PRIMERGY Econel 200 S2 Server

Options Guide

Edition January 2007

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 200 S2 server is an Intel-based server for workgroups and small 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* DVD which is supplied in the *PRIMERGY 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 200 S2 documentation comprises the following additional manuals:

- "Safety notes and other important information" (print version delivered together with the system, PDF file available on the *ServerBooks* DVD)
- "Warranty" (print version delivered together with the system, PDF file available on the *ServerBooks* DVD)
- "Ergonomics" (PDF file available on the *ServerBooks* DVD)
- "Returning used devices" (PDF file available on the *ServerBooks* DVD)
- "PRIMERGY Econel 200 S2 Operating Manual" (PDF file available on the *ServerBooks* DVD)
- Technical Manual for the system board D2530 (PDF file available on the *ServerBooks* DVD)

– “BIOS Manual” (PDF file available on the *ServerBooks* DVD)
– “PRIMERGY ServerView Suite” includes the ServerStart Disc 1 and 2, the *ServerBooks* DVD, the Software CD and the update CDs for Windows and Linux. The PDF version of the manual “PRIMERGY ServerView Suite - ServerStart” is also available on the *ServerBooks* DVD.

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

– “LSI SATA Software RAID User’s Guide“ (PDF file available on the *ServerBooks* DVD)

Further sources of information:

– Manual on the monitor
– Manual on *ServerView* Server Management
– Manual on *RemoteView* Remote Server Maintenance
– Documentation on boards and drives
– Documentation on your operating system
– Information files on your operating system

(see also “Related publications” on page 59).

1.2 Expansions and conversions

Second processor

The server can be upgraded to a so-called dual processor system. A dual processor system needs a multi processor operating system. The second processor must have the same type and clock rate as the first.

Extension of the main memory

The system board supports up to 8 Gbyte main memory. 4 slots (2 banks with 2 modules) are available for the main memory. Each memory bank can be populated with 512 Mbyte, 1 Gbyte or 2 Gbyte FBD533/PC2-4200F Fully Buffered DIMM memory modules. You find further information on the main memory in the Technical Manual for the system board D2530.

Additional accessible drives

Three free 5.25-inch bays are available for additional accessible drives (DVD-ROM, CD-RW/DVD, DVD-RW or tape backup drive).

The lowest bay can be equipped with a 5-inch multibay. In this multibay a 1.44 MB floppy disk drive and a slimline drive (CD-RW/DVD, DVD-RW) can be installed.

Hard disk drives

Up to four SATA hard disk drives can be installed. One SATA hard disk drive is already installed in the base unit.

Expansion boards in the PCI slots

The system board offers:
- 3 x PCI-X (133/100 MHz) slots
- 1 x PCI 33 MHz slot
- 1 x PCI-Express x16 slot (x8 wired)
- 1 x PCI-Express x8 slot (x4 wired)

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 these instructions should only be performed by technical specialists. Equipment repairs should only be performed by service personnel. Any unauthorized opening 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 opening of the device will result in the invalidation of the warranty and exclusion from all liability.

- ► First of all please familiarize yourself with the safety instructions in the chapter “Safety notes” on page 11 et seq. .
- ► Ensure that all required manuals (see “Additional documentation about the server” on page 5) are available, printing out the PDF files if necessary. 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 et seq. .
- ► Extend or upgrade your server as described in the relevant chapter.
- ► Close the server, connect it to the power outlet, and switch it on as described in the chapter “Completion” on page 49 et seq. .
- ► 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 notes and other important information” 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 these instructions should only be performed by technical specialists. Equipment repairs should only be performed by service 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 only in the original packaging or in packaging that protects it from knocks and jolts.

Installation and operation

CAUTION!

- 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 ON/OFF button 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.
- 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.

CAUTION!

- Make sure that no objects (such as bracelets or paper clips) fall into or liquids spill into the device (risc of electric shock or short circuit).
- 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 59).
- 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 59).

Notes on handling CD and 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:

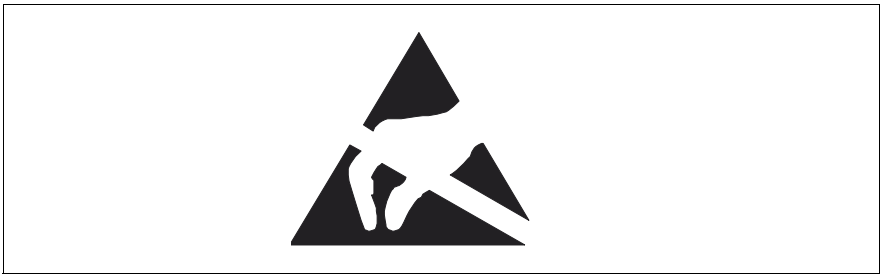

Figure 1: ESD label

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 et seq. .

4.1 Opening the server

- ► Terminate all applications and shut down the server correctly.
- ► If your operating system has not switched off the server, press the ON/OFF button.
- ► Remove the power plug from the grounded insulated socket.
- ► If required, remove the lock on the side cover.

Figure 2: Removing the side cover

- ► Open the latch (1).

  The opening of the latch pushes back the side cover (2) and disengages the hooks on the top of the side cover.
- ► Remove the side cover (3).

4.2 Removing the processor fan 2

For the installation of additional memory modules or installation of a second processor the processor fan 2 has to be removed.

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

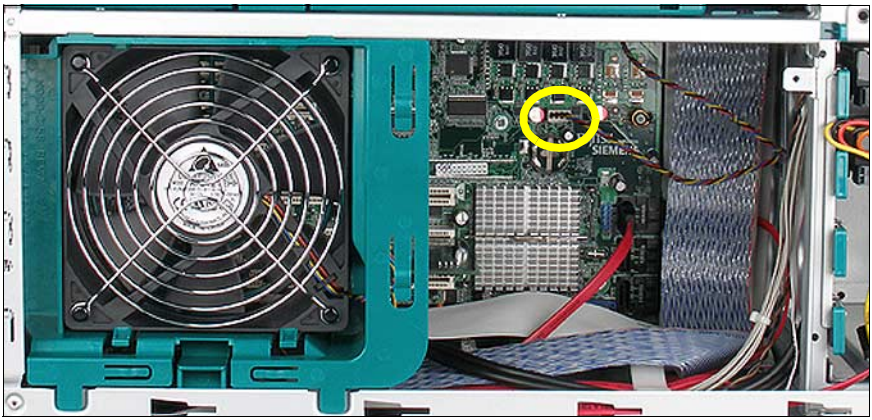

Figure 3: Removing the processor fan 2 cable

► Disconnect the plug of the processor fan cable from the system board (connector Fan2 CPU, see circle).

Figure 4: Removing the processor fan 2

► Press together the two locks (see arrows) of the air duct, use the grip at the right side and remove the air duct with the integrated processor fan 2.

4.3 Removing the system fan

For the installation of PCI controllers or installation of a second processor the system fan has to be removed.

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

► Remove the processor fan 2 as described in section “Removing the processor fan 2” on page 18.

Figure 5: Removing the system fan

► Pull the locking bar (see arrow) upward and remove the system fan.

