RS300-E7/PS4

Configuration Guide

E6290

First Edition V1
May 2011

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Contents

Revision history iii
Safety information iv

Chapter 1: Product introduction

1.1 Key features 1-2
1.2 System overview 1-4
1.3 Front panel features 1-5
1.4 Rear panel features 1-5
1.5 System specifications 1-6

Chapter 2: Components

2.1 Upgrading CPU and CPU heatsink 2-2
2.2 Upgrading system memory 2-4
2.3 Upgrading hard disk drives 2-5
2.4 Installing ASUS PIKE SAS RAID card 2-6
2.5 Installing ASUS Server Management Board 2-7
2.6 Installing PCI express cards 2-8
2.7 Friction rail kit 2-9
2.8 OS support list 2-10

Revision history

Revision	Revision history	Date
V1	First release of RS300-E7/PS4 configuration guide	May 2011

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, make sure 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 RS300-E7/PS4. It includes the product overview and general specifications.

Product introduction

1.1 Key features

Highly Expandable 1U Server with Quad-LAN Connection

As a UP 1U rack-mount server based on new generation Intel® Xeon Sandy Bridge CPU, RS300-E7/PS4 provides immediate performance scale up, impressive expandability and upgradability in the 1U, Quad-LAN networking connection and remote management, being an ideal solution for entry-level customers.

Support New Generation Intel Xeon Sandy Bridge CPU

- Intel Xeon Sandy Bridge CPU has up to 21% higher performance and 16% performance/Watt compared with last generation processor
- ASUS proprietary CPU heat-pipe delivers high thermal performance for stable computing applications without interference with expansion slots

Quad-LAN for Reliable Networking Connection and Effective Application

- Provides higher networking bandwidth by teaming 4 GbE LAN ports into just 1
- Being superior for virtualization application with more networking resource and queues for virtual servers
- Optimized for VMware fault-tolerance

2 + 1 Expandability in UP 1U

- Supports 2+1 I/O expansion slots in the 1U chassis for higher expandability
- One PCI-E x8 (x8 link) slot to support full-height/half-length card
- One PCI-E x16 (x8 link) slot to support full-height/half-length card
- One more slot designed for ASUS optional PIKE card for seamless upgrade to SAS storage and RAID protection

Optional ASUS PIKE for Demand on Upgradability

- Provides cost effective storage interface upgrade solutions, being compatible with all ASUS DP & UP system
- Maximize I/O performance and data protection without sacrifice of expandability in 1U
- Offers total RAID solution without additional effort for verification

Remote Management Solution

- Optional Web GUI ASMB4-iKVM upgrade kit provides full control to server with function keys and remote server screen
- Share local device with target servers
- Being Compatible with ASUS E7 Generation server system with ASMB5 header

