



RS700-X7 / PS4

Configuration Guide



E7373

First Edition V1

June 2012

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Revision history

Revision	Revision history	Date
V1	First release of RS700-X7/PS4 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

High performance 1U server with great expandability and flexibility

The RS700-X7/PS4 is a space-saving 1U server featuring high memory and storage capacity, flexible RAID, 2+1 expansion slots, 80 PLUS Gold power supply, and quad LAN. It's designed for telecom server centers, IDC, and all small and medium businesses facing space constraints.

Optimized cooling design

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

Flexible 2+1 expansion in a 1U chassis

Despite 1U space requirements, the RS700-X7/PS4 manages to offer two PCI Express 3.0 slots and one extra slot dedicated to exclusive ASUS PIKE cards, helping users with better server integration.

Up to 92% power efficiency

Maintaining the ASUS commitment to environmental protection, the RS700-X7/PS4 is equipped with a 600W 80 PLUS Gold power supply to reduce power loss and consumption. As such, it lowers power bills to save users money with up to 92% power efficiency.

Innovative storage and RAID

The RS700-X7/PS4 supports optional ASUS PIKE RAID upgrade kits. With a PIKE card, users can integrate server functions into data security, and upgrade from SATA to SAS storage without occupying the two PCI Express 3.0 slots. This gives users better flexibility through more storage options.

High availability and reliability

The RS700-X7/PS4 uses hot-swap features for high availability and easy upgrades, allowing users to replace drive modules with no hassles. Additionally, the proprietary ASUS anti-vibration fan module cage provides superior cooling with no reliability compromise.

Quad LAN support

Four LAN ports provide high networking bandwidth with load balance and fault tolerance functions. The server supports ASUS and most other available 10Gb/s LAN cards for extra-fast networking.

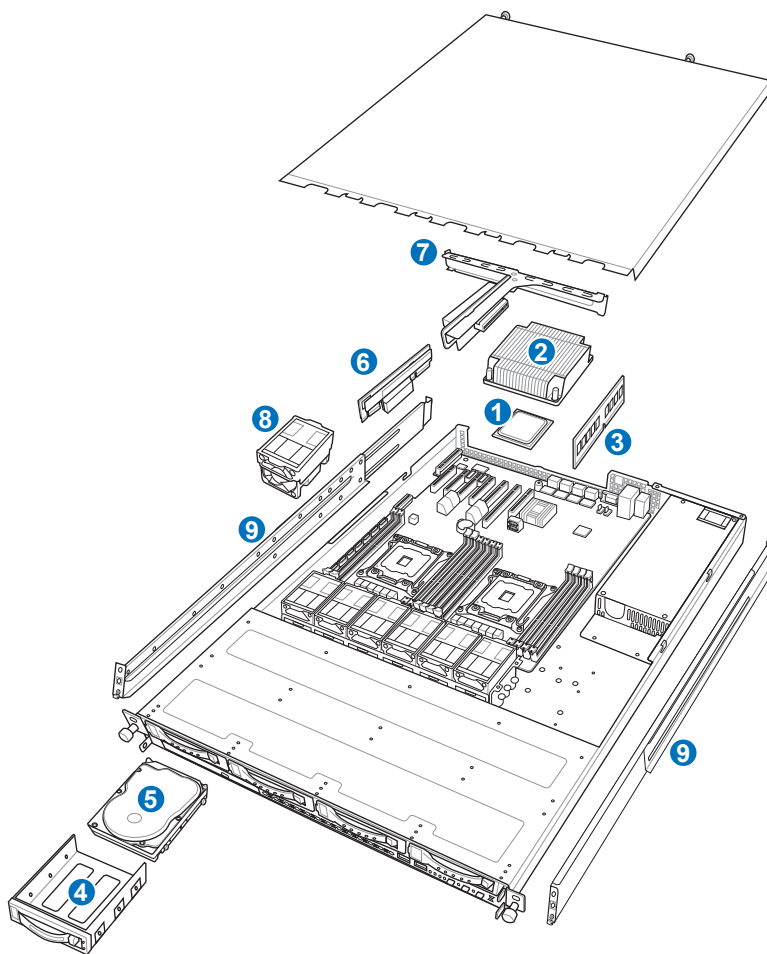
Outstanding computing capabilities

With support for new Intel® Sandy Bridge Socket R/LGA 2011 and 12 DIMM memory slots, the RS700-X7/PS4 provides improved computing power for customers that demand an extensive range of applications.

