Server

PRIMERGY 560

Intel-based Server

Operating Manual

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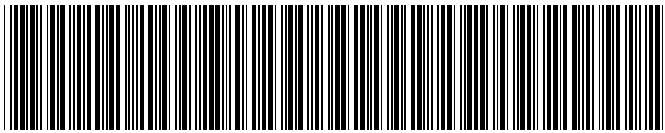

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PRIMERGY 560

Operating Manual

October 1998 edition

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Introduction

The PRIMERGY 560 is an Intel-based server for medium-size and large networks and can be equipped with up to four Pentium Pro processors.

Its highly developed hardware and software components provide a high degree of reliability and availability. Hardware components include hot-plug power supplies and hot-replace hard disks, and memory modules with EDC option (Error Detection and Correction). Software components include server management, PDA (Prefailure Detection and Analyzing) and ASR&R (Automatic Server Reconfiguration and Restart).

Security functions in the *BIOS Setup* and on the system board protect the data on the server against manipulation. Additional protection is offered by the lockable server door and an anti-theft facility.

This Operating Manual tells you how to put your server into operation, how to operate it in daily use and how to expand your server.

Further information is provided:

- in the manual "Safety and Ergonomics"
- in the Technical Manual for the system board
- in the Operating Manual for the monitor
- in the manual for the *ServerView* server management
- in the manual for RemoteView
- in the documentation of your operating system
- in the information files of your operating system
- in the documentation for the boards and drives

Features

System board

The system board can accommodate one or two processor boards, each with one or two Intel Pentium Pro processors. This enables the system to be expanded to a four-processor system. The main memory has error detection and correction (EDC) and can be extended up to four Gbytes. Three EISA, one EISA/PCI and five PCI slots are available for expansion boards. The ASIC on the system board and associated server management ensure high system reliability.

Hard disk subsystem

The hard disk subsystem comprises six 3 1/2-inch hard disk carriers and the SCSI platter. The hard disk carriers are connected to the SCSI platter without cables and are simple to install and remove. An SCSI hard disk drive can be installed in each hard disk carrier. The subsystem is controlled by a standard controller or by a disk array controller (DAC). If a DAC is installed in the server, a hard disk carrier can be swapped during operation (hot replace).

Power supply

The power supply comprises up to three hot-plug power supply modules connected in parallel in the server. Depending on the equipment level, a redundant power supply can be achieved for the server with two or three power supply modules. In the case of redundant power supply, it is a simple matter to exchange a power supply module during operation (hot replace).

Server management

Server management is implemented on the system board with the aid of the supplied *ServerView* software and PDA (Prefailure Detection and Analyzing) technology from Siemens. The PDA analyzes and monitors all components relevant to system reliability, thus enabling early detection of overload situations and appropriate counter-measures. Further information on the *ServerView* server management is provided in the manual of the same name.

Notational conventions

The meanings of the symbols and fonts used in this manual are as follows:

Pay particular attention to texts marked with this symbol. Failure to observe this warning endangers your life, destroys the system, or may lead to loss of data.

This symbol is followed by supplementary information, remarks and tips.

► Texts which follow this symbol describe activities that must be performed in the order shown.

␣ This symbol means that you must enter a blank space at this point.

↵ This symbol means that you must press the Enter key.

`Texts in this typeface` are screen outputs from the PC.

`Texts in this bold typeface` are the entries you make via the keyboard.

Texts in italics indicate commands or menu item.

"Quotation marks" indicate names of chapters and terms that are being emphasized.

Important notes

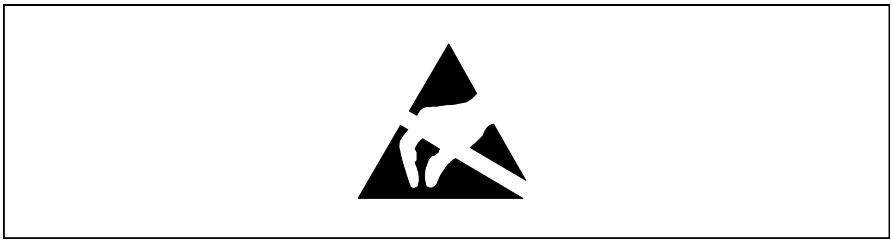
In this chapter you will find information regarding safety which it is essential to take note of when working with your server. The manufacturer's notes contain helpful information on your server.

Safety

Pay attention to the information provided in the manual "Safety and Ergonomics".

- During installation and before operating the device, observe the instructions on environmental conditions in the chapter entitled "Technical data" as well as the instructions in the chapter "Preparation for use and operation".
- The ON/OFF switch does not cut off line voltage from the server. To disconnect the line voltage completely, remove the power plug from the grounded power outlet.
- When cleaning the Server, observe the relevant notes in the chapter "Preparation for use and operation".
- When connecting and disconnecting cables, observe the relevant notes in the chapter "Preparation for use and operation".
- Replace the lithium battery on the system board in accordance with the instructions in the Technical Manual for the system board.
- The CD-ROM drive contains a light-emitting diode (LED), classified according to IEC 825-1:1993:LASER CLASS 1.
- Keep this Operating Manual together with your device. If you pass on the device to third parties, you should also pass on the Operating Manual.
- Please check whether the device is set to the local line voltage (see "Installing and removing a power supply module").

Boards with electrostatic sensitive devices (ESD) may be identified by labels.



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

- You must always discharge yourself (e.g. by touching a grounded object) before working.
- The equipment and tools you use must be free of static charges.
- Pull out the power plug before inserting or pulling out boards containing ESDs.
- Always hold boards with ESDs by their edges.
- Never touch pins or conductors on boards fitted with ESDs.

Manufacturer's notes

CE certificate

CE This device complies with the requirements of the EEC directive 89/336/EEC "Electromagnetic compatibility" and 73/23/EEC "Low voltage directive".

FCC Class A Compliance Statement

If there is an FCC statement on the device, then:
The following statement applies to the products covered in this manual, unless otherwise specified herein. The statement for other products will appear in the accompanying documentation.

NOTE:

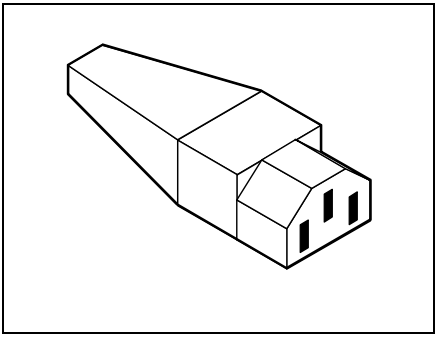
This equipment has been tested and found to comply with the limits for a "Class A" digital device, pursuant to Part 15 of the FCC rules and meets all requirements of the Canadian Interference-Causing Equipment Regulations. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in strict accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Siemens AG is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Siemens AG. The correction of interferences caused by such unauthorized modification, substitution or attachment will be the responsibility of the user.

The use of shielded I/O cables is required when connecting this equipment to any and all optional peripheral or host devices. Failure to do so may violate FCC rules.

Power cord selection



The power cord for this unit has been packed separately and has been selected according to the country of destination. It must be used to prevent electric shock. Use the following guidelines if it is necessary to replace the original cord set.

The female receptacle of the cord set must meet CEE-22 requirements (see Figure 1).

Figure 1

For the United States and Canada

Use a UL listed and CSA labeled cord set consisting of a three conductor cord with a maximum length of 15 feet.

For units which stand on a desk or table, type SVT or SJT cord sets shall be used.

For units which stand on floor, only SJT type cord sets shall be used.

The cord set must be selected according to the current rating for your unit. Please consult Table A for the selection criteria for power cords used in the United States and Canada.

Table A:

Cord Type	Size of Conductors in Cord	Maximum Current Rating of Unit
SJT	18 AWG 16 AWG 14 AWG	10 Amps 12 Amps 12 Amps
SVT	18 AWG 17 AWG	10 Amps 12 Amps

For units set at 115 V:

use a parallel blade, grounding type attachment plug rated 15 A, 125 V (Figure 2).

For units set at 230 V (domestic use):

use a tandem blade, grounding type attachment plug rated 15 A, 250 V (Figure 3).

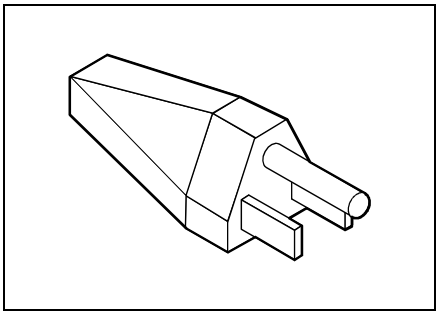


Figure 2

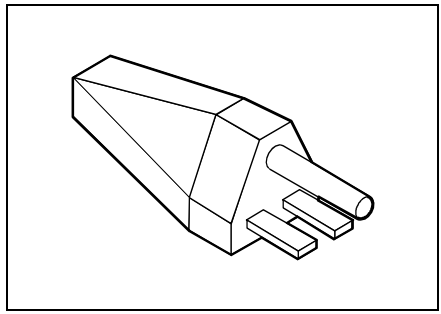


Figure 3

For units set at 230 V (outside of the United States and Canada):

use a cord set consisting of a minimum AWG according to Table A and a grounding type attachment plug rated 15 A, 250 V. The cord set should have the appropriate safety approvals for the country in which the equipment will be installed and should be marked HAR.

For the United Kingdom

Should the plug on the flexible cord not be of the type for your socket outlets, do not use an adapter but remove the plug from the cord and discard. Carefully prepare the end of the supply cord and fit a suitable plug.

WARNING

THIS APPLIANCE MUST BE EARTHED

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Green and Yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

- The wire which is coloured Green and Yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol or coloured Green or Green and Yellow.
- The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black.
- The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Red.

Disposal and recycling

This server is made predominantly of materials that are suitable for environmentally-friendly disposal or specialized recycling.

Do not throw lithium batteries or accumulators into the trashcan. They must be disposed of in accordance with local regulations concerning special waste.

If you have any questions on disposal, please contact your local office, our service department, or, directly:

Siemens AG ICP CS
Recycling Center
D-33094 Paderborn

Tel.: ..49 5251 818010
Fax: ..49 5251 818015

Energy saving under Windows NT

Using the *Powersaver* screen blanker (file *POWERSAV.SCR*) you can lock the mouse and keyboard so that no input can be made. If the attached monitor and screen controller support power management in accordance with VESA (DPMS), the monitor can be switched into power-saving mode at the same time.

The program *SSLAUNCH* enables you to activate the screen blanker immediately.

Both programs are located on the SNI Utility Diskette for Windows NT. Information on the programs is provided in the associated help files.

Transporting the server

Transport the server only in its original packaging or in a packaging which protects it from knocks and jolts, to the new site. Do the server until all transport maneuvers are completed.

If you need to lift or transport the server, ask someone to help you.

Preparation for use and operation

Please take note of the safety information in the chapter "Important notes".

Unpacking and checking the delivery

If you need to lift or transport the server, ask someone to help you.

It is recommended not to throw away the original packaging material! It may be required for reshipment at some later date

- ► Unpack all the individual parts.
- ► Check the delivery for damage incurred during transport.
- ► Check whether the delivery agrees with the details in the delivery note.
- ► Check whether all necessary details have been entered on the first page of the guarantee coupon booklet.

Should you discover that the delivery does not correspond to the delivery note, notify your supplier immediately.

Preparing the PC for use

The steps required to prepare for use should be carried out in the prescribed order. The single steps are described in this chapter.

1. Decide where you are going to install the server.
2. Connect the external devices to the server.
3. Connect the server to the line voltage.
4. Unlock the server.
5. Configure the server and install the operating system.

Setting up the server

Do not expose the server to extreme environmental conditions (see chapter "Technical data"). Protect it from dust, humidity and heat.

There must be a clearance of at least 200 mm in front of and behind the server to ensure adequate ventilation. Do not cover the ventilation areas of the monitor and the server.

Connecting the server

Read the documentation about the external device before connecting it.

Do not connect or disconnect cables during a thunderstorm.

Always take hold of the actual plug body. Never unplug a cable by pulling the cable itself!

Connect and disconnect the cables in the order described below.

Connecting cables

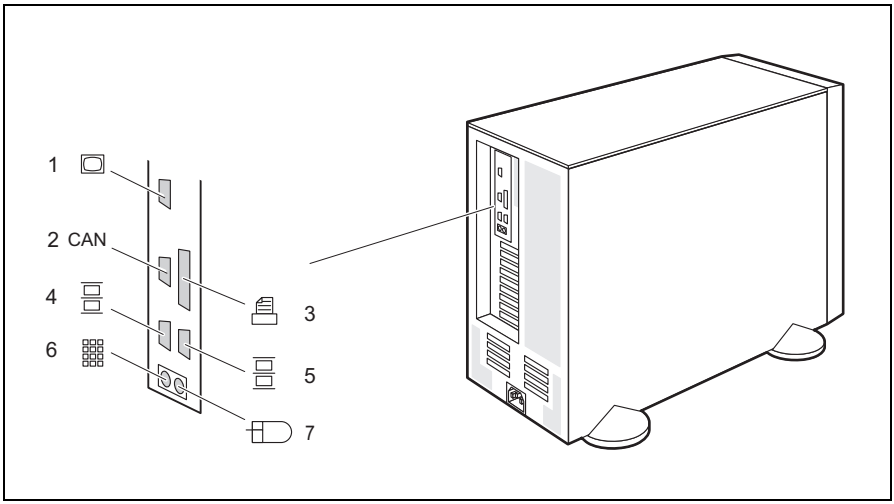
- Turn off all power and equipment switches.
- Pull all power plugs out of the grounded power outlets.
- Plug all cables into the server and peripherals.
- Plug all data communication cables into the utility sockets.
- Plug all power cables into the grounded power outlets.

Disconnecting cables

- Turn off all power and equipment switches.
- Pull all power plugs out of the grounded power outlets.
- Unplug all data communication cables from the utility sockets.
- Disconnect the relevant cables at the server and at the peripherals.

Connecting external devices

The ports for external devices are on the rear of the server. Which ports are available on your server depend on the boards installed. The standard ports are indicated by symbols.



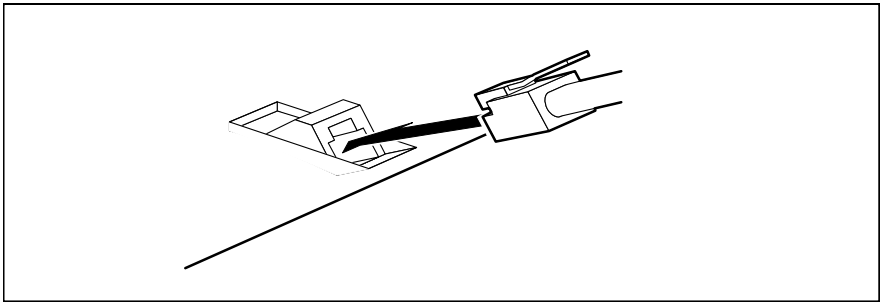
1 = Monitor port
2 = CAN bus
3 = Parallel port
4 = Serial port 1
5 = Serial port 2
6 = Keyboard port
7 = PS/2 mouse port

i Some of the devices that you connect require special drivers (see the documentation for the connected device).

