FUJITSU

FUJITSU Server PRIMERGY TX1320 M1

Operating Manual

Edition July 2014

Comments… Suggestions… Corrections…

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Feel free to send us your comments by e-mail to manuals@ts.fujitsu.com.

Certified documentation
according to DIN EN ISO 9001:2008

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 9001:2008.

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Before reading this manual

For your safety

This manual contains important information for safely and correctly using this product.

Carefully read the manual before using this product. Pay particular attention to the accompanying manual "Safety Notes and Regulations" and ensure these safety notes are understood before using the product. Keep this manual and the manual "Safety Notes and Regulations" in a safe place for easy reference while using this product.

Radio interference

This product is a "Class A" ITE (Information Technology Equipment). In a domestic environment this product may cause radio interference, in which case the user may be required to take appropriate measures.   VCCI-A

Aluminum electrolytic capacitors

The aluminum electrolytic capacitors used in the product's printed circuit board assemblies and in the mouse and keyboard are limited-life components. Use of these components beyond their operating life may result in electrolyte leakage or depletion, potentially causing emission of foul odor or smoke.

As a guideline, in a normal office environment (25°C) operating life is not expected to be reached within the maintenance support period (5 years). However, operating life may be reached more quickly if, for example, the product is used in a hot environment. The customer shall bear the cost of replacing replaceable components which have exceeded their operating life. Note that these are only guidelines, and do not constitute a guarantee of trouble-free operation during the maintenance support period.

High safety use

This product has been designed and manufactured to be used in commercial and/or industrial areas as a server.

When used as visual display workplace, it must not be placed in the direct field of view to avoid incommoding reflections (applies only to TX server systems).

The device has not been designed or manufactured for uses which demand an extremely high level of safety and carry a direct and serious risk of life or body if such safety cannot be assured.

These uses include control of nuclear reactions in nuclear power plants, automatic airplane flight control, air traffic control, traffic control in mass transport systems, medical devices for life support, and missile guidance control in weapons systems (hereafter, "high safety use"). Customers should not use this product for high safety use unless measures are in place for ensuring the level of safety demanded of such use. Please consult the sales staff of Fujitsu if intending to use this product for high safety use.

Measures against momentary voltage drop

This product may be affected by a momentary voltage drop in the power supply caused by lightning. To prevent a momentary voltage drop, use of an AC uninterruptible power supply is recommended.

(This notice follows the guidelines of Voltage Dip Immunity of Personal Computer issued by JEITA, the Japan Electronics and Information Technology Industries Association.)

Technology controlled by the Foreign Exchange and Foreign Trade Control Law of Japan

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Harmonic Current Standards

This product conforms to harmonic current standard JIS C 61000-3-2.

Only for the Japanese market: About SATA hard disk drives

The SATA version of this server supports hard disk drives with SATA / BC-SATA storage interfaces. Please note that the usage and operation conditions differ depending on the type of hard disk drive used.

Please refer to the following internet address for further information on the usage and operation conditions of each available type of hard disk drive:

http://jp.fujitsu.com/platform/server/primergy/harddisk/

Only for the Japanese market:

Shielded LAN cables should be used in this product.

 i   Although described in this manual, some sections do not apply to the
     Japanese market. These options and routines include:

–   CSS (Customer Self Service)

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1 Introduction

The PRIMERGY TX1320 M1 server is an Intel-based server for small and medium-sized networks and can be used in the horizontal position or as a desktop model.

The PRIMERGY TX1320 M1 server features exceptionally low energy consumption, very quiet running and a compact size. As a result, it is also the ideal solution for small offices.

Thanks to its highly developed hardware and software components, the PRIMERGY TX1320 M1 server offers a high level of data security and availability. This includes hot-plug HDD modules (2.5-inch variant), the ServerView Operations Manager for server management, Prefailure Detection and Analysing (PDA), and Automatic Server Reconfiguration and Restart (ASR&R).

Security functions in the BIOS-setup protect the data on the server against manipulation. Additional security is provided by the lockable drive cover.

1.1 Concept and target groups for this manual

This operating manual describes how to install, set up and operate your server.

This operating manual is intended for those responsible for installing the hardware and ensuring that the system runs smoothly. It contains all the information you need to put your PRIMERGY TX1320 M1 into operation.

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 TX1320 M1 can be found in the following documents:

– "Quick Start Hardware - FUJITSU Server PRIMERGY TX1320 M1" (only included as a printed copy)

– "Quick Start Guide"

– "Safety Notes and Regulations" manual " 安全上のご注意 " for the Japanese market

– "Warranty" manual " 保証書 " for the Japanese market

– "ServerView Suite Local Service Concept - LSC" manual

– "Returning used devices" manual and "Service Desk" leaflet " サポート＆サービス " for the Japanese market

– "FUJITSU Server PRIMERGY TX1320 M1 Upgrade and Maintenance Manual"

– "D3239 BIOS Setup Utility for FUJITSU Server PRIMERGY TX1320 M1 Reference Manual"

i All documentation on PRIMERGY hardware and ServerView software is available online from the Fujitsu manuals server at:

– For the global market *http://manuals.ts.fujitsu.com*
– For the Japanese market:
  http://jp.fujitsu.com/platform/server/primergy/manual

The complete PRIMERGY documentation set can also be downloaded as a DVD ISO image at:

– For the global market: *ftp://ftp.ts.fujitsu.com/images/serverview/manuals*
– For the Japnese market: *http://jp.fujitsu.com/primergy/downloads*

Further sources of information:

– ServerView Suite Glossary
– Manual for the monitor
– Documentation for the boards and drives
– Operating system documentation
– Information files in your operating system

1.3   Notational conventions

The following notational conventions are used in this manual:

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

2 Functional overview

This section provides information on the features and technical data of the PRIMERGY TX1320 M1 server.

2.1 Features

Intel® Xeon®, Pentium®, or Core i3 processor

The server has an Intel® Xeon®, Pentium®, or Core i3 processor for high-speed data processing.

Customer Self Service (CSS)

The PRIMERGY Customer Self Service (CSS) concept enables you to identify and replace the affected component yourself in the case of certain error scenarios.

In the CSS concept, you can replace the following components yourself in the event of an error:

– Hot-plug hard disk drives

– Memory modules

– System fans

– Expansion cards

For information on replacing these components, see the "FUJITSU Server PRIMERGY TX1320 M1 Upgrade and Maintenance Manual".

CSS indicators on the control panel and on the back of the PRIMERGY server provide you with information if a CSS event arises.

In addition, CSS errors are displayed in the ServerView Operations Manager, the server management software from Fujitsu.

In the event of errors, the ServerView Operations Manager refers you directly to the affected component and its order information in the Illustrated Spares catalog of the server in question. (This feature is not available for the Japanese market.)

i	Further information on the CSS concept is provided in the "PRIMERGY ServerView Suite Local Service Concept - LSC" manual on the PRIMERGY ServerView Suite DVD.

For the latest information on optional products provided for the TX1320 M1 see the configurator of the server:

http://ts.fujitsu.com/products/standard_servers/index.html
(for the EMEA market)

http://jp.fujitsu.com/platform/server/primergy/system/
(for the Japanese market)

System board

The features of the system board are described in the "FUJITSU Server PRIMERGY TX1320 M1 Upgrade and Maintenance Manual" and in the "D3239 BIOS Setup Utility for FUJITSU Server PRIMERGY TX1320 M1 Reference Manual" for the firmware.

Trusted Platform Module (TPM)

A Trusted Platform Module (TPM) for safer storage of keys can be implemented as an option. This module enables programs from third party manufacturers to store key information (e.g. drive encryption using Windows Bitlocker Drive Encryption).

The TPM is activated via the BIOS system (for more information, refer to the "D3239 BIOS Setup Utility for FUJITSU Server PRIMERGY TX1320 M1 Reference Manual").

