RS720-X7/RS8

Configuration Guide

E7389

First Edition V1
June 2012

Contents

Revision history

Revision	Revision history	Date
V1	First release of RS720-X7/RS8 configuration guide	June 2012

Safety information

Electrical Safety

- Before installing or removing signal cables, ensure that the power cables for the system unit and all attached devices are unplugged.
- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing any additional devices to or from the system, contact a qualified service technician or your dealer. Ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you service.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your dealer.

Operation Safety

- Servicing of this product or units is to be performed by trained service personnel only.
- Before operating the server, carefully read all the manuals included with the server package.
- Before using the server, ensure all cables are correctly connected and the power cables are not damaged. If any damage is detected, contact your dealer as soon as possible.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Place the server on a stable surface.

This product is equipped with a three-wire power cable and plug for the user's safety. Use the power cable with a properly grounded electrical outlet to avoid electrical shock.

Lithium-Ion Battery Warning

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

CD-ROM Drive Safety Warning

CLASS 1 LASER PRODUCT

Heavy System

CAUTION! This server system is heavy. Ask for assistance when moving or carrying the system.

Chapter 1

This chapter describes the key features of RS920A-E6 and RS926A-E6. It includes the product overview and general specifications.

Product introduction

1.1 Key features

Mass Storage Capacity in a 2U Chassis with 92% Power Efficiency

Based on the Intel® Socket R E5-2600 processor platform, the ASUS RS720-X7/RS8 server offers customers assured quality of service with high memory capacity, outstanding power efficiency, quad LAN, and mass storage. It also enables comprehensive server management and flexible RAID, offering functional integration that makes it an excellent all-round choice for any IT application.

Mass storage capacity in a 2U chassis

The RS720-X7/RS8 features eight SAS/SATA 2.5”/3.5” hard drive bays and supports up to 24TB storage capacity in 2U. Its hot-swap design provides 24/7 non-stop service, high availability, and easy upgrades.

Up to 92% power efficiency

Equipped with 1+1 redundant 770W 80 PLUS Gold power supplies, the RS720-X7/RS8 saves users money on energy costs while maintaining strict environmental protection standards. The two power supplies also utilize a hot-swap design that allows work to continue even if one of them requires maintenance or replacement.

Extensive expandability

The expansion slot design includes up to one PCI Express 3.0 x16 slot and six PCI Express 3.0 x8 slots, meeting future expansion demands with ease.

Quad LAN support

Four LAN ports offer higher networking bandwidth with load-balancing and fault-tolerance functions. The RS720-X7/RS8 supports ASUS-made and most other available 10Gb/s LAN cards for the fastest networking currently possible.

Intelligent thermal design

The front-parallel placement of the CPU and memory guides smooth airflow throughout the chassis, while smart fan control technology adjusts fan speeds automatically based on system load.

