FUJITSU

Fujitsu Server PRIMERGY TX1330 M6

Operating Manual

03/2024

Comments… Suggestions… Corrections…

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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 that these safety notes are understood before using the product. Keep this manual and the "Safety Notes and Regulations" manual 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 printed circuit board assemblies of the product 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.

The product is not suitable for use at visual display workplaces according to §2 of the Workplace Regulations (applies to all server systems except TX server systems).

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, the use of an 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.)

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Harmonic Current Standards

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

Only for Japan: About SATA HDDs

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

For more information on the usage and operation conditions of each available type of HDD, see the following internet address:
https://jp.fujitsu.com/platform/server/primergy/harddisk/

Only for Japan:

Shielded LAN cables should be used in this product.

UK Importer information

Fujitsu Services Limited

22 Baker Street, London, W1U 3BW, United Kingdom

Version history

Issue number	Issue date	Description
V 1.0	03/2024	Initial release

Content

1 Introduction

1.1 Concept and target groups of 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. The operating manual contains all the information you need to put the PRIMERGY TX1330 M6 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 Notational conventions

The following notational conventions are used in this manual:

Text in bold	Indicates references to names of interface elements.
`Text in monospace`	Indicates commands.
"Quotation marks"	Indicate names of chapters and terms that are being emphasized.
►	Describes activities that must be performed in the order shown.
 **CAUTION**	Pay particular attention to texts marked with this symbol. Failure to observe this warning may endanger your life, destroy the system or lead to the loss of data.
	Indicates additional information, notes, and tips.

2 Before you start

2.1 Safety notes

CAUTION

► Before you start to install, set up and operate your server, please carefully read the safety instructions in "Important information" on page 47.

2.2 Documentation overview

2.2.1 About availability of manuals

To get an overview on all documents for your server, see Table 1.

All documentation on PRIMERGY hardware and software is available online on the Fujitsu support page at:
https://support.ts.fujitsu.com

For Japan:
https://www.fujitsu.com/jp/products/computing/servers/primergy/manual/

For Japan:
The complete PRIMERGY documentation set can also be downloaded as a DVD ISO image at:
https://www.fujitsu.com/jp/products/computing/servers/primergy/downloads/

2.2.2 List of documents

Document	Description
"Safety Notes and Regulations" manual "安全上のご注意" for Japan	Important safety information, available online, or as a printed copy
"Fujitsu Server PRIMERGY TX1330 M6 Operating Manual"	Information how to install, set up and operate your server, available online
"Fujitsu Server PRIMERGY TX1330 M6 Upgrade and Maintenance Manual"	Instructions for upgrading the server configuration or replacing defective hardware, available online
"D4132 BIOS Setup Utility for Fujitsu Server PRIMERGY TX1330 M6 Reference Manual"	Information on configurable BIOS options and parameters, available online
"Fujitsu Server PRIMERGY TX1330 M6 Disassembly and Recycling Instructions"	Instructions for disassembling and recycling the server, available online
System foil	Label inside the top cover outlining connectors, indicators and jumper
ID card	Various system information, such as the product name, serial number, order number, MAC addresses and DNS name (for Japan, only the product name and the serial number) The location of the ID card can be found in the overview of the server.
iRMC S6 documentation	– "iRMC S6 - Concepts and Interfaces" user guide – "iRMC S6 - Configuration and Maintenance" user guide – "iRMC S6 - Web Interface" user guide

Document	Description
Infrastructure Manager documentation	"Fujitsu Software Infrastructure Manager V2.9.0 Infrastructure Manager for PRIMEFLEX V2.9.0 User's Guide"
ServerView documentation	– "ServerView Suite Local Service Concept (LSC)" user guide – "ServerView embedded Lifecycle Management (eLCM)" user guide
Illustrated Spares catalog	Spare parts identification and information system (not valid for Japan), available for online use or download (Windows OS) at https://manuals.ts.fujitsu.com/isc_illustrated_spares/.
Glossary	Contains abbreviations and explanations, available online
"Warranty" manual "保証書" for Japan	Important information on warranty regulations, recycling and service, available online, or as a printed copy
"Returning used devices" manual	Recycling and contact information, available online at https://ts.fujitsu.com/recycling, or as a printed copy Not applicable in Japan and other countries that have different regulations for recycling
"Service Desk" leaflet "サポート＆サービス" for Japan	
Additional documentation	RAID documentation and "NVMe User Guide", available online at https://support.ts.fujitsu.com/ For Japan: https://www.fujitsu.com/jp/products/computing/servers/primergy/manual/
Third party documentation	– Operating system documentation, online help – Peripherals documentation

Table 1: List of documents

3 Product description

3.1 Overview of the server

3.1.1 Server front

3.1.1.1 2.5-inch HDD/SSD configuration

The PRIMERGY TX1330 M6 server is available as a floorstand model and a rack model.

The floorstand model can be converted to a rack model using an optional conversion kit.

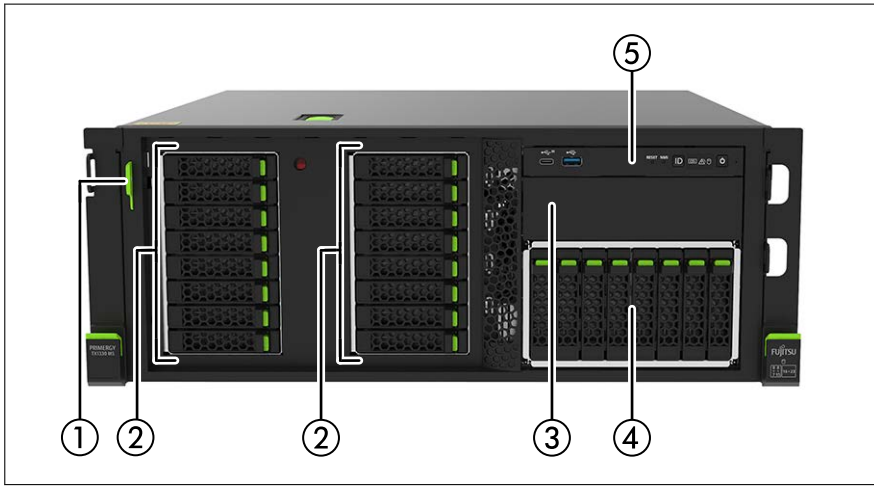


Figure 1: Server front with 2.5-inch HDDs/SSDs - example rack model

1	ID card	4	Extension box with 8x 2.5-inch HDDs/ SSDs
2	2.5-inch HDDs / SSDs		
3	Accessible drive bay	5	Front panel module

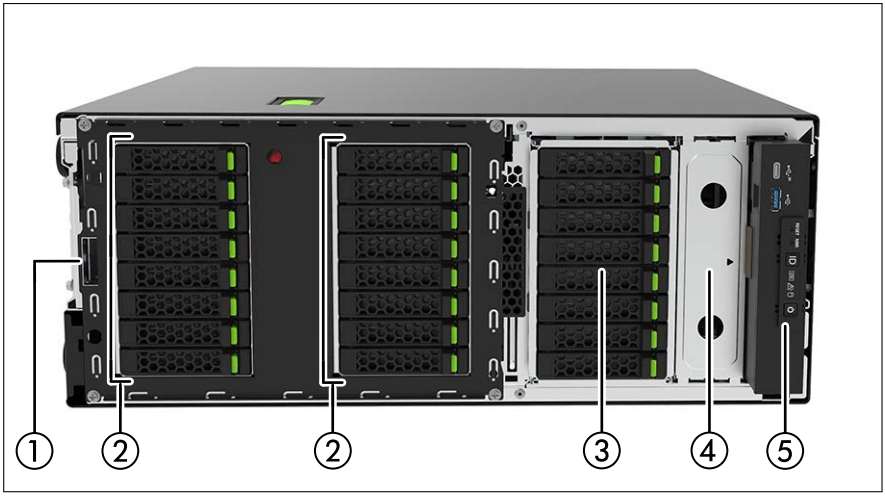


Figure 2: Server front with 2.5-inch HDDs/SSDs - example tower model

1	Slot for ID card	4	Accessible drive bay
2	2.5-inch HDDs / SSDs	5	Front panel module
3	Extension box with 8x 2.5-inch HDDs/ SSDs		

3.1.1.2 3.5-inch HDD configuration

The PRIMERGY TX1330 M6 server is available as a floorstand model and a rack model.

The floorstand model can be converted to a rack model using an optional conversion kit.

