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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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1 Preface

The PRIMERGY TX100 S1 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.

Thanks to its highly developed hardware and software components, the PRIMERGY TX100 S1 server offers a high level of data security and availability.

Security functions in the BIOS-Setup and on the system board protect the data on the server against manipulation. The supported RAID levels allow the hard disk controllers to offer error tolerance, through data redundancy, for users who want to provide complete protection for valuable data.

Its low noise level and high energy efficiency make it ideal for office environments.

The PRIMERGY TX100 S1 has a power management function that reduces power consumption to <65 W in typical configurations. The server thus satisfies the requirements of the U.S. Environmental Protection Agency (EPA) - see section “ENERGY STAR” on page 26.

1.1 Concept and target groups for this manual

This operating manual describes how to install, set up and operate your server. This manual is intended for those people responsible for installing the hardware and ensuring that the system runs smoothly. The manual contains all the information required to install and operate your PRIMERGY TX100 S1.

To understand the various expansion options, you will need to be familiar with the fields of hardware and data transmission and you will require a basic knowledge of the underlying operating system.
1.2 Documentation overview

More information on your PRIMERGY TX100 S1 can be found in the following documents:

- “Quick Start Hardware - PRIMERGY TX100 S1” leaflet (only included as a printed copy)
- "Quick Start Software - Quick Installation Guide" DVD booklet (only included as a printed copy with the PRIMERGY ServerView Suite)
- “Safety notes and other important information” manual
- “Warranty” manual
- “Returning used devices” manual
- “Helpdesk” leaflet
- Technical manual for the system board D2679-B11
- “PRIMERGY TX100 S1 Server Operating Manual”
- "PRIMERGY TX100 S1 Server Options Guide"
- “D2679-B11 BIOS Setup Utility for PRIMERGY TX100 S1” manual

PRIMERGY manuals are available in PDF format on the PRIMERGY ServerView Suite DVD 2. The PRIMERGY ServerView Suite DVD 2 is part of the PRIMERGY ServerView Suite supplied with every server.

If you no longer have the ServerView Suite DVDs, you can obtain the relevant current versions using the order number U15000-C289.

The PDF files of the manuals can also be downloaded free of charge from the Internet. The overview page showing the online documentation available on the Internet can be found using the URL: http://manuals.ts.fujitsu.com. The PRIMERGY server documentation can be accessed using the Industry standard servers navigation option.
Further sources of information:

- PRIMERGY Abbreviations and Glossary on the PRIMERGY ServerView Suite DVD 2
- Manual for the monitor
- Documentation for the boards and drives
- Operating system documentation
- Information files in your operating system

1.3 Performance features

System board

The features of the system board are described in the technical manual for the system board D2679-B11 for the hardware and in the BIOS Setup manual for the firmware.

Slots for expansion cards

The server can be flexibly expanded via four slots:

- one PCIe Gen2 x8
- one PCIe Gen2 x4 (mech. x8)
- one PCIe Gen2 x1
- one PCI

PCIe Gen2 doubles the bandwidth of currently existing PCIe busses and allows improved system performance.

Hard disk drives

Upto four SATA hard disk drives, each with a maximum height of 1 inch, are built into the drive rack. There is a wire connection to the controller.

The SATA hard disk drives can be controlled by the onboard SATA RAID controller.
Onboard SATA controller

A 6-port SATA controller is integrated on the system board; up to four SATA hard disk drives can be connected to the controller. The LSI Embedded MegaRAID software (SATA Software RAID) supports RAID levels 0, 1 and 10.

For more information on configuring the controller, see section “Configuring the onboard SATA controller” on page 43.

Accessible drives

The first (top) bay contains the server's DVD drive.

The 5.25-inch bay below is available for additional accessible drives (CD/DVD drives or a magnetic tape drive).

The accessible drives cannot be replaced during operation.

Cooling

The Cool-safe™ cooling concept with split-level cooling (different fresh air channels and fans for processors and memory modules) ensures maximum performance of the new processors and maximum reliability by keeping all components cool.

The efficient cooling system prevents high temperatures and results in lower fan speed and less noise. The fans use less power.

Power supply

The server has a built-in power supply unit, which automatically sets itself to a mains voltage in the range of 100 V - 240 V.
High level of availability and data security

When memory data is accessed, 1-bit errors are identified in the main memory and automatically corrected with the error correcting code (ECC) method. The patented memory scrubbing function regularly starts up the EDC mechanism, ensuring continuous data integrity.

The memory modules used support SDDC technology (Chipkill™), which further increases the effectiveness of the monitoring and correction of memory errors.

ASR&R (Automatic Server Reconfiguration and Restart) restarts the system in the event of an error and automatically "hides" the defective system components.

The onboard SATA controller supports different RAID levels and increases the availability and data security of the system.

