Product Insights
FUJITSU Server PRIMERGY TX2550 M5

Tower powerhouse with the richest feature set

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FUJITSU Server PRIMERGY Dual Socket Systems

Fujitsu Server PRIMERGY dual socket systems are designed for high performance demands in data centres – and hereby mark the standard across different usage scenarios ranging from typical database applications, collaboration or even high performance computing solutions. With their versatile and scalable system design, nearly any workload can be processed at the highest efficiency in a flexible manner.

Products of the Dual Socket Range:

- PRIMERGY TX2550 M5
- PRIMERGY RX2520 M5
- PRIMERGY RX2530 M5
- PRIMERGY RX2540 M5

PRIMERGY TX2550 M5: Tower powerhouse with the richest feature set

The FUJITSU Server PRIMERGY TX2550 M5 is a sophisticated dual socket tower server enhanced with the latest technology to deliver the highest levels of workload versatile performance, expandability and cost-effectiveness. This office ready, powerful system comes with the latest Intel® Xeon® Processor Scalable Family CPUs with 26 cores, along with up to 1.5TB of high-speed 2,933 MT/s DDR4 and Intel® Optane™ DC persistent memory technology making this powerful system ideal for most CPU/memory driven requirements such as demanding business applications (industry specific, analytics apps), business processing (ERP, CRM) and virtualised workloads. The server is designed for huge expandability with up to 32 hard drives, NVMe options, advanced RAID and a range of high-throughput networking cards including DynamicLOM options, making it highly suitable for storage centric requirements such as collaboration/IT infrastructure workloads and even high-data transfer web or big-data configurations.. Up to 8 expansion slots are available for future growth. A high-end Graphics card boosts performance for VDI, CAD, web requirements. The server is designed for silent operation, ideal for offices. The server also delivers world-class reliability and energy efficiency up to 96% efficient, dual power supplies. Operation in higher ambient temperatures is ensured by the Cool-safe® Advanced Thermal Design, avoiding the need for expenditure on special cooling. Furthermore, the server supports the Fujitsu iRMC S5, to enhance admin productivity and ease server usage across the entire lifecycle.

System highlights:

- Powerful dual-socket performance and latest gen memory at the right price, ideal for most CPU/memory centric workloads
- Excellent storage expandability, rich storage controller and networking feature set – ideal for managing large datasets, infrastructure and collaboration, web server workloads
- Energy and cost-saving features, plus reliability improvements via high-efficiency Power Supplies and Cool-safe® Advanced Thermal Design
- Future-proof with Rack form factor availability, M.2-devices, NV-DIMMs and NVMe devices

Customer benefits

PRIMERGY Family Value Proposition

Industry's most complete x86-based server portfolio for companies of all sizes, across all industries and for any type of workload. FUJITSU Server PRIMERGY Systems are a key factor in the success of our customers for more than 20 years already. They provide greater availability with business-proven quality from Germany with its development and production in the heart of Europe. This results in robust PRIMERGY servers with an extremely low annual failure rate that is way below the market average.

In addition, FUJITSU Server PRIMERGY Systems provide highest efficiency levels by cutting operational costs and complexity. PRIMERGY servers consistently achieve world record and best-in-class performance results in a wide range of industry benchmark disciplines, thus helping to accelerate IT workloads and shorten time-to-business results.

And last but not least, FUJITSU Server PRIMERGY Systems provide more agility in daily data centre operations, thus helping to turn IT into a business advantage. The tools offered in the FUJITSU Server ServerView Management Suite simplify and dynamise the IT infrastructure. A wide-ranging portfolio of services and tools reduces costs throughout the lifecycle, shortens project times and increases the availability of applications and services.