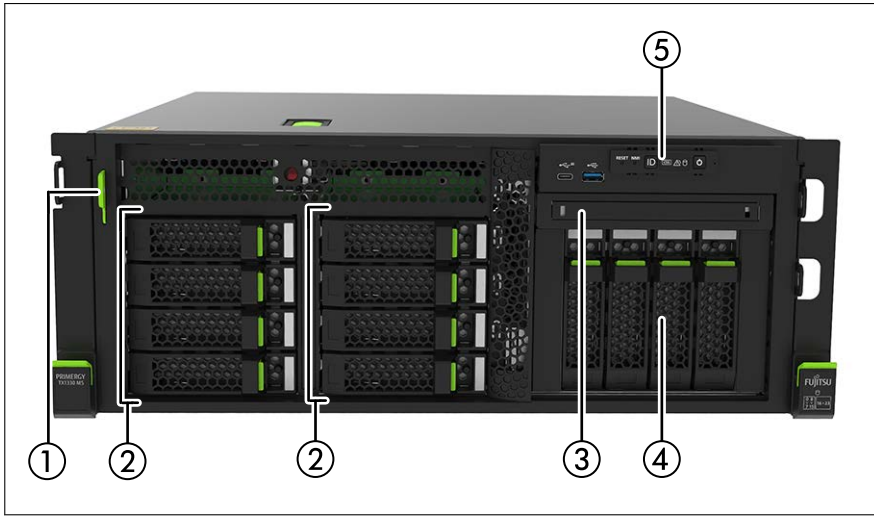


Figure 3: Server front with 3.5-inch HDDs - example rack model

1 ID card
2 3.5-inch HDDs
3 ODD
4 Extension box with 4x 3.5-inch HDDs
5 Front panel module

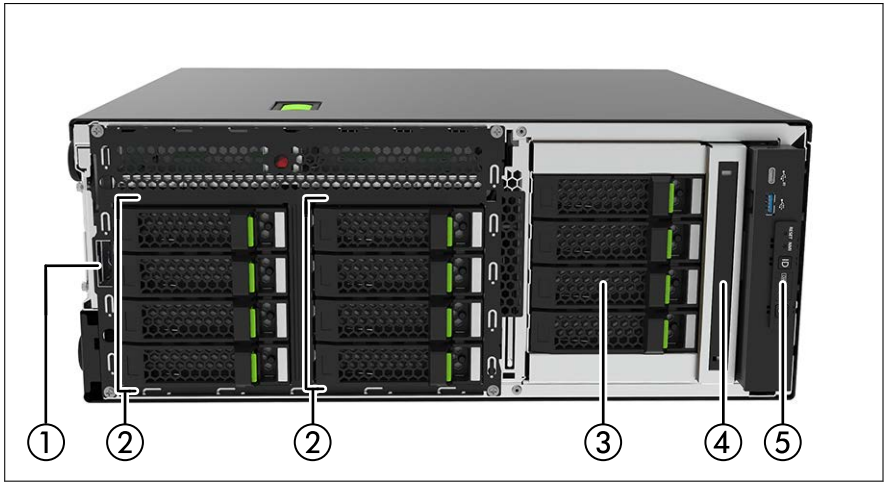


Figure 4: Server front with 3.5-inch HDDs - example tower model

1	Slot for ID card	4	ODD
2	3.5-inch HDDs	5	Front panel module
3	Extension box with 4x 3.5-inch HDDs		

3.1.2 Server rear

3.1.2.1 Server rear with standard PSU

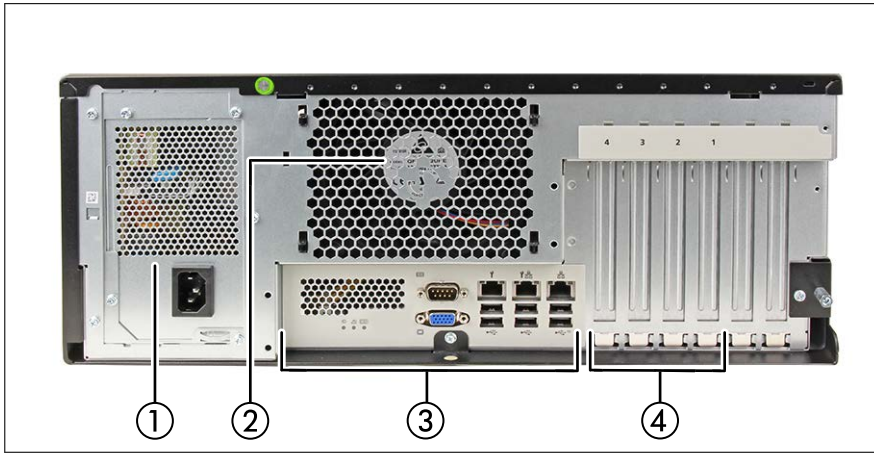


Figure 5: Server rear with standard PSU

1	Standard PSU	3	I/O panel
2	System fan	4	Optional expansion cards

3.1.2.2 Server rear with hot-plug PSUs

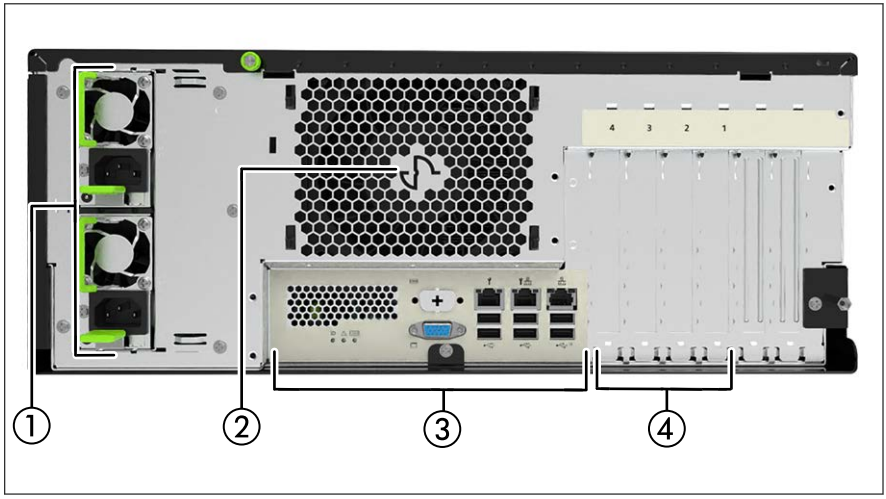


Figure 6: Server rear with hot-plug PSUs

1	Hot-plug PSUs	3	I/O panel
2	System fan	4	Optional expansion cards

3.2 Features

3.2.1 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 HDD/SSD modules

– Hot-plug PSUs

– Hot-plug fan modules

– Memory modules (not allowed for Japan)

– Expansion cards (not allowed for Japan)

For more information on replacing these components, see the "Fujitsu Server PRIMERGY TX1330 M6 Upgrade and Maintenance Manual".

CSS indicators on the front panel and I/O panel of the PRIMERGY server provide you with information if a CSS event arises.

More information on the CSS concept is provided in the "PRIMERGY ServerView Suite Local Service Concept - LSC" manual on the Fujitsu support page.

For the latest information on optional products provided for the PRIMERGY TX1330 M6, see the configurator tool of the server:
https://ts.fujitsu.com/products/standard_servers/index.html

For Japan:
https://www.fujitsu.com/jp/products/computing/servers/primergy/

3.2.2 System board

The features of the system board are described in the "Fujitsu Server PRIMERGY TX1330 M6 Upgrade and Maintenance Manual". The setup possibilities are described in the "D4132 BIOS Setup Utility for Fujitsu Server PRIMERGY TX1330 M6 Reference Manual".

3.2.3 Trusted Platform Module (TPM)

A 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 (for more information, see the "D4132 BIOS Setup Utility for Fujitsu Server PRIMERGY TX1330 M6 Reference Manual").

CAUTION

- When using the TPM, note the program descriptions provided by the third party manufacturers.
- You must 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.

3.2.4 Power supply unit (PSU)

The server can be equipped with:

– One standard PSU

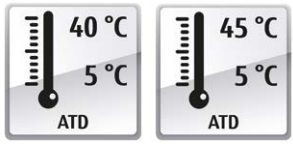
  The PSU adjusts automatically to any mains voltage in the range of 100 V - 240 V.

– Up to two hot-plug PSUs

  The hot-plug PSU adjusts automatically to any mains voltage in the range 100 V - 240 V. In addition, a second hot-plug PSU can be installed optionally to serve as a redundant power supply. If one PSU fails, the second PSU in the redundant configuration ensures operation can continue uninterrupted and the defective PSU can be replaced during operation (hot-plug).

3.2.5 Advanced Thermal Design (ATD)

The ATD option allows you to operate the system with a wider temperature range either of 5 °C to 40 °C or 5 °C to 45 °C, depending on your system and configuration.



This option can only be ordered from the manufacturer and is indicated by the respective logo on the identification rating plate.

CAUTION

- In a system that is configured with ATD, only certain components which support the respectively increased higher operating temperature range may be installed and used. For applicable restrictions, see the official configurator tool.

3.2.6 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.

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

The Prefailure Detection and Analysis (PDA) 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 HDD/SSD modules provide additional availability.

3.2.7 iRMC S6 with integrated management LAN connector

The iRMC S6 (**i**ntegrated **R**emote **M**anagement **C**ontroller) is a Baseboard Management Controller (BMC) with integrated management LAN connector and expanded functionality. In this way, the iRMC S6 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 S6 include the following:

- Browser access via the own Web server of the iRMC S6
- 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 S6 configuration
- Customer Self Service (CSS)
- User management of the iRMC S6
- Multi-computer, global iRMC S6 user administration using an LDAP Directory Service
- Automatic network configuration via DNS / DHCP
- Power supply of the iRMC S6 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 S6 can be found in the iRMC S6 user guides, see "Documentation overview" on page 15.

3.2.8 Server management

Server management is implemented using the Infrastructure Manager which enables the management of all PRIMERGY servers in the network via a central console.

The Infrastructure Manager supports the following functions:

- Manages device information such as model names, serial numbers, and IP addresses
- Monitoring values for Air Inlet Temperature, CPU Usage, and Power Consumption
- Creates, stores, and assigns profiles which are the setting information for the managed nodes
- Operates log collection of various kinds of logs (Hardware logs, Operating System logs, and ServerView Suite logs) for multiple managed nodes together and executes integrated management of collected logs
- Firmware updates for multiple managed nodes together and manages versions of the firmware in an integrated manner
- Network management the status of physical connection between managed nodes and the status of virtual connection between virtual machines, virtual switches, and virtual routers

More information on the Infrastructure Manager is provided in the associated documentation.

3.2.9 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 more information, see "Notes on configuring controllers" on page 82).

3.2.10 Service and support

PRIMERGY servers are easy to maintain and modular, thus enables 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, CPU, 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 on the system board, the 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.

3.2.11 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 web interface. You can also start the text-based or graphic console bypass (Advanced Video Redirection, AVR) and connect virtual drives as remote storage.

More information about the iRMC can be found in the iRMC user guides at https://support.ts.fujitsu.com/.

3.2.12 Property and data protection

The floorstand model is protected against unauthorized opening by a lock. Apart from this, the server is also fitted with two intrusion detection switches which enable the iRMC web interface to detect and log any removal of the housing cover and the cover for the HDD/SSD modules.

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

The rack model is protected against unauthorized access by a lockable rack door.

3.2.13 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 "D4132 BIOS Setup Utility for Fujitsu Server PRIMERGY TX1330 M6 Reference Manual".

3.3 Connectors, controls, and indicators

3.3.1 Server front

3.3.1.1 Connectors on the front panel

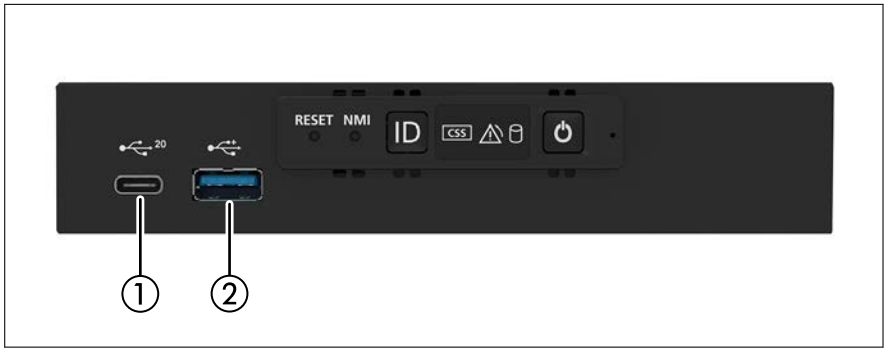


Figure 7: Connectors on the front panel

1 USB 3.2 Gen 2 Type C connector

2 USB 3.2 Gen 1 Type A connector

3.3.1.2 Controls on the front panel

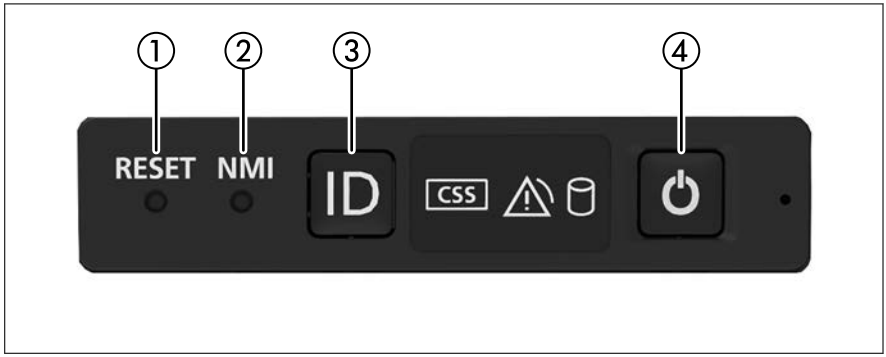


Figure 8: Controls on the front panel

1 Reset button

2 NMI button

3 ID button

4 On/Off button

Reset button (1)

Reboots the system. Press the reset button with a straightened end of a paper clip.

CAUTION

Risk of data loss

NMI button (2)

Used to troubleshoot software and device driver errors. Press the NMI button with a straightened end of a paper clip.

CAUTION

► Use this button only if directed to do so by qualified certified maintenance personnel.

ID button (3)

Highlights the ID indicator on the front panel and I/O panel for easy server identification.

On/Off button (4)

Used to switch the server on or off.

If the system is running an ACPI-compliant operating system, pressing the On/Off button will perform a graceful shutdown.

3.3.1.3 Indicators on the front panel

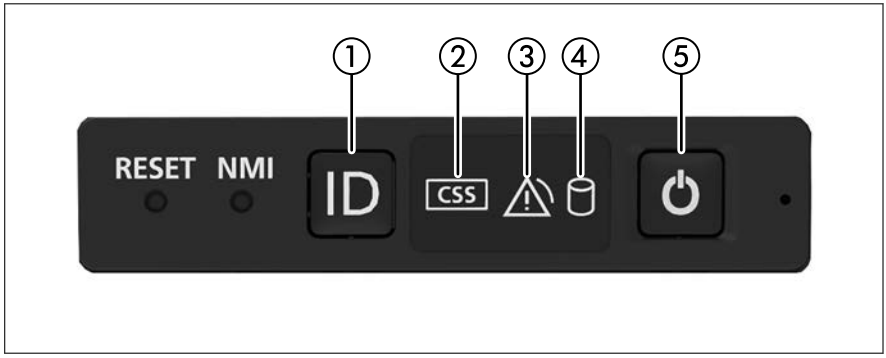


Figure 9: Indicators on the front panel

1 ID indicator
2 CSS indicator
3 Global Error indicator
4 HDD/SSD activity indicator
5 Power-on/AC connected indicator

ID indicator (1)

See also "iRMC-related status signals" on page 36.

Status	Description
blue on	The server has been highlighted using the iRMC web interface or the ID button on the front panel for easy identification.
flashing blue	The server has been highlighted for easy identification using the iRMC with disabled local VGA output.