CAUTION!

– When using the TPM, note the program descriptions provided by the third party manufacturers.

– You must also create a backup of the TPM content. To do this, follow the third party manufacturer's instructions. Without this backup, if the TPM or the system board is faulty you will not be able to access your data.

– If a failure occurs, please inform your service about the TPM activation before it takes any action, and be prepared to provide them with your backup copies of the TPM content.

Hard disk drives

The server is shipped with one of the following drive cages:

– For up to two non hot-plug 3.5-inch SATA hard disk drives:

Up to two 3.5-inch SATA HDD modules can be used in the drive cage. Each HDD module can accommodate an SATA hard disk drive with a maximum height of 1 inch.

– For up to six 2.5-inch SAS/SATA hard disk drives:

Up to four 2.5-inch SAS/SATA HDD modules can be used in the drive cage, up to two 2.5-inch SAS/SATA HDD modules can be used in the expansion box. Each HDD module can accommodate an SAS/SATA hard disk drive with a 2.5-inch format. The modules are connected to the SAS/SATA backplane wirelessly. This allows HDD modules to be plugged in or pulled out easily. If the server has a corresponding RAID configuration, defective HDD modules can also be replaced during operation.

Hybrid configurations of SAS and SATA HDD modules are not supported.

Onboard SATA controller

A 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 75.

SAS/SATA RAID controller

The server is available with the following SAS/SATA RAID controllers for operating the internal SAS/SATA hard disk drives:

– Modular RAID 0/1 controller with "Integrated Mirroring Enhanced" (SAS IME) for SAS1.0

   RAID levels 0, 1 and 1E are supported for internal hard disk drive configurations.

– Modular RAID 0/1 controller with "MegaRAID functionality" (SAS MegaRAID) for SAS1.0 and SAS2.0

   RAID levels 0, 1,10 and 1E are supported for internal hard disk drive configurations.

– Modular RAID 5/6 controller with "MegaRAID functionality" (SAS MegaRAID) for SAS1.0 and SAS2.0

   RAID levels 0, 1, 10, 1E, 5, 50, 6 and 60 are supported for internal hard disk drive configurations. As an option, a battery backup unit (BBU) or a flash backup unit (FBU) can save the memory content even if the power fails. Cache memory size of 512 MB or 1 GB is available.

| i | For more information on configuring the controller, see section "Configuring the server" on page 75.

Further information on SAS/SATA RAID controllers is provided in the "Modular RAID Controller Installation Guide" (on the Fujitsu manuals server under *x86 Servers - Storage Adapters - LSI RAID / SCSI Controllers*).

Further information on other SAS/SATA RAID controllers (e.g. for operating external SAS/SATA hard disk drives or tape drives) is available on ServerView Suite DVD under *x86 Servers - Expansion Cards - Storage Adapters - LSI RAID / SCSI Controllers*.

Accessible drives/components

Two mounting locations are available:

– a 3.5-inch bay for a backup drive.

– a 5.25-inch bay with a slimline DVD drive.

The accessible drives cannot be replaced during operation.

Power supply

The server has a built-in power supply unit, which automatically sets itself to a mains voltage in the range 100V - 240V.

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.

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

The PDA (Prefailure Detection and Analysis) technology from Fujitsu analyzes and monitors all components that are critical for system reliability.

A RAID controller supports different RAID levels and increase the availability and data security of the system.

The hot-plug HDD modules provide additional availability.

iRMC S4 with integrated management LAN connector

The iRMC S4 (**i**ntegrated **R**emote **M**anagement **C**ontroller) is a Baseboard Management Controller (BMC) with integrated management LAN connector and expanded functionality that was previously only available with additional plug-in cards. In this way, the iRMC S4 enables complete control of PRIMERGY servers, regardless of system status, and thus particularly the control of PRIMERGY servers that are in the "out-of-band" system status.

Major functions supported by the iRMC S4 include the following:

● Browser access via iRMC S4´s own Web server

● Secure communication (SSH, SSL)

● Power Management for the managed server (depending on its system status)

● Power Consumption Management

● Connecting virtual drives as remote storage

● Text-based and graphic console bypass (Advanced Video Redirection)

● Remote Storage

● Command Line Interface (CLI)

● Simple, interactive or script-based iRMC S4configuration

● Customer Self Service (CSS)

● iRMC S4´s own user management

● Multi-computer, global iRMC S4 user administration using an LDAP Directory Service

● Automatic network configuration via DNS / DHCP

● Power supply of the iRMC S4 via the system standby supply

● Full-coverage alarm management

● System Event Log (SEL) reading and processing

● IPMI support

● CIM / WS-MAN support

● Internal Event Log for user login / logout auditing

More information about the iRMC S4 can be found in the "iRMC S4 - integrated Remote Management Controller" user guide (on the Fujitsu manuals server under *x86 Servers - Software - ServerView Suite - Out-Of-Band Management*).

Server management

Server management is implemented using the ServerView Operations Manager supplied and the PDA (Prefailure Detection and Analysis) technology from Fujitsu. PDA reports the threat of a system error or overload at an early stage, allowing preventive measures to be taken.

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

● High-performance, graphical console bypass (AVR) protected by HTTPS/SSL (128 bit)

● Remote storage via USB

● Remote power on

● Intrusion detection in the floorstand model

● Temperature monitoring of the CPU and the surrounding area

● Detailed status and error reports for processors and main memory

● Watchdog timer for Automatic Server Reconfiguration and Restart (ASR&R) in the event that memory modules or processors fail

● Power monitoring

● End-of-life monitoring of fans with prompt notification before failure

● Watchdog timer for monitoring the operating system with ASR&R

Further information on the ServerView Operations Manager is provided in the associated documentation.

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 75).

Service and support

PRIMERGY servers are easy to maintain and modular, thus enabling quick and simple maintenance.

The handles and locks (touch points) used to exchange 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.

PRIMERGY diagnostic LEDs fitted on the system board indicate which component (memory module, processor, fan or expansion card) is not functioning properly.

The Flash EPROM program supplied with the Fujitsu utilities supports a fast BIOS update.

With the iRMC (integrated Remote Management Controller) on the system board, the PRIMERGY TX1320 M1 server can also be maintained and serviced remotely. This enables remote diagnosis for system analysis, remote configuration and remote restart should the operating system or hardware fail.

ServerView Remote Management

ServerView Remote Management is the remote management solution from Fujitsu for PRIMERGY servers. ServerView Remote Management and the relevant hardware components integrated on the system board allow remote monitoring and maintenance as well as fast restoration of operation in the event of errors.

Remote monitoring and maintenance avoids time-consuming and costly on-site repairs and reduces service costs. This leads to a reduction in the total cost of ownership and an excellent return on investment for the remote management solution.

The administrator can access all system information and information from the sensors such as fan speeds or voltages via the iRMC S4's Web interface (see section "iRMC S4 with integrated management LAN connector" on page 20). You can also start the text-based or graphic console bypass (Advanced Video Redirection, AVR) and connect virtual drives as remote storage.

> **i** More information about the iRMC S4 can be found in the "iRMC S4 - integrated Remote Management Controller" user guide (on the Fujitsu manuals server under *x86 Servers - Software - ServerView Suite - Out-Of-Band Management*).

2.2   Server specification

This section explains the specifications for the server. The specifications for this server are liable to be updated without any notice. Please be forewarned.

