Altos R5250 Installation Configuration Guide

Abstract

This document provides you a quick OS installation guide on Altos R5250, including Windows Server 2008, Windows Server 2008 x64 Edition, Windows Server 2003 R2, Windows Server 2003 R2 x64 Edition, Windows 2000, Red Hat Enterprise Linux 5.0 (32-bit & 64-bit) and SuSE Linux Enterprise Server 10 (32-bit & 64-bit), Windows XP and Windows Vista.

Version: 1.2

May 2008

CONTENTS

INTRODUCTION

This article describes the Altos R5250 Installation Configuration guide:

- Hardware parts give you a briefly and quick hardware information about Altos R5250
- The operating system installation tips.

Where Can I Download the Latest Altos R5250 Installation Configuration Guide

1. The Altos R5250 Installation Configuration Guide would be updated on a monthly basis. Please download the latest release from the Acer support website.

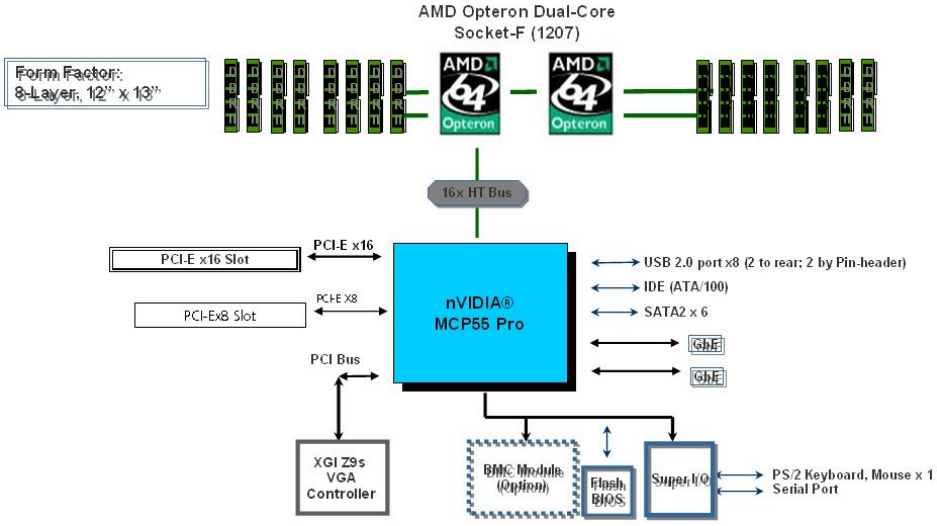
HARDWARE SPECIFICATION

Model	Altos R5250
Processor	Dual-Core AMD Opteron processors 2000 series (Santa Rosa & Barcelona) at 1.8 GHz or above Frequency
Cache	• Up to 2x 512 KB L2 cache and 2 MB/6 MB L3 cache for dual-core processor • Up to 4x 512 KB L2 cache and 2 MB/6 MB1 L3 cache for quad-core processor
Chipset	NVIDIA NFP3600
Memory	• Dual memory channels per processor • 16 x DIMM sockets support 512MB/1GB/2GB DDR II 667 registered with ECC • Maximum memory of 64GB (When 4 GB DIMM available) • Support memory sparing
Storage Interface	• Embedded six SATA2 ports • Optional SAS /SAS RAID daughter card or SAS RAID add-on card
Expansion Slots	Total 2 slots • Defaulted with PCI-E x16 slot (w/ x16 throughput) or optional PCI-X riser card support • PCI-E X8: dedicated to SAS or SAS RAID daughter card
VGA	• Onboard XGI Z9s video controller w/ 16MB SDRAM • Optional add-on ATI FireGL V5200 graphic card support
SATA Controller	• Six SATA ports with Software RAID 0, 1, 5 support
LAN Controller	• Onboard dual NVIDIA nForce Networking Controller • Supporting TCP Offload Engine (TOE)
BMC	Optional BMC module • IPMI 2.0 compliant
ARMC/3P	Optional ARMC/3P module • Remote KVM support • Dedicate NIC port • Media redirection support
Availability sub-system	
System Power Supply	• 650W Fixed Power Supply

Storage Subsystem	
Drive Bays	• One slim optical bay • Up to three hot-swap SAS/SATA2 HDDs
Hard Disks	• Up to 3 SAS/SATA HDDs support

BOARD LAYOUT

System Block Diagram



DIMM POPULATION GUIDELINE

Memory population

Single Processor

NOTE. When Altos R5250 is installed with single processor, memory can only be installed in DIMM A1/B1, A2/B2, A3/B3 and A4/B4. Memory installed in DIMM C1/D1, C2/D2, C3/D3 and C4/D4 will not be detected when there is only one processor.

	CPU1				
#	DIMM A1/B1	DIMM A2/B2	DIMM A3/B3	DIMM A4/B4	Total Memory
1	2 x 512MB				1 GB
2	2 x 512MB	2 x 512MB			2 GB
3	2 x 512MB	2 x 512MB	2 x 512MB		3 GB
4	2 x 512MB	2 x 512MB	2 x 512MB	2 x 512MB	4 GB
5	2 x 1GB				2 GB
6	2 x 1GB	2 x 1GB			4 GB
7	2 x 1GB	2 x 1GB	2 x 1GB		6 GB
8	2 x 1GB	2 x 1GB	2 x 1GB	2 x 1GB	8 GB
9	2 x 2GB				4 GB
10	2 x 2GB	2 x 2GB			8 GB
11	2 x 2GB	2 x 2GB	2 x 2GB		12 GB
12	2 x 2GB	2 x 2GB	2 x 2GB	2 x 2GB	16 GB

Dual Processor

	CPU1				CPU1				
#	DIMM A1/B1	DIMM A2/B2	DIMM A3/B3	DIMM A4/B4	DIMM C1/D1	DIMM C2/D2	DIMM C3/D3	DIMM C4/D4	Total Memory
1	2 x 512MB				2 x 512MB				2 GB
2	2 x 512MB	2 x 512MB			2 x 512MB	2 x 512MB			4 GB
3	2 x 512MB	2 x 512MB	2 x 512MB		2 x 512MB	2 x 512MB	2 x 512MB		6 GB
4	2 x 512MB	2 x 512MB	2 x 512MB	2 x 512MB	2 x 512MB	2 x 512MB	2 x 512MB	2 x 512MB	8 GB
5	2 x 1GB				2 x 1GB				4 GB
6	2 x 1GB	2 x 1GB			2 x 1GB	2 x 1GB			8 GB
7	2 x 1GB	2 x 1GB	2 x 1GB		2 x 1GB	2 x 1GB	2 x 1GB		12 GB
8	2 x 1GB	2 x 1GB	2 x 1GB	2 x 1GB	2 x 1GB	2 x 1GB	2 x 1GB	2 x 1GB	16 GB
9	2 x 2GB				2 x 2GB				8 GB
10	2 x 2GB	2 x 2GB			2 x 2GB	2 x 2GB			16 GB
11	2 x 2GB	2 x 2GB	2 x 2GB		2 x 2GB	2 x 2GB	2 x 2GB		24 GB
12	2 x 2GB	2 x 2GB	2 x 2GB	2 x 2GB	2 x 2GB	2 x 2GB	2 x 2GB	2 x 2GB	32 GB

Memory population with Sparing

Single Processor

NOTE. When Altos R5250 is installed with single processor, memory can only be

installed in DIMM A1/B1, A2/B2, A3/B3 and A4/B4. Memory installed in DIMM C1/D1, C2/D2, C3/D3 and C4/D4 will not be detected when there is only one processor.

	CPU1				Total Memory	
#	DIMM A1/B1	DIMM A2/B2	DIMM A3/B3	DIMM A4/B4	Physical Memory	Detected by OS
1	2 x 512MB Single Rank	2 x 512MB Single Rank	2 x 512MB Single Rank (Spare)		3 GB	2 GB
2	2 x 512MB Single Rank	2 x 512MB Single Rank	2 x 512MB Single Rank	2 x 512MB Single Rank (Spare)	4 GB	3 GB
3	2 x 1GB Single Rank	2 x 1GB Single Rank	2 x 1GB Single Rank (Spare)		6 GB	4 GB
4	2 x 1GB Single Rank	2 x 1GB Single Rank	2 x 1GB Single Rank	2 x 1GB Single Rank (Spare)	8 GB	6 GB
5	2 x 1GB Dual Rank	2 x 1GB Dual Rank (Spare) [1]			4 GB	3 GB
6	2 x 1GB Dual Rank	2 x 1GB Dual Rank	2 x 1GB Dual Rank (Spare) [1]		6 GB	5 GB
7	2 x 2GB Dual Rank	2 x 2GB Dual Rank (Spare) [1]			8 GB	6 GB
8	2 x 2GB Dual Rank	2 x 2GB Dual Rank	2 x 2GB Dual Rank (Spare) [1]		12 GB	10 GB

NOTE1. Only one rank of each DIMM will be used as spare.

Dual Processor

	CPU1				CPU2				Total Memory	
#	DIMM A1/B1	DIMM A2/B2	DIMM A3/B3	DIMM A4/B4	DIMM C1/D1	DIMM C2/D2	DIMM C3/D3	DIMM C4/D4	Physical Memory	Detected by OS
1	2 x 512MB Single Rank	2 x 512MB Single Rank	2 x 512MB Single Rank (Spare)		2 x 512MB Single Rank	2 x 512MB Single Rank	2 x 512MB Single Rank (Spare)		6 GB	4 GB
2	2 x 512MB Single Rank	2 x 512MB Single Rank	2 x 512MB Single Rank	2 x 512MB Single Rank (Spare)	2 x 512MB Single Rank	2 x 512MB Single Rank	2 x 512MB Single Rank	2 x 512MB Single Rank (Spare)	8 GB	6 GB
3	2 x 1GB Single Rank	2 x 1GB Single Rank	2 x 1GB Single Rank (Spare)		2 x 1GB Single Rank	2 x 1GB Single Rank	2 x 1GB Single Rank (Spare)		12 GB	8 GB
4	2 x 1GB Single Rank	2 x 1GB Single Rank	2 x 1GB Single Rank	2 x 1GB Single Rank (Spare)	2 x 1GB Single Rank	2 x 1GB Single Rank	2 x 1GB Single Rank	2 x 1GB Single Rank (Spare)	16 GB	12 GB
5	2 x 1GB Dual Rank	2 x 1GB Dual Rank (Spare) [1]			2 x 1GB Dual Rank	2 x 1GB Dual Rank (Spare) [1]			8 GB	6 GB
6	2 x 1GB Dual Rank	2 x 1GB Dual Rank	2 x 1GB Dual Rank (Spare) [1]		2 x 1GB Dual Rank	2 x 1GB Dual Rank	2 x 1GB Dual Rank (Spare) [1]		12 GB	10 GB
7	2 x 2GB Dual Rank	2 x 2GB Dual Rank (Spare) [1]			2 x 2GB Dual Rank	2 x 2GB Dual Rank (Spare) [1]			16 GB	12 GB
8	2 x 2GB Dual Rank	2 x 2GB Dual Rank	2 x 2GB Dual Rank (Spare) [1]		2 x 2GB Dual Rank	2 x 2GB Dual Rank	2 x 2GB Dual Rank (Spare) [1]		24 GB	20 GB

NOTE1. Only one rank of each DIMM will be used as spare.

OS INSTALLATION TIPS

Below is Altos R5250 OS certification matrix:

Operating System	Service Pack	Status	Note
Windows Server 2008 Enterprise x64 Edition	N/A	Certified	1, 2, 3
Windows Server 2008 Enterprise Edition	N/A	Certified	1, 2, 3
Windows Server 2003 R2 Enterprise x64 Edition	SP2	Certified	
Windows Server 2003 R2 Enterprise Edition	SP2	Certified	
Windows 2000 Advanced Server	SP4	Tested	
Windows Vista Enterprise x64 Edition	N/A	Tested	
Windows Vista Enterprise Edition	N/A	Tested	
Windows XP Professional x64	SP2	Tested	
Windows XP Professional	SP2	Tested	
Red Hat Enterprise Linux 5.0 EM64T	N/A	Certified	
Red Hat Enterprise Linux 5.0	N/A	Certified	
SUSE Linux Enterprise Server 10 EM64T	N/A	Certified	
SUSE Linux Enterprise Server 10	N/A	Certified	

NOTE 1. Altos R5250 BIOS P06 (or later) is required to support Windows Server 2008.

NOTE 2. This Windows Server 2008 certification also applies to Standard Edition and Web Server 2008.

NOTE 3. EasyBUILD 8.0 build 200 (or later) can support Windows Server 2008

The drivers required for the OS installation can be found on the EasyBUILD 8.0 build 200 (or later). We suggest that you use the drivers contained in the EasyBUILD 8.0 build 200 (or later), as these drivers are tested and qualified by Acer.

There are two ways you can get the drivers. You can either make diskettes from EasyBUILD 8.0 build 200 (or later), or put it in the optical drive and search the driver directly.

NOTE. In this section, we assume the OS is installed on the HDD connected to the onboard SATA RAID, SAS/SAS RAID Daughter Card, LSI MegaRAID SAS 8204ELP or LSI MegaRAID SAS 8708ELP.

Windows Server 2008 Enterprise x64 Edition Installation (SAS Daughter Board)

Below information describes how to manually install Windows Server 2008

Enterprise x64 Edition on Altos R5250 with SAS daughter board.

BIOS Required

Altos R5250 BIOS P06 (or later) is required to support Windows Server 2008.

Drivers Required

For Windows Server 2008 x64 Installation, the following device drivers are required.

Device	Version	EasyBUILD Version
SAS Daughter Board	1.26.05.00	EasyBUILD 8.0 build 200 (or later)
Chipset	Package 9.26	EasyBUILD 8.0 build 200 (or later)
Onboard Gigabit Ethernet	67.80.0.0	EasyBUILD 8.0 build 200 (or later)
Onboard VGA	6.14.10.1090	EasyBUILD 8.0 build 200 (or later)
ATI FireGL V5600	8.440.0.0	EasyBUILD 8.0 build 200 (or later)

Software Required

The management utility for SAS daughter board and NIC can be found in the EasyBUILD 8.0 build 200 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.63	EasyBUILD 8.0 build 200 (or later)
ForceWare Network Access Manager	67.80.0.0	EasyBUILD 8.0 build 200 (or later)

Configuring SAS Daughter Board

Please refer to the Appendix B. for the SAS daughter board configuration.

Installation Tips

1. Though Windows Server can recognize the SAS daughter board controller, we still need to replace the driver with the one in EasyBUILD. Please make the driver diskette from the EasyBUILD 8.0 build 200 first before the installation.
2. Please boot the system form the Windows Server 2008 x64 CD/DVD. Follow the instructions to do the installation.
3. When you see the "**Where do you want to install Windows?**" on the screen, please insert the driver diskette and click on **Load Driver**.
4. Click on **OK**. You will see the supported devices listed.
5. Select "**LSI Adapter,SAS 3000 series, 8-port with 1068E - StorPort (A:\lsi_sas.inf)**" and click on Next.
6. Please hold the **ctrl** key to select all of listed driver and click on **Next** to

load the driver.

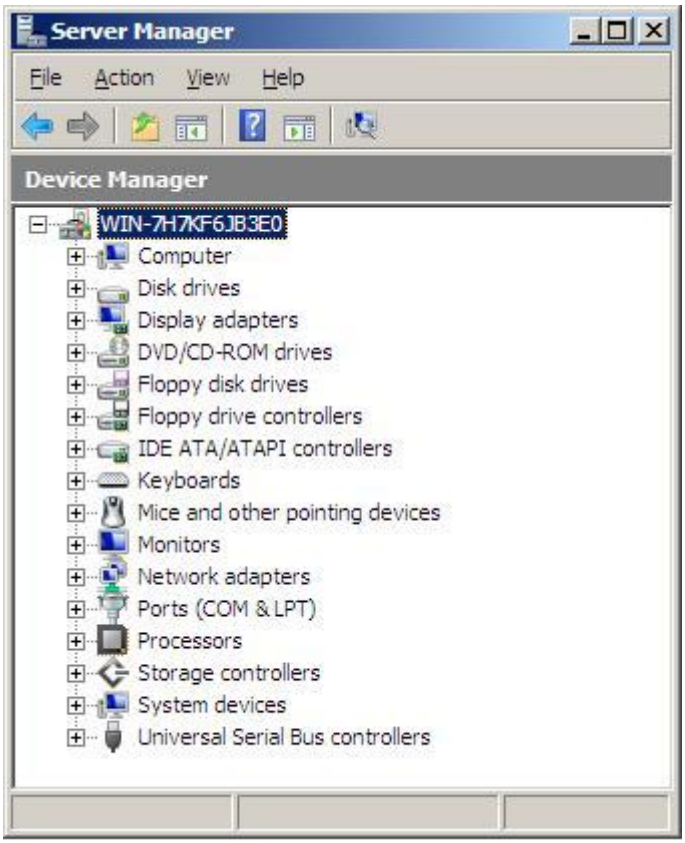
7. After the driver is loaded and returned to "**Where do you want to install Windows?**" page, click on **Next** to continue the installation.

8. Follow the instructions to finish the installation.

Chipset Driver Package Installation

1. Though Windows Server 2008 x64 has built-in driver for onboard chipset and can recognize the onboard gigabit Ethernet controller, we still need to replace the driver with the one in EasyBUILD.

2. After the installation completes, you would see the following devices in Device Manager without any yellow mark.



3. Please insert the EasyBUILD 8.0 build 200 into the optical drive

4. Expand **Drivers -> Altos R5250 -> Chipset**, select **Windows Server 2008 x64** and click on **Setup**.

5. Follow the instruction and use the default setting to install all of the drivers and utilities in the driver package.

6. After all drivers and utilities are installed, please reboot the system.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

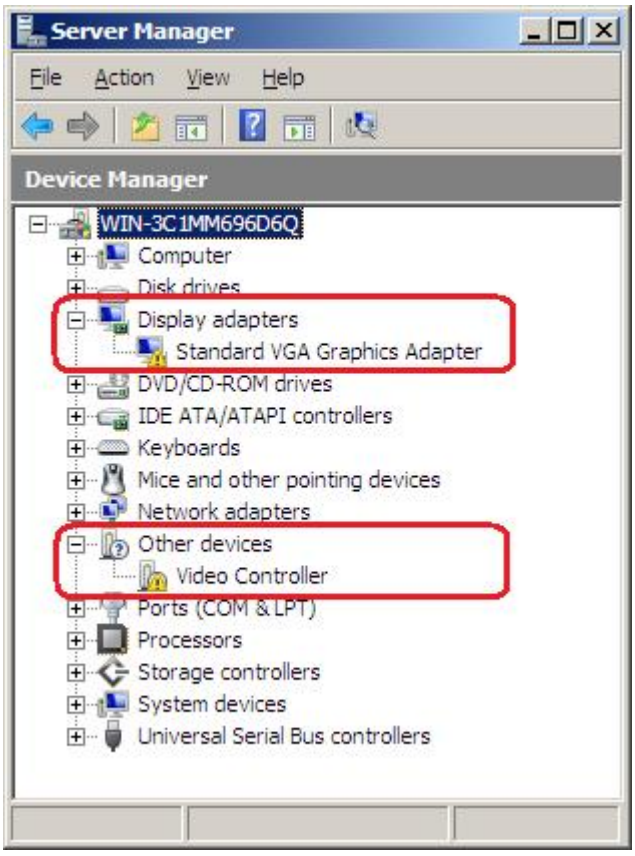
VGA Driver Installation (onboard VGA)

1. Windows will treat onboard VGA as Standard VGA device. You can find the XGI Z9s driver in EasyBUILD 8.0 build 200. Please insert the EasyBUILD 8.0 build 200 into the optical drive.
2. Expand **Drivers -> Altos R5250 -> Graphics adapters -> XGI Z9s**, select **Windows Server 2008 x64** and click on **Setup**.
3. Click on **Display Driver** and follow the instruction to install the VGA driver.
4. Please reboot the server after the driver is installed.
5. After the system rebooted, you would see **XGI Z7/Z9/Z9s/Z11 v1.09.10** listed in Display adapters in **Device Manager**.

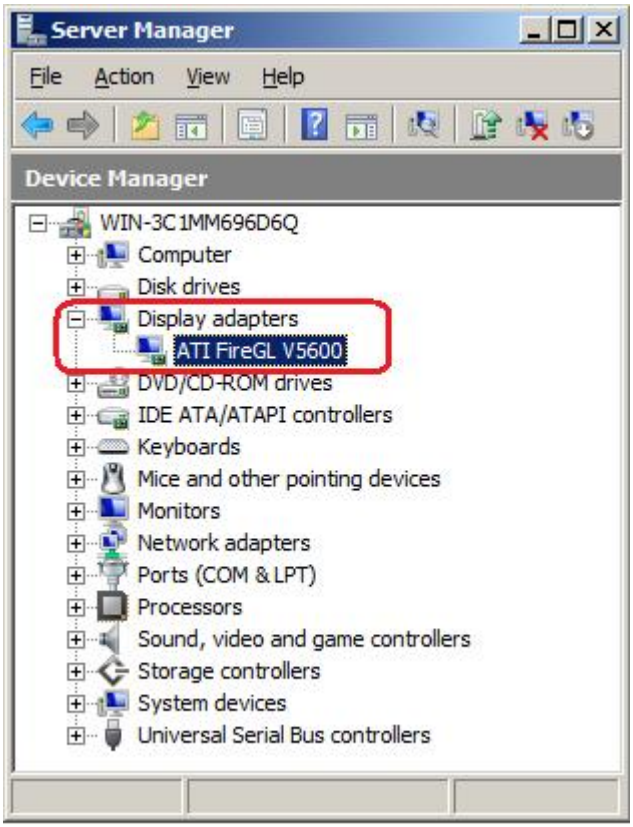
VGA Driver Installation (ATI FireGL V5600)

NOTE. With ATI FireGL V5600 installed, you need to disable onboard VGA controller first from BIOS before you install the ATI FireGL V5600 driver,

1. Press **F2** during the POST to enter the BIOS. After you entering the BIOS, select **Advanced** -> **PCI Configuration** -> **Onboard VGA Control**, press **Enter** and change the setting from Enabled to Disabled press. And then press **F10** to save configuration changes and reboot system.
2. After you reboot and entering the OS, you will see **Standard VGA Graphics Adapter** and one **Video Controller** under **Other Device** in Windows Server 2008 **Device Manager** for ATI FireGL V5600.



3. You can find the ATI FireGL V5600 driver in EasyBUILD 8.0 build 200. Please insert the EasyBUILD 8.0 build 200 into the optical drive.
4. Expand **Drivers -> Altos R5250 -> Graphics adapters -> ATI FireGL V5600**, select **Windows Server 2008 x64** and click on **Setup**.
5. Follow the instruction to install the VGA driver.
6. At **Select Components**, please click on **Express**.
7. Please reboot the server after the driver is installed. You would see **ATI FireGL V5600** in Display adapters in Device Manager.



RAID Utility Installation

1. For installing MegaRAID Storage Manager for SAS daughter board, please insert the EasyBUILD 8.0 build 200 into the optical drive.
2. Expand Utilities -> Altos R5250 -> SAS Daughter Board, select MegaRAID Storage Manager (Windows Server 2008 x64) and click on Setup.
3. Follow the instruction, accept the license agreement and use the default setting to the **Setup Type**.
4. At the **Setup Type**, please select **StandAlone**.
5. Follow the instruction again to complete the installation.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows Server 2008 Enterprise x64 Edition Installation (SAS RAID Daughter Board)

At current stage, SAS RAID daughter board driver for Windows Server 2008 is not ready.

Windows Server 2008 Enterprise x64 Edition Installation (with onboard SATA RAID)

Below information describes how to manually install Windows Server 2008 Enterprise x64 Edition on Altos R5250 with onboard SATA RAID.

BIOS Required

Altos R5250 BIOS P06 (or later) is required to support Windows Server 2008.

Drivers Required

For Windows 2008 x64 Installation, the following device drivers are required.

Device	Version	EasyBUILD Version
Onboard SATA RAID	10.3.51.1	EasyBUILD 8.0 build 200 (or later)
Chipset	Package 9.26	EasyBUILD 8.0 build 200 (or later)
Onboard Gigabit Ethernet	67.80.0.0	EasyBUILD 8.0 build 200 (or later)
Onboard VGA	6.14.10.1090	EasyBUILD 8.0 build 200 (or later)
ATI FireGL V5600	8.440.0.0	EasyBUILD 8.0 build 200 (or later)

Software Required

The management utility for onboard SATA RAID and NIC can be found in the EasyBUILD 8.0 build 200 (or later).

Software	Version	Directory on EasyBUILD
Onboard SATA RAID Utility	10.3.51.1	EasyBUILD 8.0 build 200 (or later)
ForceWare Network Access Manager	67.80.0.0	EasyBUILD 8.0 build 200 (or later)

Configuring onboard SATA RAID

Please refer to the Appendix A. for the onboard SATA RAID configuration.

Installation Tips

1. Though Windows Server can recognize the onboard SATA RAID, we still replace the driver with the one in EasyBUILD. Please make the driver diskette from the EasyBUILD 8.0 build 200 first before the installation.
2. Please boot the system form the Windows Server 2008 x64 CD/DVD. Follow the instructions to do the installation.
3. When you see the "**Where do you want to install Windows?**" on the screen, please insert the driver diskette and click on **Load Driver**.
4. Click on OK. You will see the NVIDIA nForce RAID Controller (A:\nvrd64.inf), NVIDIA nForce RAID Device (A:\nvrd64.inf) and NVIDIA nForce Serial ATA Controller (A:\nvrd64.inf) listed.

