FUJITSU M10-4S SERVER

UNMATCHED SCALABILITY,
MAINFRAME RELIABILITY, AND
INDUSTRY-LEADING VIRTUALIZATION

KEY FEATURES

- Up to 64 processors (up to 1,024 cores) and up to 64 TB or memory for superior enterprise application performance.

- The 16-core 3.0 GHz SPARC64 X and the 3.7 GHz SPARC64 X+ processors, with supercomputer technology, provide superior performance for enterprise workloads such as OLTP, ERP, BIDW, SCM, and CRM.

- Software-on-chip instructions on the SPARC64 X / SPARC64 X+ processors accelerate key database functions.

- CPU Activation economically and rapidly meets capacity requirements.

- Flexible resource configuration using, physical partition, Oracle VM Server for SPARC and Solaris Zones virtualization technologies.

- Power-saving features are built in to the processor and the server.

- Mainframe-class RAS features for 24/7 mission-critical applications.

- Managed by the independent service processor's eXtended System Control Facility (XSCF).

- Firmware updates during system operation.

The Fujitsu M10-4S server is a flexible and scalable system that delivers high performance and high availability for mission-critical enterprise applications. It is an ideal platform for enterprise-class workloads such as large-scale online transaction processing (OLTP), business intelligence and data warehousing (BIDW), enterprise resource planning (ERP), and customer relationship management (CRM). It is also ideal for cloud computing and new workloads such as Big Data and Analytics. The Fujitsu M10-4S is a modular system that can scale from 2 to 64 processors and 64 TB of memory using 4 processor "building blocks" to create a large, scale-up server that can also be deployed in a scale-out configuration. The Fujitsu M10-4S uses the latest SPARC64 X ("ten") and X+ ("ten plus") processors. Mixing of SPARC64 X and X+ chassis in a single Fujitsu M10-4S system provides excellent investment protection. Customers can also enjoy the benefits of Capacity on Demand (COD) with core-level CPU Activation. Innovative Software on Chip (SWOC) capabilities of the SPARC64 X / SPARC64 X+ processors deliver dramatic performance increases by implementing key software functions directly in the processor. The Fujitsu M10-4S server enables highly flexible system configurations with physical partitioning capabilities in addition to a suite of built-in virtualization technologies included at no cost: Oracle VM Server for SPARC and Oracle Solaris Zones.

Mainframe-Class RAS and Maximum Scalability

The Fujitsu M10-4S server delivers high availability to support the most-demanding mission-critical applications. It comes with mainframe-class reliability, availability, and serviceability (RAS) features including automatic recovery with instruction retry, error-correcting code (ECC) protection with extended ECC support, guaranteed data path integrity, configurable memory mirroring, and many more RAS features. Furthermore, major system components are redundant and hot-swappable for increased availability and serviceability.

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Building Blocks for Maximum Flexibility

The Fujitsu M10-4S is a modular system that can create a large, scale-up server with as many as 64 processors and up to 64 TB of memory. Each Fujitsu M10-4S four rack unit (4U) building block has two or four 16-core processors. A Fujitsu M10-4S server can have from 1 to 16 building blocks, for maximum configuration flexibility. The blocks are connected via a Fujitsu-developed interconnect technology that ensures high bandwidth, low latency, and linear scalability. The server can also be flexibly deployed and operated in a scale-out configuration.

In either scale-up or scale-out configuration, gradually adding resources such as CPU, memory, and PCI slots is a matter of installing additional building blocks and connecting them via the high-speed interconnect. For example, the minimum configuration of one building block can be used for development and testing stages, but as the application is put into production, more building blocks can be added to increase capacity.

Oracle Solaris: The World's Most Advanced Operating System

Only Oracle offers the Oracle Solaris Binary Application Guarantee Program, offering guaranteed binary and source-code compatibility for applications dating back to 1997 or earlier. The Fujitsu M10-4S server supports Oracle Solaris 10 and Oracle Solaris 11. In addition, Oracle Solaris 8 and Oracle Solaris 9 are available using Oracle Solaris Legacy Containers. Oracle Solaris 10 and later deliver Oracle Solaris ZFS and revolutionary features such as dynamic tracing (DTrace), cryptographic infrastructure, user and process rights management, and the Oracle Solaris IP Filter.

