Data Sheet
Fujitsu PRIMERGY RX4770 M5 Server

Power for the backend of digitalization

PRIMERGY RX4770 M5
The Fujitsu PRIMERGY Server RX4770 M5 is an industry-standard x86 server system with four sockets, providing superior levels of performance, scalability and efficiency. This combination turns the server into an ideal platform for running databases and transactional applications, business intelligence (BI) workloads, back-end and in-memory databases as well as other compute-intensive applications. In addition, it substantially simplifies carrying out DC server optimization such as server virtualization or consolidation. Featuring the latest Intel® Xeon® Scalable Family processors with each up to 28 cores pushes this server to a whole new level of compute performance to deliver more efficient business results. Thanks to the highly performant and superfast DDR4 memory technology with up to 6TB memory capacity and optionally up to 24x Intel® Optane™ DC Persistent Memory NV-DIMM modules along with excellent support for NVMe Flash drives, the system can handle complex, data-intensive workloads such as in-memory databases like SAP HANA® and real-time business analytics even easier than the previous generation. The PRIMERGY RX4770 M5 supports 12 Gbit/s SAS/ SATA controllers with optional FBU. It can either come as a 16x 2.5-inch hot-plug storage drives holding base unit or in a base unit holding a total of 12x storage drives even for directly connected PCIe SSDs. Up to eight PCI-Express Gen3 slots increases bandwidth and provides sufficient expandability for faster insights. With built-in redundancy and hot-pluggable components as well as advanced business-critical RAS features such as Resilient System- and Memory Technologies, the RX4770 M5 provides higher availability and uptime. Virtualization and consolidation of IT resources offer many benefits but can often lead to increased expenses for server administration. Therefore the PRIMERGY RX4770 M5 delivers state-of-the-art management capabilities with the latest generation integrated Remote Management Controller (iRMC S5) offering a variety of user-friendly functions to ensure a faster and more cost-effective infrastructure management, no matter whether the server is located in the server-room next door or in another part of the world.
# Features & Benefits

<table>
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<th>Main Features</th>
<th>Benefits</th>
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<tr>
<td><strong>INNOVATION MEETS PERFORMANCE</strong></td>
<td>Ready for the future and data growth scenarios with the performance of two processors – marking the standard of tomorrow with an increase in computing power. New SKUs of the 2nd generation Intel® Xeon® Scalable processors deliver additional customer value with increased performance and industry leading frequency for the most demanding workloads.</td>
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<td>- Wide choice of different types of Intel® Xeon® Scalable processors as well as new 2nd generation Intel® Xeon® Scalable processors. Each processor offers up to 28 cores, up to 56 threads, 12 memory channels enabling a significantly higher performance and efficiency. They rely on Intel® UltraPath Interconnect for an increased data rate between the CPUs. Intel® Optane™ DC persistent memory is an innovative memory technology that delivers a unique combination of affordable large capacity and persistence (non-volatility). It revolutionizes the data center memory-storage hierarchy of the past and brings massive data sets closer to the CPU for faster time to insight. In total, up to 15,360 GB main memory in a mixed mode (non-volatile memory + DDR4 @ 2,933 MT/s) are available.</td>
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<td><strong>ENHANCED FEATURES FOR ENHANCED COMPUTING</strong></td>
<td>Business-critical RAS features lower the risk for unplanned IT downtimes. The systems' enhanced set of features adds even more reliability, availability, and serviceability that customers need to run business-critical applications.</td>
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<td>- Extended RAS-features for fail-safe operation: Built-in redundancy and hot-pluggable components, Advanced ECC, Memory Scrubbing and SDDC. A storage drive bay configuration with up to 16x 2.5-inch or up to 12x PCIe 2.5-inch SSD SFF*, complemented by internal M.2 devices for hypervisor installations. Our power supply units with up to 96% energy efficiency and Fujitsu’s Cool-safe* Advanced Thermal Design for higher ambient temperatures in the data center are available for this server.</td>
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<td><strong>REVOLUTIONIZING MEMORY AND STORAGE</strong></td>
<td>Optimize, store, and move larger, more complicated data sets with Intel® Optane™ technology. This revolutionary innovation bridges critical gaps in the storage and memory hierarchy delivering persistent memory, large memory pools, fast caching and fast storage.</td>
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<td>- Intel® Optane™ persistent memory modules are DDR4 socket compatible and can co-exist with conventional DDR4 DRAM DIMMs on the same platform. They are available in capacities of 128 GB, 256 GB and 512 GB.</td>
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<td><strong>INFRASTRUCTURE MANAGEMENT</strong></td>
<td>Converged data center management that provides organizations centralized control over the entire infrastructure that includes servers, storage, networking, cloud management software as well as power and cooling using a single user interface.</td>
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<td>- ISM is available with two licensing options: (1) ISM Advanced is the fully featured licensed version of ISM that provides comprehensive infrastructure management capabilities across datacenter. (2) ISM Essential provides a quick start to infrastructure management with essential monitoring and update functions.</td>
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<td><strong>PROTECT YOUR COMPANY WITH SECURE SERVERS</strong></td>
<td>PRIMERGY servers come with a wide variety of such robust security features and combine these capabilities with the best quality and efficiency, and more agility in daily operations helps to turn IT into a business advantage faster.</td>
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<td>- PRIMERGY servers are equipped with beneficial features to protect against, detect and recover from security breaches (UEFI Secure Boot, TPM 2.0, signed firmware updates, agent-free device management, secure authorization and authentication, alerting and logging, secure Out of Band Management with iRMC S5, …).</td>
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## Technical details