System Board

System board type	D3239
Chipset	Intel® C224

Processor

Processor quantity and type	1x Intel® Xeon® E3-1200 v3 (quad-core), Celeron®, Pentium®, Core® i3

Memory Modules Configuration

Memory slots	4
Memory slot type	UDIMM (DDR3)
Memory capacity (min. - max.)	2 GB - 32 GB
Memory protection	ECC
Memory notes	1600 MHz memory modules with 2, 4, or 8 GB

Interfaces

USB connectors	7x USB 2.0 (UHCI) with 480 MBit/s (4x external at the rear, 2x external at the front, 1x internal for UFM, no USB wake-up)
	3x USB 3.0 (UHCI) with 5 GBit/s (2x external at the rear, 1x internal for backup device)
Graphics (15-pin)	1 x VGA
Serial 1 (9-pin)	1 x serial RS-232-C, usable for iRMC or system or shared
LAN / Ethernet (RJ-45)	2 x Gbit/s Ethernet

Service LAN (RJ45)	1 x dedicated service LAN port for iRMC S4 (10/100/1000 Mbit/s) Service LAN traffic can be switched to shared onboard Gbit LAN port

Onboard or integrated controllers

RAID Controller	Modular RAID 0/1 controller with "Integrated Mirroring Enhanced" (SAS IME) for SAS1.0. RAID levels 0, 1 and 1E are supported for internal hard disk drive configurations.
	Modular RAID 0/1 controller with "MegaRAID functionality" (SAS MegaRAID) for SAS1.0 and SAS2.0. RAID levels 0, 1,10 and 1E are supported for internal hard disk drive configurations.
	Modular RAID 5/6 controller with "MegaRAID functionality" (SAS MegaRAID) for SAS1.0 and SAS2.0. RAID levels 0, 1, 10, 1E, 5, 50, 6 and 60 are supported for internal hard disk drive configurations.
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.
Remote Management Controller	Integrated Remote Management Controller (iRMC S4, 32 MB attached memory incl. graphics controller), IPMI 2.0 compatible
Trusted Platform Module (TPM)	Infineon / 1.2 (option)

Slots

PCI-Express x8 Gen3	2x
PCI-Express x4 Gen2	1x (mechanically x8)
PCI-Express x1 Gen2	1x (mechanically x4)
Slot notes	in SAS configuration 1x PCI-Express occupied by modular RAID controller

Drive bays

Hard disk bay configuration	6x 2.5-inch hot-plug SAS/SATA or 2x 3.5-inch non hot-plug SATA
Accessible drive bays	1x 3.5/1.6-inch for backup devices; 1x 5.25/0.5-inch for CD-RW/DVD
Notes accessible drives	all possible options described in relevant system configurator

Operating Panel

Operating buttons	On/off switch
	NMI button
	Reset button
	ID button
Status LEDs	System status (orange / yellow)
	Identification (blue)
	Hard disks access (green)
	Power (orange / green / yellow)
	CSS (yellow)
	HDD (orange)
	PSU (orange)
	TEMP (orange)
	CPU (orange)
	MEM (orange)
	FAN (orange)
Status LED at system rear side:	System status (orange / yellow)
	Identification (blue)
	LAN connection (green)
	LAN speed (green / yellow)
	CSS (yellow)

Dimensions / Weight

Upright operating position (W x D x H)	180 mm x 343 mm x 360 mm (including feet)
Horizontal operating position (W x D x H)	340 mm x 343 mm x 98 mm
Weight	up to 10 kg
Weight notes	Weight may vary depending on actual configuration

Ventilation clearance

At least 200 mm on the front and rear.

Ambient conditions

Environment class 3K2 Environment class 2K2	EN 60721 / IEC 721 Part 3-3 EN 60721 / IEC 721 Part 3-2
Temperature:	
Operation (3K2)	10 °C ... 35 °C
Transport (2K2)	-25 °C ... 60 °C
Humidity	10% ... 85% (non condensing)

Condensation during operation must be avoided!

Noise level (depending on the configuration)

	SATA systems	**SAS systems**
Sound power level L_{WAd} (ISO 9296)	3.7 B (standby) 3.7 B (operation)	4.9 B (standby) 5.0 B (operation)
Sound pressure level at adjacent workstation L_{pAm} (ISO 9296)	22 dB (A) (standby) 23 dB (A) (operation)	33 dB (A) (standby) 35 dB (A) (operation)

Electrical values

Power supply configuration	1x standard power supply
Max. output	250 W
Rated voltage range	100 - 240 V
Rated frequency range	47 Hz - 63 Hz
Rated current	max. 6.0 A – 3.0 A (100 V / 240 V)

Compliance with regulations and standards

Product safety and ergonomics	
International	IEC 60950-1 2ed; am1
Europe	
Safety	EN 60950-1 2ed.; am1 EN 62479 EN 62311
Ergonomics	ISO 9241-3 EN 2941-3 EK1-ITB2000:2013
USA / Canada	CSA-C22.2 No. 60950-1-07 2ed. UL 60950-1 2ed.
Taiwan	CNS 14336
China	GB 4943
Electromagnetic compatibility	
International	CISPR 22
Europe	EN 55022 Class A EN 55024 EN 61000-3-2 EN 61000-3-3 ETSI 300386
USA / Canada	47CFR part 15 Class A / ICES-003
Taiwan	CNS 13438 Class A
China	GB 9245 / GB 17625
Japan	VCCI Class A / JEITA
Korea	KN 22 / KN 24
CE marking to EU directives	Low Voltage Directive 2006/95/EC Electromagnetic compatibility 2004/108/EC Restriction of hazardous substances 2011/65/EU

3 Installation steps, overview

This chapter contains an overview of the steps necessary 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 information" on page 33.

► Transport the server to the place where you want to set it up.

► Unpack all parts, 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 46).

► Make sure that all necessary manuals (see "Documentation overview" on page 12) are available; print out the PDF files if required.

► Set up the server (see section "Setting up the server" on page 47).

► Wire the server. Follow the instructions in sections "Connecting devices to the server" on page 53 and "Notes on connecting/disconnecting cables" on page 56.

► Connect the server to the mains (see section "Connecting the server to the mains" on page 54).

► Familiarize yourself with the controls and indicators on the front and rear of the server (see section "Controls and indicators" on page 63).

► 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 ServerView Suite DVD 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 "ServerView Suite Installation Manager" user's guide (on the Fujitsu manuals server under *x86 Servers - Software - 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 76.

–   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 76 or section "Configuring the server and installing the operating
    system without the ServerView Installation Manager" on page 77).

i   You will find more information on installing the server remotely or
    locally in the "ServerView Suite Installation Manager" user's guide
    (on the Fujitsu manuals server under *x86 Servers - Software -
    ServerView Suite - Server Installation and Deployment*).

4 Important information

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

4.1 Safety instructions

| i | The following safety instructions are also provided in the manual "Safety Notes and Regulations" or " 安全上のご注意 ". |

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 must be performed by technical specialists.

● Equipment repairs must 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.

Before starting up

⚠ **CAUTION!**

- During installation and before operating the device, observe the instructions on environmental conditions for your device (see "Ambient conditions" on page 27).

- 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 100V - 240V. Ensure that the local mains voltage lies within these limits.

- This device must only be connected to properly grounded power outlets 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 power outlet close to the device.

CAUTION!

- Ensure that the power sockets on the device and the grounded power outlets 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 power outlets.

- 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 FUJITSU Server PRIMERGY TX1320 M1 Upgrade and Maintenance manual).

- Do not throw batteries into the trash can.

- Batteries 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 FUJITSU Server PRIMERGY TX1320 M1 Upgrade and Maintenance manual.

- 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/BDs and optical drives

When working with devices with optical drives, these instructions must be followed.

⚠ **CAUTION!**

- Only use CDs/DVDs/BDs that are in perfect condition, in order to prevent data loss, equipment damage and injury.

- Check each CD/DVD/BD 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/BD and cause imbalance.

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

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

- High humidity and airborne dust levels are to be avoided. Electric shocks and/or server failures may be caused by liquids such as water, or metallic items, such as paper clips, entering a drive.

