

ASUS[®]

ESC1000 G2

Configuration Guide



E7582

First Edition

July 2012

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Revision history

Revision	Revision history	Date
V1	First release of ESC1000 G2 configuration guide	July 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, 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 ESC1000 G2. It includes the product overview and general specifications.

Product introduction

1.1 Key features

The ASUS ESC1000 G2 is a second generation professional workstation based on the Intel® Xeon® E5-1600 processor platform, featuring three 5.25" media bays, four hot-swap 3.5" SATA hard drive cages, 80PLUS Gold 1350W power supply, and six PCI Express 3.0 x16 expansion slots. It is designed for professional applications in fluid dynamics, medical research, engineering, the sciences, financial modeling, real-time graphics, rendering, and heavy-duty ray tracing.

Quad-GPU support unleashes more computing power

Six PCI Express 3.0 x16 slots enable up to four double-deck GPUs, using new Gen 3 links to provide double the bandwidth of PCI Express 2.0. Fully compatible with NVIDIA® Quadro™ and Tesla™ GPUs, the ESC1000 G2 is ideal for SOHO workplaces with its ability to handle massive computing tasks.

Dual Intel® Ethernet for fast networking

Twin Ethernet controllers support doubled network bandwidth, alongside teaming and fault tolerance functions to offer extra-reliable and fast network connections.

ASUS SSD Caching

Unique design boosts system performance by using an installed SSD as a cache for frequently accessed data. This allows you to access data easily and quickly without wasting time waiting for data to transfer.

USB 3.0 Boost

The ESC1000 G2 detects and optimizes connected device protocols automatically for faster USB speeds in all usage scenarios.

Maximum power supply with DIGI+ for demanding workloads

The 1350W 80PLUS Gold power supply unit cuts down system power loss and improves energy efficiency, saving users money on operating costs. With exclusive ASUS DIGI+ Power, the ESC1000 G2 utilizes precise power adjustments on both the processor and memory modules, providing higher system stability.

DTS® Ultra PC II

A brand-new friendly interface brings more functions, including symmetry, audio restoration, and enhancement. DTS® symmetry monitors and balances level differences between all digital audio formats, while audio restoration reconstructs percussion and transient sounds from compressed sources to restore lost punch and clarity.

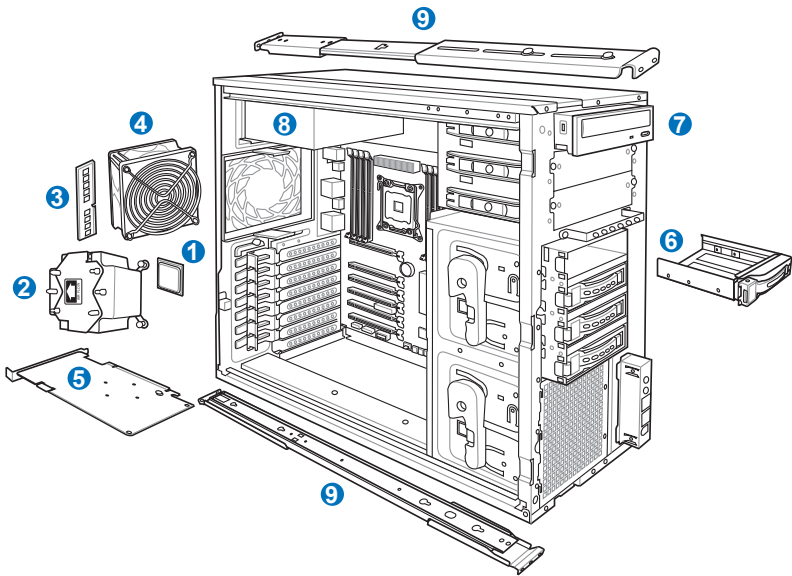
AI Suite II

The ESC1000 G2 is bundled with ASUS AI Suite II, which provides one-stop utility management and a user-friendly interface for system tuning.