5. Please hold the **ctrl** key to select all of listed driver and click on **Next** to load the driver.
6. After the driver is loaded and returned to "**Where do you want to install Windows?**" page, click on **Next** to continue the installation.
7. Follow the instructions to finish the installation.

Chipset Driver Installation

Please refer to the Windows Server 2008 Enterprise x64 Edition (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver will be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard VGA)

Please refer to the Windows Server 2008 Enterprise x64 Edition (SAS Daughter Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5600)

Please refer to the Windows Server 2008 Enterprise x64 Edition (SAS Daughter Board) ATI FireGL V5600 Driver Installation section.

RAID Utility Installation

The onboard SATA RAID utility is included in the chipset driver package. The onboard SATA RAID utility will be installed automatically when you installing the chipset driver package.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows Server 2008 Enterprise x64 Edition Installation (with LSI MegaRAID SAS 8204ELP)

Below information describes how to manually install Windows Server 2008 Enterprise x64 Edition on Altos R5250 with LSI MegaRAID SAS 8204ELP.

BIOS Required

Altos R5250 BIOS P06 (or later) is required to support Windows Server 2008.

Drivers Required

For Windows 2008 x64 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD

LSI MegaRAID SAS 8204ELP	09.32.0207.2007	EasyBUILD 8.0 build 200 (or later)
Chipset	Package 9.26	EasyBUILD 8.0 build 200 (or later)
Onboard Gigabit Ethernet	67.80.0.0	EasyBUILD 8.0 build 200 (or later)
Onboard VGA s	6.14.10.1090	EasyBUILD 8.0 build 200 (or later)
ATI FireGL V5600	8.440.0.0	EasyBUILD 8.0 build 200 (or later)

Software Required

The management utility for LSI MegaRAID SAS 8204ELP and NIC can be found in the EasyBUILD 8.0 build 200 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.63	EasyBUILD 8.0 build 200 (or later)
ForceWare Network Access Manager	67.80	EasyBUILD 8.0 build 200 (or later)

Configuring LSI MegaRAID SAS 8204ELP

Please refer to the Appendix D. for the LSI MegaRAID SAS 8204ELP configuration.

Installation Tips

1. Though Windows Server can recognize the LSI MegaRAID SAS 8204ELP, we still need to replace the driver with the one in EasyBUILD. Please make the driver diskette from the EasyBUILD 8.0 build 200 first before the installation.
2. Please boot the system form the Windows Server 2008 x64 CD/DVD. Follow the instructions to do the installation.
3. When you see the "**Where do you want to install Windows?**" on the screen, please insert the driver diskette and click on **Load Driver**.
4. Click on **OK**. You will see the supported devices listed.
5. Select "LSI Logic MegaRAID SAS 8208ELP and 8204ELP (A:\MegaSR.INF)" and click on Next.
6. Please hold the **ctrl** key to select all of listed driver and click on **Next** to load the driver.
7. After the driver is loaded and returned to "**Where do you want to install Windows?**" page, click on **Next** to continue the installation.
8. Follow the instructions to finish the installation.

Chipset Driver Installation

Please refer to the Windows Server 2008 Enterprise x64 Edition (SAS Daughter

Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard VGA)

Please refer to the Windows Server 2008 Enterprise x64 Edition (SAS Daughter Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5600)

Please refer to the Windows Server 2008 Enterprise x64 Edition (SAS Daughter Board) ATI FireGL V5600 Driver Installation section.

RAID Utility Installation

Please refer to the Windows Server 2008 x64Enterprise Edition (SAS Daughter Board) RAID Utility Installation section.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows Server 2008 Enterprise x64 Edition Installation (with LSI MegaRAID SAS 8708ELP)

Below information describes how to manually install Windows Server 2008 Enterprise x64 Edition on Altos R5250 with LSI MegaRAID SAS 8708ELP.

BIOS Required

Altos R5250 BIOS P06 (or later) is required to support Windows Server 2008.

Drivers Required

For Windows 2008 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
LSI MegaRAID SAS 8208ELP	2.20.0.64	EasyBUILD 8.0 build 200 (or later)
Chipset	Package 9.26	EasyBUILD 8.0 build 200 (or later)
Onboard Gigabit Ethernet	67.80.0.0	EasyBUILD 8.0 build 200 (or later)
Onboard VGA s	6.14.10.1090	EasyBUILD 8.0 build 200 (or later)
ATI FireGL V5600	8.440.0.0	EasyBUILD 8.0 build 200 (or later)

Software Required

The management utility for LSI MegaRAID SAS 8708ELP and NIC can be found

in the EasyBUILD 8.0 build 200 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.63	EasyBUILD 8.0 build 200 (or later)
ForceWare Network Access Manager	67.80	EasyBUILD 8.0 build 200 (or later)

Configuring LSI MegaRAID SAS 8708ELP

Please refer to the Appendix E. for the LSI MegaRAID SAS 8708ELP configuration.

Installation Tips

1. Though Windows Server can recognize the LSI MegaRAID SAS 8708ELP, we still need to replace the driver with the one in EasyBUILD. Please make the driver diskette from the EasyBUILD 8.0 build 200 first before the installation.
2. Please boot the system form the Windows Server 2008 x64 CD/DVD. Follow the instructions to do the installation.
3. When you see the "**Where do you want to install Windows?**" on the screen, please insert the driver diskette and click on **Load Driver**.
4. Click on **OK**. You will see the supported devices listed.
5. Select "LSI Logic MegaRAID SAS 8708ELP RAID Controller (A:\oemsetup.inf)" and click on Next.
6. Please hold the **ctrl** key to select all of listed driver and click on **Next** to load the driver.
7. After the driver is loaded and returned to "**Where do you want to install Windows?**" page, click on **Next** to continue the installation.
8. Follow the instructions to finish the installation.

Chipset Driver Installation

Please refer to the Windows Server 2008 Enterprise x64 Edition (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard VGA)

Please refer to the Windows Server 2008 Enterprise x64 Edition (SAS Daughter Board) XGI Z9x Driver Installation section.

VGA Driver Installation (ATI FireGL V5600)

Please refer to the Windows Server 2008 Enterprise x64 Edition (SAS Daughter Board) ATI FireGL v5600 Driver Installation section.

RAID Utility Installation

Please refer to the Windows Server 2008 Enterprise x64 Edition (SAS Daughter Board) RAID Utility Installation section.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows Server 2008 Enterprise Edition Installation (SAS Daughter Board)

Below information describes how to manually install Windows Server 2008 Enterprise Edition on Altos R5250 with SAS daughter board.

BIOS Required

Altos R5250 BIOS P06 (or later) is required to support Windows Server 2008.

Drivers Required

For Windows Server 2008 Installation, the following device drivers are required.

Device	Version	EasyBUILD Version
SAS Daughter Board	1.26.05.00	EasyBUILD 8.0 build 200 (or later)
Chipset	Package 9.26	EasyBUILD 8.0 build 200 (or later)
Onboard Gigabit Ethernet	67.80.0.0	EasyBUILD 8.0 build 200 (or later)
Onboard VGA	6.14.10.1090	EasyBUILD 8.0 build 200 (or later)
ATI FireGL V5600	8.440.0.0	EasyBUILD 8.0 build 200 (or later)

Software Required

The management utility for SAS daughter board and NIC can be found in the EasyBUILD 8.0 build 200 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.63	EasyBUILD 8.0 build 200 (or later)
ForceWare Network Access Manager	67.80.0.0	EasyBUILD 8.0 build 200 (or later)

Configuring SAS Daughter Board

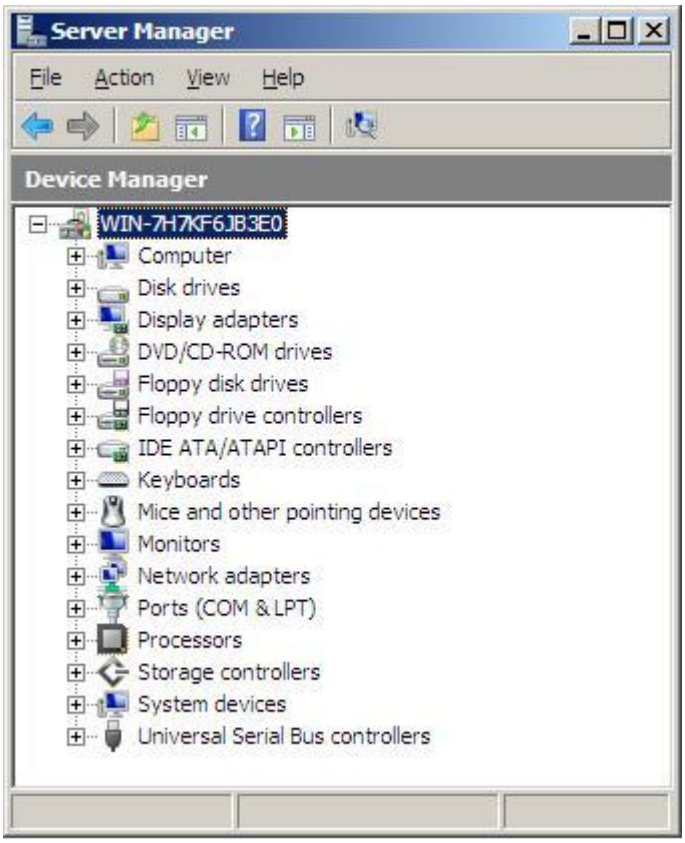
Please refer to the Appendix B. for the SAS daughter board configuration.

Installation Tips

1. Though Windows Server can recognize the SAS daughter board controller, we still need to replace the driver with the one in EasyBUILD. Please make the driver diskette from the EasyBUILD 8.0 build 200 first before the installation.
2. Please boot the system form the Windows Server 2008 CD/DVD. Follow the instructions to do the installation.
3. When you see the "**Where do you want to install Windows?**" on the screen, please insert the driver diskette and click on **Load Driver**.
4. Click on **OK**. You will see the supported devices listed.
5. Select "LSI Adapter,SAS 3000 series, 8-port with 1068E - StorPort (A:\lsi_sas.inf)" and click on Next.
6. Please hold the **ctrl** key to select all of listed driver and click on **Next** to load the driver.
7. After the driver is loaded and returned to "**Where do you want to install Windows?**" page, click on **Next** to continue the installation.
8. Follow the instructions to finish the installation.

Chipset Driver Package Installation

1. Though Windows Server 2008 has built-in driver for onboard chipset and can recognize the onboard gigabit Ethernet controller, we still need to replace the driver with the one in EasyBUILD.
2. After the installation completes, you would see the following devices in Device Manager without any yellow mark.



3. Please insert the EasyBUILD 8.0 build 200 into the optical drive
4. Expand **Drivers -> Altos R5250 -> Chipset**, select **Windows Server 2008** and click on **Setup**.
5. Follow the instruction and use the default setting to install all of the drivers and utilities in the driver package.
6. After all drivers and utilities are installed, please reboot the system.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard VGA)

1. Windows will treat onboard VGA as Standard VGA device. You can find the XGI Z9s driver in EasyBUILD 8.0 build 200. Please insert the EasyBUILD 8.0 build 200 into the optical drive.
2. Expand Drivers -> Altos R5250 -> Graphics adapters -> XGI Z9s, select Windows Server 2008 and click on Setup.
3. Click on **Display Driver** and follow the instruction to install the VGA driver.

4. Please reboot the server after the driver is installed.

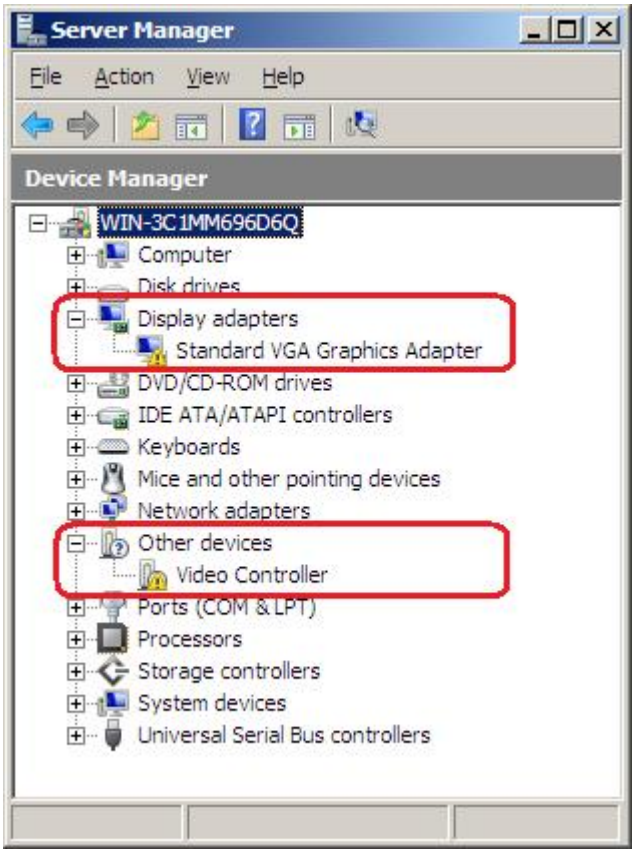
5. After the system rebooted, you would see **XGI Z7/Z9/Z9s/Z11 v1.09.10** listed in Display adapters in Device Manager.

VGA Driver Installation (ATI FireGL V5600)

NOTE. With ATI FireGL V5600 installed, you need to disable onboard VGA controller first from BIOS before you install the ATI FireGL V5600 driver,

1. Press **F2** during the POST to enter the BIOS. After you entering the BIOS, select **Advanced** -> **PCI Configuration** -> **Onboard VGA Control**, press **Enter** and change the setting from Enabled to Disabled press. And then press **F10** to save configuration changes and reboot system.

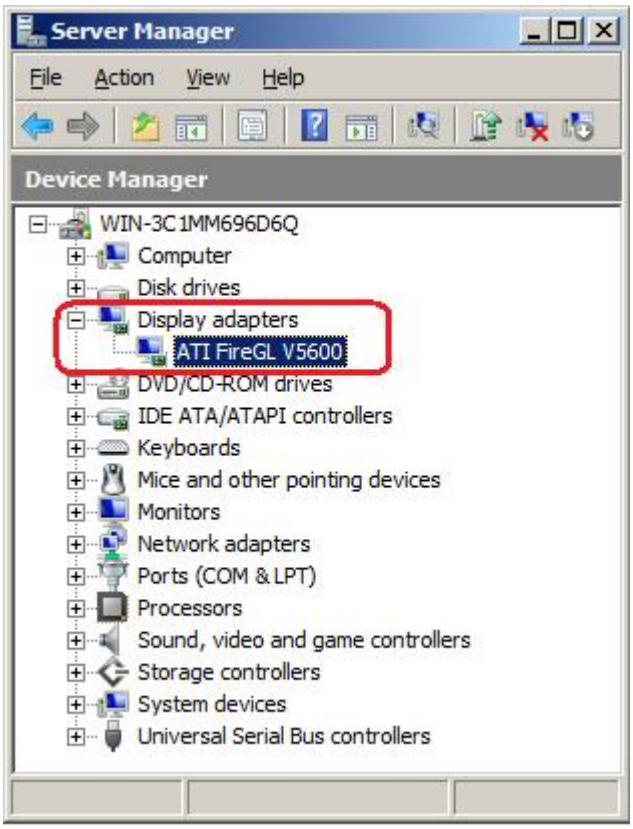
2. After you reboot and entering the OS, you will see **Standard VGA Graphics Adapter** and one **Video Controller** under **Other Device** in Windows Server 2008 **Device Manager** for ATI FireGL V5600.



3. You can find the ATI FireGL V5600 driver in EasyBUILD 8.0 build 200. Please insert the EasyBUILD 8.0 build 200 into the optical drive.

4. Expand **Drivers -> Altos R5250 -> Graphics adapters -> ATI FireGL V5600**, select **Windows Server 2008** and click on **Setup**.

5. Follow the instruction to install the VGA driver.
6. At **Select Components**, please click on **Express**.
7. Please reboot the server after the driver is installed. You would see **ATI FireGL V5600** in Display adapters in Device Manager.



RAID Utility Installation

1. For installing MegaRAID Storage Manager for SAS daughter board, please insert the EasyBUILD 8.0 build 200 into the optical drive.
2. Expand Utilities -> Altos R5250 -> SAS Daughter Board, select MegaRAID Storage Manager (Windows Server 2008) and click on Setup.
3. Follow the instruction, accept the license agreement and use the default setting to the **Setup Type**.
4. At the **Setup Type**, please select **StandAlone**.
5. Follow the instruction again to complete the installation.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows Server 2008 Enterprise Edition Installation (SAS RAID Daughter Board)

At current stage, SAS RAID daughter board driver for Windows Server 2008 is not ready.

Windows Server 2008 Enterprise Edition Installation (with onboard SATA RAID)

Below information describes how to manually install Windows Server 2008 Enterprise Edition on Altos R5250 with onboard SATA RAID.

BIOS Required

Altos R5250 BIOS P06 (or later) is required to support Windows Server 2008.

Drivers Required

For Windows 2008 Installation, the following device drivers are required.

Device	Version	EasyBUILD Version
Onboard SATA RAID	10.3.51.1	EasyBUILD 8.0 build 200 (or later)
Chipset	Package 9.26	EasyBUILD 8.0 build 200 (or later)
Onboard Gigabit Ethernet	67.80.0.0	EasyBUILD 8.0 build 200 (or later)
Onboard VGA	6.14.10.1090	EasyBUILD 8.0 build 200 (or later)
ATI FireGL V5600	8.440.0.0	EasyBUILD 8.0 build 200 (or later)

Software Required

The management utility for onboard SATA RAID and NIC can be found in the EasyBUILD 8.0 build 200 (or later).

Software	Version	Directory on EasyBUILD
Onboard SATA RAID Utility	10.3.51.1	EasyBUILD 8.0 build 10.3.51.1 200 (or later)
ForceWare Network Access Manager	67.80.0.0	EasyBUILD 8.0 build 200 (or later)

Configuring onboard SATA RAID

Please refer to the Appendix A. for the onboard SATA RAID configuration.

Installation Tips

1. Though Windows Server can recognize the onboard SATA RAID, we still need to replace the driver with the one in EasyBUILD. Please make the driver diskette from the EasyBUILD 8.0 build 200 first before the installation.
2. Please boot the system form the Windows Server 2008 CD/DVD. Follow the instructions to do the installation.

3. When you see the "**Where do you want to install Windows?**" on the screen, please insert the driver diskette and click on **Load Driver**.
4. Click on OK. You will see the NVIDIA nForce RAID Controller (A:\nvrd32.inf), NVIDIA nForce RAID Device (A:\nvrd32.inf) and NVIDIA nForce Serial ATA Controller (A:\nvrd32.inf) listed.
5. Please hold the **ctrl** key to select all of listed driver and click on **Next** to load the driver.
6. After the driver is loaded and returned to "**Where do you want to install Windows?**" page, click on **Next** to continue the installation.
7. Follow the instructions to finish the installation.

Chipset Driver Installation

Please refer to the Windows Server 2008 Enterprise Edition (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver will be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard VGA)

Please refer to the Windows Server 2008 Enterprise Edition (SAS Daughter Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5600)

Please refer to the Windows Server 2008 Enterprise Edition (SAS Daughter Board) ATI FireGL V5600 Driver Installation section.

RAID Utility Installation

The onboard SATA RAID utility is included in the chipset driver package. The onboard SATA RAID utility will be installed automatically when you installing the chipset driver package.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows Server 2008 Enterprise Edition Installation (with LSI MegaRAID SAS 8204ELP)

Below information describes how to manually install Windows Server 2008 Enterprise Edition on Altos R5250 with LSI MegaRAID SAS 8204ELP.

BIOS Required

Altos R5250 BIOS P06 (or later) is required to support Windows Server 2008.

Drivers Required

For Windows 2008 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
LSI MegaRAID SAS 8204ELP	09.32.0207.2007	EasyBUILD 8.0 build 200 (or later)
Chipset	Package 9.26	EasyBUILD 8.0 build 200 (or later)
Onboard Gigabit Ethernet	67.80.0.0	EasyBUILD 8.0 build 200 (or later)
Onboard VGA s	6.14.10.1090	EasyBUILD 8.0 build 200 (or later)
ATI FireGL V5600	8.440.0.0	EasyBUILD 8.0 build 200 (or later)

Software Required

The management utility for LSI MegaRAID SAS 8204ELP and NIC can be found in the EasyBUILD 8.0 build 200 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.63	EasyBUILD 8.0 build 200 (or later)
ForceWare Network Access Manager	67.80	EasyBUILD 8.0 build 200 (or later)

Configuring LSI MegaRAID SAS 8204ELP

Please refer to the Appendix D. for the LSI MegaRAID SAS 8204ELP configuration.

Installation Tips

1. Though Windows Server can recognize the LSI MegaRAID SAS 8204ELP, we still need to replace the driver with the one in EasyBUILD. Please make the driver diskette from the EasyBUILD 8.0 build 200 first before the installation.
2. Please boot the system form the Windows Server 2008 CD/DVD. Follow the instructions to do the installation.
3. When you see the "**Where do you want to install Windows?**" on the screen, please insert the driver diskette and click on **Load Driver**.
4. Click on **OK**. You will see the supported devices listed.
5. Select "LSI Logic MegaRAID SAS 8208ELP and 8204ELP (A:\MegaSR.INF)" and click on Next.
6. Please hold the **ctrl** key to select all of listed driver and click on **Next** to load the driver.

7. After the driver is loaded and returned to "**Where do you want to install Windows?**" page, click on **Next** to continue the installation.

8. Follow the instructions to finish the installation.

Chipset Driver Installation

Please refer to the Windows Server 2008 Enterprise Edition (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard VGA)

Please refer to the Windows Server 2008 Enterprise Edition (SAS Daughter Board) XGI Z9x Driver Installation section.

VGA Driver Installation (ATI FireGL V5600)

Please refer to the Windows Server 2008 Enterprise Edition (SAS Daughter Board) ATI FireGL V5600 Driver Installation section.

RAID Utility Installation

Please refer to the Windows Server 2008 Enterprise Edition (SAS Daughter Board) RAID Utility Installation section.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows Server 2008 Enterprise Edition Installation (with LSI MegaRAID SAS 8708ELP)

Below information describes how to manually install Windows Server 2008 Enterprise Edition on Altos R5250 with LSI MegaRAID SAS 8708ELP.

BIOS Required

Altos R5250 BIOS P06 (or later) is required to support Windows Server 2008.

Drivers Required

For Windows 2008 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
LSI MegaRAID SAS 8208ELP	2.20.0.32	EasyBUILD 8.0 build 200 (or later)

Chipset	Package 9.26	EasyBUILD 8.0 build 200 (or later)
Onboard Gigabit Ethernet	67.80.0.0	EasyBUILD 8.0 build 200 (or later)
Onboard VGA	6.14.10.1090	EasyBUILD 8.0 build 200 (or later)
ATI FireGL V5600	8.440.0.0	EasyBUILD 8.0 build 200 (or later)

Software Required

The management utility for LSI MegaRAID SAS 8204ELP and NIC can be found in the EasyBUILD 8.0 build 200 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.63	EasyBUILD 8.0 build 200 (or later)
ForceWare Network Access Manager	67.80	EasyBUILD 8.0 build 200 (or later)

Configuring LSI MegaRAID SAS 8708ELP

Please refer to the Appendix E. for the LSI MegaRAID SAS 8708ELP configuration.

Installation Tips

1. Though Windows Server can recognize the LSI MegaRAID SAS 8708ELP, we still need to replace the driver with the one in EasyBUILD. Please make the driver diskette from the EasyBUILD 8.0 build 200 first before the installation.
2. Please boot the system form the Windows Server 2008 CD/DVD. Follow the instructions to do the installation.
3. When you see the "**Where do you want to install Windows?**" on the screen, please insert the driver diskette and click on **Load Driver**.
4. Click on **OK**. You will see the supported devices listed.
5. Select "LSI Logic MegaRAID SAS 8708ELP RAID Controller (A:\oemsetup.inf)" and click on Next.
6. Please hold the **ctrl** key to select all of listed driver and click on **Next** to load the driver.
7. After the driver is loaded and returned to "**Where do you want to install Windows?**" page, click on **Next** to continue the installation.
8. Follow the instructions to finish the installation.

Chipset Driver Installation

Please refer to the Windows Server 2008 Enterprise Edition (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard VGA)

Please refer to the Windows Server 2008 Enterprise Edition (SAS Daughter Board) XGI Z9x Driver Installation section.

VGA Driver Installation (ATI FireGL V5600)

Please refer to the Windows Server 2008 Enterprise Edition (SAS Daughter Board) ATI FireGL v5600 Driver Installation section.

RAID Utility Installation

Please refer to the Windows Server 2008 Enterprise Edition (SAS Daughter Board) RAID Utility Installation section.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows Server 2003 R2 Enterprise x64 Edition SP2 Installation (SAS Daughter Board)

Below information describes how to manually install Windows Server 2003 R2 Enterprise x64 Edition on Altos R5250 with SAS daughter board installed.