Server management

Server management is implemented using the ServerView Operations Manager software supplied from Fujitsu Technology Solutions.

The ServerView Operations Manager enables the management of all PRIMERGY servers in the network via a central console. The ServerView Operations Manager supports the following functions:

- Round-the-clock monitoring, regardless of server status
- Wake On LAN
- Monitoring of the ambient and CPU temperatures
- Monitoring of PCI bus loading
- Detailed status and error reports for bus systems, processors and main memory
- Watchdog timer for Automatic Server Reconfiguration and Restart (ASR&R) in the event of failure of memory modules or processors
- Power monitoring
- Watchdog timer for monitoring the operating system and applications with ASR&R

ServerView Installation Manager
You can configure the PRIMERGY server quickly and precisely with the ServerView Installation Manager software provided. User-guided menus are available for installing the server operating system (for further details see section “Configuring the server” on page 43).

Service and support
PRIMERGY servers are service-friendly and modular, enabling quick and easy maintenance.

The handles and locks (touch point) on the various hot pluggable components are colored green to ensure simple and immediate recognition.

In order to prevent the components from being damaged by incorrect handling when they are being installed and removed, the areas of all components that can be touched without damaging them are also marked green.

The Flash EPROM program supplied with the Fujitsu Technology Solutions utilities supports a fast BIOS update.
1.4 Notational conventions

The following notational conventions are used in this manual:

<table>
<thead>
<tr>
<th>Notational Conventions</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text in italics</td>
<td>indicates commands or menu items.</td>
</tr>
<tr>
<td>“Quotation marks”</td>
<td>indicate names of chapters and terms that are being emphasized.</td>
</tr>
<tr>
<td>▶</td>
<td>describes activities that must be performed in the order shown.</td>
</tr>
<tr>
<td>!</td>
<td>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.</td>
</tr>
<tr>
<td>!</td>
<td>indicates additional information, notes and tips.</td>
</tr>
</tbody>
</table>

1.5 Technical data

Electrical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage range</td>
<td>100 V - 240 V</td>
</tr>
<tr>
<td>Frequency</td>
<td>50 Hz - 60 Hz</td>
</tr>
<tr>
<td>Rated current with basic configuration</td>
<td>100 V - 240 V / 0.7 A - 0.3 A</td>
</tr>
<tr>
<td>Max. rated current</td>
<td>100 V - 240 V / 3.5 A - 1.5 A</td>
</tr>
<tr>
<td>Effective power</td>
<td>53 W - 146 W</td>
</tr>
<tr>
<td>Apparent power</td>
<td>63 VA - 156 VA</td>
</tr>
<tr>
<td>Heat dissipation</td>
<td>191 kJ/h - 526 kJ/h (181 btu/h - 498 btu/h)</td>
</tr>
<tr>
<td>Main power fuse</td>
<td>16 A</td>
</tr>
<tr>
<td>Protection class</td>
<td>I</td>
</tr>
</tbody>
</table>
## Compliance with regulations and standards

<table>
<thead>
<tr>
<th>Product safety and ergonomics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>International</strong></td>
<td>IEC 60950-1</td>
</tr>
<tr>
<td><strong>Europe</strong></td>
<td></td>
</tr>
<tr>
<td>Safety</td>
<td>EN 60950-1</td>
</tr>
<tr>
<td>ergonomics</td>
<td>ISO 9241-3</td>
</tr>
<tr>
<td></td>
<td>EN 2941-3</td>
</tr>
<tr>
<td></td>
<td>EK1-ITB 2003:2007</td>
</tr>
<tr>
<td></td>
<td>UL 60950-1</td>
</tr>
<tr>
<td><strong>USA / Canada</strong></td>
<td>CSA-C22.2 60950-1-03</td>
</tr>
<tr>
<td><strong>Taiwan</strong></td>
<td>CNS 14336</td>
</tr>
<tr>
<td><strong>China</strong></td>
<td>GB 4943</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electromagnetic compatibility</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>International</strong></td>
<td>CISPRA 24</td>
</tr>
<tr>
<td><strong>Europe</strong></td>
<td>EN 55022</td>
</tr>
<tr>
<td></td>
<td>EN 55024</td>
</tr>
<tr>
<td></td>
<td>EN 61000-3-2</td>
</tr>
<tr>
<td></td>
<td>EN 61000-3-3</td>
</tr>
<tr>
<td></td>
<td>ETS 300386</td>
</tr>
<tr>
<td><strong>USA / Canada</strong></td>
<td>47CFR part 15 Class A / ICES-003</td>
</tr>
<tr>
<td><strong>Taiwan</strong></td>
<td>CNS 13438 Class A</td>
</tr>
<tr>
<td><strong>China</strong></td>
<td>GB 9245 / GB 17625</td>
</tr>
<tr>
<td><strong>Japan</strong></td>
<td>VCCI Class A / Jeida</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CE marking to EU directives</th>
<th>Low Voltage Directive 2006/95/EC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Electromagnetic compatibility 2004/108/EC</td>
</tr>
</tbody>
</table>
**Preface**

**Technical data**

**Mechanical specifications**

<table>
<thead>
<tr>
<th>Width</th>
<th>203 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total depth</td>
<td>386 mm</td>
</tr>
<tr>
<td>Height</td>
<td>390 mm</td>
</tr>
</tbody>
</table>

**Weight**

Approx. 12 kg (depending on configuration).