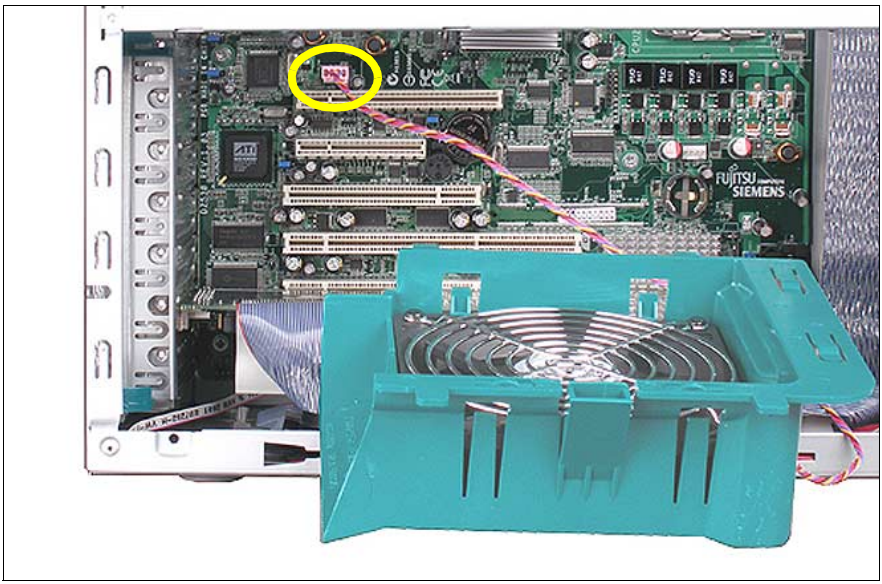

Figure 6: Removing the system fan cable

► Disconnect the plug of the system fan cable from the system board (see circle, connector Rear Fan).

4.4 Removing the memory air duct

For the installation of additional memory modules or installation of a second processor the traverse with the memory air duct has to be removed.

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

► Remove the processor fan 2 as described in section “Removing the processor fan 2” on page 18.

► Remove the system fan as described in section “Removing the system fan” on page 19.

Figure 7: Removing the traverse with the memory air duct

- ► Press on the locking bar of the traverse (see arrow) and pull out the traverse somewhat.
- ► Unhook the traverse at the left side (see circles).
- ► Take out the traverse with the memory air duct carefully.

4.5 Removing the processor fan 1

For the installation of additional memory modules the processor fan 1 has to be removed.

- ► Remove the side cover as described in section “Opening the server” on page 17.
- ► Remove the processor fan 2 as described in section “Removing the processor fan 2” on page 18.
- ► Remove the system fan as described in section “Removing the system fan” on page 19.

► Remove the traverse with the memory air duct as described in section “Removing the memory air duct” on page 21.

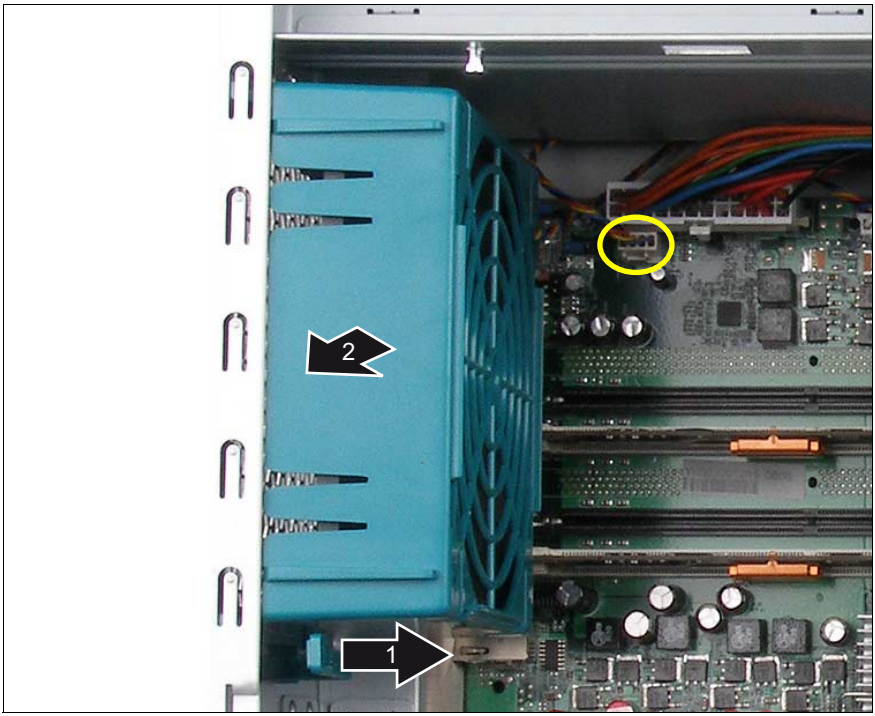

Figure 8: Removing the processor fan 1

► Disconnect the plug of the processor fan cable from the system board (see circle, connector Fan1 CPU).

► Pull the lock bar (1) in direction of the front side.

► Pull the system fan somewhat forward to disengage its hooks at the rear side of the server (2) and take out the processor fan 1.

5 Processors

CAUTION!

Refer to the safety notes in chapter “Safety notes” on page 11 et seq. .

CAUTION!

Processors are components which are extremely sensitive to electrostatic discharges and must be handled with caution. After taking a processor out of its protective wrapper, set it on an insulated antistatic surface with the smooth side down. Never slide a processor over a surface.

5.1 Installing a second processor

The system board can be upgraded with a second processor. The upgrade kit includes a processor and a heat sink.

CAUTION!

You may only use processors of the same type on the system board. The second processor must have the same type and clock rate as the first. Use a suitable multiprocessor operating system if dual operation is required.

- Remove the side cover as described in section “Opening the server” on page 17.
- Remove the processor fan 2 as described in section “Removing the processor fan 2” on page 18.
- Remove the system fan as described in section “Removing the system fan” on page 19.
- Remove the traverse with the memory air duct as described in section “Removing the memory air duct” on page 21.

Installing the processor

► Take out the processor from its protective wrapper.

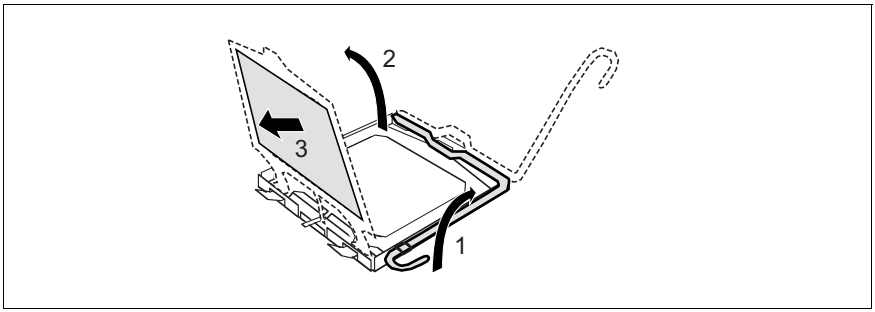

Figure 9: Releasing the socket lifter

► Release the socket lifter by pressing it sideways and pull it upward until it stops (1).

► Open the cover (2).

► Remove the plastic cover (3).

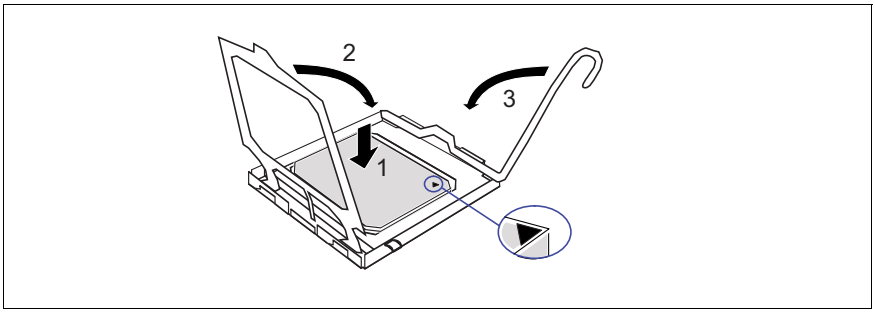

Figure 10: Inserting the processor

► Position the new processor over the socket, and press it carefully into the socket (1).

CAUTION!

The processor can only be installed in one particular direction. Pay attention to the location mark on one of the corners. Do not use force to press it into the socket to avoid damaging the pins or the processor.

► Close the cover (2).

► Lock the processor into place in the socket by placing the socket lever in its original position (3).

Installing the heat sink

► Remove the protective cover on the underside of the heat sink.