Cutting-edge architecture

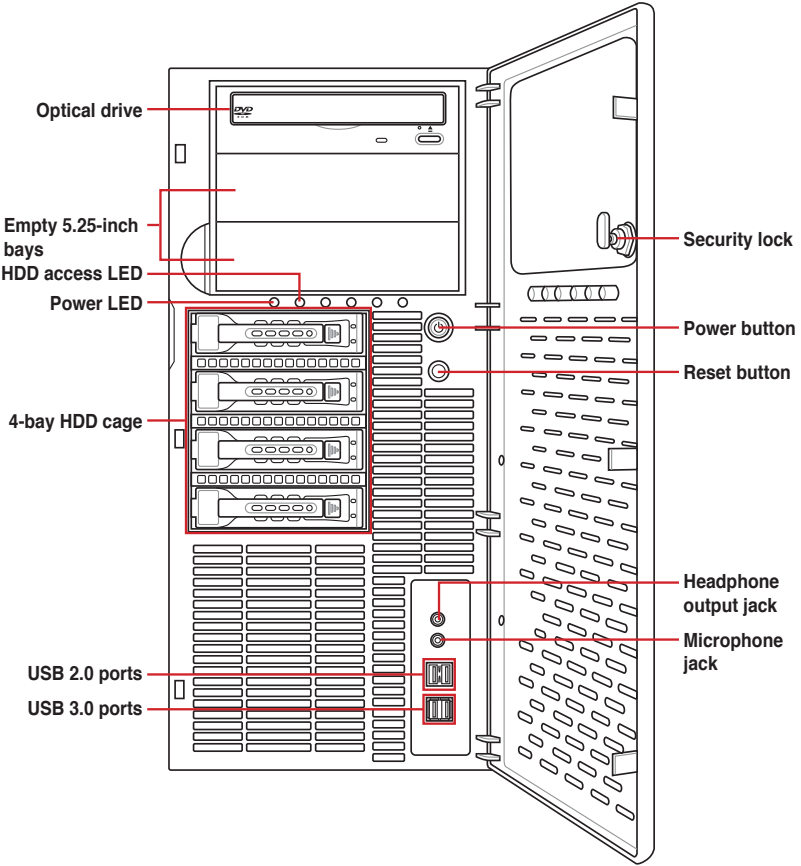
The ESC1000 G2 supports new Intel® Sandy Bridge-E processors. With eight DIMM slots and DDR3 1600, it accommodates up to 64GB in memory capacity, providing high computing capabilities. Extra PCI Express 3.0 lanes are perfect for systems that require high I/O connectivity and bandwidth, with support for more compatible devices.