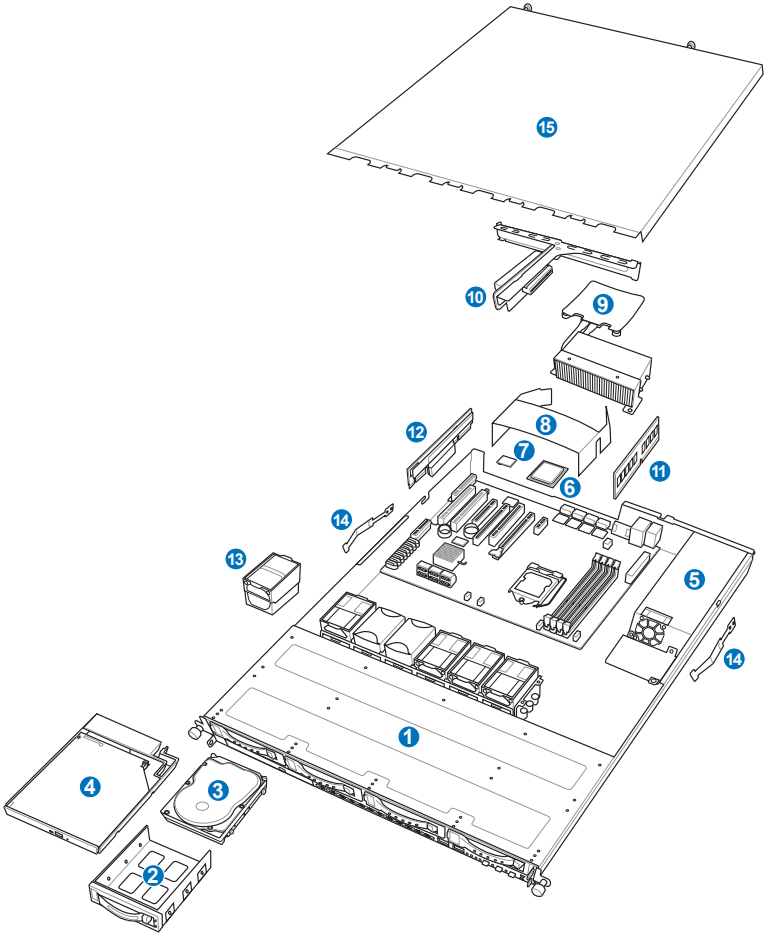
ASWM Enterprise Supported

- ASWM provides easy deployment and management with user-friendly interface
- Delivers centralized management, asset management, notification mechanism and integrated BMC BIOS update

Energy-Saving with 80+ Green Power Supply

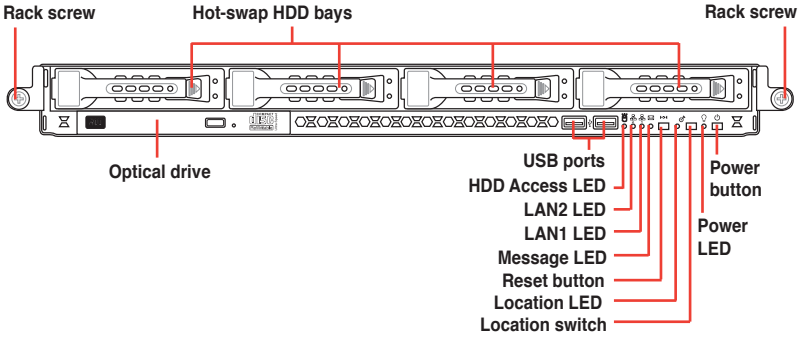
- Eliminates total system power loss to the lowest level with 80+ Power Supply

1.2 System overview

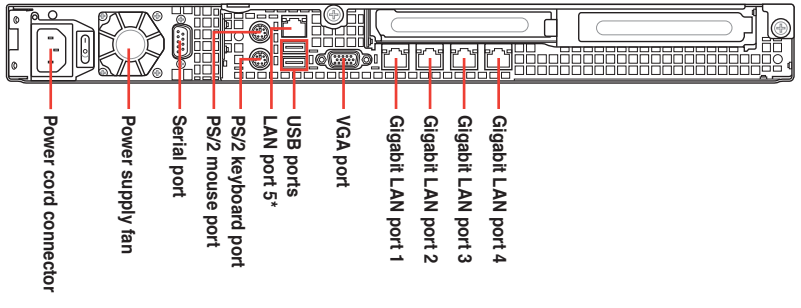


Items	Items
1. Front cover	2. Hard disk drive bays
3. Hard disk drive	4. Optical disc drive
5. 350W Single Power Supply	6. CPU
7. ASMB5-iKVM controller card	8. CPU heatsink air duct
9. CPU heatsink	10. PCI-E 2.0 riser card
11. DDR3 DIMM	12. ASUS PIKE SAS controller card
13. System fans	14. Friction Rail fixing latches
15. Top cover	

1.3 Front panel features



1.4 Rear panel features



* This port is for ASUS ASMB5-iKVM controller card only.