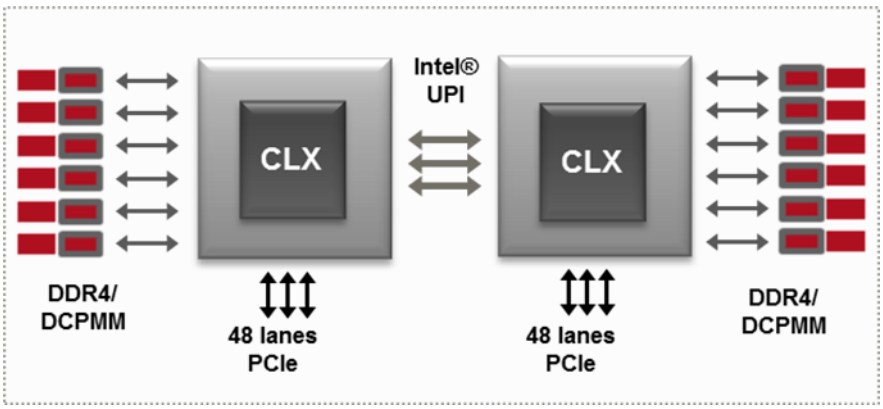
Product characteristics

The dual-socket PRIMERGY TX2550 M5 relies on Intel's latest Xeon® Scalable Family processors including the new, second-generation Intel Xeon Scalable processors (known as "Cascade Lake- SP Refresh"), which offer performance gains and up to 26 cores, plus continue support for the latest generation DDR4 at 2,933 MT/s and the new Intel® Optane™ DC Persistent Memory Technology.

- Support for up to two Intel® Xeon® Bronze, Silver& Gold Processors with up to 26 cores for application driven choice of processor
- 12x DIMMs with DDR4 and DCPMM for up to 1,536 GB of memory for enhanced workload performance
- Up to 32x 2.5" HDD/SSD´s including 8x 2.5" PCIe SSD, or up to 12x 3.5" HDD/SSD´s + 2x 2.5" non-hp HDD/SSD
- Up to 7xPCIe Gen3 slots and 1xPCI-32 slot with riser kit
- Optional advanced RAID controllers (up to 8GB cache)
- 2x 1GbE Ethernet + 1x 1GbE Mgmt. LAN plus DynamicLoM + optional high-throughput cards (10/25/40/100 Gb)
- 2x 450W/800W/1200W PSUs (platinum, 94% efficiency) or 2x 800W (titanium, 96% efficiency)

Intel® Xeon® Processor Scalable Family (code name "Cascade Lake")

Features	Intel® Xeon® Scalable Processor
CPU	Up to 28 cores with Intel HT technology (70W-205W) Note: TX2550 M5 supports up to 26 cores (150W) with the new "Cascade Lake - SP Refresh"
New capabilities	Frequency and architecture improvements, Intel® Optane™ DC persistent memory support on selected SKUs, Intel Speed Select Technology on selected SKUs
Socket	Socket P
Scalability	2S, 4S, & glueless 8S (>via xNC support)
Memory	6 channels DDR4 per CPU / 12 DIMMS per socket up to 2933 MT/s / Intel® Optane™ DC persistent memory (up to 512 GB / module) Note: TX2550 M5 supports DCPMM modules up to 256 GB each
UPI	Up to 3 links per CPU (up to 10.4 GTS)
PCIe	PCIe Gen 3: 48 lanes per CPU
FPGA	Support of discrete Intel Arria 10 FPGA



Features	82xx (Platinum)	62xx (Gold)	52xx(Gold)	42xx (Silver)	32xx (Bronze)
# of UPI links	3	3	2	2	2
UPI speed	10.4GT/s	10.4GT/s	10.4GT/s	9.6GT/s	9.6GT/s
Node controller support	Yes	Yes	No	No	No
# of memory channels	6	6	6	6	6
DDR4 speed	2933	2933	2666	2400	2133
DCPMM support	Yes	Yes	Yes	No	No
RAS capability	Advanced	Advanced	Advanced	Standard	Standard
Turbo Boost Technology	Yes	Yes	Yes	Yes	No
Hyper-Threading Technology	Yes	Yes	Yes	Yes	No
AVX-512 support	Yes	Yes	Yes	Yes	Yes
VNNI	Yes	Yes	Yes	Yes	Yes
# of PCIe lanes	48	48	48	48	48