CSS indicator (2)

Status	Description
off	No critical event detected (CSS component).
orange on	Prefailure event detected (CSS component). For HDDs, see also "HDD prefailure detection" on page 36.
flashing orange	CSS component failure detected.

Global Error indicator (3)

See also "iRMC-related status signals" on page 36.

Status	Description
off	No critical event detected (non-CSS component).
orange on	Prefailure event detected (non-CSS component).
flashing orange	Non-CSS component failure detected. Possible causes: – System is out of the specified temperature range – Defective sensor – CPU error – Error detected by server management software

HDD/SSD activity indicator (4)

Status	Description
flashing green	Data access in progress.

Power-on/AC connected indicator (5)

Status	Description
off	The server is switched off.
green on	The server is switched on and operating normally.
flashing white	The BMC firmware is starting up after the server has been connected to the mains.
white on	Server is switched off and connected to the mains (standby mode).
flashing green & white	Server has been switched on but Power Cycle Delay settings delay it.

iRMC-related status signals

ID indicator	Global error indicator	Description
flashing blue	off	A remote connection has been established. Local VGA output has been disabled during the remote session.
flashing blue	flashing orange	An emergency flash of the iRMC firmware is in progress.

For more information about the iRMC flash procedure, see "Basic software procedures" in the "Fujitsu Server PRIMERGY TX1330 M6 Upgrade and Maintenance Manual".

HDD prefailure detection

Depending on your hardware configuration HDD prefailure detection will be supported.

The requirements are:

– iRMC S6 Firmware

– supported OOB RAID system

3.3.1.4 Indicator on the ODD

ODDs may have an indicator or not.

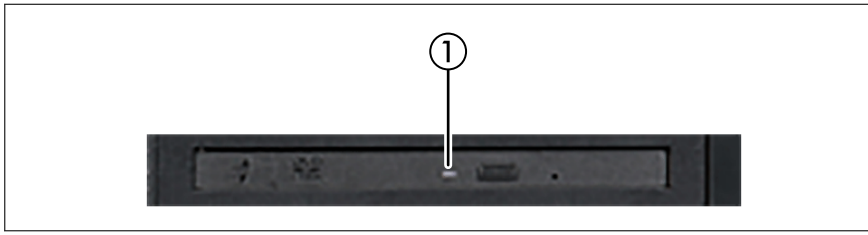


Figure 10: Indicator on the ODD (example)

1 Activity indicator

Activity indicator (1)

Status	Description
off	The ODD is inactive.
green on	The storage medium is being accessed.

3.3.1.5 Indicators on the hot-plug HDD/SSD module

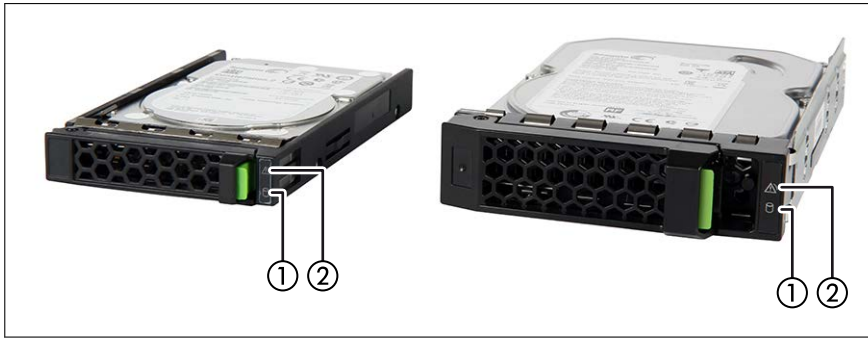


Figure 11: Indicators on the hot-plug HDD/SSD module

1 Access indicator 2 Error indicator

Access Indicator (1)

Status	Description
off	The HDD/SSD is inactive.
green on	The HDD/SSD being accessed.

Error indicator (2)

Status	Description
off	No HDD/SSD error detected.
orange on	An HDD/SSD error has been detected. Possible causes: – The drive is defective and needs replacing. – A RAID rebuild process has failed. – The HDD/SSD module has not been inserted correctly.
flashing orange slowly	HDD/SSD RAID rebuild is in progress. Data is being restored after replacing a drive that has been combined into a RAID array.

3.3.2 Server rear

3.3.2.1 Connectors on the server rear

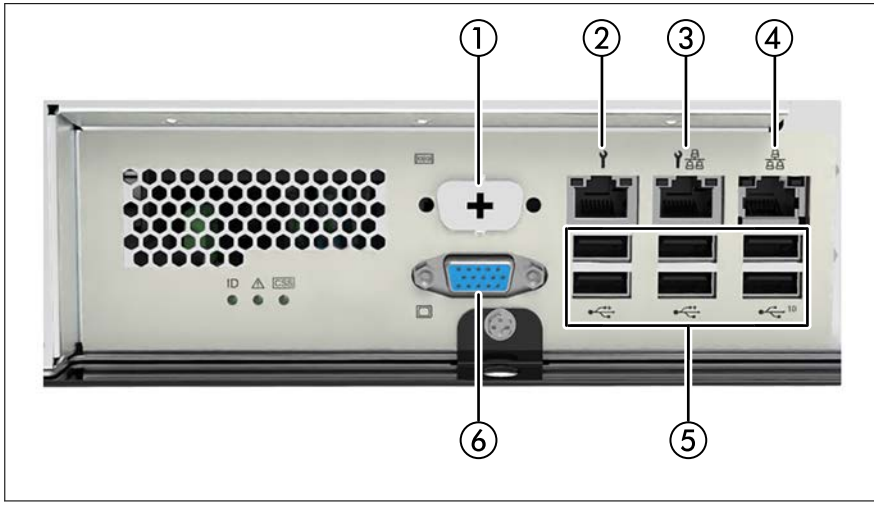


Figure 12: Connectors on the server rear

1 Slot for Serial connector COM1* (Option)
2 Management LAN connector
3 Shared LAN connector (LAN1)
4 Standard LAN connector (LAN2)
5 USB 3.2 Gen1 connectors (x6)
6 Video connector (VGA)

The serial connector can be used as the standard interface or for communication with iRMC.

Depending on the BIOS settings, the shared LAN connector may also be used as a management LAN connector. For more information, see the corresponding BIOS Setup Utility reference manual.

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

3.3.2.2 ID, CSS and Global Error indicators

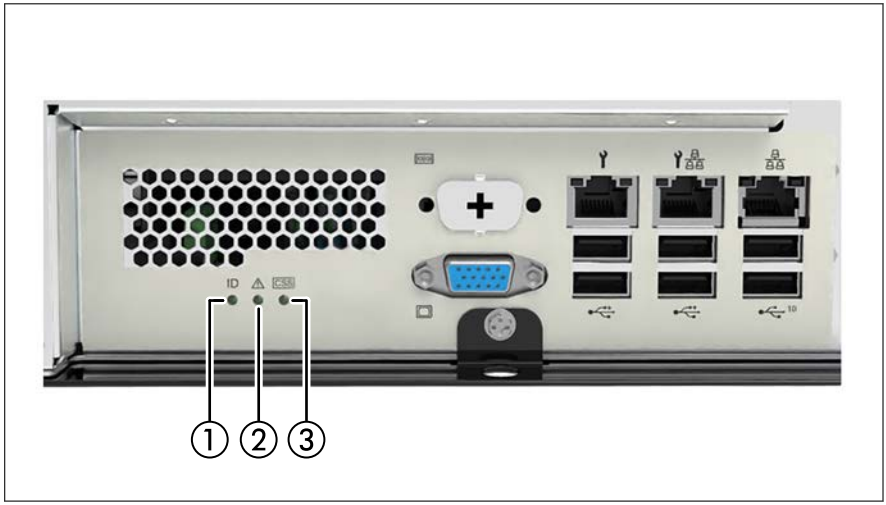


Figure 13: ID, CSS and Global Error indicators

1 ID indicator
2 Global Error indicator
3 CSS indicator

If CSS and Global Error indicators are located in the same place on the I/O panel of the server, also check the indicators on the front panel to determine if a CSS or Global Error event has been detected.

For more information on detected errors, see the System Event Log or use the iRMC web interface.

ID indicator (1)

See also "iRMC-related status signals" on page 42.

Status	Description
blue on	The server has been highlighted using the Infrastructure Manager, iRMC web interface or the ID button on the front panel for easy identification.
flashing blue	The server has been highlighted for easy identification using the iRMC (AVR) with disabled local VGA output.

Global Error indicator (2)

See also "iRMC-related status signals" on page 42.

Status	Description
off	No critical event detected (non-CSS component).
orange on	Prefailure event detected (non-CSS component).
flashing orange	Non-CSS component failure detected. Possible causes: – System is out of the specified temperature range – Defective sensor – CPU error – Error detected by server management software

CSS indicator (3)

Status	Description
off	No critical event detected (CSS component).
orange on	Prefailure event detected (CSS component).
flashing orange	CSS component failure detected.

iRMC-related status signals

ID indicator	Global error indicator	Description
flashing blue	off	A remote connection has been established. Local VGA output has been disabled during the remote session.
flashing blue	flashing orange	An emergency flash of the iRMC firmware is in progress.

For more information about the iRMC flash procedure, see "Basic software procedures" in the "FUJITSU Server PRIMERGY TX1330 M6 Upgrade and Maintenance Manual".

3.3.2.3 LAN indicators

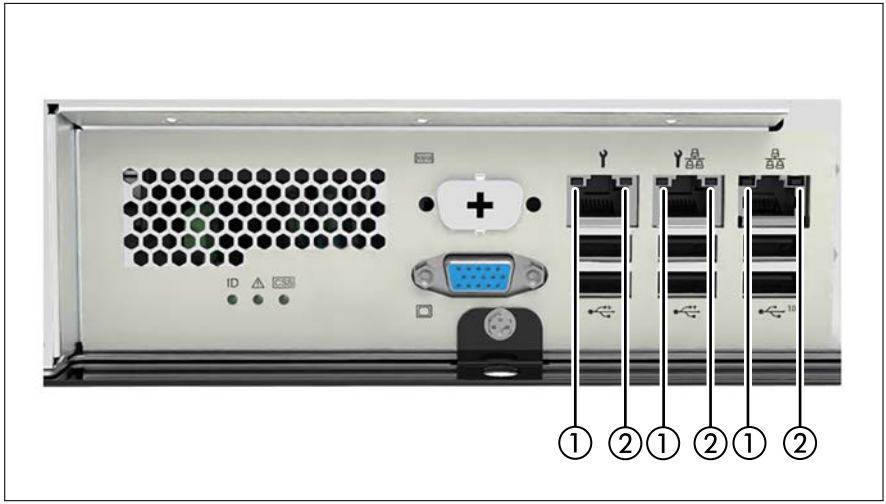


Figure 14: LAN indicators

1 LAN link/transfer indicator

2 LAN speed indicator

LAN link/transfer indicator (1)

Status	Description
green on	A LAN connection has been established.
off	LAN is not connected.
flashing green	LAN data transfer is in progress.

LAN speed indicator (2)

Status	Description
yellow on	Data traffic at a transfer rate of 1 Gbit/s.
green on	Data traffic at a transfer rate of 100 Mbit/s.
off	Data traffic at a transfer rate of 10 Mbit/s.

3.3.2.4 Indicator on hot-plug PSU

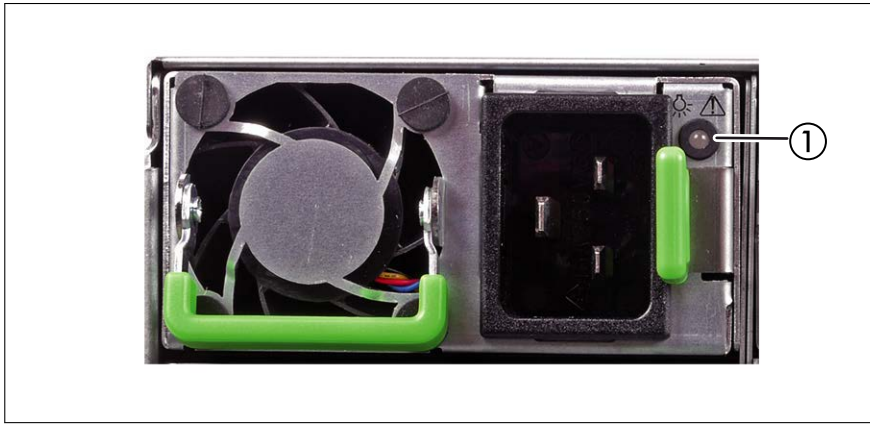


Figure 15: Indicator on hot-plug PSU

1 PSU status indicator

PSU status indicator (1)

Status	Description
flashing green	The server is switched off, but mains voltage is present (standby mode).
green on	The server is switched on and operating properly.
flashing orange	An overload has been detected. The PSU is still running, but failure might be imminent.
orange on	A PSU failure has been detected.