1.5 System specifications

Model Name		RS300-E7/PS4
Processor / System Bus		1 x Socket LGA1155 - Intel® Xeon® E3-1200 Processor Family - Intel® Core™ i3-2100 Processor Family
Core Logic		Intel® C204 chipset
ASUS Features	Smart Fan	√
	ASWM2.0	√
Memory	Total Slots	4 (2 Channels)
	Capacity	Maximum up to 32GB
	Memory Type	DDR3 1333 / 1066 ECC UDIMM
	Memory Size	1GB, 2GB, 4GB and 8GB
Expansion Slots	Total PCI/PCI-X/ PCI-E Slots	2
	Slot Type	1 x PCI-E 2.0 x16 slot (x8 link) (Full-Height/HL) 1 x PCI-E 2.0 x8 slot (x8 link) (Full-Height/HL)
	Additional Slot 1	1 x PIKE slot for storage enhancement
Storage	SATA Controller	Intel® C204: 2 x SATA 6Gb/s ports 2 x SATA 3Gb/s ports Intel Rapid Storage Technology (for Windows only) - Supports software RAID 0, 1, 10 & 5 LSI® MegaRAID (for Linux / Windows) - Supports software RAID 0, 1 & 10
	SAS Controller	Optional: - ASUS PIKE 1068E 8-port SAS RAID card - ASUS PIKE 6480 8-port SAS RAID card - 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 Gen2 / SATA HDD Bays

(continued on the next page)

Model Name		RS300-E7/PS4
Networking	LAN	4 x Intel 82574L + 1 x Mgmt LAN
Graphic	VGA	Aspeed AST2050 16MB
Auxiliary Storage Device Bay (Floppy / Optical Device)		1 x Slim-type optical Device Bay Options: No Device / DVD-RW
Onboard I/O		1 x External Serial Port 5 x RJ-45 ports (1 for ASMB5-iKVM) 4 x USB 2.0 ports (Front x 2, Rear x 2) 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 2003 R2 Enterprise 32/64-bit RedHat® Enterprise Linux AS5.5/6.0 32/64-bit SuSE® Linux Enterprise Server 10 SP3/11 32/64-bit (Subject to change without any notice)
Management Solution	Out of Band Remote Hardware	Optional ASMB5-iKVM for KVM-over-IP support
	Software	ASUS ASWM Enterprise
Dimension (HH x WW x DD)		615mm x 444mm x 43.4mm
Net Weight Kg (CPU, DRAM & HDD not inclu ded)		15 Kg
Power Supply		350W (80+) Single Power Supply
Power Rating		Input: 100–240V, 7–3.5A, 50–60Hz, Class I
Environment		Operation temperature: 10°C–35°C / Non operation temperature: -40°C–70°C Non operation humidity: 20%–90% (Non-condensing)

