Datasheet
Fujitsu SPARC M12-1 Unix Server

The Fujitsu SPARC M12-1 server is a high-performance, compact, entry-level server based on the latest SPARC64™ XII processor, delivering high availability for mission-critical enterprise workloads and cloud computing

Product Overview

The Fujitsu SPARC M12-1 server offers high reliability and outstanding processor core performance. It is an ideal entry-level server for traditional enterprise-class workloads such as online transaction processing (OLTP), business intelligence and data warehousing (BIDW), enterprise resource planning (ERP), and customer relationship management (CRM), as well as new environments in cloud computing or big data processing.

The Fujitsu SPARC M12 servers incorporate the SPARC64 XII ("twelve") processor, which features improved throughput performance with eight threads per core and significantly faster memory access through the use of DDR4 memory. Moreover, Fujitsu SPARC M12 servers deliver dramatic in-memory database performance increases by implementing key software processing functions onto the processor itself, a functionality called Software on Chip. These Software on Chip features include single instruction, multiple data (SIMD) and decimal floating-point arithmetic logical units (ALUs).

Additional Software on Chip technology is implemented to accelerate cryptographic processing using the Oracle Solaris encryption library. This reduces the overhead of encryption and decryption dramatically.

Keep Pace with Expanding Needs

The Fujitsu SPARC M12-1 server is designed to reduce total cost of ownership (TCO), rapidly deploy new business services, and reduce server sprawl by consolidating existing systems more cost-effectively and more reliably. IT managers can take advantage of enterprise-class reliability, availability, and scalability (RAS) features in this compact server and can incrementally grow capacity to meet their business requirements as they change.

Advanced Virtualization and Consolidation

SPARC-based servers are the industry's most advanced consolidation and virtualization platforms. Oracle VM Server for SPARC software enables as many as 48 logical domains to be deployed in a single Fujitsu SPARC M12-1 server. The logical domains can be further virtualized with Oracle Solaris Zones, a feature of Oracle Solaris, which supports thousands of virtual machines.

Features and benefits

Main features	Benefits
■ Up to one 6-core 3.2 GHz SPARC64 XII processors and 48 powerful threads	■ Do more with less: more powerful cores, higher productivity, fewer software licenses
■ Flexible main memory configurations: from 64 GB to 1 TB, and supporting mixed DIMM capacities	■ Superior performance for ERP, BIDW, SCM, CRM, Big Data, and Analytics workloads
■ 1U form factor	■ Compact footprint with high performance and reliability ideal for data center integration and virtualization
■ Mainframe-class reliability, availability, and serviceability (RAS) capabilities	■ Robust RAS features to support the most demanding 24/7 mission-critical applications
■ 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 a single processor core with no downtime
■ Software-on-Chip instructions implementing key software functions directly in SPARC64 XII processor	■ Drastic performance gains for a wide range of applications such as encryption, decimal arithmetic operations, and database accelerators built into each CPU core
■ Layered virtualization including 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, avoiding costly and complex migrations
■ Oracle Solaris Binary Application Guarantee	■ Preservation of software investments with guaranteed compatibility, allowing existing SPARC Solaris applications to run unmodified

Topics

World-Class Enterprise Performance with Extreme Core Technology

Fujitsu SPARC M12 servers featuring the latest SPARC64 XII processor provide superior performance for mission-critical enterprise workloads and cloud computing. Employing proven Fujitsu supercomputer technology for highly parallel computing and an innovative cooling technology to achieve low latency access time between memory and CPU, the Fujitsu SPARC M12 servers can process large amounts of data in a short period of time. These technologies provide superior performance for enterprise workloads such as online transaction processing (OLTP), enterprise resource planning (ERP), business intelligence and data warehousing (BIDW), supply chain management (SCM), and customer relationship management (CRM), as well as new environments in cloud computing or data processing.

Pay as You Grow Dynamic Scalability

The modern enterprise needs a flexible platform that provides superior performance and availability for the current applications environment, and the ability to scale for future growth and technological needs. The Fujitsu SPARC M12 server features unique dynamic scaling to grow as the business grows. With the CPU Activation feature, customers can activate CPU resources on a CPU core basis starting from a single CPU socket and one core. CPU Activation enables rapid and cost-effective adding of resources.