Onboard ASMB6-iKVM remote management upgrade kit

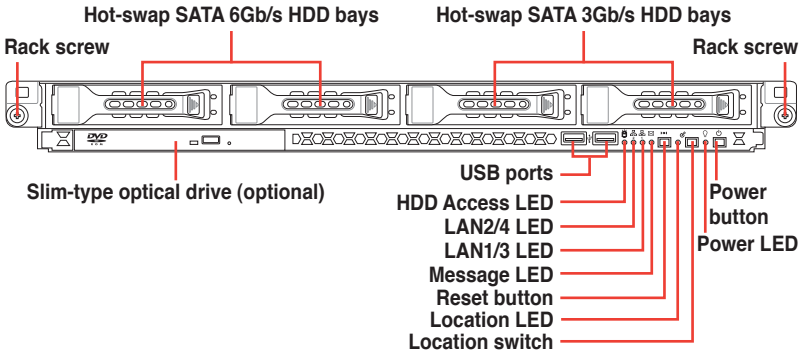
The exclusive ASUS ASMB6-iKVM enables dashboard system health monitoring, remote power on/off control, virtual media over LAN, automatic video recording, and network bonding support. In addition, the ASMB6 function is based on BIOS-level access, so even if the server operating system is down, the KVM module can still provide round-the-clock remote monitoring and diagnosis through a user-friendly graphical user interface.

1.2 System overview



Items	Items
1. Central processing unit (CPU)	6. ASUS PIKE SAS RAID card (optional)
2. CPU heatsink	7. Riser card bracket
3. System memory	8. System fans
4. HDD trays	9. Friction rackmount rail kit
5. Hard disk drives	

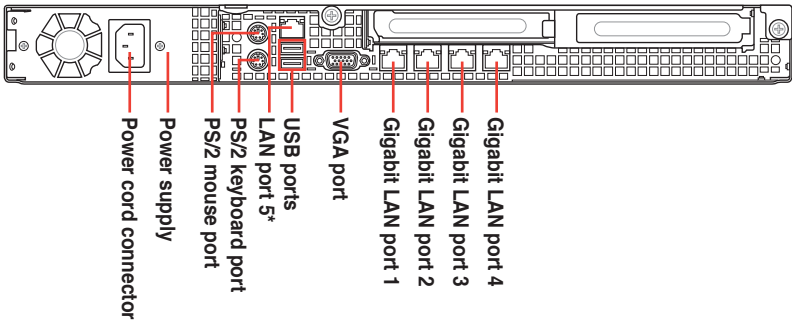
1.3 Front panel features



1.4 Rear panel features



- The ports for the USB, VGA, and Gigabit LANs do not appear on the rear panel if the motherboards are not present.
- The port is for ASUS ASMB6-iKVM controller only.



1.5 System specifications

Model Name		RS700-X7/PS4
Processor / System Bus		1 x Socket LGA2011 Intel® Xeon® E5-2600 Processor Family
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 1333 / 1066 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	2
	Slot Type	1 x PCI-E x16 (Gen3 x8 link) [FH/HL] 1 x PCI-E x8 (Gen3 x8 link) [FH/HL]
	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 SAS2 6G RAID card - ASUS PIKE 2008/IMR 8-port SAS2 6G RAID card - ASUS PIKE 2108 8-port SAS2 6G H/W RAID card
HDD Bays	I = internal A or S = hot-swappable	4 x Hot-swap 3.5" SAS/SATA HDD Bays

(continued on the next page)