1.2 System overview

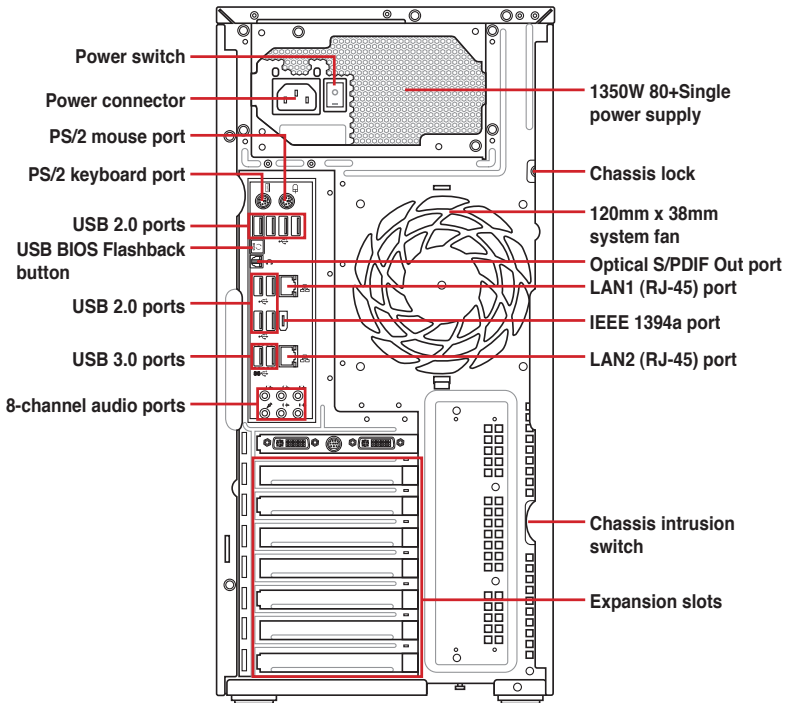


Items	
1.	Central processing unit (CPU)
2.	CPU heatsink and fan
3.	System memory
4.	System fan
5.	Graphics card
6.	Hard disk drives
7.	Optical drive (optional)
8.	Single power supply
9.	Rackmount rail kit (optional)

1.3 Front panel features



1.4 Rear panel features



The PS/2 keyboard / mouse combo port, USB ports, ESATA ports, Audio ports, S/PDIF Out ports, and Gigabit LAN ports do not appear on the rear panel if motherboard is not present.

1.5 System specifications

ASUS ESC1000 G2 is a workstation that features the ASUS P9X79 WS motherboard, supports Intel® LGA2011 Xeon® E5-1600/Core™ i7-3900/3800 series processors, and the latest technologies through the onboard chipsets..

Model Name		ESC1000 G2
Processor / System Bus		1 x Socket LGA2011 Intel® Xeon® processor E5-1600/Core™ i7-3900/3800 processor family (TDP=130W)
Core Logic		Intel® X79 Express Chipset
Memory	Total Slots	8 (4-channel per CPU, 8 DIMM per CPU)
	Capacity	Maximum up to 64GB (UDIMM)
	Memory Type	DDR3 1066/1333/1866(O.C.)/2000(O.C.)/ 2133(O.C.)/2400(O.C.) non-ECC/ECC UDIMM *Refer to www.asus.com for detailed memory AVL CPU support list.
	Memory Size	1GB, 2GB, 4GB and 8GB (UDIMM)
Expansion Slots	Total PCI/PCI-X/PCI-E Slots	6
	Slot Type	4 x PCI-E 3.0 x16 slots (dual at x16/x16, quad at x8/x8/x8/x8) 2 x PCI-E 3.0 x16 slots (at x4 mode)
Storage	SATA Controller	Intel® X79: - 2 x SATA 6.0Gb/s ports (gray) - 4 x SATA 3.0Gb/s ports (blue) Intel Rapid Storage Technology enterprise (for Windows only) supporting software RAID 0, 1, 5 & 10
		Marvell 88SE9128 SATA controller: - 2 x SATA 6.0Gb/s ports supporting RAID 0 & 1
Networking	LAN	1 x Intel® 82579V Gigabit LAN (PHY) 1 x Intel® 82574L Gigabit LAN controller
HDD Bays		4 x Hot-swap 3.5" HDD Bays
Auxiliary Storage FDD / CD / DVD		3 x 5.25" media bays (Optional: DVD-RW)* *DVD-RW default for North America
Front Panel I/O		2 x USB 3.0 ports 2 x USB 2.0 ports 1 x Line In 1 x Line Out

(continued on the next page)

Rear Panel I/O	1 x PS/2 Keyboard port 1 x PS/2 Mouse port 1 x S/PDIF Out (Optional) 1 x USB BIOS Flashback button 2 x USB 3.0/2.0 ports (blue) 8 x USB 2.0/1.1 ports (white port can be switched to USB BIOS Flashback) 1 x IEEE 1394a port 2 x RJ45 ports 8-channel Audio I/O
OS Support	Windows® XP Service Pack 2 64-bit Windows® XP Service Pack 3 32-bit Windows® Vista Service Pack 2 32/64-bit Windows® 7 Ultimate Service Pack 1 32/64-bit RedHat® Enterprise Linux Desktop WS 6.2 Open SuSE® 12.1 Ubuntu Desktop 11.1 Fedora 16
Anti-virus Software	Optional anti-virus CD Pack
Dimension (HH x WW x DD)	445mm x 217.5mm x 545mm
Net Weight Kg (CPU, DRAM & HDD not included)	17 Kg
Power Supply	1350W (80+) Gold Single Power Supply
Power Rating	Input: 115-240Vac, 14.5-6.5A, 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.