3.3.2.5 Indicator on FJBU

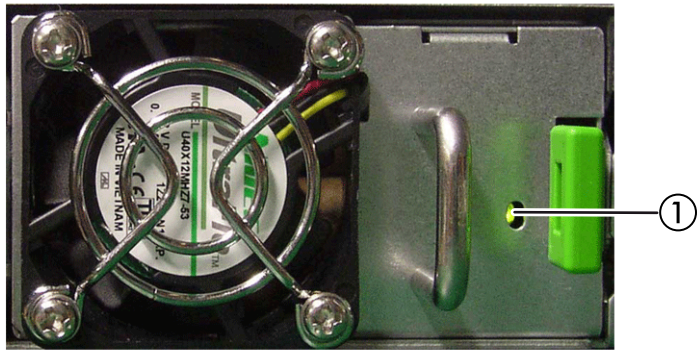


Figure 16: Indicator on FJBU

1 FJBU status indicator

FJBU status indicator (1)

Status	Description
flashing green	The battery unit is charging.
flashing green slowly	The battery unit is discharging.
green on	The battery unit is fully charged.
flashing orange	A battery unit failure has been detected. Possible causes: – Capacity failure – Overheating
orange on	A general battery failure has occurred.

4 Important information

4.1 Introduction

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

Depending on your server or the installed options some information is not valid for your server.

CAUTION

► Before installing and starting up a server, please observe the safety instructions listed in the following section. This will help you to avoid making serious errors that could impair your health, damage the server and endanger the data base.

4.2 Safety instructions

4.2.1 Basic safety instructions

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

This server 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.

► The actions described in this manual shall be performed by technical specialists. A technical specialist is a person who is trained to install the server including hardware and software.

► Repairs to the server that do not relate to CSS failures shall be performed by service personnel. Please note that unauthorized interference with the server 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.

► Only valid for non hot-plug components

Before installing/removing internal components to/from the server, turn off the server, all peripheral devices, and any other connected devices. Also unplug all power cords from the power outlet. Failure to do so can cause electric shock or damage.

4.2.2 Before starting up

► During installation and before operating the server, observe the instructions on environmental conditions for your server.

► If the server is brought in from a cold environment, condensation may form both inside and on the outside of the server.

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 observed.

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

In Japan and APAC, transporting the server in its original packaging does not apply.

4.2.3 Installation and operation

► This server should not be operated in ambient temperatures above 35 °C. For servers with Advanced Thermal Design the ambient temperature can increase to 40 °C or 45 °C.

► If the server 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 server automatically adjusts itself to a mains voltage, see the type label of your server. Ensure that the local mains voltage lies within these limits.

► This server must only be connected to properly grounded power outlets or connected to the grounded rack internal power distribution server with tested and approved power cords.

- If a DC power cord is used, the server must be connected to a proper DC source and earth ground stud/end.
- Ensure that the server is connected to a properly grounded power outlet close to the server.
- Ensure that the power sockets on the server and the properly grounded power outlets are easily accessible.
- The On/Off button or the main power switch (if present) does not isolate the server from the mains power supply. In case of repair or servicing disconnect the server completely from the mains power supply, unplug all power plugs from the properly grounded power outlets.
- Always connect the server and the attached peripheral devices 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.
- The adequately shielded data cables must be used.

  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.
- Ethernet cabling has to comply with EN 50173 and EN 50174-1/2 standards or ISO/IEC 11801 standard respectively. The minimum requirement is a Category 5 shielded cable for 10/100 Ethernet, or a Category 5e cable for Gigabit Ethernet.
- Route the cables in such a way that they do not create a potential hazard (ensure that no-one can trip over them) and that they cannot be damaged. When connecting the server, see the relevant instructions in this manual.
- Never connect or disconnect data transmission lines during a storm (risk of lightning hazard).
- Ensure that no objects (e.g. jewelry, 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), contact the server administrator or your customer service team. Only disconnect the server from the mains power supply if there is no risk of harming yourself.

- Proper operation of the server (in accordance with IEC 62368-1 resp. EN 62368-1) is only ensured if the server is completely assembled and the rear covers for the installation slots have been fitted (electric shock, cooling, fire protection, interference suppression).
- Only install server 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 server or violate the safety regulations. Information on which server 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: CSS components can be replaced.
- The warranty is void if the server is damaged during installation or replacement of server 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.
- Only valid for non hot-plug components

  Before installing/removing internal components to/from the server, turn off the server, all peripheral devices, and any other connected devices. Also unplug all power cords from the power outlet. Failure to do so can cause electric shock or damage.

  Internal devices remain hot after shutdown. Wait for a while after shutdown before installing or removing internal options.
- Do not damage or modify internal cables or internal devices. Doing so may cause a server failure, fire, or electric shock and will void the warranty and exempt the manufacturer from all liability.
- The circuit boards and soldered parts of internal options are exposed and can be damaged by static electricity. To ensure reliable protection, you must wear an earthing band on your wrist when working with this type of module and connect it to an unpainted, conducting metal part of the server.
- Do not touch the circuitry on boards or soldered parts. Hold the metallic areas or the edges of the circuit boards.

- ► Install the screw removed during installation/detaching internal options in former position. To use a screw of the different kind can cause a breakdown of equipment.
- ► The procedure of installation on this notes might change depending on a configuration of option.

4.2.4 Batteries

- ► 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.
- ► Do not throw batteries into the trash can.

  Batteries must be disposed of in accordance with local regulations concerning special waste.
- ► Ensure that you insert the battery the right way round.
- ► The battery used in this server may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat about 100 °C (212F), or incinerate the battery.
- ► Replace the lithium battery on the system board in accordance with the instructions in the corresponding Upgrade and Maintenance Manual, chapter "System board and components" > "CMOS battery".
- ► 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

4.2.5 Working with optical disk drives (ODDs) and media

When working with ODDs, 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 and vibrations.

  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 ODD (equipment damage) and can fly out of the drive (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 ODD.
- Before use, clean the ODD tray using a soft, dry cloth.
- As a precaution, remove disks from the ODD when the drive is not to be used for a long time. Keep the ODD tray closed to prevent foreign matter, such as dust, from entering the ODD.
- 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.

You can prevent damage from the ODD 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.

4.2.6 Laser information

The ODD complies with IEC 60825-1 laser class 1.

CAUTION

The ODD 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 ODD casing!

4.2.7 Modules with Electrostatic-Sensitive Devices (ESD modules)

ESD modules are identified by the following sticker:

Figure 17: ESD label

The ESD label can be different.

When you handle ESD modules, you must always observe the following points:

- ▶ Switch off the server and remove the power plugs from the power outlets before installing or removing ESD modules.
- ▶ The circuit boards and soldered parts of internal options are exposed and can be damaged by static electricity. To ensure reliable protection, you must wear an earthing band on your wrist when working with ESD modules and connect it to an unpainted, conducting metal part of the server.
- ▶ 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 server.
- ▶ Always hold ESD modules at the edges or at the colored touch points.
- ▶ Do not touch any connectors or conduction paths on an ESD module.
- ▶ Place all the components on a pad which is free of electrostatic charge.

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

4.2.8 Transporting the server

CAUTION

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

  In Japan and APAC, transporting the server in its original packaging does not apply.
- ► 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.
- ► Never lift or carry the server by the handles or the Quick Release Levers (QRLs) on the front panel.

4.2.9 Installing the server in the rack

CAUTION

- ► For safety reasons, at least 2 people are required to install the server in the rack because of its weight and size.
  (For Japan, see "安全上のご注意".)
- ► Never lift the server into the rack using the Quick Release Levers (QRLs) on the front panel.
- ► When connecting and disconnecting cables, observe the relevant instructions in the "Important Information" chapter of the technical manual for the corresponding rack. The technical manual is supplied with the corresponding rack.
- ► When installing the rack, ensure that the anti-tilt mechanism is correctly fitted.
- ► Do not extend more than one server out of the rack simultaneously even if the tilt protection is in place. If several servers are simultaneously extended from the rack, there is a risk that the rack could tip over. See the safety information of the rack and the warning label.
- ► If the server/rack is intended for permanent connection to the mains only an authorized specialist (electrician) is allowed to work. Please follow the regulation of each country.
- ► If the server is integrated into an installation that draws power from an industrial power supply network with an IEC309 type connector, the power supply's fuse protection must comply with the requirements for non-industrial power supply networks for the type A connector.

4.2.10 Other important information

- ► During cleaning, observe the instructions in the corresponding operating manual chapter "Operation" > "Cleaning the server".
- ► Keep all manuals close to the server. All documentation must be included if the equipment is passed on to a third party.

4.3 CE conformity

The system complies with the requirements of European Regulations. Find the CE declaration on certificate portal: https://sp.ts.fujitsu.com/sites/certificates/default.aspx

CAUTION

This is a Class A product. In a domestic environment this product may cause RF interference.

► In this case the user may be required to take adequate measures.

To open the CE declaration applicable for your system, proceed as follows:

► Select the product class, e.g. "Industry Standard Servers".

► Select the subclass, e.g. "Tower servers".

► Select your server, e.g. "PRIMERGY TX1330 M6".

► Select the document, e.g. "CE Cert PRIMERGY TX1330 M6".

4.4 ENERGY STAR

Products that have been certified compliant with ENERGY STAR and labelled are in full compliance with the specification at shipping. Note that energy consumption can be affected by software that is installed or any changes that are made to the hardware configuration or BIOS or energy options subsequently. In such cases, the properties guaranteed by ENERGY STAR can no longer be assured.

The "Fujitsu Software Infrastructure Manager V2.9.0 User's Guide" contains instructions for reading out measurement values, including those relating to current energy consumption and air temperatures. Either the Performance Monitor or the Task Manager can be used to read out CPU utilization levels.

Note

The following table shows that the processor dynamic voltage and frequency scaling, processor low-power idle state, and dynamic memory low-power state are enabled on shipment and the end user does not need to enable them.

Active State Power Management features	Enabled on shipment	End-user enabling required
Processor dynamic voltage and frequency scaling	Yes	No
Processor low-power idle state	Yes	No
Dynamic memory low-power state	Yes	No

4.5 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.

4.6 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. More information can be found at:
https://ts.fujitsu.com/products/standard_servers/index.html

For Japan:
https://jp.fujitsu.com/platform/server/primergy/concept/

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 does not apply in Japan and APAC. Do not throw away the packaging. You may need it later for transporting the server. 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:

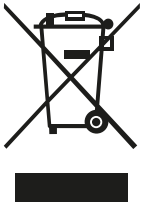
Cd Cadmium
Hg Mercury
Pb Lead

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 2012/19/EU 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.

More information can be found at:
https://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 at:
https://ts.fujitsu.com/recycling

5 Starting up

5.1 Safety notes

CAUTION

- ► Follow the safety instructions in "Important information" on page 47.
- ► Do not expose the server to extreme environmental conditions (see " Ambient conditions" on page 111). Protect the server from dust, humidity and heat.
- ► Ensure that the server is acclimatized for the time indicated in Table 2 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 2: Acclimatization time

In 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).

5.2 Installation steps, overview

- ► First of all, carefully read the safety instructions in "Important information" on page 47 and following.
- ► 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 correspond to the details on the delivery note, see "Unpacking the server" on page 63.
- ▶ Ensure that you have all necessary manuals, see "Documentation overview" on page 15. If required, print out the PDF files.
- ▶ Components that have been ordered additionally may be delivered loose with the server. For installing, see the original component documentation.
- ▶ Set up the floorstand model, see "Setting up the floorstand model" on page 64 or install the rack model in the rack, see "Installing the server in the rack" on page 66.
- ▶ Connect the devices to the server. To do this, see "Notes on connecting/disconnecting cables" on page 73 and "Connecting devices to the server" on page 74.
- ▶ Connect the server to the mains, see "Connecting the power cord" on page 75.
- ▶ If applicable, get access to the drives, see "Access to the drives (floorstand model)" on page 88.
- ▶ If applicable, install the HDD/SSD modules, see "Installing HDD/SSD modules" on page 90.
- ▶ If applicable, install a second PSU, see "Installing a second PSU" on page 94.
- ▶ Familiarize yourself with the controls and indicators on the front and rear of the server, see "Connectors, controls, and indicators" on page 32.