Model Name		RS700-X7/PS4
Networking	LAN	4 x Intel 82574L + 1 x Mgmt LAN
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 Enterprise 32/64-bit Windows® Server 2008 R2 Enterprise CentOS 5.6 32/64 bit VMWare ESX4.1/ESXi4.1 RedHat® Enterprise Linux AS5.6/6.0 32/64-bit SuSE® Linux Enterprise Server 11.2 32/64-bit (Subject to change without any notice)
Management Solution	Out of Band Remote Hardware	Onboard ASMB6-iKVM for KVM-over-IP
	Software	ASUS ASWM Enterprise
Dimension (HH x WW x DD)		615mm x 444mm x 43.4mm
Net Weight Kg (CPU, DRAM & HDD not included)		15 Kg
Power Supply		600W 80PLUS Gold Single Power Supply
Power Rating		Input: 100–240V, 7.5–3.1A, 50–60Hz, Class I
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.

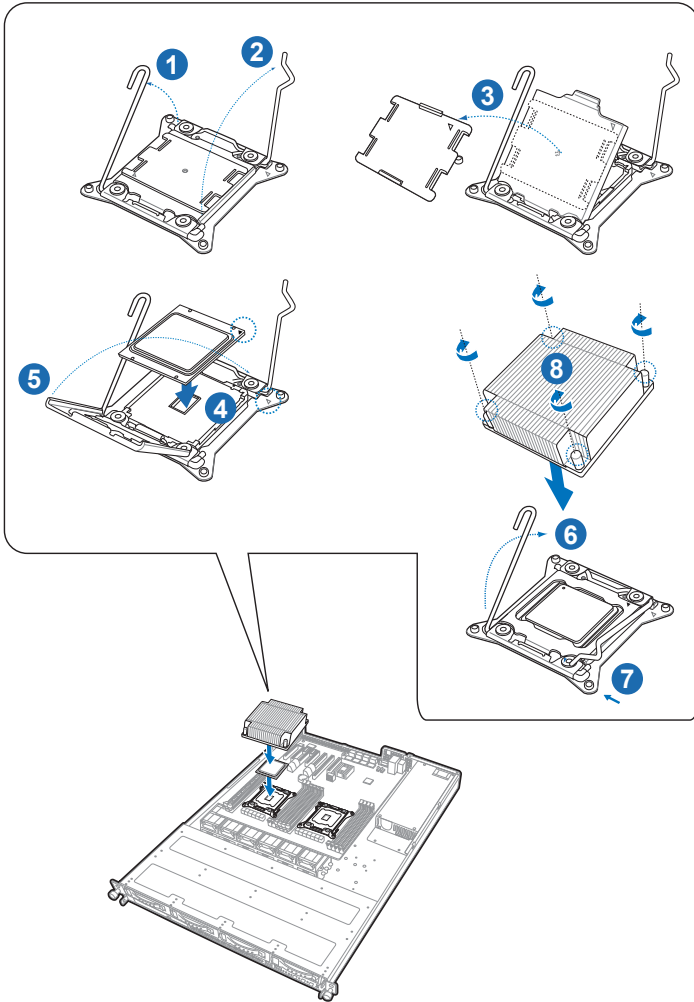
Chapter 2

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

Components

2.1 Upgrading CPU and CPU heatsink

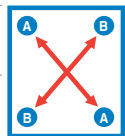
The motherboard comes with two surface mount LGA 2011 Socket R designed for the Intel® Xeon® E5-2600 series processor family.



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



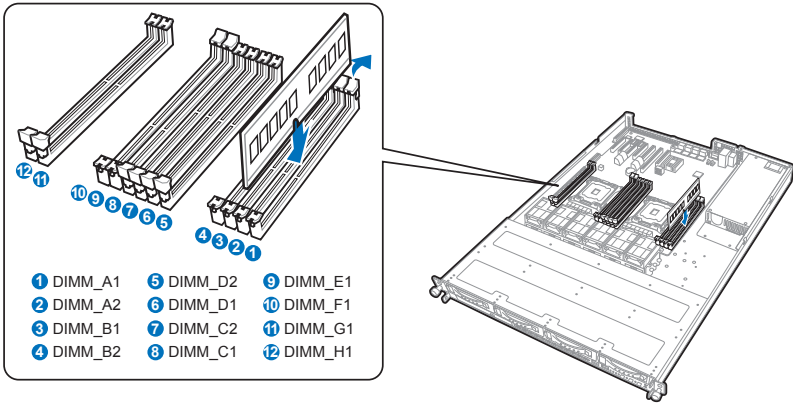
Tighten the four heatsink screws in a diagonal sequence.



