PRIMERGY Econel 100 Server System

Options Guide

Edition December 2005

Comments… Suggestions… Corrections…

The User Documentation Department would like to know your opinion of this manual. Your feedback helps us optimize our documentation to suit your individual needs.

Fax forms for sending us your comments are included in the back of the manual.

There you will also find the addresses of the relevant User Documentation Department.

Certified documentation according to DIN EN ISO 9001:2000

To ensure a consistently high quality standard and user-friendliness, this documentation was created to meet the regulations of a quality management system which complies with the requirements of the standard DIN EN ISO 9001:2000.

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Contents

1 Introduction

The PRIMERGY Econel 100 server is an Intel-based server for small and mid-size networks. The server is suitable for use as a file server and also as an application, information or Internet server.

1.1 Overview of the documentation

PRIMERGY manuals are available in PDF format on the *ServerBooks* CD which is supplied in the ServerView Suite package for every server system.

These PDF files can also be downloaded free of charge from the Internet: at *http://manuals.fujitsu-siemens.com* you will find an overview page with the online documentation available on the Internet. You can go to the PRIMERGY Server documentation by clicking on “industry standard servers”.

Concept and target groups

This Options Guide shows you how you can expand and upgrade the server.

The activities described in this manual may only be performed by technical specialists.

Additional documentation about the server

The PRIMERGY Econel 100 documentation comprises the following additional manuals:

– “Quick Start Hardware - PRIMERGY Econel100” (poster)
– “Quick Start Software - PRIMERGY ServerView Suite” (poster)
– “Warranty” manual (print version delivered together with the system, PDF file available on the *ServerBooks* CD)
– “Safety” manual (print version delivered together with the system, PDF file available on the *ServerBooks* CD)
– “Ergonomics” manual (PDF file available on the *ServerBooks* CD)
– “Returning used devices” (PDF file available on the *ServerBooks* CD)
– “Help Desk” (poster with worldwide help desk telephone numbers)
– “PRIMERGY Econel 100 Server System Operating Manual” (PDF file available on the *ServerBooks* CD)

– Technical Manual for the system board D2179 (PDF file available on the *ServerBooks* CD)
– "BIOS Setup" manual (PDF file available on the *ServerBooks* CD)
– "ServerView Suite" includes the *ServerStart* CD, the *ServerBooks* CD and the print version of the manual "PRIMERGY ServerView Suite - ServerStart". The PDF file of the manual is also available on the *ServerBooks* CD.
– "LSI SATA Software RAID User's Guide" (PDF file available on the *ServerBooks* CD)

If you need a backup of the *ServerBooks* CD send the details of your server via E-mail address:
Reklamat-PC-LOG@fujitsu-siemens.com

Further sources of information:

– manual for the monitor
– manual for *ServerView server management*
– documentation for the boards and drives
– operating system documentation
– information files of your operating system

(see also "Related publications" on page 55)

1.2 Expansions and conversions

Extension of the main memory

The system board supports up to 8 Gbyte main memory. 4 slots are available for the main memory. Each slot can be populated with 512 Mbyte, 1 Gbyte or 2 Gbyte PC2-4200 DDR2 533 MHz (unbuffered) DIMMmemory modules.

Additional accessible drives

Two free 5.25-inch bays for additional accessible drives and one 3.5-inch bay for a 1.44 MB floppy disk drive are available. If a backup drive (tape) is to be installed a PCI SCSI controller is needed.

The highest, first bay is already occupied with a DVD drive.

SATA hard disk drives

Up to four SATA hard disk drives can be installed.

Additional controllers in the PCI slots

The system board offers three PCI-E (Express) slots and four standard PCI slots (33 MHz) for additional controllers.

1.3 Notational conventions

The following notational conventions are used in this manual:

text in italics	indicate commands, menu items or software programs.
“quotation marks”	indicate names of chapters and terms that are being emphasized.
►	describes activities that must be performed in the order shown
 **CAUTION!**	Pay particular attention to texts marked with this symbol. Failure to observe this warning may endanger your life, destroy the system or lead to the loss of data.
	indicates additional information, notes and tips

Table 1: Notational conventions

2 Procedure

CAUTION!

The actions described in this manual should only be performed by technical specialists. Equipment repairs should only be performed by service personnel. Any failure to observe the guidelines in this manual, and any unauthorized openings and improper repairs could expose the user to risks (electric shock, energy hazards, fire hazards) and could also damage the equipment. Please note that any unauthorized openings of the device will result in the invalidation of the warranty and exclusion from all liability.

- ► At first, please take notice of chapter “Safety notes” on page 11 and following.
- ► Make sure all necessary manuals (see “Additional documentation about the server” on page 5) are available; possibly print of the PDF files. You will definitely need the Operating Manual for the server and the Technical Manual for the system board.
- ► Shut down the server correctly, switch it OFF, pull out the power plug, and open the server as described in the chapter “Preparation” on page 17 and following.
- ► Expand or upgrade your server as described in the relevant chapter.
- ► Close the server, connect it to the mains, and switch it ON as described in chapter “Completion” on page 43 and following.
- ► Start the operating system and, if necessary, configure it as required (see Operating Manual).

3 Safety notes

The following safety notes are also provided in the “Safety” manual.

This device complies with the relevant safety regulations for data processing equipment.

If you have any questions about where you can set up the device, contact your sales outlet or our customer service team.

CAUTION!

The actions described in this manual should only be performed by technical specialists. Any repairs on the device must be performed by authorized, technically qualified personnel. Any unauthorized openings and improper repairs could expose the user to risks (electric shock, energy hazards, fire hazards) and could also damage the equipment. Please note that any unauthorized openings of the device will result in the invalidation of the warranty and exclusion from all liability.

Before operating the device

CAUTION!

- During installation and before operating the device, observe the instructions on environmental conditions for your device.
- If the device is brought in from a cold environment, condensation may form both inside and on the outside of the machine.

  Wait until the device has acclimatized to room temperature and is absolutely dry before starting it up. Material damage may be caused to the device if this requirement is not observed.
- Transport the device in its original packaging or in other suitable packaging which will protect it against shock or impact.

Installation and operation

CAUTION!

- If the server is integrated in an installation that receives power from an industrial (public) power supply network with the IEC309 connector, the (public) power supply protection must comply with the requirements for the non-industrial (public) power supply networks for the type A connector.
- The server automatically sets itself to a voltage in the range of 100 V to 240 V. Make sure that your local voltage is within this range.
- This device has a specially approved power cable and must only be connected to a grounded insulated socket.
- Ensure that the power socket on the device or the grounded wall outlet is freely accessible.
- The power switch or the main power switch does not disconnect the device from the mains voltage. To disconnect the line voltage completely, remove the power plug from the grounded insulated socket.
- Always connect the device and the attached peripherals to the same power circuit. Otherwise you run the risk of losing data if, for example, the central processing unit is still running but the peripheral device (e.g. storage subsystem) has failed during a power outage.
- Data cables must be adequately shielded.
- To the LAN wiring the requirements apply in accordance with the standards EN 50173 and EN 50174-1/2.
  As minimum requirement the use of a protected LAN line of category 5 for 10/100 MBps Ethernet, and/or of category 5e for Gigabit Ethernet is considered.
  The requirements of the specification ISO/IEC 11801 are to be considered.
- Route the cables in such a way that they do not form a potential hazard (make sure no-one can trip over them) and that they cannot be damaged. When connecting up a device, refer to the relevant notes in this manual.

CAUTION!

- Never connect or disconnect data transmission lines during a storm (lightning hazard).
- Otherwise you run the risk of losing data if, for example, the central processing unit is still running but the peripheral device (e.g. storage subsystem) has failed during a power outage.
- In emergencies (e.g. damaged casing, controls or cables, penetration of liquids or foreign matter), switch OFF the device immediately, remove the power plug and contact your sales outlet or customer service team.
- Proper operation of the system (in accordance with IEC 60950/EN 60950) is only ensured if the casing is completely assembled and the rear covers for the installation openings have been put in place (electric shock, cooling, fire protection, interference suppression).
- Only install system expansions that satisfy the requirements and rules governing safety and electromagnetic compatibility and relating to telecommunications terminal equipment. If you install other expansions, you may damage the system or violate the safety regulations and regulations governing RFI suppression. Information on which system expansions are suitable can be obtained from the customer service centre or your sales outlet.
- The components or parts marked with a warning label (e.g. lightning symbol) may only be opened, removed or exchanged by authorized, qualified personnel.
- The warranty expires if the device is damaged during the installation or replacement of system expansions.
- You may only set those resolutions and refresh rates specified in the “Technical data” section of the monitor description. Otherwise, you may damage your monitor. If you are in any doubt, contact your sales outlet or customer service centre.

Batteries

CAUTION!

- Incorrect replacement of batteries may lead to a risk of explosion. The batteries may only be replaced with identical batteries or with a type recommended by the manufacturer (see the technical manual for the system board under “Related publications” on page 55).
- Replace the lithium battery on the system board in accordance with the instructions in the technical manual for the system board (see “Related publications” on page 55).

Notes on handling CDs/DVDs and CD/DVD drives

CAUTION!

- Use only CDs/DVDs in proper condition in the CD/DVD drive of your server to prevent data loss, damage to the device and injuries.
- Therefore, check each CD/DVD for damage, cracks, breakage etc. before inserting it in the drive.

  Please note that any additional labels applied may change the mechanical properties of a CD/DVD and cause imbalance.

  Damaged and imbalanced CDs/DVDs can break at high drive speeds (data loss).

  Under certain conditions sharp-edged pieces of broken CDs/DVDs can penetrate the cover of the drive (damage to the device) and be thrown out of the device (danger of injury, particularly on uncovered body parts such as the face or neck).