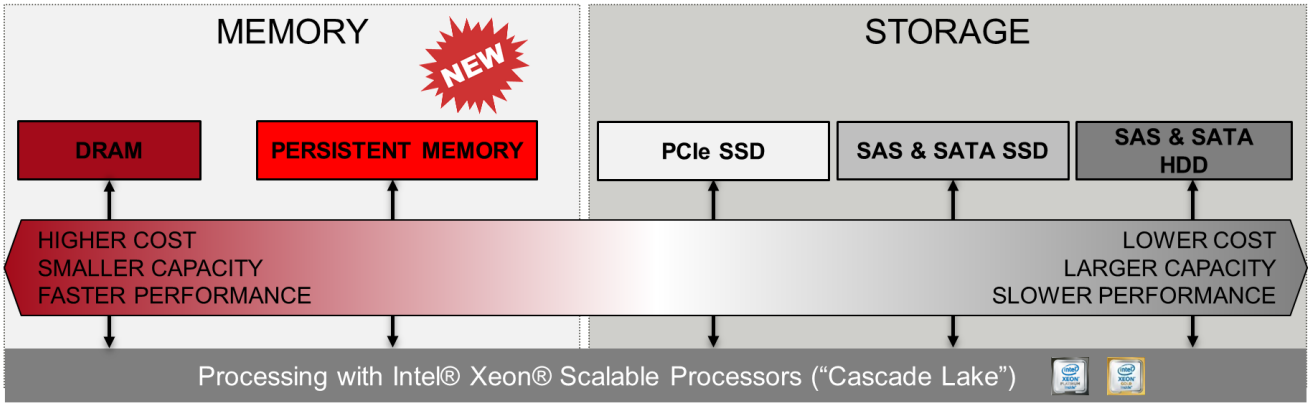
Intel® Optane™ DC Persistent Memory

Intel® Optane™ DC persistent memory represents a groundbreaking technology innovation. Delivered with the next-generation Intel® Xeon® Scalable processor (code name "Cascade Lake and Cascade Lake Refresh"), this technology will transform critical data workloads – from cloud and databases, to in-memory analytics, and content delivery networks. The new DIMMs slot into the DRAM interface, just like a normal stick of RAM, but come in three capacities of 128, 256, and 512GB. That's a massive capacity increase compared to the industry-leading 128GB DDR4 memory sticks. The new modules use Intel's 3D XPoint memory and can be addressed as either memory or storage. Unlike DRAM, 3D XPoint retains data after power is removed, thus enabling radical new use cases. 3D XPoint is also fast enough to serve as a slower tier of DRAM, but it does require tuning the application and driver stacks to accommodate its unique characteristics.

The PRIMERGY TX2550 M5 owns 12x DIMM slots in total. There are different kinds of DDR4 Memory Modules available: RDIMM x4, RDIMM x8, LRDIMM. Mix of these different kind of memories is not allowed. In addition DCPMM (Intel® Optane™ DC persistent memory) is available and can be mixed with all kind of memory modules. Please see the configurator for more details.

Supported memory capacities per CPU:
384 GB DDR4 RDIMM/LRDIMM (6x 64GB 2Rx4)
768 GB with 4x DDR4 64GB & 2x DCPMM 256GB (Standard CPU with type Gold is required; exception is the Xeon Silver 4215 SKU)

Supported memory capacities per System:
768 GB using RDIMM/LRDIMM
1536 GB using RDIMM/LRDIMM with 64GB per module and 256GB DCPMM



DynamicLoM Technology

FUJITSU DynamicLoM technology marks a new way of LoM integration. As a variation of a LAN on motherboard architecture, it allows for the selection of an OCP based interface card that best meets the needs of a FUJITSU server PRIMERGY server setup above the onboard 2x10GbE connectors. To give you the flexibility you need at the initial server installation as well as in future in changing conditions without overhauling the complete IT infrastructure.

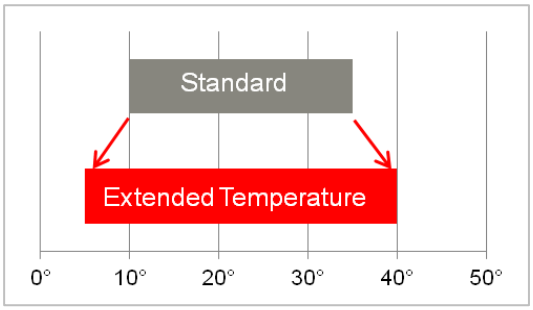
For further information, please see the White Paper "FUJITSU DynamicLoM Technology"

FUJITSU Cool-safe® Advanced Thermal Design

The Cool-safe® Design, developed by FUJITSU, is an important module that ensures energy-efficient FUJITSU server PRIMERGY systems. It is a holistic construction and design concept. The focus is on an optimum balance between the material involved and the performance, efficiency and reliability levels of the PRIMERGY servers.