- Shocks and vibrations are also to be avoided.

- Do not insert any objects other than the specified CDs/DVDs/BDs.

- Do not pull on, press hard, or otherwise handle the CD/DVD/BD tray roughly.

- Do not disassemble the optical drive.

- Before use, clean the optical disk tray using a soft, dry cloth.

- As a precaution, remove disks from the optical drive when the drive is not to be used for a long time. Keep the optical disk tray closed to prevent foreign matter, such as dust, from entering the optical drive.

- Hold CDs/DVDs/BDs by their edges to avoid contact with the disk surface.

● Do not contaminate the CD/DVD/BD surface with fingerprints, oil, dust, etc. If dirty, clean with a soft, dry cloth, wiping from the center to the edge. Do not use benzene, thinners, water, record sprays, antistatic agents, or silicone-impregnated cloth.

● Be careful not to damage the CD/DVD/BD surface.

● Keep the CDs/DVDs/BDs away from heat sources.

● Do not bend or place heavy objects on CDs/DVDs/BDs.

● Do not write with ballpoint pen or pencil on the label (printed) side.

● Do not attach stickers or similar to the label side. Doing so may cause rotational eccentricity and abnormal vibrations.

● When a CD/DVD/BD is moved from a cold place to a warm place, moisture condensation on the CD/DVD/BD surface can cause data read errors. In this case, wipe the CD/DVD/BD with a soft, dry cloth then let it air dry. Do not dry the CD/DVD/BD using devices such as a hair dryer.

● To avoid dust, damage, and deformation, keep the CD/DVD/BD in its case whenever it is not in use.

● Do not store CDs/DVDs/BDs at high temperatures. Areas exposed to prolonged direct sunlight or near heating appliances are to be avoided.

i You can prevent damage from the optical drive and the CDs/DVDs/BDs, as well as premature wear of the disks, by observing the following suggestions:

– Only insert disks in the drive when needed and remove them after use.
– Store the disks in suitable sleeves.
– Protect the disks from exposure to heat and direct sunlight.

Laser information

The optical drive complies with IEC 60825-1 laser class 1.

CAUTION!

The optical 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 optical drive casing!

Modules with Electrostatic-Sensitive Devices

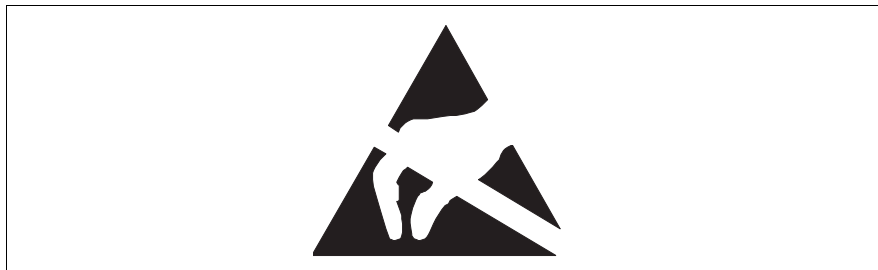Modules with electrostatic-sensitive devices are identified by the following sticker:

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.

> **i** 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 78.

● Keep this operating manual and the other documentation (such as the technical manual, documentation DVD) close to the device. All documentation must be included if the equipment is passed on to a third party.

4.2   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" and the directive of the European Parliament and Council 2011/65/EU. This is indicated by the CE marking (CE = Communauté Européenne).

4.3 FCC Class A Compliance Statement

If there is an FCC statement on the device, it 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. 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 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. 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.

4.4 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.

4.5 Environmental protection

Environmentally-friendly product design and development

This product has been designed in accordance with the Fujitsu 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. Further information can be found at:

– *http://ts.fujitsu.com/products/standard_servers/index.html* (for the EMEA market)
– *http://jp.fujitsu.com/platform/server/primergy/concept/* (for the Japanese market)

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

This packaging information doesn't apply to the Japanese market.

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.

Important information

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

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

Please handle returns, recycling and disposal in accordance with local regulations.

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 *http://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 branch or from our recycling center in Paderborn:

Fujitsu Technology Solutions
Recycling Center
D-33106 Paderborn

Tel.   +49 5251 525 1410
Fax   +49 5251 525 32 1410

5 Hardware installation

CAUTION!

● Follow the safety instructions in the chapter "Important information" on page 33.

● Do not expose the server to extreme environmental conditions (see "Ambient conditions" on page 27). 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.

Temperature difference (°C)	Minimum acclimatization time (hours)
5	3
10	5
15	7
20	8
25	9
30	10

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).

5.1   Unpacking the server

⚠ **CAUTION!**

Follow the safety instructions in "Important information" on page 33.

The server must always be lifted or carried by at least two people. (For the Japanese market, please refer to " 安全上のご注意 ".)

Do not unpack the server until it is at its installation location.

► Transport the server to the place where you want to set it up.

► Unpack all individual parts.

Keep the original packaging in case you want to transport the server again (applies only to EMEA market).

► Check the delivery for any damage during transport.

► Check whether the items delivered match the details on the delivery note.

The product name and serial number of the product can be found on the ID card (see section "ID card" on page 67).

► Notify your supplier immediately should you discover that the items delivered do not correspond to the delivery note.

5.2   Setting up the server

► Set up the server.

Note that the server may be operated in the vertical (see section "Positioning the server vertically" on page 48) or horizontal position (see section "Positioning the server horizontally" on page 51).

CAUTION!
– The device must be protected from direct sunlight.
– The required minimum distances for operation and maintenance areas must be adhered to.
– The server must be accessible at the rear for connection to other devices (e.g. memory subsystem).
– The mains plug must be accessible easily and safely.
– There must be a clearance of at least 200 mm in front of and behind the server to ensure adequate ventilation of the system.

► Wire the server. Follow the instructions in sections "Connecting devices to the server" on page 53 and "Notes on connecting/disconnecting cables" on page 56.

► Connect the server to the mains (see section "Connecting the server to the mains" on page 54).

5.2.1   Positioning the server vertically

⚠️ **CAUTION!**

If the server is positioned vertically, the stabilizers must be attached!

The stabilizers must be attached in the correct direction (see figure 4 on page 50).

Clipping the stabilizers together
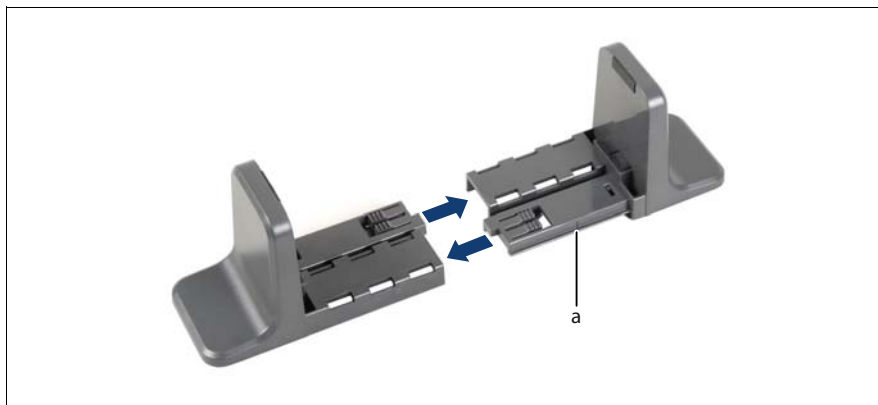
Figure 2: Clipping the stabilizer together

► Clip the stabilizers together in the direction of the arrow as far as the marking line (a).