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.



Recommended memory configurations

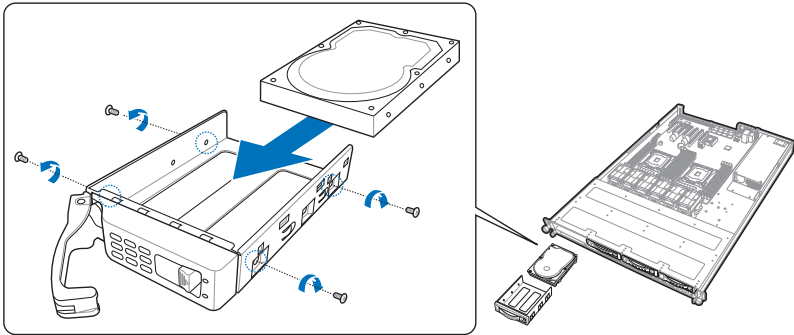
1 CPU Configuration (must on CPU1)								
	A1	A2	B1	B2	C1	C2	D1	D2
1 DIMMs	•							
2 DIMMs	•				•			
3 DIMMs	•		•		•			
4 DIMMs	•		•		•		•	
5 DIMMs	•	•	•		•		•	
6 DIMMs	•	•	•		•	•	•	
7 DIMMs	•	•	•	•	•	•	•	
8 DIMMs	•	•	•	•	•	•	•	•

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-S000I0620T	DDR3 1600 ECC REG 16G 240P
90-S000I0610T	DDR3 1600 ECC REG 8G 240P
90-S000I0600T	DDR3 1600 ECC REG 4G 240P

2.3 Upgrading hard disk drives

The system supports four hot-swap SATA/SAS hard disk drives and two SATAIII hard disk drives*. The hard disk drive installed on the drive tray connects to the motherboard SATA/SAS ports via the SATA/SAS backplane.

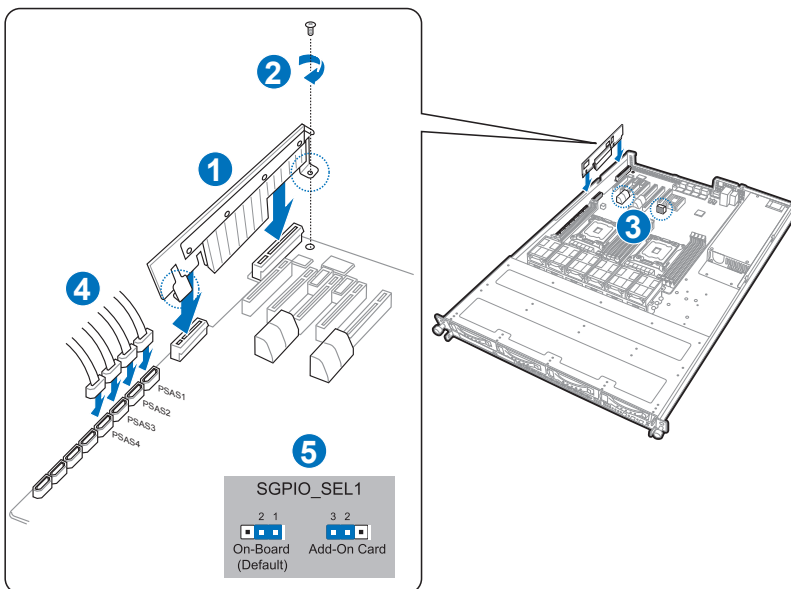


We recommend that you install identical drives of the same model and capacity for RAID configuration.

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.