### PRIMERGY RX4770 M5

#### Mainboard
- **Mainboard type**: D3753
- **Chipset**: Intel® C624
- **Processor quantity and type**: 2 or 4 x Intel® Xeon® Gold 5xxx processor / Intel® Xeon® Gold 6xxx processor / Intel® Xeon® Platinum 8xxx processor
- **Processor notes**: A minimum of 2 processors must be configured, no mix of different processor types
- **Memory slots**: 48 (12 DIMMs per CPU, 6 channels with 2 slots per channel)
- **Memory slot type**: DIMM (DDR4 / DDR-T for non-volatile memory modules)
- **Memory capacity (min. - max.)**: 16 GB - 15 TB
- **Memory protection**: Advanced ECC, Memory Scrubbing, SDDC, Memory Mirroring support, Rank sparing memory support
- **Memory notes**: Max. 6 slots populated with DCPMM modules per CPU, please see relevant system configurator for details. Memory Mirroring Mode with identical modules in both channel pairs of a bank (4 or 6 modules per bank) per CPU. Rank Sparing Mode with minimum of 2 modules single ranked (1R) or dual ranked (2R) or 1 module quad ranked (4R) per CPU.

#### Interfaces
- **USB 3.x ports**: 5 x USB 3.0 (2x front, 2x rear, 1x internal)
- **Graphics (15-pin)**: 2 x VGA (1 x front, 1 x rear)
- **Serial 1 (9-pin)**: 1 x RS-232-C
- **Management LAN (RJ45)**: 1 x dedicated management LAN port for iRMC S5 (10/100/1000 Mbit/s)

#### Onboard or integrated Controller
- **RAID controller**: All hardware storage controller options are described under Components
- **SATA Controller**: Intel® C624, 1 x SATA channel for ODD
- **LAN Controller**: DynamicLoM based on Intel® C624 (Intel® X722) Optional DynamicLoM OCP adaptors:
  - 2 x 10 Gbit/s Ethernet (RJ45)
  - 2 x 10 Gbit/s SFP+
  - 4 x 1 Gbit/s Ethernet (RJ45)
  - 4 x 10 Gbit/s SFP+