High Availability for Mission-Critical Applications

The Fujitsu SPARC M12-1 server delivers high availability to support demanding mission-critical applications. It comes with mainframe-class reliability, availability, and serviceability (RAS) features including automatic recovery with instruction retry, extended error-correcting code (ECC) protection, guaranteed data path integrity, configurable memory mirroring, and many more RAS capabilities. Furthermore, major system components are redundant and hot-swappable for increased availability and serviceability.

Innovative Software on Chip Technology

Fujitsu SPARC M12-1 servers feature Software on Chip (SWoC) technology, which implements common software code sequences directly in the processor hardware, offering significant enhancements for key database functions. Two Software on Chip technologies, SIMD (Single Instruction Multiple Data) and decimal floating point ALUs (Arithmetic Logical Units), directly accelerate Oracle Database in-memory processing with specific hardware instructions. SWoC encryption acceleration is also implemented, providing high-speed encryption processing (encryption/decryption) using the Oracle Solaris encryption library. Also, the load placed on the CPU when the database is encrypted is reduced and a secure work environment can be configured.

Oracle Solaris: The World's Most Advanced Enterprise Operating System

Only Oracle offers the Oracle Solaris binary application guarantee, which provides guaranteed binary and source-code compatibility for legacy applications. The Fujitsu SPARC M12 servers support Oracle Solaris 11 and Oracle Solaris 10 which offer the powerful Oracle Solaris ZFS file system, and unmatched capabilities such as dynamic tracing (the DTrace feature of Oracle Solaris), a cryptographic infrastructure, user and process rights management, and the Oracle Solaris IP Filter feature. In addition, Oracle Solaris 9 and 8 are supported using Oracle Solaris Legacy Containers.

Specifications

Processor	
CPU	SPARC64 XII: 6-core processor, 8 Simultaneous Multithreading threads per core, Two instruction pipelines per core, 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 core	512 KB
Level 3 cache per CPU socket	16 MB
Clock speed	3.2 GHz
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 • Cryptographic Processing. Supported encryption modes are AES, DES, 3DES, DH, DSA, ECC, RSA and SHA
System	
CPU	Up to 1 CPU
Main memory	Up to 1 TB with 64 GB DIMM
I/O	• 3 PCI Express 3.0 short, low-profile slots (eight lanes) • Up to 33 PCI Express slots with optional PCI Expansion Units • 4-port 10GbE, 1 SAS-2 port, 2-port USB
Service processor	One per unit
Storage	
Local storage	Up to 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 11.3 + SRU 11.3.17.5.0 or later • Oracle Solaris 11.2 + SRU11.2.15.5.1 • Oracle Solaris 11.1 + SRU11.1.21.4.1 • Oracle Solaris 10 1/13* Guest Domains: • Oracle Solaris 11.1 or later • Oracle Solaris 10 1/13* • Oracle Solaris 10 8/11* • Oracle Solaris 10 9/10* * Plus required patches Oracle Solaris 9 or 8 branded zones run within an Oracle Solaris 10 domain. Please see the *Fujitsu SPARC M12 Systems Product Notes* manual for SRU/patch requirements.
Software included	• Oracle Solaris 11.3 or later, 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 monitoring, and notifications.
System monitoring	Oracle Enterprise Manager Ops Center 12c Release 3 Update 2 or later Oracle Enterprise Manager Cloud Control 13c Release 1 or later
Virtualization	Built-in, no-cost Oracle VM Server for SPARC provides the flexibility and power of

Software	
	running multiple logical domains in a single server. Multiple Oracle Solaris Zones may be run within a single Oracle VM Server for SPARC logical domain.