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

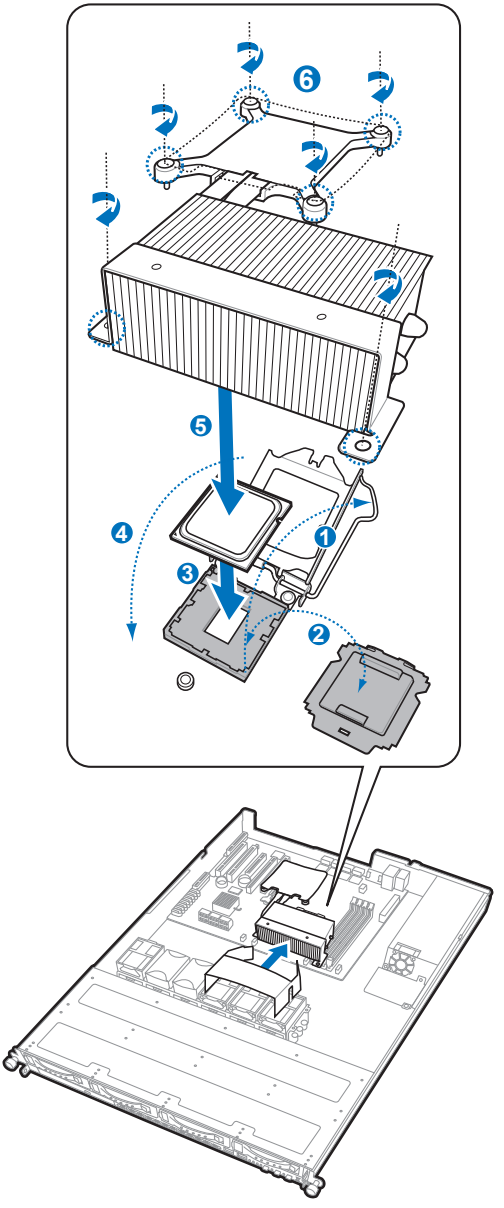
Chapter 2

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

Components

2.1 Upgrading CPU and CPU heatsink

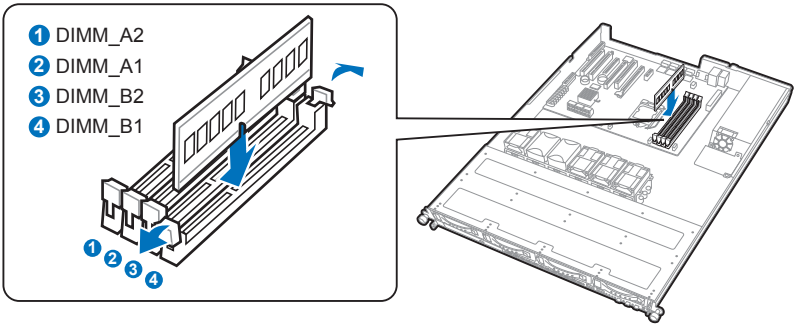
ASUS RS300-E7/PS4 supports Intel® LGA1155 Sandy-bridge processors.



Order P/N	Description
90-S000U09Y1T (single pack)	Quad Core Intel Xeon E3-1220 3.1G
90-S000U0A21T (single pack)	Quad Core Intel Xeon E3-1230 3.1G
90-S000U0A41T (single pack)	Quad Core Intel Xeon E3-1240 3.1G
90-S000U0A71T (single pack)	Quad Core Intel Xeon E3-1270 3.1G
90-S000U0A91T (single pack)	Quad Core Intel Xeon E3-1280 3.1G

2.2 Upgrading system memory

The motherboard comes with four (4) Double Data Rate 3 (DDR3) Dual Inline Memory Modules (DIMM) sockets.



You may install 1GB, 2GB, 4GB and 8GB Unbuffered with ECC DDR3 DIMMs into the DIMM sockets using the memory configurations in this section.

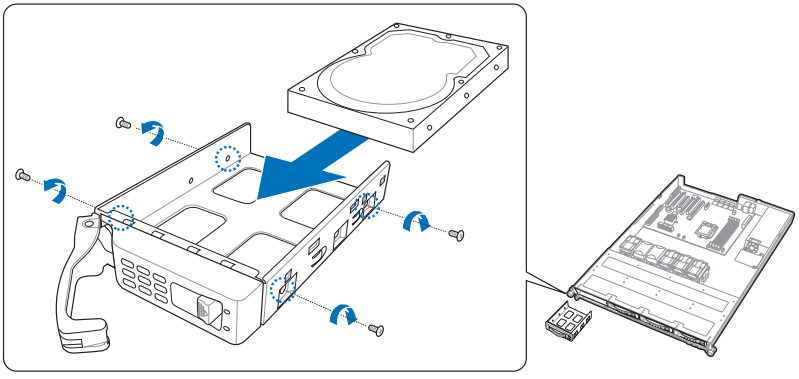
UDIMM				
DIMM Slot Per Channel	DIMM Populated per Channel	DIMM Type	Speed	Rank per DIMM
2	1	Unbuffered DDR3 ECC	1066/1333	Single Rank, Dual Rank
2	2	Unbuffered DDR3 ECC	1066/1333	Single Rank, Dual Rank

- Start installing the DIMMs from slot A2 and B2 (orange).
- Always install DIMMs with the same CAS latency. For optimum compatibility, it is recommended that you obtain memory modules from the same vendor.

Order P/N	Description
90-S000I05L0T	DDR3 1333 ECC UNB 1G Single Pack
90-S000I05M0T	DDR3 1333 ECC UNB 2G Single Pack
90-S000I0570T	DDR3 1333 ECC UNB 4G Single Pack

2.3 Upgrading hard disk drives

The system supports four hot-swap SATAII/SAS hard disk drives.