Adjusting the width of the stabilizers
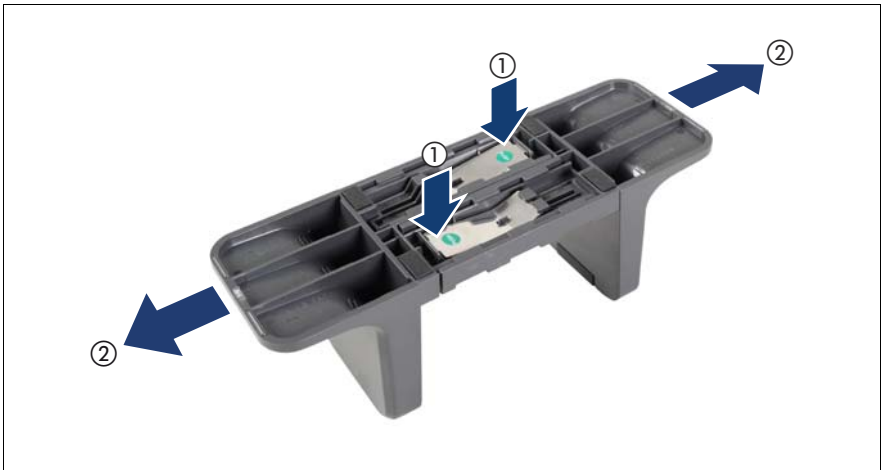
Figure 3: Adjusting the width of a stabilizer

You may have to adjust the width of the stabilizers.

► Press the two locking levers (1) and keep them pressed.

► Pull the stabilizer apart (2).

Placing the server on the stabilizers

Figure 4: Placing the server on stabilizers

► Place the server on the stabilizers (1).

Position the stabilizers between the rubber feet (2).

► Press the stabilizers together (3).

5.2.2   Positioning the server horizontally

⚠ **CAUTION!**

If the server is positioned horizontally, ensure that the rubber feet are pointing downward.

Figure 5: Positioning the server horizontally

► Place the server on its four rubber feet.
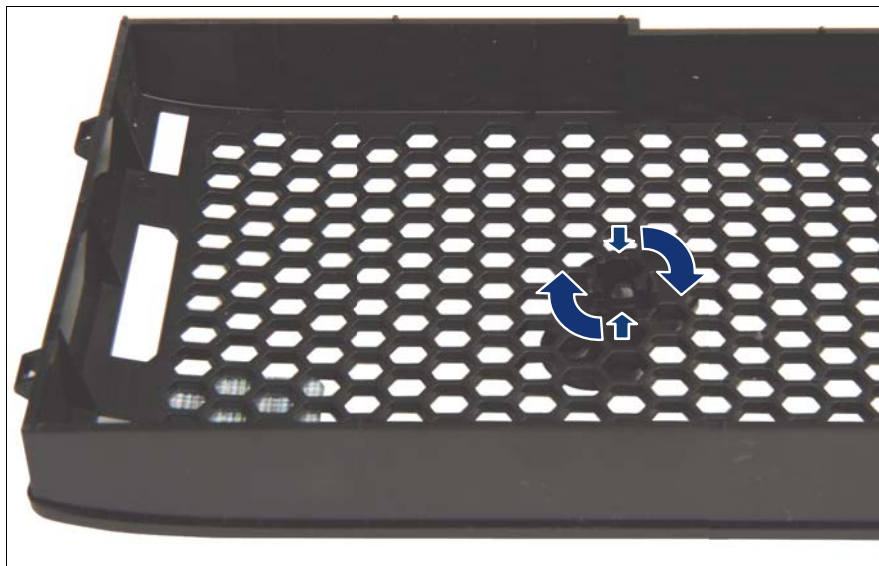
Figure 6: Rotating the Fujitsu Infinity Mark

► Rotate the Fujitsu Infinity Mark clockwise by 90 degrees.

5.3   Connecting devices to the server

The connectors for external devices are on the front and rear of the server. The additional connectors available on your server depend on the expansion cards installed.

The standard connectors are indicated by symbols and color coding:
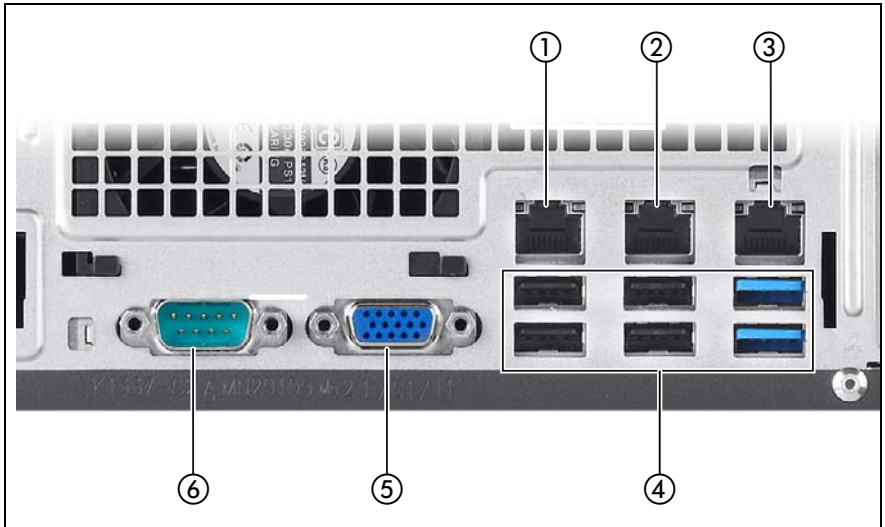
Figure 7: Connector panel on the rear side

1	Management LAN connector, for iRMC S4 server management function
2	Shared LAN connector (LAN1)
3	Standard LAN connector (LAN2)
4	6 USB connectors: 4x USB 2.0 (black); 2x USB3.0 (blue)
5	Video connector (blue)
6	Serial connector COM1 (turquoise)

> **i**   Some of the devices that can be connected may require special drivers (see the documentation for the connected device).

▶ Connect the data cables to the server and peripherals.

Two additional USB connectors are located on the front of the server.

5.4 Connecting the server to the mains

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

⚠ **CAUTION!**

The server is automatically set to a mains voltage in the range 100V - 240V. You may only operate the server if its rated voltage range corresponds to the local mains voltage.

► Connect the insulated connector of the power cable to the power supply unit of the server.

► Insert the mains plug into an earthing contact socket in the internal supply network.

5.4.1 Using cable ties

You can secure the power cable using a cable tie to ensure that the insulated connector cannot be disconnected from the power supply unit accidentally. The cable tie is included in the accessories pack that is delivered together with the server.
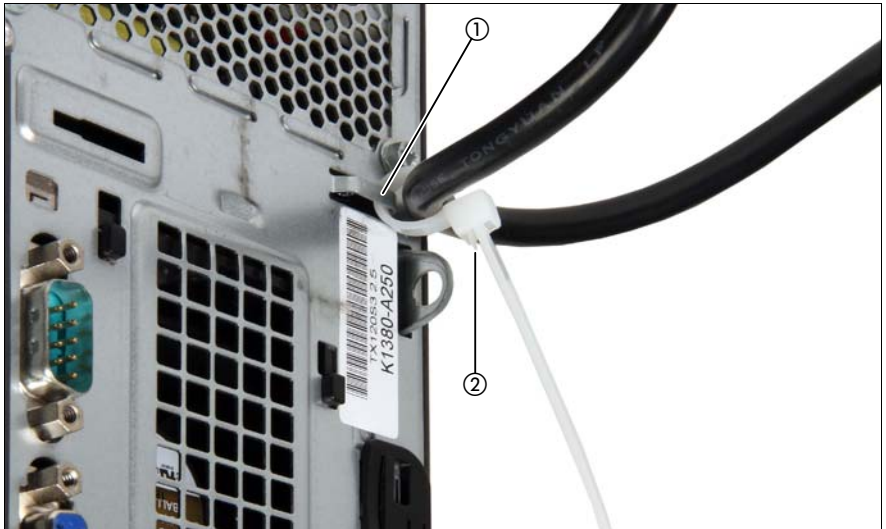
Figure 8: Using cable ties

► Thread the cable tie through the eye (1).