You protect the CD/DVD drive and prevent mechanical damage, as well as premature wearing of the CDs/DVDs, by observing the following suggestions:

- Only insert the CDs/DVDs in the drive when needed and remove them after use.
- Store the CDs/DVDs in suitable sleeves.
- Protect the CDs/DVDs from exposure to heat and direct sunlight.

Note about the laser

The CD/DVD drive is classified for laser class 1 according to IEC 60825-1.

CAUTION!

The CD/DVD drive contains a laser diode (LED). Sometimes the LED produces a stronger laser beam than laser class 1. Direct view into the laser beam is dangerous.

Never remove parts of the CD/DVD drive assembly!

Modules with electrostatic-sensitive components

Systems and components that might be damaged by electrostatic discharge (ESD) are marked with the following label:

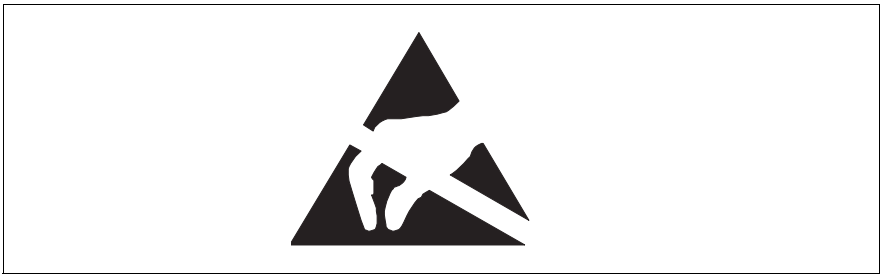

Figure 1: ESD label

When you handle components fitted with ESDs, you must observe the following points under all circumstances:

- Remove the power plug from the power socket before inserting or removing components containing ESDs.
- You must always discharge yourself of static charges (e.g. by touching a grounded object) before working.
- The equipment and tools you use must be free of static charges.
- Use a grounding cable designed for this purpose to connect yourself to the system unit as you install components.
- Only touch the components at the positions highlighted in green (touch point).
- Do not touch any exposed pins or conductors on a component.

- Place all components on a static-safe base.

You will find a detailed description for handling ESD components in the relevant European or international standards (EN 61340-5-1, ANSI/ESD S20.20).

4 Preparation

CAUTION!

Refer to the safety notes in chapter “Safety notes” on page 11 and following.

4.1 Opening the server

- Terminate all applications and shut down the server correctly.
- Switch off the power supply unit (press the main power switch), and remove the power plug from the grounded insulated socket.
- If required, remove the lock on the side cover.

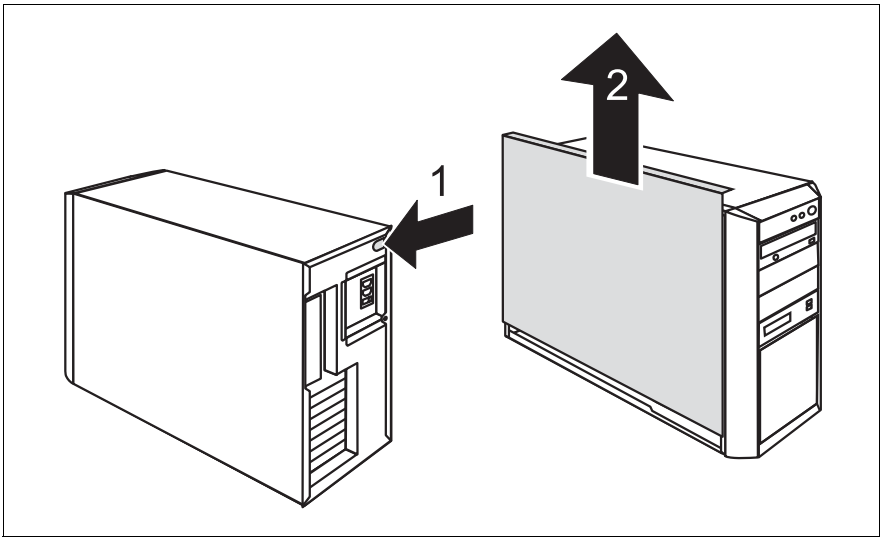

Figure 2: Removing the side cover

- Keep the locking button pressed (1), and slide the side cover in the direction of the arrow (2).
- Remove the side cover.

4.2 Removing the front panel

For the installation of additional accessible drives the front panel is to be removed:

- ► Remove the side cover as described in section “Opening the server” on page 17.

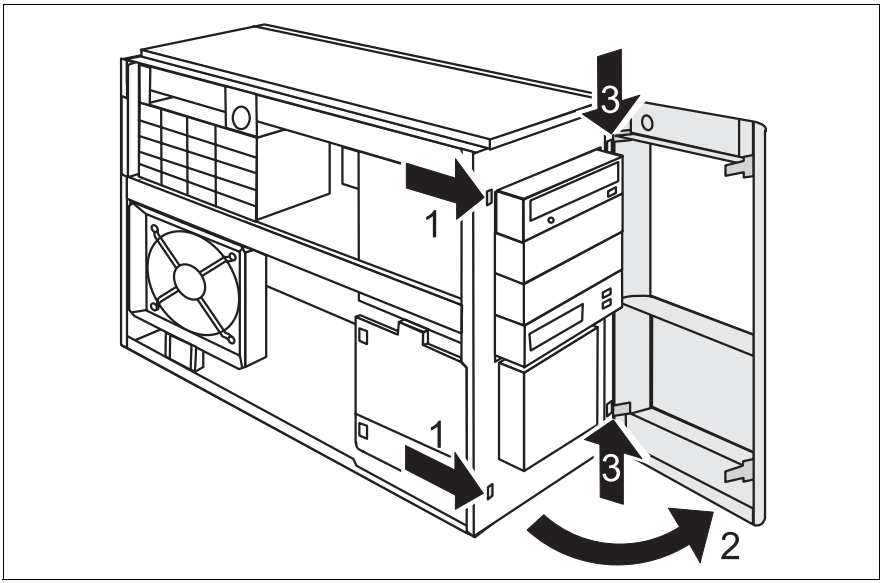

Figure 3: Removing the front panel

- ► Detach the two unlocking levers (1) and open the front panel (2).
- ► Remove the front panel carefully (3).

4.3 Folding out the power supply unit

Fold out the power supply unit when making extension of the main memory:

- ► Remove the side cover as described in section “Opening the server” on page 17.
- ► Disconnect all power supply cables from the system board and from the drives (see cabling in the appendix).

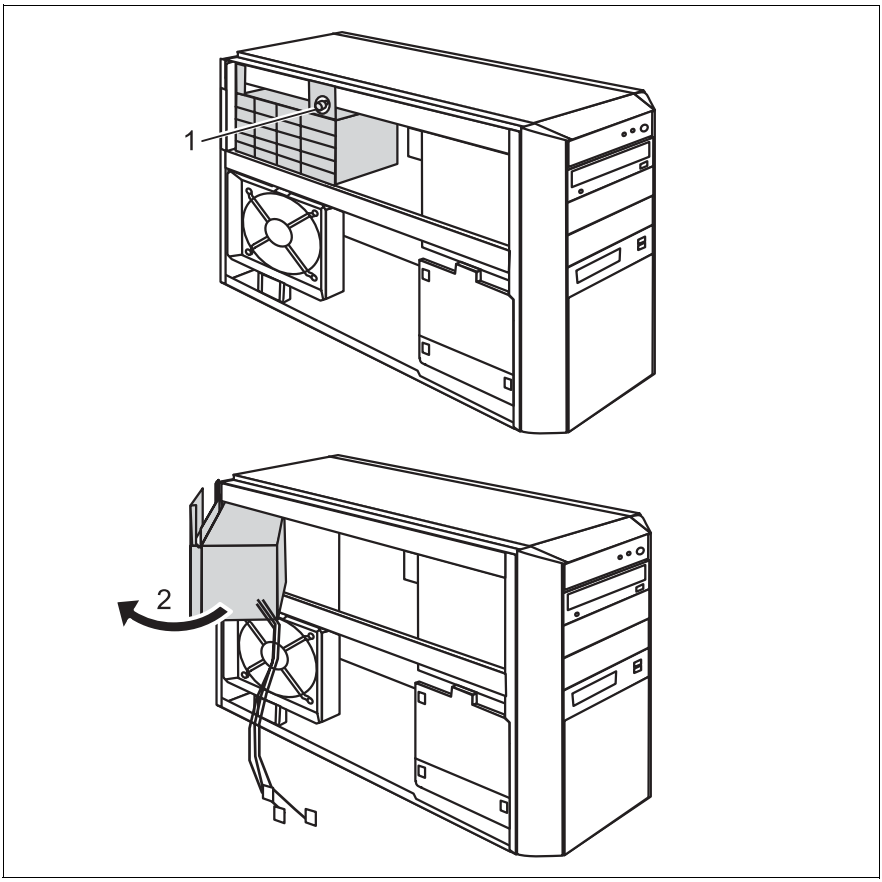

Figure 4: Folding out the power supply unit

- ► Loosen the knurled screw (1) and swing the power supply unit out from the housing (2).

4.4 Removing the system fan

For the installation of additional cards into the PCI slots the system fan is to be removed:

- ► Remove the side cover as described in section “Opening the server” on page 17.
- ► Disconnect the fan cable from the connector FAN2 on the system board (see cabling in the appendix).