**Ventilation clearance**

At least 200 mm on the front and rear.

**Ambient conditions**

<table>
<thead>
<tr>
<th>Environment class 3K2</th>
<th>EN 60721 / IEC 721 Part 3-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment class 2K2</td>
<td>EN 60721 / IEC 721 Part 3-2</td>
</tr>
<tr>
<td>Temperature:</td>
<td></td>
</tr>
<tr>
<td>Operation (3K2)</td>
<td>10 °C .... 35 °C</td>
</tr>
<tr>
<td>Transport (2K2)</td>
<td>-25 °C .... 60 °C</td>
</tr>
<tr>
<td>Humidity</td>
<td>10% .... 85%</td>
</tr>
</tbody>
</table>

Condensation during operation must be avoided!

**Noise level with standard fan modules**

<table>
<thead>
<tr>
<th>Sound power level $L_{WAd}$ (ISO 9296)</th>
<th>$\leq 3.7$ B (standby)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\leq 4.0$ B (operating)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sound pressure level at adjacent position $L_{pAm}$ (ISO 9296)</th>
<th>$\leq 21$ dB(A) (standby)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\leq 25$ dB(A) (operating)</td>
</tr>
</tbody>
</table>
2 Installation steps, overview

This chapter contains an overview of the steps you need to carry out to install your server. Links take you to sections where you can find more detailed information about the respective steps:

- First of all, it is essential that you familiarize yourself with the safety information in chapter “Important notes” on page 17.
- Transport the server to the place where you want to set it up.
- Unpack the system, check the contents of the package for visible transport damage and check whether the items delivered match the details on the delivery note (see section “Unpacking the server” on page 30).
- Make sure that you have all necessary manuals (see “Documentation overview” on page 6); print out the PDF files if required.
- Components that have been ordered additionally may be delivered loose with the server. For mounting refer to the original component documentation.
- Set up the server (see section “Setting up the server” on page 31).
- Wire the server. Follow the instructions in sections “Connecting devices to the server” on page 32 and “Notes on connecting/disconnecting cables” on page 35.
- Connect the server to the mains (see section “Connecting the server to the mains” on page 34).
- Familiarize yourself with the controls and indicators on the front and rear of the server (see section “Control and display elements” on page 37).
Configure the server and install the desired operating system and applications. The following options are available:

- Remote installation with the ServerView Installation Manager:

  With the PRIMERGY ServerView Suite DVD 1 provided, you can configure the server and install the operating system in a convenient manner.

  Details on how to operate the ServerView Installation Manager, as well as some additional information, are included in the “PRIMERGY ServerView Suite Installation Manager” user’s guide (on PRIMERGY ServerView Suite DVD 2 under Industry Standard Servers - Software - PRIMERGY ServerView Suite - Server Installation and Deployment).

  Configuration information can also be found in section “Configuring the server and installing the operating system with the ServerView Installation Manager” on page 44.

- Local configuration and installation with or without the ServerView Installation Manager (see section “Configuring the server and installing the operating system with the ServerView Installation Manager” on page 44 or section “Configuring the server and installing the operating system without the ServerView Installation Manager” on page 45).

You will find more information on installing the server remotely or locally in the “PRIMERGY ServerView Suite Installation Manager” user’s guide (on the PRIMERGY ServerView Suite DVD 2 under Industry Standard Servers - Software - PRIMERGY ServerView Suite - Server Installation and Deployment).
3 Important notes

In this chapter you will find essential information regarding safety when working on your server.

3.1 Safety instructions

The following safety instructions are also provided in the manual “Safety notes and other important information”.

This device meets the relevant safety regulations for IT equipment. If you have any questions about whether you can install the server in the intended environment, please contact your sales outlet or our customer service team.

CAUTION!

- The actions described in this manual should only be performed by technical specialists.
- Equipment repairs should only be performed by service staff. Please note that unauthorized interference with the system will void the warranty and exempt the manufacturer from all liability.
- Any failure to observe the guidelines in this manual, and any improper repairs could expose the user to risks (electric shock, energy hazards, fire hazards) or damage the equipment.
Safety instructions

Before starting up

CAUTION!

- During installation and before operating the device, observe the instructions on environmental conditions for your device (see section “Technical data” on page 11).