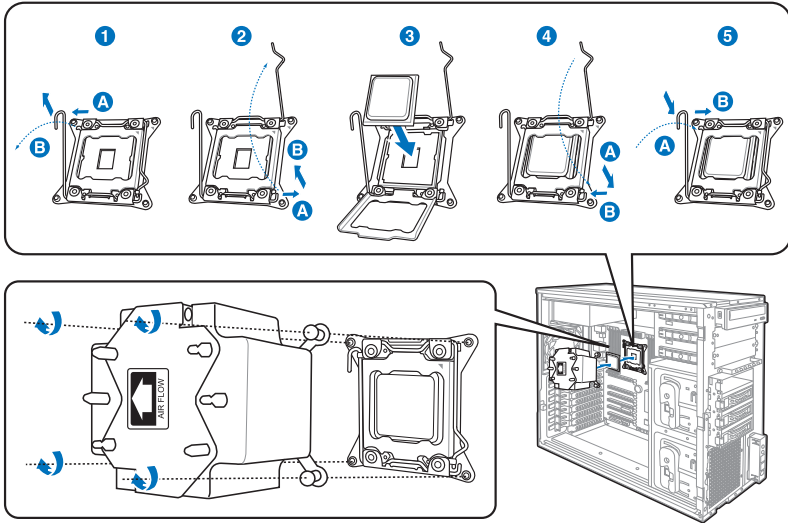
Chapter 2

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 a surface mount LGA2011 socket designed for the Intel® Xeon® E5-1600/Core™ i7-3900/3800 series processors.

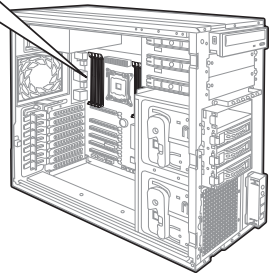
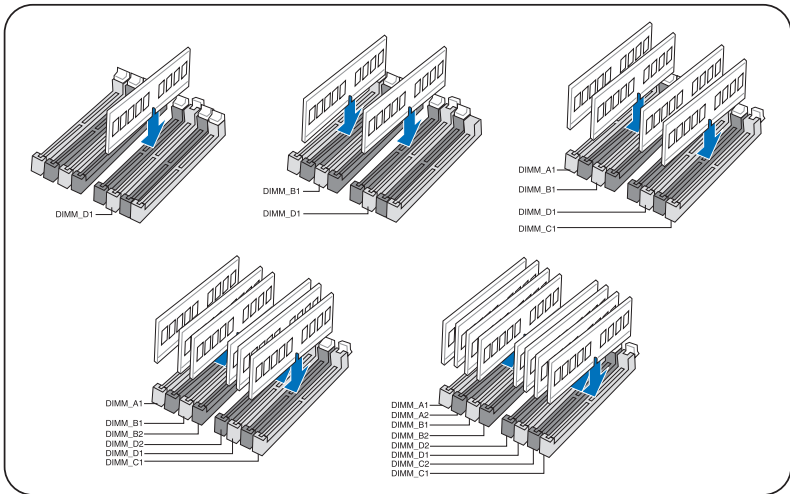


Please note the order in opening/ closing the double latch. Follow the instructions printed on the metal sealing hatch or the illustrations shown below in this manual. The plastic cap will pop up automatically once the CPU is in place and the hatch properly sealed down.