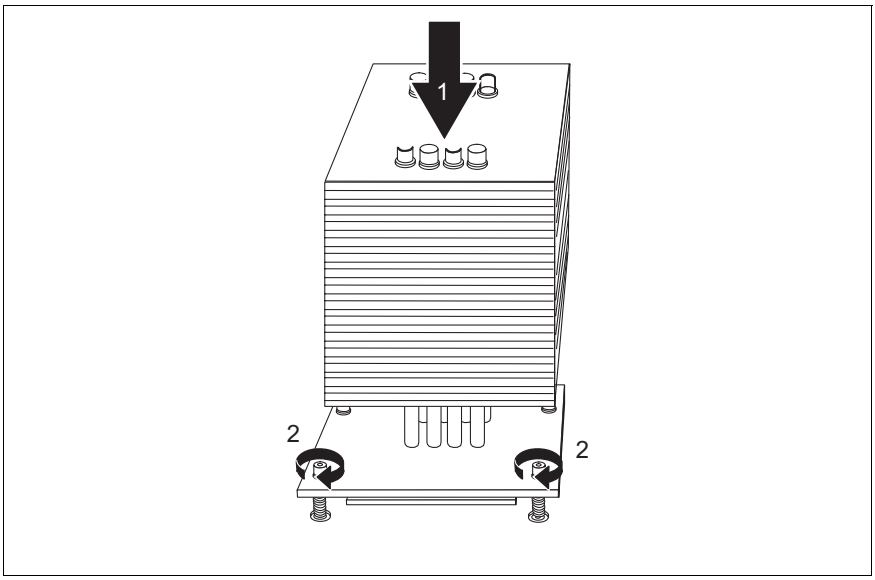

Figure 11: Installing the heat sink

► Place the heat sink onto the processor socket (1).

► Fasten the heat sink by tightening the four screws in a crossover pattern (2).

CAUTION!

Never operate a processor without heat sink or without processor fan as otherwise the processor may overheat and fail, causing the complete system board to fail.

► Install the traverse with the memory air duct as described in section “Installing the memory air duct” on page 50.

► Install the system fan as described in section “Installing the system fan” on page 51.

- ► Install the processor fan 2 as described in section “Installing the processor fan 2” on page 52.
- ► Close the server, connect it to the mains, and switch it on as described in section “Closing the server” on page 53 et seq. .

6 Main memory

CAUTION!

Refer to the safety notes in chapter “Safety notes” on page 11 et seq. .

The system board supports up to 8 Gbyte main memory. Four slots are available (two slots each form a memory bank) for the main memory. Each memory bank can be populated with two 512 Mbyte, 1 Gbyte or 2 Gbyte FBD533/PC2-4200F Fully Buffered DIMM memory modules.

The basic unit includes the first memory bank populated either with 1x 512 Mbyte, 2x 512 Mbyte, 2x 1 Gbyte or 2x 2 Gbyte.

ECC with memory scrubbing and with Single Device Data Correction (SDDC, Chipkill) function is supported.

6.1 Slot population rules

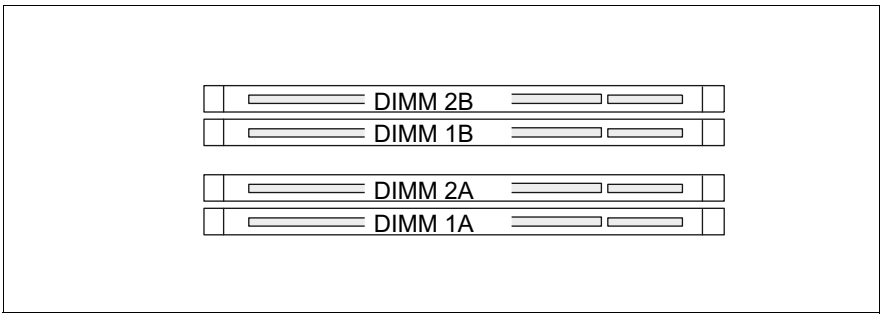

Figure 12: Structure of the main memory in memory banks and memory modules

The modules capacity can be different for the different memory banks: e.g. pair 1A/1B can be populated with two 512 Mbyte modules and pair 2A/2B with two 1 Gbyte modules.

Following table shows the mandatory population order.

	DIMM 1A (white socket)	DIMM 2A (black socket)	DIMM 1A (white socket)	DIMM 2A (black socket)
Single channel	equipped	empty	empty	empty
Dual channel	equipped	empty	equipped	empty
	equipped	equipped	equipped	equipped

Table 2: Memory modules population

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

6.2 Installing/removing main memory

- ► Remove the side cover as described in section “Opening the server” on page 17.
- ► Remove the processor fan 2 as described in section “Removing the processor fan 2” on page 18.
- ► Remove the system fan as described in section “Removing the system fan” on page 19.
- ► Remove the traverse with the memory air duct as described in section “Removing the memory air duct” on page 21.
- ► Remove the processor fan 1 as described in section “Removing the processor fan 1” on page 22.
- ► Unpack the memory module.

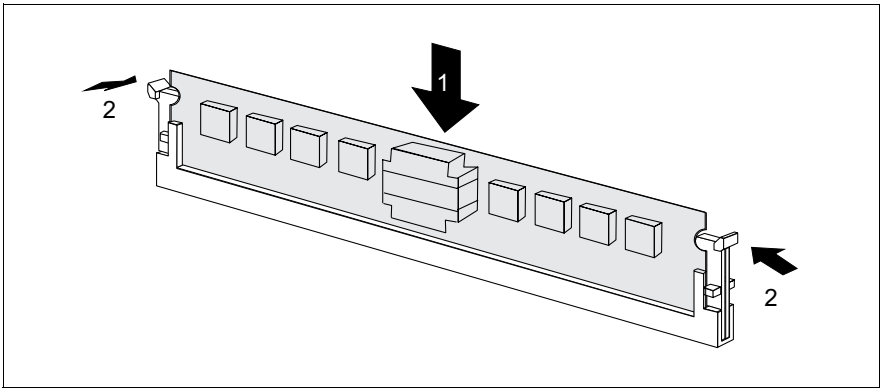

Figure 13: Installing a memory module

- ► Push the holder on each side of the memory slot outward.
- ► Insert the memory module in the slot (1) while folding the side holders up until the memory module engages (2).
- ► Install the traverse with the memory air duct as described in section “Installing the memory air duct” on page 50.
- ► Install the system fan as described in section “Installing the system fan” on page 51.
- ► Install the processor fan 1 as described in section “Installing the processor fan 1” on page 49.
- ► Install the processor fan 2 as described in section “Installing the processor fan 2” on page 52.
- ► Close the server, connect it to the mains, and switch it on as described in section “Closing the server” on page 53 et seq. .

7 Accessible drives

CAUTION!

Refer to the safety notes in chapter “Safety notes” on page 11 et seq. .

Three free 5.25-inch bays are available for additional accessible drives (DVD-ROM, CD-RW/DVD, DVD-RW or tape backup drive).

The lowest bay can be equipped with a 5-inch multibay. In this multibay a 1.44 MB floppy disk drive and a slimline drive (CD-RW/DVD, DVD-RW) can be installed.

7.1 Installing an accessible drive

Only one USB tape drive is allowed in the server. The USB tape drive can be connected directly to the onboard USB controller.

Only one SCSI tape drive is allowed in the server. In this case you need also a SCSI controller because there is no onboard SCSI controller on the system board.

- Remove the side cover as described in section “Opening the server” on page 17.
- Remove the processor fan 2 as described in section “Removing the processor fan 2” on page 18.
- Remove the system fan as described in section “Removing the system fan” on page 19.