- If the server has been moved from a cold environment, condensation may form both inside and on the outside of the machine. Wait until the server has acclimatized to room temperature and is absolutely dry before starting it up. Material damage may be caused to the server if this requirement is not met.

- Only transport the server in the original packaging or in packaging that protects it from impacts and jolts.

Installation and operation

CAUTION!

- This unit should not be operated in ambient temperatures above 35 °C.

- If the unit is integrated into an installation that draws power from an industrial power supply network with an IEC309 connector, the power supply's fuse protection must comply with the requirements for non-industrial power supply networks for type A connectors.

- The unit automatically adjusts itself to a mains voltage in a range of 100 V - 240 V. Ensure that the local mains voltage lies within these limits.

- This device must only be connected to properly grounded shock-proof sockets or insulated sockets of the rack's internal power supply with tested and approved power cables.

- Ensure that the device is connected to a grounded shockproof socket close to the device.
Important notes

CAUTION!

- Ensure that the power sockets on the device and the grounded shockproof sockets are freely accessible.
- The On/Off button or the main power switch (if present) does not isolate the device from the mains power supply. To disconnect it completely from the mains power supply, unplug all network power plugs from the grounded shockproof sockets.
- Always connect the server and the attached peripherals to the same power circuit. Otherwise you run the risk of losing data if, for example, the server is still running but a peripheral device (e.g. memory subsystem) fails during a power outage.
- Data cables must be adequately shielded.
- The EN 50173 and EN 50174-1/2 standards apply for LAN cabling. The minimum requirement is the use of a category 5 screened LAN cable for 10/100 Mbit/s Ethernet, or a category 5e cable for Gigabit Ethernet. The requirements from the ISO/IEC 11801 specification must also be met.
- Route the cables in such a way that they do not create a potential hazard (make sure no-one can trip over them) and that they cannot be damaged. When connecting the server, refer to the relevant instructions in this manual.
- Never connect or disconnect data transmission lines during a storm (risk of lightning strike).
- Make sure that no objects (e.g. jewelery, paperclips etc.) or liquids can get inside the server (risk of electric shock, short circuit).
- In emergencies (e.g. damaged casing, controls or cables, penetration of liquids or foreign bodies), switch off the server immediately, remove all power plugs and contact your sales outlet or customer service team.
CAUTION!

- Proper operation of the system (in accordance with IEC 60950-1/EN 60950-1) is only ensured if the casing is completely assembled and the rear covers for the installation slots have been fitted (electric shock, cooling, fire protection, interference suppression).

- Only install system expansions that satisfy the requirements and rules governing safety and electromagnetic compatibility and those relating to telecommunication terminals. If you install other expansions, they may damage the system or violate the safety regulations. Information on which system expansions are approved for installation can be obtained from our customer service center or your sales outlet.

- The components marked with a warning notice (e.g. lightning symbol) may only be opened, removed or exchanged by authorized, qualified personnel. Exception: hot-pluggable power supply units can be replaced.

- The warranty is void if the server is damaged during installation or replacement of system expansions.

- Only set screen resolutions and refresh rates that are specified in the operating manual for the monitor. Otherwise, you may damage your monitor. If you are in any doubt, contact your sales outlet or customer service center.
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).

- Do not throw batteries into the trash can. They must be disposed of in accordance with local regulations concerning special waste.

- The battery must be disposed of in accordance with local regulations concerning special waste.

- Replace the lithium battery on the system board in accordance with the instructions in the technical manual for the system board.

- All batteries containing pollutants are marked with a symbol (a crossed-out garbage can). In addition, the marking is provided with the chemical symbol of the heavy metal decisive for the classification as a pollutant:

  Cd Cadmium
  Hg Mercury
  Pb Lead
Working with CDs/DVDs and CD/DVD drives

When working with devices with CD/DVD drives, these instructions must be followed.

CAUTION!

- Only use CDs/DVDs that are in perfect condition in your server's CD/DVD drive, in order to prevent data loss, equipment damage and injury.

- Check each CD/DVD for damage, cracks, breakages etc. before inserting it in the drive.

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 circumstances, sharp CD/DVD fragments can pierce the cover of the CD/DVD drive (equipment damage) and can fly out of the device (danger of injury, particularly to uncovered body parts such as the face or neck).

You can prevent mechanical damage and damage to the CD/DVD drive, as well as premature CD/DVD wear, by observing the following suggestions:

- Only insert 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.

Laser information

The CD/DVD drive complies with IEC 60825-1 laser class 1.

CAUTION!

The CD/DVD drive contains a light-emitting diode (LED), which under certain circumstances produces a laser beam stronger than laser class 1. Looking directly at this beam is dangerous.