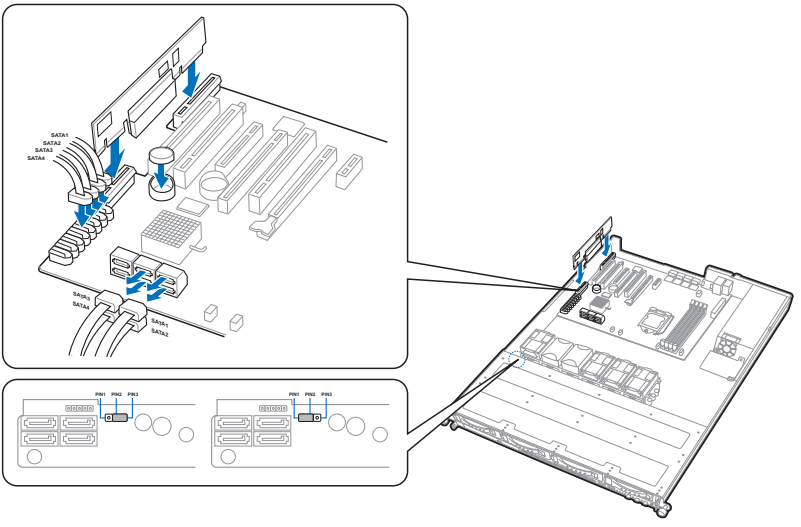


We recommend that you install identical drives of the same model and capacity for RAID configuration.

Order P/N	Description
90-S000H6560T	SATA2 500G 7200rpm with tray (single pack)
90-S000H6570T	SATA2 1TB 7200rpm with tray (single pack)
90-S000H65D1T	SATA3 500G 7200rpm with tray (single pack)
90-S000H65C1T	SATA3 750G 7200rpm with tray (single pack)
90-S000H65B1T	SATA3 1TB 7200rpm with tray (single pack)
90-S000H64R0T	SAS 6G 300G 15Krpm with tray (single pack)
90-S000H64S0T	SAS 6G 450G 15Krpm with tray (single pack)
90-S000H64T0T	SAS 6G 600G 15Krpm with tray (single pack)

2.4 Installing ASUS PIKE SAS RAID card

The ASUS PIKE SAS RAID card allows users to create RAID 0, 1, 5, 10 and 50 from SAS hard disk drives connected to the SAS connectors on the motherboard.

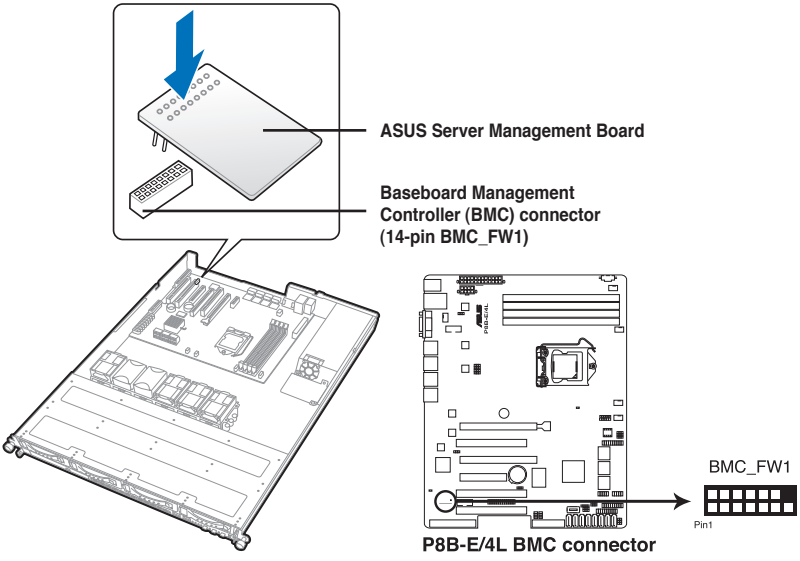


Move the **SGPIO_SEL1** jumper on the SATA/SAS backplane to 2–3.