► Connect the external devices to the appropriate port.

Connecting the keyboard

► Plug the round plug of the keyboard cable into the keyboard port on the server.



► Plug the other connector of the keyboard cable into the socket on the underside of the keyboard.

Connecting the server to the line voltage

The power supply can be set to the following line voltage range:
100 V to 125 V or 200 V to 240 V).

Before connecting the server to the line voltage, you must always check that the line voltage range set on the server corresponds to the local line voltage.

The line voltage range set when shipped is indicated at the rear of the server on a sticker near the type rating plate.

Label	Line voltage range
230 V	200 V - 240 V
115 V	100 V - 125 V

If you need to change the set line voltage range, proceed as follows:

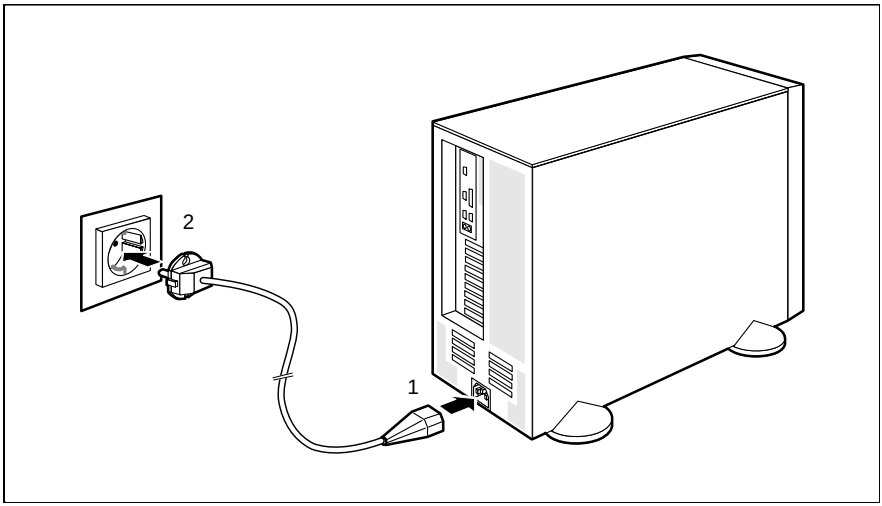
► Remove all power supply modules (see "Installing and removing a power supply module").

► Set the correct line voltage range at the switch on the right of the power supply modules.

Switch position	Line voltage range
230 V	200 V - 240 V
115 V	100 V - 125 V

► Refit all power supply modules.

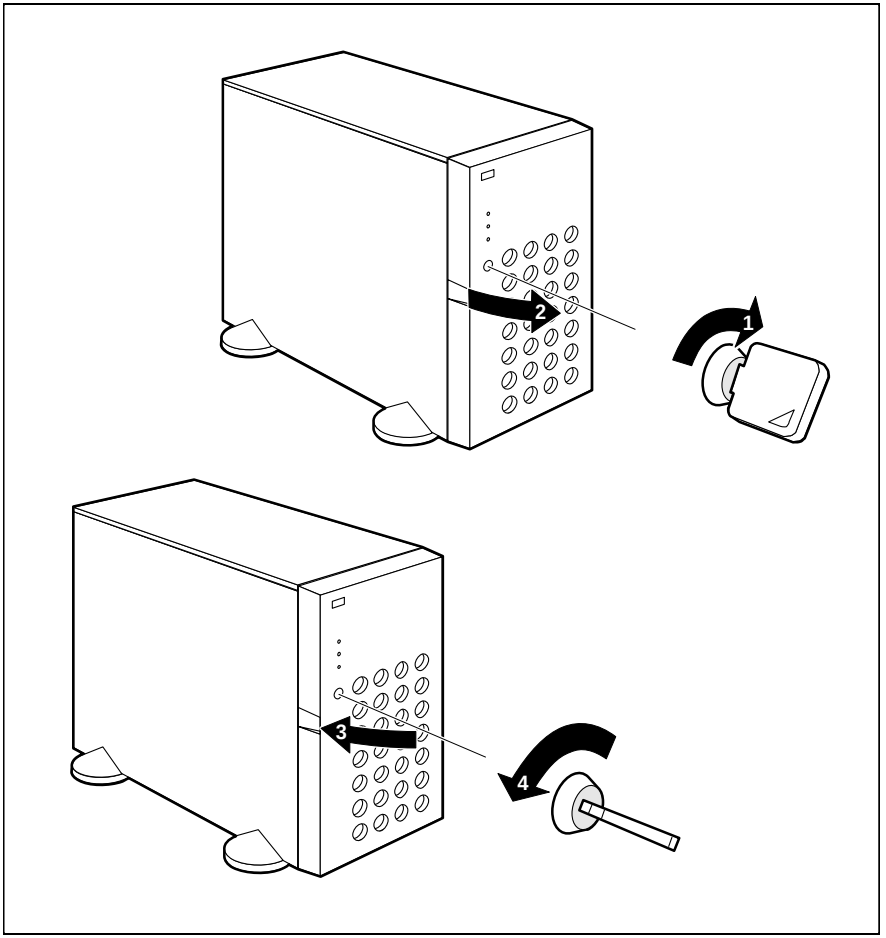
► Remove the old voltage sticker and replace it with the enclosed sticker indicating the current voltage setting.



► Plug the power cable into the server (1).

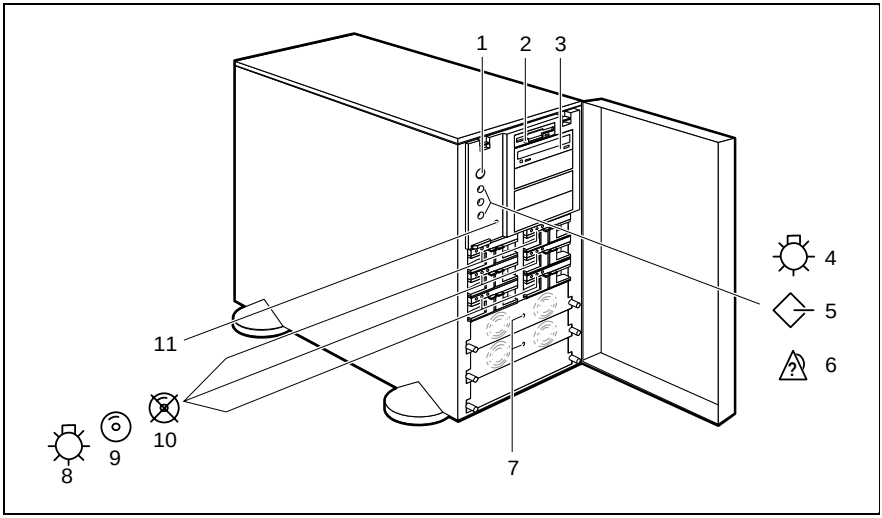
► Plug the power cable into the grounded power outlet (2).

Unlocking/locking the server



- ► Turn the key clockwise (1).
- ► Open the door (2).
- ► Perform the necessary operations.
- ► Shut the door (3).
- ► Turn the key counterclockwise (4).

Controls and indicators



1 = ON/OFF switch
2 = Floppy disk access indicator
3 = CD-ROM access indicator
4 = Server power-on indicator
5 = SCSI indicator
6 = Alarm indicator
7 = Power supply power-on indicator
8 = Hard disk drive power-on indicator
9 = Hard disk drive access indicator
10 = Hard disk error indicator
11 = Indicator test switch

ON/OFF switch

switches the server on or off.
If the server is switched on, the power-on indicator (4) lights up green.

i The ON/OFF switch does not cut off line voltage from the server. To disconnect the line voltage completely, remove the power plug from the grounded power outlet.

Floppy disk access indicator

The indicator lights up when the floppy disk drive is being accessed.

CD-ROM access indicator

The indicator lights up when the CD-ROM drive is accessed.

Power-on indicator (server)

The indicator lights up when the server is switched on.

SCSI busy indicator

lights up green, when data is transferred on a SCSI channel.

lights up green and yellow alternatingly if no hard disk drive may be installed or withdrawn.

Alarm indicator

lights when there is a fault in a hard disk drive.

flashes when a rebuild is in progress at the disk array controller after a hard disk has been exchanged.

Power-on indicator (power supply)

lights if the power supply is correctly installed and is in operation

Power-on indicator (hard disk drive)

lights if a hard disk drive is installed in the hard disk carrier and the required supply voltage is available.

Hard disk drive access indicator

lights green, when the hard disk drive is being accessed.

flashes green-yellow when the hard disk drive may not be removed (60 seconds delay time after a hard disk replacement).

Hard disk error indicator (only in conjunction with disk array controller)

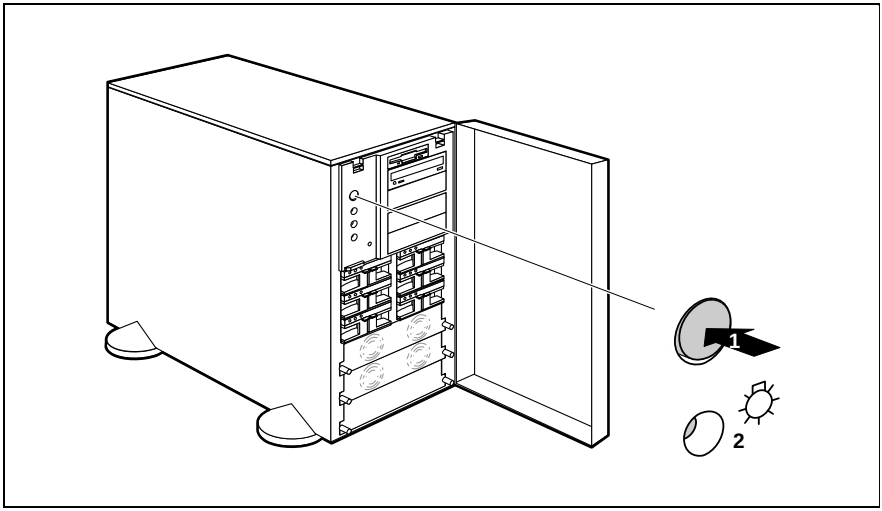
lights if the hard disk drive is defective or not installed correctly.

flashes when a rebuild is in progress after a hard disk has been exchanged.

Indicator test switch

tests the indicators of the server and hard disk drives, the SCSI Busy indicator, the alarm indicator and the hard disk error indicator.

Switching the server on and off



► Press the ON/OFF switch (1).

If the server is switched on, the power-on indicator (2) lights up green. The server runs a self-test immediately it is switched on.

If after switching on the server there is nothing but flickering stripes on the screen, switch the server off immediately (see "Troubleshooting and tips - Flickering stripes on the monitor screen").

The ON/OFF switch does not cut off line voltage from the server. To disconnect the line voltage completely, remove the power plug from the grounded power outlet.

The server can be switched on not only at the ON/OFF switch but also in the following ways:

- **At a specified time,**
  set in the *ServerView* program.
- **With the ring indicator of a modem,**
  when the ring indicator is activated by an incoming call.
- **Automatically following a power failure,**
  when the server was switched on prior to the power failure.

Configuring the server

ServerStart

With the *ServerStart CD* provided you can configure the server and install the operating system in a convenient manner. The menu-guided configuration includes server configuration with *SCU*, EISA configuration with *ECU*, ISA configuration with *ICU* and the disk array controller configuration with *DACCF*. To find out how to operate *ServerStart* and for further information see the corresponding CD booklet.

Note on *SCSI-ID*:
Please note that the SCSI IDs for the hard disk drives are permanently defined.

Note on *SCO UNIX*
The DAC manual mentions the utility *DAC960* when describing *SCO UNIX* installation. The name for this utility is no longer correct. Enter *MDAC* instead.

Note on *Novell Netware 3.12*:
If you want to install *Novell Netware 3.12*, you must first set the *APIC* function (if existing) to *Disabled* in the Advanced menu in the *BIOS Setup*.

Descriptions of operating systems not covered in the DAC manual are provided in the appropriate readme files on the driver diskettes.

If you use *ServerStart*, you can skip the following sections on how to configure the server and install the operating system. Continue with the section "Cleaning the server".

Saving the EISA configuration

If your server has a system board with EISA slots (EISA bus), you must save the corresponding EISA configuration. If you server does not have a system board with EISA slots, you can skip this step.

The server is fully configured when it is supplied. Please store the configuration data on the configuration utility disk supplied. Detailed information on the EISA configuration program is provided in the associated User's Manual.

The following EISA configuration disks are supplied with your server:
- Configuration Utility Disk
- Configuration Library Disk with additional CFG files

► Deactivate the write protection and insert the configuration utility disk into the floppy disk drive.

► Switch your server on.

Having run through its self-test, the server starts the EISA configuration utility from the floppy disk. The company logo appears on screen.

► Press any key to continue.

The welcome screen is displayed.

► Press the Enter key.

The *main menu* appears.

► Select the item *Maintain system configuration diskette*, and press the Enter key.

The *Maintain System Configuration Diskette* menu is displayed.

Press the Enter key to move forwards one menu level, press **Esc** to move back one level or to Exit. Help texts are either displayed automatically or can be called up by pressing the **F1** key.

► Select the item *Create a backup SCI file*, and press the Enter key.

The *Save System Configuration Information (SCI) File Description* menu appears.

► Enter a description of the contents of the file, e.g., *factory configuration*, and press the Enter key.

The system reports that an SCI file was created successfully on the configuration program disk.

► Press the Enter key.

The *Maintain System Configuration Diskette* menu is displayed.

► Select the item *Exit* and press the Enter key.

The *main menu* appears.

► Select the item *Exit* from this utility and press the Enter key twice.

This exits the EISA configuration program.

ICU Utility

You can configure plug&play boards and standard ISA boards with the utility *ICU* (ISA Configuration Utility). You can also use *ICU* to check the system resources of the server (e.g. interrupt assignment). Operating instructions for the *ICU* program are provided in the corresponding manual.

Configuring the Disk Array Controller

If your server is fitted with a Disk Array Controller (DAC), you must configure the DAC as described in the related documentation.

Configuring the standard SCSI controller

If your server is equipped with an Ultra SCSI controller or a Fast-Wide SCSI-2 controller, you must make the relevant settings in the configuration of the controller for the drives used.

Installing the operating system

- ► Insert the installation disk and the CD of the operating system you want to install.
- ► Reboot the server.
- ► Follow the instructions on the screen and in the manual for the operating system.