Drivers Required

For Windows 2003 x64 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS Daughter Board	1.25.10.00	\Disk\r5250\sas\sas1068\x64\ws03\
Onboard NVIDIA NFP3600 Chipset	Package 9.18	Disk\R5250\onboard\Chipset\x64\ws03\
Onboard NVIDIA nForce Networking Controller	65.2.0.0	Including in chipset driver package 9.18
Onboard XGI Z9s	6.14.10.900	\Disk\r5250\onboard\xgiz9s\x64\ws03\
ATI FireGL V5200	8.323.1.0	\Disk\R5250\graphic\V5200\x64\ws03\

Software Required

The management utility for SAS daughter board and NIC can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD

MegaRAID Storage Manager	2.30	\app\R5250\sas\lsi1068\Windows\
ForceWare Network Access Manager	65.16	Including in chipset driver package 9.18

Configuring SAS Daughter Board

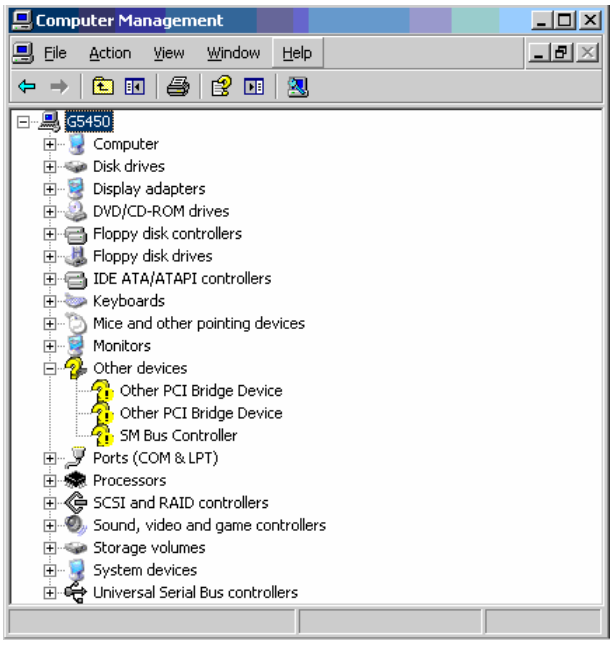
Please refer to the Appendix B. for the SAS daughter board configuration.

Installation Tips

1. As Windows Server 2003 R2 x64 can't recognize the SAS daughter board, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Press F6 at the beginning of installation for providing the driver diskette for the SAS daughter board.
3. Select "**LSI Fusion-MPT SAS Driver (Server 2003 x64)**" as target driver
4. After loading the RAID driver from diskette, follow the normal procedure to finish the installation.

Chipset Driver Package Installation

1. After the installation completes, you would see the following devices with yellow mark in Device Manager.



2. Please insert the EasyBUILD 8.0 build 100 into the optical drive
3. Expand **Drivers -> Altos R5250 -> Chipset**, select **Windows Server 2003 R2 x64** and click on **Setup**.

4. Follow the instruction and use the default setting to install all of the drivers and utilities in the driver package.
5. After all drivers and utilities are installed, please reboot the system.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

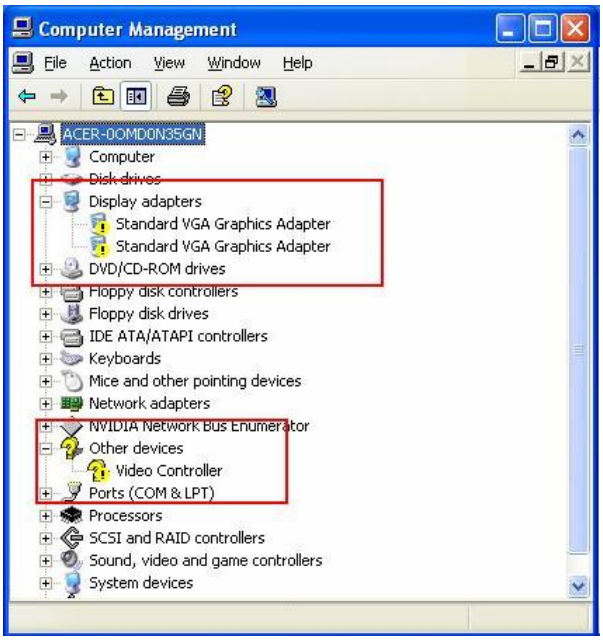
VGA Driver Installation (onboard XGI Z9s)

1. Windows will treat onboard VGA as Standard VGA device. You can find the XGI Z9s driver in EasyBUILD 8.0 build 100. Please insert the EasyBUILD 8.0 build 100 into the optical drive.
2. Expand **Drivers -> Altos R5250 -> Graphics adapters -> XGI Z9s**, select **Windows Server 2003 R2 x64** and click on **Setup**.
3. Click on **Display Driver** and follow the instruction to install the VGA driver.
4. Please reboot the server after the driver is installed.
5. After the system rebooted, you would see **XGI Z7/Z9/Z9s/Z11 v1.09.03** listed in Display adapters in Device Manager.

VGA Driver Installation (ATI FireGL V5200)

NOTE. With ATI FireGL V5200 installed, you need to disable onboard VGA controller first from BIOS before you install the ATI FireGL V5200 driver,

1. Press **F2** during the POST to enter the BIOS. After you entering the BIOS, select Advanced -> PCI Configuration -> Onboard VGA Control, press **Enter** and change the setting from Enabled to Disabled press. And then press **F10** to save configuration changes and reboot system.
2. After you reboot and entering the OS, you will see one **Standard VGA Graphics Adapter** and one **Video Controller** under **Other Device** in Windows Server 2003 x64 **Device Manager** for ATI FireGL V5200.



3. You can find the ATI FireGL V5200 driver in EasyBUILD 8.0 build 100. Please insert the EasyBUILD 8.0 build 100 into the optical drive.
4. Expand **Drivers -> Altos R5250 -> Graphics adapters -> ATI FireGL V5200**, select **Windows XP x64** and click on **Setup**.
5. Follow the instruction to install the VGA driver.
6. At **Select Components**, please click on **Express**.
7. Please reboot the server after the driver is installed. You would see **ATI FireGL V5200** and **ATI FireGL V5200 Secondary** listed in Display adapters in Device Manager.
8. After the system rebooted, if you see the following message on the screen.

9. Please right-click on desktop and select **Properties**.
10. Select Setting tab, Change the setting of Display to 1. Plug and Play Monitor and ATI FireGL V5200 and click on Advanced.
11. Select **Troubleshoot** tab, change the setting of the **Hardware acceleration** to **Full** and apply the setting. You will not see the message again.

12. Checking the Device Manager, you would see **ATI FireGL V5200** and **ATI FireGL V5200 Secondary** listed in Display adapters in Device Manager.
13. After you install the driver for ATI FireGL V5200, please also install the driver for onboard XGI Z9s.

RAID Utility Installation

1. For installing MegaRAID Storage Manager for SAS daughter board, please insert the EasyBUILD 8.0 build 100 into the optical drive.
2. Expand Utilities -> Altos R5250 -> SAS Daughter Board, select MegaRAID Storage Manager (Windows Server 2003 R2 x64) and click on Setup.
3. Follow the instruction, accept the license agreement and use the default setting to the **Setup Type**.
4. At the **Setup Type**, please select **StandAlone**.
5. Follow the instruction again to complete the installation.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows Server 2003 R2 Enterprise x64 Edition SP2 Installation (SAS RAID daughter board with i-Button)

Below information describes how to manually install Windows Server 2003 R2 Enterprise x64 Edition on Altos R5250 SAS RAID daughter board with i-Button.

Drivers Required

For Windows 2003 x64 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS RAID Daughter Board	09.25.1029.2007	\Disk\r5250\raid\sas1068\x64\ws03\
Onboard NVIDIA NFP3600 Chipset	Package 9.18	\Disk\R5250\onboard\Chipset\x64\ws03\
Onboard NVIDIA nForce Networking Controller	65.2.0.0	Including in chipset driver package 9.18
Onboard XGI Z9s	6.14.10.0900	\Disk\r5250\onboard\xgiz9s\x64\ws03\
ATI FireGL V5200	8.323.1.0	\Disk\R5250\graphic\V5200\x64\ws03\

Software Required

The management utility for SAS daughter board and NIC can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD

MegaRAID Storage Manager	2.30	\app\r5250\raid\lsi1068\Windows\
ForceWare Network Access Manager	65.16	Including in chipset driver package 9.18

Configuring SAS RAID daughter board

Please refer to the Appendix C. for the SAS RAID daughter board Configuration.

Installation Tips

1. As Windows Server 2003 R2 x64 can't recognize the SAS RAID daughter board, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Press F6 at the beginning of installation for providing the driver diskette for the SAS daughter board.
3. Select "LSI Embedded MegaRAID (Windows XP/2003 64-bit)" as target driver
4. After loading the RAID driver from diskette, follow the normal procedure to finish the installation.

Chipset Driver Installation

The chipset driver installation is the same as L SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise x64 Edition (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard XGI Z9s)

The XGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise x64 Edition (SAS Daughter Board) XGI Z9x Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise x64 Edition (SAS Daughter Board) ATI FireGL V5200 Driver Installation section.

RAID Utility Installation

The MegaRAID Storage Manager installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise x64 Edition (SAS Daughter Board) RAID Utility Installation section.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows Server 2003 R2 Enterprise x64 Edition SP2 Installation (with onboard SATA RAID)

Below information describes how to manually install Windows Server 2003 R2 Enterprise x64 Edition on Altos R5250 with onboard SATA RAID.

Drivers Required

For Windows 2003 x64 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
Onboard SATA RAID	5.10.2600.678	\Disk\R5250\onboard\sataraid\x64\ws03\
Onboard NVIDIA NFP 3600 Chipset	Package 9.18	\Disk\R5250\onboard\Chipset\x64\ws03\
Onboard NVIDIA nForce Networking Controller	65.2.0.0	Including in chipset driver package 9.18
Onboard XGI Z9s	6.14.10.900	\Disk\r5250\onboard\xgiz9s\x64\ws03\
ATI FireGL V5200	8.323.1.0	\Disk\R5250\graphic\V5200\x64\ws03\

Software Required

The management utility for onboard SATA RAID and NIC can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
Onboard SATA RAID Utility	5.10.2600.681	Including in chipset driver package 9.18
ForceWare Network Access Manager	65.16	Including in chipset driver package 9.18

Configuring onboard SATA RAID

Please refer to the Appendix A. for the onboard SATA RAID configuration.

Installation Tips

1. As Windows Server 2003 R2 x64 can't recognize the onboard SATA RAID, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Press F6 at the beginning of installation for providing the driver diskette for the onboard SATA RAID controller.
3. You will see NVIDA RAID CLASS Driver (required) and NVIDIA nForce Storage Controller (required) listed. Please select both of them to install.

4. After loading the onboard SATA RAID driver from diskette, follow the normal procedure to finish the installation.

Chipset Driver Installation

The chipset driver installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise x64 Edition (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver will be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard XGI Z9s)

The XGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise x64 Edition (SAS Daughter Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise x64 Edition (SAS Daughter Board) ATI FireGL V5200 Driver Installation section.

RAID Utility Installation

The onboard SATA RAID utility is included in the chipset driver package. The onboard SATA RAID utility will be installed automatically when you installing the chipset driver package.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows Server 2003 R2 Enterprise x64 Edition SP2 Installation (with LSI MegaRAID SAS 8204ELP)

Below information describes how to manually install Windows Server 2003 R2 Enterprise x64 Edition on Altos R5250 with LSI MegaRAID SAS 8204ELP.

Drivers Required

For Windows 2003 x64 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
LSI MegaRAID SAS 8204ELP	09.25.1029.2007	\Disk\R5250\sas\8204elp\x64\w2k3\
Onboard NVIDIA NFP3600 Chipset	Package 9.18	Disk\R5250\onboard\Chipset\x64\ws03\

Onboard NVIDIA nForce Networking Controller	65.2.0.0	Including in chipset driver package 9.18
Onboard XGI Z9s	6.14.10.900	\Disk\R5250\onboard\xgiz9s\x64\ws03\
ATI FireGL V5200	8.323.1.0	\Disk\R5250\graphic\V5200\x64\ws03\

Software Required

The management utility for LSI MegaRAID SAS 8204ELP and NIC can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\R5250\sas\8204ELP\Windows\
ForceWare Network Access Manager	65.16	Including in chipset driver package 9.18

Configuring LSI MegaRAID SAS 8204ELP

Please refer to the Appendix D. for the LSI MegaRAID SAS 8204ELP configuration.

Installation Tips

1. As Windows Server 2003 R2 x64 can't recognize the LSI MegaRAID SAS 8204ELP, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Press F6 at the beginning of installation for providing the driver diskette for the LSI MegaRAID SAS 8204ELP.
3. Select "LSI Embedded MegaRAID (Windows XP/2003 64-bit)" as target driver
4. After loading the RAID driver from diskette, follow the normal procedure to finish the installation.

Chipset Driver Installation

The chipset driver installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise x64 Edition (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard XGI Z9s)

The XGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise x64 Edition (SAS Daughter Board) XGI Z9x Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise x64 Edition (SAS Daughter Board) ATI FireGL V5200 Driver Installation section.

RAID Utility Installation

The MegaRAID Storage Manager installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise x64 Edition (SAS Daughter Board) RAID Utility Installation section.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows Server 2003 R2 Enterprise Edition SP2 Installation (SAS Daughter Board)

Below information describes how to manually install Windows Server 2003 R2 Enterprise Edition on Altos R5250 with SAS daughter board installed.

Drivers Required

For Windows 2003 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS Daughter Board	1.25.10.00	\Disk\r5250\sas\sas1068\x64\ws03\
Onboard NVIDIA NFP3600 Chipset	Package 9.21	\Disk\R5250\onboard\Chipset\ws03\
Onboard NVIDIA nForce Networking Controller	65.3.1.0	Including in chipset driver package 9.21
Onboard XGI Z9s	6.14.10.900	\Disk\R5250\onboard\xgiz9s\ws03\
ATI FireGL V5200	8.323.1.0	\Disk\R5250\graphic\V5200\ws03\

Software Required

The management utility for SAS daughter board can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\R5250\sas\lsi1068\Windows\
ForceWare Network Access Manager	65.31	Including in chipset driver package 9.21

Configuring SAS Daughter Board

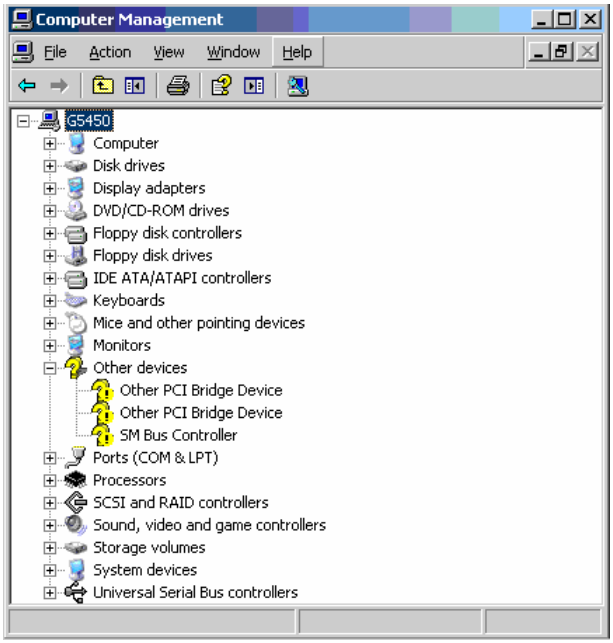
Please refer to the Appendix B. for the SAS daughter board configuration.

Installation Tips

1. As Windows Server 2003 can't recognize the SAS daughter board, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Press F6 at the start of installation to provide the driver disk for the SAS daughter board.
3. Select "**LSI Fusion-MPT SAS Driver (Server 2003 32-bit)**" as target driver
4. After loading the RAID driver from diskette, follow the normal procedure to finish the installation.

Chipset Driver Installation

1. After the installation completes, you would see the following devices with yellow mark in Device Manager.



2. Please insert the EasyBUILD 8.0 build 100 into the optical drive
3. Expand **Drivers -> Altos R5250 -> Chipset**, select **Windows Server 2003** and click on **Setup**.
4. Follow the instruction and use the default setting to install all of the drivers and utilities in the driver package.
5. After all drivers and utilities are installed, please reboot the system.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver will be installed automatically when you installing the

chipset driver package.

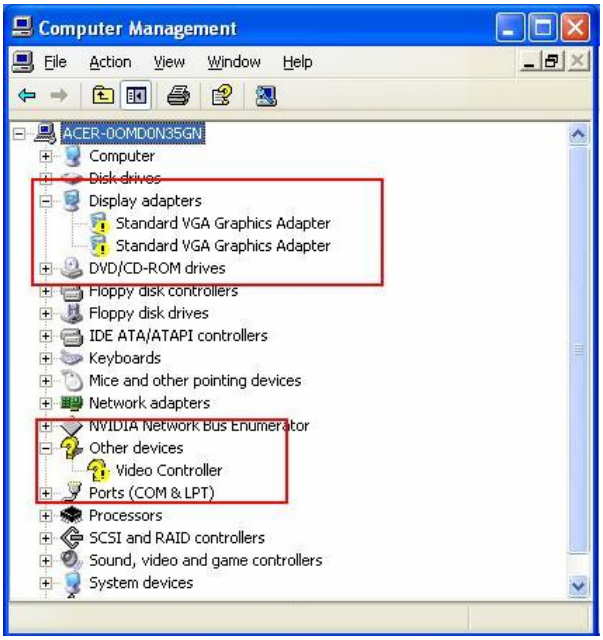
VGA Driver Installation (onboard XGI Z9s)

1. Windows 2003 will treat onboard VGA as Standard VGA device. You can find the XGI Z9s driver in EasyBUILD 8.0 build 100. Please insert the EasyBUILD 8.0 build 100 into the optical drive.
2. Expand **Drivers -> Altos R5250 -> Graphics adapters -> XGI Z9s**, select **Windows Server 2003** and click on **Setup**.
3. Follow the instruction to install the VGA driver.
4. Please reboot the server after the driver is installed.
5. After the system rebooted, you would see **XGI Z7/Z9/Z9s/Z11 v1.09.03** listed in Display adapters in Device Manager.

VGA Driver Installation (ATI FireGL V5200)

NOTE. With ATI FireGL V5200 installed, you need to disable onboard VGA controller first from BIOS before you install the ATI FireGL V5200 driver,

1. Press **F2** during the POST to enter the BIOS. After you entering the BIOS, select Advanced -> PCI Configuration -> Onboard VGA Control, press **Enter** and change the setting from Enabled to Disabled press. And then press **F10** to save configuration changes and reboot system.
2. After you reboot and entering the OS, you will see one **Standard VGA Graphics Adapter** and one **Video Controller** under **Other Device** in Windows Server 2003 **Device Manager** for ATI FireGL V5200.



3. You can find the ATI FireGL V5200 driver in EasyBUILD 8.0 build 100.

Please insert the EasyBUILD 8.0 build 100 into the optical drive.

4. Expand **Drivers -> Altos R5250 -> Graphics adapters -> ATI FireGL V5200**, select **Windows XP x64** and click on **Setup**.
5. Follow the instruction to install the VGA driver.
6. At **Select Components**, please click on **Express**.
7. Please reboot the server after the driver is installed. You would see **ATI FireGL V5200** and **ATI FireGL V5200 Secondary** listed in Display adapters in Device Manager.
8. After the system rebooted, if you see the following message on the screen.

9. Please right-click on desktop and select **Properties**.
10. Select Setting tab, Change the setting of Display to 1. Plug and Play Monitor and ATI FireGL V5200 and click on Advanced.
11. Select **Troubleshoot** tab, change the setting of the **Hardware acceleration** to **Full** and apply the setting. You will not see the message again.
12. Checking the Device Manager, you would see **ATI FireGL V5200** and **ATI FireGL V5200 Secondary** listed in Display adapters in Device Manager.

RAID Utility Installation

1. For installing MegaRAID Storage Manager for SAS daughter board, please insert the EasyBUILD 8.0 build 100 into the optical drive.
2. Expand **Utilities** -> **Altos R5250 -> SAS Daughter Board**, select **MegaRAID Storage Manager (Windows Server 2003)** and click on **Setup.**
3. Follow the instruction, accept the license agreement and use the default setting to the **Setup Type**.
4. At Setup Type, please select **StandAlone**.
5. Follow the instruction again to complete the installation.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows Server 2003 R2 Enterprise Edition SP2 Installation (SAS RAID daughter board with i-Button)

Below information describes how to manually install Windows Server 2003 R2 Enterprise Edition SP2 on Altos R5250 SAS RAID daughter board with i-Button.

Drivers Required

For Windows 2003 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS RAID Daughter Board	09.25.1029.2007	\Disk\r5250\raid\sas1068\ws03\
Onboard NVIDIA NFP3600 Chipset	Package 9.21	\Disk\R5250\onboard\Chipset\ws03\
Onboard NVIDIA nForce Networking Controller	65.3.1.0	Including in chipset driver package 9.21
Onboard XGI Z9s	6.14.10.900	\Disk\R5250\onboard\xgiz9s\ws03\
ATI FireGL V5200	8.323.1.0	\Disk\R5250\graphic\V5200\ws03\

Software Required

The management utility for SAS RAID daughter board and NIC can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\r5250\raid\lsi1068\Windows\
ForceWare Network Access Manager	65.31	Including in chipset driver package 9.21

Configuring SAS RAID Daughter Board

Please refer to the Appendix C. for the SAS RAID Daughter Board Configuration.

Installation Tips

1. As Windows Server 2003 can't recognize the SAS RAID daughter board, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Press F6 at the beginning of installation for providing the driver diskette for the SAS RAID daughter board.
3. Select "LSI Logic Embedded MegaRAID (Windows XP/2003)" as target driver
4. After loading the RAID driver from diskette, follow the normal procedure to finish the installation.

Chipset Driver Installation

The chipset driver installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise Edition (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard XGI Z9s)

The XGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise Edition (SAS Daughter Board) XGI Z9x Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS Daughter Board installed. Please refer to the Windows Server 2003 R2 Enterprise Edition (SAS Daughter Board) ATI FireGL V5200 Driver Installation section.

RAID Utility Installation

The MegaRAID Storage Manager installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise Edition (SAS Daughter Board) MegaRAID Storage Manager Installation section.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows Server 2003 R2 Enterprise Edition SP2 Installation (with onboard SATA RAID)

Below information describes how to manually install Windows Server 2003 R2 Enterprise Edition SP2 on Altos R5250 with onboard SATA RAID.

Drivers Required

For Windows 2003 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
Onboard SATA RAID	5.10.2600.687	\Disk\r5250\raid\sas1068\ws03\
Onboard NVIDIA NFP3600 Chipset	Package 9.21	\Disk\R5250\onboard\Chipset\ws03\
Onboard NVIDIA nForce Networking Controller	65.3.1.0	Including in chipset driver package 9.21

Onboard XGI Z9s	6.14.10.900	\Disk\R5250\onboard\xgiz9s\ws03\
ATI FireGL V5200	8.323.1.0	\Disk\R5250\graphic\V5200\ws03\

Software Required

The management utility for onboard SATA RAID and NIC can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
Onboard SATA RAID Utility	5.10.2600.687	Including in chipset driver package 9.21
ForceWare Network Access Manager	65.31	Including in chipset driver package 9.21

Configuring onboard SATA RAID

Please refer to the Appendix A. for the onboard SATA RAID configuration.

Installation Tips

1. As Windows Server 2003 can't recognize the onboard SATA RAID, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Press F6 at the beginning of installation for providing the driver diskette for the onboard SATA RAID controller.
3. You will see NVIDA RAID CLASS Driver (required) and NVIDIA nForce Storage Controller (required) listed. Please select both of them to install.
4. After loading the onboard SATA RAID driver from diskette, follow the normal procedure to finish the installation.

Chipset Driver Installation

The chipset driver installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise Edition SP2 (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard XGI Z9s)

The XGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise Edition (SAS Daughter Board) XGI Z9x Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise Edition (SAS

Daughter Board) ATI FireGL V5200 Driver Installation section.

RAID Utility Installation

The onboard SATA RAID utility is included in the chipset driver package. The onboard SATA RAID utility will be installed automatically when you installing the chipset driver package.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows Server 2003 R2 Enterprise Edition SP2 Installation (with LSI MegaRAID SAS 8204ELP)

Below information describes how to manually install Windows Server 2003 R2 Enterprise Edition SP2 on Altos R5250 with LSI MegaRAID SAS 8204ELP.

Drivers Required

For Windows 2003 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
LSI MegaRAID SAS 8204ELP	09.25.1029.2007	\Disk\R5250\sas\8204elp\w2k3\
Onboard NVIDIA NFP3600 Chipset	Package 9.21	\Disk\R5250\onboard\Chipset\ws03\
Onboard NVIDIA nForce Networking Controller	65.3.1.0	Including in chipset driver package 9.21
Onboard XGI Z9s	6.14.10.900	\Disk\R5250\onboard\xgiz9s\ws03\
ATI FireGL V5200	8.323.1.0	\Disk\R5250\graphic\V5200\ws03\

Software Required

The management utility for LSI MegaRAID SAS 8204ELP and NIC can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\R5250\sas\8204ELP\Windows\
ForceWare Network Access Manager	65.31	Including in chipset driver package 9.21

Configuring LSI MegaRAID SAS 8204ELP

Please refer to the Appendix D. for the LSI MegaRAID SAS 8204ELP configuration.