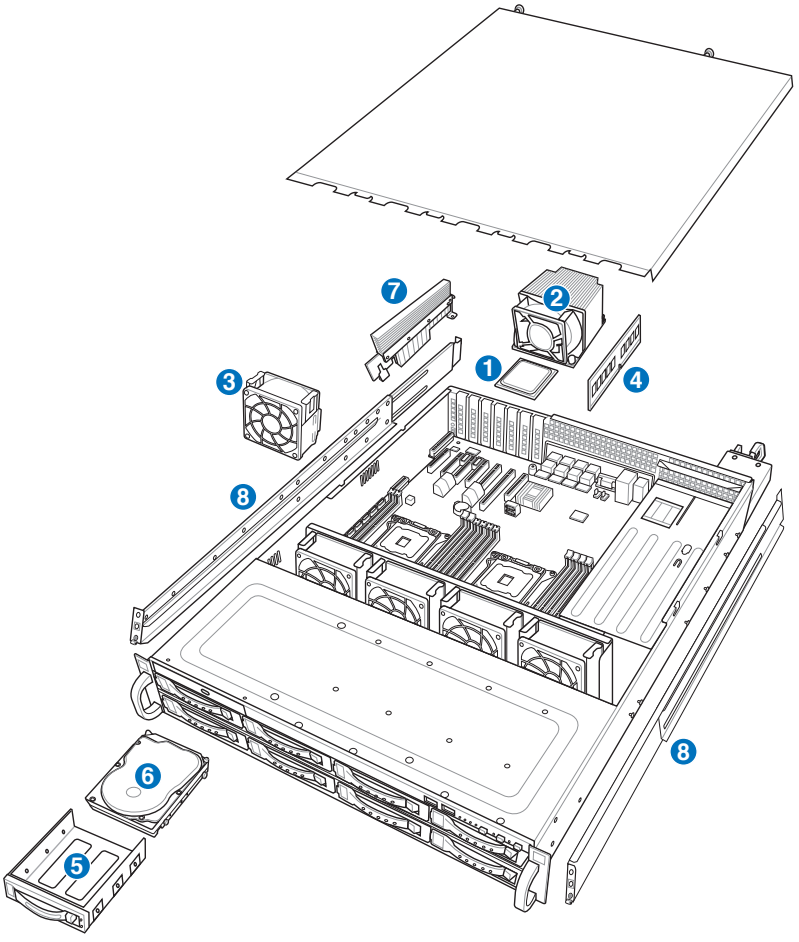
Flexible RAID

The RS720-X7/RS8 supports optional ASUS RAID PIKE upgrade kits. With these, users can integrate server capabilities with greater data security and quickly upgrade storage from SATA to SAS.

Built-in remote server management

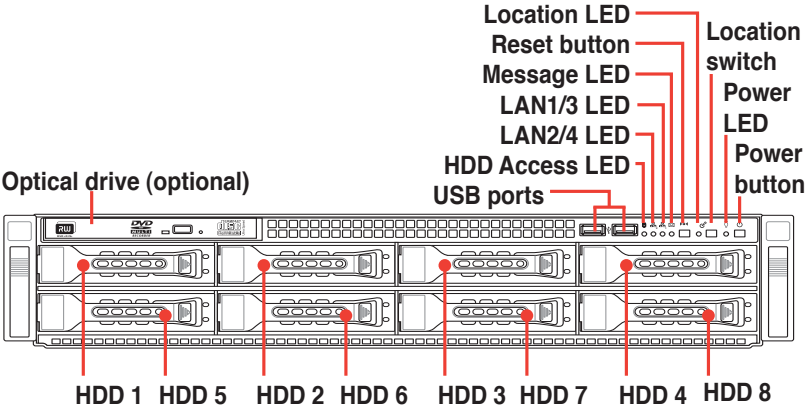
The web and graphical interface-based ASMB6-iKVM module lets users fully control the server with out-of-band management using the IPMI 2.0 standard for real time remote monitoring. Additionally, ASWM Enterprise provides one-to-multiple centralized management, including BIOS flashing, remote control, power control, and asset management, all via a user-friendly interface.

1.2 System overview

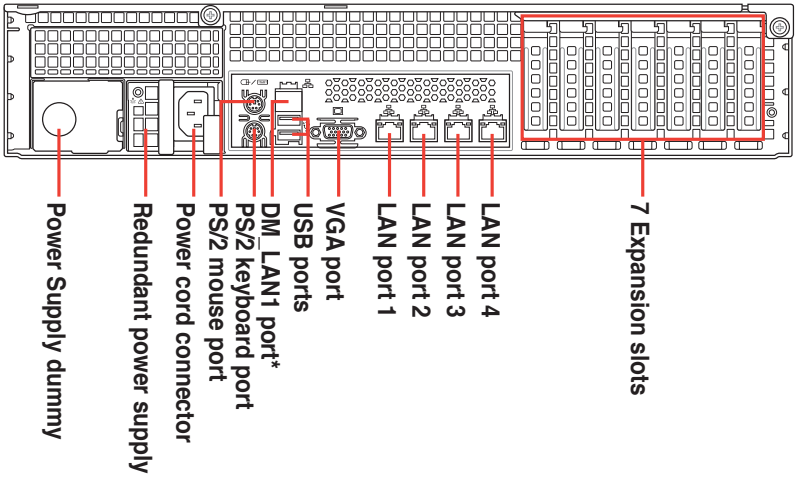


Items	Items
1. Central processing unit (CPU)	5. HDD trays
2. CPU cooler	6. Hard disk drives
3. System FAN	7. ASUS PIKE SAS RAID card (optional)
4. System memory	8. Friction rackmount rail kit

1.3 Front panel features



1.4 Rear panel features



* This port is for ASUS ASMB6-iKVM controller only.