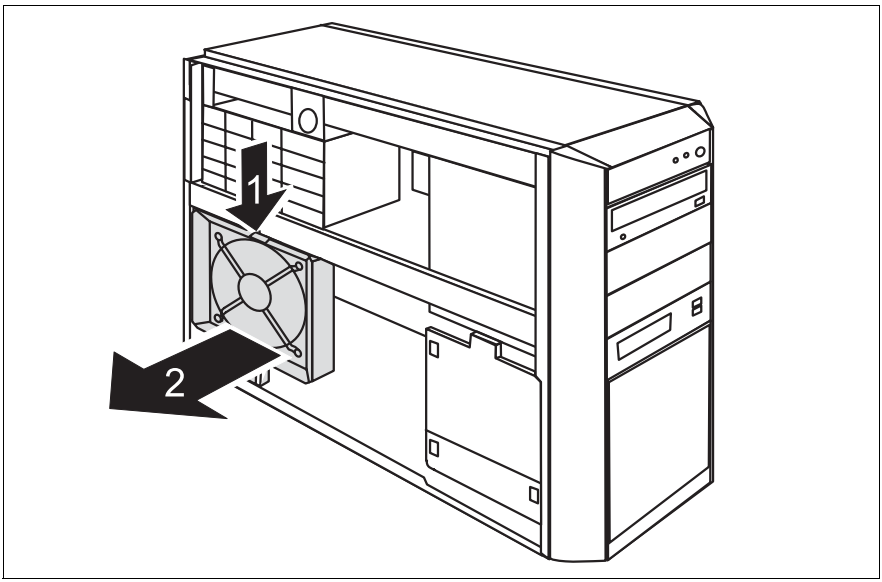

Figure 5: Removing the system fan

- ► Detach the unlocking lever (1) and remove the system fan (2).

5 Main memory

CAUTION!

Refer to the safety notes in chapter “Safety notes” on page 11 and following.

The system board supports up to 8 Gbyte main memory. 4 slots are available for the main memory. Each slot can be populated with 512 Mbyte, 1 Gbyte or 2 Gbyte PC2-4200 DDR2 533 MHz (unbuffered) DIMM memory modules.

The basic unit includes one memory module.

5.1 Equipping rules

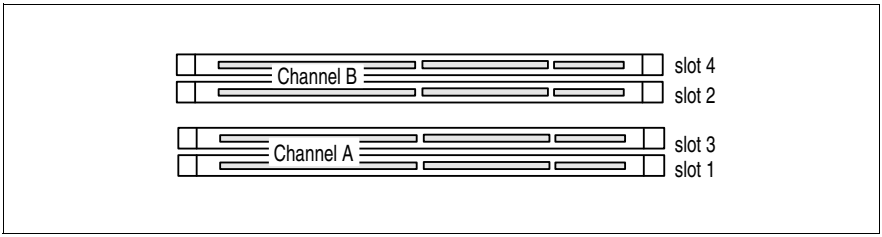

Figure 6: Structure of the main memory

The system board has two memory channels (channel A and channel B) with two slots each (slot 1 and 3 or slot 2 and 4).

If you use more than one memory module, then make sure to distribute the memory modules over both memory channels. By doing this you use the performance advantages of the dual-channel mode.

The maximum system performance is given when the same memory size is used in channel A and channel B.

To simplify equipping, the slots are color coded.

Following table shows the mandatory population order.

mode	option	slot			
		slot 1	**slot 3**	**slot 2**	**slot 4**
single channel	channel A	equipped			
			equipped		
	channel B			equipped	
					equipped
dual channel	channel A+B	equipped		equipped	
			equipped		equipped
		equipped	equipped	equipped	equipped

Table 2: Memory modules population

If you install three memory modules equip the following slots: channel A (slot 1 and slot 3), channel B (slot 2).

With a dual channel configuration identical memory modules are to be used for the individual population possibilities.

5.2 Extending the main memory

- ► Open the server and fold out the power supply unit as described in chapter “Preparation” on page 17 and following.
- ► Unpack the memory module.

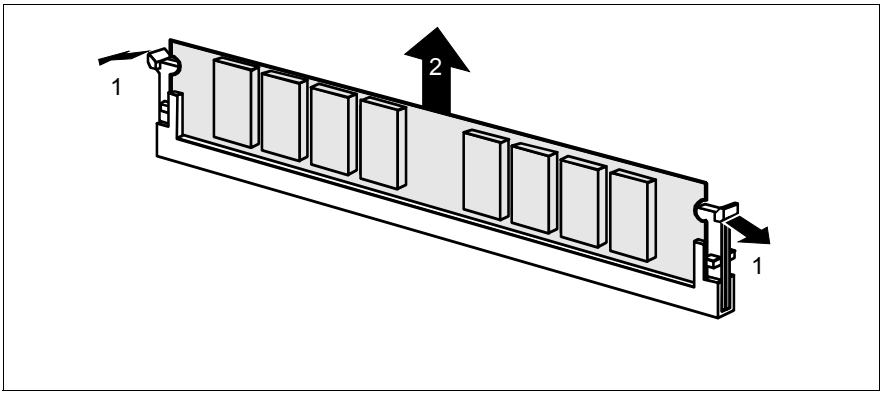

Figure 7: Removing a memory module

- ► Press the holders on either side of the mounting location concerned outward (1).
- ► If the mounting location was already equipped: pull the memory module out of the mounting location (2).

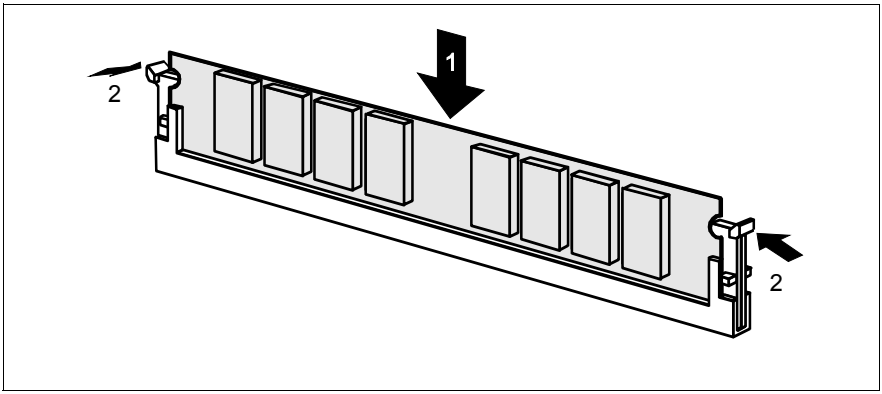

Figure 8: Inserting a memory module

- ► Press the holders on either side of the mounting location concerned outward.
- ► Insert the memory module in the mounting location (1) until the holders at the sides engage (2).
- ► Fold in the power supply unit and close the server as described in the chapter “Completion” on page 43 and following.

6 Accessible drives

CAUTION!

Refer to the safety notes in chapter “Safety notes” on page 11 and following.

Two free 5.25-inch bays for additional accessible drives and one 3.5-inch bay for a 1.44 MB floppy disk drive are available. If a backup drive (tape) is to be installed a PCI SCSI controller is needed.

The bays can be equipped as follows with accessible drives:

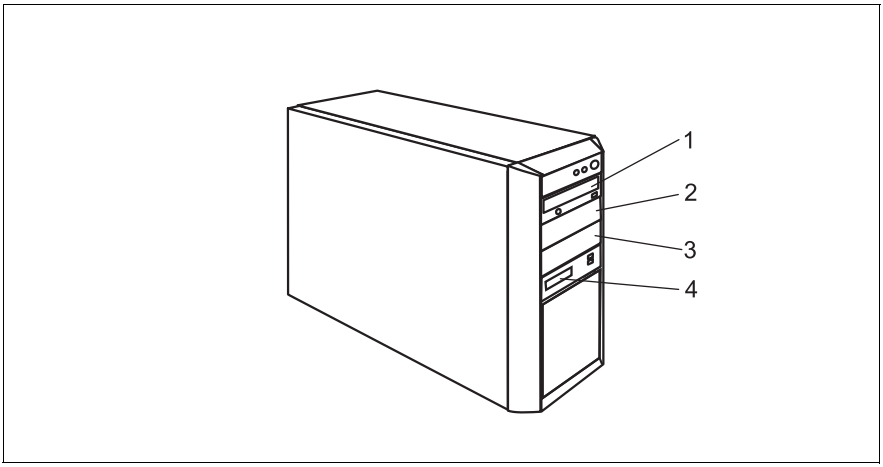

Figure 9: Accessible drives: overview of the installation sequence

Pos.	Slot	Drive
1	5.25-inch	DVD drive (already available)
2	5.25-inch	DVD, CD drive or first tape
3	5.25-inch	second tape
4	3.5-inch	1.44 MB floppy disk drive

6.1 Installing a CD/DVD/tape drive

► Open the server and remove the front panel as described in chapter “Preparation” on page 17 and following.

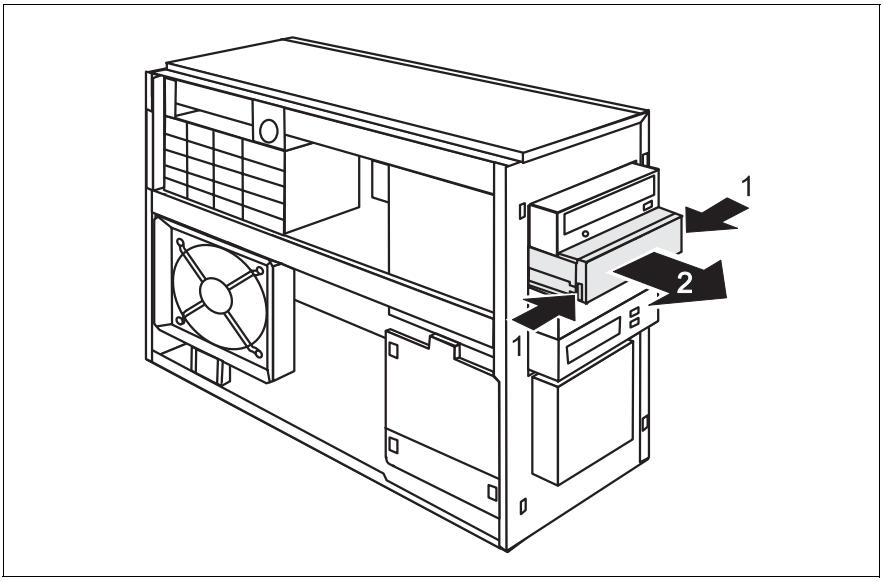

Figure 10: Removing the slide-in unit

► Press both tabs of the EasyClick rails together (1) and pull out the slide-in unit (2).