Further information can be found in the White Paper: "FUJITSU Cool-safe Design"

Cool-safe® Advanced Thermal Design is an extension of the Cool-safe® concept which has been successfully applied over many years. Selected servers can thus be operated within greater temperature ranges. As can be seen in the diagram, the normal temperature range for server operations is between 10 °C / 50 °F and 35 °C / 95 °F. Cool-safe® Advanced Thermal Design extends the range to between 5 °C / 41 °F and 45 °C / 105 °F. The advantages of higher ranges are obvious:



Note: Cool-safe® now extends temperature range to 45 °C

- Servers can be put in hotter rooms without having to specially cool the rooms.
- Significant savings can thus be obtained regarding energy and cooling costs. According to Gartner an increase of temperature in a room of 5 ° C / 9°F means a 20 % saving potential for power consumption for the cooling system.
- New cooling models for data centres, such as those with fresh air cooling, benefit from the FUJITSU Cool-Safe® Advanced Thermal Design.
- FUJITSU Cool-safe® Advanced Thermal Design saves money and simultaneously guarantees the proven availability and reliability of PRIMERGY servers.

For detailed information on FUJITSU Cool-safe® Advanced Thermal Design, please refer to the White Paper.

Overview PRIMERGY TX2550 M5

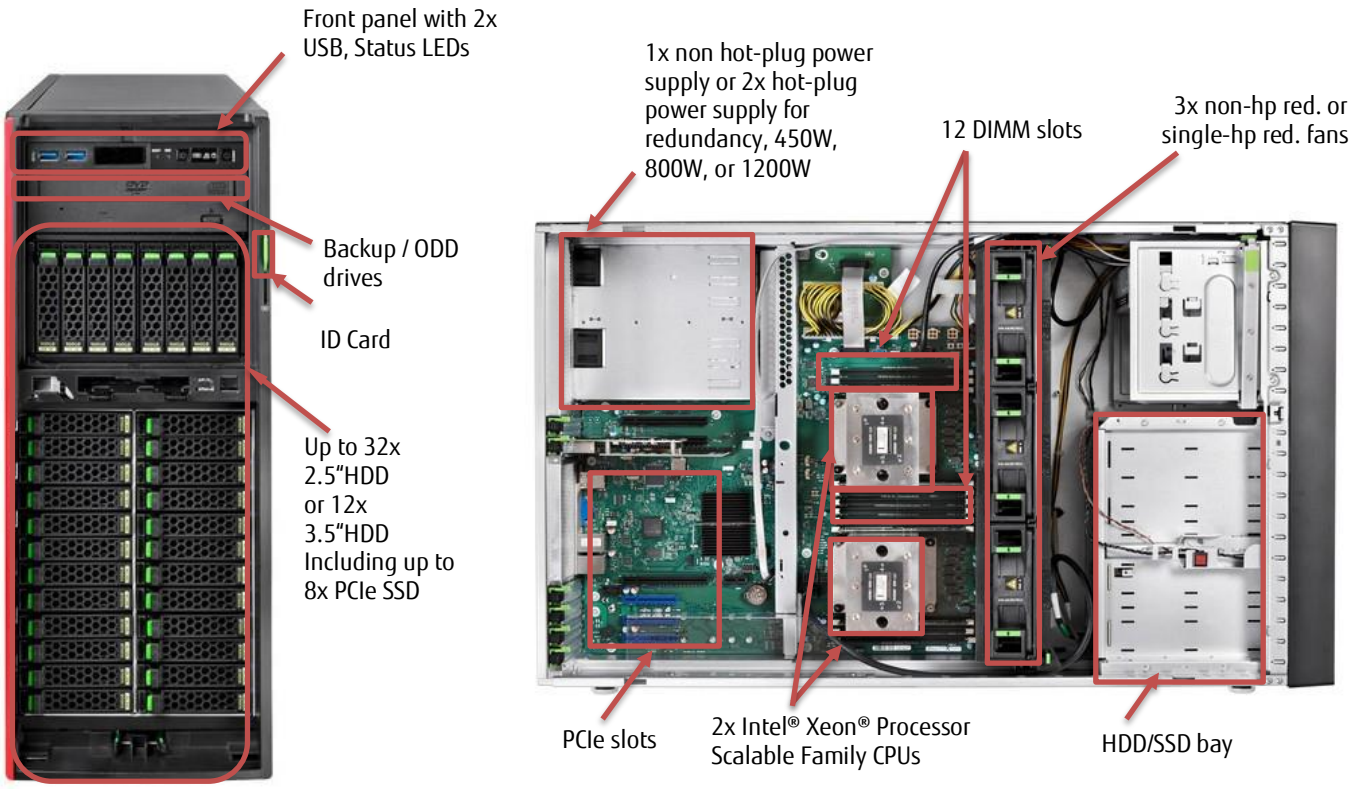
Features	Benefits
Power packed performance across workloads ■ Wide choice of different types of Intel® Xeon® Scalable processors as well as the new 2nd generation Intel® Xeon® Scalable processors. The server can field CPUs with up to 26 cores relying on Intel® UltraPath Interconnect for an increased data rate between the CPUs. Up to 1.5TB memory (12 DIMM slots) including a mix of DDR4 @ 2,933 MT/s and Intel® Optane™ DC persistent memory.	■ Enhanced Dual-socket compute and high bandwidth DDR4 memory - optimal for demanding enterprise and SME requirements. Intel® Optane™ DC persistent memory is an innovative memory technology which delivers a unique combination of affordable large capacity and non-volatile persistence. It revolutionises the data centre memory-storage hierarchy of the past and brings massive data sets closer to the CPU for faster time to insight. As such, the TX2550 M5 is capable of handling a range of diverse tasks: Demanding Industry and Analytics apps, Business processing and enterprise applications as well as virtualised workloads.
Highly expandable and flexible design ■ Significant storage capacity with up to 32x hot plug 2.5"HDD/SSD including up to 8x PCIe SSD, or up to 12x hot plug 3.5" HDD/SSD + 2x non-hp 2.5" HDD/SSD and up to 3x 1.6" drive bays for ODD or backup. Advanced RAID controllers (RAID 0, 1, 1E, 10, 5, 50, 6, 60) with up to 8GB cache for enhanced data protection and reliability beyond embedded basic RAID capability. Flexibility in networking capability via Onboard LAN for basic requirements, DynamicLoM via OCP for extended requirements. Range of additional high throughput networking cards (100/40/25/10Gb) also available.	