Advanced Virtualization and Consolidation

SPARC-processor-based servers are the industry's best consolidation and virtualization platforms. The Fujitsu M10-4S server supports as many as 16 physical partitions, and as many as 256 Oracle VM Server for SPARC logical domains can be deployed in each physical partition,. Each physical domain or logical domain can be further optimized with Oracle Solaris Zones, which supports thousands of software partitions enabling massive server consolidation and virtualization

Fujitsu M10-4S Server Specifications	
Processor	
CPU	SPARC64 X / SPARC64 X+ 16-core processors, dual-threaded SPARC V9 architecture, Error Checking and Correction (ECC) protection
Primary cache per core	64 K data cache and 64 K instruction cache
Secondary cache per processor	24 MB
Clock speed	3.0 GHz (16-core SPARC64 X) / 3.7 GHz (16-core SPARC64 X+)
Software on Chip features	• SIMD Single Instruction Multiple Data Vector Processing • Extended Floating-Point Registers • Decimal Floating-Point Processing. IEEE 754 standard and Oracle Number are supported. • Cryptographic Processing. Supported encryption modes are AES, DES, 3DES, RSA and SHA.
System	
CPU	• Up to 4 CPUs: 1-unit configuration • Up to 16 CPUs: 4-unit configuration • Up to as 64 CPUs: 16-unit configuration
Main memory	• Up to 4 TB per unit, with 64 GB DIMM: 1-unit configuration • Up to 16 TB per unit, with 64 GB DIMM: 4-unit configuration • Up to 64 TB per unit, with 64 GB DIMM: 16-unit configuration

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Fujitsu M10-4S Server Specifications – continued

System –continued

I/O	• 8 PCI Express 3.0 short, low-profile slots (eight lanes): 1-unit configuration • 32 PCI Express 3.0 short, low-profile slots (eight lanes): 4-unit configuration • 128 PCI Express 3.0 short, low-profile slots (eight lanes): 16-unit configuration • Up to 928 PCI Express slots with optional PCI expansion unit • 4-port GbE, 1-port SAS, 2-port USB per unit
Memory bandwidth (per chip)	102 GB/sec
Service processor	One per unit

Storage

Internal device	Up to eight 900 GB or 600 GB internal 2.5 in. SAS HDDs or 400 GB SAS SSDs

Software

Operating system	• Oracle Solaris 11.1 or later • Oracle Solaris 10 1/13 or later
Software Included	• Oracle Solaris 11.2 which includes Oracle VM Server for SPARC • Oracle Solaris ZFS (default file system)
Management software	• XSCF monitoring/control facility • XSCF software, which manages hardware configuration and health, domain configuration and status, error monitor, and notification
System monitoring	Oracle Enterprise Manager Ops Center
Virtualization	Built-in, no-cost Physical Partitions, Oracle VM Server for SPARC and Oracle Solaris Zones provide the flexibility and power of up to 256 virtual systems in a single physical partition of Fujitsu M10-4S server. Applications certified only for Oracle Solaris 8 or Oracle Solaris 9 may be installed in an Oracle Solaris legacy zone in an Oracle Solaris 10 1/13 guest domain.

Reliability, Availability, and Serviceability

Key features	• End-to-end ECC protection • Guaranteed data path integrity • Automatic recovery with instruction retry • Dynamic L1 and L2 cache way degradation • ECC and Extended ECC protection for memory, memory mirroring, periodic memory patrol, and predictive self-healing • Hardware redundancy in memory, HDD/SSD, PSU, fan, liquid cooling pump, and XSCF (on configurations with two or more building blocks) • Hot-pluggable HDD/SSD, PSU, PCI card, and fan • Live operating system upgrades • Firmware updates during system operation