Never remove parts of the CD/DVD drive casing!
Important notes

Safety instructions

Modules with Electrostatic-Sensitive Devices

Modules with electrostatic-sensitive devices are identified by the following sticker:

![ESD label]

Figure 1: ESD label

When you handle components fitted with ESDs, you must always observe the following points:

- Switch off the system and remove the power plugs from the power outlets before installing or removing components with ESDs.
- You must always discharge static build-up (e.g. by touching a grounded object) before working with such components.
- Any devices or tools that are used must be free of electrostatic charge.
- Wear a suitable grounding cable that connects you to the external chassis of the system unit.
- Always hold components with ESDs at the edges or at the points marked green (touch points).
- Do not touch any connectors or conduction paths on an ESD.
- Place all the components on a pad which is free of electrostatic charge.

For a detailed description of how to handle ESD components, see the relevant European or international standards (EN 61340-5-1, ANSI/ESD S20.20).
Other important information:

- During cleaning, observe the instructions in section “Cleaning the server” on page 45.
- Keep this operating manual and the other documentation (such as the technical manual, CD) close to the device. All documentation must be included if the equipment is passed on to a third party.

3.2 CE conformity

The system complies with the requirements of the EC directives 2004/108/EC regarding “Electromagnetic Compatibility” and 2006/95/EC “Low Voltage Directive”. This is indicated by the CE marking (CE = Communauté Européenne).

3.3 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 Standard ICES-003 for digital apparatus. 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 warranty that interference will not occur in a particular installation.
Important notes

FCC Class A Compliance Statement

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.

Fujitsu Technology Solutions 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 Fujitsu Technology Solutions. 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 and ICES rules.

**WARNING:**

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.
3.4 ENERGY STAR

The PRIMERGY TX100 S1 has a power management function that reduces power consumption in energy-saving mode to <65 W in typical configurations. The server thus satisfies the requirements of the U.S. Environmental Protection Agency (EPA).

The EPA estimates that computer systems use around 5% of all electricity in the office sector and that this figure is growing rapidly. If all computer systems and peripherals were placed in energy-saving mode when not in use, the overall savings in electricity could amount to some US $2 billion annually. These savings would also prevent the emission of 20 million tons of carbon dioxide into the atmosphere - equivalent to the emissions from 5 million automobiles.

As an ENERGY STAR partner, Fujitsu Technology Solutions GmbH has determined that in some particular configurations this product meets the ENERGY STAR guidelines for energy efficiency.

3.5 Transporting the server

CAUTION!

Only transport the server in its original packaging or in packaging that protects it from impacts and jolts. Do not unpack the server until it is at its installation location.

If you need to lift or transport the server, ask other people to help you.
3.6 Environmental protection

Environmentally-friendly product design and development

This product has been designed in accordance with the Fujitsu Technology Solutions standard for “environmentally friendly product design and development”. This means that key factors such as durability, selection and labeling of materials, emissions, packaging, ease of dismantling and recycling have been taken into account.

This saves resources and thus reduces the harm done to the environment.

Energy-saving information

Devices that do not need to be constantly switched on should be switched off until they are needed as well as during long breaks and after completion of work.

Packaging information

Do not throw away the packaging. You may need it later for transporting the system. If possible, the equipment should only be transported in its original packaging.

Information on handling consumables

Please dispose of printer consumables and batteries in accordance with the applicable national regulations.

In accordance with EU directives, batteries must not be disposed of with unsorted domestic waste. They can be returned free of charge to the manufacturer, dealer or an authorized agent for recycling or disposal.

All batteries containing pollutants are marked with a symbol (a crossed-out garbage can). They are also marked with the chemical symbol for the heavy metal that causes them to be categorized as containing pollutants:

Cd Cadmium
Hg Mercury
Pb Lead
Environmental protection

Important notes

Labels on plastic casing parts

Please avoid sticking your own labels on plastic parts wherever possible, since this makes it difficult to recycle them.

Returns, recycling and disposal

The device must not be disposed of with domestic waste. This device is labeled in compliance with European directive 2002/96/EC on waste electrical and electronic equipment (WEEE).

This directive sets the framework for returning and recycling used equipment and is valid across the EU. When returning your used device, please use the return and collection systems available to you. Further information can be found at www.ts.fujitsu.com/recycling.

Details regarding the return and recycling of devices and consumables within Europe can also be found in the “Returning used devices” manual, via your local Fujitsu Technology Solutions branch or from our recycling center in Paderborn:

Fujitsu Technology Solutions
Recycling Center
D-33106 Paderborn

Tel. +49 5251 8 18010
Fax +49 5251 8 333 18010
4 Installing the hardware

CAUTION!

- Follow the safety instructions in the chapter “Important notes” on page 17.
- Do not expose the server to extreme environmental conditions (see “Ambient conditions” on page 13). Protect the server from dust, humidity and heat.
- Make sure that the server is acclimatized for the time indicated in this table before putting it into operation.