If your system is fitted with a DAC, please refer to the User's Manual for the DAC for how to install the desired operating system.

Note on *SCO UNIX*
The DAC manual mentions the utility *DAC960* when describing *SCO UNIX* installation. The name for this utility is no longer correct. Enter *mdac* instead.

Note on *Novell Netware 3.12*:
If you want to install *Novell Netware 3.12*, you must first set the *APIC* function (if existing) to *Disabled* in the Advanced menu in the *BIOS Setup*.

Descriptions of operating systems not covered in the DAC manual are provided in the appropriate readme files on the driver diskettes.

Cleaning the server

Switch the server off and pull the power plug out of the grounded-contact power socket.

Do not clean any interior parts yourself, leave this job to a service technician.

Do not use any cleaning agents that contain abrasives or may corrode plastic.

Ensure that no liquid enters the system.

Ensure that the ventilation areas of the server and the monitor are free.

Wipe the server and monitor casing with a dry cloth. If particularly dirty, use a cloth which has been moistened in mild domestic detergent and then carefully wrung out.

Use a cloth for disinfection to clean the keyboard and the mouse.

Settings in BIOS Setup

In *BIOS Setup* you can set the system functions and the hardware configuration of the server. When the server is delivered, the default entries are valid (see Technical Manual for the system board). You can customize these settings to your requirements in *BIOS Setup*.

If you want to change settings in *BIOS Setup*, you must:

- call *BIOS Setup*
- select the relevant menu
- select the field for the entry you want to change
- change the entry
- make other settings, if required
- save the settings and exit *BIOS Setup*

This chapter shows you how to call and operate *BIOS Setup*. The menus and setting options provided by *BIOS Setup* are described in detail in the Technical Manual for the system board.

Calling BIOS Setup

► Reboot the server.

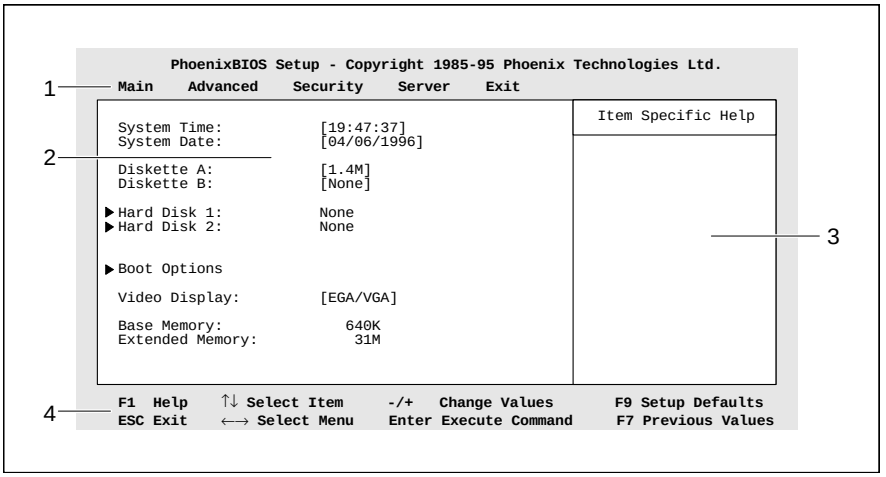
One of the following messages will be displayed at the bottom of the screen:

```
Press <F2> to enter Setup
Press <F1> to resume, <F2> to Setup
```

► Press function key F2.

i If you have assigned a setup password, you must now enter this password and confirm it with the Enter key.

The *Main* menu of *BIOS Setup* is displayed on the screen.



Example of the *Main* menu of the *BIOS Setup*

1 = Menu bar
2 = Working area
3 = Information area
4 = Operations bar

The *BIOS Setup* screen is divided into the following areas:

- Menu bar (1)
  In the menu bar, you can select the different *BIOS Setup* menus.
- Working area (2)
  The working area displays the setting options (fields) of the selected menus. You can set the entries in the displayed fields according to your requirements. ▶ indicates fields which open further submenus. You can change entries in these submenus.
- Information area (3)
  The information area displays brief information on the selected field.
- Operations bar (4)
  The operations bar indicates which keys you can use to operate *BIOS Setup*.

i You can display more information on the functions of the keys by pressing F1.

Operating BIOS Setup

If you change entries in *BIOS Setup*, make a note of the changed entries (e.g. in the technical manual for the system board), or print out the changed screen page. To do so, the printer must be connected to the server through the parallel interface.

Selecting a menu

Use the key ← or →.

Selecting a field or a submenu

Use the cursor keys ↑ and ↓. The selected field is highlighted.

Selecting a submenu (marked with ►)

Select the corresponding field, and press the Enter key. Press the Esc key to return from the submenu to its superior menu.

Changing fields

Use the key + or - of the numeric bloc.

Setting the default entries for the selected menu

Use the function key F9.

Reverting the fields of the selected menu to the entries that were in effect when *BIOS Setup* was called

Use the function key F7.

Printing a screen page

Use the key combination Shift + Print.

Exiting BIOS Setup

To exit *BIOS Setup*, select the *Exit* menu from the menu bar. You can then decide which settings you want to save. The *Exit* menu offers the following options. You must mark the required option and activate it with the Enter key.

Save Changes & Exit

Select *Save Changes & Exit* to save the current settings and exit the *BIOS Setup*. The server is rebooted and the new settings come into effect.

Discard Changes & Exit

Select *Discard Changes & Exit* to discard the changes you have made. The settings which were in force when *BIOS Setup* was called remain effective. *BIOS Setup* is terminated and the server is rebooted.

Get Default Values

To revert all the menus of *BIOS Setup* to the default entries, select *Get Default Values*. If you want to exit *BIOS Setup* with these settings, select *Save Changes & Exit.*

Load Previous Values

To load the values of all the menus of *BIOS Setup* that were in effect when *BIOS Setup* was called, select *Load Previous Values.* If you want to exit *BIOS Setup* with these settings, select *Save Changes & Exit.*

Save Changes

To save settings without exiting *BIOS Setup*, select *Save Changes.*

Property and data protection

For protecting your system and personal data from unauthorized access, you can use the *BIOS Setup* security functions.

The lockable server door also offers protection against unauthorized access and operation of the server power switch.

The server has an anti-theft feature. At the bottom right on the rear there are two holes through which you can feed a steel cable for securing the server to an immovable object.

BIOS Setup security functions

The *Security menu* in BIOS Setup offers you various options for protecting your data from unauthorized access. By combining these options, you can achieve optimum protection for your system.

Detailed information of the *Security* menu can be found in the Technical Manual for the system board. The sections "Setting the Setup password" and "Setting the System password " describe how you set up passwords.

Preventing unauthorized BIOS Setup calls

You can activate this protection by setting a setup password in the *Security* menu. In addition, you can suppress the `Press F2 for Setup` message in the *Security* menu. This message is then no longer displayed while the server's startup routine is in progress.

Preventing unauthorized system access

You can activate this protection by setting a system password in the *Security* menu. Under *System Password Mode* you can also define the scope of the system password.

Preventing unauthorized access to the settings of boards with their own BIOS

You can activate this protection by selecting the value *Extended* for *Setup Password Lock* field in the *Security* menu.

Preventing system booting from the diskette drive

You can activate this protection by selecting the value *Diskette Lock* for the *System Load* field in the *Security* menu.

Activating virus warnings

You can have a warning output if the boot sector has been modified. To activate this warning, select the value *Enabled* for the *Virus Warning* field in the *Security* menu.

Preventing unauthorized writing of diskettes

To activate this protection, select the value *Disabled* for the *Diskette Write* field in the *Security menu.*

Protecting BIOS from overwriting

To activate this protection, select the value *Disabled* for the *Flash Write* field in the *Security* menu.

Protecting server from being switched off by a program

To activate this protection select the value *Disabled* for the *Soft Power Off* field in the *Security* menu.

Protecting server from being switched on by an external device

To activate this protection select the value *Disabled* for the *Remote Power On* field in the *Security* menu.

Setting the Setup password

The Setup password prevents unauthorized calling of *BIOS Setup*. *BIOS Setup* can be called only by those who know the Setup password.

The password must be four to eight characters in length. All alphanumerical characters can be used; no differentiation is made between upper-case and lower-case.

Passwords are not displayed as they are entered.

If you have forgotten your passwords, please contact your technical customer service.

To set or change the Setup password, proceed as follows:

- Call *BIOS Setup* and select the *Security* menu (see "Settings in BIOS Setup").
- Mark the *Set Setup Password* field and press the Enter key.

You are asked to enter a password:
`Enter new Password:`

- Enter the Setup password and press the Enter key.

You are asked to confirm the password:
`Re-enter new Password:`

- Enter the Setup password again and press the Enter key.

You can now choose whether you want the Setup password to prevent calling of the *BIOS Setup* only or in addition lock the settings of installed boards with their own BIOS.

- To prevent calling of the *BIOS Setup* only, mark the *Setup Password Lock* field and select the value *Standard*.
- To lock the settings of installed boards with their own BIOS in addition to preventing calling of the *BIOS Setup*, mark the *Setup Password Lock* field and select the value *Extended*.
- Select the option *Save Changes & Exit* in the *Exit* menu.

The server is rebooted and the new Setup password is effective.

Canceling Setup password

If you cancel the Setup password, you automatically deactivate the system password.

To cancel the Setup password (without setting a new password):

- ► Call *BIOS Setup* and select the *Security* menu (see "Settings in BIOS Setup").
- ► Mark the *Set Setup Password* field and press the Enter key.

You are asked to enter a password:
`Enter new Password:`

- ► Press the Enter key twice.
- ► Select the option *Save Changes & Exit* in the *Exit* menu.

The server is rebooted and the Setup password is canceled.

Setting the System password

The system password prevents unauthorized access to your server. With the system password you can either prevent booting of the operating system or lock the keyboard. The system can be accessed only by those who know the system password.

You must also set a Setup password to make the system password effective.

The password must be four to eight characters in length. All alphanumerical characters can be used; no differentiation is made between upper-case and lower-case.

Passwords are not displayed as they are entered.

If you have forgotten your passwords, please contact your technical customer service.

To set or change the system password, proceed as follows:

- Call *BIOS Setup* and select the *Security* menu (see "Settings in BIOS Setup").
- Mark the *Set System Password* field and press the Enter key.

You are asked to enter a password:
`Enter new Password:`

- Enter the system password and press the Enter key.

You are asked to confirm the password:
`Re-enter new Password:`

- Enter the system password again and press the Enter key.

You can now choose whether you want the system password to prevent booting of the operating system or lock the keyboard.

- To prevent booting of the operating system, mark the *System Password Mode* field and select the value *System*.
- To lock the keyboard, mark the *System Password Mode* and select the value *Keyboard*.
- Select the option *Save Changes & Exit* in the *Exit* menu.

The server is rebooted and the new system password is effective.

Canceling system password

To cancel the system password (without setting a new password):

- ► Call *BIOS Setup* and select the *Security* menu (see "Settings in BIOS Setup").
- ► Mark the *Set System Password* field and press the Enter key.

You are asked to enter a password:

```
Enter new Password:
```

- ► Press the Enter key twice.
- ► Select the option *Save Changes & Exit* in the *Exit* menu.

The server is rebooted and the system password is canceled.

Troubleshooting and tips

Take note of the safety hints in the manual "Safety and Ergonomics" and in the chapter "Preparation for use and operation", when you connect or disconnect cables.

If a fault occurs, try to correct it as described:

- in this chapter
- in the documentation of the connected devices
- in the help systems of the software used.

If you fail to correct the problem, proceed as follows:

► Switch the server off.

► Make a note of the steps and the circumstances that led to the fault. Also make a note of any error messages displayed.

► Contact your customer service.

Power-on indicator remains dark after you have switched on your device

This may have the following causes:

There is a defect in the ac power supply

► Check whether the power cable is plugged properly into the server and power outlet.

► Switch your server on.

Power supply overloaded

► Switch the server off.

► Switch the server on after a few seconds.

Server switches itself off

Error in the power supply module

The power-on indicator of the defective power supply module does not light.

► Exchange the defective power supply module.

i If you have a redundant power supply, there is no need to switch the server off to exchange the defective power supply module.

Server management has detected an error

► In the *ServerView* program check the error list or check the ErrorLog file using the SCU utility; and attempt to eliminate the error.

The screen stays blank

If your screen remains blank this may have the following causes:

Monitor is switched off

► Switch your monitor on.

Screen has been blanked

► Press any key on the keyboard.

or

► Deactivate screen blanking (screen saver). Enter the appropriate password.

Brightness control is set to dark

► Set the brightness control to light. For detailed information, please refer to the Operating Manual supplied with your monitor.

Wrong monitor port used

If you have installed an additional monitor controller, then the monitor controller and the monitor port on the system board are switched off.

► Connect the monitor cable to the proper monitor port.

Power cable or monitor cable not connected

► Switch off the monitor and the server.

► Check whether the power cable is properly connected to the monitor and to the power outlet.

► Check whether the monitor cable is properly connected to the server and monitor (if it is plugged in with a connector).

► Switch on the monitor and the server.

Flickering stripes on the monitor screen

Switch off the server immediately!

The flickering stripes are probably caused by an old-type screen that does not support the horizontal frequency.

► Find out which horizontal frequency your monitor screen supports. You will find the horizontal frequency (also known as line frequency or horizontal deflection frequency) in the documentation of your monitor.

► Refer to the documentation for your operating system or the corresponding driver software for the screen controller for how to set the correct horizontal frequency for your monitor, and follow the procedure accordingly.

No screen display or display drifts

The wrong frequency and/or resolution has been selected for the monitor or for the application program.

- ► Find out which horizontal frequency your monitor screen supports. You will find the horizontal frequency (also known as line frequency or horizontal deflection frequency) in the documentation of your monitor.
- ► Refer to the documentation for your operating system or the corresponding driver software for the screen controller for how to set the correct horizontal frequency for your monitor, and follow the procedure accordingly.

No mouse pointer displayed on the screen

If no mouse pointer is displayed, this may have the following causes:

Mouse driver not loaded

- ► Check whether the mouse driver is properly installed and is present when the application program is started. Detailed information can be found in the User Guides of the mouse, the operating system or the application program.

Mouse controller disabled

The mouse controller must be enabled, if you use the supplied mouse.

- ► Check in the *BIOS Setup* that the mouse controller is enabled.

The floppy disk cannot be read or written

- ► Check whether the write protection of the floppy disk is activated.
- ► In the *BIOS Setup* check the entry for the floppy disk drive.
- ► Check in the *BIOS Setup* whether the diskette drive controller and write permission are enabled (see the Technical Manual for the system board).
- ► Check that the cables of the floppy disk drive are properly connected (refer to chapter "System expansions").