Reliability, Availability, and Serviceability	
Key features	• End-to-end ECC protection • Guaranteed data path integrity • Automatic recovery with instruction retry • Dynamic L1, L2 and L3 cache way degradation • ECC and Extended ECC protection for memory, memory mirroring, periodic memory patrol, and predictive self-healing • Hardware redundancy in memory (when mirroring), HDD, SSD(Software RAID), PCI cards (Multipath configuration), power system, PSU, and fan • Hot-pluggable HDD/SSD, PSU and fans. Hot-plug of PCI cards supported with the PCI Expansion Unit • Live operating system upgrades • Firmware updates during system operation

Envionment	
AC power	100 V to 120 V ±10%(50/60 Hz), 200 V to 240 V ±10% (50/60 Hz)
Power consumption	Maximum 785 W at 100 V Maximum 774 W at 200 V
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	-25° C to 60° C (-13° F to 140° F) (packed) 0 to 50° C (32° F to 122° F) (non-packed)
Altitude	Up to 3,000 m (9,840 ft.)
Acoustic Noise	• 7.4 B • 58 dB
Cooling	2,830 kJ/h at 100 V 2,790 kJ/h at 200 V

Dimensions and Weight	
Height	42.5 mm (1.67 in.)
Width	43.1 cm (17.0 in.)
Depth	72.1 cm (28.4 in.)
Weight	18 kg (39.7 lb.)

Regulatons	
Safety	• EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 • IEC 60950-1:2005, 2nd Edition + A1:2009 + A2:2013 (Evaluated to all CB countries) • ANSI/UL 60950-1-2014 • CAN/CSA C22.2 No. 60950-1-07 + A1:2011 + A2:2014 • CNS 14336-1:2010 • GB4943.1-2011 • GOST IEC 60950-1-2014 • IS 13252 (Part 1):2010 + A1:2013 + A2:2015
RFI / EMC	• EN55032:2015 Class A • EN61000-3-2:2014 • EN61000-3-3:2013 • FCC Part-15 Subpart B: 2017 Class A • ICES-003 Issue 6: 2016 Class A

Regulatons	
	• VCCI V-3/2016.04 Class A • JIS C61000-3-2: 2011 • CNS13438:2006 Class A • AS/NZS CISPR 32:2015 Class A • GB/T9254-2008 • GB17625.1-2012 • GOST CISPR 32-2015 • GOST 30805.22-2013 • GOST 30804.3.2-2013 • GOST 30804.3.3-2013 • KN32 Class A • TCVN 7189:2009
Immunity	• EN55024:2010 • GOST CISPR 24-2013 • KN35

More information

Fujitsu products, solutions & services

Products
www.fujitsu.com/global/products/
In addition to the Fujitsu SPARC M12 Server, Fujitsu offers a full portfolio of other computing products.

Computing products
- Storage systems: ETERNUS
- Server: PRIMERGY, PRIMEQUEST, Fujitsu SPARC M12, BS2000/OSD Mainframe
- Client Computing Devices: LIFEBOOK, STYLISTIC, ESPRIMO, FUTRO, CELSIUS
- Peripherals: Fujitsu Displays, Accessories
- Software
- Network

Product Support Services with different service levels agreements are recommended to safeguard each product and ensure smooth IT operation.

Solutions
http://www.fujitsu.com/global/solutions
The Fujitsu solutions combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships. Fujitsu's Solutions include parts of one or more activity groups (e.g., planning, implementation, support, management, and training services) and are designed to solve a specific business need.
Infrastructure Solutions are customer offerings created by bringing Fujitsu's best products, services and technologies together with those from partners to deliver benefit to our customers' businesses.
Industry Solutions are tailored to meet the needs of specific verticals.
Business and Technology Solutions provide a variety of technologies developed to tackle specific business issues such as security and sustainability, across many verticals.

Services
www.fujitsu.com/global/services/
Several customizable Fujitsu Service offerings ensure that IT makes a real difference and delivers true business value. We do this by leveraging our extensive experience in managing large, complex, transformational IT programs to help clients in planning, delivering and operating IT services in a challenging and changing business environment.

Application Services support the development, integration, testing, deployment and on-going management of both custom developed and packaged applications. The services focus on delivering business and productivity improvements for organizations.
Business Services respond to the challenge of planning, delivering and operating IT in a complex and changing IT environment.
Managed Infrastructure Services enable customers to deliver the optimal IT environment to meet their needs – achieving high levels of IT service quality and performance for data center and end user environments.

Fujitsu green policy innovation

Environment - Fujitsu Global
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:

Green Policy Innovation

More information

Learn more about Fujitsu, please contact your Fujitsu sales representative, Fujitsu business partner, or visit our website.
http://www.fujitsu.com/sparc

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