- ► Configure the server and install the desired operating system and applications. The following options are available:
  - ► Installation with ServerView Installation Manager

    Local configuration and installation, see "Configuring the server with ServerView Installation Manager" on page 80.

    Remote installation, see "Configuring the server with ServerView Installation Manager" on page 80.

    For more information on installing the server (remote or local), see the "ServerView Installation Manager" user guide at https://support.ts.fujitsu.com.

  - ► Installation without ServerView Installation Manager

    Local configuration and installation, see "Configuring the server without ServerView Installation Manager" on page 81.

5.3 Unpacking the server

CAUTION

- ► Follow the safety instructions in "Important information" on page 47.
- ► The server must always be lifted or carried by at least two people. (For Japan, see " 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 (does not apply to Japan).
- ► 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 "About availability of manuals" on page 15).
- ► Notify your supplier immediately should you discover that the items delivered do not correspond to the delivery note.

► Remove all scratching protection foils from the front panel, HDD/SSD frames, Fujitsu and PRIMERGY logo, VGA dummy and ODD dummy in case they are still sticked to the server system.

5.4 Setting up the floorstand model

If you are not installing a PRIMERGY TX1330 M6 floorstand model, skip this section and continue with "Installing the server in the rack" on page 66.

CAUTION

► Follow the safety instructions in "Important information" on page 47.

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

► Unpack the server (see "Unpacking the server" on page 63).

► Set up the server.

CAUTION

- ► The server 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 subsystem.

► If applicable, install the anti-tilt bracket, see "Installing the anti-tilt bracket" on page 65.

► Connect the devices to the server, see "Connecting devices to the server" on page 74 and "Notes on connecting/disconnecting cables" on page 73.

► Connect the server to the mains, see "Connecting the power cord" on page 75.

Installing the anti-tilt bracket

Figure 18: Installing the anti-tilt bracket (A)

► Fit the anti-tilt bracket onto the bottom edge of the server rear.

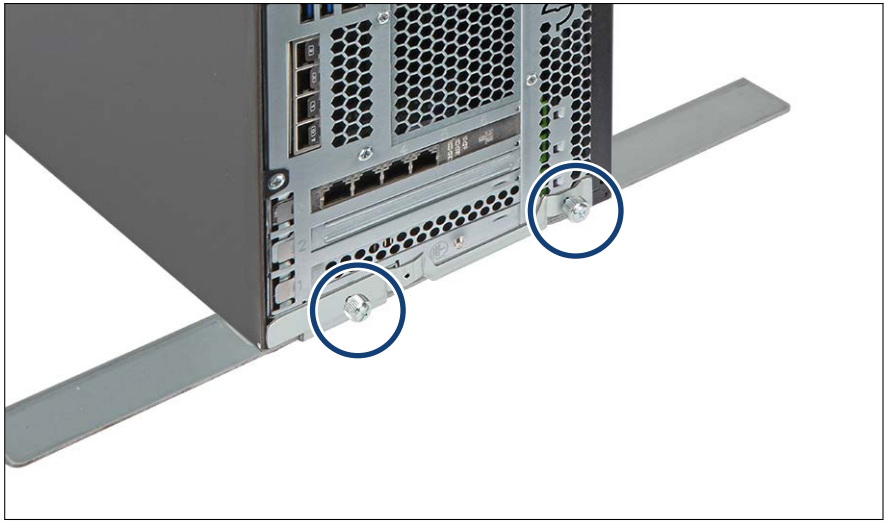


Figure 19: Installing the anti-tilt bracket (B)

► Fasten the anti-tilt bracket on the rear of the server with two knurled thumb screws.

5.5 Installing the server in the rack

5.5.1 Overview

CAUTION

- ► Please observe the safety information and notes on rack mounting in "Important information" on page 47 and "Installing the server in the rack" on page 66.
- ► At least two people are needed to install/remove the server in/from the rack. (For Japan, see "安全上のご注意".)
- ► Do not extend more than one unit out of the rack simultaneously even if the tilt protection is in place. If several units are simultaneously extended out of the rack, there is a risk that the rack could tip over.

Fujitsu rack systems

The rack systems from Fujitsu support the installation of PRIMERGY servers:

– PRIMECENTER rack

– PRIMECENTER M1 rack

– DataCenter rack

– 19-inch standard rack (for Japan)

– 19-inch slim rack (for Japan)

For information on mounting the server in the rack, see the "Mounting Instructions" provided with the Rack Mounting Kit. For more information, see the manual of your rack system.

For Japan, see also the "Rack system structure guide".

Online documentation for rack installation can be found at https://support.ts.fujitsu.com under **Product - Rack & Components**.

For Japan:
https://jp.fujitsu.com/platform/server/primergy/manual/peri_rack.html

To accommodate the ventilation concept and ensure proper ventilation, any unused areas in the rack must be sealed using dummy covers.

The power is supplied via the multiple socket outlets fitted in the rack (not valid for Japan).

The main features of Fujitsu rack systems are as follows:

– rail systems that can be mounted without tools

– support systems having a linear alignment feature to ensure that they can be adjusted to different rack depths

Asymmetrical PRIMECENTER rack and DataCenter rack provide an enhanced cable management in the lateral rack area.

3rd party racks

Installation in most current rack systems from other manufacturers (3rd party racks) is also supported. For details please contact your sales representative.

- ► Wire the server. Read the information in "Connecting devices to the server" on page 74 and "Notes on connecting/disconnecting cables" on page 73.
- ► Connect the system to the mains, see "Connecting the power cord" on page 75.

5.5.2 Installing the server in the rack

CAUTION

At least two people are needed to position the server on the rack rails. (For Japan, see "安全上のご注意".)

For configurations below 32 kg:

At least two people are needed to lift the server into the rack cabinet.

For configurations below 55 kg:

At least three people are needed to lift the server into the rack cabinet.

For configurations above 55 kg:

At least four people are needed to lift the server into the rack cabinet.

Additionally, a lifter is required in the following cases:

– The server weighs more than 50 kg.

– The server weighs more than 21 kg and is to be installed above the height of 25 U.

When using a lifter, this installation procedure needs to be carried out by maintenance personnel.

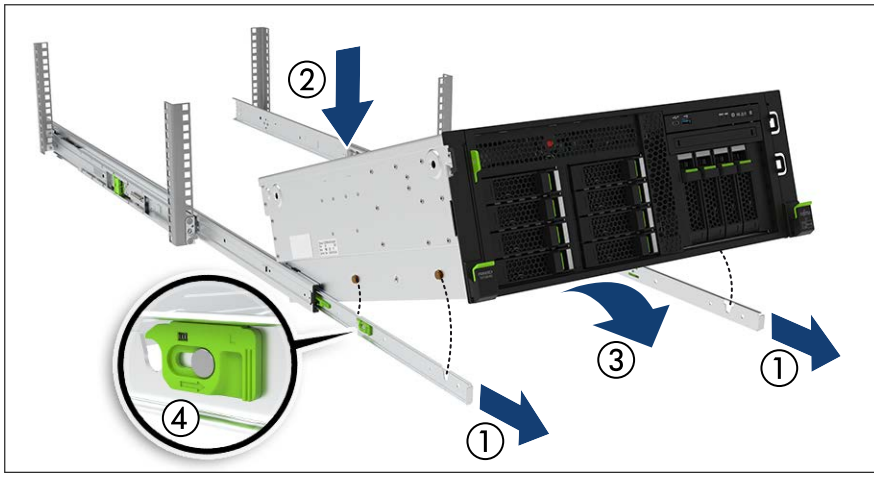


Figure 20: Installing the server into the rack rails

▶ Fully extend the rack rails until they lock in place (1).

The rack rails must click into place so that they can no longer be moved.

▶ At a slight angle, lower the server onto the rear mounting point on the rack rails (2).

▶ Fold down the server, while pressing the rail to the server side (3). Ensure that all six rack mounting bolts are properly seated in the mounting points on the rack rails and that the locking bars engage (4).

5.5.3 Sliding the server into the rack

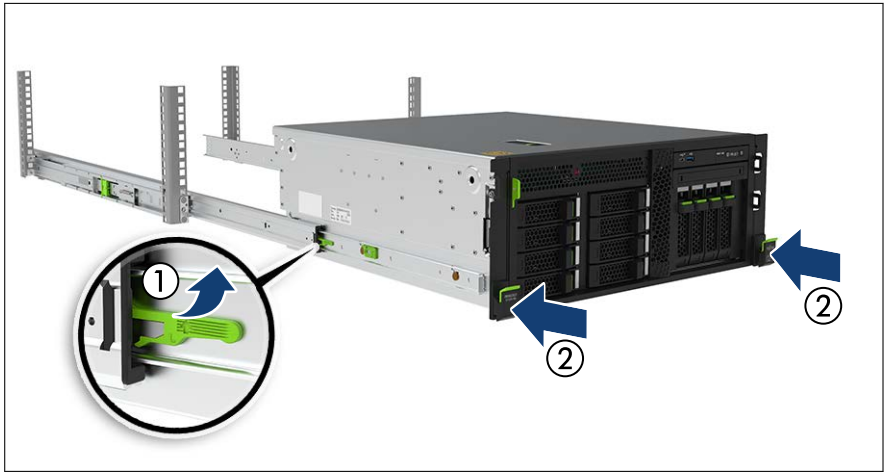


Figure 21: Sliding the server into the rack

► Release the locking mechanism of both rails (1).

► Push the server as far as it will go into the rack (2) until the quick-release levers engage.

CAUTION

► Be careful with your fingers. You can pinch them when the quick release levers change to the release position.

► Connect all cables except the power cord to the server rear.

5.5.4 Installing the front cover with lock

Figure 22: Installing the front cover

► Attach the front cover in a slight angle to the front.

Figure 23: Aligning the front cover

► Align the front cover. The lock on the left side must be pushed in (see circle).

Figure 24: Turning the key

► Insert the key.

► Turn the key in locked position.

5.6 Connecting cables

5.6.1 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.
- ► Ensure that you wait for 10 seconds or more after shutdown before turning the server on.

Connecting cables

► Switch off the server and equipment switches.

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

► Disconnect the DC power cord with earth grounding conductor from the properly DC source and earth ground stud or end.

► Connect all cables to the server and peripherals.

► Connect all data communication cables into the utility sockets.

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

► Connect the DC power cord with earth grounding conductor from the properly DC source and earth ground stud or end.

Disconnecting cables

- ▶ Switch off the server and equipment switches.
- ▶ Disconnect all power cords from the properly grounded power outlets.
- ▶ Disconnect the DC power cord with earth grounding conductor from the properly DC source and earth ground stud or end.
- ▶ Disconnect all data communication cables from the utility sockets.
- ▶ Disconnect the relevant cables from the server and all the peripherals.

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.

5.6.2 Connecting devices to the server

The connectors for external devices are on the front and rear of the server, see "Connectors, controls, and indicators" on page 32.

For a remote installation using the ServerView Installation Manger a LAN connection is necessary.

Some of the devices that can be connected may require special software, e.g. drivers (see the documentation for the connected device).

Connecting the keyboard, mouse and monitor

- ► Connect the keyboard and mouse to the USB connectors of the server.
- ► Connect the monitor to one of the two video connectors at the front or rear.

  The front video connector is designed for maintenance issues. If you connect a monitor to the video connector at the front, the video connector at the rear is deactivated. A monitor connected to the front must have at least the same resolution as the monitor connected to the rear. A console bypass is not possible via the video connector at the front.

  If a separate graphics card is installed in a slot, the graphic controller on the system board is automatically deactivated. The corresponding video connector can not be used. Connect the video cable of the monitor to the video connector of the graphics card.

- ► Connect the power cord of the monitor to a power outlet of the rack socket strip.