Order P/N	Description
N/A	E5-1660 3.3G(6C/15M/130W/DDR3 1600/HT)
N/A	E5-1650 3.2G(6C/12M/130W/DDR3 1600/HT)
N/A	E5-1620 3.6G(4C/10M/130W/DDR3 1600/HT)
N/A	CORE I7-3820 3.6G (4C/10M/130W/DDR3 1600/HT)

2.2 Upgrading system memory

The motherboard comes with eight Double Data Rate 3 (DDR3) Dual Inline Memory Modules (DIMM) slots.



You may install 1GB, 2GB, 4GB, 8GB unbuffered ECC or non-ECC DDR3 DIMMs into the DIMM sockets depending on the installed CPU.

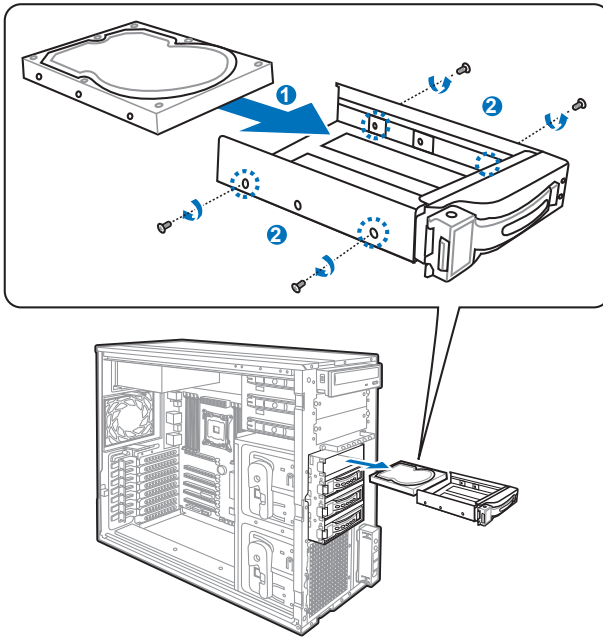


Always install DIMMs with the same CAS latency. For optimum compatibility, it is recommended that you obtain memory modules from the same vendor.

Order P/N	Description
90-S000I0630T	DDR3 1600 ECC UNB 2G 240P SINGLE PACK
90-S000I0640T	DDR3 1600 ECC UNB 4G 240P SINGLE PACK
90-S000I0650T	DDR3 1600 ECC UNB 8G 240P SINGLE PACK

2.3 Upgrading hard disk drives

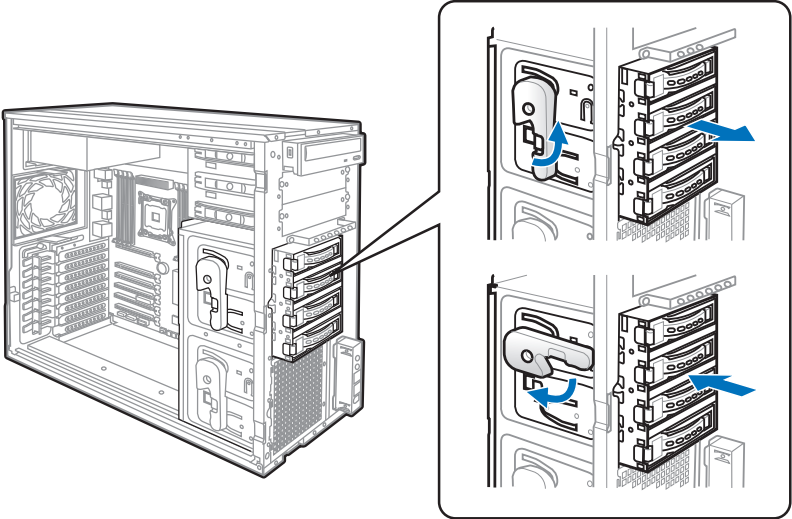
The system supports four hot-swap SATAII/SAS hard disk drives.