► Pull the cable tie tight to secure the power cable.

  The insulated connector cannot now be disconnected from the server accidentally.

  i You can loosen the cable tie by opening the small locking lever (2).

5.5 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:

Be sure to wait for 10 seconds or more after shutdown before turning the server on.

Connecting cables

► Turn off all power and equipment switches.

► Disconnect all power plugs from the properly grounded power outlets.

► Connect all cables to the server and peripherals.

► Plug all data communication cables into the utility sockets.

► Plug all power cords into the properly grounded power outlets.

Disconnecting cables

► Turn off all power and equipment switches.

► Disconnect all power plugs from the properly grounded power outlets.

► Unplug all data communication cables from the utility sockets.

► Disconnect the relevant cables from the server and all the peripherals.

ℹ For connecting or disconnecting LAN cables, the server does not need to be powered off. To avoid loss of data teaming function has to be enabled.

Information for ensuring electromagnetic compatibility

All data and signal cables must have sufficient shielding. The use of cable type S/FTP Cat5 or higher is recommended.
Use of unshielded or badly shielded cables may lead to increased emission of interference and/or reduced fault-tolerance of the device.

6 Starting up and operation

⚠️ **CAUTION!**

Follow the safety instructions in chapter "Important information" on page 33.

6.1 Opening the drive cover

Opening the drive cover with locked key
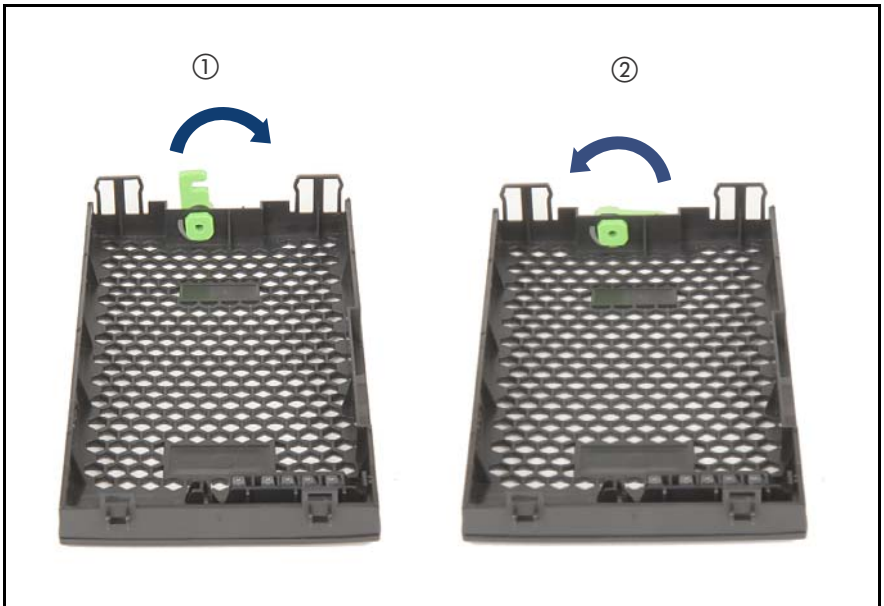
Figure 9: Opening the drive cover with locked key

► Rotate the green hook (1) in the drive cover for 90°. As a result, even if the key is locked, the drive cover can be removed.

► Rotate the green hook (2) in the drive cover for 90°. Now, the drive cover cannot be removed if the key is locked.

Figure 10: Opening the drive cover

► Turn the key clockwise (1) and remove the key.

► Open the drive cover carefully in the direction of the arrow (2) until the ratches of the cover are released, and pull it downward to remove it (3).

⚠ **CAUTION!**

Do not pull too hard to avoid damage to the locking mechanism.

► Attach the drive cover to the recesses on the HDD cover (4).

► Push down the HDD cover in the direction of the arrow (5).

i Please note the following when operating with tape drives:

If the system is programmed to eject the media automatically, the accessible drives must not be obstructed.

The drive cover is replaced and the server locked in the reverse order.

Figure 11: Removing the drive cover from the HDD cover

► Carefully pull out on the green release lever (1) and lift off the drive cover (2).

6.2   Opening the HDD cover

Figure 12: Removing the HDD cover

▶ Unlock the server (1).

▶ Remove the HDD cover (2).

The HDD cover is replaced and the server locked in the reverse order.

# 6.3 Controls and indicators

6.3.1 Front of server
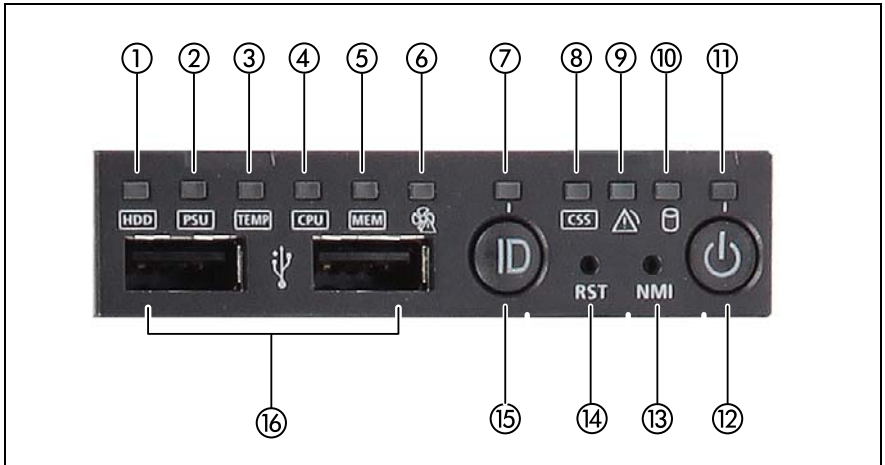
Figure 13: Front side (indicators and controls)

1	HDD error indicator	9	Global Error indicator
2	PSU error indicator	10	HDD / SSD activity indicator
3	Temperature error indicator	11	Power-on indicator
4	CPU error indicator	12	On/Off button
5	Memory error indicator	13	NMI button
6	Fan error indicator	14	Reset button
7	ID indicator	15	ID button
8	CSS indicator	16	2 USB connectors

6.3.1.1 Local diagnostic indicators

Symbol	Indicator	Status	Description
HDD]	HDD / SSD error indicator	orange on	HDD / SSD, SAS / SATA backplane or RAID controller failure detected
PSU	PSU error indicator	orange on	Hot-plug PSU module failure detected **i** Only available in redundant PSU configurations.
TEMP	Temperature error indicator	orange on	Operating temperature levels above permitted limits
CPU	CPU error indicator	orange on	CPU prefailure event detected
MEM	Memory error indicator	orange on	Memory module failure detected
(fan symbol)	Fan error indicator	orange on	Fan prefailure or failure event detected

i In addition to local diagnostic indicators, CSS or Global Error LEDs indicate, if the defective component is a customer replaceable unit or if a service technician needs to be dispatched to replace the part.

6.3.1.2 Control elements

Symbol	Button	Function
⏻	On / Off button	This button is used to switch the server on or off. **i** If the system is running an ACPI-compliant operating system, the pressing the On / Off button will performs a graceful shutdown.
NMI	NMI button	This button is used to troubleshoot software and device driver errors It can be pressed using the end of a paper clip. ⚠ **CAUTION!** Use this button only if directed to do so by qualified certified maintenance personnel!
RST	Reset button	This button is used to reboot the system. It can be pressed using the end of a paper clip. ⚠ **CAUTION!** Risk of data loss!
ID	ID button	This button highlights the ID indicator on the front and I/O panels for easy server identification.