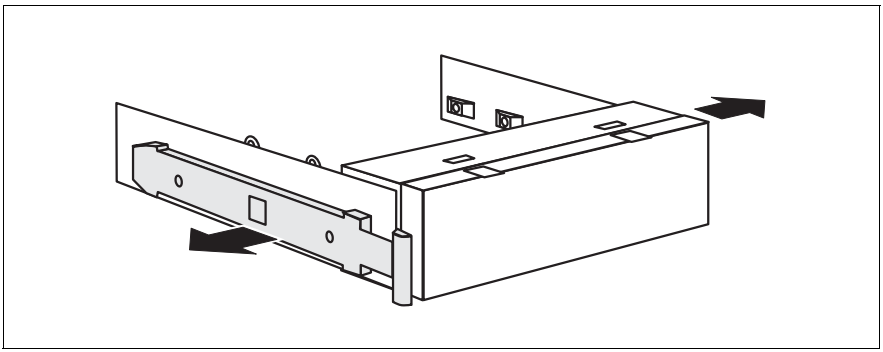

Figure 11: Removing the EasyClick rails

► Remove the EasyClick rails from the slide-in unit.

CAUTION!

Keep the slide-in unit for future use. If the drive is removed again and not replaced with a new drive, the slide-in unit must be reinstalled due to cooling, to comply with applicable EMC regulations (regulations on electromagnetic compatibility) and to protect against fire.

- ► Unpack the new drive, and make the desired settings. You should read the accompanying documentation supplied with the drive beforehand.

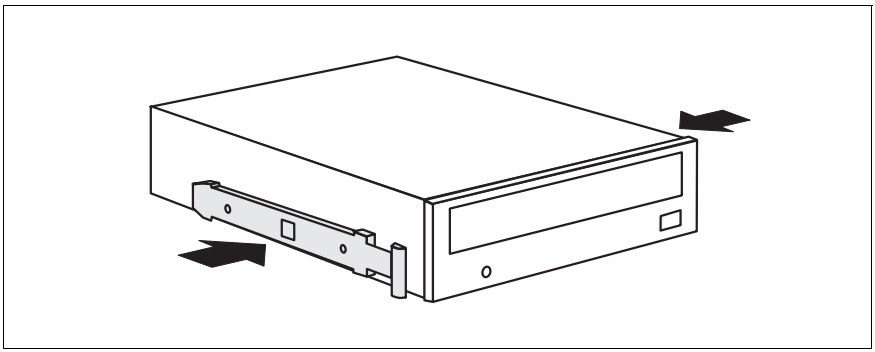

Figure 12: Attaching the rails to the CD/DVD drive

- ► Press the EasyClick rails into the lower mounting holes of the drive. Screws are not necessary, the pins at the rails engage into the mounting holes of the drive.
- ► Push the assembled drive with the rails into the free bay until the EasyClick rails are locked in position.
- ► Connect the cables to the drive as described in the next section.
- ► Mount the front cover and close the server as described in chapter “Completion” on page 43 and following.

6.1.1 Connecting the drives

- Connect the power cable connector P3, P4 or P5 to the relevant power connector of the drive. You should read the accompanying documentation supplied with the drive beforehand.

IDE drive (CD/DVD)

- Connect the second connector of the existing IDE cable T26139-Y1737-V111 (flat band cable) to the relevant IDE port of the CD/DVD drive. You should read the accompanying documentation supplied with the drive beforehand.

SCSI drives (tape)

For the operation of additional backup drives (tape) a PCI SCSI controller is needed. The PCI SCSI controller will be installed in one of the seven PCI slots (1-7) (see chapter “Controllers in PCI slots” on page 39).

- Connect the SCSI cable T26139-Y3859-V11/T26139-Y3576-V209 (flat band cable delivered with the SCSI controller) to the relevant SCSI interface of the tape drive. You should read the accompanying documentation supplied with the drive and/or the controller beforehand.
- Connect the SCSI cable to the SCSI interface of the SCSI controller. You should read the accompanying documentation supplied with the drive and/or the controller beforehand.

6.2 Installing the floppy disk drive

- ► Open the server and remove the front panel as described in chapter “Preparation” on page 17 and following.
- ► Remove the connector of the USB front cable from the connector USB front on the system board.

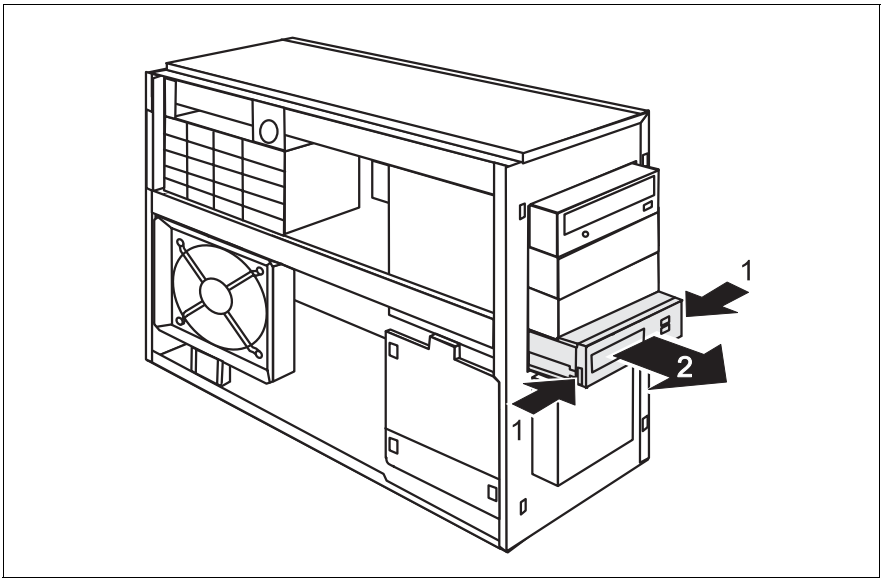

Figure 13: Removing the slide-in unit

- ► Press together the two springs of the EasyClick rails until they are unlocked (1).
- ► Remove the slide-in unit from the location (2).

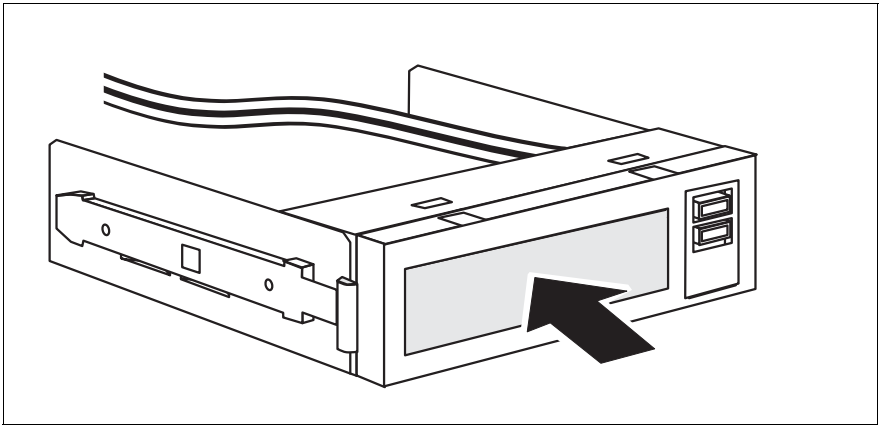

Figure 14: Removing the FDD dummy

► Remove the FDD dummy from the slide-in unit.

CAUTION!

Keep the FDD dummy for future use. If the drive is removed again and not replaced with a new drive, the FDD dummy must be reinstalled due to cooling, to comply with applicable EMC regulations (regulations on electromagnetic compatibility) and to protect against fire.

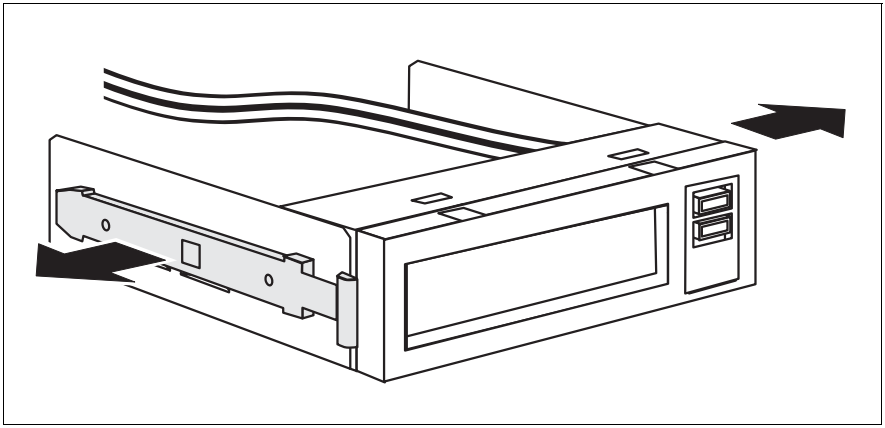

Figure 15: Removing the EasyClick rails

► Remove the EasyClick rails from the slide-in unit.

