Adding A Spare Driver To A Raid 10 Set

6.2.6 6.2.6 Adding a spare drive to a RAID 10 set Adding a spare drive to a RAID 10 set Adding a spare drive to a RAID 10 set 6.2.6 6.2.6 Adding a spare drive to a RAID 10 set Adding a spare drive to a RAID 10 set To add a spare drive to a RAID 10 set: Press <S S S S S >...

Page 122: Deleting A Raid 10 Set Spare Drive

The screen displays the information on the added spare drive. Press <Esc> to exit the utility. 6.2.7 6.2.7 6.2.7 Deleting a RAID 10 set spare drive Deleting a RAID 10 set spare drive Deleting a RAID 10 set spare drive 6.2.7 6.2.7 Deleting a RAID 10 set spare drive...

Page 123 The screen displays the available spare drive(s). Use the arrow keys to select the spare drive you want to delete, then press <Enter>. When a confirmation dialogue box appears, select <Yes>, then press <Enter> to delete the spare drive. Press <ESC> to exit the utility. A S U S R S 1 6 0 - E 3 / P S 4 A S U S R S 1 6 0 - E 3 / P S 4...

Page 124: Deleting A Raid Set

6.2.8 6.2.8 6.2.8 Deleting a RAID set Deleting a RAID set Deleting a RAID set 6.2.8 6.2.8 Deleting a RAID set Deleting a RAID set To delete a RAID set: Press <D D D D D > from the C o n f i g u r e / V i e w H o s t R A I D S e t t i n g s For RAID 0 and RAID 10 set, go to step 3.

Page 125: Rebuilding A Raid Set

6.2.9 6.2.9 6.2.9 Rebuilding a RAID set Rebuilding a RAID set Rebuilding a RAID set 6.2.9 6.2.9 Rebuilding a RAID set Rebuilding a RAID set The rebuild option is available only for RAID 1 and RAID 10 sets. To rebuild a RAID set: From the main menu, select the RAID set you want to rebuild, then press <Enter>.

Page 126: Verifying A Raid Set Harddisk Drive

6.2.10 6.2.10 Verifying a RAID set hard disk drive 6.2.10 Verifying a RAID set hard disk drive Verifying a RAID set hard disk drive Verifying a RAID set hard disk drive 6.2.10 6.2.10 Verifying a RAID set hard disk drive To verify a RAID set hard disk drive: Select S C S I D i s k U t i l i t i e s S C S I D i s k U t i l i t i e s...

Page 127: Making A Raid Set Bootable

Select V e rify D is k M e d ia V e rify D is k M e d ia V e rify D is k M e d ia V e rify D i s k M e d ia V e rify D i s k M e d ia from the menu, then press <Enter>.

<u>Page 128</u> Select the RAID set you want to make bootable, then press <Enter>. Press < B > < B > < B > when the RAID set information displays on screen. < B > < B > When prompted, select M a r k b o o t a b l e b o o t a b l e ...

Page 129 Chapter 7 This chapter provides instructions for installing the necessary drivers for different system components.

Page 130: Raid Driver Installation

RAID driver installation After creating the RAID sets for your server system, you are now ready to install an operating system to the independent hard disk drive or bootable array. This part provides instructions on how to install the RAID controller drivers during OS installation.

Page 131 Select Y e s Y e s Y e s Y e s using the <Tab> key when asked if you have the driver disk. Y e s Press <Enter> Select f d 0 f d 0 f d 0 f d 0 using the <Tab>...

<u>Page 132</u> When prompted, insert the Red Hat to the floppy disk drive, select O K, The drivers for the RAID controller are installed to the system. When asked if you will load additional RAID controller drivers: • For PVL-D/2U/SCSI model, select Y e s RAID controller drivers (for Adaptec Follow screen instructions to continue the OS installation.

Page 133: Lan Driver Installation

LAN driver installation This section provides instructions on how to install the Broadcom LAN controller drivers. 7.2.1 7.2.1 Windows Windows ® ® ® ® 7.2.1 7.2.1 7.2.1 Windows Windows Windows To install the Broadcom ® 2003 Server OS: Restart the computer, then log

on with A d m i n i s t r a t o r Insert the motherboard/system support CD to the optical drive.

Page 134 Click N e x t N e x t when the InstallShield Wizard window appears. Follow N e x t N e x t N e x t screen instructions to continue installation. 7 - 67 - 67 - 67 - 67 - 6C h a p t e r 7 : D r i v e r i n s t a l l a t i o n...

Page 135: Red Hat Enterprise Ver. 3.0

7.2.2 7.2.2 Red Hat Red Hat Red Hat ® ® ® ® (8 (

Page 136 Building the driver from the TAR file To build the driver from the TAR file: Create a directory and extract the TAR files: tar xvzf bcm5700-<version>.tar.gz Build the driver bcm5700.o as a loadable module for the running...

Page 137: Vga Driver Installation

VGA driver installation This section provides instructions on how to install the ATI Graphics Adapter (VGA) driver. 7.3.1 7.3.1 7.3.1 Windows Windows Windows ® ® ® ® 7.3.1 7.3.1 Windows Windows You need to manually install the ATI 2000 Server operating system. To install the ATI ®...

Page 138 7.3.2 7.3.2 7.3.2 Windows Windows Windows 7.3.2 7.3.2 Windows Windows The Windows ® 2003 Server operating system automatically recognizes the ® RAGE XL VGA driver during system installation. There is no need to install an additional driver(s) to support the onboard VGA. 7.3.3 7.3.3 7.3.3...

Page 139: Management Applications And Utilities Installation

The support CD that came with the motherboard package contains the drivers, management applications, and utilities that you can install to avail all motherboard features. The contents of the support CD are subject to change at any time without notice. Visit the ASUS website (www.asus.com) for updates. 7.4.1 7.4.1 7.4.1...

Page 140: Management Software Menu

Contact information Click the C o n t a c t C o n t a c t tab to display the ASUS contact information. You can C o n t a c t C o n t a c t C o n t a c t a c t also find this information on the inside front cover of this user guide.

This manual is also suitable for:

Rs160-e3 ps4

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