6.3.1.3   Indicators on the control panel

Symbol	Indicator	Status	Description
Power-on indicator	Power-on indicator	green on	Server is switched on and running.
		orange on	Server is switched off, but mains voltage is present (standby mode). **i** After connecting the server to the mains, it will take about 60 seconds until the server will switch into standby mode.
		yellow / orange flashing	iRMC booting **i** After connecting the server to the mains (power cord plugged in / after mains failure) the iRMC will boot. The system cannot be switched on, until the iRMC boot sequence is complete. During this time, the power-on indicator will flash yellow / orange.
		yellow on	Power on delay **i** After shutting down, the server cannot be switched on again right away. If the On / Off button is pressed right after shutting down the server, the power-on indicator will light up yellow until the delay period ends and the server will boot.
	HDD / SSD activity indicator	green flashing	Data access in progress

Symbol	Indicator	Status	Description
⚠	Global error indicator	off	No critical event (non CSS component)
		orange on	Prefailure detected (non CSS component)
		orange flashing	Non-CSS component failure
CSS	CSS indicator	off	No critical event (CSS component)
		yellow on	Prefailure detected (CSS component)
		yellow flashing	CSS component failure
ID	ID indicator	blue on	Localizes the server
		blue flashing	Local monitor off

6.3.1.4   ID card
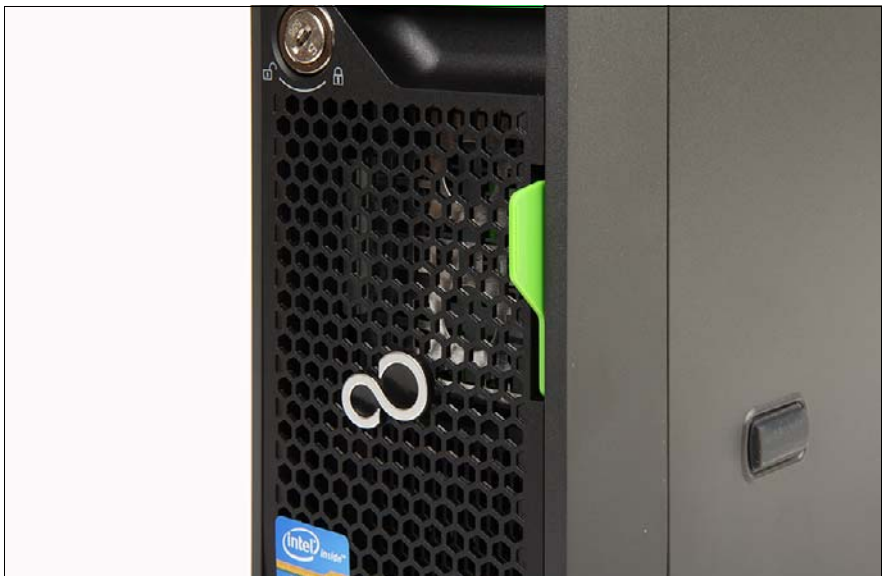
Figure 14: ID card

You can pull out the ID card as far as it will go and push it back again.

The ID card contains various system information, such as the product name, serial number, order number, MAC addresses and DNS name (in the Japanese market, only the product name and the serial number).

6.3.1.5 Indicators on the drives

Optical drive activity indicator

Lights up green when the storage medium is being accessed.

Hard disk drive indicators

Figure 15: Indicators on the 2.5 inch HDD modules

1	HDD BUSY (green)
	– Lit: HDD in active phase (drive active, drive being accessed) – Does not light: HDD inactive

2	HDD FAULT (orange)
	 (in conjunction with a RAID controller)
	
	 ● SAS server variant
	
	     – Does not light: no HDD error
	     – Lit: HDD Faulty (drive defective/needs replacing, drive failed, drive deactivated by software or the HDD module is not correctly inserted)
	     – Slow flashing: HDD Rebuild (the data is being restored after changing a drive)
	     – Fast flashing: HDD Identify
	
	 ● SATA server variant
	
	     – Does not light: no HDD error
	     – Lit: HDD Faulty or Rebuild Stopped (drive defective and must be replaced, a rebuild process was stopped or the module is not correctly inserted)
	     – Slow flashing: HDD Rebuild (the data is being restored after changing a drive)
	     – Fast flashing: HDD Identify

6.3.2   Rear of the server

CSS, Global Error and ID indicators
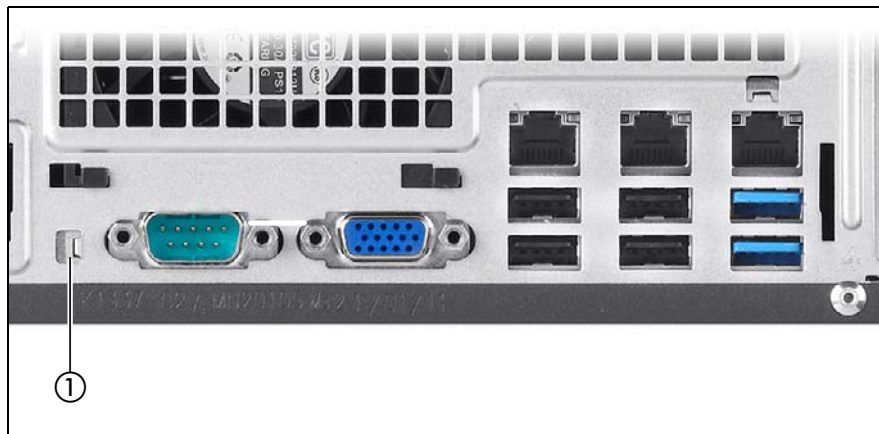
Figure 16: Indicators on the connector panel: CSS, Global Error and ID indicators

1	CSS, Global Error and ID indicators (yellow, orange and blue)

Global Error indicator (orange)

– **Lights up orange** if a prefailure event has been detected that requires (precautionary) service intervention.
– **Flashes orange** if an error was detected that requires service intervention.
– **Does not light up** if there is no critical event.

If the event is still acute after a power cycle, the indicator is activated after the restart.

The indicator also lights up in standby mode.

You can find more details on the indicated errors in the System Event Log (SEL), on the ServerView Local Service Panel, in the ServerView Operations Manager or via the iRMC S4's Web interface.

CSS   CSS indicator (yellow)

– **Lights up yellow** if a prefailure event was detected for a CSS component that you can fix yourself (for reasons of precaution) with the CSS concept.
– **Flashes yellow** if an error was detected that you can fix yourself with the CSS concept.
– **Does not light up** when the system is OK.

If the event is still acute after a power failure, the indicator is activated after the restart.

The indicator also lights up in standby mode.

For more information on the CSS concept, see the FUJITSU Server PRIMERGY TX1320 M1 Upgrade and Maintenance manual.

ID	ID indicator	blue on	Localizes the server
		blue flashing	Local monitor off

LAN indicators
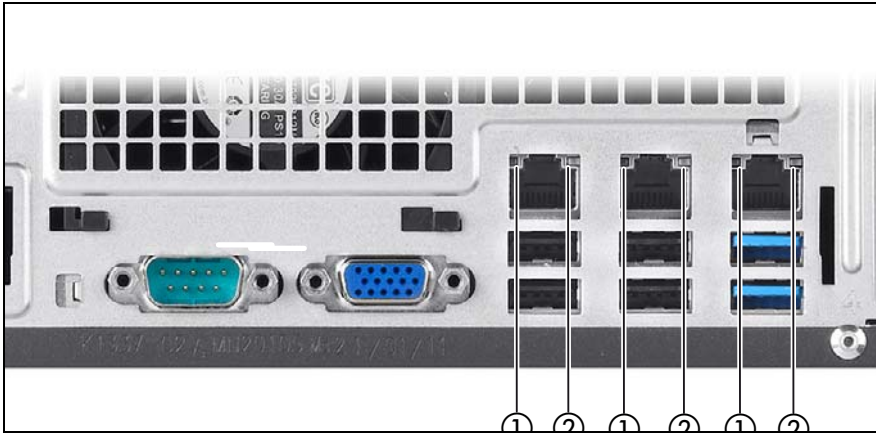
Figure 17: Indicators on the connector panel: LAN indicators

1	LAN link/transfer	**Steady green signal** when a LAN connection exists.
		Remains dark when no LAN connection exists.
		Flashes green when LAN transfer takes place.
2	LAN speed	**Steady yellow signal** in the event of a LAN transfer rate of 1 Gbit/s
		Steady green signal in the event of a LAN transfer rate of 100 Mbit/s.
		Remains dark in the event of a LAN transfer rate of 10 Mbit/s.