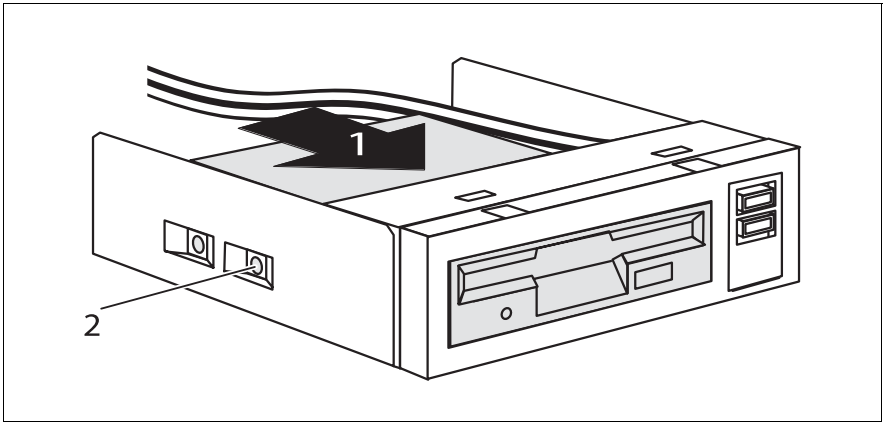

Figure 16: Installing the floppy disk drive

- Unpack the floppy disk drive. You should read the accompanying documentation supplied with the floppy disk drive beforehand.
- Insert the floppy disk drive from inside into the slide-in unit and fasten it with two screws (one screw on each side). Take care that the USB front cable is not damaged.
- Reattach the EasyClick rails to the slide-in unit.
- Insert the slide-in unit into the housing. Take care that the USB front cable is not damaged.
- Plug the connector of the USB front cable on the connector USB front on the system board.
- Plug the connector P2 of the power supply cable on the rear side of the floppy disk drive.
- Plug the connector of the data cable T26139-Y1248-V8 on the rear side of the floppy disk drive and on the connector floppy disk drive on the system board.
- Mount the front cover and close the server as described in chapter “Completion” on page 43 and following.

7 SATA hard disk drives

CAUTION!

Refer to the safety notes in chapter “Safety notes” on page 11 and following.

7.1 Installing a SATA hard disk drive

Up to three additional SATA hard disk drives can be installed.

► Open the server as described in section “Opening the server” on page 17.

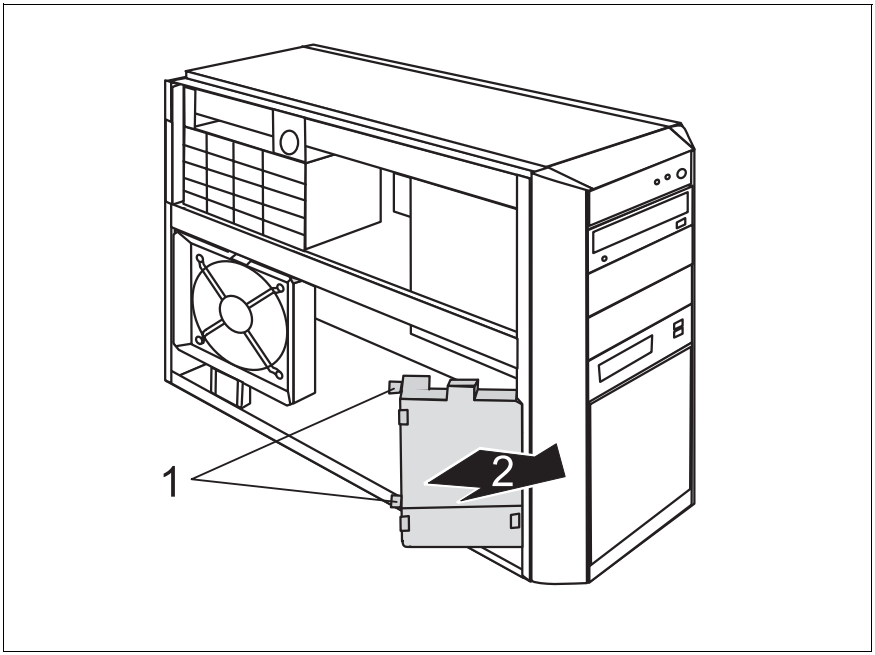

Figure 17: Removing the cover

► Pull the two noses (1) frontward and take out the cover (2).

Behind the cover is the drive cage with the necessary pre-mounted EasyClick rails.

- ► Remove the necessary EasyClick rails from the next free bay of the hard disk drive cage (installation sequence from above downward).
- ► Unpack the new drive, and make the desired settings. You should read the accompanying documentation supplied with the drive beforehand.

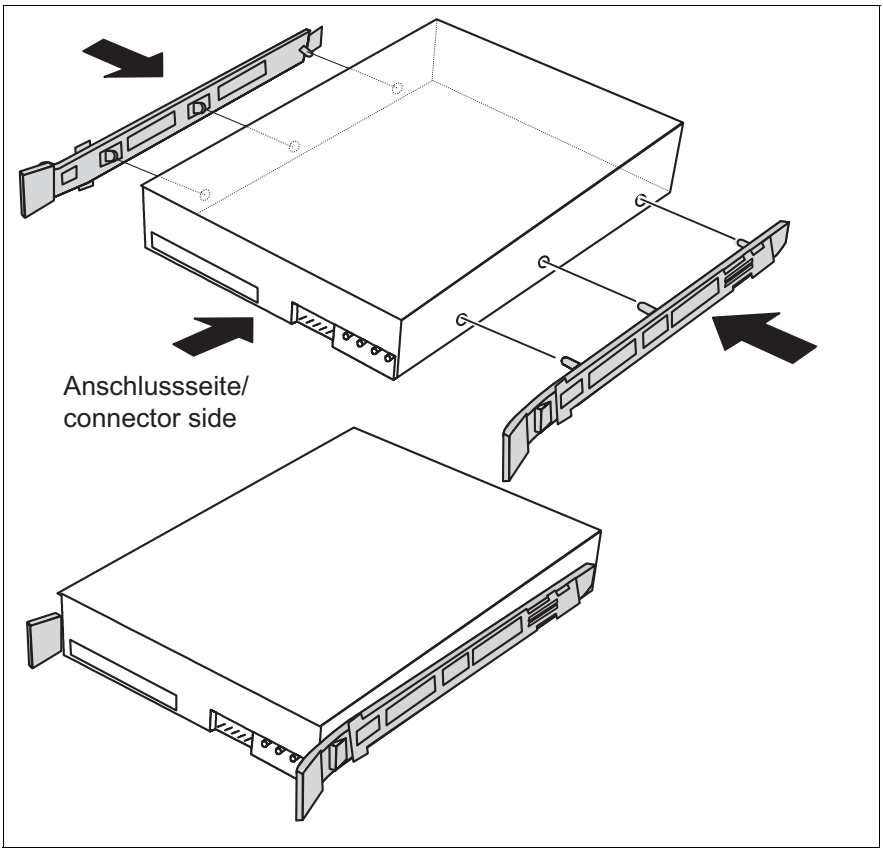

Figure 18: Attaching the EasyClick rails to the hard disk drive

- ► Press the EasyClick rails (upper pin row) into the mounting holes of the drive as shown in the figure. Screws are not necessary, the pins at the rails engage into the mounting holes of the drive.

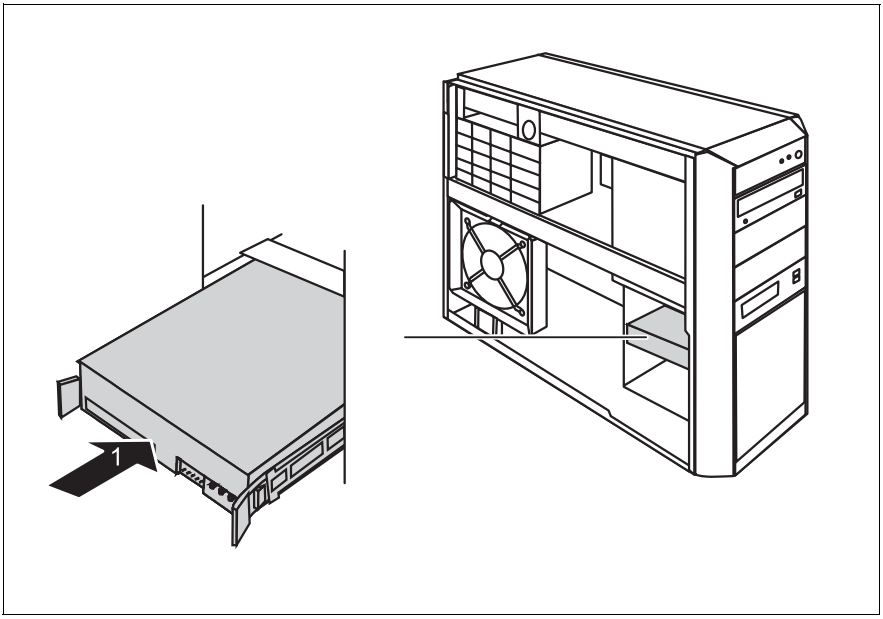

Figure 19: Installing the hard disk drive

- ► Push the assembled drive with the rails into the free bay until the EasyClick rails are locked in position.
- ► Connect the power cable/connector P7, P11 or P12 to the relevant power connector of the drive. You should read the accompanying documentation supplied with the drive beforehand.
- ► Connect the SATA cable T26139-Y3928-V101 to the SATA interface of the SATA drive (the free cables are already connected to the system board and fixed with cable clips at the housing bottom) (see also figure 20 on page 36).