Environment

Power option 1	• AC power: 200 V to 240 V ±10%, one-phase (50/60 Hz) • Power cords • Plug: IEC309-60A, three-pin, IP67, 4m
Power option 2	• AC power: 200 V to 240 V ±10%, 3-phase delta (50/60 Hz) • Power cords • Plug: IEC309-63A, 3P+E, 4W, IP67, 4m
Power option 3	• AC power: 380 V to 415 V ±10%, 3-phase star (50/60 Hz) • Power cords • Plug: IEC309-32A, 3P+N+E, 5W, IP67, 4m

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Fujitsu M10-4S Server Specifications – continued

Environment – continued

Power consumption	Single unit maximum 2,779 W (SPARC64 X), 3,299 W (SPARC64 X+) One rack, 8 units maximum 23,586 W (SPARC64 X), 27,746 W (SPARC64 X+) Two racks, 16 units maximum 47,972 W (SPARC64 X), 56,292 W (SPARC64 X+)
Operating temperature	• 5° to 35° C (41° to 95° F) at an altitude of 0 m to 500 m • 5° to 33° C (41° to 91° F) at an altitude of 501 m to 1,000m • 5° to 31° C (41° to 88° F) at an altitude of 1,001 m to 1,500 m • 5° to 29° C (41° to 84° F) at an altitude of 1,501 m to 3,000 m
Non-operating temperature	• –20° to 60° C (packed) • 0° to 50°C (non-packed)
Altitude	Up to 3,000 m (9,843 ft.)
Acoustic Noise	• 8.2 B, 7.5 B (4x, 2x SPARC64 X) / 9.0 B, 8.5 B (4x, 2x SPARC64 X+) • 64 dB, 58 dB (4x, 2x SPARC64 X) / 74 dB, 67 dB (4x, 2x SPARC64 X+)
Cooling	• 10,000 kJ/hr, 9,482 BTU/hr (SPARC64 X) / 11,880 kJ/hr, 11,260 BTU/hr (SPARC64 X+)

Dimensions and Weight

Height	17.5 cm (6.9 in.)
Width	44.0 cm (17.3 in.)
Depth	81.0 cm (31.9. in.)
Weight	60 kg (132.3 lb.)

Regulations

Safety	• UL60950-1, 2nd Edition + A1 • CSA C22.2 No. 60950-1-07 + A1 • EN60950-1:2006 + A1:2010 +A2:2011 • IEC60950-1:2005, 2nd Edition + A1:2009 (evaluated to all CB countries) • CFR21 Part 1040 • IEC60825-1	• IEC60825-2 • CB Scheme with all country deviations • CNS14336&GB4943 through exemption • CNS14336 • S-Mark • GOST-R certification mark
RFI/EMC	• EN55022:2010 • VCCI (2012) • FCC Part-15 (2012) • CNS13438:2006 (CISPR 22:2005 +A1:2005) • KCC • GOST-R certification mark • S-Mark	• EN61000-3-2:2006 + A1:2009 + A2:2009 • EN61000-3-3:2008 • JIS C 61000-3-2 (2011) • ICES-003 Class A • AS/NZS CISPR 22 (2009) • CISPR 22:2008
Immunity	• EN55024:2010 • IEC61000-4-2 • IEC61000-4-3 • IEC61000-4-4	• IEC61000-4-5 • IEC61000-4-6 • IEC61000-4-8 • IEC61000-4-11
Telecommunications	EN 300 386 V1.4.1 (2008)	

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Warranty

Visit oracle.com/us/support/index.html for Oracle's global warranty support information on Oracle products.

Services

From design and implementation to support and management, Oracle provides an end-to-end portfolio of services designed to accelerate the alignment of IT infrastructure with business needs, optimize usage of IT assets, and contain costs. Oracle's expertise helps you address key data center challenges, including virtualization/consolidation, power, space and cooling optimization, planning and implementation, and ongoing maintenance and support. In addition, Oracle offers top-rated technical support for your Fujitsu M10-4S server. Visit oracle.com/us/support/index.html for information on Oracle's service program offerings for Oracle products.

Contact Us

For more information about the Fujitsu M10-4S server, visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.

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Hardware and Software, Engineered to Work Together

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