> **i** Depending on the settings in the BIOS, the shared LAN connector may also be used as a service LAN connector. You will find further information in the "D3239 BIOS Setup Utility for FUJITSU Server PRIMERGY TX1320 M1" manual.

6.4 Switching the server on and off

⚠ **CAUTION!**

If nothing appears on the screen but flickering stripes after switching on the server, switch the server off immediately (see section "Flickering stripes on monitor screen" on page 83).

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

Switching the server on

The power-on indicator (item 11 in figure 13 on page 63) lights orange.

– **Starting up for the first time:**

ℹ For the Japanese market, please refer to the " はじめにお読みください ".

► Press the On/Off button (item 12 in figure 13 on page 63).

The power-on indicator lights green (item 11 in figure 13 on page 63).

► Insert the PRIMERGY ServerView Suite DVD in the DVD drive.

► Follow the on-screen instructions (see also section "Configuring the onboard SATA controller" on page 75 or section "Configuring the server and installing the operating system without the ServerView Installation Manager" on page 77).

– **System already installed**:

► Press the On/Off button (item 12 in figure 13 on page 63).

The power-on indicator lights green (item 11 in figure 13 on page 63).

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

Switching the server off

Power-on indicator (item 11 in figure 13 on page 63) lights green.

► Shut down the operating system properly.

The server is automatically switched off. The power-on indicator lights up orange.

i	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 corresponding control signal.

Other On/Off options

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

– **Specified switch on time / switch off time**

The server is switched ON or OFF at a time specified in the ServerView Operations Manager.

– **Ring indicator**

The server is switched on by an internal or external modem.

– **Wake On LAN (WOL)** (Shared LAN only)

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 of the settings in the BIOS).

– **"Power override" function**

The server can be switched off immediately by pressing and holding the On/Off button (approx. 4-5 sec.).

⚠ **CAUTION!**
There is a risk that data may be lost.

– **IPMI**

The server is switched on by an IPMI console via serial port COM1 (item 6 in figure 7 on page 53) or via the service LAN connection (item 1 in figure 7 on page 53).

6.5 Configuring the server

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

6.5.1 Configuring the onboard SATA controller

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

| **i** | The controller has its own configuration utility. For further information, refer to the "Embedded MegaRAID Software User's Guide" (on the Fujitsu manuals server under *x86 Servers - Expansion Cards - Storage Adapters - LSI SAS / SCSI RAID Controllers*). |

| **i** | Descriptions of operating systems not covered in the controller manual are provided in the corresponding readme under: |

http://www.fujitsu.com/global/services/computing/server/ia/driver/index.html (for the EMEA market).

http://jp.fujitsu.com/platform/server/primergy/downloads/ (for the Japanese market).

6.5.2 Configuring the SAS/SATA RAID controller

The server has a SAS/SATA RAID controller with "MegaRAID functionality". You can configure the SAS/SATA RAID controller either before or during installation with the ServerView Installation Manager. Using the ServerView Installation Manager is recommended.

| **i** | A separate utility is available to the controller for MegaRAID configuration. For further information, refer to the "SAS Software User's Guide" (on the Fujitsu manuals server under *x86 Servers - Expansion Cards - Storage Adapters - LSI Configuration Software*). |
| | Further information on modular RAID controllers is provided in the "Modular RAID Controller Installation Guide" (on the Fujitsu manuals server under *x86 Servers - Expansion Cards - Storage Adapters - LSI SAS / SCSI RAID Controllers*). |

i	Descriptions of operating systems not covered in the controller manual are provided in the corresponding readme under:

http://www.fujitsu.com/global/services/computing/server/ia/driver/index.html
(for the EMEA market).

http://jp.fujitsu.com/platform/server/primergy/downloads/
(for the Japanese market).

6.5.3   Configuring the server and installing the operating system with the ServerView Installation Manager

Using the ServerView Installation Manager on the ServerView Suite DVD 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.

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

i	Descriptions of operating systems not covered in the RAID controller manual are provided in the corresponding readme files under:

http://www.fujitsu.com/global/services/computing/server/ia/driver/index.html
(for the EMEA market).

http://jp.fujitsu.com/platform/server/primergy/downloads/
(for the Japanese market).

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 78.

6.5.4 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 75.

Configuring the SAS/SATA RAID controller

Configure the controller as described in section "Configuring the onboard SATA controller" on page 75.

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.

6.6 Cleaning the server

⚠ **CAUTION!**

Switch off the server and disconnect the power plugs from the properly grounded power outlets.

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.

Do not use any cleaning sprays (including flammable types). It may cause a device failure or a fire.

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.

7 Property and data protection

7.1 Mechanical access protection

The lock and drive cover can be used to restrict access to the On/Off button and the drives.

To prevent it being removed from its location, the server can be secured to a fixed object with a steel cable running through a clip on the back.

7.2 BIOS Setup security functions

The *Security* menu in BIOS Setup offers various options for protecting your data from unauthorized access. For example, it allows you to assign passwords or prevent the BIOS from being overwritten. By combining these options you can achieve optimum protection for your system.

> **i** A detailed description of the *Security* menu and how to assign passwords can be found in the BIOS Setup documentation on the Fujitsu manuals server.

8 Troubleshooting and tips

⚠ **CAUTION!**

Follow the safety instructions in the "Safety Notes and Regulations" manual and in chapter "Hardware installation" on page 45.

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.

8.1 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 power outlet(s).

Power supply overloaded

► Disconnect the server power plug(s) from the grounded power outlet(s).

► Wait a few minutes before you plug it/them into the grounded power outlet(s) again.

► Switch on your server.

8.2 Server switches itself off

Server Management has detected an error

► Check the error list of System Event Log in ServerView Operations Manager or in the iRMC web interface, and attempt to eliminate the error.

8.3 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 power outlet.

► 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.

8.4   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.

8.5   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.

8.6   No mouse pointer displayed on screen

Mouse driver not loaded

► Check whether the mouse driver is properly installed and is activated when the application program is started. Detailed information can be found in the user manuals for the mouse, the operating system and the application program.

8.7 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.

> **i** 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 "FUJITSU Server PRIMERGY TX1320 M1 Upgrade and Maintenance Manual") or contact our customer service team.

8.8 Drives reported as "dead" when starting system

This error message can occur when the onboard SAS controller has RAID functionality or the server is equipped with a PCI RAID controller.

RAID controller configuration incorrect

► Check and correct the settings for the drives using the RAID controller utility.

Further information is provided in the manual for the RAID controller.

8.9 Added drive reported as defective

RAID controller is not configured for this drive

The drive was probably installed when the system was switched off.

► Reconfigure the RAID controller for the drive using the corresponding utility. Information is provided in the documentation for the RAID controller.

or

► Remove and reinstall the drive while the system is switched ON.

If the drive continues to be shown as defective, then replace it.

8.10 Error message on screen

The meaning of the error message is explained in the documentation for the relevant components and programs on the Fujitsu manuals server.