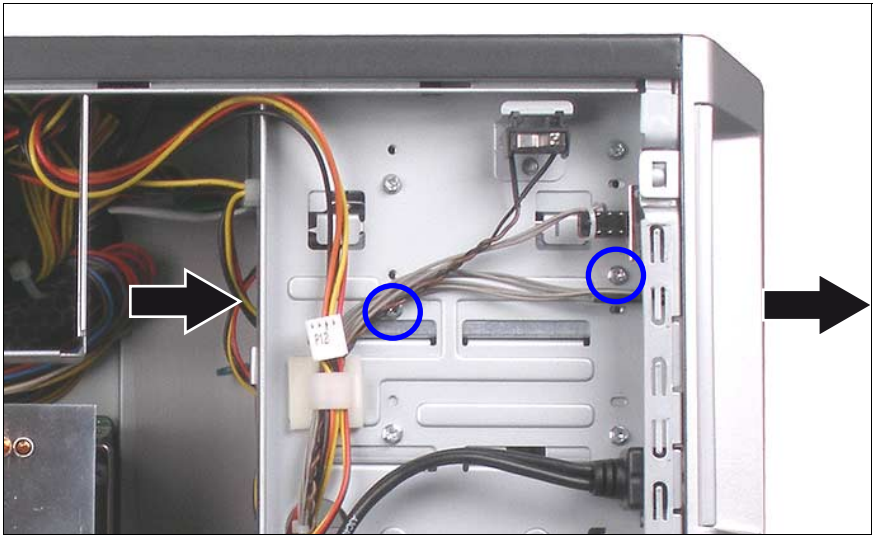

Figure 14: Screws of the middle bay

- ► Remove the two screws of the depending bay and push the dummy module from the inside through the front panel.

CAUTION!

Keep the dummy module for future use. If the drive is removed again and not replaced with a new drive, the dummy module 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.
- ► Push the accessible drive into the free bay.
- ► Fasten the accessible drive with two screws.
- ► Connect the data cable to the accessible drive (see the cabling plans in the Appendix).
- ► Connect the power cable to the accessible drive (see the cabling plans in the Appendix).
- ► Install the system fan as described in section “Installing the system fan” on page 51.

- Install the processor fan 2 as described in section “Installing the processor fan 2” on page 52.
- Close the server, connect it to the mains, and switch it on as described in section “Closing the server” on page 53 et seq. .

7.2 Installing the 5-inch multibay

- Remove the side cover as described in section “Opening the server” on page 17.
- Remove the processor fan 2 as described in section “Removing the processor fan 2” on page 18.
- Remove the system fan as described in section “Removing the system fan” on page 19.

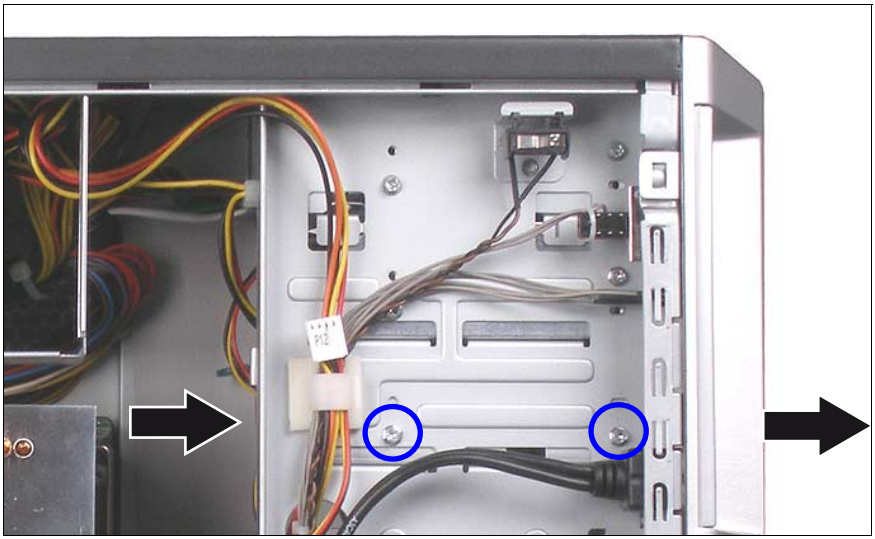

Figure 15: Screws of the lowest bay

- Remove the two screws of the lowest bay and push the dummy module from the inside through the front panel.

CAUTION!

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

► Unpack the 5-inch multibay.

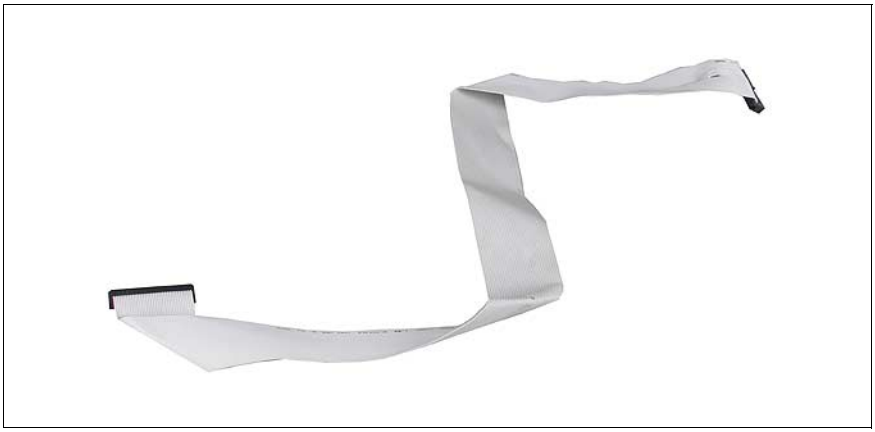

Figure 16: Folding the floppy cable

► Fold the floppy cable as shown in the photo.

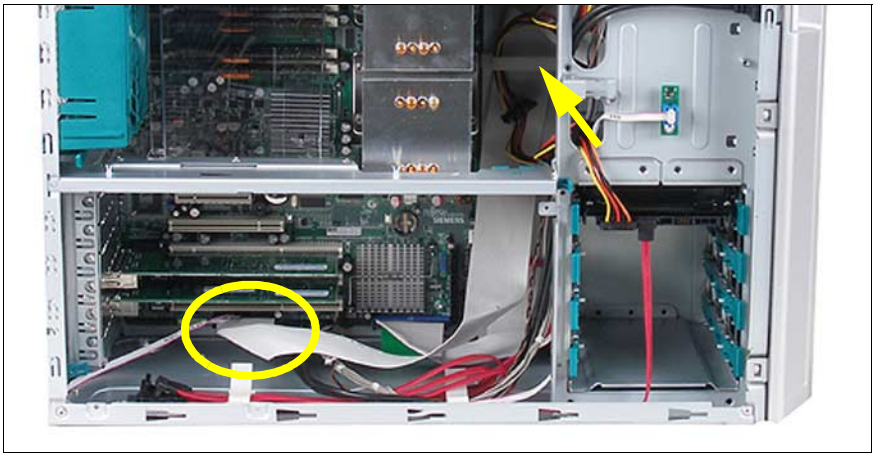

Figure 17: Routing the floppy cable

- ► Connect the floppy cable to the system board (see circle) and route the floppy cable in the cable clamp (see arrow) as shown in the photo. Left the cable clamp opened.
- ► Thread the floppy cable and the power cable plugs P9/P12 through the lowest bay and the front panel.

The DVD-ROM, CD-RW/DVD or DVD-RW drive must be removed or replaced by another drive (e.g. USB drive), before installing the slimline drive (CD-RW/DVD, DVD-RW).

- ► Replace/remove the DVD-ROM, CD-RW/DVD or DVD-RW drive.
- ► Thread the CDROM cable (connected before to the DVD-ROM, CD-RW/DVD or DVD-RW drive) through the lowest bay and the front panel.