1.5 System specifications

Model Name		RS720-X7/RS8
Processor / System Bus		2 x Socket-R 2011
		Intel® Xeon® Processor E5-2600 product family(115W)
		QPI 6.4 / 7.2 / 8.0 GT/s
Core Logic		Intel® C602-A PCH chipset
ASUS Features	Smart Fan	√
	ASWM Enterprise	√
Memory	Total Slots	12 (4-channel per CPU, 8 DIMM per CPU1, 4 DIMM per CPU2)
	Capacity	Maximum up to 96GB (UDIMM) Maximum up to 384GB (RDIMM) Maximum up to 384GB (LRDIMM)
	Memory Type	DDR3 800 / 1066 / 1333 / 1600 RDIMM DDR3 1066 / 1333 ECC UDIMM/Non-ECC UDIMM DDR3 1066 / 1333 LR-DIMM
	Memory Size	1GB, 2GB, 4GB, 8GB, 16GB, 32GB (RDIMM) 1GB, 2GB, 4GB, 8GB (UDIMM) 8GB, 16GB, 32GB (LRDIMM)
Expansion Slots	Total PCI/PCI-X/ PCI-E Slots	7
	Slot Type	Low-profile: - 1 x PCI-E x16 (Gen3 x16 link) + 5 x PCI-E x8 (Gen3 x8 link) or - 1 x PCI-E x16 (Gen3 x8 link) + 6 x PCI-E x8 (Gen3 x8 link)
	Additional Slot 1	1 x PIKE slot for storage enhancement
Storage	SATA Controller	Intel® C602-A: 2 x SATA 6Gb/s ports 4 x SATA 3Gb/s ports Intel Rapid Storage Technology (for Windows only) - Supports software RAID 0, 1, 10 & 5 LSI® Mega RAID (for Windows/Linux) - Supports software RAID 0, 1, & 10
	SAS Controller	Optional: - ASUS PIKE 2008 8-port SAS 6G RAID card - ASUS PIKE 2008/IMR 8-port SAS 6G RAID card - ASUS PIKE 2108 8-port SAS 6G H/W RAID card
HDD Bays	I = internal A or S will be hot-swappable	8 x Hot-swap 3.5” HDD Bays

(continued on the next page)

Model Name		RS720-X7/RS8
Networking	LAN	4 x Intel 82574L + 1 x Mgmt LAN per Node
Graphic	VGA	Aspeed AST2300 16MB
Auxiliary Storage Device Bay (Floppy / Optical Device)		1 x Slim-type optical Device Bay Options: No Device / DVD-RW
Onboard I/O		2 x Internal Serial Port 5 x RJ-45 ports (1 for ASMB6-iKVM) 4 x USB 2.0 ports (Front x 2, Rear x 2) 1 x Internal A Type USB Port 1 x VGA port 1 x PS/2 keyboard port 1 x PS/2 mouse port
OS Support		Windows® Server 2008 R2 Windows® Server 2008 R2 Enterprise Windows® Server 2008 Enterprise 32/64-bit RedHat® Enterprise Linux AS5.6/6.0 32/64-bit SuSE® Linux Enterprise Server 11.2 32/64-bit CentOS 5.6 32/64-bit VMWare ESX4.1/ESXi4.1 (Subject to change without any notice)
Management Solution	Out of Band Remote Hardware	Onboard ASMB6-iKVM for KVM-over-IP
	Software	ASWM Enterprise
Dimension (HH x WW x DD)		615mm x 444mm x 87.0mm (2U)
Net Weight Kg (CPU, DRAM & HDD not inclu ded)		22 Kg
Power Supply		1+1 Redundant 770W 80PLUS Gold Power Supply (following different configuration by region)
Environment		Operating temperature: 10°C–35°C Non operating temperature: -40°C–70°C Non operating humidity: 20%–90% (Non-condensing)