Time and/or date is not correct

- ► Set the time and/or date in the operating system or in the *BIOS Setup*.

If the time and date are repeatedly wrong when you switch on your server, the battery is flat. Change the lithium battery as described in the Technical Manual of the system board.

The system cannot be started up

You have probably received one of the following error messages:

```
Invalid configuration information
```

```
Invalid EISA configuration storage
```

If you receive one of these messages after system startup, the configuration information for your EISA system has been deleted. In this case you must restore the EISA configuration. There are two possibilities to proceed: You can either repeat the configuration procedure in its entirety (see user manual for EISA configuration), or better still, you can reload the configuration data (SCI file) that you saved on floppy disk back onto your system. This possibility is described below.

EISA configuration restoring (Load SCI file from the floppy disk)

► Insert the configuration utility disk in floppy disk drive. The disk must not be write protected.

► Restart the system.

Having run through its power-on self-test, the system starts the EISA configuration utility from the floppy disk.

► Confirm the logo screen by pressing the Enter key.

The welcome screen contains a CMOS error message. Attempt to correct the error by running through the following two configuration procedures which are described in detail below:

- Start by running through the EISA configuration procedure and selecting the menu items *Add or remove boards* and *View or edit details* in order to write valid setup information to the CMOS RAM.
- Run through the EISA configuration procedure a second time and load an SCI file from the EISA configuration utility floppy disk.

i If these measures do not help, consult your supplier or our service technicians.

Starting at the welcome screen and the error message, proceed as follows:

► Press the Enter key.

The main menu appears.

► Select the item *Configure computer* and press the Enter key.

The system loads the configuration files and the *Steps in configuring your computer* menu appears.

► Select the item *Step 2: Add or remove boards* and press the Enter key.

The *Step 2: Add or Remove Boards* screen appears.

► Press function key F10.

The *Steps in configuring your computer* menu appears again.

► Select the item *Step 3: View or Edit Details* and press the Enter key.

► Check to ensure that the following settings are correct:

- memory size
- Diskette drives
- hard disk drives
- Video mode

► Press the Enter key.

The *Save and exit* screen appears.

► Select the item *Save the configuration* and restart the computer and press the Enter key (if necessary, more than once) to bring up the Reboot screen.

► Press the Enter key to restart the system.

Having run through its self-test, the server starts the EISA configuration utility from the floppy disk.

► Confirm the Logo and welcome screens by pressing the return key.

The appears.

► Select the item *Maintain system configuration diskette* and press the Enter key.

The *Maintain System Configuration Diskette* menu is displayed.

► Select the item *Load SCI file* and press the Enter key.

The *Open System Configuration Information (SCI) file* menu appears.

► Select *SNICONF.SCI factory configuration* (or another SCI file of your choice) and press the Enter key.

The system loads the configuration file and the *Step 5: Save and exit* menu appears.

► Select the item *Save the configuration and restart the Computer* and press the Enter key.

The *Reboot* screen appears.

► Remove the floppy disk from the drive.

► Press the Enter key to restart the system.

System will not boot after installing hard disk drives

If you operate the hard disks on a standard SCSI controller:

- Call the SCSI configuration menu and check the settings for the hard disks (*SCSI Device Configuration*) and the settings under *Advanced Configuration Options*.

Drives are reported as "dead" at system boot

This error message may only occur if you use a Disk Array Controller.

- Check that the SCSI cabling and SCSI channel assignment still correspond to the original status.
- Use the *DACCF* program to check the settings for the drives.

Further information is provided in the DAC manual.

DAC reports added drive as defective

The drive was probably installed with the system switched off.

- Install the drive while the system is switched on, or configure the drive using the DAC utility.

If the drive is still reported as defective, it should be exchanged.

Error messages on the screen

Error messages are listed in the Technical Manual of the system board and in the documentation of the installed software.

System expansions

This chapter describes how to modify your server hardware (e.g. installing or removing boards or accessible drives).

Memory and processor upgrading as well as replacement of the lithium battery are described in the Technical Manual for the system board.

You will find an overview and a brief description of the installed system boards on the left-hand housing side cover of the server.
A detailed description of the system board is provided in the corresponding Technical Manual.

Opening the server

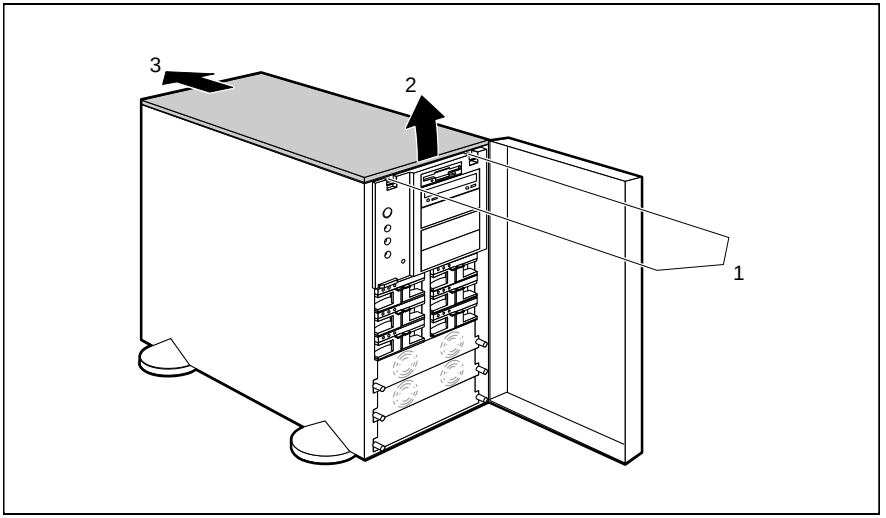
Please take note of the safety information in the chapter "Important notes".

► Switch the server off.

Pull the power plug out of the power outlet!

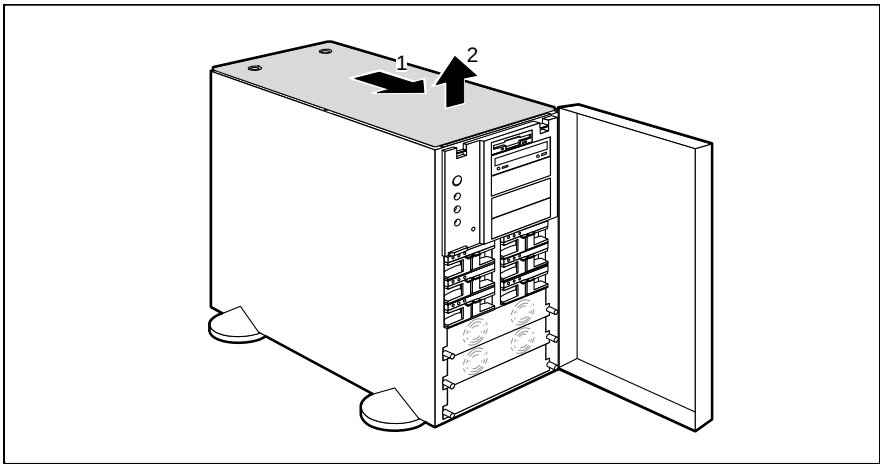
If you want to fully open the server, you must proceed as follows:
1. Remove top panel.
2. Remove control panel.
3. Remove side panel.

Removing the top panel



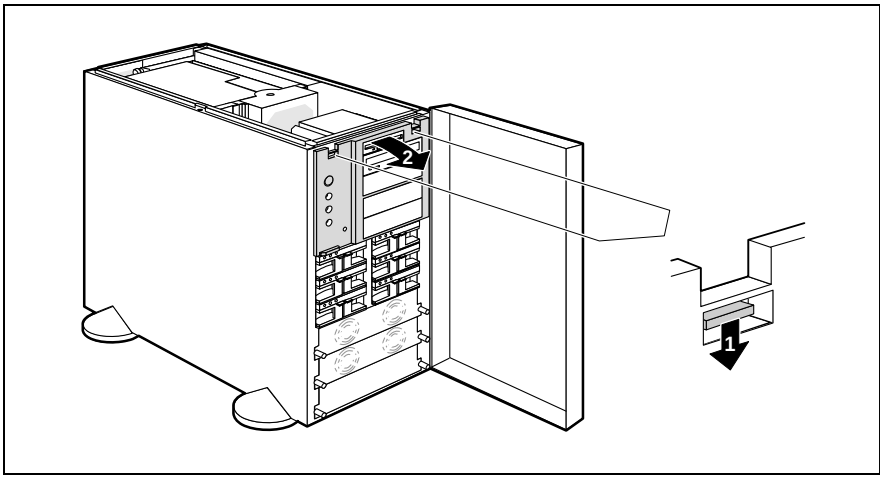
- ► Remove the two screws (1).
- ► Lift the top panel at the front by 5 to 7 mm (2) and push it out of the server in the direction of the arrow (3).

i The server cannot be switched on after the top panel has been removed (safety switch).



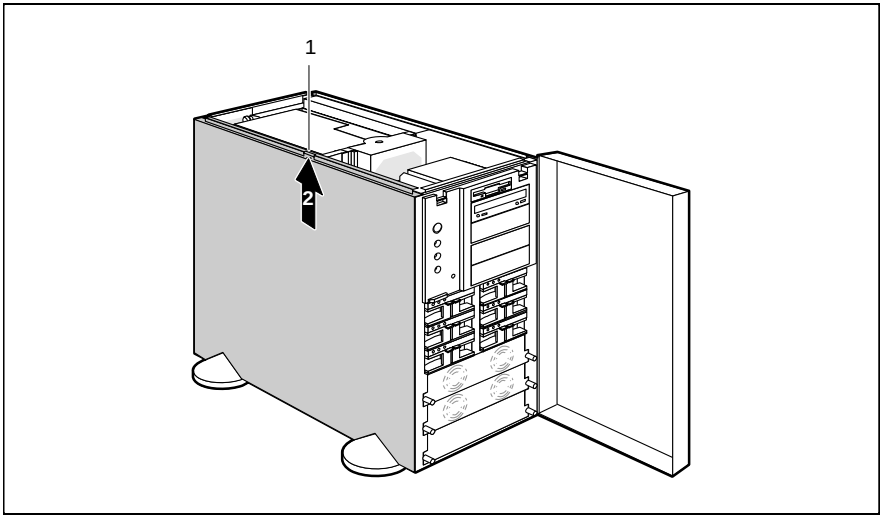
► Push the inner cover forward as far as it will go (1) and lift it off (2).

Removing the control panel



► Press down on the two plastic levers (1) and tilt the control panel out of the server in the direction of the arrow (2).

Removing the side cover

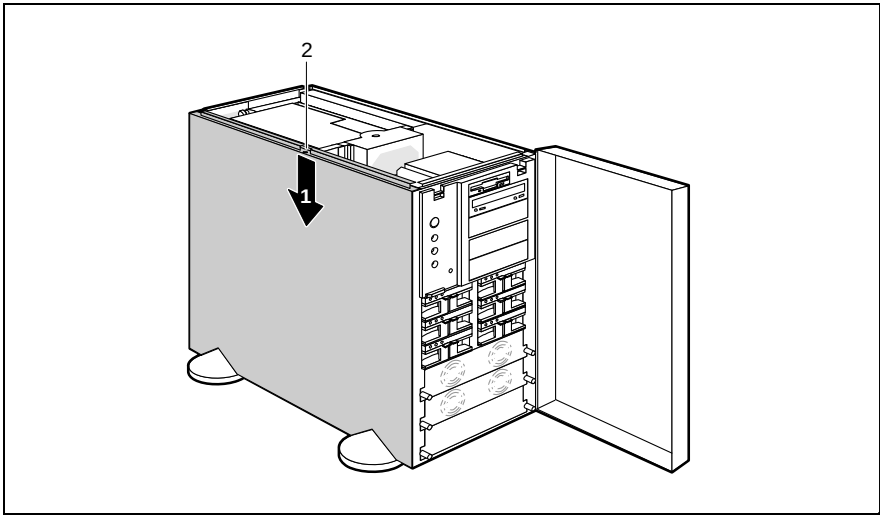


- ► Remove the screw (1).
- ► Lift the side panel out of the server in the direction of the arrow (2).

Assembling the server

If you have fully opened the server, you must proceed as follows to reassemble it:
1. Mounting the side cover.
2. Mount the control panel.
3. Mount the top panel.

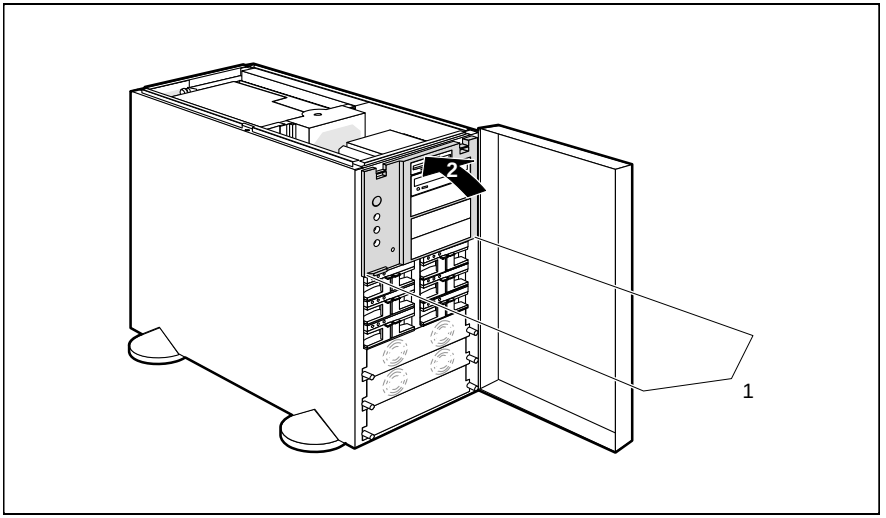
Mounting the side cover



► Mount the side cover in the server in the direction of the arrow (1).

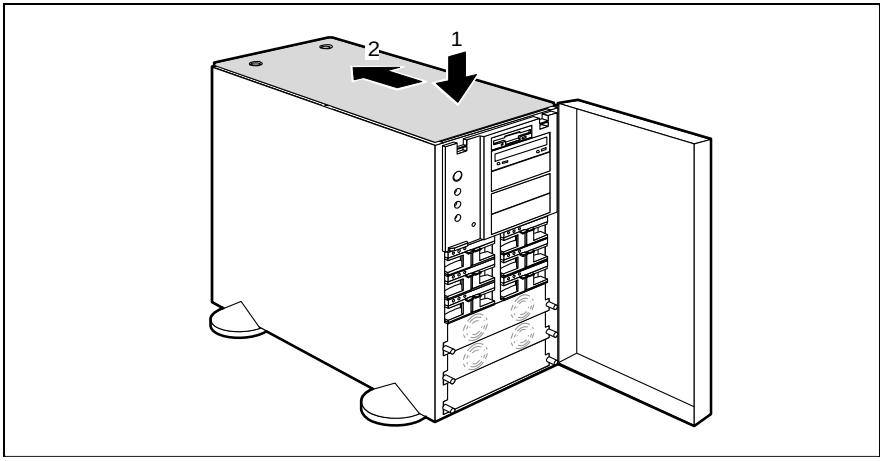
► Fasten the side panel with the screw (2).