<table>
<thead>
<tr>
<th>Temperature difference (°C)</th>
<th>Minimum acclimatization time (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>20</td>
<td>8</td>
</tr>
<tr>
<td>25</td>
<td>9</td>
</tr>
<tr>
<td>30</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 1: Acclimatization time

In the table “Acclimatization time”, the temperature difference refers to the difference between the operating environment temperature and the temperature to which the server was exposed previously (outside, transport or storage temperature).
4.1 Unpacking the server

CAUTION!

Follow the safety instructions in chapter “Important notes” on page 17.

- Transport the server to the place where you want to set it up.
- Unpack all the individual parts.
  Keep the original packaging in case you want to transport the server again.
- Check the delivery for any damage during transport.
- Check whether the items delivered match the details on the delivery note.

The model rating plate is located on the top side of the server, at the back on the left.

- If the delivery is damaged or does not match the delivery note, contact your supplier immediately!
4.2 Setting up the server

CAUTION!
Follow the safety instructions in chapter “Important notes” on page 17.

Set up the server.

CAUTION!
- The device must be protected from direct sunlight.
- Ensure that the minimum clearances (see “Ventilation clearance” on page 13) are observed.
- Access to the rear of the server must be assured so that other devices (e.g. memory subsystems) can be connected.
- The mains plug must be accessible easily and safely.
- A clearance of at least 200 mm must be maintained in front of and behind the system to ensure proper ventilation.

Wire the server. Read the information in section “Connecting devices to the server” on page 32 and section “Notes on connecting/disconnecting cables” on page 35.

Connect the system to the mains (see section “Connecting the server to the mains” on page 34).
4.3 Connecting devices to the server

Most of the ports for external devices are on the rear of the server. The additional ports available on your server depend on the expansion cards installed. The standard ports (figure 2) are marked with symbols, and some are color-coded.

![Connection panel on the rear](image)

<table>
<thead>
<tr>
<th>Port</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PS/2 mouse port</td>
</tr>
<tr>
<td>2</td>
<td>PS/2 keyboard port</td>
</tr>
<tr>
<td>3</td>
<td>Serial port COM1</td>
</tr>
<tr>
<td>4</td>
<td>Monitor port (VGA)</td>
</tr>
<tr>
<td>5</td>
<td>6 x USB port</td>
</tr>
<tr>
<td>6</td>
<td>LAN port 1</td>
</tr>
</tbody>
</table>
Installing the hardware

The corresponding indicators are explained in section “Rear of server” on page 39.

Some of the devices connected require special software (e.g. drivers) (see documentation for the connected device).

Connect the devices.

Two additional USB ports are located on the front of the server (see figure 4 on page 37).

If components with large power requirements (e.g. external USB hard disk drives) are connected simultaneously, these USB ports may be switched off.

Connecting the keyboard, mouse and monitor

Connect the monitor, the keyboard and the mouse to the standard ports of the server (see figure 2 on page 32).

Connect the power cable of the monitor to a grounded mains outlet of the in-house mains and/or to the mains socket strip of the rack.

CAUTION!

The rated current for the monitor is indicated on the technical data label on the monitor or in the operating manual for the monitor.
4.4 Connecting the server to the mains

The server is fitted with a built-in power supply.

**CAUTION!**

The power supply unit automatically adapts to a mains voltage between 100 V - 240 V. Make sure that your local mains voltage is within the range.

![Connecting the server to the mains](image)

- Connect the insulated connector of the power cable to the power supply unit of the server (1).
- Insert the mains plug into an earthing contact socket (2) in the internal supply network.
4.5 Notes on connecting/disconnecting cables

**CAUTION!**

Always read the documentation supplied with the device you wish to connect.

Never connect, or disconnect cables during a thunderstorm.

Never pull on a cable when disconnecting it. Always take hold of the cable by the plug.

Follow the sequence described below to connect or disconnect external devices to or from the server:

**Connecting cables**

- Turn off all power and equipment switches.
- Disconnect all power plugs from the grounded shockproof sockets.
- Connect all cables to the server and peripherals.
- Plug all data communication cables into the utility sockets.
- Plug all power cables into the grounded shockproof sockets.

**Disconnecting cables**

- Turn off all power and equipment switches.
- Disconnect all power plugs from the grounded shockproof sockets.
- Unplug all data communication cables from the utility sockets.
- Disconnect the relevant cables from the server and all the peripherals.
5 Installation and operation

CAUTION!
Follow the safety instructions in chapter “Important notes” on page 17.

5.1 Control and display elements

5.1.1 Front of server

![Figure 4: Front of server](image)

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DVD drive activity indicator</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>DVD eject button</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>hard disk activity indicator</td>
<td></td>
</tr>
</tbody>
</table>

TX100 S1 Operating Manual 37
5.1.1.1 Control elements

On/Off button

When the system is switched off, it can be switched on again by pressing the On/Off button.