***Specifications are subject to change without notice.**

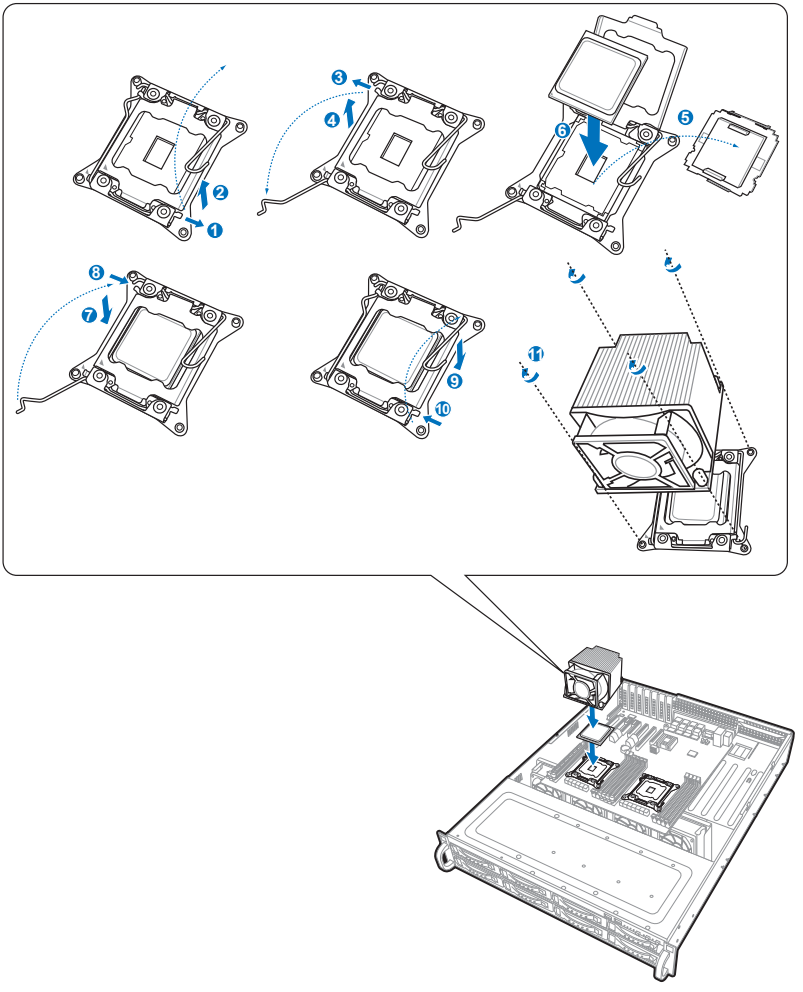
Chapter 2

This chapter lists the key components and optional accessories for the server system.

Components

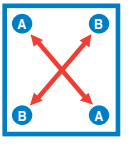
2.1 Upgrading CPU and CPU heatsink

The motherboard comes with two surface mount LGA 2011 Socket R designed for the Intel® Xeon® E5-2600 series processor family.



Position the CPU over the socket, ensuring that the notch match the socket.