Mounting the control panel

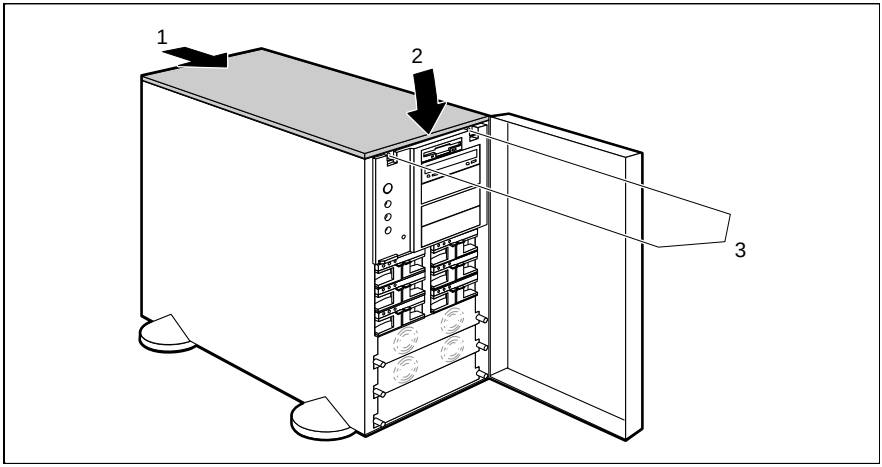


- ► Insert the hooks (1) of the control panel in the appropriate recesses of the server.
- ► Push the control panel in the direction of the arrow (2) up against the server until you feel both plastic clips engage.

Mounting the top panel



► Fit the inner cover (1 + 2).



► Push the top cover into the server in the direction of the arrow (1) as far as it will go. Ensure that the hooks on the underside of the top cover engage in the corresponding recesses on the rear of the server.

► Tilt the top panel downwards (2), and secure it with the two screws (3).

Installing and removing a SCSI hard disk drive

The server can accommodate six carriers for 3 1/2-inch hard disk drives. A Fast-Wide SCSI hard disk drive or an Ultra-Wide SCSI hard disk drive with an SCA interface and a maximum height of 1.6 inch can be installed in each carrier.

If the SCSI hard disk drive is operated on a disk array controller (DAC) and belongs to a disk array operated with RAID level 1 or level 5, it is not necessary to switch off the system in order to swap a hard disk (hot replace). To swap a hard disk, you need an SCSI hard disk drive with the same or higher capacity. A rebuild on the new hard disk is performed automatically after disk swap. A precondition is that the DAC is correctly configured. Refer to the information in the DAC manual.

If you want to swap several SCSI hard disk drives during operation, proceed as follows:

- Swap the first SCSI hard disk drive.
- Wait until the hard disk drive access indicator no longer flashes green-yellow.
- Swap the next SCSI hard disk drive etc.

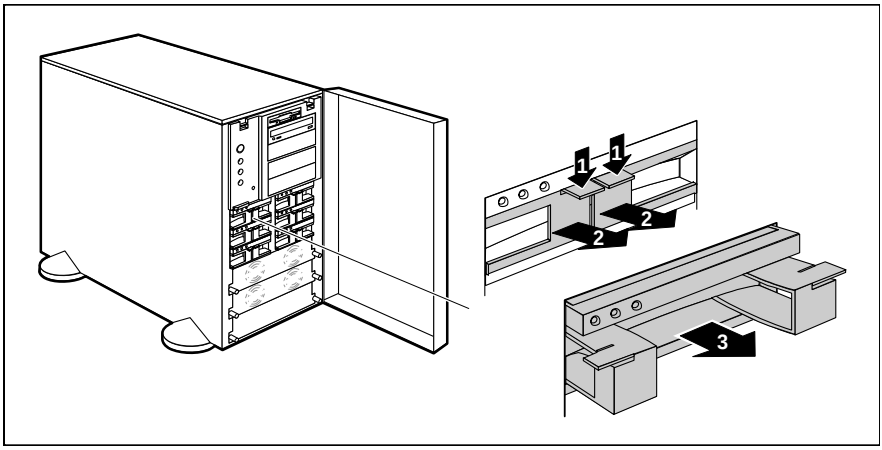
The SCSI-ID is allocated via the SCSI platter (see "Boards and cabling").

The following applies if the SCSI hard disk is operated on a DAC:

RAID level 0 and 7
Rebuild is not possible. If a hard disk fails, its data is lost.

RAID level 1 and 5 without standby hard disk
Rebuild on the new disk is carried out automatically when the old disk is swapped.

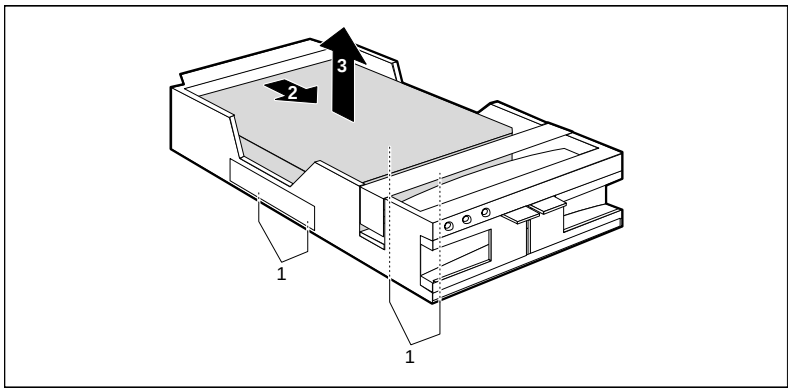
RAID level 1 and 5 with standby hard disk
A standby hard disk is automatically enabled as a replacement for the defective hard disk and the data of the defective disk is rebuilt on the standby disk.



► Press both locking levers downwards (1) and then swing them both outwards as far as possible (2).

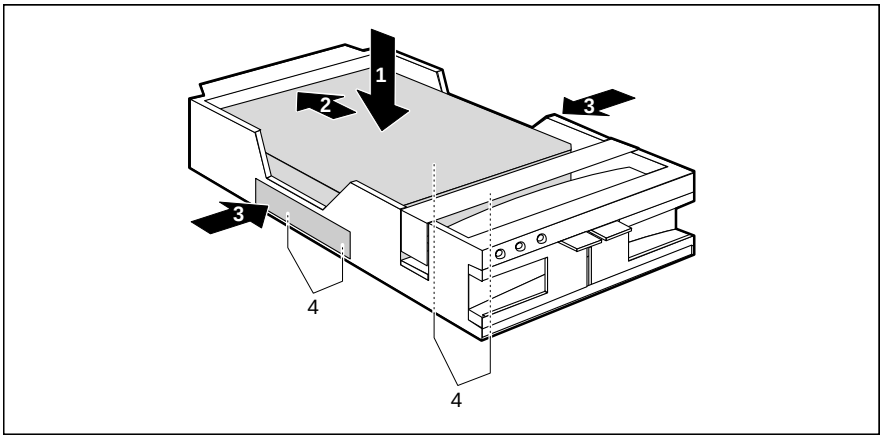
► Withdraw the hard disk carrier out of the server (3).

i If a hard disk drive is already installed in the carrier you have just withdrawn, you must remove it.

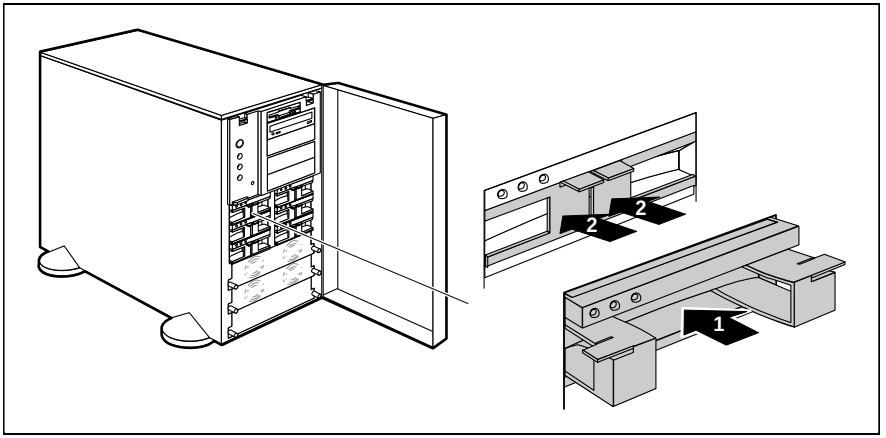


► Remove the four screws (1) on the underside of the carrier.

Withdraw the hard disk drive from its connector in the direction of the arrow (2) and lift it (3) out of the carrier.



- ► Place the new hard disk drive in the carrier (1) and push it in the direction of the arrow (2) until it locks in place.
- ► Press the contact strips into place at both sides of the carrier (3).
- ► Secure the hard disk drive with the four screws on the underside of the carrier (4).



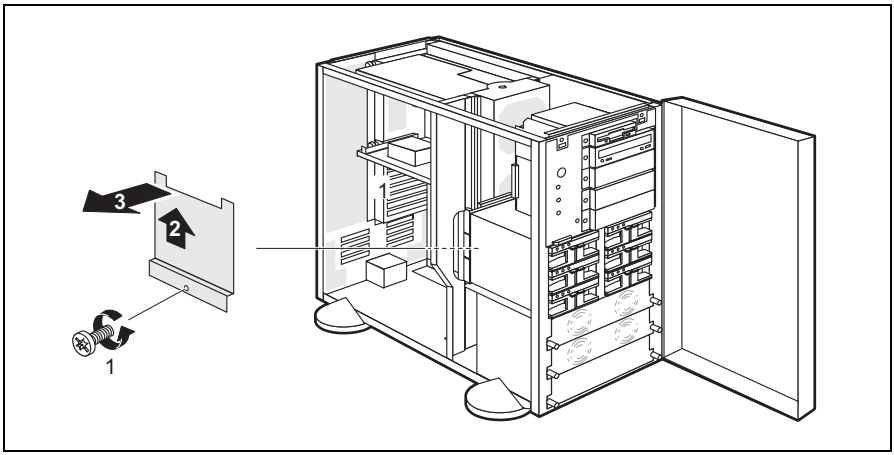
- ► Swing the two locking levers of the carrier outwards as far as they will go, and insert the carrier fully into the server (1).
- ► Swing the two locking levers inwards (2) until they lock into place.

Installing a RemoteView hard disk drive

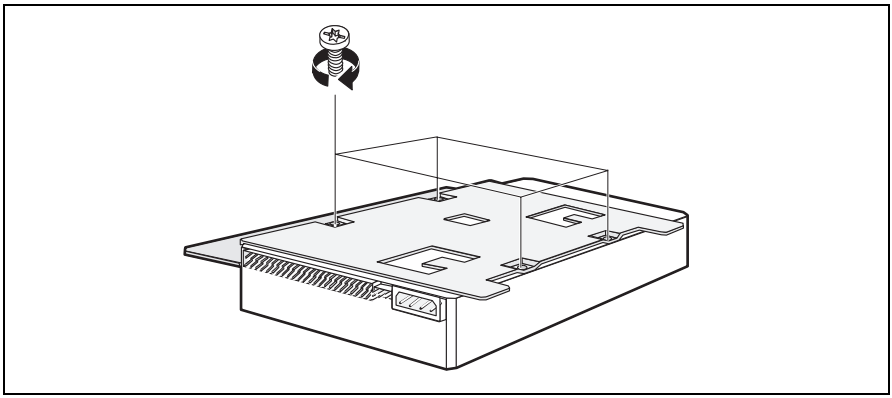
In order to use the Remote Test and Diagnosis System *RemoteView* on the server, you must install the optional RemoteView hard disk drive which contains the RemoteView software. The RemoteView hard disk drive has an IDE interface and is installed in the server on a mounting plate to the right below the system board.

i You may also retro-install the RemoteView software on an IDE hard disk. Please see the RemoteView manual for further information.

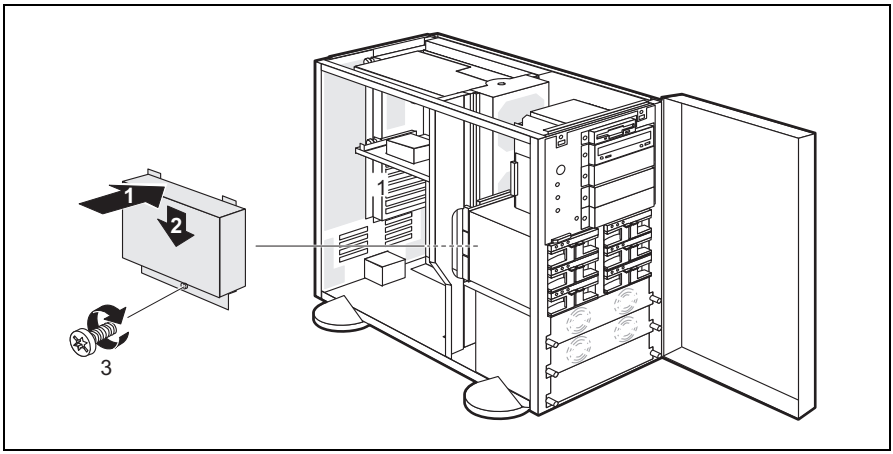
► Open the server (see "Opening the server").



► Remove screw (1) and the mounting plate for the RemoteView hard disk drive (2 + 3).



► Screw the RemoteView hard disk drive to the mounting plate.



► Place the RemoteView hard disk drive with mounting plate in the corresponding mounting supports of the server (1 + 2) and fasten it using the screw (3).

► Connect the data line to the RemoteView hard disk drive and to the IDE interface of the system board (see Technical Manual of the system board).

► Connect a free power line to the RemoteView hard disk.

► Close the server (see "Assembling the server").