  The rated current for the monitor is indicated on the technical data label on the monitor or in the operating manual for the monitor.

5.6.3 Connecting the power cord

5.6.3.1 Overview

In its basic configuration the server has a permanently installed PSU or a hot-plug PSU. Besides the hot-plug PSU, a second hot-plug PSU can be installed optionally to serve as a redundant power supply. If one PSU fails, the second PSU in the redundant configuration ensures operation can continue uninterrupted.

5.6.3.2 Connecting the power cord (standard PSU)

CAUTION

The server automatically adjusts to a mains voltage in the range from 100 V - 240 V.

- ► You may only operate the server if its rated voltage range corresponds to the local mains voltage.

► Connect the power cord to the PSU.

► Connect the mains connector to a grounded mains outlet in the in-house power supply network.

Using a cable tie

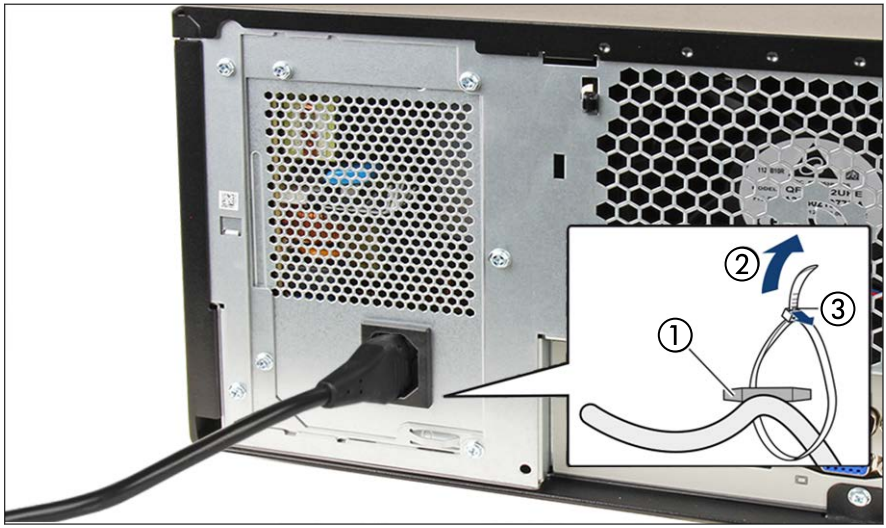


Figure 25: Securing the power cord

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

► Pull the cable tie tight to secure the power cable (2).

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

You can loosen the cable tie by opening the small locking lever (3).

It will take about 60 seconds until the server can be powered on.

5.6.3.3 Connecting the power cord (hot-plug PSU)

CAUTION

The server automatically adjusts to a mains voltage in the range from 100 V - 240 V.

- ► You may only operate the server if its rated voltage range corresponds to the local mains voltage.

- ► Connect the power cord to the PSU.
- ► Connect the mains connector to a grounded mains outlet in the in-house power supply network.
- ► Ensure that the status indicator on the PSU is lit green, see "Indicator on hot-plug PSU" on page 43.

You can secure the power cord with a cable clamp to ensure that the power cord cannot be disconnected from the server by mistake. The cable clamp is included in the accessories pack that is delivered together with the server.

Using a cable clamp

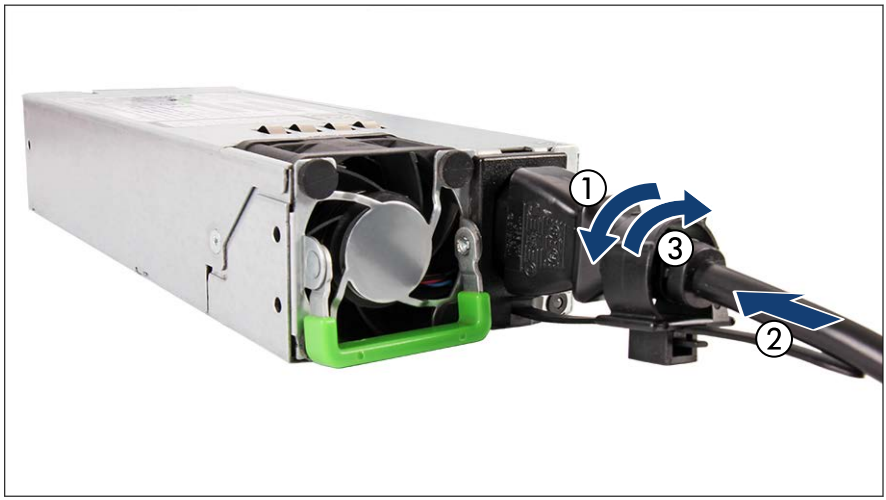


Figure 26: Locking the cable clamp of a PSU

- ► Pull the cable clamp up (1).
- ► Thread the power cord through the cable clamp (2).
- ► Press the cable clamp down until it engages to secure the cable (3).

i It will take about 60 seconds until the server can be powered on.

5.7 Switching on the server for the first time

CAUTION

- ► The On/Off button does not disconnect the server from the mains. To completely disconnect it from the mains, remove the power cords from the PSUs.
- ► Do not move, strike, or shake the server when it is switched on. This can damage the HDD/SSD in the server and cause data loss.
- ► Switch the server on when the temperature is in the specified temperature range. For more information on the operating environment, see " Ambient conditions" on page 111. When operating the server out of the specified temperature range, the server may operate improperly and data loss may occur. Furthermore, Fujitsu cannot be held responsible for any related damage, malfunction, or loss of data, etc.
- ► Ensure that you wait for 10 seconds or more after power off before switching on the server again.
- ► After connecting all power cords, wait at least 10 seconds before pressing the On/Off button.

Switching the server on

The AC connected indicator lights up green (standby mode) when the server is connected to the mains.

It will take about 60 seconds until the server can be switched on.

Starting up

For Japan, see "はじめにお読みください".

► Press the On/Off button.

► Configure your server and install the operating system, see "Configuring the server with ServerView Installation Manager" on page 80.

5.8 Configuring the server with ServerView Installation Manager

Ensure that the power saving functions are disabled in the **Power** menu of the BIOS setup during operation.

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 the hardware configuration of your server. This configuration is detected automatically.

Configuring the controllers

When using the ServerView Installation Manager you can configure the onboard controller either before or during installation.

► Configure the RAID controllers using the ServerView RAID Manager.

► If applicable, configure the onboard SATA controller, see "Notes on configuring controllers" on page 82.

► If applicable, configure the SAS/SATA RAID controller with MegaRAID functionality, see "Notes on configuring controllers" on page 82.

Installing the operating system

Descriptions of operating systems not covered in the RAID controller manual are provided in the corresponding readme files under: https://www.fujitsu.com/global/support/products/computing/servers/primergy/drivers/

For Japan: https://www.fujitsu.com/jp/products/computing/servers/primergy/downloads/

For more information on installing the server, see the "ServerView Installation Manager" user guide at https://support.ts.fujitsu.com under **Product** - **Software** - **ServerView** - **Provisioning**.

- ▶ Open this manual.
- ▶ For the remote or local installation, follow the instruction in this manual and on the screen.
- ▶ Configure the settings for the general system behavior of the server using the Server Configuration Manager.

5.9 Configuring the server without ServerView Installation Manager

Configuring the onboard SAS/SATA controller

- ▶ If applicable, configure the onboard SATA controller, see "Notes on configuring controllers" on page 82.
- ▶ If applicable, configure the SAS/SATA RAID controller with MegaRAID functionality, see "Notes on configuring controllers" on page 82.

Installing the operating system

- ▶ Insert the 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.

5.10 Notes on configuring controllers

5.10.1 General Notes

Ensure that the power saving functions are disabled in the **Power** menu of the BIOS setup during operation.

Descriptions of operating systems not covered in the controller manual are provided in the corresponding readme under:
https://www.fujitsu.com/global/support/products/computing/servers/primergy/drivers/

For Japan:
https://www.fmworld.net/cgi-bin/drviasearch/drviaindex.cgi

https://www.fujitsu.com/jp/products/computing/servers/primergy/downloads/

5.10.2 Notes on onboard SATA controllers

The controller has its own configuration utility. For more information, see the “Embedded MegaRAID Software User’s Guide” at https://support.ts.fujitsu.com/.

In the BIOS the onboard SATA controller can be configured as RAID (default) or non-RAID.

5.10.3 Notes on SAS/SATA RAID controllers

A separate utility is available to the controller for MegaRAID configuration. For more information, see the "SAS Software User’s Guide" available online at https://support.ts.fujitsu.com/.

More information on modular RAID controllers is provided in the "Modular RAID Controller Installation Guide" available online at https://support.ts.fujitsu.com/.

5.11 Note on operating system

Open the Windows operating system / Restoring the preinstalled environment

For the procedure to open the Windows operating system or to restore the preinstalled environment, see the manuals on the Fujitsu manual download site https://www.fujitsu.com/jp/products/computing/servers/primergy/manual/ (for Japan only) or the attached manuals.

Linux operating system support

About the Fujitsu Support Pack for Linux (FJ-LSP)

The FJ-LSP can only be used from customers who have an contracted support as a tool to create an Fujitsu recommended Linux support environment.

The FJ-LSP can be downloaded from the Fujitsu SupportDesk subscriber site (SupportDesk web: https://eservice.fujitsu.com/supportdesk-web/).

The FJ-LSP have to be used with the application wizard of the ServerView Installation Manager.

6 Operation

6.1 Safety notes

CAUTION

- ► Follow the safety instructions in "Important information" on page 47.

6.2 Switching the server on and off

CAUTION

- ► The On/Off button does not disconnect the server from the mains. To completely disconnect it from the mains, remove the power cords from the PSUs.
- ► Do not move, strike, or shake the server when it is switched on. This can damage the HDD/SSD in the server and cause data loss.
- ► Switch the server on when the temperature is in the specified temperature range. For more information on the operating environment, see " Ambient conditions" on page 111. When operating the server out of the specified temperature range, the server may operate improperly and data loss may occur. Furthermore, Fujitsu cannot be held responsible for any related damage, malfunction, or loss of data, etc.
- ► Ensure that you wait for 10 seconds or more after power off before switching on the server again.
- ► After connecting all power cords, wait at least 10 seconds before pressing the On/Off button.

Switching the server on

The AC connected indicator lights up green (standby mode) when the server is connected to the mains.

It will take about 60 seconds until the server can be switched on.

► Press the On/Off button.

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 several minutes.

Switching the server off

The power-on indicator lights up green.

► Shut down the operating system properly.

The server is switched off automatically and enters standby mode. The AC connected indicator lights up green.

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

CAUTION

There is a risk that data may be lost.

Other On/Off options

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

– **Timer-controlled turn-on/off**

  Using the iRMC, you can configure that the server is turned on/off controlled by an internal timer.

– **Ring indicator**

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

– **Wake up On LAN (WOL)**

  The server is turned 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 or in iRMC).

– **Power button override**

The system can be switched off (hard power off) by keeping the On/Off button (approximately 4 - 5 seconds).

CAUTION

There is a risk that data may be lost.

– **iRMC**

iRMC offers various options for switching the server on and off, e.g. via the **System power button** on the Global icons of the iRMC web interface.

CAUTION

When switching off the power

The operation of the power switch can be specified as "Do Nothing", "Stand by", "Hibernate", and "Shutdown" depending on the OS settings. The default is "Shutdown".

On this server, functions corresponding to "Stand by" and "Hibernate" are supported as BIOS and hardware functions. However, some drivers and software installed in the server do not support these functions. For this reason, functions corresponding to "Stand by" and "Hibernate" are unavailable on this server. When the operating mode is set to "Stand by" or "Hibernate", the system may operate improperly or HDD/SSD data may be corrupted.

For more information about operating mode settings, see the manual supplied with the OS.

6.3 Access to the drives (floorstand model)

6.3.1 Removing the accessible drive bay cover

Figure 27: Removing the accessible drive bay cover

► Press up on the locking latch (1) and fold out the accessible drive bay cover (2).

► Remove the accessible drive bay cover.

6.3.2 Removing the HDD bay cover

Figure 28: Removing the HDD bay cover

► Fold out the HDD bay cover in the direction of the arrow and remove it.