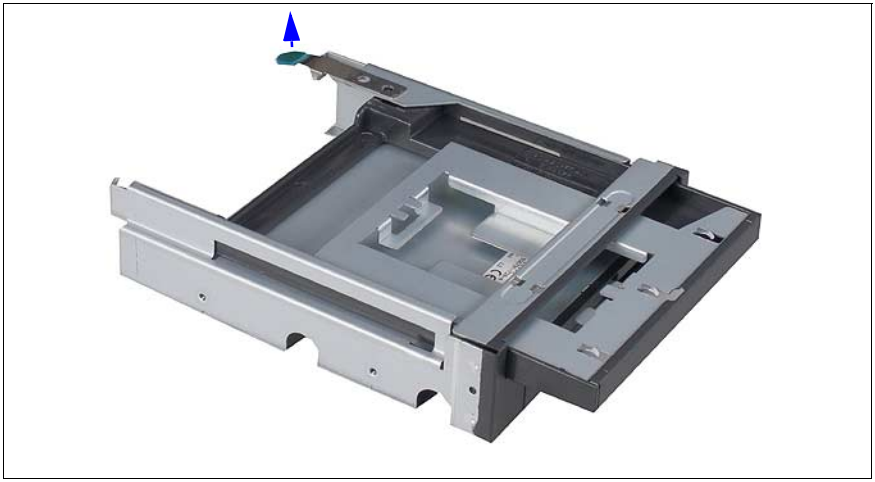

Figure 18: Removing the dummy module

► Pull up the green touch point and push the dummy module out of the 5-inch multibay.

CAUTION!

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

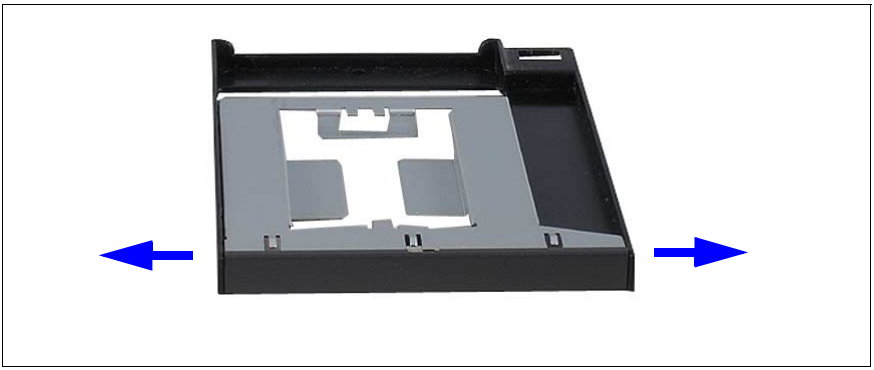

Figure 19: Removing the dummy

► Take the dummy out of the frame by extracting sideward the frame until the four pins of the frame disengage.

CAUTION!

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

Figure 20: Inserting the slimline drive

► Insert the slimline drive in the frame. The four pins will fasten the frame.

► Slide the slimline drive into the mounting location of the 5-inch multibay until it latches in place.

Figure 21: Connecting the cables

- Connect the power cable plugs P9 (floppy) and P12 (CDROM) to the rear side of the drives.
- Connect the floppy cable and the CDROM cable to the rear side of the drives.
- Push the 5-inch multibay into the lowest bay. Lead the cables carefully into the interior of the chassis. Avoid deadlocks or damage of the cables.
- Fasten the 5-inch multibay with two screws.
- Straighten the floppy and the CDROM cable and close the cable clamp.
- Install the system fan as described in section “Installing the system fan” on page 51.
- Install the processor fan 2 as described in section “Installing the processor fan 2” on page 52.
- Close the server, connect it to the mains, and switch it on as described in section “Closing the server” on page 53 et seq. .

8 Hard disk drives

CAUTION!

Refer to the safety notes in chapter “Safety notes” on page 11 et seq. .

Up to four SATA hard disk drives can be installed. One SATA hard disk drive is already installed in the base unit.

8.1 Installing SATA hard disk drives

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

You find the necessary pre-mounted EasyClick rails in the drive cage.

- Remove the 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.

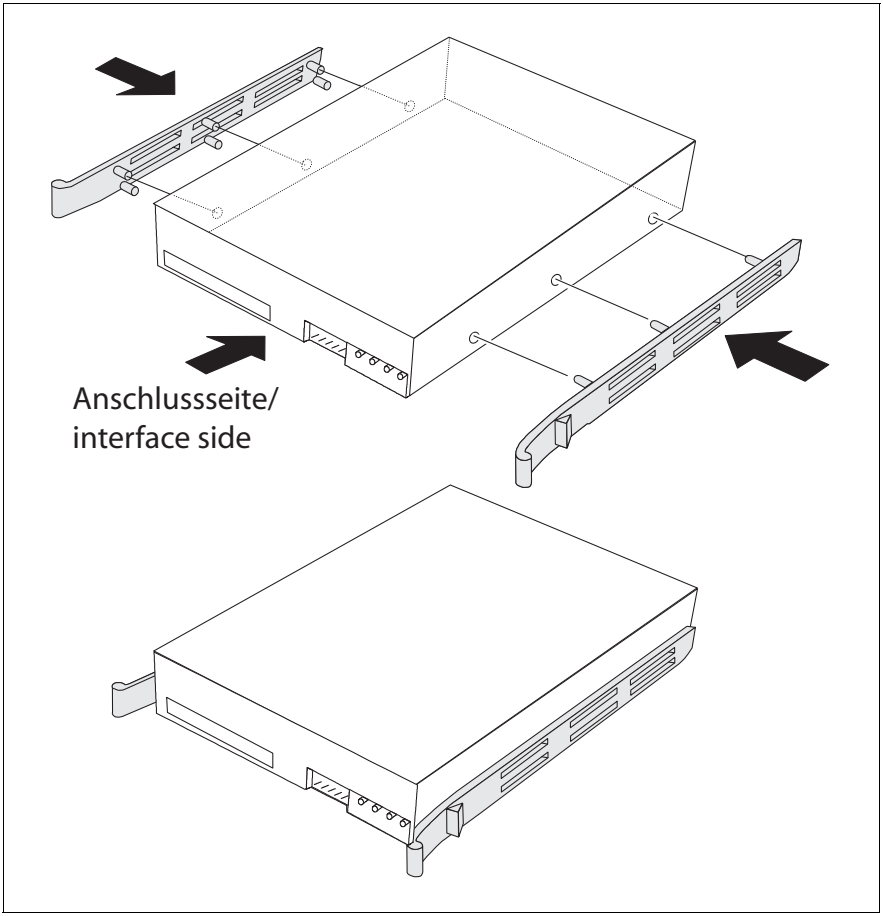

Figure 22: Attaching the rails to the SATA hard disk drive

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

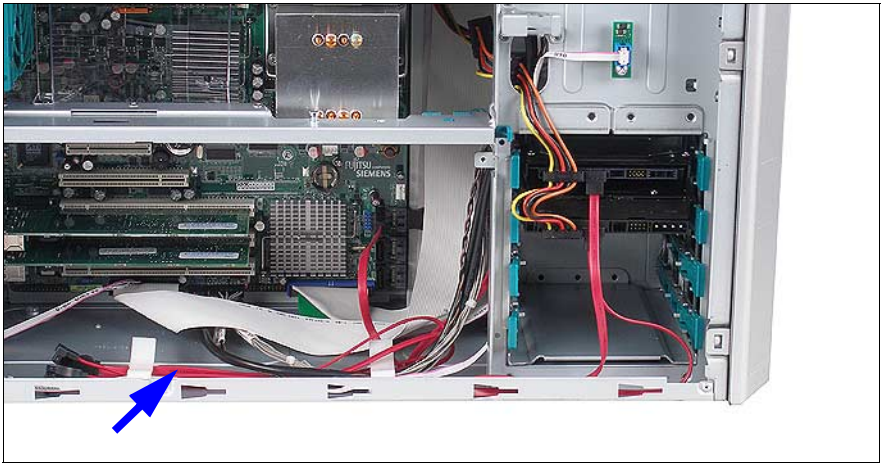

Figure 23: Installing the SATA hard disk drive

- ► Push the assembled drive with the rails into the free bay until the EasyClick rails are locked in position.
- ► Attach the power cable and the SATA cable to the new drive (see the cabling plans in the Appendix).