You must enter the hard disk parameters in *BIOS-Setup* and boot from the hard disk once using these parameters in order for *RemoteView* to be started automatically later. Proceed as follows:

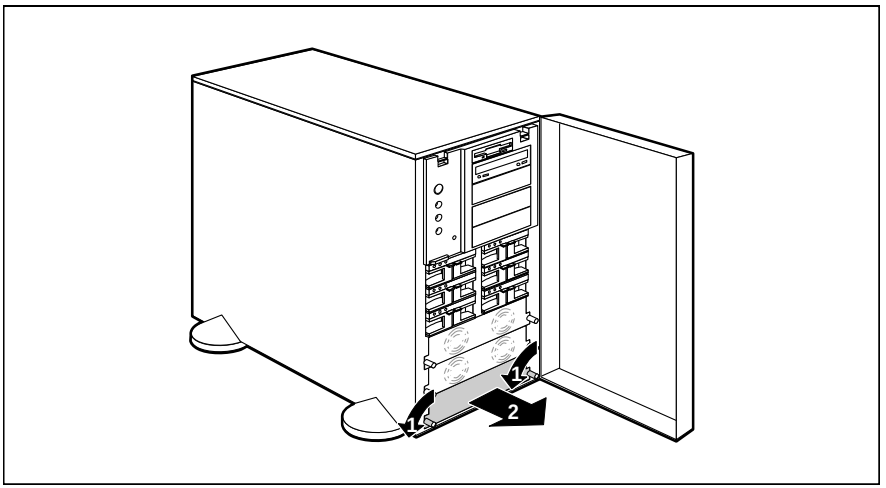
- ► Start the server and invoke *BIOS Setup*.
- ► Enter the hard disk parameters under *Hard Disk 1*.
- ► Save the setting and terminate *BIOS Setup*.
  The server boots MS-DOS and RemoteView from the IDE hard disk.
- ► To terminate RemoteView, use the menu item *Boot Original OS*.

The server boots the standard operating system. How to operate RemoteView is described in the corresponding documentation of RemoteView.

Installing and removing a power supply module

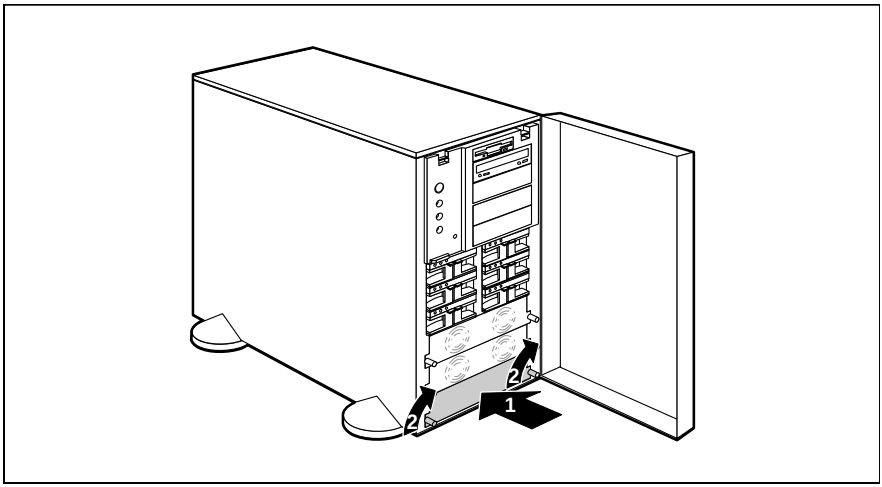
If the power-on indicator of a power supply module goes off during operation, then the module is defective and must be replaced. If the server has three power supply modules, trouble-free replacement can be carried out during operation.

The power supply must be set to the local line voltage (115 V for 100 V - 125 V and 230 V for 200 V - 240 V). During current operation you must not remove several power supply modules at the same time.



► Turn both quarter-turn fasteners counterclockwise (1) and remove the power supply module or the bay cover from the server (2).

Make sure that the new power supply module is set to the correct line voltage (switch at the right of the power supply module).



► Push the new power supply module into the server (1) and secure it with the two quarter-turn fasteners (2).

If you remove a power supply module without replacing it, you must refit the bay cover.

Installing and removing an accessible drive

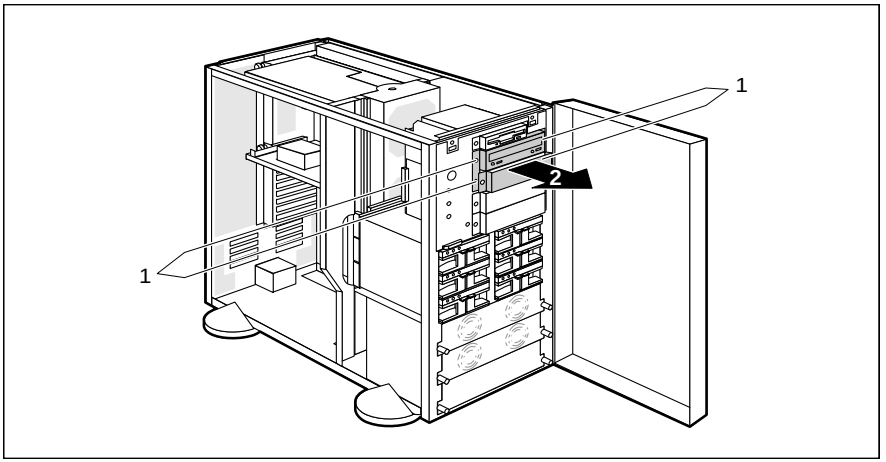
The server accommodates up to five accessible drives (four 5 1/4-inch drives and one 3 1/2-inch drive). A 5 1/4-inch drive carrier can house two half-height drives or one full-height drive.

For each accessible SCSI drive that you install you must assign a unique SCSI ID (0 - 6) and remove or disable the terminating resistor. As the CD-ROM drive already fitted is located at the end of the SCSI cable, a terminating resistor is connected and enabled.

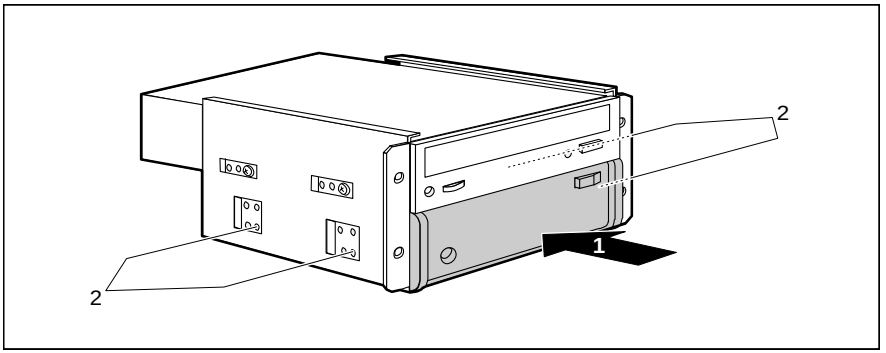
► Read the documentation supplied with the drive and make the required settings (SCSI ID, resistors) at the drive.

Installing an accessible 5 1/4-inch drive

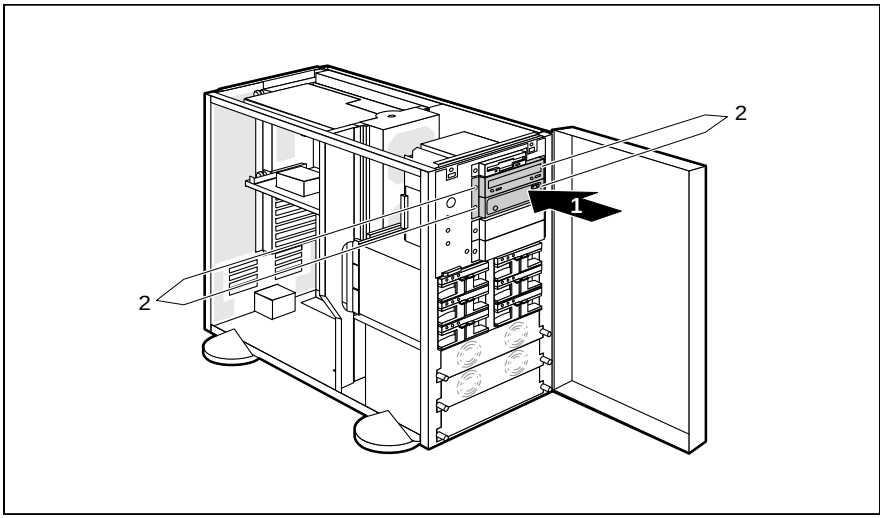
- ► Remove the top panel, side panel and control panel (see "Opening the server").
- ► Select a bay appropriate to the height of the drive.
- ► If a drive is already installed in the carrier, disconnect the data line and the power line from the drive.



- ► Remove the four screws (1) of the appropriate carrier and withdraw the carrier and drive cover from the server (2).



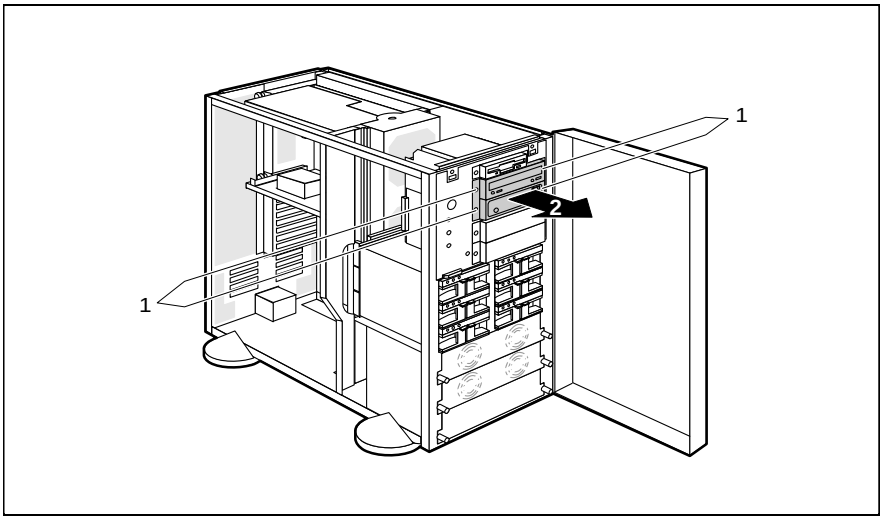
- ► Push the new drive into the carrier (1) and secure it with the four screws (2).



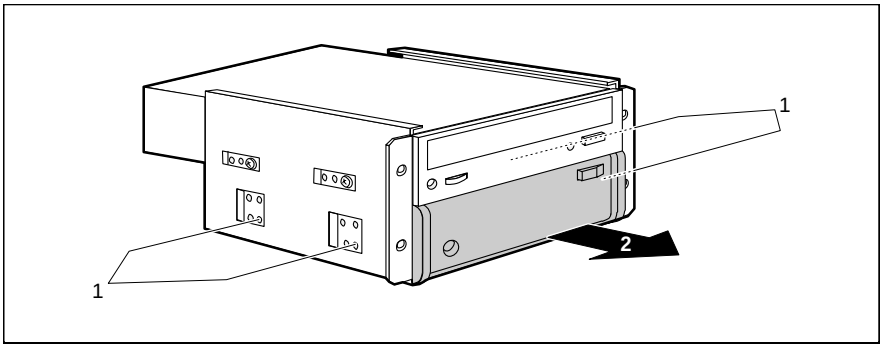
- ► Push the drive carrier into the server (1) and secure it (and the drive cover, if only a half-height drive is installed) with the four screws (2).
- ► Connect the data lines and the power lines to the disk drives.
- ► Remove the top panel, side panel and control panel (see "Assembling the server").

Removing an accessible 5 1/4-inch drive

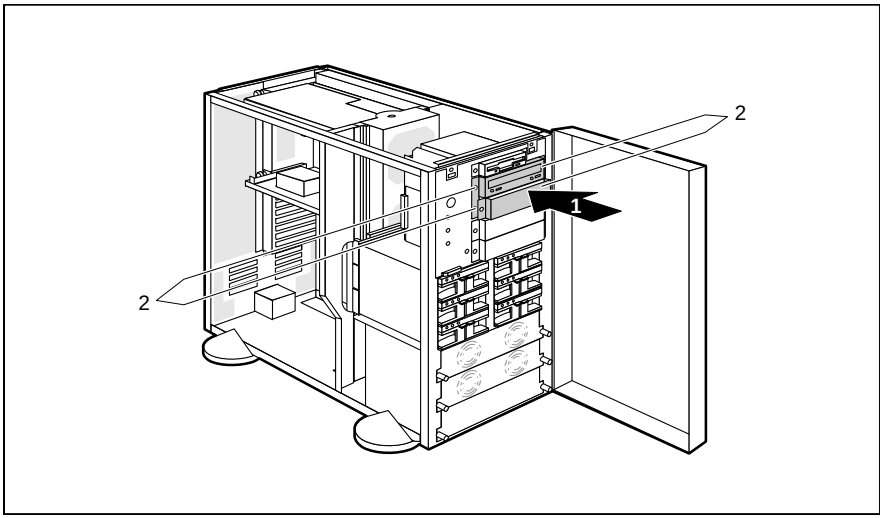
- ► Remove the top panel, side panel and control panel (see "Opening the server").
- ► Disconnect the data line and power line from the drives in the drive carrier to be removed.



- ► Remove the four screws (1) of the appropriate carrier drive and withdraw the drive carrier from the server (2).



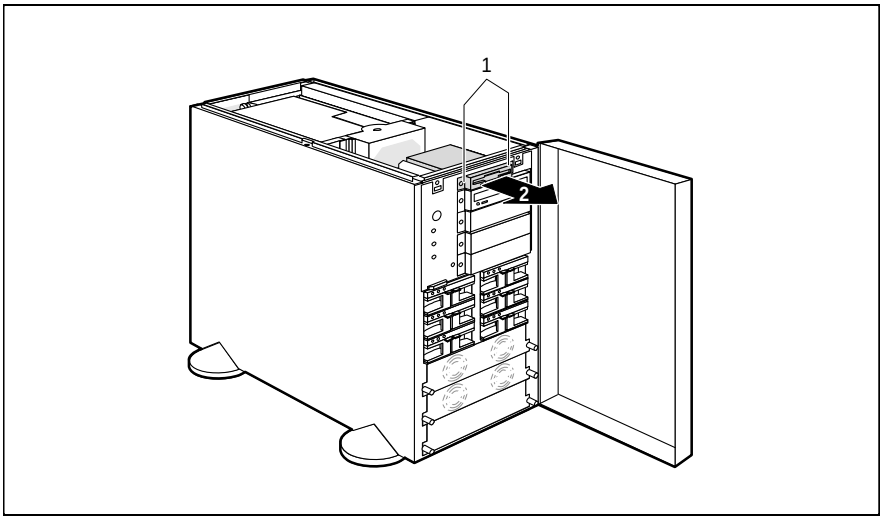
- ► Remove the four screws (1) and withdraw the drive from the drive carrier (2).