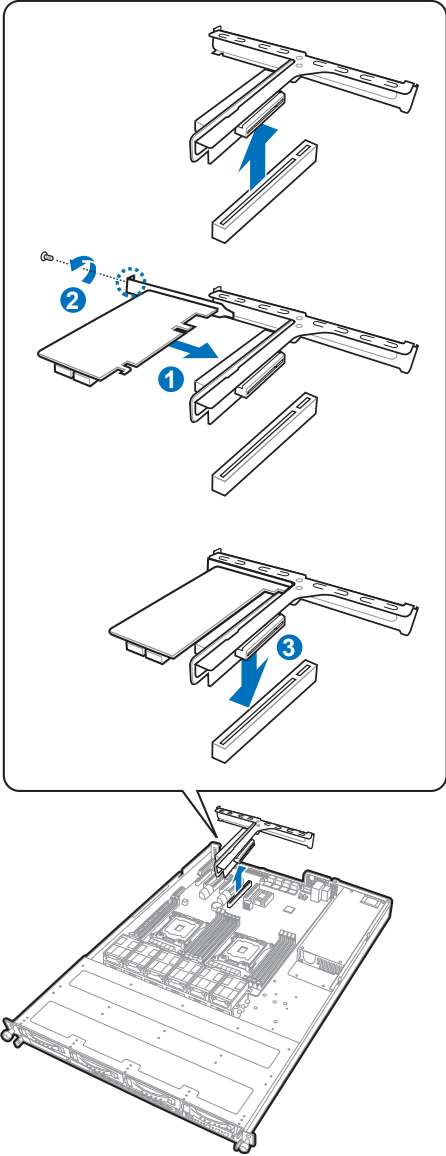


1. Locate the PIKE RAID card slot on the motherboard, then remove the screw at the end of the PIKE slot on the motherboard.
2. Tighten the screw to secure the PIKE card on the motherboard.
3. Remove the SATA/SAS cables from the onboard SATA1–4 connectors.
4. Connect the SATA/SAS cables to the onboard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

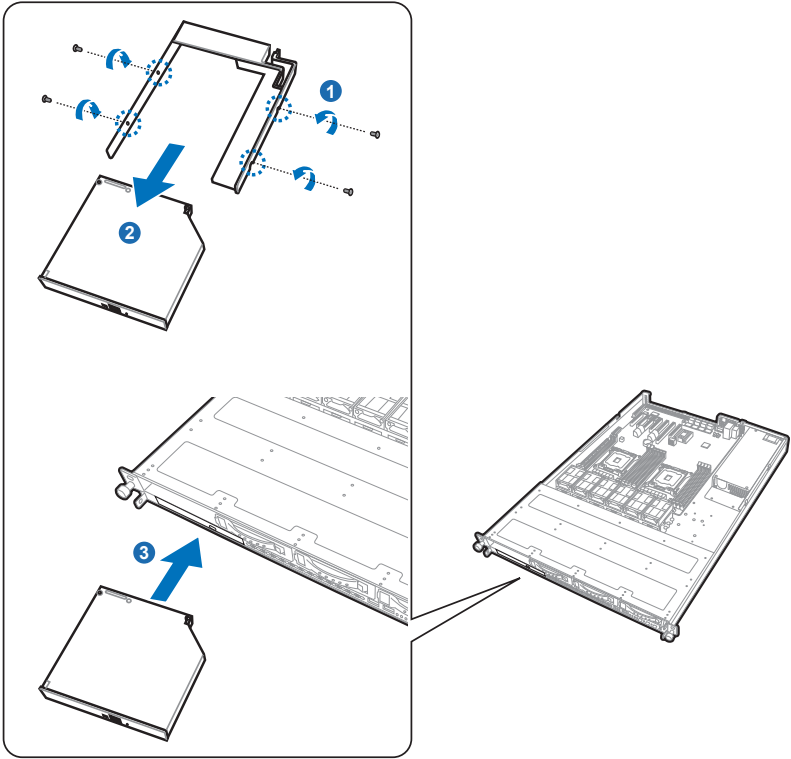
Order P/N	Description
90-S00CS0130T	PIKE2008 8-port SAS 6G card. RAID Kit (RAID 0, 1, 10, 1E)
90-S00CS0140T	PIKE 2008/IMR 8-port SAS 6G card. RAID Kit (RAID 0, 1, 10, 5, 50)
90-S00CS0150T	PIKE 2108 8-port SAS 6G card. RAID Kit (H/W RAID 0, 1, 10, 5, 6, 50, 60)