When the system is operating, pressing the On/Off button will switch off the system.

The On/Off button does not disconnect the server from the mains voltage. To disconnect from the mains completely, remove the power plug(s).

DVD eject button

When the DVD drive button is pressed, the DVD drive opens or closes.

5.1.1.2 Indicators

Power indicator

Glowes green when the server is switched on.

Hard disk activity indicator (green)

Lights up green when an internal drive (HDD or backup drive) is being accessed.

DVD drive indicator (green)

Lights up green when the storage medium is being accessed.
5.1.2 Rear of server

Master switch

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>Server is switched OFF.</td>
</tr>
<tr>
<td>I</td>
<td>Server is switched ON.</td>
</tr>
</tbody>
</table>

Figure 5: Master switch
## LED indicators on the LAN connection

![Figure 6: LED indicators on the LAN connection](image)

<table>
<thead>
<tr>
<th></th>
<th>Characteristic</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LAN connection indicator (green)</td>
<td>Lights up when a LAN connection is established. Flashes when data is being sent or received.</td>
</tr>
</tbody>
</table>
| 2 | LAN line speed (orange/green) | Off = 10 Mbit/s (or no connection, if LED 1 is also off)  
Green = 100 Mbit/s  
Orange = 1000 Mbit/s. |
5.2 Switching the server on and off

CAUTION!

It nothing appears on the screen but flickering stripes after switching on the server, switch the server off immediately (see chapter “Troubleshooting and tips” on page 49).

The master switch and the On/Off button do not disconnect the server from the mains voltage. To completely disconnect it from the mains voltage, remove the power plug from the socket.

Switching the server on

The power-on indicator (item 4 in figure 4 on page 37) lights up orange (standby mode) if the server is connected to the mains and the master switch (see figure 5 on page 39) is switched on.

- Starting up for the first time:
  - Press the On/Off button (item 7 in figure 4 on page 37).
  - Insert ServerView Suite DVD 1 in the DVD drive.
  - Follow the on-screen instructions (see also section “Configuring the server and installing the operating system with the ServerView Installation Manager” on page 44 or section “Configuring the server and installing the operating system without the ServerView Installation Manager” on page 45).

- System already installed:
  - Press the On/Off button (item 4 in figure 4 on page 37).

The server is switched on, performs a system test and boots the operating system.

In the case of configurations with a large memory size, the boot process may be prolonged and the screen may remain dark for about 20 seconds.
Switching the server on and off

Switching the server off

The Power-on indicator (item 7 in figure 4 on page 37) lights up green.

- Shut down the operating system properly.

The server is switched off automatically.

If the operating system does not switch the server off automatically, press the On/Off button for at least four seconds and/or send a control signal for power button override.

Other On/Off options

Besides the On/Off button, the server can be switched ON and OFF in the following ways:

- **Timer-controlled switch-on/off**
  
  Using the ServerView Operations Manager, you can configure that the server is switched on/off controlled by timer.

- **Ring indicator**
  
  The server is switched on by an internal or external modem.

- **Wake up On LAN (WOL)**
  
  The server is switched on by a command via the LAN (Magic Packet™).

- **After power failure**
  
  The server automatically reboots following a power failure (depending on the settings in the BIOS).

- **Power button override**
  
  The system can be switched off by pressing and holding down the On/Off button (for approximately 4 - 5 seconds).

  **CAUTION!**
  
  There is a risk that data may be lost.
5.3 Configuring the server

This section contains information about configuring the server and installing the operating system.

5.3.1 Configuring the onboard SATA controller

A 6-port SATA controller is integrated on the system board. You can configure the onboard SATA controller either before or during installation with the ServerView Installation Manager. Using the ServerView Installation Manager is recommended.

The controller has its own configuration utility. For further information, refer to the “Embedded MegaRAID Software User’s Guide” (on the PRIMERGY ServerView Suite DVD 2 under Industry Standard Servers - Expansion Cards - Storage Adapters - LSI RAID / SCSI Controllers).

Descriptions of operating systems not covered in the controller manual are provided in the corresponding readme files on the driver CDs.
Configuring the server and installing the operating system with the ServerView Installation Manager

Using the ServerView Installation Manager on the PRIMERGY ServerView Suite DVD 1 provided, you can conveniently configure the server and install the operating system. This includes configuring the server-specific settings using the ServerView Configuration Manager and configuring the RAID controller using the **ServerView RAID Manager**.

**Advantages of the ServerView Installation Manager**

- Wizard assisted configuration of your server hardware and disk arrays
- Wizard assisted installation of all leading server operating systems
- Wizard-assisted creation of configuration files for unattended installation of several PRIMERGY servers with identical hardware configurations.
- Installation of drivers and additional software.