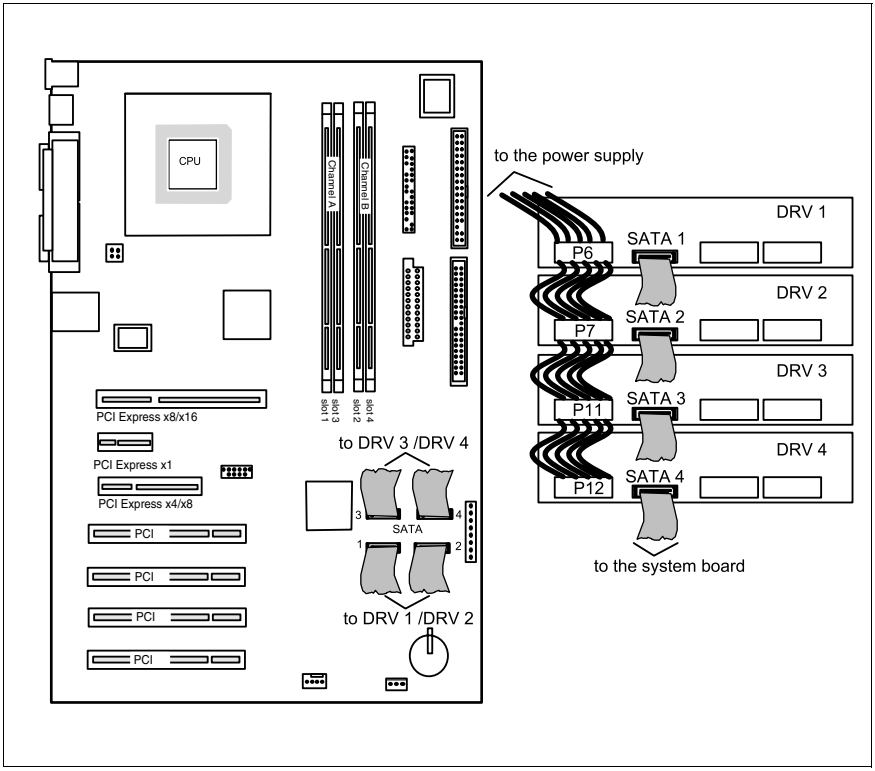

Figure 20: SATA drives: cabling

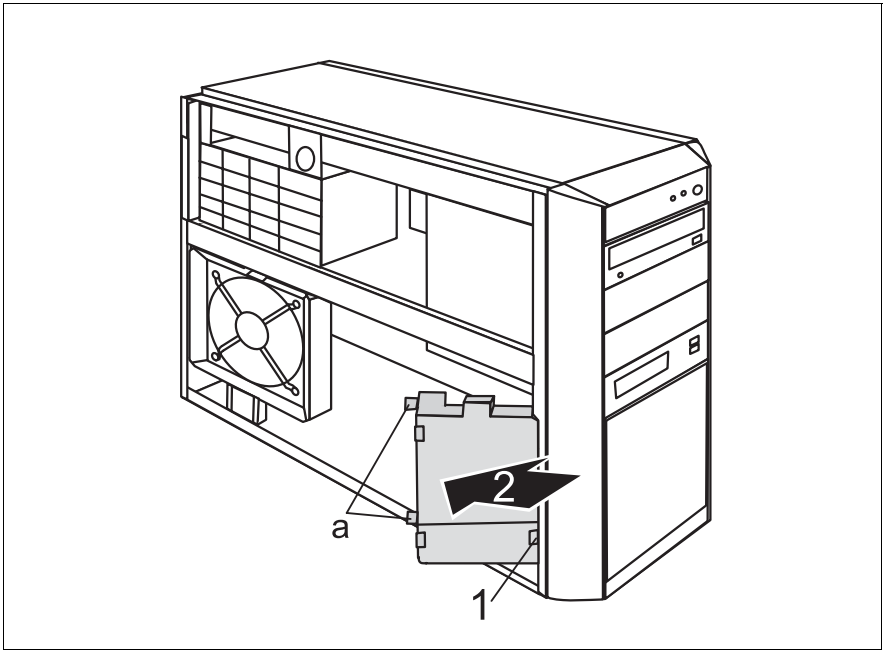

Figure 21: Mounting the cover

- ► Hook the cover with its right hand side into the housing (1).
- ► Fold the cover (2) until the two noses (a) on the left hand side engages. Ensure that no power cable or SATA cables become pinched.
- ► Close the server as described in chapter “Completion” on page 43 and following.

8 Controllers in PCI slots

CAUTION!

Refer to the safety notes in chapter “Safety notes” on page 11 and following.

The system board offers three PCI-E (Express) slots and four standard PCI slots (33 MHz) for additional controllers. The numbering of the slots takes place from above downward (1-7). Four slots (1, 3, 5 and 7) are suitable also for low-profile cards.

8.1 Installing a standard PCI controller

- Open the server and remove the system fan as described in chapter “Preparation” on page 17 and following.

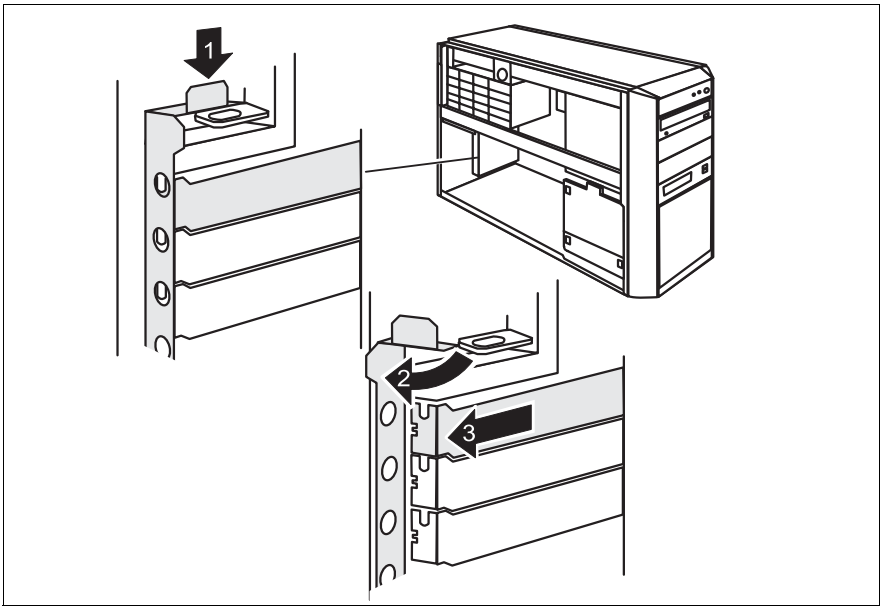

Figure 22: Removing the slot cover

- Press the unlocking mechanism (1) in the direction of the arrow and fold out the locking rail (2). The word „PRESS“ is embossed on the unlocking mechanism.

► Remove the PCI slot cover (3).

CAUTION!

Keep the slot cover for further use. If the controller is removed again and not replaced with a new controller, the slot cover has to be reinstalled to comply with applicable EMC regulations and satisfy cooling requirements and fire protection measures.

► Unpack the new controller, and make the desired settings. You should read the accompanying documentation supplied with the controller beforehand.

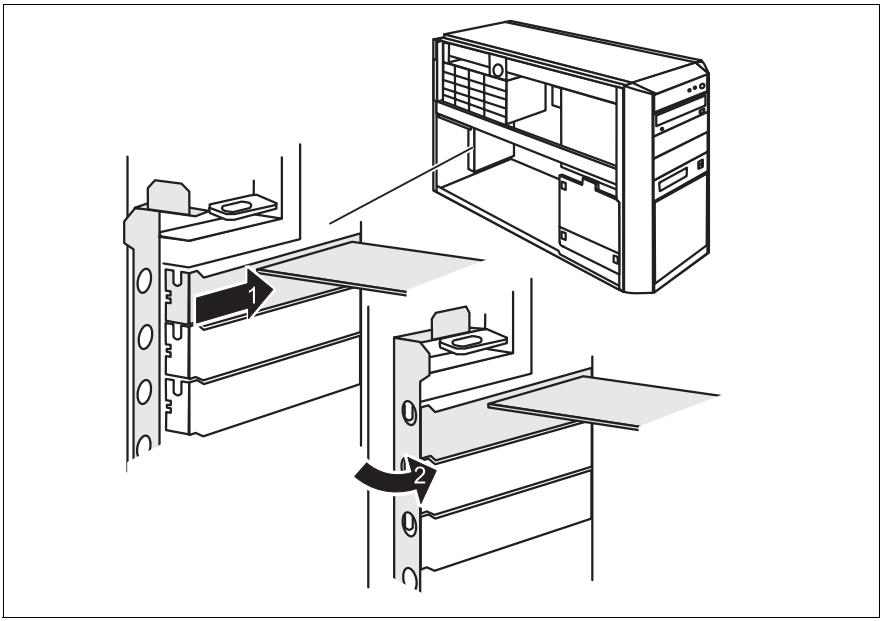

Figure 23: Installing the controller

► Install the controller into the PCI slot (1) and press it carefully into the associated plug-in location on the system board until it engages properly.

► Fold the locking rail (2) until it engages.

► If required, connect the cables to the controller and other components.

► Mount the system fan and close the server as described in chapter “Completion” on page 43 and following.

Please check the relevant PCI slot settings in the *BIOS-Setup*. If necessary, change the settings. Please read the documentation for the installed PCI card.

Pay attention to the allocation of the PCI interrupts. You find further information in the Technical Manual for the system board D2179 (PDF file available on the *ServerBooks* CD).

8.2 Installing a low-profile PCI controller

The four standard PCI slots are suitable for installing low-profile cards. These slots are provided with two-piece covers. In order to install a low-profile card a part of this two-piece cover is to be mounted as fitting bracket onto the slot cover of the card.

► Remove the slot cover from the PCI slot as shown in figure “Removing the slot cover” on page 39.

CAUTION!