  Power cable:
  plug P18 must always be connected to the lowest SATA hard disk. In this case: remove the plug P18 from the first SATA hard disk, and connect the plug to the second SATA hard disk. Connect plug P17 to the first SATA hard disk.

  SATA cable:
  Connect the SATA cable to the system board and the SATA hard disk. Cable SATA hard disk 1 belongs to system board connector SATA1, SATA hard disk2 to connector SATA2, SATA hard disk3 to connector SATA3, SATA hard disk4 to connector SATA4 (position of the connectors see system board foil D2530 in the side cover).

  You will find further SATA cables stored in the cable clamps (see arrow).
- ► Close the server, connect it to the mains, and switch it on as described in chapter “Completion” on page 49 et seq. .

9 Expansion boards in PCI slots

CAUTION!

Refer to the safety notes in chapter “Safety notes” on page 11 et seq. .

The system board offers six PCI slots:
– 3 x PCI-X (133/100 MHz) slots
– 1 x PCI 33 MHz slot
– 1 x PCI-Express x16 slot (x8 wired)
– 1 x PCI-Express x8 slot (x4 wired)

Figure 24: Numbering of the PCI slots

You will find further information in the Technical Manual for the system board D2530 (PDF file available on the *ServerBooks* DVD).

9.1 Installing an expansion board

- Remove the side cover as described in section “Opening the server” on page 17.
- Remove the system fan as described in section “Removing the system fan” on page 19.

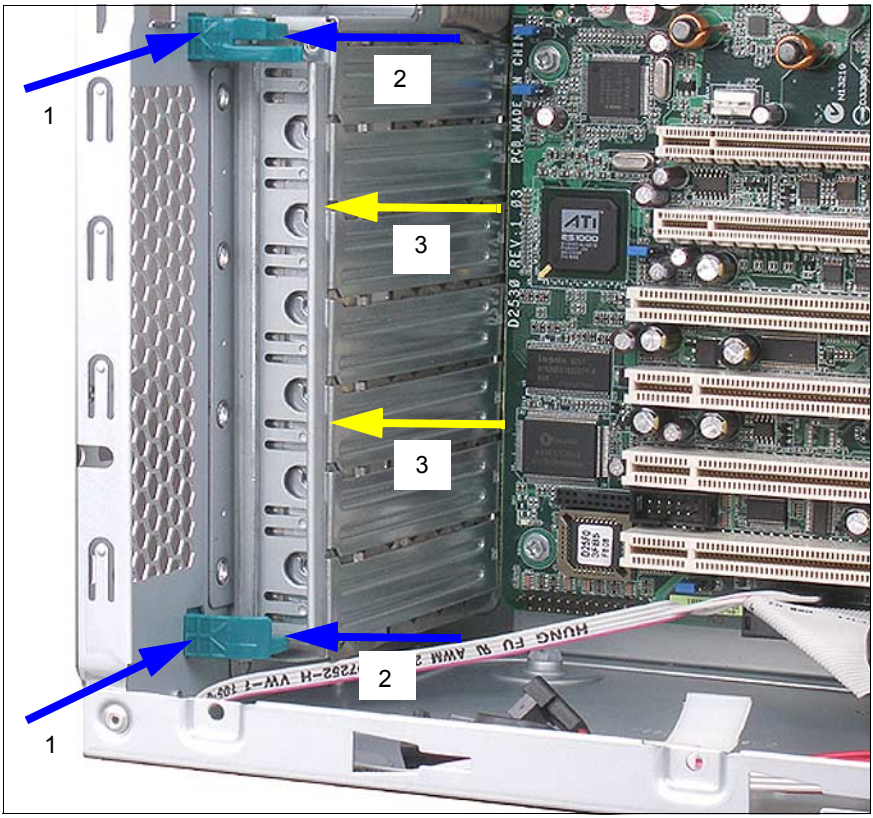

Figure 25: Opening the locking clamp

► Press on the two green locking levers in the direction of the arrow (1) and tilt the locking levers out of the chassis (2). Then open the slot locking bar (3).

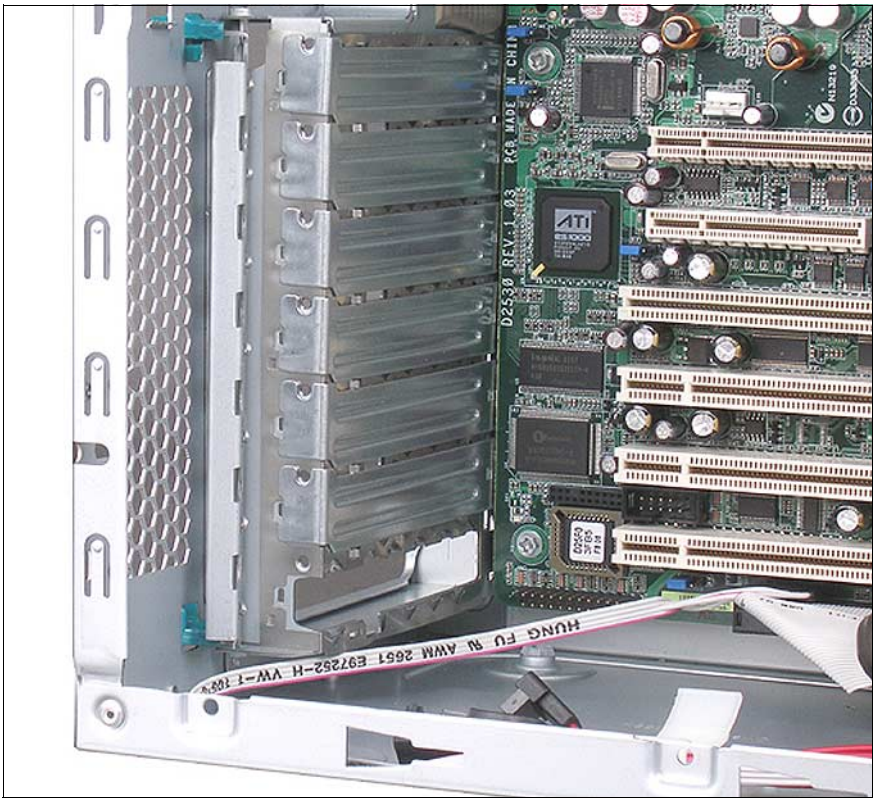

Figure 26: Removing the slot cover

► Remove the PCI slot cover.

CAUTION!

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

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

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

- ► Close the slot locking bar and press on the two green locking levers at the server's rear side until they engage.
- ► If required, connect the cables to the expansion board and other components.
- ► Install the system fan as described in section "Installing the system fan" on page 51.
- ► Close the server, connect it to the mains, and switch it on as described in section "Closing the server" on page 53 et seq. .

Please check the relevant PCI slot settings in the BIOS manual. If necessary, change the settings. Please read the documentation for the installed expansion board.

Pay attention to the allocation of the PCI interrupts. You will find further information in the Technical Manual for the system board D2530 (PDF file available on the *ServerBooks* DVD).

10 Completion

CAUTION!

Refer to the safety notes in chapter “Safety notes” on page 11 et seq. .

10.1 Installing the processor fan 1

Figure 27: Installing processor fan 1

- Put the hooks of the processor fan 1 into the recesses on the server’s rear side (see circles).
- Push the processor fan 1 in direction to the connector panel until the lock bar engages.
- Connect the plug of the processor fan cable to the system board (connector Fan1 CPU, see also figure 8 on page 23).

10.2 Installing the memory air duct

Figure 28: Installing the traverse with the memory air duct

- ► Insert carefully the traverse with the memory air duct.
- ► Hook the traverse at the left side (see circles).
- ► Press on the traverse at the right side (see arrow) until the locking bar engages.

10.3 Installing the system fan

Figure 29: Installing the system fan

- ► Hook the system fan into the traverse (see circles) and press it in the chassis until it clicks into place.
- ► Connect the system fan cable to the connector “Rear fan” on the system board (see also figure 6 on page 21).