#### Slots
- **PCI-Express 3.0 x16**: 8 x whereas 4x full height and 4x low profile with up to 167mm length

#### Slot Notes
- Important note: 4 PCIe slots are supported with the first and second processor. Additional 4 PCIe slots are supported with the third and forth processors.
- Slot 1 & 2: PCIe Gen3 x16 @CPU1 for low profile cards with up to 167mm length
- Slot 3 & 4: PCIe Gen3 x16 @CPU4 for full height cards with up to 167mm length
- Slot 5: PCIe Gen3 x16 @CPU2 for low profile cards with up to 167mm length
- Slot 6 & 7: PCIe Gen3 x16 @CPU3 for full height cards with up to 167mm length
- Slot 8: PCIe Gen3 x16 @CPU2 for low profile cards with up to 167mm length (used for the internal modular RAID controller if selected)
### Drive bays

| Storage drive bays | 2.5-inch hot-plug SAS/SATA/PCIe  
|                   | 2 x M.2 slot whereas slot 1 supports 80mm or 110mm and slot 2 supports 42mm or 80mm |
| Notes accessible drives | All possible options described in relevant system configurator. |
| Optional accessible drives | 1 x 5.25/9.5mm for DVD-RW/Blu-ray |

### General system information

| Number of fans | 12 |
| Fan configuration | hot-plug |
| Fan notes | 11+1 redundant |

### Operating panel

| Operating buttons | On/off switch  
|                  | NMI button  
|                  | Reset button  
|                  | ID button |
| Status LEDs | System status (green)  
|             | Global error (orange)  
|             | Identification (blue)  
|             | Hard disks access (green)  
|             | Power (green)  
|             | CSS (orange)  
| At system rear side: | System status (green)  
|                      | CSS (orange)  
|                      | Identification (blue)  
|                      | Global error (orange)  
|                      | LAN connection (green)  
|                      | LAN speed (green / yellow) |

### BIOS

| BIOS features | UEFI compliant  
|              | Legacy BIOS compatibility customer configuration option  
|              | Secure boot support  
|              | ROM based setup utility  
|              | GPT support for boot drives larger than 2.2 TB  
|              | Memory Redundancy support (Mirroring, Sparing)  
|              | IPMI support  
|              | Recovery BIOS  
|              | BIOS settings save and restore  
|              | Local BIOS update from USB device  
|              | Online update tools for main Linux versions  
|              | Local and remote update via ServerView Update Manager  
|              | IPv4/IPv6 remote PXE & iSCSI boot support  
|              | Cryptographically Signed BIOS Firmware Update  
|              | HTTP and HTTPS Boot  
|              | PCIe Bifurcation configurable |

### Operating Systems and Virtualization Software

| Operating system release link | http://docs.ts.fujitsu.com/dl.aspx?id=d4ebd846-aa0c-478b-8f58-4cfbf3230473 |
| Operating system notes | Support of other Linux derivatives on demand |

### Infrastructure and Server Management

| DC Infrastructure Management | Infrastructure Manager (ISM)  
|                             | Essential Edition  
|                             | Advanced Edition |
| Server Management | Infrastructure Manager (ISM)  
|                   | Essential Edition  
|                   | Advanced Edition  
|                   | ServerView Suite |
| Management notes | For further information regarding ISM and ServerView Suite see dedicated data sheets. |
Dimensions / Weight

Dimensions / Weight
Rack (W x D x H) 482.6 mm (Bezel) / 434.8 mm (Body) x 724.8 x 86.9 mm
Mounting Depth Rack 741.3 mm
Height Unit Rack 2 U
19" rackmount Yes
Mounting Cable depth rack 200 mm (1,000 mm Rack recommended)
Weight max. 29.7 kg
Weight notes Actual weight may vary depending on configuration
Rack integration kit Rack integration kit as option

Environment

Environment
Operating temperature note Cool-safe® Advanced Thermal Design (above 35 °C or below 10 °C) depending on configuration. Please use the Fujitsu WebArchitect (www.fujitsu.com/configurator/public) to get detailed information on the corresponding configurations.
Operating relative humidity 10 - 85 % (non condensing)
Operating environment FTS 04230 – Guideline for Data Center (installation specification)
Noise emission Measured according to ISO 7779 and declared according to ISO 9296
Sound pressure (LpAm) 47.4 dB(A) (idle) / 47.4 dB(A) (operating)
Sound power (LWAd; 1B = 10dB) 6.5 B (idle) / 6.5 B (operating)
Noise notes Noise emissions depends on operation modes, system configuration and ambient temperature.
Operating mode measured based on OLTIS with 50% load. *OLTIS = FUJITSU Load Profile which stresses all components of a server with a given load level.