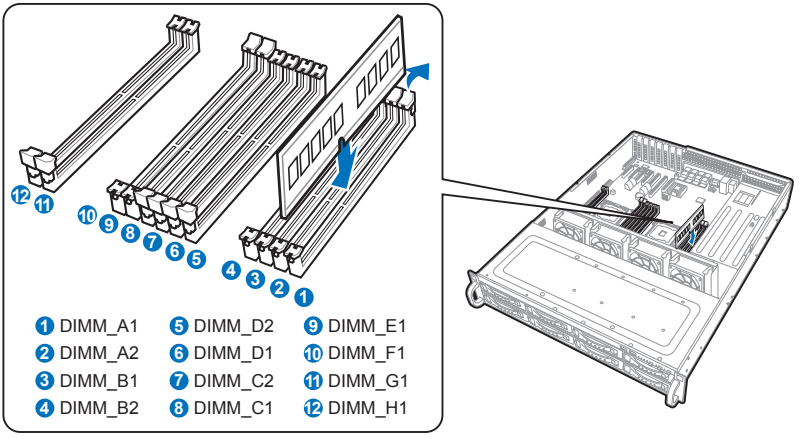
Tighten the four heatsink screws in a diagonal sequence.



P/N	Description
90-S000U0C87T	E5-2670 2.6G (8C/20M/115W/DDR3 1600/8.00 GT) with Heatsink
90-S000U0C88T	E5-2665 2.4G (8C/20M/115W/DDR3 1600/8.00 GT) with Heatsink
90-S000U0C89T	E5-2660 2.2G (8C/20M/95W/DDR3 1600/8.00 GT) with Heatsink
90-S000U0C8AT	E5-2650 2.0G (8C/20M/95W/DDR3 1600/8.00 GT) with Heatsink
90-S000U0C8BT	E5-2640 2.5G (6C/15M/95W/DDR3 1333/7.20GT) with Heatsink
90-S000U0C8CT	E5-2630 2.3G (6C/15M/95W/DDR3 1333/7.20GT) with Heatsink
90-S000U0C8DT	E5-2620 2.0G (6C/15M/95W/DDR3 1333/7.20GT) with Heatsink

2.2 Upgrading system memory

The motherboard comes with eight (for CPU1) and four (for CPU2) Double Data Rate 3 (DDR3) Dual Inline Memory Modules (DIMM) sockets.



You may install 1GB, 2GB, 4GB, 8GB, 16GB and 32GB* RDIMMs or 1GB, 2GB, 4GB and 8GB* UDIMMs or 8GB, 16GB and 32GB* LR-DIMMs into the DIMM sockets using the memory configurations in this section.

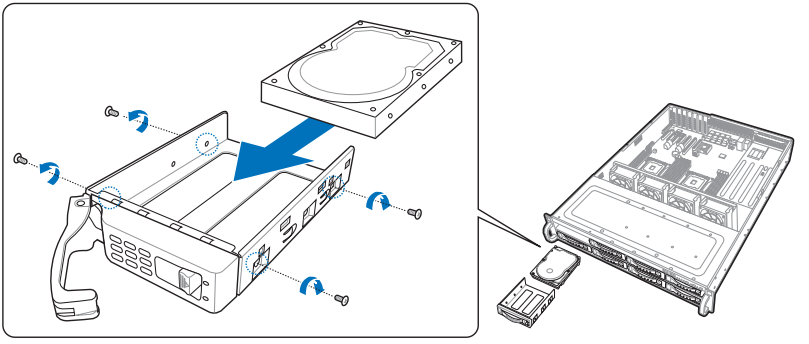
1 CPU Configuration (must on CPU1)								
	A1	A2	B1	B2	C1	C2	D1	D2
1 DIMMs	✓							
2 DIMMs	✓				✓			
3 DIMMs	✓		✓		✓			
4 DIMMs	✓		✓		✓		✓	
5 DIMMs	✓	✓	✓		✓		✓	
6 DIMMs	✓	✓	✓		✓	✓	✓	
7 DIMMs	✓	✓	✓	✓	✓	✓	✓	
8 DIMMs	✓	✓	✓	✓	✓	✓	✓	✓