6.4 Installing HDD/SSD modules

6.4.1 Installing 3.5-inch HDD modules

Removing a 3.5-inch HDD dummy module

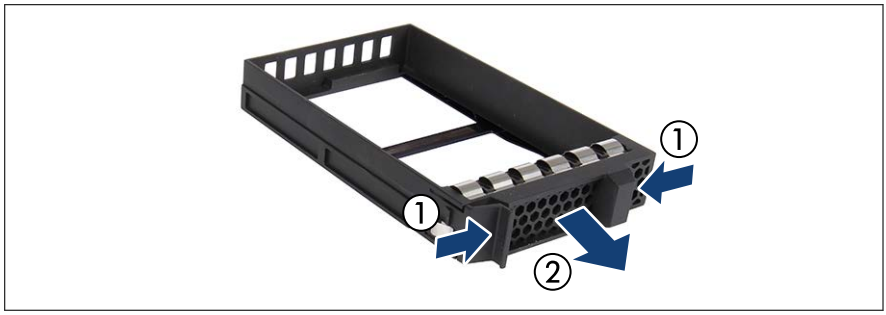


Figure 29: Removing the 3.5-inch dummy module

► Press both tabs together (1) and pull the dummy module out of its bay (2).

CAUTION

► Keep the dummy module for future use.

► Always replace dummy modules into unused HDD/SSD bays to comply with applicable EMC regulations and satisfy cooling requirements.

Installing a 3.5-inch HDD module

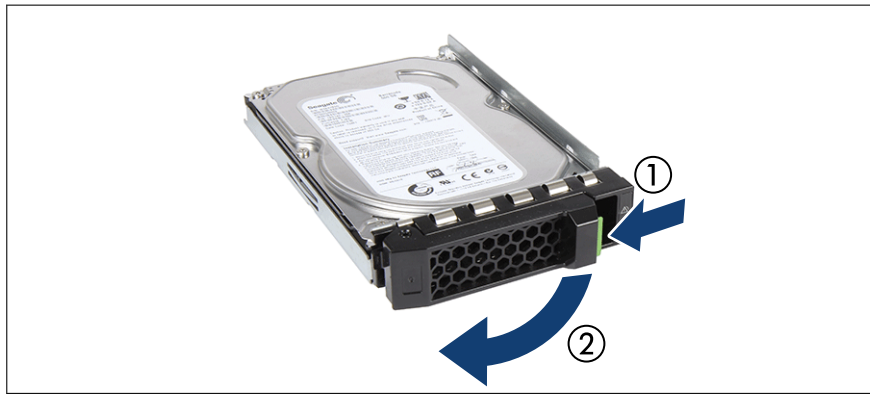


Figure 30: Opening the locking lever

► Pinch the green locking clip (1) and open the locking lever (2).

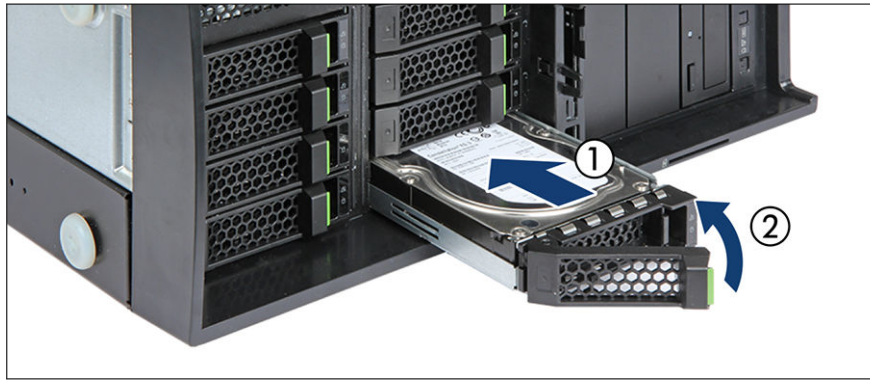


Figure 31: Installing the 3.5-inch HDD module

► Insert the HDD module into a drive bay and carefully push back as far as it will go (1).

► Close the locking lever to lock the HDD module in place (2).

► When using a RAID array, add the additional HDD to the RAID array.

Configuring the RAID array, refer to the documentation of the RAID controller, used in your configuration, see "Documentation overview" on page 15.

6.4.2 Installing 2.5-inch HDD/SSD modules

Removing a 2.5-inch HDD/SSD dummy module

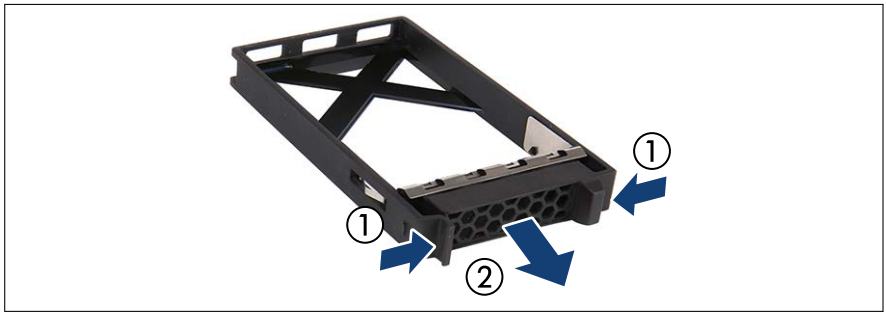


Figure 32: Removing a 2.5-inch HDD/SSD dummy module

► Press both tabs together (1) and pull the dummy module out of its bay (2).

CAUTION

► Keep the dummy module for future use.

► Always replace dummy modules into unused HDD/SSD bays to comply with applicable EMC regulations and satisfy cooling requirements.

Installing a 2.5-inch HDD/SSD module

Figure 33: Opening the locking lever

► Pinch the green locking clips (1) and open the locking lever (2).

Figure 34: Installing the 2.5-inch HDD/SSD module

► Insert the HDD/SSD module into a drive bay and carefully push back as far as it will go (1).

► Close the locking lever to lock the HDD/SSD module in place (2).

► When using a RAID array, add the additional HDD/SSD to the RAID array.

Configuring the RAID array, see the documentation of the RAID controller, used in your configuration, see "Documentation overview" on page 15.

6.5 Installing a second PSU

Removing the dummy cover

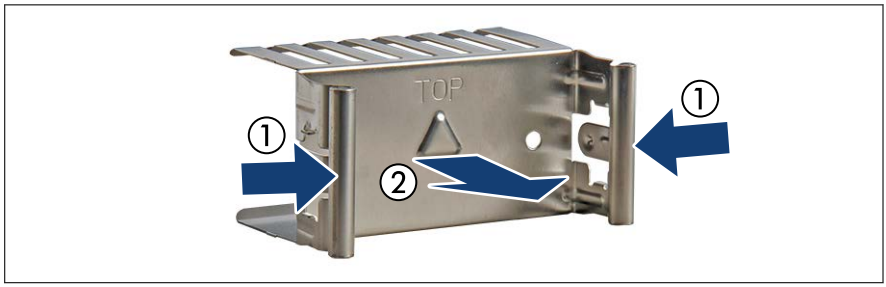


Figure 35: Removing the dummy cover

► Press in on both release latches (1) and remove the dummy cover (2).

CAUTION

► Keep the dummy cover for future use.

► If you remove a PSU and do not immediately replace it with a new one, a dummy cover must be installed in the bay again to comply with applicable EMC regulations and satisfy cooling requirements.

Installing a hot-plug PSU

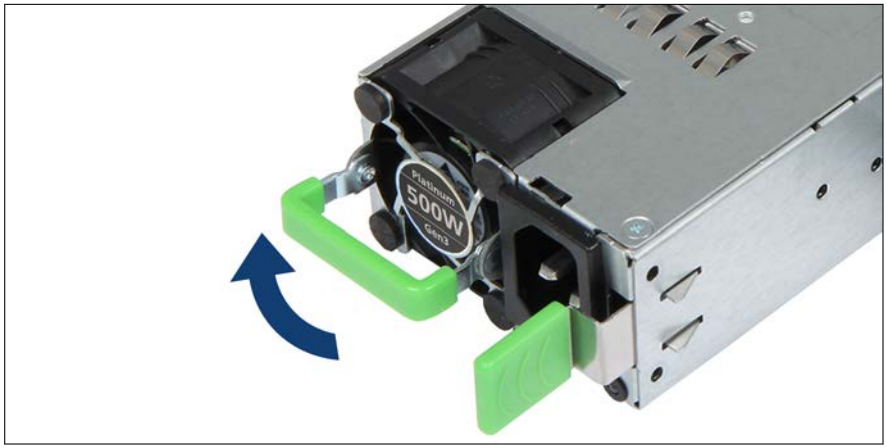


Figure 36: Folding up the handle

► Push the handle of the PSU halfway upward in the direction of the arrow.

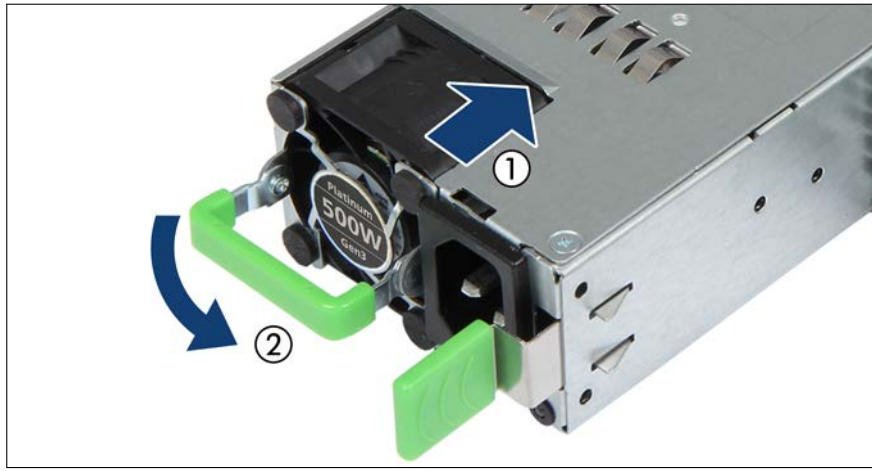


Figure 37: Installing the PSU

► Push the PSU into its bay (1) as far as it will go until the release latch snaps in place.

► Fold down the handle on the PSU (2).

Ensure that the PSU engages correctly in the bay and is locked in position. This is the only way to prevent the PSU from sliding out of its bay and being damaged during transportation.

► Connect the power cord to the PSU, see "Connecting the power cord" on page 75.

► If applicable, configure the redundant power supply.

Installing the cable clamp (only for AC PSU with cable clamp)

The kit of your AC PSU may include a cable clamp.

Figure 38: Installing the cable clamp

► Push the cable clamp into the corresponding hole until it clicks in.

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 Troubleshooting and tips

7.1 General proceeding

CAUTION

► Follow the safety instructions in the "Safety Notes and Regulations" manual or "安全上のご注意" and in "Important information" on page 47.

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.

The meaning of the error message is explained in the documentation for the relevant components and programs, available online at https://support.ts.fujitsu.com/.

7.2 Power-on indicator remains unlit after you have switched on your device

Cause	Troubleshooting
Power cable incorrectly connected	► Ensure 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.

7.3 System does not boot after installing a new HDD

Cause	Troubleshooting
SAS configuration incorrect	► Check the settings for the HDDs (**SAS Device Configuration**) and the additional settings in the SAS configuration menu.

7.4 Screen remains blank

Cause	Troubleshooting
Monitor is switched off	► Switch on your monitor.
Screen has gone blank	► Press any key on the keyboard. or ► Deactivate screen saver and enter the appropriate password.
Brightness control is set to dark	► Set the brightness control on the monitor to light. For more information, see the operating manual supplied with your monitor.

7.5 No screen display or display drifts

Cause	Troubleshooting
Wrong horizontal frequency or resolution selected	► 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. ► See the documentation for your operating system or the software for the screen controller for more information of how to set the correct horizontal frequency for your monitor, and follow the procedure accordingly.

7.6 Server switches itself off

Cause	Troubleshooting
Server Management has detected an error	► Check the error list of System Event Log in the iRMC web interface, and attempt to eliminate the error.

7.7 No mouse pointer displayed on screen

Cause	Troubleshooting
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.

7.8 No effect of keyboard or mouse

Cause	Troubleshooting
Typing the keyboard does not display any characters, or the mouse cursor does not move	► Check to see whether the keyboard and mouse are connected properly. If they are not connected or you replaced them yourself, then connect the cables to the server.