Electrical values

Electrical values
Power supply configuration 2 hot-plug power supplies (standard), single power supply configuration possible
Hot-plug power supply redundancy Optional
Active power (max. configuration) 2,335 W
Apparent power (max. configuration) 2360 VA
Heat emission (max. configuration) 8406.0 kJ/h (7967.3 BTU/h)
Rated current max. 20 A (100 V) / 8 A (240 V)
Active power note To estimate the power consumption of different configurations use the Fujitsu Product Configurator: www.fujitsu.com/configurator/public
Power supply 1600W hot-plug, 94% (Platinum efficiency), 200-240V, 50 / 60Hz
Power supply notes Hot plug power supply redundancy with AC input Voltage at 200 - 240V only

Compliance

Compliance
Product PRIMERGY RX4770 M5
Model PS4770A
Global CB
RoHS (Substance limitations in accordance with global RoHS regulations)
WEEE (Waste electrical and electronical equipment)
Europe CE
USA/Canada CSAc/us
ICES-003 / NMB-003 Class A
FCC Class A
Japan VCCI/V3 Class A + JIS 61000-3-2
South Korea KN32
KN35
Australia/New Zealand C-Tick (planned)
Taiwan CNS 13438 class A - planned
Compliance link https://sp.ts.fujitsu.com/sites/certificates
Compliance notes There is general compliance with the safety requirements of all European countries and North America. National approvals required in order to satisfy statutory regulations or for other reasons can be applied for on request.
* Warning: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.
## Components

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<th>Warranty</th>
<th>3 years</th>
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<tbody>
<tr>
<td>Warranty type</td>
<td>Onsite warranty</td>
</tr>
<tr>
<td>Support Pack Options</td>
<td>Globally available in major metropolitan areas:</td>
</tr>
<tr>
<td></td>
<td>9x5, Next Business Day Onsite Response Time</td>
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<tr>
<td></td>
<td>9x5, 4h Onsite Response Time (depending on country)</td>
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<tr>
<td></td>
<td>24x7, 4h Onsite Response Time (depending on country)</td>
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<tr>
<td>Recommended Service</td>
<td>24x7, Onsite Response Time: 4h - For locations outside of EMEA please contact your local Fujitsu partner.</td>
</tr>
<tr>
<td>Service Lifecycle</td>
<td>at least 5 years after shipment, for details see <a href="https://support.ts.fujitsu.com/">https://support.ts.fujitsu.com/</a></td>
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<tr>
<td>Service Weblink</td>
<td><a href="http://ts.fujitsu.com/Supportservice">http://ts.fujitsu.com/Supportservice</a></td>
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More information

Fujitsu platform solutions
In addition to Fujitsu PRIMERGY RX4770 M5, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

Dynamic Infrastructures
With the Fujitsu Dynamic Infrastructures approach, Fujitsu offers a full portfolio of IT products, solutions and services, ranging from clients to datacenter solutions, Managed Infrastructure and Infrastructure as-a-Service. How much you benefit from Fujitsu technologies and services depends on the level of cooperation you choose. This takes IT flexibility and efficiency to the next level.

Computing Products
www.fujitsu.com/global/products/computing/

Software
www.fujitsu.com/software/

Fujitsu green policy innovation

More information
Learn more about Fujitsu PRIMERGY RX4770 M5, please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website.
http://www.fujitsu.com/fts/products/computing/servers/primergy/rack/rx4770m5/

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