2 CPU Configuration												
	A1	A2	B1	B2	C1	C2	D1	D2	E1	F1	G1	H1
1 DIMMs	✓											
2 DIMMs	✓								✓			
3 DIMMs	✓				✓				✓			
4 DIMMs	✓				✓				✓		✓	
5 DIMMs	✓		✓		✓				✓		✓	
6 DIMMs	✓		✓		✓				✓	✓	✓	
7 DIMMs	✓		✓		✓		✓		✓	✓	✓	
8 DIMMs	✓		✓		✓		✓		✓	✓	✓	✓
9 DIMMs	✓	✓	✓		✓		✓		✓	✓	✓	✓
10 DIMMs	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
11 DIMMs	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
12 DIMMs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Order P/N	Description
90-S000I0600T	DDR3 1600 ECC REG 4G 240P SINGLE PACK
90-S000I0610T	DDR3 1600 ECC REG 8G 240P SINGLE PACK
90-S000I0620T	DDR3 1600 ECC REG 16G 240P SINGLE PACK

2.3 Upgrading hard disk drives

The hard disk drive installed on the drive tray connects to the motherboard SATA/SAS ports via the SATA/SAS backplane.

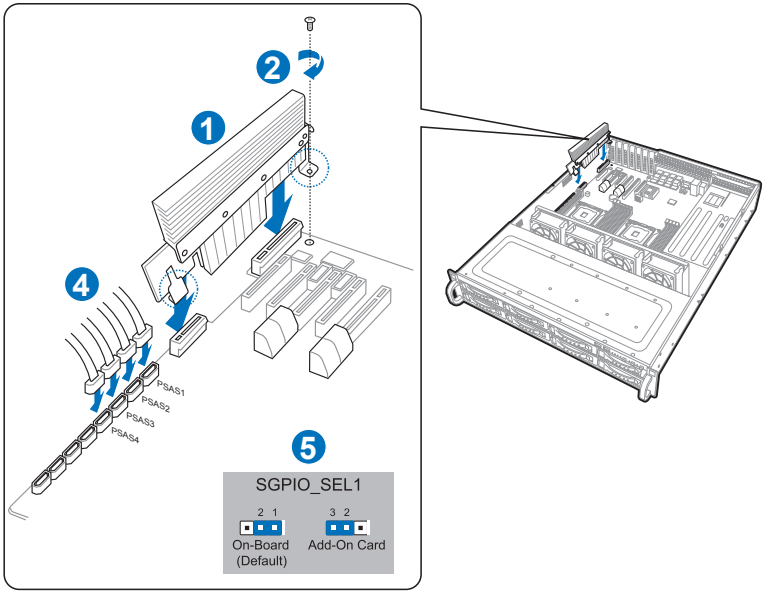


When installed, the SATAII/SAS connector on the drive connects to the SATAII/SAS interface on the backplane.

Order P/N	Description
90-S000H64R0T	300GB 6G SAS15Krpm with HDD Tray (Single Pack)
90-S000H64S0T	450GB 6G SAS15Krpm with HDD Tray (Single Pack)
90-S000H64T0T	600GB 6G SAS15Krpm with HDD Tray (Single Pack)
90-S000H65D1T	500GB SATA3 6Gb 7200 rpm with HDD Tray (Single Pack)
90-S000H65B1T	1TB SATA3 6Gb 7200 rpm with HDD Tray (Single Pack)
90-S000H65V0T	500GB SATA3 7200 rpm with HDD Tray (Single Pack)
90-S000H65U0T	1TB SATA3 7200 rpm with HDD Tray (Single Pack)
90-S000H65T0T	2TB SATA3 7200 rpm with HDD Tray (Single Pack)
90-S000H65E2T	3TB SATA3 7200 rpm with HDD Tray (Single Pack)

2.4 Installing ASUS PIKE RAID module

Follow the steps below to install an optional ASUS RAID card on your motherboard.