■ Storage suitable for securely managing extremely large datasets and flexible enough to be matched to a range of storage centric requirements such as IT infrastructure or collaboration workloads. Drives and RAID controllers can be tailored to specific business needs and budgets. Powerful and cost-effective networking options are available depending on your business need and budget. Combination of Basic capabilities via onboard LAN, plus higher performance, optional DynamicLoM via OCP offers excellent flexibility and cost effective growth capability. High throughput cards enable growth for the highest data rate requirements.
Designed to be upgrade ready and efficient ■ 8 Expansion slots (in maximal optional configuration; 7x PCIe and 1xPCI-32). Rack Form factor available from the factory and as an upgrade option. Up to 1x GFX card support (FPGA also on roadmap). Fields power supply units with 96% energy efficiency, plus Fujitsu's Cool-safe® Advanced Thermal Design for higher ambient temperatures in the data centre.	■ Versatile PCIe slots offer flexible expandability for the integration of existing and new storage controllers, networking cards, Graphics capability. Add capabilities per your business needs. Rack upgrade kit allows you to invest in a system designed for scalability to match your business growth. Graphics card improves performance for Graphics intensive apps; get more from your display infrastructure. High efficiency redundant power supplies deliver energy cost savings and enhanced reliability, while the Cool-safe® Advanced Thermal Design allows you to operate your equipment without having to invest in expensive cooling equipment.
Server and infrastructure management at your fingertips ■ The server also has regular, free updates of BIOS, firmware and selected software. The onboard iRMC S5 comes with interactive web UI and conforms to Redfish providing unified API support for heterogeneous environment. Furthermore, 2x Internal M.2 devices support hypervisor installations or mirroring while TPM2.0 modules enhance security. The new, free, ISM Essential license provides a quick start to infrastructure management with essential monitoring and update functions, while ISM Advanced is the fully featured licensed version of ISM that provides comprehensive infrastructure management capabilities.	■ The onboard iRMC S5, is optimised for both data centres and SMEs who can rely on the latest generation server management. M.2 devices are perfect for hassle-free hypervisor /operating system start-up, while TPM 2.0 provides ease of mind for administrators with the latest hardware and Software driven security features. ISM helps improve data centre productivity with converged infrastructure management. Converged data centre management provides organisations centralised control over the entire infrastructure that includes servers, storage, networking, cloud management software as well as power and cooling using a single user interface.