10.4 Installing the processor fan 2

► Connect the processor fan cable to the connector „Fan2 CPU“ on the system board (see also figure 3 on page 18).

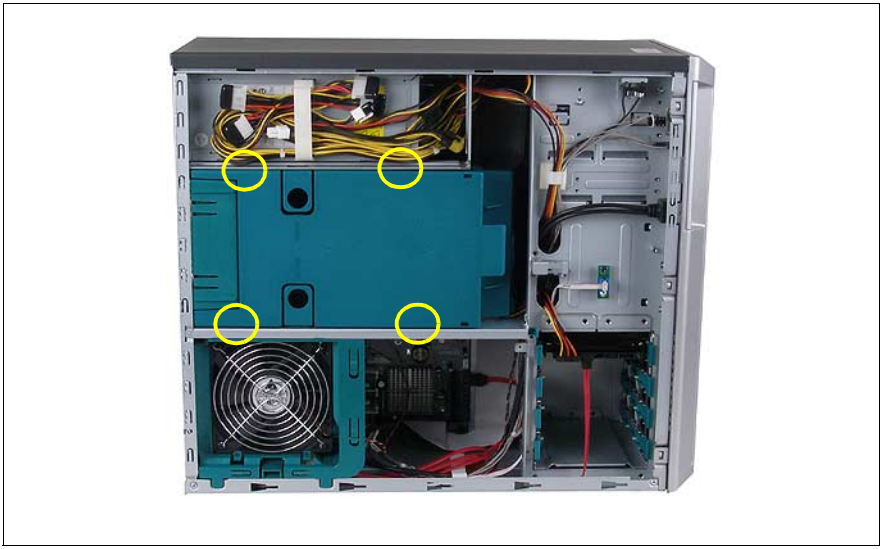

Figure 30: Installing the processor fan 2

► Insert carefully the air duct with the integrated processor fan 2. You will find four guiding bolts on the traverse and the chassis (see circles).

10.5 Closing the server

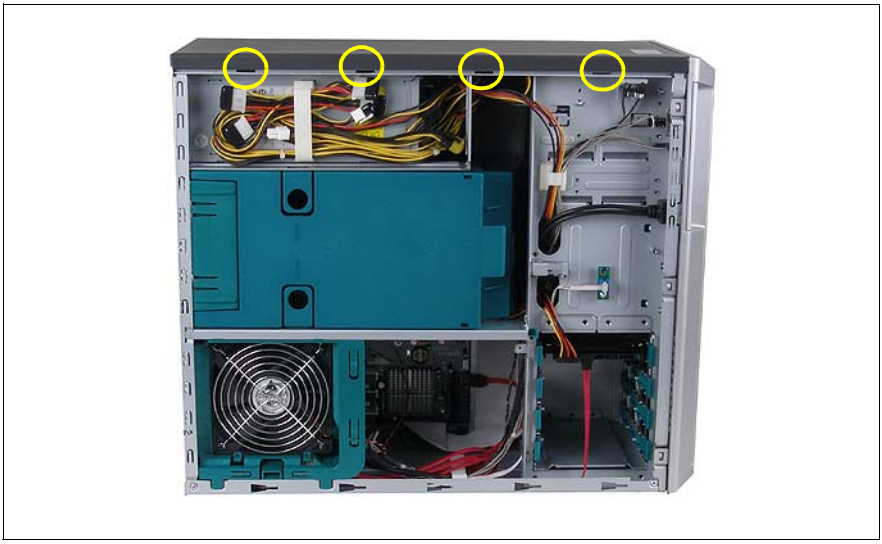

Figure 31: Side cover - recesses

► Place the side cover into the four recesses of the chassis (see circles).

Figure 32: Fastening the side cover

- ► Press the side cover onto the chassis and close the latch.

  The closing of the latch pushes forward the side cover and engages the hooks on the top of the side cover.

- ► Return the server to its original installation location.
- ► Reconnect any disconnected cables.
- ► Connect the power plug to the grounded power outlet and press the ON/OFF button.