7.9 Time and/or date is incorrect

Cause	Troubleshooting
Time and date is incorrect	► Set the correct time and date in the operating system. or ► Set the correct time and date in the BIOS **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.
The lithium battery is discharged	► If the date and time are still wrong after the server has been switched off and back on again, replace the lithium battery (see the "Fujitsu Server PRIMERGY TX1330 M6 Upgrade and Maintenance Manual") or contact our customer service team.

7.10 Temperature warning

A temperature warning is output to the hardware event log and OS event log, or ServerView issues a notification of a temperature warning such as by a popup message.

This warning is issued by ServerView when the ambient temperature exceeds the upper limit of the temperature boundaries. The upper limit is 35 °C for standard server and 40 °C or 45 °C with Advanced Thermal Design.

Cause	Troubleshooting
The ambient temperature exceeds the upper limit of the temperature boundaries	► Although continued use within the temperature boundaries poses no problems within itself, reconsider the surrounding environment conditions if this log is output or if ServerView issues this notification.

7.11 Added drive reported as defective

Cause	Troubleshooting
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 HDD/SSD continues to be shown as defective, then replace it (see the "Fujitsu Server PRIMERGY TX1330 M6 Server Upgrade and Maintenance Manual").

7.12 Expansion cards or onboard devices not recognized

When an expansion card is added, other expansion cards or onboard devices might not be recognized.

Cause	Troubleshooting
Expansion cards or onboard devices not recognized	► Reinstall the drivers for the expansion cards or onboard devices that are not recognized.

Various HDD/SSD error messages may occur when the system is rebooted. These error messages are caused by modifications in the selected RAID configuration.

Cause	Troubleshooting
RAID controller configuration incorrect	► Check and correct the settings for the drives using the RAID controller configuration program. For more information, see the "Integrated RAID for SAS User's Guide" or the "Modular RAID Controller Installation Guide" available online at https://support.ts.fujitsu.com/.

7.13 ODD cannot read data

Cause	Troubleshooting
ODD cannot read data	► Check to see whether the CD/DVD/BD is inserted properly. If the CD/DVD/BD is not inserted, correctly insert the disk so that the label is facing up. ► Check to see whether the CD/DVD/BD is not dirty. If the CD/DVD/BD is dirty, wipe it in a radial way with a soft, dry cloth. ► Check to see whether the CD/DVD/BD is not scratched or bent. If scratched or damaged, replace the CD/DVD/BD.

7.14 iRMC cannot read detailed information from the NVIDIA T400 card

The **Graphics** page of the **System** menu of the iRMC's web interface displays the status of GPU cards. When the OS is running, the iRMC cannot read detailed information from the NVIDIA T400 card besides its temperature. In this case **N/A** is displayed for the related properties.

8 Technical data

8.1 Data Sheets

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

The data sheets for this server contain more technical data. The data sheets are available online at:
https://www.fujitsu.com/fts/products/computing/servers/primergy

For more information, see the **Documents** tab under e.g. **Rack Servers**.

For Japan:
https://www.fujitsu.com/jp/products/computing/servers/primergy

8.2 System board

System board type	D4132
Chipset	Intel® C266

8.3 Processor (CPU)

CPU quantity and type	1x Intel® Xeon® CPU E24xx, Pentium, up to 95 W, up to 8 cores

8.4 Memory modules configuration

Memory slots	4
Memory type	UDIMM (DDR5)

Memory capacity (min. - max.)	Up to 128 GB using DDR5 DIMM (32 GB x4)
Memory protection	ECC
Memory notes	Supports DDR5 UDIMM up to 4400 MT/s

8.5 Interfaces

USB	Rear: 6x USB 3.2 Gen 1 Front: 1x USB 3.2 Gen 2/ 1x USB 3.2 Gen1 Internal: 1x USB 3.2 Gen 1
Graphics	1x VGA (15-pin)
Serial 1 (9-pin)	1x serial RS-232-C, usable for iRMC or system or shared
LAN / Ethernet (RJ45)	2x Intel ® i210 Gbit/s Ethernet
Management LAN (RJ45)	1x dedicated management LAN port for iRMC (10/100/1000 Mbit/s). Management LAN traffic can be switched to shared onboard converged network adapter.

8.6 Onboard or integrated controllers

RAID controllers	Modular Host Bus Adapter with "Integrated RAID" (IR) RAID levels 0 and 1 are supported for internal HDD configurations.
	Modular RAID 0/1 controller with "MegaRAID" levels 0, 1, 10, 5, 50, 6 and 60 are supported for internal HDD configurations. As an option, a flash backup unit (FBU) can save the memory content even if the power fails. Cache memory size of 1 GB or 2 GB are available.
	Modular RAID 5/6 controller with "MegaRAID functionality" (integrated MegaRAID). RAID levels 0, 1, 10, 5, 50, 6 and 60 are supported for internal HDD configurations. As an option, a flash backup unit (FBU) can save the memory content even if the power fails. Cache memory size of 1 GB or 2 GB are available.
SATA controller	1x SATA controller integrated on the system board; up to four SATA HDDs/SSDs can be connected to the controller. 1x single SATA connector for ODD 2x M.2 connector with support for SATA
Remote Management Controller	Integrated Remote Management Controller (iRMC S6) with 256 MB DDR4-800 SRAM for video, IPMI 2.0 compatible
Trusted Platform Module (TPM)	Infineon / TPM 2.0 module, TCG compliant (option)

8.7 Slots

Slot 1: PCIe Gen4 x4 (mechanical x4)	notched, up to 167.65 mm length
Slot 2: PCIe Gen4 x4 (mechanical x4)	notched, up to 167.65 mm length
Slot 3: PCIe Gen5 x0/x8 (mechanical x8)	notched, up to 240 mm length
Slot 4: PCIe Gen5 x16/x8 (mechanical x16)	up to 240 mm length
Slot notes	In SAS configuration slot 3 is proposed for modular RAID controller.

8.8 Drive bays

HDD bay configuration	Up to 12x 3.5-inch for SAS / SATA HDD or 8x / 16x / 24x 2.5-inch for SAS / SATA HDD
Accessible drive bays	3x 5.25/1.6-inch for backup devices
Notes accessible drives	All possible options described in relevant system configurator.

8.9 Dimension/Weight

Floorstand (W x D x H)	178 mm x 551 mm x 457 mm
Rack (W x D x H)	484 mm x 546 mm x 175 mm (without projecting parts)
Mounting depth rack	522 mm
Weight	Approx. 25.8 - 28.8 kg
Weight notes	Weight may vary depending on actual configuration
Rack mounting kit	Rack mounting kit as option

8.10 Ventilation clearance

There must be a clearance of at least 200 mm in front of and behind the server to ensure adequate ventilation of the subsystem.

8.11 Ambient conditions

All temperature ratings shown are valid for sea level. An altitude derating of 1 °C per 300 m to 3050 m is applicable.

Environment class 3K2 Environment class 2K2	EN 60721 / IEC 721 Part 3-3 EN 60721 / IEC 721 Part 3-2
Operation temperature (3K2)	10 °C ... 35 °C 5 °C ... 40 °C (with ATD 40 °C) 5 °C ... 45 °C (with ATD 45 °C)
Transport temperature (2K2)	-25 °C ... 60 °C
Humidity	8% ... 85%, maximum dew point 21 °C (non condensing)
Condensation during operation must be avoided!	

PRIMERGY servers are designed for the usage with operating temperatures of up to 35 °C. There could be configurations that are not able to work within this normal operation class. Please refer to Datasheet and Fujitsu WebArchitect (www.fujitsu.com/configurator/public) to obtain detailed information on the corresponding configurations.

For Japan:
https://www.fujitsu.com/jp/products/computing/servers/primergy/

8.12 Noise level (depending on the configuration)

The acoustic noise values are depending on the system configuration.

Standard configuration SATA systems	
Sound power level L_{WAd} (ISO 9296)	4.0 B (standby) 4.1 B (operation)
Sound pressure level at adjacent workstation L_{pAm} (ISO 9296)	25 dB (A) (standby) 26 dB (A) (operation)
Declared noise emission according to ISO 9296	Standby Operating (ISO 7779) ETSI 300 753 Class 3.1

8.13 Electrical values: Fujitsu battery unit (FJBU)

Max. output	380 W
Backup duration	Max. 2 seconds (380 W), 4 minutes (280 W) with FJBU M2
Charge duration	4 hours to 90%, 5 hours to 100%
Battery spec.	Nickel metal-hydride battery
Battery life time	5 years
Input/Output voltage	12 V DC
Weight	1.2 kg

8.14 Electrical values: 450 W (standard PSU)

(P/N: S26113-E663-V50-1 / DPS-450AB-31 A)

Rated voltage range	100 V - 240 V
Rated frequency range	50 Hz - 60 Hz
Max. rated current	5.7 A - 2.5 A

8.15 Electrical values: 500 W Platinum (hot-plug PSU)

(P/N: S26113-E627-V50-1 / DPS-500AB-48A)

Rated voltage range	100 V - 240 V
Rated frequency range	47 Hz - 63 Hz
Max. rated current	6.5 A

(P/N: S26113-E627-V70-1 / S19-500P1A)

Rated voltage range	100 V - 240 V
Rated frequency range	50 Hz - 60 Hz
Max. rated current	6.0 A - 2.9 A

(P/N: S26113-E627-V70-2 / S19-500P1A)

Rated voltage range	100 V - 240 V
Rated frequency range	50 Hz - 60 Hz
Max. rated current	6.0 A - 2.9 A

8.16 Electrical values: 500 W Titanium (hot-plug PSU)

(P/N: S26113-E651-V50-1 / DPS-500AB-65-A)

Rated voltage range	100 V - 240 V
Rated frequency range	50 Hz - 60 Hz

Max. rated current	6.1 A

(P/N: S26113-E651-V50-2 / DPS-500AB-65-B)

Rated voltage range	100 V - 240 V
Rated frequency range	50 Hz - 60 Hz
Max. rated current	6.1 A

8.17 Electrical values: 900 W Platinum (hot-plug PSU)

(P/N: S26113-E628-V60-1 / PS-2901-5J)

Rated voltage range	100 V - 240 V
Rated frequency range	50 Hz - 60 Hz
Max. rated current	11.0 A - 4.5 A

(P/N: S26113-E628-V50-1 / DPS-900AB-3A)

Rated voltage range	100 V - 127 V/200 V - 240 V
Rated frequency range	47 Hz - 63 Hz
Max. rated current	11.5 A/5.7 A

8.18 Electrical values: 900 W Titanium (hot-plug PSU)

(P/N: S26113-E629-V50-1 / DPS-900AB-2 A)

Rated voltage range	200 V - 240 V
Rated frequency range	47 Hz - 63 Hz
Max. rated current	5.7 A

8.19 Compliance with standards

Global	CB-Scheme (ITE) CISPR 32 CISPR 35 RoHS (Substance limitations in accordance with global RoHS regulations) WEEE (Waste electrical and electronical equipment)
Europe	EMC Directive 2014/30/EU LVD Directive 2014/35/EU RoHS Directive 2011/65/EU with all amendments (incl. (EU) 2015/863) Ecodesign Directive 2009/125/EC for energy-related products NSF/ANSI 426 Environmental Leadership and Corporate Social Responsibility Assessment of Servers
UKCA	UKCA
Germany	GS
USA / Canada	Safety NRTL FCC 47CFR part 15 Class A / ICES-003
Japan	VCCI Class A / JEITA / JEL (Japan Energy)
Australia / New Zealand	AUS/NZ (RCM class A EMC)
Taiwan	BSMI
China	CCC
Korea	KC-Mark EMC class A

CAUTION

This device meets the requirements of Class A CISPR 32/35. This device can cause radio interference in residential areas.

9 Warranty and service

Warranty

The warranty regulations can be found online at:
https://support.ts.fujitsu.com/

For Japan:
https://www.fujitsu.com/jp/products/computing/servers/primergy/support/
For the warranty regulations select "製品保証ご案内（無償修理期間）"

Service

Telephone numbers of the local service partner can be found online at:
https://support.ts.fujitsu.com/IndexContact.asp?OpenTab=servicedesk