*The software that can be installed depends on your server’s hardware configuration. This configuration is detected automatically.*

*Descriptions of operating systems not covered in the RAID controller manual are provided in the corresponding readme files on the driver CDs.*

To find out how to operate the ServerView Installation Manager and for further information, refer to the associated manual.

If you are using the ServerView Installation Manager, you can skip the following section on how to configure the server and install the operating system. Continue from section “Cleaning the server” on page 45.
5.3.3 Configuring the server and installing the operating system without the ServerView Installation Manager

Configuring the onboard SATA controller

Configure the controller as described in section “Configuring the onboard SATA controller” on page 43.

Installing the operating system

- Insert the CD/DVD for the operating system you want to install.
- Reboot the server.
- Follow the instructions on screen and in the manual for the operating system.

5.4 Cleaning the server

⚠️ CAUTION!

Switch the server off and disconnect the power plugs from the grounded shockproof sockets.

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 clear.

Clean the keyboard and the mouse with a disinfecting cloth.

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

The server is fitted with an intrusion detection switch, which enables the ServerView Operations Manager program to detect and log any removal of the left cover or housing cover for the HDD modules.

To prevent it being removed from its location, the server can be secured to a fixed object with a steel cable (or lock) running through a recess on the back (or side cover).

To protect the system and data internally against unauthorized access, you can activate the security functions of the BIOS Setup.

6.1 BIOS Setup security functions

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

A detailed description of the Security menu and how to assign passwords can be found in the BIOS Setup documentation on the PRIMERGY ServerView Suite DVD 2.
7 Troubleshooting and tips

CAUTION!
Follow the safety instructions in the “Safety notes and other important information” manual and in chapter “Important notes” on page 17.

If a fault occurs, attempt to resolve it using the measures described:

– in this chapter,
– in the documentation for the connected devices,
– in the help systems of the software used.

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

► Make a list of the steps performed and the circumstances that led to the fault. Also make a list of any error messages that were displayed.
► Switch off the server.
► Contact our customer service team.

7.1 Power-on indicator remains unlit

The power-on indicator remains dark after you switch on your device.

Power cable incorrectly connected
► Make sure that the power cable(s) is/are correctly connected to the server and the grounded socket(s).

Power supply overloaded
► Disconnect the server power plug(s) from the power socket(s).
► Wait a few seconds before you plug it/them into the grounded socket(s) again.
► Switch on your server.
7.2 Server switches itself off

Server Management has detected an error

► Check the error list or the ErrorLog file in the ServerView Operations Manager, and attempt to eliminate the error.

7.3 Screen remains blank

Monitor is switched off

► Switch on your monitor.

Screen has gone blank

► Press any key on the keyboard.

or

► Deactivate screen saver. Enter the appropriate password.

Brightness control is set to dark

► Set the brightness control on the monitor to light. For detailed information, refer to the operating manual supplied with your monitor.

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 grounded socket.

► Check whether the monitor cable is properly connected to the server and monitor (if it is plugged in with a connector). If a separate graphics card is installed in the server, then the monitor cable must be connected to the graphics card.

► Switch on the monitor and the server.
7.4 Flickering stripes on monitor screen

CAUTION!

Switch off the server immediately. Risk of damaging the server.

Monitor does not support the set 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 for your monitor.

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

7.5 No screen display or display drifts

The wrong horizontal frequency 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 for your monitor.

- Refer to the documentation for your operating system or the software for the screen controller for details of how to set the correct horizontal frequency for your monitor, and follow the procedure accordingly.
7.6 Incorrect date and time

Set the date and time in the operating system or in the BIOS Setup under the Main menu, using System Date and System Time respectively.

Note that the operating system may affect the system time. For example, the operating system time may deviate from the system time under Linux, and would overwrite the system time in the default setting on shutdown.

If the date and time are still wrong after the server has been switched off and back on again, replace the lithium battery (for a description refer to the Technical Manual for the D2679-B11 system board) or contact our customer service team.

7.7 Hard disk drive error messages at system boot

Various hard disk drive error messages may occur when the system is rebooted. These error messages are caused by modifications in the selected RAID configuration.

RAID controller configuration incorrect

Check and correct the settings for the drives using the RAID controller configuration program.

For more information on configuring the controller, see section “Configuring the onboard SATA controller” on page 43.
7.8 Added drive reported as defective

RAID controller is not configured for this drive

- Reconfigure the RAID controller for the drive using the corresponding utility. For further information, refer to the "Embedded MegaRAID Software User's Guide" (on the PRIMERGY ServerView Suite DVD 2 under Industry Standard Servers - Expansion Cards - Storage Adapters - LSI RAID / SCSI Controllers).

If the hard disk drive continues to be shown as defective, then replace it (see the "PRIMERGY TX100 S1 Options Guide").

7.9 Error message on screen

The meaning of the error message is explained in the documentation for the relevant components and programs on the PRIMERGY ServerView Suite DVD 2.
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