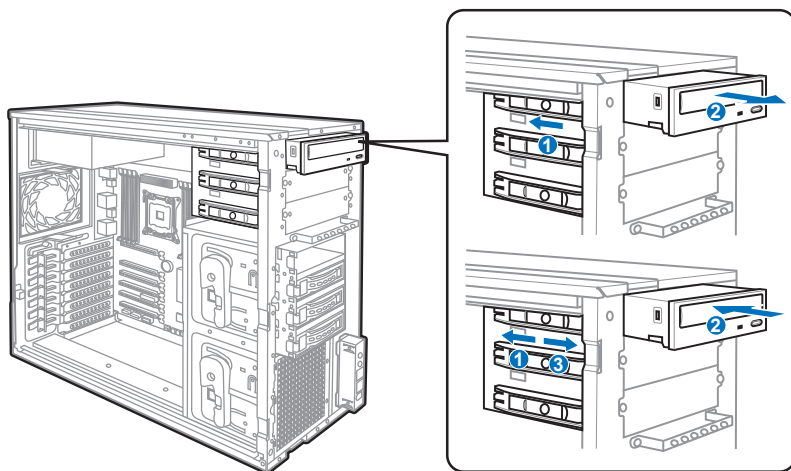
We recommend that you install identical drives of the same model and capacity for RAID configuration.

Order P/N	Description
90-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)
90-S000H65D0T	500GB SATA3 6Gb 7200 rpm (Single Pack)
90-S000H65B0T	1TB SATA3 6Gb 7200 rpm (Single Pack)
90-S000H65V1T	500GB SATA3 7200 rpm (Single Pack)
90-S000H65U1T	1TB SATA3 7200 rpm (Single Pack)
90-S000H65T1T	2TB SATA3 7200 rpm (Single Pack)
90-S000H65E3T	3TB SATA3 7200 rpm (Single Pack)

