Data Sheet
Fujitsu M10-4S Server

Flexible and scalable system that delivers high performance and high availability for mission-critical enterprise applications

The Fujitsu M10-4S

The Fujitsu M10-4S server 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 also supports cloud computing and large workloads such as big data and analytics. The Fujitsu M10-4S is a modular system that can combine "building blocks" to create a large, scale-up server with as many as 64 processors and up to 32 TB of memory, and it can also be deployed in a scale-out configuration suited for parallel distributed processing. The latest SPARC64 X ("ten") and X+ ("ten plus") processors are implemented, so customers can enjoy the benefits of Software on Chip and core-level CPU Activation, known as COD. Moreover, Fujitsu M10-4S supports mixed SPARC64 X and X+ chassis in a single system as well.

Its SPARC64 X /SPARC64 X+ processors were developed to deliver dramatic high-speed performance by implementing instructions in hardware that accelerate key software functions (Software on Chip).

The Fujitsu M10-4S server enables highly flexible system configurations with physical partitioning as well as built-in, no-cost virtualization technologies (Oracle VM Server for SPARC and the Oracle Solaris Zones feature of Oracle Solaris).

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 32 TB of memory. Each Fujitsu M10-4S 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 deployed in a scale-out configuration for parallel distributed processing. Gradually adding resources is a matter of installing additional building blocks and connecting them via the high-speed interconnect. Fujitsu's high-speed interconnect enables linear and dynamic scaling from 1 building block and 4 processors up to 16 building blocks and 64 processors to meet the most-demanding application requirements.

Features and Benefits

Main features	Benefits
■ Up to 64 16-core, SPARC64 X / SPARC64 X+ processors for a total of 2,048 powerful threads	■ Superior performance for largest workloads such as ERP, BIDW, SCM, CRM, big data, and analytics ■ Maximum cost savings with efficient consolidation of a large number of applications with diverse requirements on a single server
■ Massive system memory capacity of up to 32 TB	■ Radically improved response times and throughput performance by running entire databases in memory eliminating disk accesses
■ Mainframe-class reliability, availability, and serviceability (RAS) capabilities	■ High availability to support the most demanding 24/7 mission-critical applications
■ Modular building-block architecture	■ Growth of resources easily and economically from 4 to 64 processors
■ High-speed interconnect technology	■ Dynamic and linear scaling from 1 building block with 2 or 4 processors up to 16 building blocks with 64 processors and 1,024 cores
■ Core-based CPU activation	■ Ability to pay for only the resources that are needed and put into use minimizing initial investment and avoiding expensive upgrades ■ Fast and economical system capacity growth in increments as small as two processor cores at a time with no downtime
■ Software-on-Chip instructions implemented directly on SPARC64 X / SPARC64 X+ processors	■ Drastic performance gains for a wide range of applications such as encryption, decimal arithmetic operations, and key database functions
■ Liquid Loop Cooling technology for innovative system design	■ Dramatic reduction in space as well as a reduction of memory latency by as much as 1/5 of previous generation M-Series SPARC servers
■ Built-in no-cost virtualization: PPAR physical partitions, Oracle VM Server for SPARC and Oracle Solaris Zones technologies	■ Higher levels of system utilization and cost reduction with flexible resource configurations ■ Massive server consolidation without the need to acquire additional software
■ Supports Oracle Solaris 11 and Oracle Solaris 10, also Solaris 9 and 8 with Oracle Solaris Legacy Containers	■ Investment protection for application software as well as system management and administration expertise developed over the years avoiding costly and complex migrations
■ Oracle Solaris 100% Binary Compatibility Guarantee	■ Preserving of software investments with the full binary compatibility guarantee that the existing SPARC Oracle Solaris applications would run unmodified

Technical Details

Processor	
CPU	SPARC64 X /SPARC64 X+: 16-core processors, SPARC V9 architecture, ECC-protected
Primary cache per core	64 K data cache and 64 K instruction cache
Secondary cache per processor	24 MB
Clock speed	3.0 GHz (SPARC64 X) / 3.7 GHz (SPARC64 X+)

System	
CPU	• As many as 4 CPUs: 1-unit configuration • As many as 16 CPUs: 4-unit configuration • As many as 64 CPUs: 16-unit configuration
Main memory	• Up to 2 TB per unit, with 32 GB DIMM: 1-unit configuration • Up to 8 TB per unit, with 32 GB DIMM: 4-unit configuration • Up to 32 TB per unit, with 32 GB DIMM: 16-unit configuration
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	
Local storage	As many as eight 600 GB or 900 GB internal 2.5-in. SAS HDDs or 200 or 400 GB eMLC SAS SSDs (can be mixed)

Software	
Operating system	• Oracle Solaris 11.1 or later (SRU required) • Oracle Solaris 10 1/13 or later (SRU required)
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 12c Release 2 or later
Virtualization	Built-in, no-cost Physical Partitions, Oracle VM Server for SPARC and Oracle Solaris Zones provide the flexibility and power of up to 32 virtual systems in a single Fujitsu M10-4S server.

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, and 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

AC power	200 V to 240 V ±10%, one-phase (50/60 Hz)
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)

More Information

Fujitsu platform solutions

In addition to Fujitsu M10-4S, 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/services/computing/
- PRIMERGY: Industrial standard server
- FUJITSU M10: UNIX server
- PRIMEQUEST: Mission-critical IA server
- ETERNUS: Storage system
- BS2000/OSD: Mainframe
- GS21: Mainframe
- ESPRIMO: Desktop PC
- LIFEBOOK: Notebook PC
- CELSIUS: Workstation

Software
www.fujitsu.com/software/
- Interstage: Application infrastructure software
- Systemwalker: System management software
- Symfoware: Database software
- PRIMECLUSTER: Clustering software

More information

Learn more about Fujitsu M10-4S, please contact your Fujitsu sales representative, Fujitsu business partner, or visit our website.
www.fujitsu.com/sparc

Fujitsu green policy innovation

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment. Using our global know-how, we aim to resolve issues of environmental energy efficiency through IT. Please find further information at:
www.fujitsu.com/global/about/environment/

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