Keep the slot cover for further use. If the controller is removed again and not replaced with a new controller, the slot cover has to be reinstalled to comply with applicable EMC regulations and satisfy cooling requirements and fire protection measures.

► Unpack the new controller, and make the desired settings. You should read the accompanying documentation supplied with the controller beforehand.

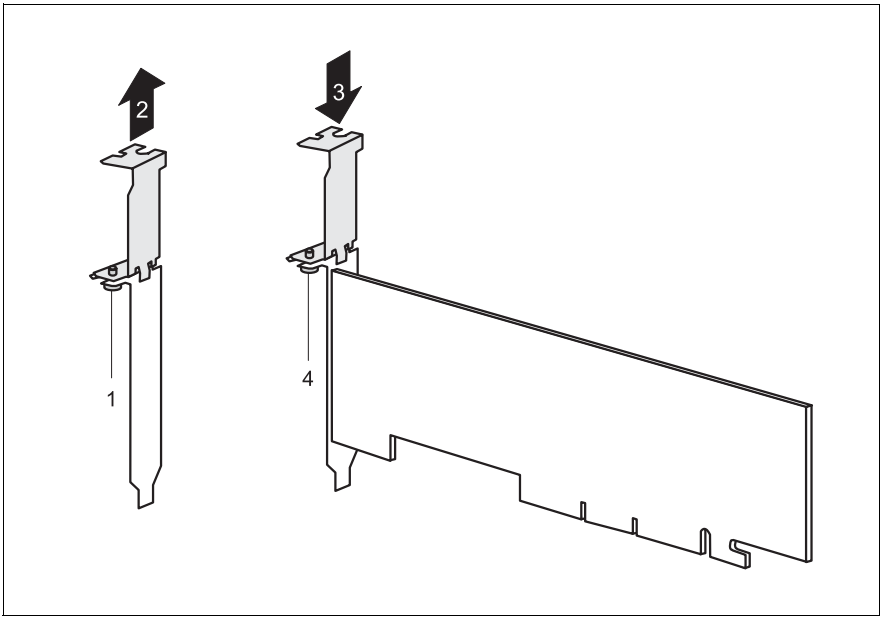

Figure 24: Mounting the fitting bracket

- ► Loosen the screw (1) and remove the fitting bracket (2) from the slot cover.
- ► Place the bracket onto the slot cover of the low-profile card (3) and screw it on (4).

Now you can install the low-profile PCI card like a standard PCI card (see section “Installing a standard PCI controller” on page 39).

9 Completion

CAUTION!

Refer to the safety notes in chapter “Safety notes” on page 11 and following.

9.1 Mounting the system fan

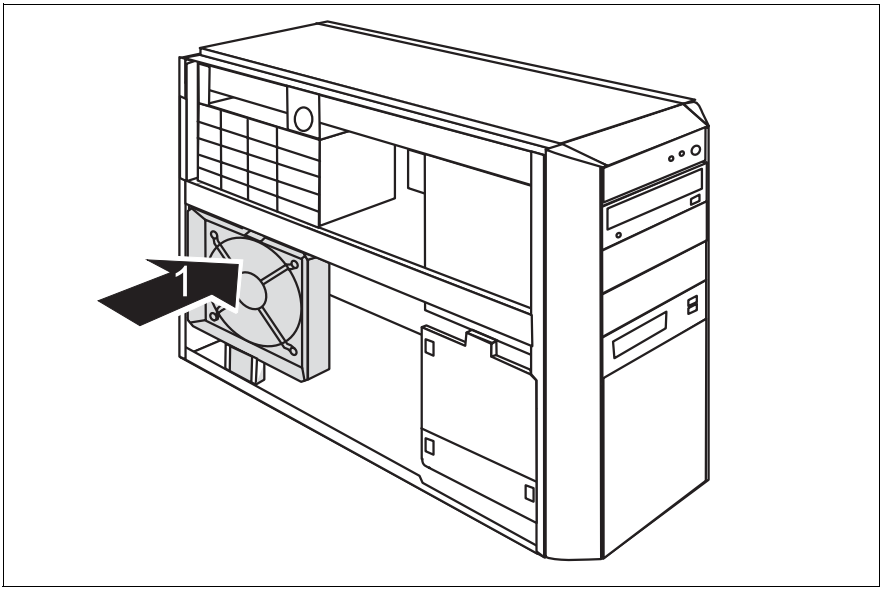

Figure 25: Mounting the system fan

- Place the system fan onto the support rail on the server’s bottom and press it in the direction of the arrow (1) until it clicks audibly into place.
- Connect the fan cable to the connector FAN2 on the system board (see cabling in the appendix).

9.2 Folding in the power supply unit

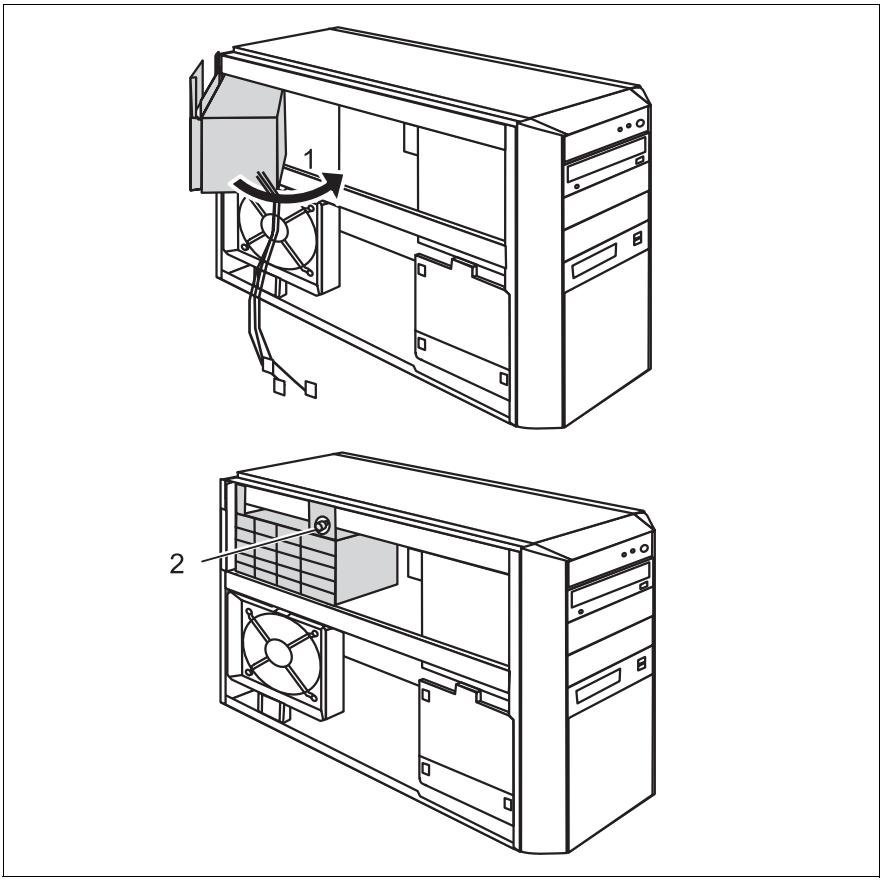

Figure 26: Folding in the power supply unit

- ► Swing the power supply unit back into the housing (1) and fasten it with the knurled screw (2).
- ► Connect all power supply cables to the system board and to the drives (see cabling in the appendix).

9.3 Mounting the front cover

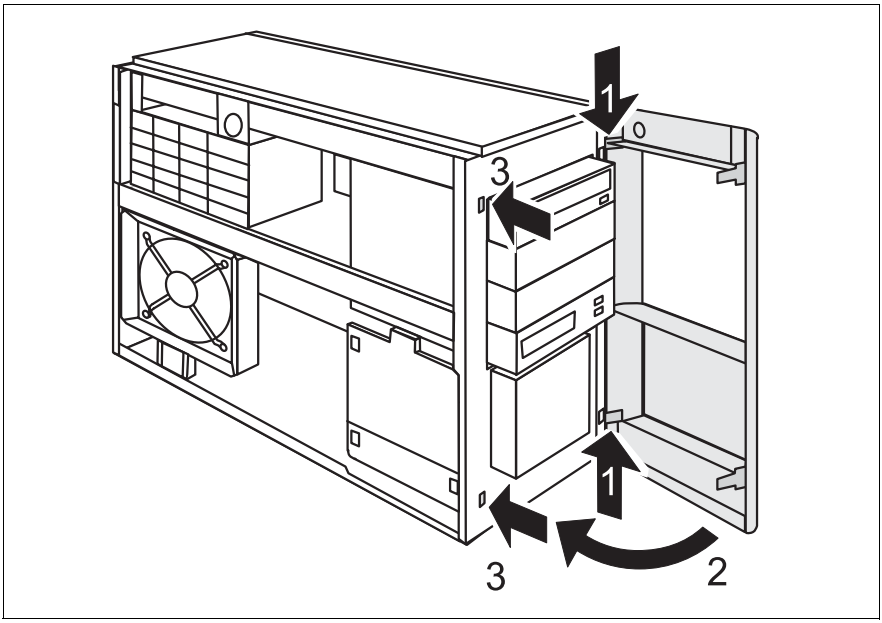

Figure 27: Mounting the front cover

- ► Hook on the front cover (1).
- ► Swing the front panel in the direction of the arrow (2) until it engages (3).

