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- 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 new 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 up to 64 processors and up to 64 TB of memory. The Fujitsu M10-4S can also be flexibly 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. The customers can also enjoy the benefits of Capacity on Demand (COD) with core-level CPU Activation. Innovative Software on Chip capabilities of the SPARC64 X / SPARC64 X+ processors deliver dramatic performance increases by implementing key software functions directly in hardware.

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 the Oracle Solaris Zones feature of Oracle Solaris.

Building Blocks for Maximum Flexibility

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 that ensures high bandwidth, low latency, and linear scalability. The server can also be flexibly deployed in a scale-out configuration. In either a scale-up or a scale-out configuration, gradually adding resources is a matter of installing additional building blocks and connecting them via the high-speed interconnect.

SPARC64

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 64 TB	■ Radically improved response times and throughput performance by running entire databases in memory eliminating costly 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 2 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, 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 implementing key software functions 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 1/5th 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, Dual-threaded SPARC V9 architecture, Error Checking and Correction (ECC) protection
Level 1 cache per core	64 K data cache and 64 K instruction cache
Level 2 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 algorithms: AES, DES, 3DES, RSA and SHA

System

CPU	• Up to 4 CPUs: 1-unit configuration • Up to 16 CPUs: 4-unit configuration • Up to 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
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 1.2 TB internal 2.5-in. SAS HDDs or 400 GB or 800 GB eMLC SAS SSDs (can be mixed)

Software

Operating system	Control Domain: • Oracle Solaris 11.1 (plus required SRU) or later • Oracle Solaris 10 1/13 (plus required patches) Guest Domains: • Oracle Solaris 11.1 (plus required SRU) or later • Oracle Solaris 10 1/13 (plus required patches) • Oracle Solaris 10 8/11 (plus required patches) • Oracle Solaris 10 9/10 (plus required patches) Please see the *Fujitsu M10/SPARC M10 Systems Product Notes* manual for SRU/patch requirements.
Software included	• Oracle Solaris 11.3 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 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(Software RAID), 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)
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)

More Information

Fujitsu platform solutions

In addition to Fujitsu M10-4S, Fujitsu provides a complete range of platform solutions. These solutions 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 client systems to datacenter solutions, Managed Infrastructure and Infrastructure-as-a-Service (IaaS) clouds. Customers can make the most beneficial choices from the complete and comprehensive selection of Fujitsu technologies and services. This takes IT flexibility and efficiency to the next level.

Computing Products

www.fujitsu.com/global/services/computing/
- FUJITSU M10: UNIX server
- PRIMERGY: Industrial standard 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
- Systemwalker: System management
- Symfoware: Database
- PRIMECLUSTER: Clustering

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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