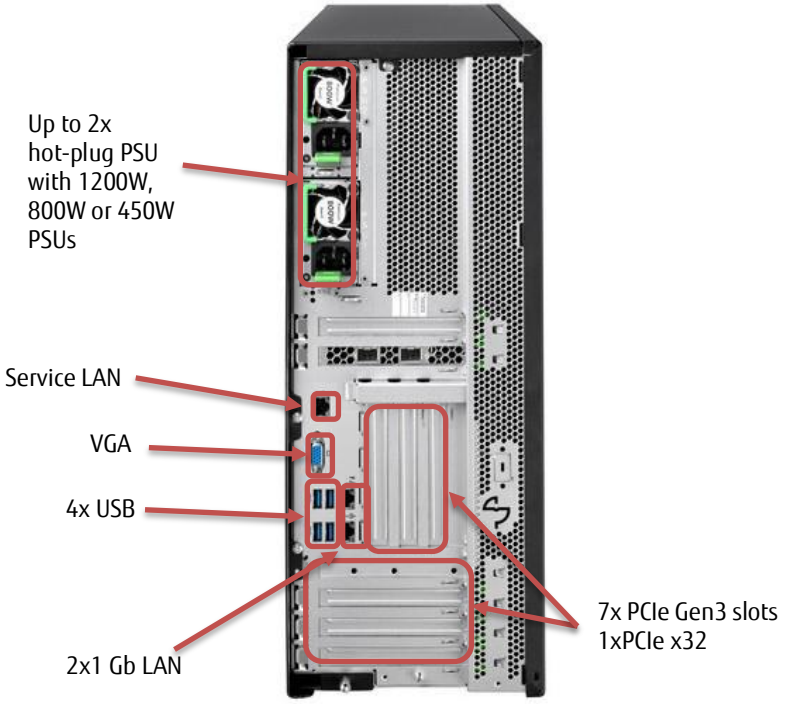
PRIMERGY TX2550 M5

Chassis	Tower, Rack (4 height units)
CPU	Up to 2x Intel® Xeon® Scalable Family Processors with up to 26 cores
Chipset	Intel® C624
Memory	12 DIMM slots, DDR4 2,993 MT/s DIMM Max. 1536 GB (8x 64GB LRDIMM + 4x 256GB DCPMM)
HDD	Up to 32x hot-plug SFF SAS/SATA HDD/SSD; including up to 8x PCIe-SSDs; or 12x hot-plug LFF SAS/SATA HDD or SATA SSD + 2x non hot-plug SFF SATA HDD
PSU	1(+1) hot-plug, 450W/800W/1200W platinum, 1(+1) hot-plug, 800W titanium
I/O	5x PCIe x8 (full height) 2x PCIe x16 (full height) 1x PCIe-32
Fan	3x120mm high power fans (optional non-hot plug redundant or single hot plug redundant)
USB	7x USB 3.0 (2x front, 4x rear, 1x internal)
LAN on Board	1x dedicated Service LAN 2x 1Gb LAN (RJ-45) 1x OCP LAN options; OCP LAN options with 2x 10GbT or 2x 10Gb SFP+
Manageability	iRMC S5, Status LEDs, rear VGA

Usage Scenarios:

- Moderately sized Stand alone or Virtualised Workloads
- Compute/Memory centric Work Loads including Enterprise Applications (SAP, bespoke SCM, Analytics), business processing, virtualisation requirements
- Databases and business intelligence solutions which need performance, large storage and I/O throughput
- Business intelligence (BI) workloads
- IT Infrastructure/ Collaboration
- Server consolidation


Front panel with 2x USB, Status LEDs
Backup / ODD drives
ID Card
Up to 32x 2.5"HDD or 12x 3.5"HDD Including up to 8x PCIe SSD
1x non hot-plug power supply or 2x hot-plug power supply for redundancy, 450W, 800W, or 1200W
12 DIMM slots
3x non-hp red. or single-hp red. fans
PCIe slots
2x Intel® Xeon® Processor Scalable Family CPUs
HDD/SSD bay


Up to 2x hot-plug PSU with 1200W, 800W or 450W PSUs
Service LAN
VGA
4x USB
2x1 Gb LAN
7x PCIe Gen3 slots 1xPCIe x32

Positioning within the PRIMERGY portfolio

One size does not fit all: To be able to meet the requirements for companies of all sizes, Fujitsu offers industry's most complete portfolio of industry standard x86 servers.