9.4 Closing the server

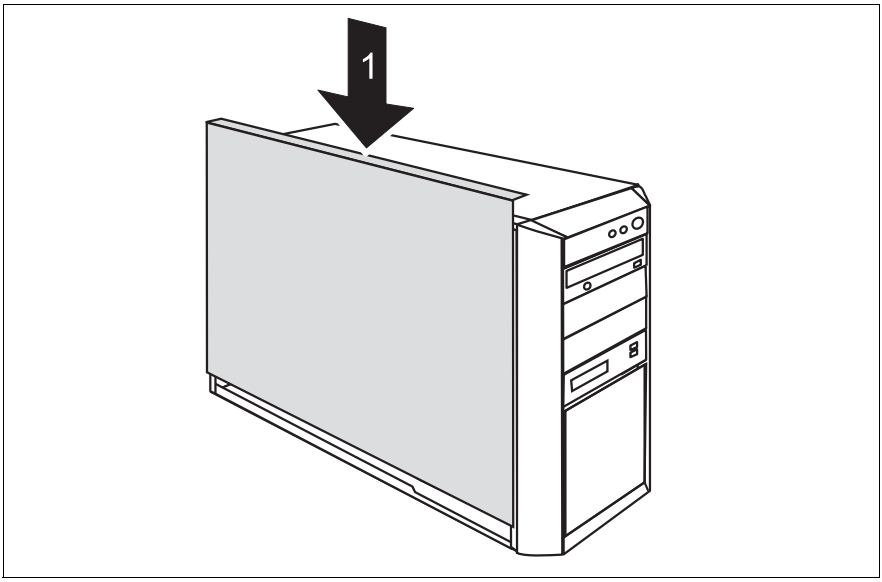

Figure 28: Installing the side cover

- ► Slide the side cover in the direction of the arrow (1) until it engages.
- ► Return the server to its original installation location.
- ► Reconnect any disconnected cables.
- ► Connect the power plug to the grounded power outlet, switch on the power supply unit (press the main power switch) and press the ON/OFF button.

10 Appendix

10.1 Cabling

The following table gives you an overview of the cables:

Part number	Name
T26139-Y3701-V106	Operating panel cable
T26139-Y3894-V2	USB front cable
T26139-Y1737-V111	IDE cable
T26139-Y1248-V8	Floppy disk drive cable
T26139-Y3859-V11/ T26139-Y3576-V209	SCSI cable
T26139-Y3922-Z1	Intrusion detection switch cable
T26139-Y3928-V101	SATA cable

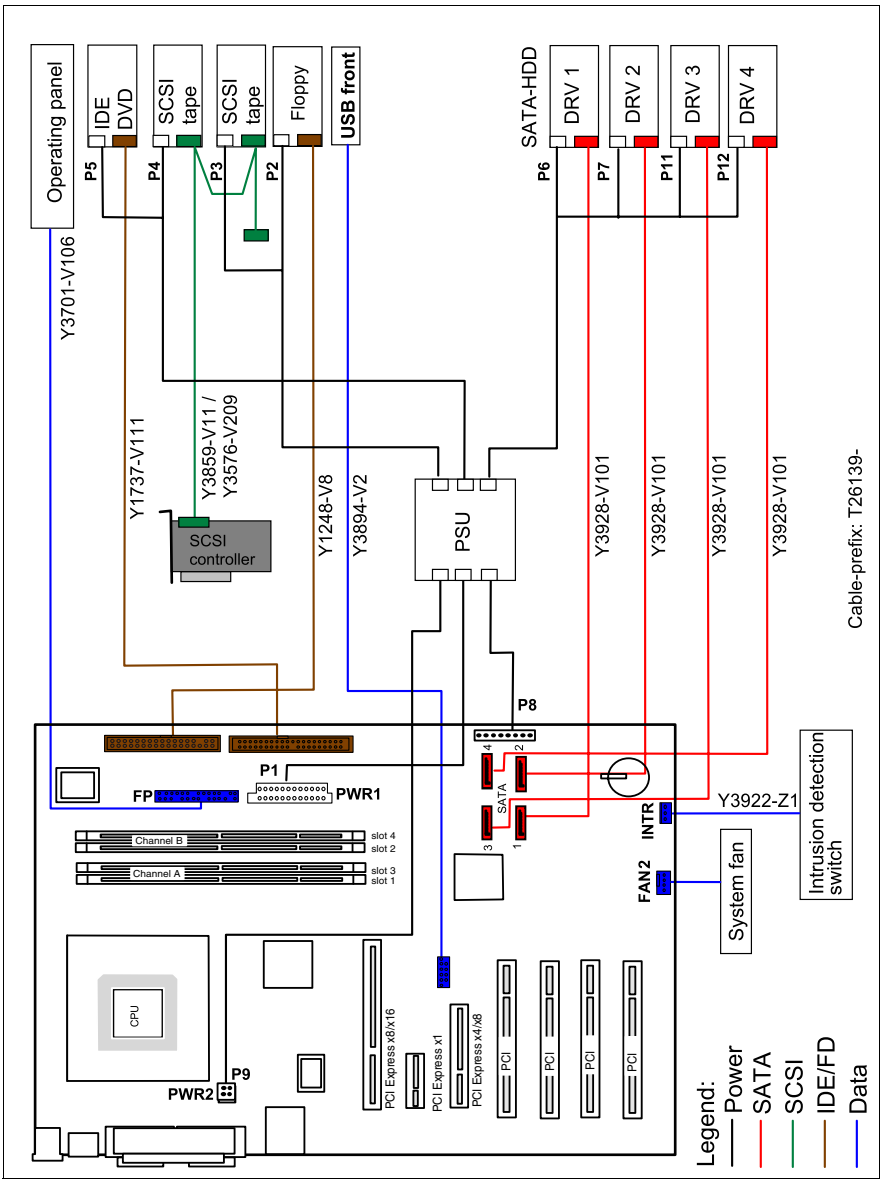

Figure 29: Basic cabling

Abbreviations

AC
Alternating Current

ACPI
Advanced Configuration and Power Interface

ANSI
American National Standards Institute

ASR&R
Automatic Server Reconfiguration and Restart

BIOS
Basic Input-Output System

BMC
Baseboard Management Controller

CC
Cache Coherency

CD
Compact Disk

CD-ROM
Compact Disk-Read Only Memory

CE
Communauté Européenne

CHS
Cylinder Head Sector

CMOS
Complementary Metal Oxide Semiconductor

COM
Communications

CPU
Central Processing Unit

DC
Direct Current

DIMM
Dual Inline Memory Module

DIP
Dual Inline Package

DMA
Direct Memory Access

DMI
Desktop Management Interface

ECC
Error Checking and Correcting

ECP
Extended Capabilities Port

EEPROM
Electrically Erasable Programmable Read-Only Memory

EMC
ElectroMagnetic Compatibility

EMP
Emergency Management Port

EPP
Enhanced Parallel Port

EPROM
Erasable Programmable Read-Only Memory

ESD
ElectroStatic Discharge

FCC
Federal Communications Commission (USA)

FPC
Front Panel Controller

FRU
Field Replaceable Unit

FSB
Front Side Bus

GAM
Global Array Manager

GUI
Graphical User Interface

HDD
Hard Disk Drive

HSC
Hot-Swap Controller

I²C
Inter-Integrated Circuit

I/O
Input/Output

ICES
Interference-Causing Equipment Standard (Canada)

ICM
Intelligent Chassis Management

ID
Identification

IDE
Integrated Drive Electronics

IME
Integrated Mirroring Enhanced

IPMI
Intelligent Platform Management Interface

IRQ
Interrupt Request Line

LAN
Local Area Network

LBA
Logical Block Address

LCD
Liquid Crystal Display

LUN
Logical Unit Number

LVD
Low-Voltage Differential SCSI

MMF
Multi Mode Fibre

MRL
Manual Retention Latch

NMI
Non Maskable Interrupt

NVRAM
Non Volatile Random Access Memory

OS
Operating System

PAM
Promise Array Management

PCI
Peripheral Component Interconnect

PDA
Prefailure Detection and Analysing

PDF
Portable Data Format

POST
Power ON Self Test

PS/2
Personal System/2 (IBM)

RAID
Redundant Arrays of Independent Disks

RAM
Random Access Memory

ROM
Read-Only Memory

RSB
Remote Service Board

RTC
Real Time Clock

RTDS
Remote Test- und Diagnose-System

SAF-TE
SCSI Accessed Fault-Tolerance Enclosures

SATA
Serial ATA (Advanced Technology Attachment)

SBE
Single Bit Error

SCA
Single Connector Attachment

SCSI
Small Computer System Interface

SCU
System Configuration Utility

SDR
Sensor Data Record

SDRAM
Synchronous Dynamic Random Access Memory

SEL
System Event Log

S.M.A.R.T
Self-Monitoring, Analysis, and Reporting Technology

SMI
System Management Interrupt

SSU
System Setup Utility

SVGA
Super Video Graphics Adapter

USB
Universal Serial Bus

VGA
Video Graphics Adapter

WOL
Wakeup on LAN

ZCR
Zero Channel RAID

Related publications

PRIMERGY manuals are available as PDF files on the *ServerBooks* CD. The *ServerBooks* CD is part of the *ServerView Suite* delivered with each server system.

The current versions of the required manuals can be downloaded free of charge as PDF files from the Internet. The overview page showing the online documentation available on the Internet can be found via the URL: *http://manuals.fujitsu-siemens.com*. For the documentation of the PRIMERGY servers choose the navigation point *industry standard servers*.

[1] **Safety**

[2] **Ergonomics**

[3] **Warranty**

[4] **Returning used devices**

[5] **System board D2179 for Econel 100**
Technical Manual

[6] **BIOS-Setup**
Reference Manual

[7] **Quickstart Hardware - PRIMERGY Econel 100**
Poster

[8] **Quickstart Software - PRIMERGY ServerView Suite**
Poster

[9] **PRIMERGY Econel 100 Server System**
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[10] **PRIMERGY ServerView Suite**
ServerStart
User Manual

[11] **LSI SATA Software RAID**
User Manual

[12] **Configurator**
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http://extranet.fujitsu-siemens.com/cafe/products/primergy

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Suggestions
Corrections

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