11 Appendix

11.1 Cabling

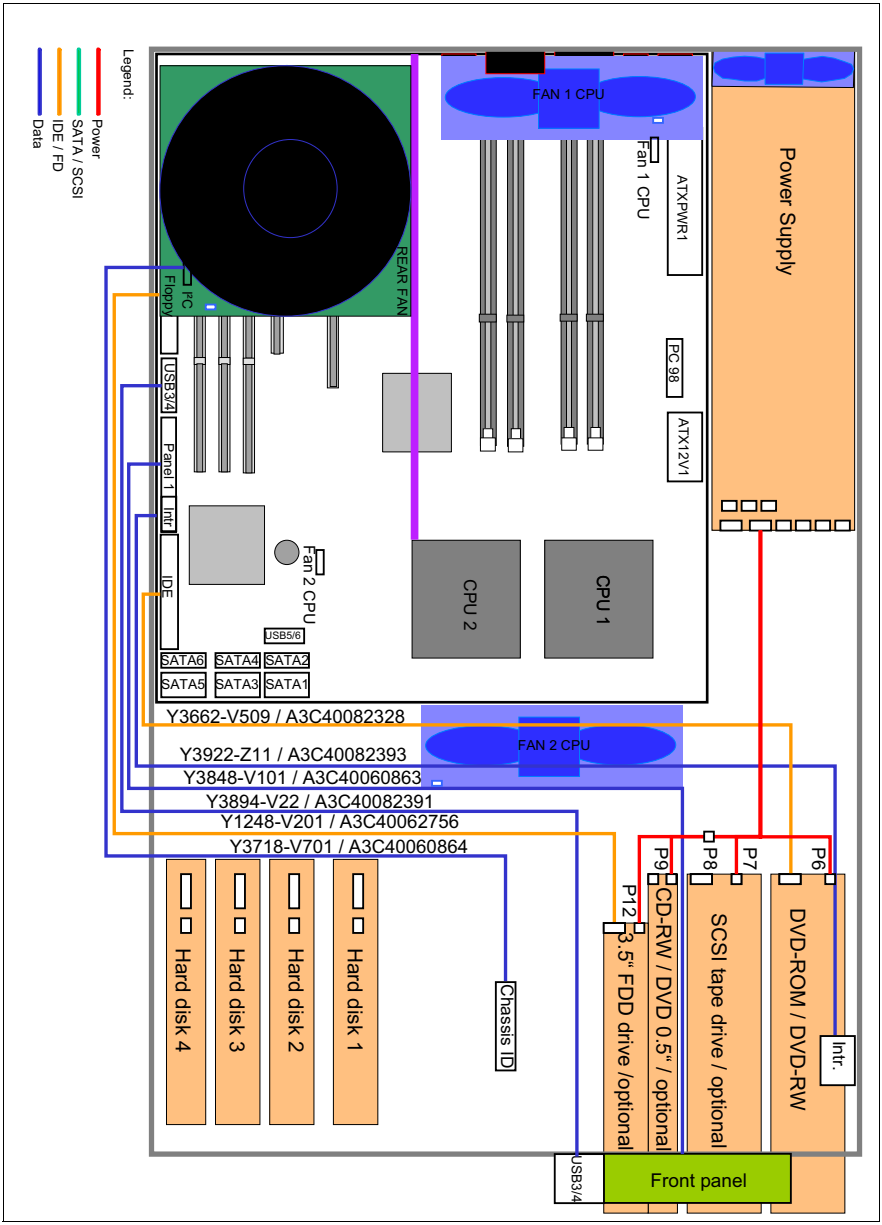

Figure 33: Basic cabling IDE, FD, DATA

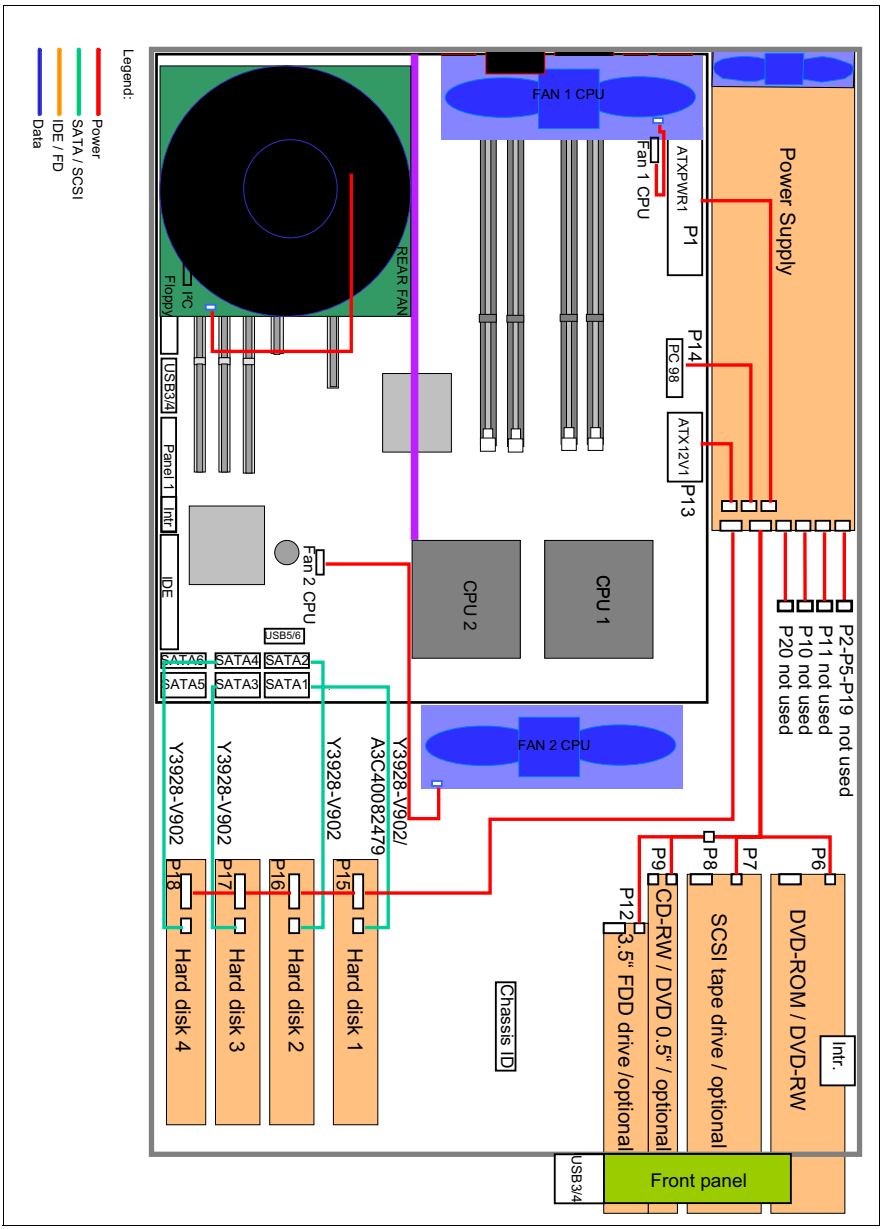

Figure 34: Basic cabling PS, SATA

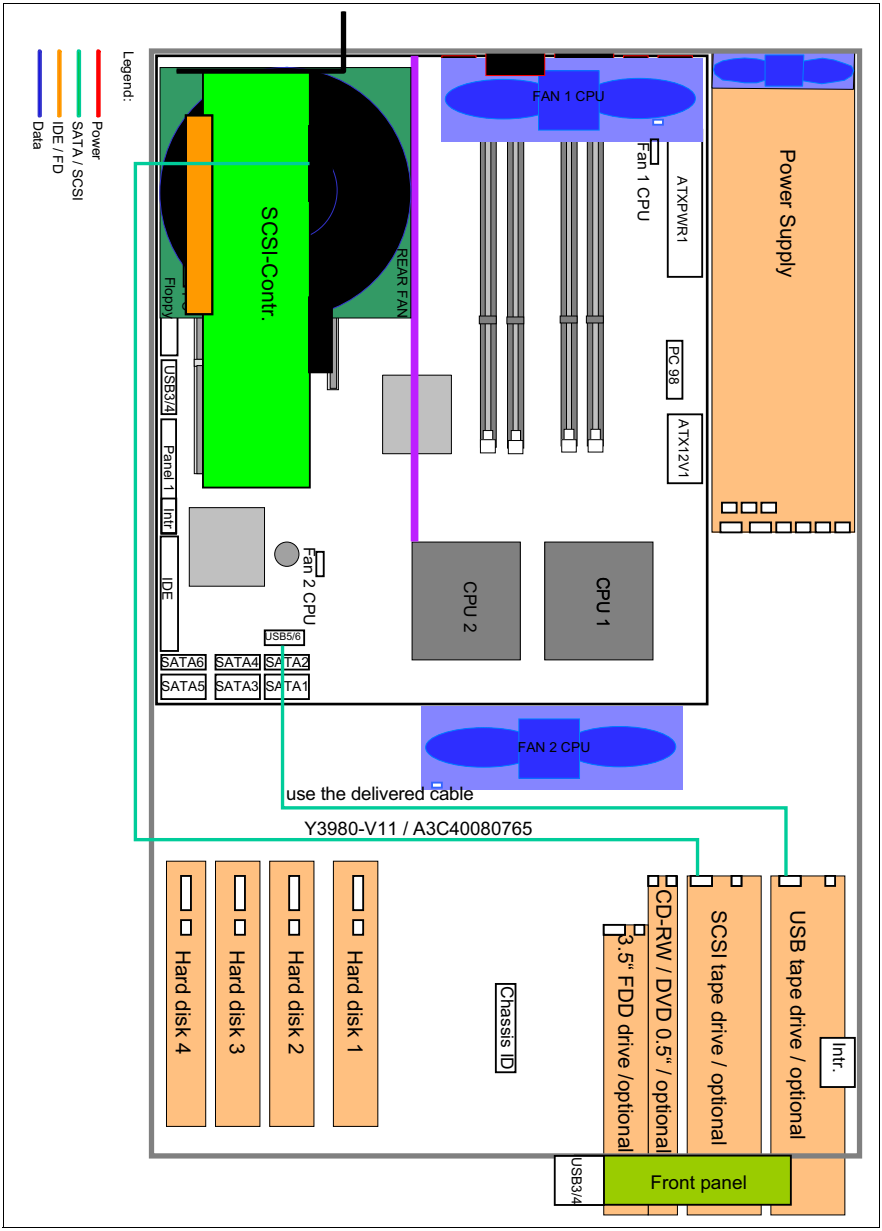

Figure 35: Basic cabling SCSI, USB

Related publications

Manuals for PRIMERGY server systems are available as PDF files on the *ServerBooks* DVD. The *ServerBooks* DVD is part of the *PRIMERGY ServerView Suite* package 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 notes and other important information**

[2] **Warranty**

[3] **Ergonomics**

[4] **Returning used devices**

[5] **Econel 200 S2 Server**
Operating Manual

[6] **System Board D2530**
Technical Manual

[7] **D2530 Setup Utility**
Reference Manual

[8] **Quick Start Hardware - PRIMERGY Econel 200 S2**
Poster

[9] **Quick Start Software - PRIMERGY ServerStart**
Poster

[10] **PRIMERGY ServerView Suite**
ServerStart
User Manual

[11] **PRIMERGY ServerView Suite**
ServerView Installation
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[14] **PRIMERGY ServerView Suite**
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[16] **LSI SATA Software RAID**
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[17] **Global Array Manager Client Software**
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[18] **Global Array Manager Server Software**
User's Guide

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Comments
Suggestions
Corrections

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Comments on PRIMERGY Econel 200 S2
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