Installation Tips

1. As Windows Server 2003 can't recognize the LSI MegaRAID SAS 8204ELP, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Press F6 at the beginning of installation for providing the driver diskette for the LSI MegaRAID SAS 8204ELP.
3. Select "LSI Embedded MegaRAID (Windows XP/2003)" as target driver
4. After loading the RAID driver from diskette, follow the normal procedure to finish the installation.

Chipset Driver Installation

The chipset driver installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise Edition (with SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard XGI Z9s)

The XGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise Edition (with SAS Daughter Board) XGI Z9x Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise Edition (with SAS Daughter Board) ATI FireGL V5200 Driver Installation section.

RAID Utility Installation

The MegaRAID Storage Manager installation is the same as SAS daughter board installed. Please refer to the Windows Server 2003 R2 Enterprise Edition (with SAS Daughter Board) MegaRAID Storage Manager Installation section.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows 2000 Advanced Server SP4 Installation (SAS Daughter Board)

Below information describes how to manually install Microsoft Windows 2000 Advanced Server SP4 on Altos R5250 with SAS daughter board installed.

Drivers Required

For Windows 2000 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS Daughter Board	1.25.10.0	\Disk\r5250\sas\sas1068\ws2k\
Onboard NVIDIA NFP 3600 Chipset	Package 9.21	\Disk\R5250\onboard\Chipset\ws2k\
Onboard NVIDIA nForce Networking Controller	65.3.1.0	Including in chipset driver package 9.21
Onboard XGI Z9s	6.14.10.900	\Disk\R5250\onboard\xgiz9s\ws2k\
ATI FireGL V5200	8.323.1.0	\Disk\R5250\graphic\V5200\ws2k\

Software Required

The management utility of SAS daughter board can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\R5250\sas\lsi1068\Windows\
ForceWare Network Access Manager	65.31	Including in chipset driver package 9.21

Configuring SAS Daughter Board

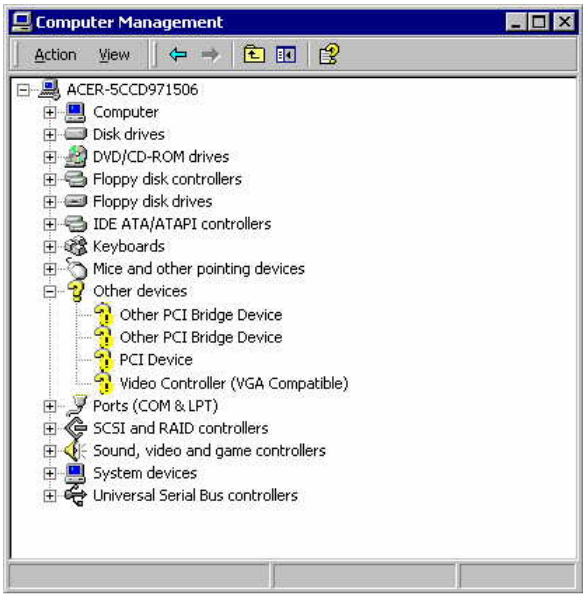
Please refer to the Appendix B. for the SAS daughter board configuration.

Installation Tips

1. As Windows 2000 can't recognize the SAS daughter board, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Press F6 at the start of installation to provide the driver disk for the SAS daughter board.
3. Select "**LSI Fusion-MPT Driver for SAS 1068E**" as target driver
4. After loading the driver from diskette, follow the normal procedure to finish the installation.

Chipset Driver Installation

1. After the installation completes, you would see the following other devices listed in Device Manager.



2. Please insert the EasyBUILD 8.0 build 100 (or later) into the optical drive
3. Expand **Drivers -> Altos R5250 -> Chipset** and double-click on **Windows 2000**.
4. Follow the instruction and use the default setting to install all of the drivers and utilities in the driver package.
5. After all drivers and utilities are installed, please reboot the system.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

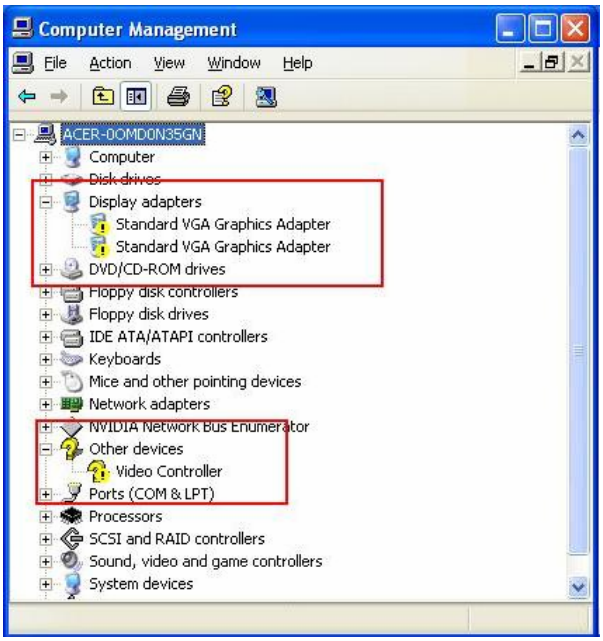
VGA Driver Installation (onboard ZGI Z9s)

1. Windows 2000 cannot recognize the onboard VGA. You can find the XGI Z9s driver in EasyBUILD 8.0 build 100. Please insert the EasyBUILD 8.0 build 100 into the optical drive.
2. Expand **Drivers -> Altos R5250 -> Graphics adapters -> XGI Z9s**, select **Windows 2000** and click on **Setup**.
3. Follow the instruction to install the VGA driver.
4. Please reboot the server after the driver is installed.
5. After the system rebooted, you would see **XGI Z7/Z9/Z9s/Z11 v1.09.03** listed in Display adapters in Device Manager.

VGA Driver Installation (ATI FireGL V5200)

NOTE. With ATI FireGL V5200 installed, you need to disable onboard VGA controller first from BIOS before you install the ATI FireGL V5200 driver,

1. Press **F2** during the POST to enter the BIOS. After you entering the BIOS, select Advanced -> PCI Configuration -> Onboard VGA Control, press **Enter** and change the setting from Enabled to Disabled press. And then press **F10** to save configuration changes and reboot system.
2. After you reboot and entering the OS, you will see one **Standard VGA Graphics Adapter** and one **Video Controller** under **Other Device** in Windows Server 2000 **Device Manager** for ATI FireGL V5200.



3. You can find the ATI FireGL V5200 driver in EasyBUILD 8.0 build 100. Please insert the EasyBUILD 8.0 build 100 into the optical drive.
4. Expand **Drivers -> Altos R5250 -> Graphics adapters -> ATI FireGL V5200**, select **Windows XP x64** and click on **Setup**.
5. Follow the instruction to install the VGA driver.
6. At **Select Components**, please click on **Express**.
7. Please reboot the server after the driver is installed. You would see **ATI FireGL V5200** and **ATI FireGL V5200 Secondary** listed in Display adapters in Device Manager.
8. After the system rebooted, if you see the following message on the screen.

9. Please right-click on desktop and select **Properties**.
10. Select Setting tab, Change the setting of Display to 1. Plug and Play Monitor and ATI FireGL V5200 and click on Advanced.
11. Select **Troubleshoot** tab, change the setting of the **Hardware acceleration** to **Full** and apply the setting. You will not see the message again.
12. Checking the Device Manager, you would see **ATI FireGL V5200** and **ATI FireGL V5200 Secondary** listed in Display adapters in Device Manager.

RAID Utility Installation

1. For installing the MegaRAID Storage Manager for the SAS daughter board, please insert the EasyBUILD 8.0 build 100 (or later) into the optical drive.
2. Expand **Utilities** -> **Altos R5250 -> SAS Daughter Board**, select **MegaRAID Storage Manger (Windows 2000)** and click on **Setup.**
3. Follow the instruction, accept the license agreement and use the default setting to the **Setup Type**.
4. At Setup Type, please select **StandAlone**.
5. Follow the instruction again to complete the installation.

Network Utility Installation

NOTE. ForceWare Network Access Manager only supports Microsoft Internet Explorer version 6.0 or later. If you want to use the ForceWare Network Access Manager with Windows 2000, you need to update the Microsoft Internet Explorer to version 6.0 or later.

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows 2000 Advanced Server SP4 Installation (SAS RAID daughter board with i-Button)

Below information describes how to manually install Windows 2000 Advanced Server SP4 on Altos R5250 SAS RAID daughter board with i-Button.

Drivers Required

For Windows 2000 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS RAID Daughter Board	09.25.1029.2007	\Disk\r5250\raid\sas1068\w2k\
Onboard NVIDIA NFP 3600 Chipset	Package 9.21	\Disk\R5250\onboard\Chipset\ws2k\
Onboard NVIDIA nForce Networking Controller	65.3.1.0	Including in chipset driver package 9.21
Onboard XGI Z9s	6.14.10.900	\Disk\R5250\onboard\xgiz9s\ws2k\
ATI FireGL V5200	8.323.1.0	\Disk\R5250\graphic\V5200\ws2k\

Software Required

The management utility for LSI MegaRAID SAS and NIC can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\r5250\raid\lsi1068\Windows\
ForceWare Network Access Manager	65.31	Including in chipset driver package 9.21

Configuring SAS RAID Daughter Board

Please refer to the Appendix C. for the SAS RAID Daughter Board Configuration.

Installation Tips

6. As Windows 2000 can't recognize the SAS RAID daughter board, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
7. Press F6 at the beginning of installation for providing the driver diskette for the SAS RAID daughter board.
8. Select "**LSI Logic Embedded MegaRAID (Windows 2000 SP4)**" as target driver
9. After loading the SAS driver from diskette, follow the normal procedure to finish the installation.

Chipset Driver Installation

The chipset driver installation is the same as SAS daughter board installed. Please refer to the Windows 2000 Advanced Server SP4 Installation (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing

the chipset driver package.

VGA Driver Installation (onboard ZGI Z9s)

The ZGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Windows 2000 Advanced Server SP4 Installation (SAS Daughter Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS daughter board installed. Please refer to the Windows 2000 Advanced Server SP4 Installation (SAS Daughter Board) ATI FireGL V5200 Driver Installation section.

RAID Utility Installation

The MegaRAID Storage Manager installation is the same as SAS daughter board installed. Please refer to the Windows 2000 Advanced Server SP4 Installation (SAS Daughter Board) RAID Utility Installation section.

Network Utility Installation

NOTE. ForceWare Network Access Manager only supports Microsoft Internet Explorer version 6.0 or later. If you want to use the ForceWare Network Access Manager with Windows 2000, you need to update the Microsoft Internet Explorer to version 6.0 or later.

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows 2000 Advanced Server SP4 Installation (with onboard SATA RAID)

Below information describes how to manually install Windows 2000 Advanced Server SP4 on Altos R5250 with onboard SATA RAID.

Drivers Required

For Windows 2000 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
Onboard SATA RAID	5.10.2600.687	\Disk\R5250\onboard\sataraid\ws2k\
Onboard NVIDIA NFP 3600 Chipset	Package 9.21	\Disk\R5250\onboard\Chipset\ws2k\
Onboard NVIDIA nForce Networking Controller	65.3.1.0	Including in chipset driver package 9.21
Onboard XGI Z9s	6.14.10.900	\Disk\R5250\onboard\xgiz9s\ws2k\
ATI FireGL V5200	8.323.1.0	\Disk\R5250\graphic\V5200\ws2k\

Software Required

The management utility for onboard SATA RAID and NIC can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
Onboard SATA RAID Utility	5.10.2600.687	Including in chipset driver package 9.21
ForceWare Network Access Manager	65.31	Including in chipset driver package 9.21

Configuring onboard SATA RAID

Please refer to the Appendix A. for the onboard SATA RAID configuration.

Installation Tips

1. As Windows 2000 can't recognize the onboard SATA RAID, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Press F6 at the beginning of installation for providing the driver diskette for the onboard SATARAID.
3. You will see NVIDA RAID CLASS Driver (required) and NVIDIA nForce Storage Controller (required) listed. Please select both of them to install.
4. After loading the onboard SATA RAID driver from diskette, follow the normal procedure to finish the installation.

Chipset Driver Installation

The chipset driver installation is the same as SAS daughter board installed. Please refer to the Windows 2000 Advanced Server SP4 Installation (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard ZGI Z9s)

The ZGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Windows 2000 Advanced Server SP4 Installation (SAS Daughter Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS daughter board installed. Please refer to the Windows 2000 Advanced Server SP4 Installation (SAS Daughter Board) ATI FireGL V5200 Driver Installation section.

RAID Utility Installation

The onboard SATA RAID utility is included in the chipset driver package. The onboard SATA RAID utility will be installed automatically when you installing the chipset driver package.

Network Utility Installation

NOTE. ForceWare Network Access Manager only supports Microsoft Internet Explorer version 6.0 or later. If you want to use the ForceWare Network Access Manager with Windows 2000, you need to update the Microsoft Internet Explorer to version 6.0 or later.

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows 2000 Advanced Server SP4 Installation (with LSI MegaRAID SAS 8204ELP)

Below information describes how to manually install Windows 2000 Advanced Server SP4 on Altos R5250 with LSI MegaRAID SAS 8204ELP.

Drivers Required

For Windows 2000 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
LSI MegaRAID SAS 8204ELP	09.25.1029.2007	\Disk\R5250\sas\8204elp\w2k\
Onboard NVIDIA NFP 3600 Chipset	Package 9.21	\Disk\R5250\onboard\Chipset\ws2k\
Onboard NVIDIA nForce Networking Controller	65.3.1.0	Including in chipset driver package 9.21
Onboard XGI Z9s	6.14.10.900	\Disk\R5250\onboard\xgiz9s\ws2k\
ATI FireGL V5200	8.323.1.0	\Disk\R5250\graphic\V5200\ws2k\

Software Required

The management utility for LSI MegaRAID SAS and NIC can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\R5250\sas\8204ELP\Windows\
ForceWare Network Access Manager	65.31	Including in chipset driver package 9.21

Configuring LSI MegaRAID SAS 8204ELP

Please refer to the Appendix D. for the LSI MegaRAID SAS 8204ELP

configuration.

Installation Tips

1. As Windows 2000 can't recognize the LSI MegaRAID SAS 8204ELP, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Press F6 at the beginning of installation for providing the driver diskette for the LSI MegaRAID SAS 8204ELP.
3. Select "**LSI Embedded MegaRAID (Windows 2000 SP4)**" as target driver
4. After loading the SAS driver from diskette, follow the normal procedure to finish the installation.

Chipset Driver Installation

The chipset driver installation is the same as SAS daughter board installed. Please refer to the Windows 2000 Advanced Server SP4 Installation (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard ZGI Z9s)

The ZGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Windows 2000 Advanced Server SP4 Installation (SAS Daughter Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS daughter board installed. Please refer to the Windows 2000 Advanced Server SP4 Installation (SAS Daughter Board) ATI FireGL V5200 Driver Installation section.

RAID Utility Installation

The MegaRAID Storage Manager installation is the same as SAS daughter board installed. Please refer to the Windows 2000 Advanced Server SP4 Installation (SAS Daughter Board) RAID Utility Installation section.

Network Utility Installation

NOTE. ForceWare Network Access Manager only supports Microsoft Internet Explorer version 6.0 or later. If you want to use the ForceWare Network Access Manager with Windows 2000, you need to update the Microsoft Internet Explorer to version 6.0 or later.

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed

automatically when you installing the chipset driver package.

Windows Vista Enterprise x64 Edition Installation (SAS Daughter Board)

Below information describes how to manually install Windows Vista Enterprise x64 Edition on Altos R5250 SAS daughter board installed.

Drivers Required

For Windows Vista x64 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS Daughter Board	1.25.10.00	\Disk\r5250\sas\sas1068\x64\vista\
Onboard NVIDIA NFP3600 Chipset	Package 1502	\Disk\R5250\onboard\Chipset\x64\vista\
Onboard NVIDIA nForce Networking Controller	65.7.4.0	Including in chipset driver package 1502
Onboard XGI Z9s	6.14.10.900	\Disk\r5250\onboard\xgiz9s\x64\vista\
ATI FireGL V5200	8.362.0.0	\Disk\R5250\graphic\V5200\x64\vista\

Software Required

The management utility for SAS Daughter Board can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\R5250\sas\lsi1068\Windows\

Configuring SAS Daughter Board

Please refer to the Appendix B. for the SAS Daughter Board Configuration.

Installation Tips

1. Though Windows Vista x64 can recognize the SAS daughter board controller, we still replace the driver with the one in EasyBUILD. Please make the driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Please boot the system form the Windows Vista x64 CD/DVD. Follow the instructions to do the installation.
3. When you see the "**Where do you want to install Windows?**" on the screen, please insert the driver diskette and click on **Load Driver**.
4. Click on **OK**. You will see the supported devices listed.
5. Select "**SAS DAUGHTER BOARD RAID (A:\oemsetup.inf)**" and click on **Next**.
6. After the driver is loaded and returned to "**Where do you want to install**

Windows?" page, click on **Next** to continue the installation.

7. Follow the instructions to finish the installation.

Chipset Driver Installation

1. Please insert the EasyBUILD 8.0 build 100 (or later) into the optical drive
2. Expand **Drivers -> Altos R5250 -> Chipset** and double-click on **Windows Vista x64**.
3. Follow the instruction and use the default setting to install all of the drivers and utilities in the driver package.
4. After all drivers and utilities are installed, please reboot the system.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

RAID Utility Installation

1. For installing the MegaRAID Storage Manager for the SAS daughter board, please insert the EasyBUILD 8.0 build 100 (or later) into the optical drive.
2. Expand **Utilities** -> **Altos R5250 -> SAS DAUGHTER BOARD**, select **MegaRAID Storage Manger (Windows Vista x64)** and click on **Setup.**
3. Follow the instruction, accept the license agreement and use the default setting to the **Setup Type**.
4. At Setup Type, please select **StandAlone**.
5. Follow the instruction again to complete the installation.

Windows Vista Enterprise x64 Edition Installation (SAS RAID Daughter Board)

Below information describes how to manually install Windows Vista Enterprise x64 Edition on Altos R5250 SAS RAID daughter board installed.

Drivers Required

For Windows Vista x64 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS RAID Daughter Board	09.25.1029.2007	\Disk\r5250\raid\sas1068\x64\vista\
Onboard NVIDIA NFP3600 Chipset	Package 1502	\Disk\R5250\onboard\Chipset\x64\vista\
Onboard NVIDIA nForce Networking	65.7.4.0	Including in chipset driver package 1502

Controller		
Onboard XGI Z9s	6.14.10.900	\Disk\r5250\onboard\xgiz9s\x64\vista\
ATI FireGL V5200	8.362.0.0	\Disk\R5250\graphic\V5200\x64\vista\

Software Required

The management utility for SAS RAID daughter board can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\r5250\raid\lsi1068\Windows\

Configuring SAS RAID Daughter Board

Please refer to the Appendix C. for the SAS Daughter Board Configuration.

Installation Tips

1. Though Windows Vista x64 can recognize the SAS RAID daughter board controller, we still replace the driver with the one in EasyBUILD. Please make the driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Please boot the system form the Windows Vista x64 CD/DVD. Follow the instructions to do the installation.
3. When you see the "**Where do you want to install Windows?**" on the screen, please insert the driver diskette and click on **Load Driver**.
4. Click on **OK**. You will see the supported devices listed.
5. Select "LSI Logic MegaRAID SAS 8208ELP and 8204ELP (A:\MegaSR.INF)" and click on Next.
6. After the driver is loaded and returned to "**Where do you want to install Windows?**" page, click on **Next** to continue the installation.
7. Follow the instructions to finish the installation.

Chipset Driver Installation

The chipset driver installation is the same as SAS daughter board installed. Please refer to the Windows Vista Enterprise x64 Edition Installation (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

RAID Utility Installation

The MegaRAID Storage Manager installation for SAS RAID daughter board is

the same as SAS daughter board installed. Please refer to the Windows Vista Enterprise x64 Edition Installation (SAS Daughter Board) RAID Utility Installation section.

Windows Vista Enterprise x64 Edition Installation (with onboard SATA RAID)

Below information describes how to manually install Windows Vista Enterprise x64 Edition on Altos R5250 with onboard SATA RAID.

Drivers Required

For Windows Vista x64 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
Onboard SATA RAID	5.10.2600.955	Disk\r5250\onboard\sataraid\x64\vista\
Onboard NVIDIA NFP3600 Chipset	Package 1502	\Disk\R5250\onboard\Chipset\x64\vista\
Onboard NVIDIA nForce Networking Controller	65.7.4.0	Including in chipset driver package 1502
Onboard XGI Z9s	6.14.10.900	\Disk\r5250\onboard\xgiz9s\x64\vista\
ATI FireGL V5200	8.362.0.0	\Disk\R5250\graphic\V5200\x64\vista\

Software Required

The management utility for onboard SATA RAID can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
Onboard SATA RAID Utility	1.4.6.08	Including in chipset driver package 1502

Configuring onboard SATA RAID

Please refer to the Appendix A. for the onboard SATA RAID configuration.

Installation Tips

1. Though Windows Vista x64 can recognize the onboard SATA RAID, we still replace the driver with the one in EasyBUILD. Please make the driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Please boot the system form the Windows Vista x64 CD/DVD. Follow the instructions to do the installation.
3. When you see the "**Where do you want to install Windows?**" on the screen, please insert the driver diskette and click on **Load Driver**.
4. Click on **OK**. You will see the **NVIDIA nForce RAID Controller (A:\nvrd64.inf)**, **NVIDIA nForce RAID Device (A:\nvrd64.inf)** and **NVIDIA nForce Serial ATA Controller (A:\nvrd64.inf)** listed.

5. Please hold the **ctrl** key to select all of listed driver and click on **Next** to load the driver.
6. After the driver is loaded and returned to "**Where do you want to install Windows?**" page, click on **Next** to continue the installation.
7. Follow the instructions to finish the installation.

Chipset Driver Installation

The chipset driver installation is the same as SAS daughter board installed. Please refer to the Windows Vista Enterprise x64 Edition Installation (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

RAID Utility Installation

The onboard SATA RAID utility is included in the chipset driver package. The onboard SATA RAID utility would be installed automatically when you installing the chipset driver package.

Windows Vista Enterprise Edition Installation (SAS Daughter Board)

Below information describes how to manually install Windows Vista Enterprise Edition on Altos R5250 SAS daughter board installed.

Drivers Required

For Windows Vista Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS Daughter Board	1.25.10.00	\Disk\r5250\sas\sas1068\vista\
Onboard NVIDIA NFP3600 Chipset	Package 1502	\Disk\R5250\onboard\Chipset\vista\
Onboard NVIDIA nForce Networking Controller	65.7.4.0	Including in chipset driver package 1502
Onboard XGI Z9s	6.14.10.900	\Disk\r5250\onboard\xgiz9s\vista\
ATI FireGL V5200	8.362.0.0	\Disk\R5250\graphic\V5200\vista\

Software Required

The management utility for SAS Daughter Board can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD

MegaRAID Storage Manager	2.30	\app\R5250\sas\lsi1068\Windows\

Configuring SAS Daughter Board

Please refer to the Appendix B. for the SAS Daughter Board Configuration.

Installation Tips

1. Though Windows Vista can recognize the SAS daughter board controller, we still replace the driver with the one in EasyBUILD. Please make the driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Please boot the system form the Windows Vista CD/DVD. Follow the instructions to do the installation.
3. When you see the "**Where do you want to install Windows?**" on the screen, please insert the driver diskette and click on **Load Driver**.
4. Click on **OK**. You will see the supported devices listed.
5. Select "**LSI Adapter, SAS 3000 series, 8-port with1068E –StorPort (A:\lsi_sas.inf)**" and click on **Next**.
6. After the driver is loaded and returned to "**Where do you want to install Windows?**" page, click on **Next** to continue the installation.
7. Follow the instructions to finish the installation.

Chipset Driver Installation

1. Please insert the EasyBUILD 8.0 build 100 (or later) into the optical drive
2. Expand **Drivers -> Altos R5250 -> Chipset** and double-click on **Windows Vista**.
3. Follow the instruction and use the default setting to install all of the drivers and utilities in the driver package.
4. After all drivers and utilities are installed, please reboot the system.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

RAID Utility Installation

1. For installing the MegaRAID Storage Manager for the SAS daughter board, please insert the EasyBUILD 8.0 build 100 (or later) into the optical drive.
2. Expand **Utilities** -> **Altos R5250 -> SAS DAUGHTER BOARD**, select **MegaRAID Storage Manger (Windows Vista x64)** and click on **Setup.**

3. Follow the instruction, accept the license agreement and use the default setting to the **Setup Type**.
4. At Setup Type, please select **StandAlone**.
5. Follow the instruction again to complete the installation.

Windows Vista Enterprise Edition Installation (SAS RAID Daughter Board)

Below information describes how to manually install Windows Vista Enterprise Edition on Altos R5250 SAS RAID daughter board installed.