PRIMERGY TX Family

Robust and cost-efficient servers characterised by simple and quiet operations

PRIMERGY RX Family

Versatile rack servers with leading efficiency and performance

PRIMERGY CX Family

Modular and density-optimised servers to scale efficiently

Operation and Management

Efficient operation and management of IT infrastructures and equipment

Differentiation to other PRIMERGY Tower servers

Model	TX1310 M3	TX1320 M4	TX1330 M4	TX2550 M5
Characteristic	An ideal server for your essential workloads	Ultra-compact advanced server to grow your business	Highly expandable advanced server for typical SME business requirements	Tower powerhouse with the richest feature set
Type	Mono socket tower server	Mono socket tower server	Mono socket tower server	Dual socket tower server
Processor	Intel® Xeon® E3-1200 v6 family, Core™ i3, Pentium® Celeron®	Intel® Xeon® E-2200/2100 family, Core™ i3, Pentium® Celeron®	Intel® Xeon® E-2200/2100 family, Core™ i3, Pentium®	Intel® Xeon® Processor Scalable Family ("Cascade Lake - SP and Cascade Lake – SP Refresh")
Memory	4 GB – 64 GB, 4 DIMM (DDR4)	4 GB - 128 GB, 4 DIMM (DDR4)	4 GB – 128 GB, 4 DIMM (DDR4)	8 GB – 1,536GB, 12 DIMM (DDR4 + DCPMM)
Hard disk configuration	4 x 3.5-inch	4 x 3.5-inch 4/8 x 2.5-inch For additional details please see the configurator	4/8/12 x 3.5-inch 8/16/24 x 2.5-inch For additional details please see the configurator	4/8/12 x 3.5-inch 8/16/24/32 x 2.5-inch For additional details please see the configurator
I/O slots	2x PCIe 3.0 x1 1x PCIe 3.0 x4 1x PCIe 3.0 x16	1x PCIe 3.0 x1 1x PCIe 3.0 x4 2x PCIe 3.0 x8	1x PCIe 3.0 x1 1x PCIe 3.0 x4 2x PCIe 3.0 x8	5x PCIe 3.0 x8 (full height) 2x PCIe 3.0 x16 (full height) 1x PCIe-32

Differentiation against previous model

PRIMERGY	TX2550 M4	TX2550 M5
Housing	Tower, Rack 4U	Tower, Rack 4U
Chipset	Intel® C624	Intel® C624
Processor	1x-2x Intel® Xeon® Intel® Xeon® Scalable Family processor max 150W, 4/6/8/10/12/14/16/18/20/22/24/26-Core	1x-2x Intel® Xeon® Scalable Family ("Cascade Lake –SP and Cascade Lake SP- Refresh") processor, max 150W, 4/6/8/10/12/14/16/18/20/22/24/26-Core
Memory	RDIMM, LRDIMM, Max. 768 GB 6 DIMMs / CPU, max 12x, max 2,666 MT/s	RDIMM, LRDIMM, Intel® Optane™ DC Persistent Memory Technology (DCPMM) Max. 1,536 GB DDR4 (8x 64GB LRDIMM + 4x 256GB DCPMM) 6x DIMMs / CPU, max 12x, max 2,933 MT/s
Hard disk configuration (max)	32x 2.5" HDD/SSD, up to 4x PCIe SFF SSD 12x 3.5" HDD/SSD + 2x 2.5" non hot-plug 2.5" HDD/SSD	32x 2.5" HDD/SSD, up to 8x PCIe SFF SSD 12x 3.5" HDD/SSD + 2x 2.5" non hot-plug 2.5" HDD/SSD
I/O slots	5x PCIe 3.0 x8 (full height) 2x PCIe 3.0 x16 (full height) 1x PCIe-32	5x PCIe 3.0 x8 (full height) 2x PCIe 3.0 x16 (full height) 1x PCIe-32
Connectors	Front: 2x USB3.0 Rear: 4x USB3.0, 1x VGA, 1x serial RS232 (option), 2x LAN, 1x Service LAN Internal: 1x USB2.0 (Backup), 1x USB3.0 (typeA) 2x M.2 SATA/PCIe, optional TPM 2.0	Rear VGA; front VGA option 4x USB 3.0 (2x front, 2x rear) 1x dedicated Service LAN 1x OCP LAN options Internal: 1x USB2.0 (Backup), 1x USB3.0 (typeA) 2x M.2 SATA/PCIe, optional TPM 2.0
Others	Cool-safe® Advanced Thermal Design	Cool-safe® Advanced Thermal Design

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