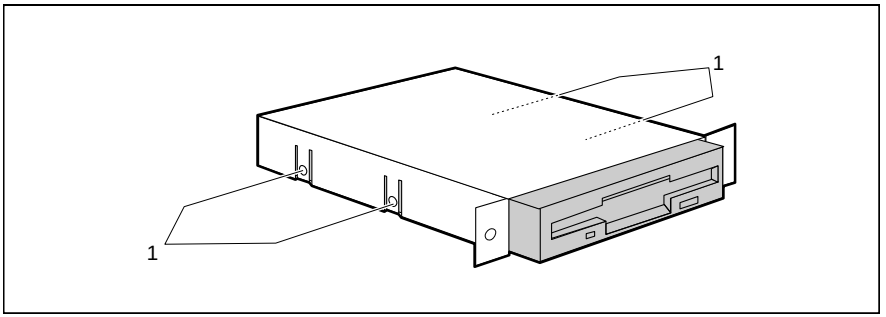
- ► Push the drive carrier into the server (1) and secure it and the drive covers with the four screws (2).
- ► If there is still a drive in the drive carrier, connect the data line and the power line.
- ► Mount the control panel, side panel and top panel (see "Assembling the server").

Changing the floppy disk drive

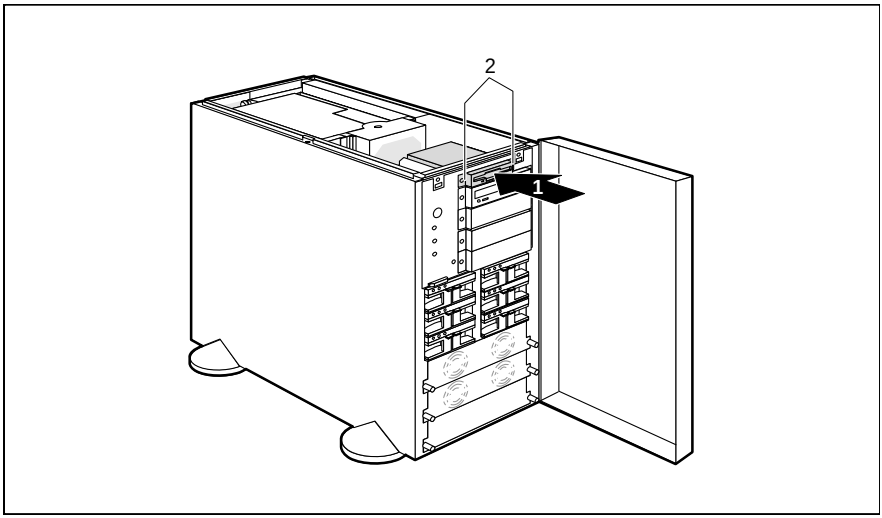
- ► Remove the top panel and the control panel (see "Opening the server")
- ► Disconnect the data line and the power line from the floppy disk drive.



- ► Remove the two screws (1) and withdraw the drive carrier from the server (2).



- ► Remove the four screws (1) and withdraw the drive from the drive carrier.
- ► Place the new floppy disk drive in the drive carrier and secure it with the four screws (1).



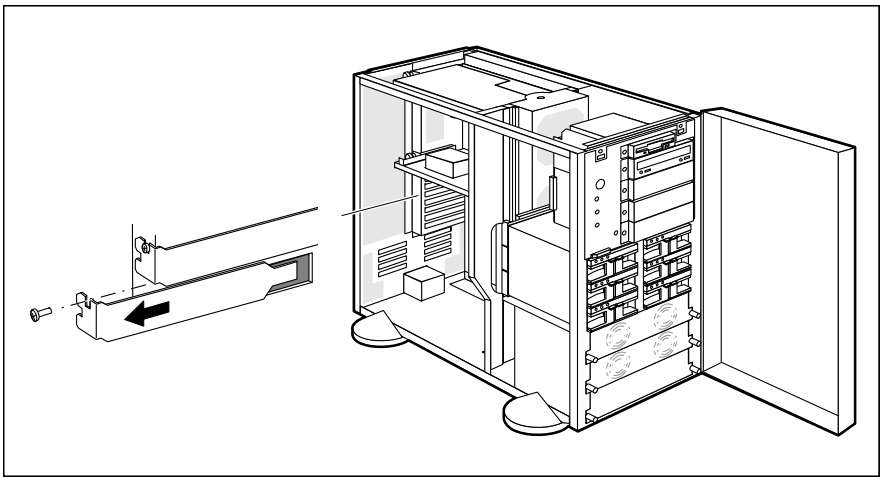
- ► Push the drive carrier into the server (1) and secure it with the two screws (2).
- ► Connect the data line and the power line to the floppy disk drive.
- ► Mount the control panel, and the top panel (see "Assembling the server").

Installing and removing boards

► Before installing or removing a board, please read the documentation supplied with the board.

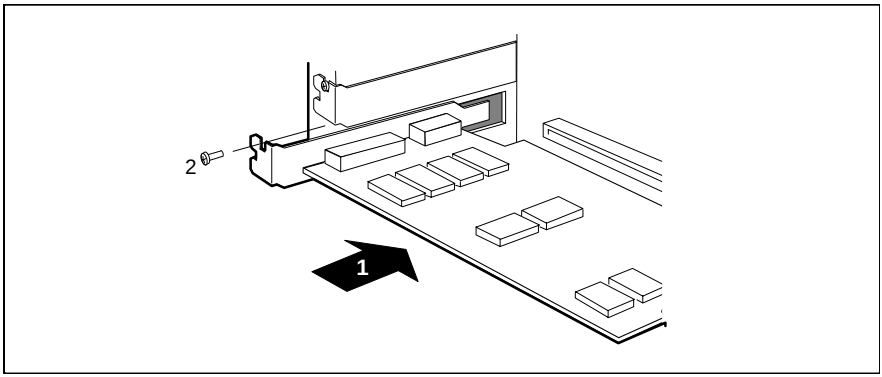
Installing a board

► Remove the top cover and the side cover (see "Opening the server").



► Remove the screw and the rear slot cover plate of the desired slot.

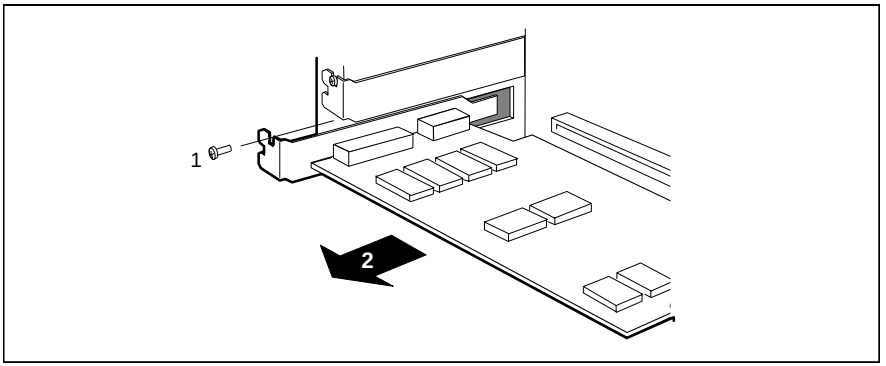
Do not dispose of the rear slot cover plate. For cooling, protection against fire and in order to comply with EMC regulations, you must refit the rear slot cover plate if you remove the board.



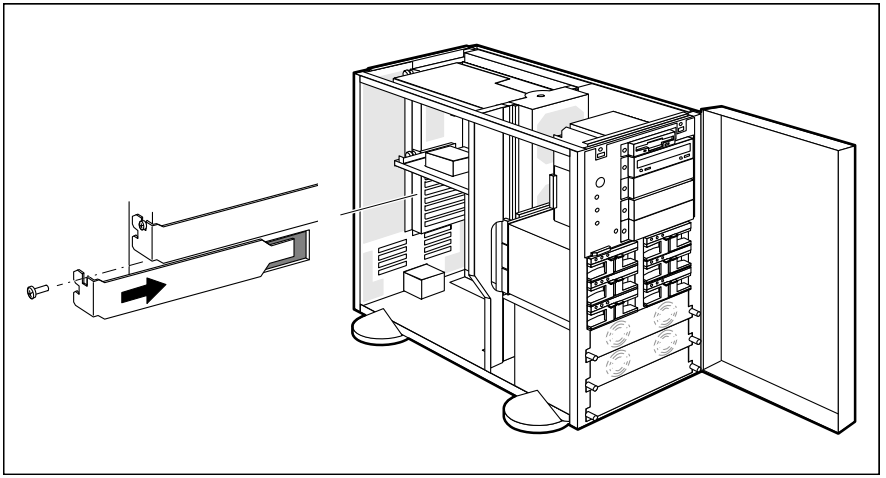
- ► Place the board in the desired slot (1) and fasten it with the screw you removed earlier (2).
- ► If necessary, connect the lines to the board.
- ► Mount the side panel and the top panel (see "Assembling the server").

Removing a board

- ► Remove the top cover and the side cover (see "Opening the server").
- ► Remove the lines connected to the board.



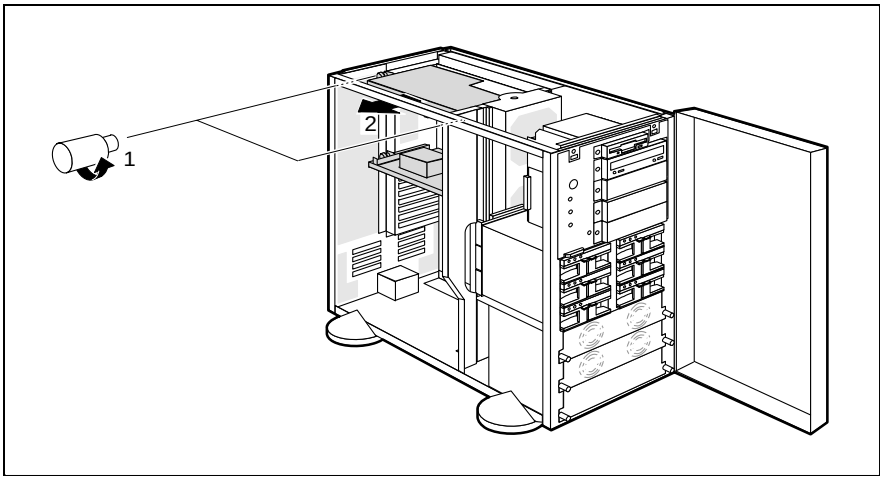
- ► Remove the screw (1) and pull the board out of the slot (2).



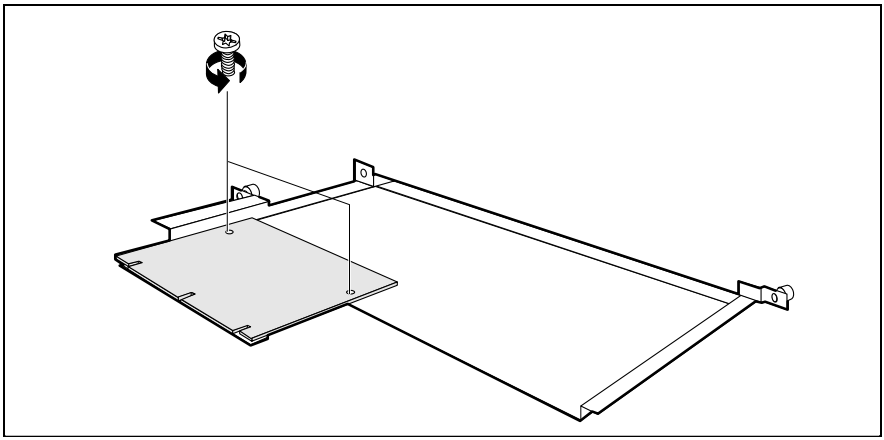
- ► Put the rear slot cover plate into the slot and fasten it with the screw you removed earlier.
- ► Mount the side panel and the top panel (see "Assembling the server").

Installing a second processor board

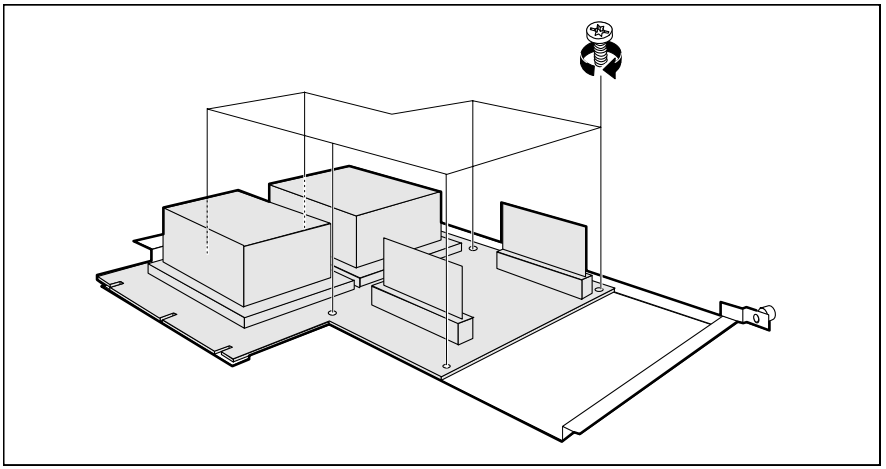
The server can be fitted with two processor boards. If only one processor board is fitted, a terminating board must be installed in the slot for the second processor board. Processor board and terminating board are each mounted on the processor mounting plate.



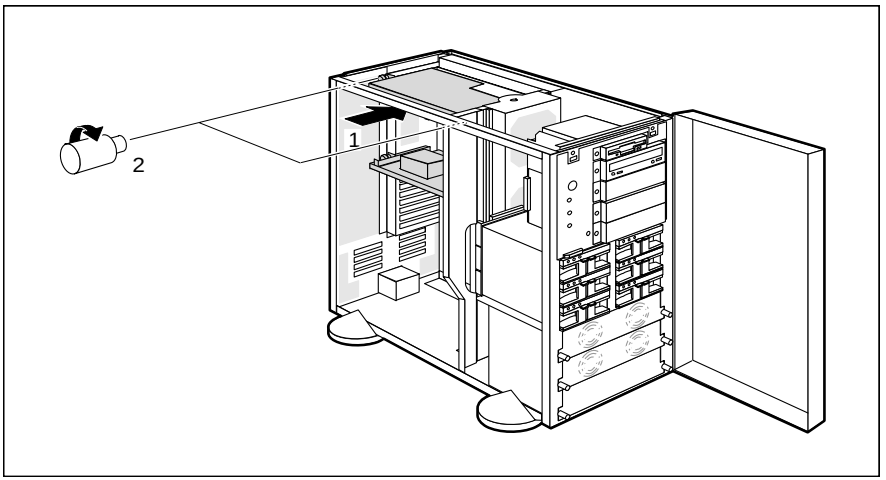
► Release the two knurled screws (1) and pull the upper processor mounting plate with the terminating board out of the slot (2).



► Unscrew the terminating board from the processor mounting plate.



► Screw the second processor board onto the processor mounting plate.