2.5 Installing an expansion card to the riser card bracket

The barebone server comes with a riser card bracket. You need to remove the bracket if you want to install PCI Express x8 or x16 expansion cards.

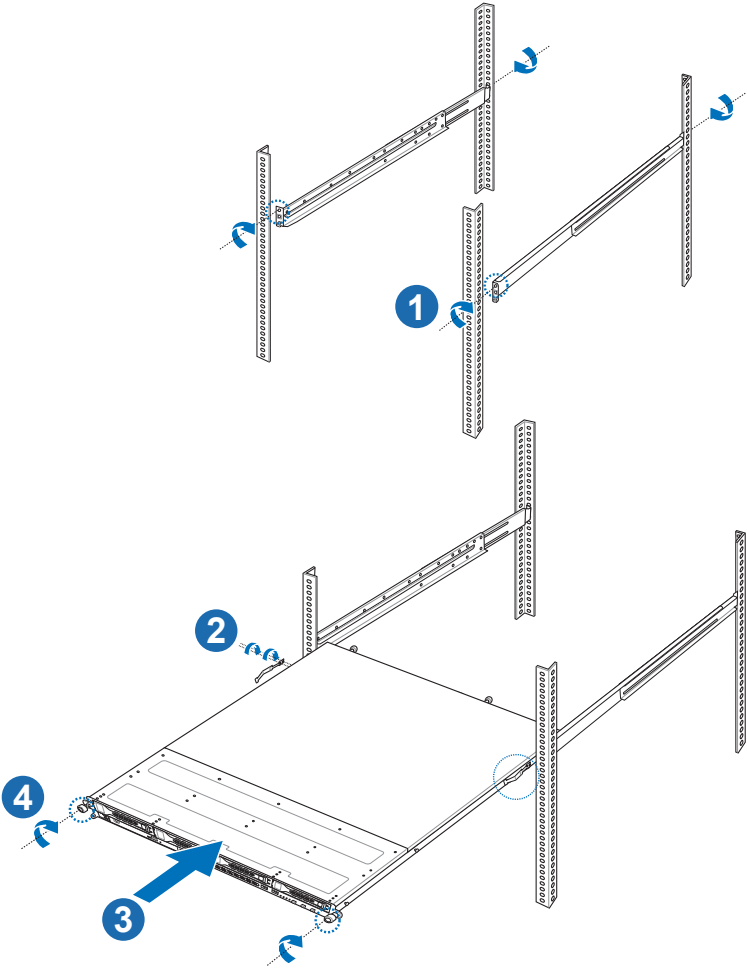
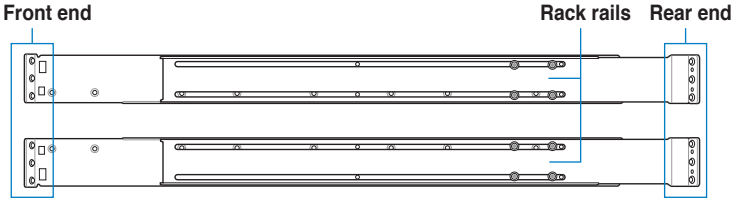


2.6 Installing optical drive



Order P/N	Description
90-S000C2000T	Slim DVD-RW Module (SATA)
90-S000C4000T	Slim DVD-ROM Module (SATA)

2.7 Friction rail kit



P/N	Description
90-S00SP1360T	FRICTION RAIL KIT V2.0

2.8 OS support list

OS support list
WindowsR Server 2008 R2 Enterprise
WindowsR Server 2008 R2
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

* Subject to change without any notice.

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)