Drivers Required

For Windows Vista Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS RAID Daughter Board	9.25.1029.2007	Disk\r5250\raid\sas1068\vista\
Onboard NVIDIA NFP3600 Chipset	Package 1502	\Disk\R5250\onboard\Chipset\vista\
Onboard NVIDIA nForce Networking Controller	65.7.4.0	Including in chipset driver package 1502
Onboard XGI Z9s	6.14.10.900	\Disk\r5250\onboard\xgiz9s\vista\
ATI FireGL V5200	8.362.0.0	\Disk\R5250\graphic\V5200\vista\

Software Required

The management utility for SAS RAID daughter board can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\r5250\raid\lsi1068\Windows\

Configuring SAS RAID Daughter Board

Please refer to the Appendix C. for the SAS Daughter Board Configuration.

Installation Tips

1. Though Windows Vista can recognize the SAS RAID daughter board controller, we still replace the driver with the one in EasyBUILD. Please make the driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Please boot the system form the Windows Vista CD/DVD. Follow the instructions to do the installation.
3. When you see the "**Where do you want to install Windows?**" on the screen, please insert the driver diskette and click on **Load Driver**.

4. Click on **OK**. You will see the supported devices listed.
5. Select "LSI Logic MegaRAID SAS 8208ELP and 8204ELP (A:\MegaSR.INF)" and click on Next.
6. After the driver is loaded and returned to "**Where do you want to install Windows?**" page, click on **Next** to continue the installation.
7. Follow the instructions to finish the installation.

Chipset Driver Installation

The chipset driver installation is the same as SAS daughter board installed. Please refer to the Windows Vista Enterprise Edition Installation (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

RAID Utility Installation

The MegaRAID Storage Manager installation for SAS RAID daughter board is the same as SAS daughter board installed. Please refer to the Windows Vista Enterprise Edition Installation (SAS Daughter Board) RAID Utility Installation section.

Windows Vista Enterprise Edition Installation (with onboard SATA RAID)

Below information describes how to manually install Windows Vista Enterprise Edition on Altos R5250 with onboard SATA RAID.

Drivers Required

For Windows Vista Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
Onboard SATA RAID	5.10.2600.955	\Disk\r5250\onboard\sataraid\vista\
Onboard NVIDIA NFP3600 Chipset	Package 1502	\Disk\R5250\onboard\Chipset\vista\
Onboard NVIDIA nForce Networking Controller	65.7.4.0	Including in chipset driver package 1502
Onboard XGI Z9s	6.14.10.0900	\Disk\r5250\onboard\xgiz9s\vista\
ATI FireGL V5200	8.362.0.0	\Disk\R5250\graphic\V5200\vista\

Software Required

The management utility for onboard SATA RAID can be found in the EasyBUILD

8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
Onboard SATA RAID Utility	1.4.6.08	Including in chipset driver package 1502

Configuring onboard SATA RAID

Please refer to the Appendix A. for the onboard SATA RAID configuration.

Installation Tips

1. Though Windows Vista can recognize the onboard SATA RAID, we still replace the driver with the one in EasyBUILD. Please make the driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Please boot the system form the Windows Vista CD/DVD. Follow the instructions to do the installation.
3. When you see the "**Where do you want to install Windows?**" on the screen, please insert the driver diskette and click on **Load Driver**.
4. Click on **OK**. You will see the **NVIDIA nForce RAID Controller (A:\nvrd32.inf)**, **NVIDIA nForce RAID Device (A:\nvrd32.inf)** and **NVIDIA nForce Serial A 艹 TA Controller (A:\nvrd32.inf)** listed.
5. **Please hold the Ctrl key** to select all of listed driver and click on **Next** to load the driver.
6. After the driver is loaded and returned to "**Where do you want to install Windows?**" page, click on **Next** to continue the installation.
7. Follow the instructions to finish the installation.

Chipset Driver Installation

The chipset driver installation is the same as SAS daughter board installed. Please refer to the Windows Vista Enterprise Edition Installation (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

RAID Utility Installation

The onboard SATA RAID utility is included in the chipset driver package. The onboard SATA RAID utility would be installed automatically when you installing the chipset driver package.

Windows XP Professional x64 Edition SP2 Installation (SAS Daughter Board)

Below information describes how to manually install Windows XP Professional x64 Edition on Altos R5250 SAS daughter board installed.

Drivers Required

For Windows XP x64 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS Daughter Board	1.25.10.00	\Disk\r5250\sas\sas1068\x64\vista
Onboard NVIDIA NFP3600 Chipset	Package 9.21	\Disk\R5250\onboard\Chipset\x64\wsxp\
Onboard NVIDIA nForce Networking Controller	65.3.1.0	Including in chipset driver package 9.21
Onboard XGI Z9s	6.14.10.900	\Disk\r5250\onboard\xgiz9s\x64\wsxp\
ATI FireGL V5200	8.323.1.0	\Disk\R5250\graphic\V5200\x64\wsxp\

Software Required

The management utility for SAS daughter board and NIC can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\R5250\sas\lsi1068\Windows\
ForceWare Network Access Manager	65.31	Including in chipset driver package 9.21

Configuring SAS Daughter Board

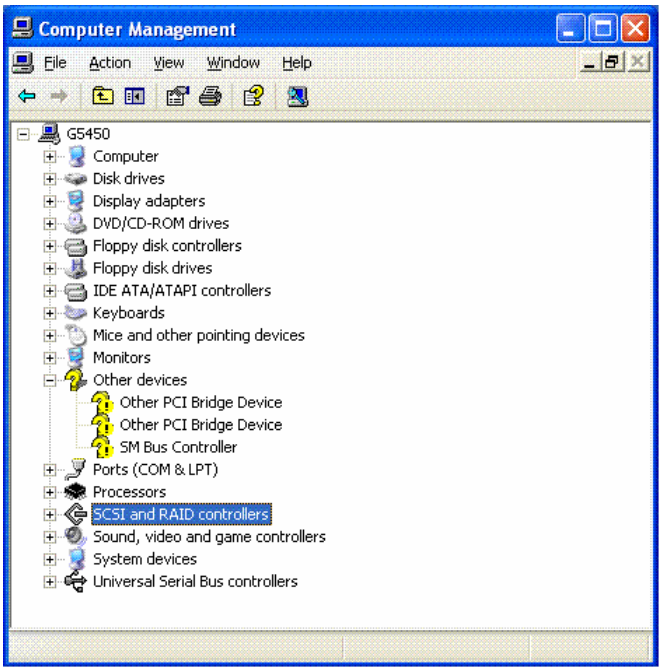
Please refer to the Appendix B. for the SAS Daughter Board Configuration.

Installation Tips

1. As Windows XP x64 can't recognize the SAS daughter board, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Press F6 at the beginning of installation for providing the driver diskette for the SAS DAUGHTER BOARD.
3. Select "**LSI Fusion-MPT SAS Driver (XP-64)**" as target driver
4. After loading the RAID driver from diskette, follow the normal procedure to finish the installation.

Chipset Driver Package Installation

1. After the installation completes, you would see the following devices with yellow mark in Device Manager.



2. Please insert the EasyBUILD 8.0 build 100 into the optical drive
3. Expand **Drivers -> Altos R5250 -> Chipset**, select **Windows XP x64** and click on **Setup**.
4. Follow the instruction and use the default setting to install all of the drivers and utilities in the driver package.
5. After all drivers and utilities are installed, please reboot the system.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

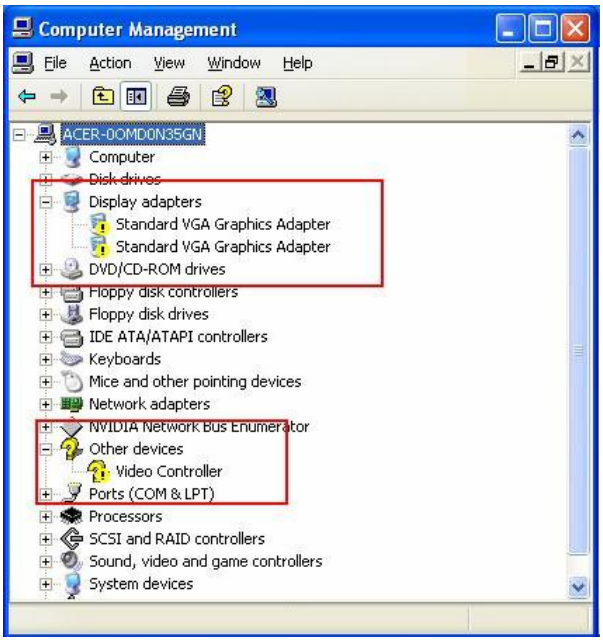
VGA Driver Installation (onboard XGI Z9s)

1. Windows XP x64 will treat onboard VGA as Standard VGA device. You can find the XGI Z9s driver in EasyBUILD 8.0 build 100. Please insert the EasyBUILD 8.0 build 100 into the optical drive.
2. Expand **Drivers -> Altos R5250 -> Graphics adapters -> XGI Z9s**, select **Windows XP x64** and click on **Setup**.
3. Follow the instruction to install the VGA driver.
4. Please reboot the server after the driver is installed.
5. After the system rebooted, you would see **XGI Z7/Z9/Z9s/Z11 v1.09.03** listed in Display adapters in Device Manager.

VGA Driver Installation (ATI FireGL V5200)

NOTE. With ATI FireGL V5200 installed, you need to disable onboard VGA controller first from BIOS before you install the ATI FireGL V5200 driver,

1. Press **F2** during the POST to enter the BIOS. After you entering the BIOS, select Advanced -> PCI Configuration -> Onboard VGA Control, press **Enter** and change the setting from Enabled to Disabled press. And then press **F10** to save configuration changes and reboot system.
2. After you reboot and entering the OS, you will see one **Standard VGA Graphics Adapter** and one **Video Controller** under **Other Device** in Windows XP **Device Manager** for ATI FireGL V5200.



3. You can find the ATI FireGL V5200 driver in EasyBUILD 8.0 build 100. Please insert the EasyBUILD 8.0 build 100 into the optical drive.
4. Expand **Drivers -> Altos R5250 -> Graphics adapters -> ATI FireGL V5200**, select **Windows XP x64** and click on **Setup**.
5. Follow the instruction to install the VGA driver.
6. At **Select Components**, please click on **Express**.
7. Please reboot the server after the driver is installed. You would see **ATI FireGL V5200** and **ATI FireGL V5200 Secondary** listed in Display adapters in Device Manager.
8. After the system rebooted, if you see the following message on the screen.

9. Please right-click on desktop and select **Properties**.
10. Select Setting tab, Change the setting of Display to 1. Plug and Play Monitor and ATI FireGL V5200 and click on Advanced.
11. Select **Troubleshoot** tab, change the setting of the **Hardware acceleration** to **Full** and apply the setting. You will not see the message again.
12. Checking the Device Manager, you would see **ATI FireGL V5200** and **ATI FireGL V5200 Secondary** listed in Display adapters in Device Manager.

RAID Utility Installation

1. For installing MegaRAID Storage Manager for SAS daughter board, please insert the EasyBUILD 8.0 build 100 into the optical drive.
2. Expand **Utilities** -> **Altos R5250 -> SAS DAUGHTER BOARD**, select **MegaRAID Storage Manager (Windows XP x64)** and click on **Setup.**
3. Follow the instruction, accept the license agreement and use the default setting to the **Setup Type**.
4. At the **Setup Type**, please select **StandAlone**.
5. Follow the instruction again to complete the installation.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows XP Professional x64 Edition SP2 Installation (SAS RAID daughter board with i-Button)

Below information describes how to manually install Windows XP Professional x64 Edition on Altos R5250 with SAS RAID daughter board installed.

Drivers Required

For Windows XP x64 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS RAID Daughter Board	09.25.1029.2007	\Disk\r5250\raid\sas1068\x64\wsxp\
Onboard NVIDIA NFP3600 Chipset	Package 9.21	\Disk\R5250\onboard\Chipset\x64\wsxp\

Onboard NVIDIA nForce Networking Controller	65.3.1.0	Including in chipset driver package 9.21
Onboard XGI Z9s	6.14.10.900	\Disk\R5250\onboard\xgiz9s\x64\wsxp\
ATI FireGL V5200	8.323.1.0	\Disk\R5250\graphic\V5200\x64\wsxp\

Software Required

The management utility for SAS RAID daughter board and NIC can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30-00	\app\r5250\raid\lsi1068\Windows\
ForceWare Network Access Manager	65.31	Including in chipset driver package 9.21

Configuring SAS RAID Daughter Board

Please refer to the Appendix C. for the SAS RAID Daughter Board Configuration.

Installation Tips

1. As Windows XP x64 can't recognize the SAS RAID daughter board, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Press F6 at the beginning of installation for providing the driver diskette for the onboard SATA RAID.
3. Select "**LSI Embedded MegaRAID (Windows XP/2003 64-bit)**" as target driver
4. After loading the SATA RAID driver from the diskette, follow the normal procedure to finish the installation.

Chipset Driver Package Installation

The chipset driver installation is the same as SAS daughter board installed. Please refer to the Windows XP Professional x64 Edition SP2 Installation (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard XGI Z9s)

The XGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Windows XP Professional x64 Edition SP2 Installation (SAS Daughter Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS daughter board installed. Please refer to the Windows XP Professional x64 Edition SP2 Installation (SAS Daughter Board) ATI FireGL V5200 Driver Installation section.

RAID Utility Installation

The MegaRAID Storage Manager installation for SAS RAID daughter board is the same as SAS daughter board installed. Please refer to the Windows XP Professional x64 Edition SP2 Installation (SAS Daughter Board) RAID Utility Installation section.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows XP Professional x64 Edition SP2 Installation (with onboard SATA RAID)

Below information describes how to manually install Windows XP Professional x64 Edition on Altos R5250 with onboard SATA RAID enabled.

Drivers Required

For Windows XP x64 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
Onboard SATA RAID	5.10.2600.687	\Disk\R5250\onboard\sataraid\x64\wsxp\
Onboard NVIDIA NFP3600 Chipset	Package 9.21	\Disk\R5250\onboard\Chipset\x64\wsxp\
Onboard NVIDIA nForce Networking Controller	65.3.1.0	Including in chipset driver package 9.21
Onboard XGI Z9s	6.14.10.900	\Disk\R5250\onboard\xgiz9s\x64\wsxp\
ATI FireGL V5200	8.323.1.0	\Disk\R5250\graphic\V5200\x64\ws03\

Software Required

The management utility for onboard SATA RAID and NIC can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
Onboard SATA RAID utility	5.10.2600.681	Including in chipset driver package 9.21
ForceWare Network Access Manager	65.31	Including in chipset driver package 9.21

Configuring onboard SATA RAID

Please refer to the Appendix A. for the onboard SATA RAID configuration.

Installation Tips

1. As Windows XP x64 can't recognize the onboard SATA RAID, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Press F6 at the beginning of installation for providing the driver diskette for the onboard SATA RAID.
3. You will see **NVIDA RAID CLASS Driver (required)** and **NVIDIA nForce Storage Controller (required)** listed. Please select both of them to install.
4. After loading the onboard SATA RAID driver from the diskette, follow the normal procedure to finish the installation.

Chipset Driver Package Installation

The chipset driver installation is the same as SAS daughter board installed. Please refer to the Windows XP Professional x64 Edition SP2 Installation (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard XGI Z9s)

The XGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Windows XP Professional x64 Edition SP2 Installation (SAS Daughter Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS daughter board installed. Please refer to the Windows XP Professional x64 Edition SP2 Installation (SAS Daughter Board) ATI FireGL V5200 Driver Installation section.

RAID Utility Installation

The onboard SATA RAID utility is included in the chipset driver package. The onboard SATA RAID utility will be installed automatically when you installing the chipset driver package.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows XP Professional Edition SP2 Installation (SAS Daughter Board)

Below information describes how to manually install Windows XP Professional Edition on Altos R5250 with SAS daughter board.

Drivers Required

For Windows XP Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS Daughter Board	1.25.10.00	\Disk\r5250\sas\sas1068\wsxp\
Onboard NVIDIA NFP3600 Chipset	Package 9.21	\Disk\R5250\onboard\Chipset\wsxp\
Onboard NVIDIA nForce Networking Controller	65.3.1.0	Including in chipset driver package 9.21
Onboard XGI Z9s	6.14.10.900	\Disk\R5250\onboard\xgiz9s\wsxp\
ATI FireGL V5200	8.323.1.0	\Disk\R5250\graphic\V5200\wsxp\

Software Required

The management utility for SAS daughter board can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\R5250\sas\lsi1068\Windows\
ForceWare Network Access Manager	65.31	Including in chipset driver package 9.21

Configuring SAS Daughter Board

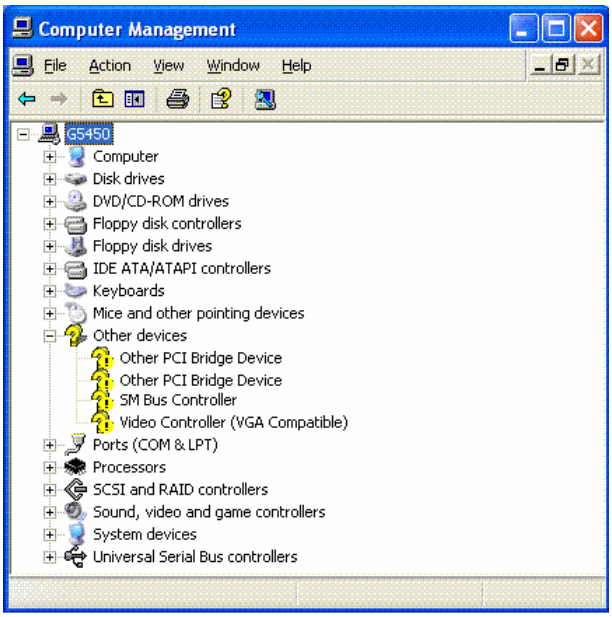
Please refer to the Appendix B. for the SAS daughter board configuration.

Installation Tips

1. As Windows XP can't recognize the SAS daughter board, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Press **F6** at the start of installation to provide the driver disk for the SAS daughter board.
3. Select "**LSI PCI Fusion-MPT Driver (XP 32-bit)**" as target driver
4. After loading the RAID driver from diskette, follow the normal procedure to finish the installation.

Chipset Driver Installation

1. After the installation completes, you would see the following devices with yellow mark in Device Manager.



2. Please insert the EasyBUILD 8.0 build 100 into the optical drive
3. Expand **Drivers -> Altos R5250 -> Chipset**, select **Windows XP** and click on **Setup**.
4. Follow the instruction and use the default setting to install all of the drivers and utilities in the driver package.
5. After all drivers and utilities are installed, please reboot the system.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver will be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard XGI Z9s)

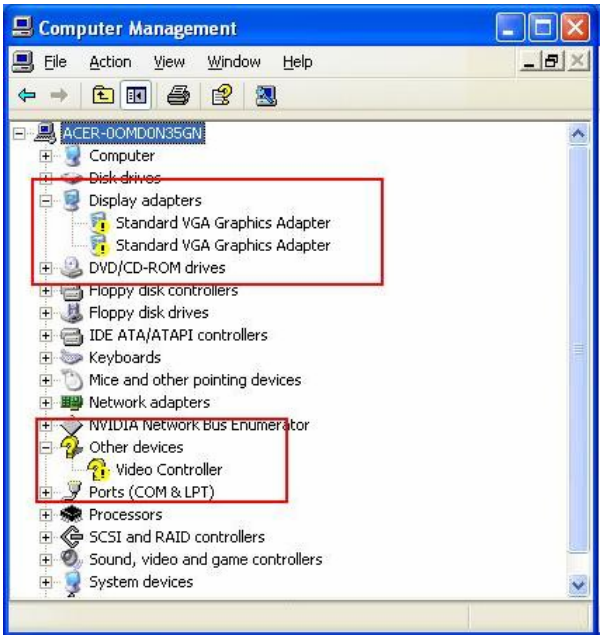
1. Windows XP cannot recognize the onboard VGA. You can find the XGI Z9s driver in EasyBUILD 8.0 build 100. Please insert the EasyBUILD 8.0 build 100 into the optical drive.
2. Expand **Drivers -> Altos R5250 -> Graphics adapters -> XGI Z9s**, select **Windows XP** and click on **Setup**.
3. Follow the instruction to install the VGA driver.
4. Please reboot the server after the driver is installed.
5. After the system rebooted, you would see **XGI Z7/Z9/Z9s/Z11 v1.09.03** listed in Display adapters in Device Manager.

VGA Driver Installation (ATI FireGL V5200)

NOTE. With ATI FireGL V5200 installed, you need to disable onboard VGA

controller first from BIOS before you install the ATI FireGL V5200 driver,

1. Press **F2** during the POST to enter the BIOS. After you entering the BIOS, select Advanced -> PCI Configuration -> Onboard VGA Control, press **Enter** and change the setting from Enabled to Disabled press. And then press **F10** to save configuration changes and reboot system.
2. After you reboot and entering the OS, you will see one **Standard VGA Graphics Adapter** and one **Video Controller** under **Other Device** in Windows XP **Device Manager** for ATI FireGL V5200.



3. You can find the ATI FireGL V5200 driver in EasyBUILD 8.0 build 100. Please insert the EasyBUILD 8.0 build 100 into the optical drive.
4. Expand **Drivers -> Altos R5250 -> Graphics adapters -> ATI FireGL V5200**, select **Windows XP x64** and click on **Setup**.
5. Follow the instruction to install the VGA driver.
6. At **Select Components**, please click on **Express**.
7. Please reboot the server after the driver is installed. You would see **ATI FireGL V5200** and **ATI FireGL V5200 Secondary** listed in Display adapters in Device Manager.
8. After the system rebooted, if you see the following message on the screen.

9. Please right-click on desktop and select **Properties**.
10. Select Setting tab, Change the setting of Display to 1. Plug and Play Monitor and ATI FireGL V5200 and click on Advanced.
11. Select **Troubleshoot** tab, change the setting of the **Hardware acceleration** to **Full** and apply the setting. You will not see the message again.
12. Checking the Device Manager, you would see **ATI FireGL V5200** and **ATI FireGL V5200 Secondary** listed in Display adapters in Device Manager.

RAID Utility Installation

1. For installing MegaRAID Storage Manager for SAS daughter board, please insert the EasyBUILD 8.0 build 100 into the optical drive.
2. Expand **Utilities** -> **Altos R5250 -> SAS DAUGHTER BOARD**, select **MegaRAID Storage Manager (Windows XP)** and click on **Setup.**
3. Follow the instruction, accept the license agreement and use the default setting to the **Setup Type**.
4. At Setup Type, please select **StandAlone**.
5. Follow the instruction again to complete the installation.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows XP Professional Edition SP2 Installation (SAS RAID daughter board with i-Button)

Below information describes how to manually install Windows XP Professional Edition on Altos R5250 with SAS RAID daughter board installed.

Drivers Required

For Windows XP Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS RAID Daughter Board	09.25.1029.2007	\Disk\r5250\raid\sas1068\wsxp\
Onboard NVIDIA NFP3600 Chipset	Package 9.21	\Disk\R5250\onboard\Chipset\wsxp\

Onboard NVIDIA nForce Networking Controller	65.3.1.0	Including in chipset driver package 9.21
Onboard XGI Z9s	6.14.10.900	\Disk\R5250\onboard\xgiz9s\wsxp\
ATI FireGL V5200	8.323.1.0	\Disk\R5250\graphic\V5200\wsxp\

Software Required

The management utility for SAS RAID daughter board and NIC can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\R5250\sas\lsi1068\Windows\
ForceWare Network Access Manager	65.31	Including in chipset driver package 9.21

Configuring SAS RAID Daughter Board

Please refer to the Appendix C. for the SAS RAID Daughter Board Configuration.

Installation Tips

1. As Windows XP can't recognize the SAS RAID daughter board, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Press F6 at the beginning of installation for providing the driver diskette for the onboard SATA RAID.
3. Select "**LSI Embedded MegaRAID (Windows XP/2003)**" as target driver
4. After loading the SATA RAID driver from the diskette, follow the normal procedure to finish the installation.

Chipset Driver Package Installation

The chipset driver installation is the same as SAS daughter board installed. Please refer to the Windows XP Professional Edition SP2 Installation (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard XGI Z9s)

The XGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Windows XP Professional Edition SP2 Installation (SAS Daughter Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS daughter board installed. Please refer to the Windows XP Professional Edition SP2 Installation (SAS Daughter Board) ATI FireGL V5200 Driver Installation section.

RAID Utility Installation

The MegaRAID Storage Manager installation for SAS RAID daughter board is the same as SAS daughter board installed. Please refer to the WindowsXP Professional Edition SP2 Installation (SAS Daughter Board) RAID Utility Installation section.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Windows XP Professional Edition SP2 Installation (with onboard SATA RAID)

Below information describes how to manually install Windows XP Professional Edition on Altos R5250 with onboard SATA RAID enabled.

Drivers Required

For Windows XP Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
Onboard SATA RAID	5.10.2600.687	\Disk\R5250\onboard\sataraid\wsxp\
Onboard NVIDIA NFP3600 Chipset	Package 9.21	\Disk\R5250\onboard\Chipset\wsxp\
Onboard NVIDIA nForce Networking Controller	65.3.1.0	Including in chipset driver package 9.21
Onboard XGI Z9s	6.14.10.900	\Disk\R5250\onboard\xgiz9s\wsxp\
ATI FireGL V5200	8.323.1.0	\Disk\R5250\graphic\V5200\wsxp\

Software Required

The management utility for onboard SATA RAID and NIC can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
Onboard SATA RAID utility	5.10.2600.687	Including in chipset driver package 9.21
ForceWare Network Access Manager	65.31	Including in chipset driver package 9.21

Configuring onboard SATA RAID

Please refer to the Appendix A. for the onboard SATA RAID configuration.