► Place the processor mounting plate with the processor board in the upper processor slot (1) and attach it firmly using the two knurled screws (2).

► Connect a free power line to the power supply connector on the processor board.

Installing the SE/DE converter boards

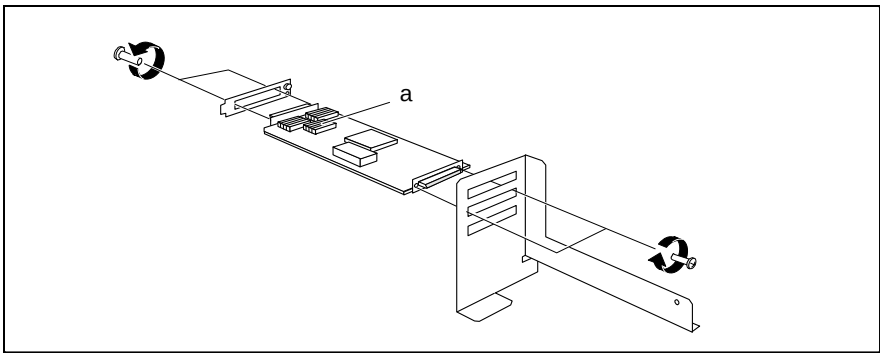
SE/DE (single-ended/differential-ended) boards are available in the following versions:

- 1-channel (one SCSI channel is implemented on a board, i.e. the board has one SCSI-SE input and one SCSI-DE output)
- 3-channel (three SCSI channels are implemented on a board, i.e. the board has three SCSI-SE inputs and three SCSI-DE outputs)

The 3-channel version is designed for insertion in an ISA or EISA slot. The 1-channel version, which cannot be inserted in a slot, is supplied as a kit. For the first board you will require the basic kit; for the second and third board you will require the upgrade kit. A maximum of three 1-channel SE/DE boards can be installed in the server.

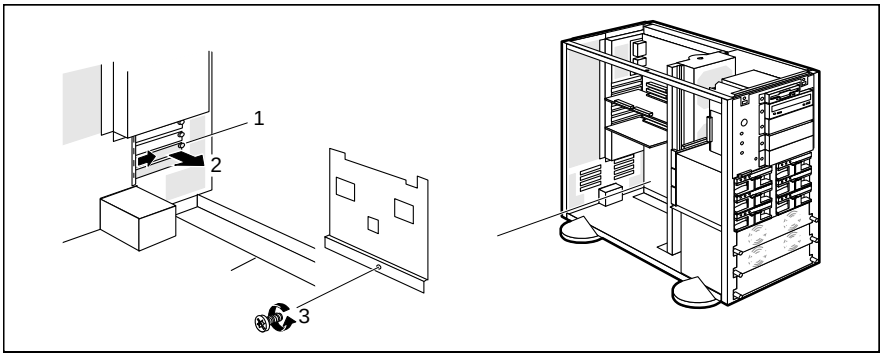
The jumpers on the boards are preset and must not be altered.

This section describes the installation of the 1-channel SE/DE conversion boards.

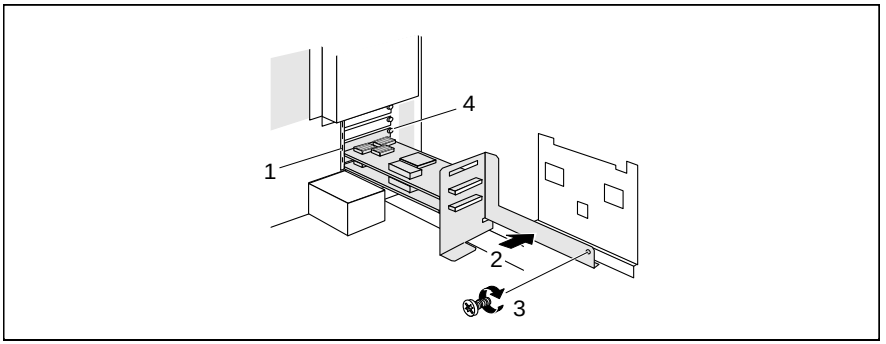


► Assemble the parts as shown in the illustration above. Please note in particular the position of the resistance networks (a) on the boards.

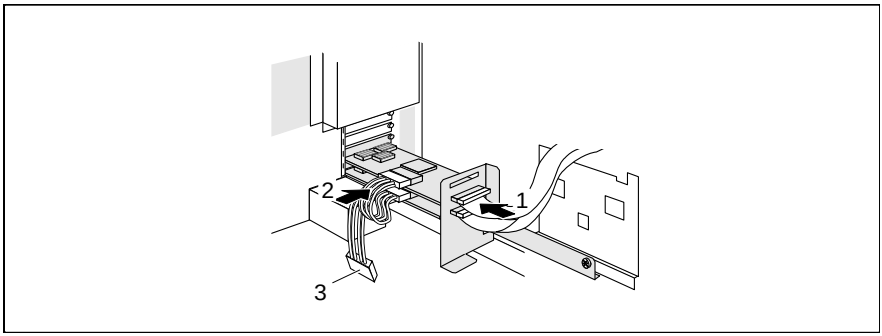
► Remove the top cover and the side cover of the server (see "Opening the server").



- ► Remove the cover plates of the slots into which you want to insert the boards (the bottom three can be used). Remove the accompanying mounting screws (1) on the back of the server and take out the cover plate toward the inside (2).
- ► Remove the mounting screw for the RemoteView hard disk carrier (3).



- ► Insert the preassembled assembly kit with the ends of the interface plates (1) into the rear panel of the server and swivel it into its final position (2).
- ► Screw the assembly kit and the RemoteView hard disk carrier tight using the previously removed screw (3).
- ► Screw the interface plates tight from the back of the server (4).



- ► Attach the SCSI lines (1) and the cascaded power supply line (2) to the built-in boards.
- ► Attach a free power supply line from the server (e.g. from the RemoteView hard disk) to the cascaded power supply line (3).
- ► Mount the side panel and the top panel (see "Assembling the server").

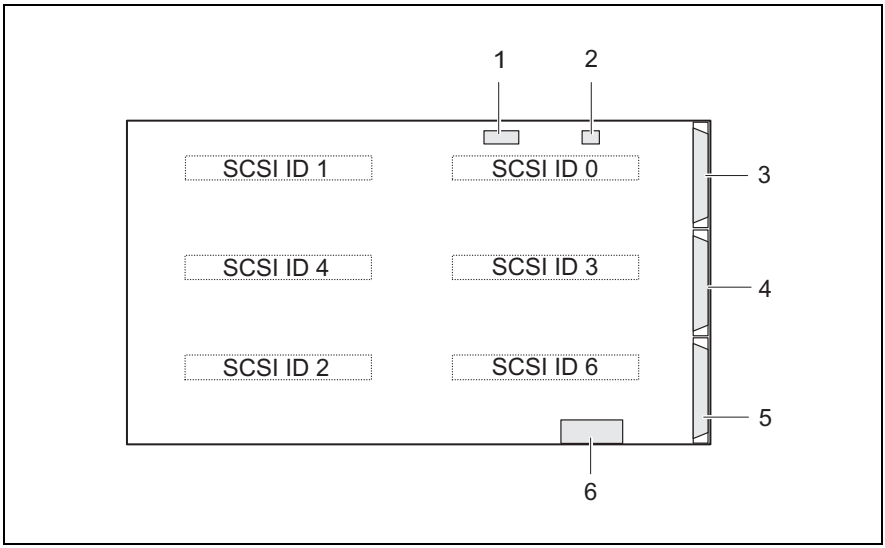
Extensions on the system board

Details of how you upgrade the main memory of your server, replace the lithium battery, add or replace processors or make certain settings are provided in the Technical Manual for the system board. Proceed as follows:

- ► Remove the top panel, the inner cover and the side cover (see "Opening the server").
- ► Make the desired expansions or settings (see the Technical Manual for the system board).
- ► Mount the side cover, the inner cover and the top panel (see "Assembling the server").

Boards and cabling

SCSI platter with SAF-TE function



1 = System indicator connector
2 = Display-test switch connector
3 = SCSI segment 0
4 = SCSI segment 1
5 = SCSI segment 2
6 = Power supply connector

The hot-replace hard disk carriers are connected to the SCSI controller via the SCSI platter. Depending on the SCSI controller used (standard or DAC), the six hard disks can be operated on three, two or a single SCSI channel.

One-channel operation

The SCSI cable is connected to the SCSI segment 0.

Two-channel operation

The SCSI cables are connected to the SCSI segments 0 and 2.

Three-channel operation

The SCSI cables are connected to the SCSI segments 0, 1 and 2.

Assignment of carrier, SCSI ID and SCSI segment

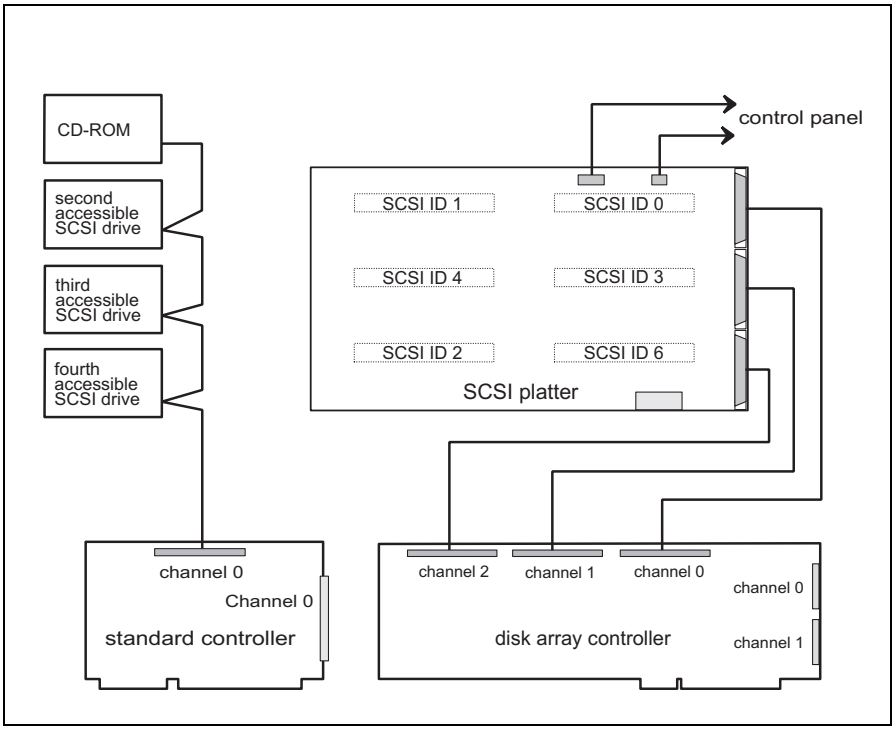
Carrier	SCSI ID	SCSI segment
top left	0	0
top right	1	0
center left	3	1
center right	4	1
bottom left	6	2
bottom right	2	2

Carriers seen from front

Disk array controller and standard controller on internal drives

The standard SCSI controller controls the accessible SCSI drives.

The disk array controller controls the hard disk drives. All three SCSI channels are led to the hard disk carriers via the SCSI platter.

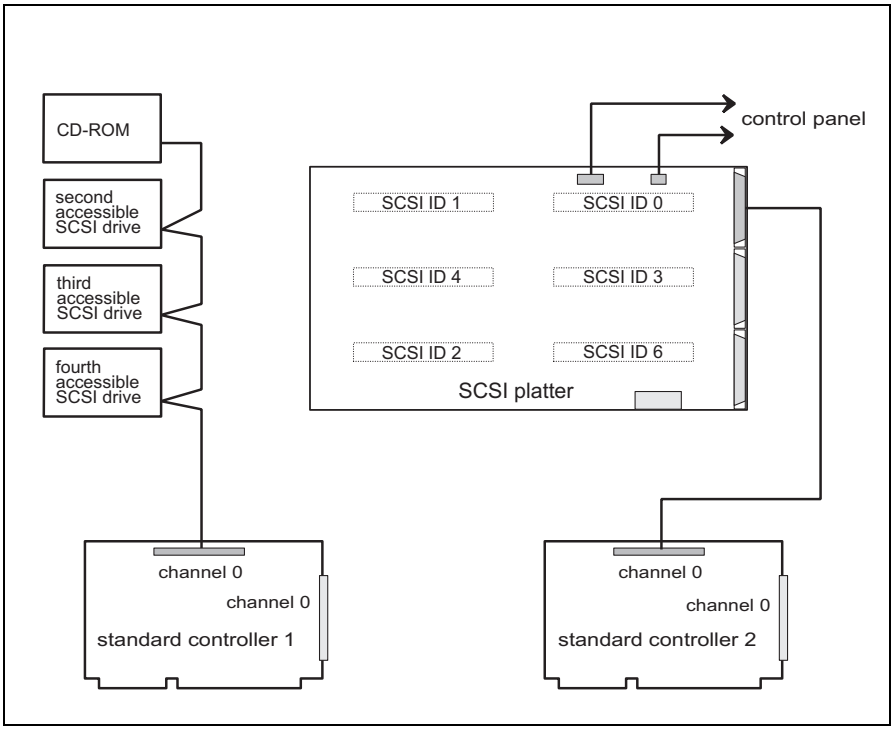


Cabling of disk array controller and standard SCSI controller

Two standard controllers on internal drives

Standard SCSI controller 1 controls the accessible SCSI drives.

Standard SCSI controller 2 controls the hard disk drives. SCSI channel 0 is led to all hard disk carriers via the SCSI platter.



Cabling of two standard SCSI controllers

Hard disks operated on standard controller 2 are **not** hot-swappable and must not be removed during operation. These hard disks must **not** be removed during operation. Loss of data!

Technical data

Electrical data (server)

Rated voltage range:	100 V - 125 V / 200 V - 240 V selectable
Frequency:	50 Hz - 60 Hz
Rated current in basic configuration:	100 V - 125 V / 3 A 200 V - 240 V / 1.8 A
Max. rated current:	100 V - 125 V / 9.5 A 200 V - 240 V / 5.5 A
Protection class:	I
Regulations complied with:	EN 60950 / VDE 0805

Dimensions

Width:	310 mm
Depth:	700 mm
Height:	610 mm
Weight:	approx. 45 kg (441.5 N) in basic configuration

Environmental conditions

Environment class 3K2	DIN IEC 721 part 3-3
Environment class 2K2	DIN IEC 721 part 3-2

Temperature:

• Operating (3K2)	15 °C .... 35 °C
• Transport (2K2)	-25 °C .... 60 °C

Condensation in operating must be avoided.

Noise level

Sound power level L_{WAd} (ISO 9296):	≤ 6.1 B
Sound pressure level at bystander position L_{pAm} (ISO 9296):	≤ 44 dB

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