Order P/N	Description
90-C1SCU0-00UAY00Z	ASUS PIKE 1068E
90-C1SCN5-00UAY10Z	ASUS PIKE 1078
90-C1SE10-00UAY00Z	ASUS PIKE 2008 IR
90-C1SE15-00UAY00Z	ASUS PIKE 2008 IMR
90-C1SEF0-00UAY00Z	ASUS PIKE 2108
90-C1SDB0-00XBN00Z	ASUS PIKE 6480

2.5 Installing ASUS Server Management Board

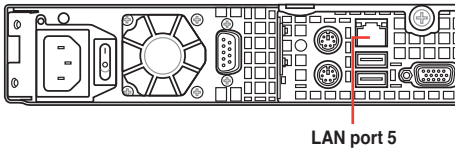
ASUS Server Management Board is an Intelligent Platform Management Interface (IPMI) 2.0-compliant board that allows users to monitor, control and manage a remote server from the local or central server in local area network (LAN).



ASMB5-iKVM

- Monitor the running status of major components via LAN or Serial Port, such as CPU and memory utilization, storage capacity and networking transfer rate.
- Advanced server management functions including “remote power on/off/reset”, “remote control via SOL (Serial-over LAN)” and “remote SEL (system event log reading when the system is out-of-band)”.
- Support Dynamic Host Configuration Protocol (DHCP), which avoids manually assigning IP address by setting DHCP mode to receive IP address automatically.

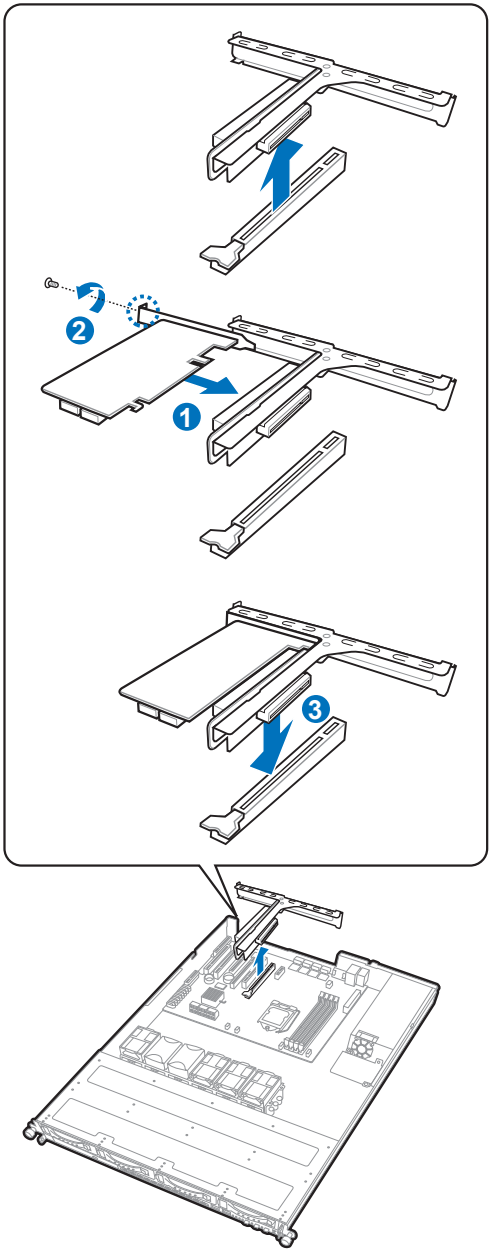
Use the LAN5 port for server management.