Installation Tips

1. As Windows XP can't recognize the onboard SATA RAID, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Press F6 at the beginning of installation for providing the driver diskette for the onboard SATA RAID.
3. You will see **NVIDA RAID CLASS Driver (required)** and **NVIDIA nForce Storage Controller (required)** listed. Please select both of them to install.
4. After loading the onboard SATA RAID driver from the diskette, follow the normal procedure to finish the installation.

Chipset Driver Package Installation

The chipset driver installation is the same as SAS daughter board installed. Please refer to the Windows XP Professional Edition SP2 Installation (SAS Daughter Board) Chipset Driver Installation section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver is included in the chipset driver package. The Gigabit Ethernet driver would be installed automatically when you installing the chipset driver package.

VGA Driver Installation (onboard XGI Z9s)

The XGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Windows XP Professional Edition SP2 Installation (SAS Daughter Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS daughter board installed. Please refer to the Windows XP Professional Edition SP2 Installation (SAS Daughter Board) ATI FireGL V5200 Driver Installation section.

RAID Utility Installation

The onboard SATA RAID utility is included in the chipset driver package. The onboard SATA RAID utility will be installed automatically when you installing the chipset driver package.

Network Utility Installation

The ForceWare Network Access Manager is included in the chipset driver package. The ForceWare Network Access Manager will be installed automatically when you installing the chipset driver package.

Red Hat Enterprise Linux 5.0 EM64T Installation (SAS Daughter Board)

Below information describes how to manually install Red Hat Enterprise Linux 5.0 EM64T on Altos R5250 with SAS daughter board.

Drivers Required

For Red Hat Enterprise Linux 5.0 EM64T Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS Daughter Board	4.00.13.04-1	\Disk\r5250\sas\sas1068\x64\rhel5\
Onboard NVIDIA NFP3600 Chipset	N/A	OS built-in
Onboard NVIDIA nForce Networking Controller	0.62	\Disk\R5250\nic\Nvidia\x64\rhel5\
Onboard XGI Z9s	1.12.03	\Disk\R5250\onboard\xgiz9s\x64\rhel5\
ATI FireGL V5200	8.35.5	\Disk\R5250\graphic\V5200\x64\rhel5\

Software Required

The management utility for SAS daughter board can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\R5250\sas\lsi1068\Linux\

Configuring SAS Daughter Board

Please refer to the Appendix B. for the SAS Daughter Board Configuration.

Installation Tips

1. Since Red Hat Enterprise Linux 5.0 EM64T cannot recognize the SAS daughter board, you need to make a driver diskette from the EasyBUILD 8.0 build 100 (or later) first before the installation.
2. Type **linux dd** when the prompt **boot:** appears at the start.
3. Please select the **sda** as the **Driver Disk Source**.
4. Follow the instruction to load the driver for SAS daughter board from the driver diskette.
5. When installing MSM (MegaRAID Storage Manager) for SAS daughter board after installation complted **OR** if you have installed the ATI FireGL V5200 in the system, you are required to manually to select/install additional package at the Package Installation Defaults.
6. At the Package Installation Defaults, select **Customize software packages**

to be installed and click **Next**.

7. At the Package Group Selection step, hold the **shift** key to select all the listed packages in the right pane under **Development,** and **right click** on all the items you just selected and then click "**Select all optional packages**".

8. After selecting the entire package under **Development**, click **Next** to follow the normal procedure to finish the installation.

Gigabit Ethernet Driver Installation

1. You can find the onboard NVIDIA nForce Networking Controller driver in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Driver Required section and copy the driver from the EasyBUILD 8.0 build 100 to HDD first.

```
# mount /media/cdrom
# cp /media/cdrom/Disk/R5250/nicNvidia/x64rhel5/nvlan-rhel5-
  0.62-1.24.i686.rpm /tmp
```

2. Install the driver

```
# cd /tmp/
# rpm –ivh nvlan-rhel5-0.62-1.24.i686.rpm
```

VGA Driver Installation (onboard XGI Z9s)

1. You can find the onboard XGI Z9s VGA driver in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Driver Required section and copy the driver from the EasyBUILD 8.0 build 100 to HDD first.

```
# mount /media/cdrom
# cp /media/cdrom/Disk/R5250/onboard/xgiz9s/x64/rhel5/
  xgi_xg27_x86_xorg7_1_12_03.run /tmp
```

2. Install the driver

```
# cd /tmp/
# ./xgi_xg27_x86_xorg7_1_12_03.run
```

VGA Driver Installation (onboard ATI FrireGL V5200)

TBD

RAID Utility Installation

1. You can find the MegaRAID Storage Manager for SAS daughter board in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Software Required section for the utility and copy it from the EasyBUILD 8.0 build 100 to HDD first.

```
# mount /media/cdrom
```

```
# cp –R /media/cdrom/app/R5250/sas/lsi1068/Linux/. /tmp
```

2. Install MegaRAID Storage Manager

```
# cd /tmp/
# ./install.sh
```

3. Type **y** to accept the license agreement and select **3** for StandAlone installation.
4. To start MegaRAID Storage Manager, click on **Applications** and select **System Tools** -> **MegaRAID Storage Manager StartupUI**.

Red Hat Enterprise Linux 5.0 EM64T Installation (SAS RAID daughter board with i-Button)

Below information describes how to manually install Red Hat Enterprise Linux 5.0 EM64T on Altos R5250 SAS RAID daughter board with i-Button.

Drivers Required

For Red Hat Enterprise Linux 5.0 EM64T Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS RAID Daughter Board	09.25.1029.2007	\Disk\r5250\raid\sas1068\x64\rhel5\
Onboard NVIDIA NFP3600 Chipset	N/A	OS built-in
Onboard NVIDIA nForce Networking Controller	0.62	\Disk\R5250\nic\Nvidia\x64\rhel5
Onboard XGI Z9s	1.12.03	\Disk\R5250\onboard\xgiz9s\x64\rhel5\
ATI FireGL V5200	8.35.5	\Disk\R5250\graphic\V5200\x64\rhel5\

Software Required

The management utility for SAS RAID daughter board can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\r5250\raid\lsi1068\Linux\

Configuring SAS RAID Daughter Board

Please refer to the Appendix C. for the SAS RAID Daughter Board Configuration.

Installation Tips

1. Since Red Hat Enterprise Linux 5.0 EM64T cannot recognize the SAS RAID daughter board, you need to make a driver diskette from the EasyBUILD

8.0 build 100 (or later) first before the installation.

2. Type **linux dd** when the prompt **boot:** appears at the start.
3. Please select the **sda** as the **Driver Disk Source**.
4. Follow the instruction to load the driver for SAS RAID daughter board from the driver diskette.
5. When installing MSM (MegaRAID Storage Manager) for SAS RAID daughter board after installation complted **OR** if you have installed the ATI FireGL V5200 in the system, you are required to manually to select/install additional package at the Package Installation Defaults.
6. At the Package Installation Defaults, select **Customize software packages** to be installed and click **Next**.
7. At the Package Group Selection step, hold the **shift** key to select all the listed packages in the right pane under **Development,** and **right click** on all the items you just selected and then click "**Select all optional packages**".
8. After selecting the entire package under **Development**, click **Next** to follow the normal procedure to finish the installation.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver installation is the same as SAS daughter board installed. Please refer to the Red Hat Enterprise Linux 5.0 EM64T Installation (SAS Daughter Board) Gigabit Ethernet Driver Installation section.

VGA Driver Installation (onboard XGI Z9s)

The XGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Red Hat Enterprise Linux 5.0 EM64T Installation (SAS Daughter Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

TBD

RAID Utility Installation

1. You can find the MegaRAID Storage Manager for SAS RAID daughter board in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Software Required section for the utility and copy it from the EasyBUILD 8.0 build 100 to HDD first.

   ```
   # mount /media/cdrom

   # cp –R /media/cdrom/app/r5250/raid/lsi1068/Linux/. /tmp
   ```

2. Install MegaRAID Storage Manager

   ```
   # cd /tmp/
   ```

```
# ./install.sh
```

3. Type **y** to accept the license agreement and select **3** for StandAlone installation.
4. To start MegaRAID Storage Manager, click on **Applications** and select **System Tools** -> **MegaRAID Storage Manager StartupUI**.

Red Hat Enterprise Linux 5.0 EM64T Installation (with onboard SATA RAID)

Below information describes how to manually install Red Hat Enterprise Linux 5.0 EM64T on Altos R5250 with onboard SATA RAID.

Drivers Required

For Red Hat Enterprise Linux 5.0 EM64T Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
Onboard SATA RAID	9.44	\Disk\r5250\onboard\sataraid\x64\rhel5\
Onboard NVIDIA NFP3600 Chipset	N/A	OS built-in
Onboard NVIDIA nForce Networking Controller	0.62	\Disk\R5250\nic\Nvidia\x64\rhel5\
Onboard XGI Z9s	1.12.03	\Disk\R5250\onboard\xgiz9s\x64\rhl5\
ATI FireGL V5200	8.35.5	\Disk\R5250\graphic\V5200\x64\rhel5\

Software Required

The management utility for onboard SATA RAID can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
Onboard SATA RAID utility	9.44	\app\R5250\onboard\sataraid\Linux\x64\rhel5\

Configuring onboard SATA RAID

Please refer to the Appendix A. for the Onboard SATA RAID Configuration.

Installation Tips

1. Since Red Hat Enterprise Linux 5.0 EM64T cannot recognize the onboard SATA RAID, you need to make a driver diskette before the installation. The driver disk is not available in EasyBUILD 8.0 build 100 yet. The driver will be available in GCSD website and next release of EasyBUILD.
2. Type **linux dd** when the prompt **boot:** appears at the start.
3. Please select the **sda** as the **Driver Disk Source**.

4. Follow the instruction to load the driver for onboard SATA RAID from the driver diskette.
5. At the **Package Installation Defaults**, select **Customize software packages to be installed**.
6. At the **Package Group Selection** step, select **Graphic Internet** under **Applications**.
7. If you have installed the ATI FireGL V5200 in the system, please also select **Development Tools** and under **Development**. If you don't have ATI FireGL V5200, please go to next step directly
8. After adding the additional packages, follow the normal procedure to finish the installation.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver installation is the same as SAS daughter board installed. Please refer to the Red Hat Enterprise Linux 5.0 EM64T Installation (SAS Daughter Board) Gigabit Ethernet Driver Installation section.

VGA Driver Installation (onboard XGI Z9s)

The XGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Red Hat Enterprise Linux 5.0 EM64T Installation (SAS Daughter Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

TBD

RAID Utility Installation

NOTE. You need the firefox to use the onboard SATA RAID utility. You need to select the Graphic Internet to install during the OS installation or you need to install the Firefox manually.

1. You can find the onboard SATA RIAD utility in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Software Required section for the utility and copy it from the EasyBUILD 8.0 build 100 to HDD first.

```
# mount /media/cdrom

# cp –R /media/cdrom/app/R5250/onboard/sataraid/Linux/x64/rhel5/
        NvRaid-UI-9-44.x86_64.rpm /tmp
```

2. Install onboard SATA RAID utility

```
# cd /tmp/

# rpm –ivh NvRaid-UI-9-44.x86_64.rpm
```

3. To start onboard SATA RAID utility, please double-click on **nvRaid** icon on the desktop.

Red Hat Enterprise Linux 5.0 EM64T Installation (with LSI MegaRAID SAS 8204ELP)

Below information describes how to manually install Red Hat Enterprise Linux 5.0 EM64T on Altos R5250 with LSI MegaRAID SAS 8204ELP.

Drivers Required

For Red Hat Enterprise Linux 5.0 EM64T Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
LSI MegaRAID SAS 8204ELP	09.25.1029.2007	\Disk\R5250\sas\8204elp\x64\rhel5\
Onboard NVIDIA NFP3600 Chipset	N/A	OS built-in
Onboard NVIDIA nForce Networking Controller	0.62	\Disk\R5250\nic\Nvidia\x64\rhel5
Onboard XGI Z9s	1.12.03	\Disk\R5250\onboard\xgiz9s\x64\rhel5\
ATI FireGL V5200	8.35.5	\Disk\R5250\graphic\V5200\x64\rhel5\

Software Required

The management utility for LSI MegaRAID SAS 8204ELP can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\R5250\sas\8204ELP\Linux\

Configuring LSI MegaRAID SAS 8204ELP

Please refer to the Appendix D. for the LSI MegaRAID SAS 8204ELP configuration.

Installation Tips

1. Since Red Hat Enterprise Linux 5.0 EM64T cannot recognize the MegaRAID SAS 8204ELP, you need to make a driver diskette from the EasyBUILD 8.0 build 100 (or later) first before the installation.
2. Type **linux dd** when the prompt **boot:** appears at the start.
3. Please select the **sda** as the **Driver Disk Source**.
4. Follow the instruction to load the driver for MegaRAID SAS 8204ELP from the driver diskette.
5. When installing MSM (MegaRAID Storage Manager) for MegaRAID SAS 8204ELP after installation complted **OR** if you have installed the ATI FireGL V5200 in the system, you are required to manually to select/install additional package at the Package Installation Defaults.

6. At the Package Installation Defaults, select **Customize software packages** to be installed and click **Next**.
7. At the Package Group Selection step, hold the **shift** key to select all the listed packages in the right pane under **Development,** and **right click** on all the items you just selected and then click "**Select all optional packages**".
8. After selecting the entire package under **Development** e, click **Next** to follow the normal procedure to finish the installation.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver installation is the same as SAS daughter board installed. Please refer to the Red Hat Enterprise Linux 5.0 EM64T Installation (SAS Daughter Board) Gigabit Ethernet Driver Installation section.

VGA Driver Installation (onboard XGI Z9s)

The XGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Red Hat Enterprise Linux 5.0 EM64T Installation (SAS Daughter Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

TBD

RAID Utility Installation

1. You can find the MegaRAID Storage Manager for MegaRAID SAS 8204ELP in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Software Required section for the utility and copy it from the EasyBUILD 8.0 build 100 to HDD first.

   ```
   # mount /media/cdrom

   # cp –R /media/cdrom/appR/5250/sas/8204ELP/Linux/ /tmp
   ```

2. Install MegaRAID Storage Manager

   ```
   # cd /tmp/

   # ./install.sh
   ```

3. Type **y** to accept the license agreement and select **3** for StandAlone installation.
4. To start MegaRAID Storage Manager, click on **Applications** and select **System Tools** -> **MegaRAID Storage Manager StartupUI**.

Red Hat Enterprise Linux 5.0 Installation (SAS Daughter Board)

Below information describes how to manually install Red Hat Enterprise Linux 5.0 on Altos R5250 with SAS daughter board.

Drivers Required

For Red Hat Enterprise Linux 5.0 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS Daughter Board	4.00.13.04-1	\EB8\Disk\r5250\sas\sas1068\rhel5\
Onboard NVIDIA NFP3600 Chipset	N/A	OS built-in
Onboard NVIDIA nForce Networking Controller	0.62	\Disk\R5250\nic\Nvidia\rhel5\
Onboard XGI Z9s	1.12.03	\Disk\R5250\onboard\xgiz9s\rhel5\
ATI FireGL V5200	8.35.5	\Disk\R5250\graphic\V5200\rhel5\

Software Required

The management utility for SAS daughter board can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\R5250\sas\lsi1068\Linux\

Configuring SAS Daughter Board

Please refer to the Appendix B. for the SAS Daughter Board Configuration.

Installation Tips

1. Since Red Hat Enterprise Linux 5 cannot recognize the SAS daughter board, you need to make a driver diskette from the EasyBUILD 8.0 build 100 (or later) first before the installation.
2. Type **linux dd** when the prompt **boot:** appears at the start.
3. Please select the **sda** as the **Driver Disk Source**.
4. Follow the instruction to load the driver for SAS daughter board from the driver diskette.
5. When installing MSM (MegaRAID Storage Manager) for SAS daughter board after installation complted **OR** if you have installed the ATI FireGL V5200 in the system, you are required to manually to select/install additional package at the Package Installation Defaults.
6. At the Package Installation Defaults, select **Customize software packages** to be installed and click **Next**.
7. At the Package Group Selection step, hold the **shift** key to select all the listed packages in the right pane under **Development,** and **right click** on all the items you just selected and then click "**Select all optional**

packages".

8. After selecting the entire package under **Development**, click **Next** to follow the normal procedure to finish the installation.

Gigabit Ethernet Driver Installation

1. You can find the onboard NVIDIA nForce Networking Controller driver in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Driver Required section and copy the driver from the EasyBUILD 8.0 build 100 to HDD first.

```
# mount /media/cdrom
# cp /media/cdrom/Disk/R5250/nic/Nvidia/rhel5/nvlan-rhel5-
  0.62-1.24.i686.rpm /tmp
```

2. Install the driver

```
# cd /tmp/
# rpm –ivh nvlan-rhel5-0.62-1.24.i686.rpm
```

VGA Driver Installation (onboard XGI Z9s)

1. You can find the onboard XGI Z9s VGA driver in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Driver Required section and copy the driver from the EasyBUILD 8.0 build 100 to HDD first.

```
# mount /media/cdrom
# cp /media/cdrom/Disk/r5250/onboard/xgiz9s/rhel5/
  xgi_xg27_x86_xorg7_1_12_03.run /tmp
```

2. Install the driver

```
# cd /tmp/
# ./ xgi_xg27_x86_xorg7_1_12_03.run
```

VGA Driver Installation (ATI FireGL V5200)

TBD

RAID Utility Installation

1. You can find the MegaRAID Storage Manager for SAS daughter board in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Software Required section for the utility and copy it from the EasyBUILD 8.0 build 100 to HDD first.

```
# mount /media/cdrom
# cp –R /media/cdrom/app/R5250/sas/lsi1068Linux/. /tmp
```

2. Install MegaRAID Storage Manager

```
# cd /tmp/
```

```
# ./install.sh
```

3. Type **y** to accept the license agreement and select **3** for StandAlone installation.
4. To start MegaRAID Storage Manager, click on **Applications** and select **System Tools** -> **MegaRAID Storage Manager StartupUI**.

Red Hat Enterprise Linux 5.0 Installation (SAS RAID daughter board with i-Button)

Below information describes how to manually install Red Hat Enterprise Linux 5.0 on Altos R5250 SAS RAID daughter board with i-Button.

Drivers Required

For Red Hat Enterprise Linux 5.0 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS RAID Daughter Board	09.25.1029.2007	\Disk\r5250\raid\sas1068\rhel5\
Onboard NVIDIA NFP3600 Chipset	N/A	OS built-in
Onboard NVIDIA nForce Networking Controller	0.62	\Disk\R5250\nic\Nvidia\rhel5\
Onboard XGI Z9s	1.12.03	\Disk\R5250\onboard\xgiz9s\rhel5\
ATI FireGL V5200	8.35.5	\Disk\R5250\graphic\V5200\rhel5\

Software Required

The management utility for SAS RAID daughter board can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\r5250\raid\lsi1068\Linux\

Configuring SAS RAID Daughter Board

Please refer to the Appendix C. for the SAS RAID daughter board Configuration.

Installation Tips

1. Since Red Hat Enterprise Linux 5 cannot recognize the SAS RAID daughter board, you need to make a driver diskette from the EasyBUILD 8.0 build 100 (or later) first before the installation.
2. Type **linux dd** when the prompt **boot:** appears at the start.
3. Please select the **sda** as the **Driver Disk Source**.
4. Follow the instruction to load the driver for SAS RAID daughter board

from the driver diskette.

5. When installing MSM (MegaRAID Storage Manager) for SAS RAID daughter board after installation complted **OR** if you have installed the ATI FireGL V5200 in the system, you are required to manually to select/install additional package at the Package Installation Defaults.
6. At the Package Installation Defaults, select **Customize software packages** to be installed and click **Next**.
7. At the Package Group Selection step, hold the **shift** key to select all the listed packages in the right pane under **Development,** and **right click** on all the items you just selected and then click "**Select all optional packages**".
8. After selecting the entire package under **Development**, click **Next** to follow the normal procedure to finish the installation.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver installation is the same as SAS daughter board installed. Please refer to the Red Hat Enterprise Linux 5.0 Installation (SAS Daughter Board) Gigabit Ethernet Driver Installation section.

VGA Driver Installation (onboard XGI Z9s)

The XGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Red Hat Enterprise Linux 5.0 Installation (SAS Daughter Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

TBD

RAID Utility Installation

The MegaRAID Storage Manager for SAS RAID daughter board installation is the same as SAS daughter board installed. Please refer to the Red Hat Enterprise Linux 5.0 Installation (SAS Daughter Board) RAID Utility Installation section.

Red Hat Enterprise Linux 5.0 Installation (with onboard SATA RAID)

Below information describes how to manually install Red Hat Enterprise Linux 5.0 on Altos R5250 with onboard SATA RAID.

Drivers Required

For Red Hat Enterprise Linux 5.0 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
Onboard SATA	9.44	EB8\Disk\r5250\onboard\sataraid\rhel5

RAID		\
Onboard NVIDIA NFP3600 Chipset	N/A	OS built-in
Onboard NVIDIA nForce Networking Controller	0.62	\Disk\R5250\NIC\Nvidia\rhel5\
Onboard XGI Z9s	1.12.03	\Disk\R5250\onboard\xgiz9s\rhel5\
ATI FireGL V5200	8.35.5	\Disk\R5250\graphic\V5200\rhel5\

Software Required

The management utility for onboard SATA RAID can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
Onboard SATA RAID utility	9.44	\app\R5250\onboard\sataraid\Linux\rhel5\

Configuring onboard SATA RAID

Please refer to the Appendix A. for the Onboard SATA RAID Configuration.

Installation Tips

1. Since Red Hat Enterprise Linux 5 cannot recognize the onboard SATA RAID, you need to make a driver diskette from the EasyBUILD 8.0 build 100 (or later) first before the installation.
2. Type **linux dd** when the prompt **boot:** appears at the start.
3. Please select the **sda** as the **Driver Disk Source**.
4. Follow the instruction to load the onboard SATA RAID driver from the driver diskette.
5. At the Package Installation Defaults, select Customize software packages to be installed.
6. At the Package Group Selection step, select Graphic Internet under Applications.
7. If you have installed the ATI FireGL V5200 in the system, please also select **Development Tools** and under **Development**. If you don't have ATI FireGL V5200, please go to next step directly
8. After adding the additional packages, follow the normal procedure to finish the installation.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver installation is the same as SAS daughter board installed. Please refer to the Red Hat Enterprise Linux 5.0 Installation (SAS Daughter Board) Gigabit Ethernet Driver Installation section.

VGA Driver Installation (onboard XGI Z9s)

The XGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Red Hat Enterprise Linux 5.0 EM64T Installation (SAS Daughter Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

TBD

RAID Utility Installation

NOTE. You need the firefox to use the onboard SATA RAID utility. You need to select the Graphic Internet to install during the OS installation or you need to install the Firefox manually.

1. You can find the onboard SATA RIAD utility in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Software Required section for the utility and copy it from the EasyBUILD 8.0 build 100 to HDD first.

```
# mount /media/cdrom
# cp –R /media/cdrom/app/R5250/onboard/sataraid/Linux/rhel5/
        /NvRaid-UI-9-44.i686.rpm /tmp
```

2. Install onboard SATA RAID utility

```
# cd /tmp/
# rpm –ivh NvRaid-UI-9-44.i686.rpm
```

3. To start onboard SATA RAID utility, please double-click on **nvRaid** icon on the desktop.

Red Hat Enterprise Linux 5.0 Installation (with LSI MegaRAID SAS 8204ELP)

Below information describes how to manually install Red Hat Enterprise Linux 5.0 on Altos R5250 with LSI MegaRAID SAS 8204ELP.

Drivers Required

For Red Hat Enterprise Linux 5.0 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
LSI MegaRAID SAS 8704ELP	09.25.1029.2007	\Disk\R5250\sas\8204elp\rhel5\
Onboard NVIDIA NFP3600 Chipset	N/A	OS built-in
Onboard NVIDIA nForce Networking Controller	0.62	\Disk\R5250\nic\Nvidia\rhel5\
Onboard XGI Z9s	1.12.03	\Disk\R5250\onboard\xgiz9s\rhel5\

ATI FireGL V5200	8.35.5	\Disk\R5250\graphic\V5200\rhel5

Software Required

The management utility for LSI MegaRAID SAS 8204ELP can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\R5250\sas\8204ELP\Linux\

Configuring LSI MegaRAID SAS 8204ELP

Please refer to the Appendix D. for the LSI MegaRAID SAS 8204ELP configuration.