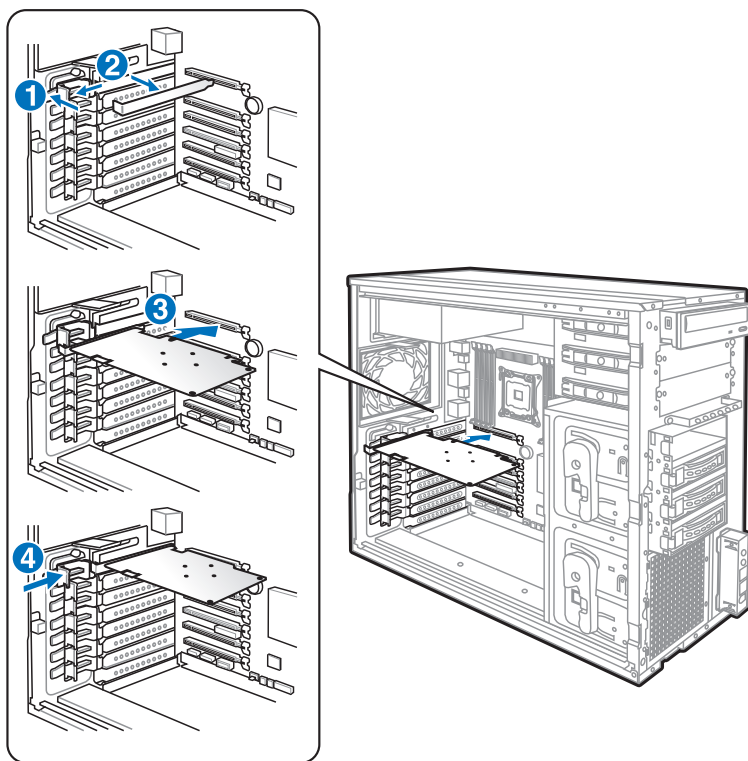
2.4 Replacing hard disk drive cage



2.5 Upgrading 5.25-in drives



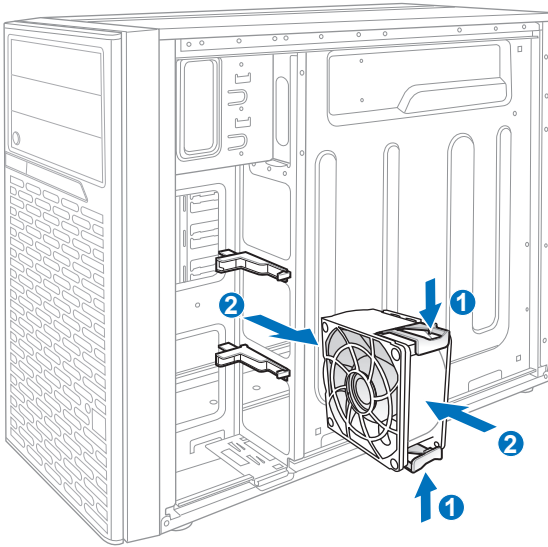
2.6 Upgrading expansion card



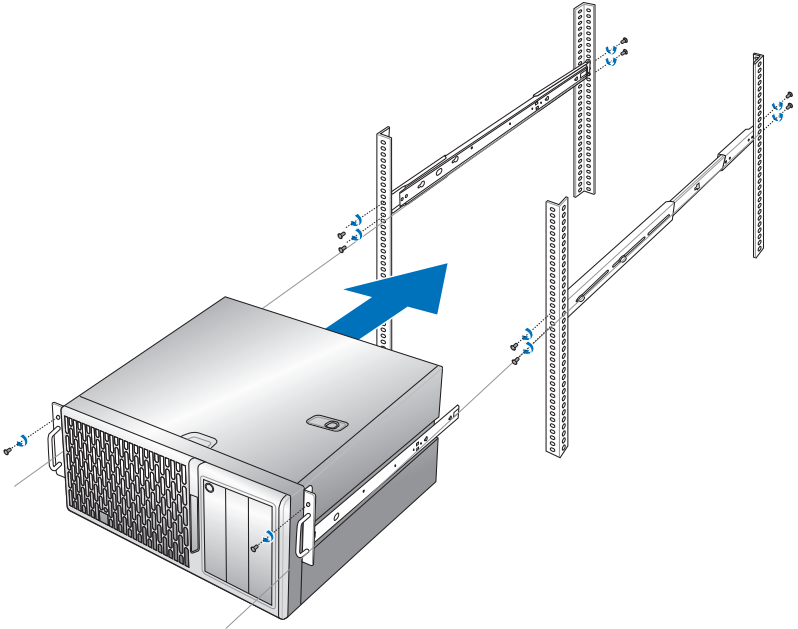
1. Locate the slot that you want to install expansion card on the motherboard.
2. Align the golden fingers of the expansion card with the slot you decided to use.
3. Insert the expansion card into the slot. Ensure that it is completely seated on the slot.
4. Reinstall the expansion card shield.

Order P/N	Description
90-S000R1M00T	TESLA C2075 6GB GPU CARD
90-S000R0080T	GRAPHIC CARD QUADRO 400
90-S000R0070T	GRAPHIC CARD QUADRO 600
90-S000R0090T	GRAPHIC CARD QUADRO 2000
90-S000R00A0T	GRAPHIC CARD QUADRO 4000
90-S000R00B0T	GRAPHIC CARD QUADRO 5000
90-S000R00C0T	GRAPHIC CARD QUADRO 6000

2.7 Upgrading front system fan



2.8 Rackmount rail kit



Order P/N	Description
90-S00SP0280T	Ball Bearing Rail Kit (Optional)

2.9 OS support list

OS support list
Windows® XP Service Pack 2 64-bit
Windows® XP Service Pack 3 32-bit
Windows® Vista Service Pack 2 32/64-bit
Windows® 7 Ultimate Service Pack 1 32/64-bit
RedHat® Enterprise Linux Desktop WS 6.2
Open SuSE® 12.1
Ubuntu Desktop 11.1
Fedora 16