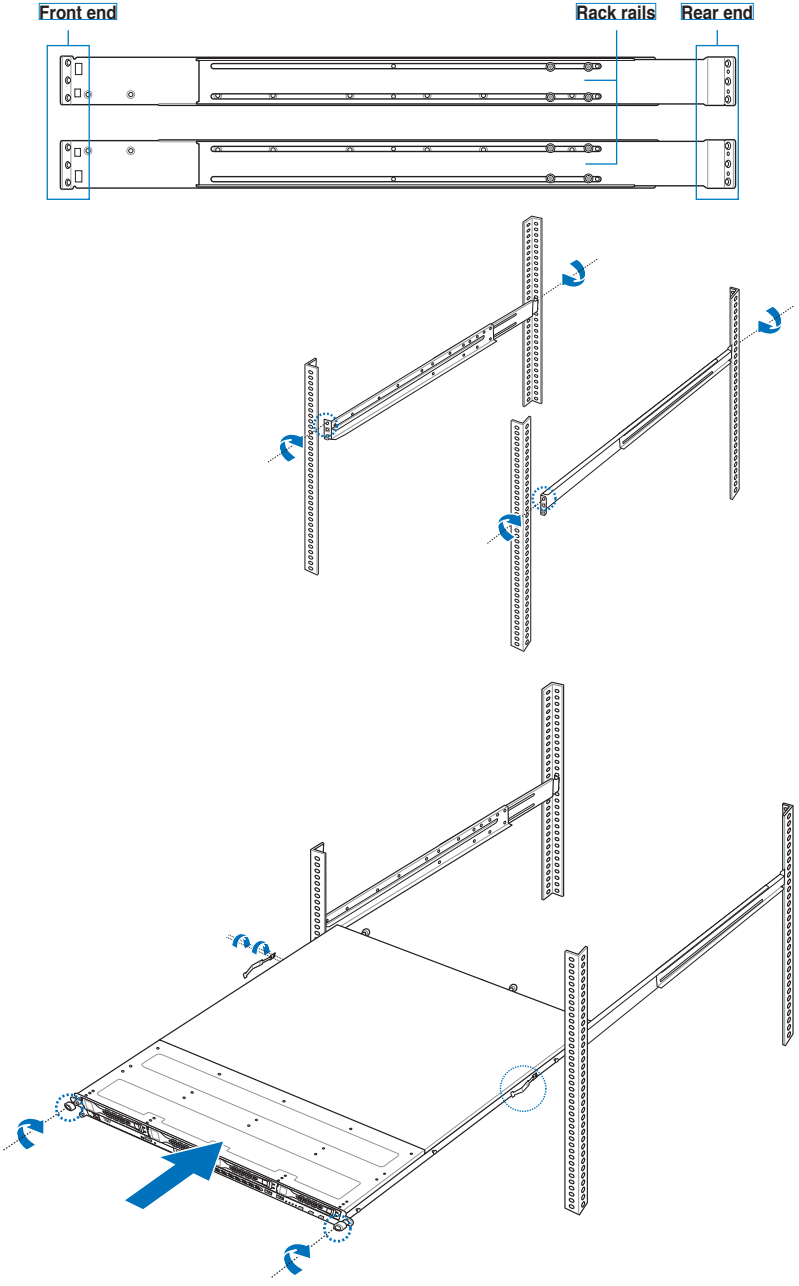
Order P/N	Description
90-C1SD80-00UAN00Z	ASMB5-iKVM Module (6 in 1)

2.6 Installing PCI express cards

The system supports PCIe x16 cards installation on the PCIe riser card brackets.



2.7 Friction rail kit



2.8 OS support list

Operating System	Version
Microsoft Windows	Windows Server 2003 Standard/Enterprise 32/64 Edition SP2 Windows Server 2008 Standard/enterprise 32/64 Edition Windows Server 2008 Foundation 32/64 Windows Vista SP1 (Installation Only) Windows XP Professional SP3 (Installation Only)
Red Hat Enterprise Linux	RHEL AS 4.0 UP7 32/64 bit RHEL AS 5.0 UP3 32/64 bit
SuSE Linux Enterprise Server	SLES 10 SP3 32/64 bit SLES 11 32/64 bit
Linux	Fedora Core 10 (Installation Only) Free BSD 7.1 (Installation Only)
Virtualization	VMWare ESX4.0 VMWare ESX4.0i

Order P/N	Description
90-S00SW7140T	Windows® Server 2008 STD 64-bit ENG
90-S00SW7150T	Windows® Server 2008 STD 64-bit TCH