Installation Tips

1. Since Red Hat Enterprise Linux 5 cannot recognize the MegaRAID SAS 8204ELP, you need to make a driver diskette from the EasyBUILD 8.0 build 100 (or later) first before the installation.
2. Type **linux dd** when the prompt **boot:** appears at the start.
3. Please select the **sda** as the **Driver Disk Source**.
4. Follow the instruction to load the driver for MegaRAID SAS 8204ELP from the driver diskette.
5. When installing MSM (MegaRAID Storage Manager) for MegaRAID SAS 8204ELP after installation complted **OR** if you have installed the ATI FireGL V5200 in the system, you are required to manually to select/install additional package at the Package Installation Defaults.
6. At the Package Installation Defaults, select **Customize software packages** to be installed and click **Next**.
7. At the Package Group Selection step, hold the **shift** key to select all the listed packages in the right pane under **Development,** and **right click** on all the items you just selected and then click "**Select all optional packages**".
8. After selecting the entire package under **Development**, click **Next** to follow the normal procedure to finish the installation.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver installation is the same as SAS daughter board installed. Please refer to the Red Hat Enterprise Linux 5.0 Installation (SAS Daughter Board) Gigabit Ethernet Driver Installation section.

VGA Driver Installation (onboard XGI Z9s)

The XGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the Red Hat Enterprise Linux 5.0 Installation (SAS Daughter

Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

TBD

RAID Utility Installation

1. You can find the MegaRAID Storage Manager for MegaRAID SAS 8204ELP in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Software Required section for the utility and copy it from the EasyBUILD 8.0 build 100 to HDD first.

   ```
   # mount /media/cdrom

   # cp –R /media/cdrom/app/R5250/sas/8204ELP/Linux/. /tmp
   ```

2. Install MegaRAID Storage Manager

   ```
   # cd /tmp/

   # ./install.sh
   ```

3. Type **y** to accept the license agreement and select **3** for StandAlone installation.

4. To start MegaRAID Storage Manager, click on **Applications** and select **System Tools** -> **MegaRAID Storage Manager StartupUI**.

SUSE Linux Enterprise Server 10 EM64T Installation (SAS Daughter Board)

Below information describes how to manually install SUSE Linux Enterprise Server 10 EM64T on Altos R5250 SAS daughter board

Drivers Required

For SUSE Linux Enterprise Server 10 EM64T Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS Daughter Board	4.00.13.04-1	\Disk\r5250\sas\sas1068\x64\sles10\
Onboard NVIDIA NFP3600 Chipset	N/A	OS built-in
Onboard NVIDIA nForce Networking Controller	0.62	\Disk\R5250\nic\Nvidia\x64\sles10\
Onboard XGI Z9s	1.12.03	\Disk\r5250\onboard\xgiz9s\x64\sles10\
ATI FireGL V5200	8.35.5	\Disk\R5250\graphic\V5200\x64\sles10\

Software Required

The management utility of SAS DAUGHTER BOARD can be found in the

EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\R5250\sas\lsi1068\Linux\

Configuring SAS Daughter Board

Please refer to the Appendix B. for the SAS Daughter Board Configuration.

Installation Tips

1. Since SUSE Linux Enterprise Server 10 EM64T cannot recognize the SAS daughter board controller, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Boot the system form SUSE Linux Enterprise Server 10 EM64T Disk1 bootable CD.
3. When you see the boot menu on the screen, press F5 and select **Yes**.
4. Press Enter to continue the installation.
5. Insert the driver disk to the floppy, select **sda: Floppy** and **OK** to load the SAS daughter board driver from the driver diskette.
6. After loading the driver, select **OK** and **Back** to return to the installation.
7. If you have installed the ATI FireGL V5200 in the system, you need to install addition packages during the OS installation. If you are using onboard XGI Z9s, please go to step 13 directly.
8. At **Installation Setting**, select the **Software**.
9. Check **C/C++ Compiler and Tools** under **Development** to add C/C++ compiler tools.
10. Click on **Details**, change the **Filter** from **Patterns** to **Package Groups**.
11. Select the **Source** under **Development** in left window and check **kernel-source** in the right window to add the kernel source.
12. Click on Accept and continue the installation.
13. Follow the instruction to complete the installation.
14. If you have installed the ATI FireGL V5200 in the system, the system CANNOT boot into X-window after OS installation completed. You need reboot the system into text and install the driver for ATI FireGL V5200 first. Please refer to VGA driver installation (ATI FireGL V5200) section for how to install the driver.

VGA Driver Installation (ATI FireGL V5200)

NOTE. With ATI FireGL V5200 installed, the system CANNOT boot into X-window after the SLES 10 installation completed. You need to reboot the

system into text mode and install the driver for ATI FireGL V5200 first.

NOTE. For installing the ATI FireGL V5200 driver, additional packages are required. Please refer to the Installation Tips section for which packages should be installed.

1. When the system stopped after OS installation completed, please power off the system than power on it again.
2. Please select **SUSE Linux Enterprise Server 10 (Failsafe)** at boot select menu.
3. After you the system boot into text mode, copy the ATI driver installer to HDD.
4. Go to the directory that includes the ATI driver installer and run the ATI driver installer.

```
# ./ati-driver-installer-8.35.5-x86.x86_64.run
```

5. Follow the instructions and use the default settings to install the driver.
6. After the driver is installed, run "aticonfig --initial" to configure the driver.

```
# aticonfig –-initial

Uninitialised file found, Configuring.

Using /etc/X11/xorg.conf

Save back-up to /etc/X11/xorg.conf.original-0
```

7. Please reboot the system.
8. If you want to change the display setting, please **DO NOT** use the OS built-in utility. Please use the ATI Catalyst Control Center instead by "amdcccle" command.

```
# amdcccle
```

Gigabit Ethernet Driver Installation

1. You can find the onboard NVIDIA nForce Networking Controller driver in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Driver Required section.
2. After you insert the EasyBUILD 8.0 build 100 into the optical drive, it will be mounted automatically. Please copy the driver from the EasyBUILD 8.0 build 100 to HDD first.

```
# cp /media/EBV71B600/ Disk/R5250/nic/Nvidia/x64/sles10/
     nvlan-sles10-0.62-1.23.x86_64.rpm /tmp
```

3. Install the driver

```
# cd /tmp
```

```
# rpm –ivh nvlan-sles10-0.62-1.23.x86_64.rpm
```

RAID Utility Installation

1. You can find the MegaRAID Storage Manager for SAS daughter board in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Software Required section.
2. After you insert the EasyBUILD 8.0 build 100 into the optical drive, it will be mounted automatically. Please copy the MegaRAID Storage Manager from the EasyBUILD 8.0 build 100 to HDD first.

   ```
   # cp –R /media/EBV71B600/app/R5250/sas/lsi1068/Linux/.
           /tmp
   ```

3. Install MegaRAID Storage Manager

   ```
   # cd /tmp/

   # ./install.sh
   ```

4. Type **y** to accept the license agreement and select **3** for StandAlone installation.
5. To start MegaRAID Storage Manager, click on Computer -> More Applications -> MegaRAID Storage Manager StartupUI.

SUSE Linux Enterprise Server 10 EM64T Installation (SAS RAID daughter board with i-Button)

Below information describes how to manually install SUSE Linux Enterprise Server 10 EM64T on Altos R5250 SAS RAID daughter board with i-Button.

Drivers Required

For SUSE Linux Enterprise Server 10 EM64T Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS RAID Daughter Board	09.25.1029.2007	\Disk\r5250\raid\sas1068\x64\sles10\
Onboard NVIDIA NFP3600 Chipset	N/A	OS built-in
Onboard NVIDIA nForce Networking Controller	0.62	\Disk\R5250\nic\Nvidia\x64\sles10\
Onboard XGI Z9s	1.12.03	\Disk\r5250\onboard\xgiz9s\x64\sles10\
ATI FireGL V5200	8.35.5	\Disk\R5250\graphic\V5200\x64\sles10\

Software Required

The management utility of SAS RAID daughter board can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\EB8\app\r5250\raid\lsi1068\Linux\

Configuring SAS RAID Daughter Board

Please refer to the Appendix C. for the SAS RAID Daughter Board Configuration.

Installation Tips

1. Since SUSE Linux Enterprise Server 10 EM64T cannot recognize the SAS RAID daughter board controller, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Boot the system form SUSE Linux Enterprise Server 10 EM64T Disk1 bootable CD.
3. When you see the boot menu on the screen, press **F5** and select **Yes**.
4. Press Enter to continue the installation.
5. Insert the driver disk to the floppy, select **sda: Floppy** and **OK** to load the SAS RAID daughter board driver from the driver diskette.
6. After loading the driver, select **OK** and **Back** to return to the installation.
7. With **SAS RAID Daughter Board** and **MegaRAID SAS 8204ELP**, you will need to manually create three partitions: "**/boot**", "**swap**" and a root "**/**" partitions during installation. You will also need to convert **Device Name** to **Device ID** with its associate mount point while creating each partition.

   The Step 8 ~ step16 below will instruct you on how to create these three required partitions and how to convert **Device Name** into **Device ID**.

NOTE: Normally, a file system to mount is identified in /etc/fstab by the **Device Name**. This identification can be changed so the file system to mount is found by searching for a **Device ID** or Volume label.

8. At Installation Setting, Click **Partitioning** .
9. Select **Create Custom Partition Setup** option box, and click **Next**
10. Select **Custom Partitioning (for experts)** option box, and then click **Next**
11. To create a partition, click **Create** at the bottom and then select **Primary Partition** option box.
12. In creating the "**/boot**" partition, you need to fill in the 'Mount Point' with "**/boot**". In addition, you will need to enter the size of the partition. Set it to '**+1GB**' which is plenty. Then click the tab **Fstab Option**.
13. You will see **Device Name** is the default option in the section labeled 'Mount in /etc/fstab by'. Then change the Fstab options to **Device ID** and click **OK** at the bottom.

14. In creating the "**swap**" partition, please follow step described in step11 – step13. For the "**swap**" partition, you need to change File system from '**Reiser**' to '**Swap**' in the combo box. And don't forget to fill in the 'Mount Point' with "**swap**". The typical size of the partition is '**+1GB**'.
15. In creating a root "**/**" partition, please follow step described in step11 – step13. and to fill in the 'Mount Point' with "**/**". Typitically, assign rest of available driver space for the root partition "**/**".
16. Once all the partitions are created, click **Finish** to proceed with normal installation.
17. If you have installed the ATI FireGL V5200 in the system, you need to install addition packages during the OS installation. If you are using onboard XGI Z9s, please go to step 13 directly.
18. At Installation Setting, select the Software.
19. Check **C/C++ Compiler and Tools** under **Development** to add C/C++ compiler tools.
20. Click on Details, change the Filter from Patterns to Package Groups.
21. Select the **Source** under **Development** in left window and check **kernel-source** in the right window to add the kernel source.
22. Click on Accept and continue the installation.
23. Follow the instruction to complete the installation.
24. If you have installed the ATI FireGL V5200 in the system, the system CANNOT boot into X-window after OS installation completed. You need reboot the system into text and install the driver for ATI FireGL V5200 first. Please refer to VGA driver installation (ATI FireGL V5200) section for how to install the driver.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS daughter board installed. Please refer to the SUSE Linux Enterprise Server 10 EM64T Installation (SAS Daughter Board) VGA Driver Installation (ATI FireGL V5200) section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver installation is the same as SAS daughter board installed. Please refer to the SUSE Linux Enterprise Server 10 EM64T Installation (SAS Daughter Board) Gigabit Ethernet Driver Installation section.

RAID Utility Installation

The MegaRAID Storage Manager installation for SAS RAID daughter board is the same as SAS daughter board installed. Please refer to the SUSE Linux Enterprise Server 10 EM64T Installation (SAS Daughter Board) Gigabit Ethernet Driver Installation section.

SUSE Linux Enterprise Server 10 EM64T Installation (with onboard SATA RAID)

Below information describes how to manually install SUSE Linux Enterprise Server 10 EM64T on Altos R5250 with onboard SATA RAID

Drivers Required

For SUSE Linux Enterprise Server 10 EM64T Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
Onboard SATA RAID	9.37	\Disk\R5250\onboard\sataraid\x64\sles10\
Onboard NVIDIA NFP3600 Chipset	N/A	OS built-in
Onboard NVIDIA nForce Networking Controller	0.62	\Disk\R5250\nic\Nvidia\x64\sles10\
Onboard XGI Z9s	1.12.03	\Disk\r5250\onboard\xgiz9s\x64\sles10\
ATI FireGL V5200	8.35.5	\Disk\R5250\graphic\V5200\x64\sles10\

Software Required

The management utility of onboard SATA RAID can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
Onboard SATA RAID Utility	9.44	\app\R5250\onboard\sataraid\Linux\x64\sles10\

Configuring onboard SATA RAID Utility

Please refer to the Appendix A. for the Onboard SATA RAID Configuration.

Installation Tips

1. Since SUSE Linux Enterprise Server 10 EM64T cannot recognize the onboard SATA RAID, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Boot the system form SUSE Linux Enterprise Server 10 EM64T Disk1 bootable CD.
3. When you see the boot menu on the screen, press F5 and select **Yes**.
4. Press Enter to continue the installation.
5. Insert the driver disk to the floppy, select **sda: Floppy** and **OK** to load the onboard SATA RAID driver from the driver diskette.
6. After loading the driver, select **OK** and **Back** to return to the installation.
7. If you have installed the ATI FireGL V5200 in the system, you need to install addition packages during the OS installation. If you are using

onboard XGI Z9s, please go to step 13 directly.

8. At Installation Setting, select the Software.
9. Check **C/C++ Compiler and Tools** under **Development** to add C/C++ compiler tools.
10. Click on Details, change the Filter from Patterns to Package Groups.
11. Select the **Source** under **Development** in left window and check **kernel-source** in the right window to add the kernel source.
12. Click on Accept and continue the installation.
13. Follow the instruction to complete the installation.
14. If you have installed the ATI FireGL V5200 in the system, the system CANNOT boot into X-window after OS installation completed. You need reboot the system into text and install the driver for ATI FireGL V5200 first. Please refer to VGA driver installation (ATI FireGL V5200) section for how to install the driver.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS DAUGHTER BOARD installed. Please refer to the SUSE Linux Enterprise Server 10 EM64T Installation (SAS Daughter Board) VGA Driver Installation (ATI FireGL V5200) section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver installation is the same as SAS DAUGHTER BOARD installed. Please refer to the SUSE Linux Enterprise Server 10 EM64T Installation (SAS Daughter Board) Gigabit Ethernet Driver Installation section.

RAID Utility Installation

1. You can find the onboard SATA RAID utility in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Software Required section.
2. After you insert the EasyBUILD 8.0 build 100 into the optical drive, it will be mounted automatically. Please copy the onboard SATA RAID utility from the EasyBUILD 8.0 build 100 to HDD first.

```
# cp /media/EB71B600/ app/R5250/onboard/sataraid/Linux/x64/sles10
      /NvRaid-UI-9-37.x86_64.rpm /tmp
```

3. Install onboard SATA RAID utility

```
# cd /tmp/

# rpm –ivh NvRaid-UI-9-37.x86_64.rpm
```

4. To start onboard SATA RAID utility, please double-click on **nvRaid** icon on the desktop.

SUSE Linux Enterprise Server 10 EM64T Installation (with LSI MegaRAID SAS 8204ELP)

Below information describes how to manually install SUSE Linux Enterprise Server 10 EM64T on Altos R5250 with LSI MegaRAID SAS 8204ELP.

Drivers Required

For SUSE Linux Enterprise Server 10 EM64T Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
LSI MegaRAID SAS 8204ELP	09.25.1029.2007	\Disk\R5250\sas\8204elp\x64\sles10\
Onboard NVIDIA NFP3600 Chipset	N/A	OS built-in
Onboard NVIDIA nForce Networking Controller	0.62	\Disk\R5250\nic\Nvidia\x64\sles10\
Onboard XGI Z9s	1.12.03	\Disk\r5250\onboard\xgiz9s\x64\sles10\
ATI FireGL V5200	8.35.5	\Disk\R5250\graphic\V5200\x64\sles10\

Software Required

The management utility of LSI MegaRAID SAS 8204ELP can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\R5250\sas\8204ELP\Linux\

Configuring LSI MegaRAID SAS 8204ELP

Please refer to the Appendix D. for the LSI MegaRAID SAS 8204ELP configuration.

Installation Tips

1. Since SUSE Linux Enterprise Server 10 EM64T cannot recognize the LSI MegaRAID SAS 8204ELP, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Boot the system form SUSE Linux Enterprise Server 10 EM64T Disk1 bootable CD.
3. When you see the boot menu on the screen, press F5 and select **Yes**.
4. Press Enter to continue the installation.
5. Insert the driver disk to the floppy, select **sda: Floppy** and **OK** to load the LSI MegaRAID SAS 8204ELP driver from the driver diskette.
6. After loading the driver, select **OK** and **Back** to return to the installation.
7. With **SAS RAID Daughter Board** and **MegaRAID SAS 8204ELP**, you will

need to manually create three partitions: "**/boot**", "**swap**" and a root "**/**" partitions during installation. You will also need to convert **Device Name** to **Device ID** with its associated mount point while creating each partition.

The Step 8 ~ step16 below will instruct you on how to create these three required partitions with its associated mount point and how to convert **Device Name** into **Device ID**.

NOTE: Normally, a file system to mount is identified in /etc/fstab by the **Device Name**. This identification can be changed so the file system to mount is found by searching for a **Device ID** or Volume label.

8. At Installation Setting, Click **Partitioning** .
9. Select **Create Custom Partition Setup** option box, and click **Next**
10. Select **Custom Partitioning (for experts)** option box, and then click **Next**
11. To create a partition, click **Create** at the bottom and then select **Primary Partition** option box.
12. In creating the "**/boot**" partition, you need to fill in the 'Mount Point' with "**/boot**". For the "**swap**" partition, you will need to enter the size of the partition. Set it to '**+1GB**' which is plenty. Then click the tab **Fstab Option**.
13. You will see **Device Name** is the default option in the section labeled 'Mount in /etc/fstab by'. Then change the Fstab options to **Device ID** and click **OK** at the bottom.
14. In creating the "**swap**" partition, please follow step described in step11 – step13. In addition, you need to change File system from '**Reiser**' to '**Swap**' in the combo box. And don't forget to fill in the 'Mount Point' with "**swap**". The typical size of the partition is '**+1GB**'.
15. In creating a root "**/**" partition, please follow step described in step11 – step13. and to fill in the 'Mount Point' with "**/**". Typitically, assign rest of available driver space for the root partition "**/**".
16. Once all the partitions are created, click **Finish** to proceed with normal installation.
17. If you have installed the ATI FireGL V5200 in the system, you need to install addition packages during the OS installation. If you are using onboard XGI Z9s, please go to step 13 directly.
18. At Installation Setting, select the Software.
19. Check **C/C++ Compiler and Tools** under **Development** to add C/C++ compiler tools.
20. Click on Details, change the Filter from Patterns to Package Groups.
21. Select the **Source** under **Development** in left window and check **kernel-**

source in the right window to add the kernel source.

22. Click on Accept and continue the installation.
23. Follow the instruction to complete the installation.
24. If you have installed the ATI FireGL V5200 in the system, the system CANNOT boot into X-window after OS installation completed. You need reboot the system into text and install the driver for ATI FireGL V5200 first. Please refer to VGA driver installation (ATI FireGL V5200) section for how to install the driver.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS daughter baord installed. Please refer to the SUSE Linux Enterprise Server 10 EM64T Installation (SAS Daughter Board) VGA Driver Installation (ATI FireGL V5200) section.

Gigabit Ethernet Driver Installation

The Gigabit Ethernet driver installation is the same as SAS daughter baord installed. Please refer to the SUSE Linux Enterprise Server 10 EM64T Installation (SAS Daughter Board) Gigabit Ethernet Driver Installation section.

RAID Utility Installation

1. You can find the MegaRAID Storage Manager for MegaRAID SAS 8204ELP in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Software Required section.
2. After you insert the EasyBUILD 8.0 build 100 into the optical drive, it will be mounted automatically. Please copy the MegaRAID Storage Manager from the EasyBUILD 8.0 build 100 to HDD first.

   ```
   # cp –R /media/EBV71B600/app/R5250/sas/8204ELP/Linux/. /tmp
   ```

3. Install MegaRAID Storage Manager

   ```
   # cd /tmp/

   # ./install.sh
   ```

4. Type **y** to accept the license agreement and select **3** for StandAlone installation.
5. To start MegaRAID Storage Manager, click on Computer -> More Applications -> MegaRAID Storage Manager StartupUI.

SUSE Linux Enterprise Server 10 Installation (SAS Daughter Board)

Below information describes how to manually install SUSE Linux Enterprise Server 10 on Altos R5250 SAS daughter board installed.

Drivers Required

For SUSE Linux Enterprise Server 10 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS Daughter Board	4.00.13.04-1	\Disk\r5250\sas\sas1068\sles10\
Onboard NVIDIA NFP3600 Chipset	N/A	OS built-in
Onboard NVIDIA nForce Networking Controller	0.62	\Disk\R5250\nic\Nvidia\sles10\
Onboard XGI Z9s	1.12.03	\Disk\r5250\onboard\xgiz9s\sles10\
ATI FireGL V5200	8.35.5	\Disk\R5250\graphic\V5200\sles10\

Software Required

The management utility for SAS daughter board can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\R5250\sas\lsi1068\Linux\

Configuring SAS Daughter Board

Please refer to the Appendix B. for the SAS Daughter Board Configuration.

Installation Tips

1. Since SUSE Linux Enterprise Server 10 cannot recognize the SAS daughter board controller, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Boot the system form SUSE Linux Enterprise Server 10 disk1 bootable CD.
3. When you see the boot menu on the screen, press **F5** and select **Yes**.
4. Press **Enter** to continue the installation.
5. Insert the driver disk to the floppy, select **sda: Floppy** and **OK** to load the SAS daughter board driver from the driver diskette.
6. After loading the driver, select **OK** and **Back** to return to the installation.
7. If you have installed the ATI FireGL V5200 in the system, you need to install addition packages during the OS installation. If you are using onboard XGI Z9s, please go to step 13 directly.
8. At **Installation Setting**, select the **Software**.
9. Check **C/C++ Compiler and Tools** under **Development** to add C/C++ compiler tools.

10. Click on **Details**, change the **Filter** from **Patterns** to **Package Groups**.
11. Select the **Source** under **Development** in left window and check **kernel-source** in the right window to add the kernel source.
12. Click on Accept and continue the installation.
13. Follow the instruction to complete the installation.
14. If you have installed the ATI FireGL V5200 in the system, the system CANNOT boot into X-window after OS installation completed. You need reboot the system into text and install the driver for ATI FireGL V5200 first. Please refer to VGA driver installation (ATI FireGL V5200) section for how to install the driver.

VGA Driver Installation (onboard XGI Z9s)

1. You can find the onboard XGI Z9s VGA driver in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Driver Required section and copy the driver from the EasyBUILD 8.0 build 100 to HDD first.

```
# mount /media/cdrom
# cp /media/cdrom/Disk/r5250/onboard/xgiz9s/sles10/
  xgi_xg27_x86_xorg7_1_12_03.run /tmp
```

2. Install the driver

```
# cd /tmp/
# ./ xgi_xg27_x86_xorg7_1_12_03.run
```

VGA Driver Installation (ATI FireGL V5200)

NOTE. With ATI FireGL V5200 installed, the system CANNOT boot into X-window after the SLES 10 installation completed. You need to reboot the system into text mode and install the driver for ATI FireGL V5200 first.

NOTE. For installing the ATI FireGL V5200 driver, additional packages are required. Please refer to the Installation Tips section for which packages should be installed.

1. When the system stopped after OS installation completed, please power off the system than power on it again.

   NOTE: To install the ATI FireGL V5200 driver on SUSE Linux Enterprise Server, you are required to modify the command line "**maxcpu**" to "**8**" at the bottom of the boot select menu.

2. At the bottom of boot select menu, modify the command line "**maxcpu**" value to "**8**" (ie. **maxcpu=8**).

   ide=nodma apm=off acpi=off noresume nosmp noapic maxcpus=8 edd=0ff 3

3. Please select **SUSE Linux Enterprise Server 10 (Failsafe)** at boot select menu.

4. After you the system boot into text mode, copy the ATI driver installer to HDD.
5. Go to the directory that includes the ATI driver installer and run the ATI driver installer

```
# ./ati-driver-installer-8.35.5-x86.x86_64.run
```

6. Follow the instructions and use the default settings to install the driver.
7. After the driver is installed, run "aticonfig --initial" to configure the driver.

```
# aticonfig –-initial

Uninitialised file found, Configuring.

Using /etc/X11/xorg.conf

Save back-up to /etc/X11/xorg.conf.original-0
```

8. Please reboot the system.
9. If you want to change the display setting, please **DO NOT use the OS built-in utility**. Please launch the ATI Catalyst Control Center by using "amdcccle".

```
# amdcccle
```

Gigabit Ethernet Driver Installation

1. You can find the onboard NVIDIA nForce Networking Controller driver in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Driver Required section.
2. After you insert the EasyBUILD 8.0 build 100 into the optical drive, it will be mounted automatically. Please copy the driver from the EasyBUILD 8.0 build 100 to HDD first.

```
# cp –R /media/EBV71B600/Disk/R5250/nic/Nvidia/sles10/. /tmp
```

3. Install the driver

```
# cd /tmp

# rpm –ivh nvlan-sles10-0.62-1.23.i686.rpm
```

RAID Utility Installation

1. You can find the MegaRAID Storage Manager in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Software Required section.
2. After you insert the EasyBUILD 8.0 build 100 into the optical drive, it will be mounted automatically. Please copy the MegaRAID Storage Manager from the EasyBUILD 8.0 build 100 to HDD first.

```
# cp –R /media/EBV71B600/app/R5250/SAS/LSI1068/Linux/. /tmp
```

3. Install MegaRAID Storage Manager

```
# cd /tmp/
# ./install.sh
```

4. Type **y** to accept the license agreement and select **3** for StandAlone installation.
5. To start MegaRAID Storage Manager, click on Computer -> More Applications -> MegaRAID Storage Manager StartupUI.