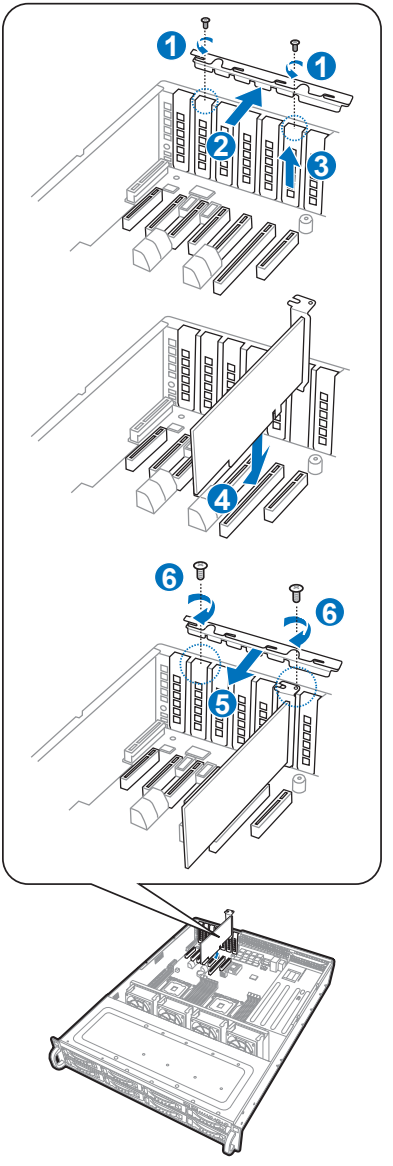


1. Locate the PIKE RAID card slot on the motherboard, then remove the screw at the end of the PIKE slot on the motherboard.
2. Tighten the screw to secure the PIKE card on the motherboard.
3. Remove the SATA/SAS cables from the onboard SATA1–4 connectors.
4. Connect the SATA/SAS cables to the onboard SAS1–4 connectors (blue).
5. Move the SGPIO_SEL1 jumper on the SATA/SAS backplane to 2–3.

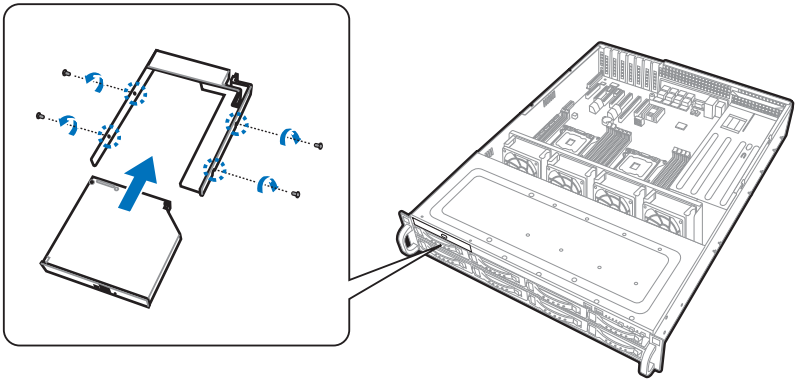
Order P/N	Description
90-S00CS0130T	PIKE2008 8-port SAS 6G card. RAID Kit (RAID 0, 1, 10, 1E)
90-S00CS0140T	PIKE 2008/IMR 8-port SAS 6G card. RAID Kit (RAID 0, 1, 10, 5, 50)
90-S00CS0150T	PIKE 2108 8-port SAS 6G card. RAID Kit (H/W RAID 0, 1, 10, 5, 6, 50, 60)

2.5 Installing an expansion card to the riser card bracket

In the future, you may need to install expansion cards. The following subsections describe the slots and the expansion cards that they support.



2.6 Installing optical drive



P/N	Description
90-S000C4000T	SLIM DVD-ROM 8X MODULE
90-S000C2000T	SLIM DVD-RW MODULE

2.7 OS support list

OS support list
WindowsR Server 2008 R2
WindowsR Server 2008 R2 Enterprise
WindowsR Server 2008 Enterprise 32/64-bit
RedHatR Enterprise Linux AS5.6/6.0 32/64-bit
SuSER Linux Enterprise Server 11.2 32/64-bit
CentOS 5.6 32/64-bit
VMWare ESX4.1/ESXi4.1

P/N	Description
90-S00SW7151T	WINDOWS SERVER 2008 STD R2 64 (64-bit only)
90-S00SW8200T	Windows Server 2008 R2 Enterprise (1-8 CPU, 10CAL)