SUSE Linux Enterprise Server 10 Installation (SAS RAID daughter board with i-Button)

Below information describes how to manually install SUSE Linux Enterprise Server 10 on Altos R5250 SAS RAID daughter board with i-Button.

Drivers Required

For SUSE Linux Enterprise Server 10 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
SAS RAID Daughter Board	09.25.1029.2007	\Disk\r5250\raid\sas1068\sles10\
Onboard NVIDIA NFP3600 Chipset	N/A	OS built-in
Onboard NVIDIA nForce Networking Controller	0.62	\Disk\R5250\nic\Nvidia\sles10\
Onboard XGI Z9s	1.12.03	\Disk\r5250\onboard\xgiz9s\sles10\
ATI FireGL V5200	8.35.5	\Disk\R5250\graphic\V5200\sles10\

Software Required

The management utility of SAS RAID daughter board can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\r5250\raid\lsi1068\Linux\

Configuring SAS RAID Daughter Board

Please refer to the Appendix C. for the SAS RAID Daughter Board Configuration.

Installation Tips

1. Since SUSE Linux Enterprise Server 10 cannot recognize the SAS RAID daughter board controller, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.

2. Boot the system form SUSE Linux Enterprise Server 10 disk1 bootable CD.
3. When you see the boot menu on the screen, press **F5** and select **Yes**.
4. Press Enter to continue the installation.
5. Insert the driver disk to the floppy, select **sda: Floppy** and **OK** to load the SAS RAID daughter board driver from the driver diskette.
6. After loading the driver, select **OK** and **Back** to return to the installation.
7. With **SAS RAID Daughter Board** and **MegaRAID SAS 8204ELP**, you are required to manually create three partitions: "**/boot**", "**swap**" and a root "**/**" partitions during installation. You will also need to convert **Device Name** to **Device ID** with its associated mount point while creating each partition.

   The **Step 8 ~ step16** below will instruct you on how to create these three required partitions and how to convert **Device Name** into **Device ID**.

NOTE: Normally, a file system to mount is identified in /etc/fstab by the **Device Name**. This identification can be changed so the file system to mount is found by searching for a **Device ID** or Volume label.

8. At Installation Setting, Click **Partitioning** .
9. Select **Create Custom Partition Setup** option box, and click **Next**
10. Select **Custom Partitioning (for experts)** option box, and then click **Next**
11. To create a partition, click **Create** at the bottom and then select **Primary Partition** option box.
12. In creating the "**/boot**" partition, you need to fill in the 'Mount Point' with "**/boot**". In addition, you will need to enter the size of the partition. Set it to '**+1GB**' which is plenty. Then click the tab **Fstab Option**.
13. You will see **Device Name** is the default option in the section labeled 'Mount in /etc/fstab by'. Then change the Fstab options to **Device ID** and click **OK** at the bottom.
14. In creating the "**swap**" partition, please follow step described in **step11 – step13**. For the "**swap**" partition, you need to additionally change File system from '**Reiser**' to '**Swap**' in the combo box. And don't forget to fill in the 'Mount Point' with "**swap**". The typical size of the partition is '**+1GB**'.
15. In creating a root "**/**" partition, please follow step described in **step11 – step13**. and to fill in the 'Mount Point' with "**/**". Typitically, assign rest of available driver space for the root partition "**/**".
16. Once all the partitions are created, click **Finish** to proceed with normal installation.
17. If you have installed the ATI FireGL V5200 in the system, you need to

install addition packages during the OS installation. If you are using onboard XGI Z9s, please go to step 13 directly.

18. At Installation Setting, select the Software.
19. Check **C/C++ Compiler and Tools** under **Development** to add C/C++ compiler tools.
20. Click on Details, change the Filter from Patterns to Package Groups.
21. Select the **Source** under **Development** in left window and check **kernel-source** in the right window to add the kernel source.
22. Click on Accept and continue the installation.
23. Follow the instruction to complete the installation.
24. If you have installed the ATI FireGL V5200 in the system, the system CANNOT boot into X-window after OS installation completed. You need reboot the system into text and install the driver for ATI FireGL V5200 first. Please refer to VGA driver installation (ATI FireGL V5200) section for how to install the driver.

VGA Driver Installation (onboard XGI Z9s)

The XGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the SUSE Linux Enterprise Server Installation (SAS Daughter Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS daughter board installed. Please refer to the SUSE Linux Enterprise Server 10 Installation (SAS Daughter Board) VGA Driver Installation (ATI FireGL V5200) section.

Gigabit Ethernet Driver Installation

The NIC driver installation is the same as SAS daughter board installed. Please refer to the SuSE Linux Enterprise Linux 10 Installation (SAS Daughter Board) Gigabit Ethernet Driver Installation section.

MeagRAID Storage Manager Installation

The MegaRAID Storage Manager installation is the same as SAS daughter board installed. Please refer to the SuSE Linux Enterprise Linux 10 Installation (SAS Daughter Board) MegaRAID Storage Manager Installation section.

SUSE Linux Enterprise Server 10 Installation (with onboard SATA RAID)

Below information describes how to manually install SUSE Linux Enterprise Server 10 on Altos R5250 with onboard SATA RAID.

Drivers Required

For SUSE Linux Enterprise Server 10 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
Onboard SATA RAID	9.37	\Disk\R5250\onboard\sataraid\sles10\
Onboard NVIDIA NFP 3600 Chipset	N/A	OS built-in
Onboard NVIDIA nForce Networking Controller	0.62	\Disk\R5250\nic\Nvidia\sles10\
Onboard XGI Z9s	1.12.03	\Disk\r5250\onboard\xgiz9s\sles10\
ATI FireGL V5200	8.35.5	\Disk\R5250\graphic\V5200\sles10\

Software Required

The management utility for onboard SATA RAID can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
Onboard SATA RAID Utility	N/A	N/A

Installation Tips

1. Since SUSE Linux Enterprise Server 10 cannot recognize the onboard SATA RAID, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Boot the system form SUSE Linux Enterprise Server 10 disk1 bootable CD.
3. When you see the boot menu on the screen, press F5 and select **Yes**.
4. Press Enter to continue the installation.
5. Insert the driver disk to the floppy, select **sda: Floppy** and **OK** to load the onboard SATA RAID driver from the driver diskette.
6. After loading the driver, select **OK** and **Back** to return to the installation.
7. If you have installed the ATI FireGL V5200 in the system, you need to install addition packages during the OS installation. If you are using onboard XGI Z9s, please go to step 13 directly.
8. At Installation Setting, select the Software.
9. Check **C/C++ Compiler and Tools** under **Development** to add C/C++ compiler tools.
10. Click on Details, change the Filter from Patterns to Package Groups.
11. Select the **Source** under **Development** in left window and check **kernel-source** in the right window to add the kernel source.

12. Click on Accept and continue the installation.
13. Follow the instruction to complete the installation.
14. If you have installed the ATI FireGL V5200 in the system, the system CANNOT boot into X-window after OS installation completed. You need reboot the system into text and install the driver for ATI FireGL V5200 first. Please refer to VGA driver installation (ATI FireGL V5200) section for how to install the driver.

VGA Driver Installation (onboard XGI Z9s)

The XGI Z9s driver installation is the same as SAS daughter board installed. Please refer to the SUSE Linux Enterprise Server Installation (SAS Daughter Board) XGI Z9s Driver Installation section.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS daughter board installed. Please refer to the SUSE Linux Enterprise Server 10 Installation (SAS Daughter Board) VGA Driver Installation (ATI FireGL V5200) section.

Gigabit Ethernet Driver Installation

The NIC driver installation is the same as SAS daughter board installed. Please refer to the SuSE Linux Enterprise Linux 10 Installation (SAS Daughter Board) Gigabit Ethernet Driver Installation section.

RAID Utility Installation

1. You can find the onboard SATA RAID utility in EasyBUILD 8.0 build 100. Please refer to Directory on EasyBUILD in Software Required section.
2. After you insert the EasyBUILD 8.0 build 100 into the optical drive, it will be mounted automatically. Please copy the onboard SATA RAID utility from the EasyBUILD 8.0 build 100 to HDD first.

```
# cp /media/EB71B600/EB8/app/R5250/onboard/sataraid/Linux/sles10/
      NvRaid-UI-9-37.i686.rpm
```

3. Install onboard SATA RAID utility

```
# cd /tmp/

# rpm –ivh NvRaid-UI-9-37.i686.rpm
```

4. To start onboard SATA RAID utility, please double-click on **nvRaid** icon on the desktop.

SUSE Linux Enterprise Server 10 Installation (with LSI MegaRAID SAS 8204ELP)

Below information describes how to manually install SUSE Linux Enterprise Server 10 on Altos R5250 with LSI MegaRAID SAS 8204ELP.

Drivers Required

For SUSE Linux Enterprise Server 10 Installation, the following device drivers are required.

Device	Version	Directory on EasyBUILD
LSI MegaRAID SAS 8204ELP	09.25.1029.2007	\Disk\R5250\sas\8204elp\sles10\
Onboard NVIDIA NFP3600 Chipset	N/A	OS built-in
Onboard NVIDIA nForce Networking Controller	0.62	\Disk\R5250\nic\Nvidia\sles10\
Onboard XGI Z9s	1.12.03	\Disk\r5250\onboard\xgiz9s\sles10\
ATI FireGL V5200	8.35.5	\Disk\R5250\graphic\V5200\sles10\

Software Required

The management utility of LSI MegaRAID SAS 8204ELP can be found in the EasyBUILD 8.0 build 100 (or later).

Software	Version	Directory on EasyBUILD
MegaRAID Storage Manager	2.30	\app\R5250\sas\8204ELP\Linux\

Configuring LSI MegaRAID SAS 8204ELP

Please refer to the Appendix D. for the LSI MegaRAID SAS 8204ELP configuration.

Installation Tips

1. Since SUSE Linux Enterprise Server 10 cannot recognize the LSI MegaRAID SAS 8204ELP, you need to make a driver diskette from the EasyBUILD 8.0 build 100 first before the installation.
2. Boot the system form SUSE Linux Enterprise Server 10 disk1 bootable CD.
3. When you see the boot menu on the screen, press F5 and select **Yes**.
4. Press Enter to continue the installation.
5. Insert the driver disk to the floppy, select **sda: Floppy** and **OK** to load the LSI MegaRAID SAS 8204ELP driver from the driver diskette.
6. After loading the driver, select **OK** and **Back** to return to the installation.
7. With **SAS RAID Daughter Board** and **MegaRAID SAS 8204ELP**, you are required to manually create three partitions: "**/boot**", "**swap**" and a root "**/**" partitions during installation. You will also need to convert **Device Name** to **Device ID** with its associated mount point while creating each partition.

   The **Step 8 ~ step16** below will instruct you on how to create these three

required partitions and how to convert **Device Name** into **Device ID**.

NOTE: Normally, a file system to mount is identified in /etc/fstab by the **Device Name**. This identification can be changed so the file system to mount is found by searching for a **Device ID** or Volume label.

8. At Installation Setting, Click **Partitioning** .
9. Select **Create Custom Partition Setup** option box, and click **Next**
10. Select **Custom Partitioning (for experts)** option box, and then click **Next**
11. To create a partition, click **Create** at the bottom and then select **Primary Partition** option box.
12. In creating the "**/boot**" partition, you need to fill in the 'Mount Point' with "**/boot**". In addition, you will need to enter the size of the partition. Set it to '**+1GB**' which is plenty. Then click the tab **Fstab Option**.
13. You will see **Device Name** is the default option in the section labeled 'Mount in /etc/fstab by'. Then change the Fstab options to **Device ID** and click **OK** at the bottom.
14. In creating the "**swap**" partition, please follow step described in **step11 – step13**. For the "**swap**" partition, you need to change File system from '**Reiser**' to '**Swap**' in the combo box. And don't forget to fill in the 'Mount Point' with "**swap**". The typical size of the partition is '**+1GB**'.
15. In creating a root "**/**" partition, please follow step described in **step11 – step13** and to fill in the 'Mount Point' with "**/**". Typitically, assign rest of available driver space for the root partition "**/**".
16. Once all the partitions are created, click **Finish** to proceed with normal installation.
17. If you have installed the ATI FireGL V5200 in the system, you need to install addition packages during the OS installation. If you are using onboard XGI Z9s, please go to step 13 directly.
18. At Installation Setting, select the Software.
19. Check **C/C++ Compiler and Tools** under **Development** to add C/C++ compiler tools.
20. Click on Details, change the Filter from Patterns to Package Groups.
21. Select the **Source** under **Development** in left window and check **kernel-source** in the right window to add the kernel source.
22. Click on Accept and continue the installation.
23. Follow the instruction to complete the installation.
24. If you have installed the ATI FireGL V5200 in the system, the system CANNOT boot into X-window after OS installation completed. You need

reboot the system into text and install the driver for ATI FireGL V5200 first. Please refer to VGA driver installation (ATI FireGL V5200) section for how to install the driver.

VGA Driver Installation (ATI FireGL V5200)

The ATI FireGL V5200 driver installation is the same as SAS daughter board installed. Please refer to the SUSE Linux Enterprise Server 10 Installation (SAS Daughter Board) VGA Driver Installation (ATI FireGL V5200) section.

Gigabit Ethernet Driver Installation

The NIC driver installation is the same as SAS daughter board installed. Please refer to the SuSE Linux Enterprise Linux 10 Installation (SAS Daughter Board) Gigabit Ethernet Driver Installation section.

MeagRAID Storage Manager Installation

The MegaRAID Storage Manager installation is the same as SAS daughter board installed. Please refer to the SuSE Linux Enterprise Linux 10 Installation (SAS Daughter Board) MegaRAID Storage Manager Installation section.

APPENDIX A: ONBOARD SATA RAID CONFIGURATION UTILITY

Configuring Onboard SATA RAID

This section briefly shows how to create RAID1 with onboard SATA RAID function.

Enabling onboard SATA RAID

To configure onboard SATA RAID, you have to enable the onboard SATA RAID in BIOS first.

1. Press **F2** during the POST to enter the BIOS
2. After you entering the BIOS, select **Advanced** -> **I/O Device Configuration** -> **NV RAID Configuration**
3. Change the setting of **NV RAID Configuration** from **Disabled** to **Enabled**.
4. After you changing the setting of **NV RAID Configuration**, you will see all the SATA port listed separately.
5. Change the setting of each port which you want to use for RAID form **Disabled** to **Enabled**.
6. Press **F10** and select **Yes** to save the setting and exit the BIOS.

Entering Onboard SATA RAID Configuration Utility

To enter the onboard SATA RAID configuration utility, press **F10** when you see **MediaShield ROM BIOS 6.77** during POST.

Note. You have to install at least one SATA HDD to the onboard SATA controller in the system or you cannot see the MediaShield ROM BIOS 6.77 during POST.

Creating a RAID1 Volume

1. After you entering the configuration utility, Use the arrow key ↑ ↓ to change the **RAID Mode** to **Mirroring**.
2. Use the arrow key ← → to move the HDD from **Free Disks** to **Array Disks**.
3. Press **F7** to finish the RAID creation.
4. Press **Y** to clear the data on disks.
5. Now you will see the RAID volume listed on screen. You can press **Ctrl-X** to exit and start to install OS

Assigning a Hot Spare Disk

You don't need to configure the Hot Spare Disk for the onboard SATA RAID. If you have a HDD is not configured and marked as free, the HDD will be used as Hot Spare Disk. When there is a HDD failed, the HDD marked as free will be used to rebuild the RAID automatically.

APPENDIX B: SAS DAUGHTER BOARD CONFIGURATION UTILITY

Configuring SAS Daughter Board:

This section briefly shows how to create RAID 1 volume with SAS daughter board.

Starting SAS Daughter Board Configuration Utility

To start LSI Logic Config Utility, press **CTRL-C** when you see the SAS BIOS during POST.

Loading Factory Default Setting

1. In the LSI Logic Config Utility, press **Alt-N** to enter the **Global Properties**.
2. Select **Restore Defaults** and press **Enter**.
3. Press **ESC**, then select **Save changes then exit this menu**.
4. Select **SAS1068E** and press **Enter**.
5. Select **Advanced Adapter Properties** and press **Enter**.
6. Select **Restore Defaults** and press **Enter**.
7. Press ESC twice then select **Save changes** then exit this menu.

Creating a RAID1 Volume with a Hot Spare Disk

1. In the LSI Logic Config Utility, please select **SAS1068E** and press **Enter**.
2. Select **RAID Properties** and press Enter.
3. Select **Create IM Volume** and press Enter
4. Move the cursor to the **RAID Disk** column.
5. Press **Space bar** and **D** to change the setting form **No** to **Yes**. The **Drive Status** will be marked as **Primary**.
6. Move the cursor to another disk.
7. Press **Space bar** to change the setting from **No** to **Yes**. The **Drive Status** will be marked as **Secondary**.
8. Move the cursor to **Hot Spr** column and select another disk.
9. Press **Spare bar** to change the setting from **No** to **Yes**. The **Drive Status** will be marked as **Hot Spare**.
10. Press C and select Save changes then exit this menu.

Initialing the RAID Volume

Since we pressed **D** to create a new IM array during creating the RAID1 volume, no synchronization will be performed. You don't need to initial the RAID volume. Now, you can exit the LSI Logic Config utility and start to install Operation System. Press **ESC** twice and select **Exit the Configuration Utility and Reboot**.

APPENDIX C: SAS RAID DAUGHTER BOARD CONFIGURATION UTILITY

Configuring SAS RAID Daughter Board:S

This section briefly shows how to create RAID 5 with SAS RAID daughter board (with i-Button).

Starting LSI MegaRAID SAS RAID Configuration Utility

To start LSI MegaRAID SAS RAID Configuration Utility for MegaRAID SAS RAID daughter board, press **CTRL-M** when you see the RAID BIOS during POST. After POST finished, the Adapter Selection page will show on the screen. Please click on **Start** to launch the configuration menu.

Loading Factory default setting

1. Select **Objects** from Management menu.
2. Select **Adapter** from Objects. The selectable adapter will be listed.
3. Press Enter on the adapter and the adapter setting will be shown on the screen. You can change the setting from this menu.
4. Select **Factory Default** and **Yes** to load the default settings.
5. Exit the configuration utility and press <Ctrl> + <Alt> + <Del> to reboot the server.

Creating a RAID volume

1. Select **Configuration** from **Management Menu**.
2. Select **New Configuration** from the **Configuration menu**. An array selection window displays the devices connected to the current controller.
3. Press the arrow keys to choose specific physical drives and press spacebar to associate the selected drive with the current array. The indicator for selected drive change from **READY** to **ONLINE**.
4. After you adding the drives to current array, press **Enter** to finish creating current array.
5. Press **Enter** again to select array to configure.
6. Press **spacebar** to select the array and press **F10** to configure the logical drive
7. Select **Accept** and press **Enter** to use the default setting for the RAID volume.
8. Press **Enter** to end the array configuration.
9. Select **YES** to Save Configuration and press any key to return to the **Configuration menu**.
10. Press **ESC** to return to the **Management Menu**

Initial RAID Volume

1. Select **Initialize** from **Management menu**. All logical drives should be listed under **Logical Drives**.
2. Press **Spacebar** to select drives for initialization. The selected drive will be shown in yellow.
3. After selecting the drives, press **F10** and select **YES** to start the initialization process.
4. When initialization is complete, press **ESC** to continue.
5. Press **ESC** to return to the **Management Menu**.

Assigning a Hot Spare Disk

1. Select **Objects** from **Management menu**.
2. Select **Physical Drive** from **Objects**. All of the HDDs will be listed.
3. Select a drive marked as **READY** and press **Enter**.
4. Select **Make Hot Spare** and press **Enter**.
5. Select **Yes** then you will see the HDD is changed from **READY** to **HOTSP**.
6. Press **ESC** to return to the **Management Menu**.

Save and Exit Embedded RAID Configuration Utility

1. When RAID configuration, initialization and assigning hot spare is completed, press **ESC** in the **Management Menu** and select **YES** to exit the RAID Configuration Utility.
2. Press **Ctrl** + **Alt** + **Del** to reboot the server.
3. Now you can start to install OS.

APPENDIX D: LSI MEGARAID SAS 8204ELP RAID CREATION

This section briefly shows how to create RAID with LSI MegaRAID SAS 8204ELP.

Starting LSI MegaRAID SAS RAID Configuration Utility

To start LSI MegaRAID SAS RAID Configuration Utility for MegaRAID SAS 8204ELP, press **CTRL-M** when you see the RAID BIOS during POST. After POST finished, the Adapter Selection page will show on the screen. Please click on **Start** to launch the configuration menu.

Loading Factory default setting

1. Select **Objects** from Management menu.
2. Select **Adapter** from Objects. The selectable adapter will be listed.
3. Press Enter on the adapter and the adapter setting will be shown on the screen. You can change the setting from this menu.
4. Select **Factory Default** and **Yes** to load the default settings.
5. Exit the configuration utility and press <Ctrl> + <Alt> + <Del> to reboot the server.

Creating a RAID volume

1. Select **Configuration** from **Management Menu**.
2. Select **New Configuration** from the **Configuration menu**. An array selection window displays the devices connected to the current controller.
3. Press the arrow keys to choose specific physical drives and press spacebar to associate the selected drive with the current array. The indicator for selected drive change from **READY** to **ONLINE**.
4. After you adding the drives to current array, press **Enter** to finish creating current array.
6. Press **Enter** again to select array to configure.
7. Press **spacebar** to select the array and press **F10** to configure the logical drive
8. Select **Accept** and press **Enter** to use the default setting for the RAID volume.
9. Press **Enter** to end the array configuration.
10. Select **YES** to Save Configuration and press any key to return to the **Configuration menu**.
11. Press **ESC** to return to the **Management Menu**

Initial RAID Volume

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

2. Press **Spacebar** to select drives for initialization. The selected drive will be shown in yellow.
3. After selecting the drives, press **F10** and select **YES** to start the initialization process.
4. When initialization is complete, press **ESC** to continue.
5. Press **ESC** to return to the **Management Menu**.

Assigning a Hot Spare Disk

1. Select Objects from Management menu.
2. Select **Physical Drive** from **Objects**. All of the HDDs will be listed.
3. Select a drive marked as **READY** and press **Enter**.
4. Select **Make Hot Spare** and press **Enter**.
5. Select **Yes** then you will see the HDD is changed from **READY** to **HOTSP**.
6. Press **ESC** to return to the **Management Menu**.

Save and Exit Embedded RAID Configuration Utility

1. When RAID configuration, initialization and assigning hot spare is completed, press **ESC** in the **Management Menu** and select **YES** to exit the RAID Configuration Utility.
2. Press **Ctrl** + **Alt** + **Del** to reboot the server.
3. Now you can start to install OS.

APPENDIX E: LSI MEGARAID SAS 8708ELP RAID CREATION

Configuring LSI MegaRAID SAS 8708ELP

This section briefly shows how to create RAID with LSI MegaRAID SAS 8708ELP.

Starting LSI MegaRAID SAS RAID Configuration Utility

To start LSI MegaRAID SAS RAID Configuration Utility for MegaRAID SAS 8708ELP, press **CTRL-H** when you see the RAID BIOS during POST. After POST finished, the Adapter Selection page will show on the screen. Please click on **Start** to launch the configuration menu.

Loading Factory Default Setting

1. In the Configuration menu, select **Adapter Properties**. The current adapter settings appear. Please click on **Next** to change the setting.
2. Change the setting of **Set Factory Defaults** from **No** to **Yes** then click on submit.
3. Press **Ctrl+Alt+Del** to reboot the server.

Creating and Initialing a RAID Volume

1. Launch the configuration menu.
2. Select Configuration Wizard
3. Select **Add Configuration** (default) and click on **Next**.
4. Select **Custom Configuration** (default) and click on **Next**.
5. Hold the **Ctrl** key and select the drives that you want to add into the array. After you selecting the drives, click on **AddtoArray.**
6. Click on Accept DG then Next.
7. Select the array you just created, click on **Add to SPAN** and **Next**.
8. Select the **RAID Level** you want to use, create the logical volume by specify the size at **Select Size** and click on **Accept** to create the logical volume.
9. Click on **Next** after you creating the logical volume.
10. Click on **Accept** and **Yes** to save the configuration.
11. Click on **Yes** to initialize the new logical drives. You will see all the logical drives listed.
12. Click on **Home** to go back to the configuration menu.
13. Now you can reboot the system and install the Operating System. Select **Exit**, click on **Yes** and press **Ctrl+Alt+Del** to reboot the system.

Assigning a Hot Spare Disk

1. Launch the configuration menu.
2. Select a free disk marked as **UNCONF GOOD** and listed under **Physical**

Drives.

3. Select Make Global Dedicated HSP or Make Dedicated HSP and click on Go.
4. Click on **Home** to go back to the configuration menu. You will see the disk marked as **Hotsapare** in pink and listed under Physical Drives.