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Fujitsu M10-1 Server Powered by the SPARC64™ X+ Processors – Frequently Asked Questions

Overview

The Fujitsu M10-1 is a high performance, compact entry-level server with high reliability that is ideal for data center integration and virtualization.
The Fujitsu M10-1 server can be configured with up to 16 cores, large memory-capacity and a large capacity disk in a space-saving one-rack-unit (1U) chassis. CPU resources can be expanded in stages using the core-level CPU Activation feature, growing processor resources one core at a time. The Fujitsu M10-1 server uses the 8-core 3.7GHz, the 16-core 3.2GHz or the16-core 2.8GHz SPARC64 X+ processor. Innovative Software on Chip capabilities deliver dramatic performance increases by implementing key software functions directly in hardware.

Customer Benefits

Increased Performance

Processor and system design improvements and innovations such as 8-core or 16core processors, up to 24MB of Level 2 cache, PCIe Gen3 I/O, DDR3-1600 memory, Software on Chip, and System on Chip dramatically improve the performance with enterprise workloads.

Predictive Monitoring
The Fujitsu M10-1 server inherits the reliability of mainframe technologies and can predict errors by using checkers that run throughout in the system. Memory patrol in the memory controller, which is independent from the CPU, improves memory reliability.

Data Protection
The Fujitsu M10-1 server is protected by a wide range of ECC (error correction code) and CRC (cyclic redundancy check) circuits including the CPU, memory, and system interconnect. Component redundancy allows the server to continue to operate even with failed components. The main memory is protected by Extended ECC in addition to the standard SECDED ECC. The data is protected even when a multi-bit error occurs due to the failure of a memory chip.

Error Avoidance
The Fujitsu M10-1 server can minimize system failures by degrading a core in the processor and cache memory. In addition key components, disks, power supplies, fans, etc., are redundant and hot-swappable.

Expandability
The Fujitsu M10-1 server is a compact, 1U, entry-level server that scales up to 16 CPU cores (or 8 cores with the 3.7GHz SPARC64 X+ processor). It is built to grow with customers' business needs. Customers can grow server capacity incrementally by adding CPU cores in pairs, up to a total of 16 cores (or 8 cores with the 3.7GHz SPARC64 X+ processor), using CPU Activation.

Unmatched Investment Protection
Oracle Solaris 8 and 9 environments can run on the Fujitsu M10-1 server with Oracle Solaris Legacy Containers. Oracle provides the Solaris Binary Application Guarantee which means the Fujitsu M10-1 supports legacy SPARC/Oracle Solaris applications. Customers can easily migrate from physical servers to Oracle Solaris Zones using the Oracle P2V tools. This maximizes ROI and minimizes investment risks.

Target Market and Uses
The Fujitsu M10-1 server is an ideal space-saving high-performance server with high performance and reliability for enterprise application and database deployments.

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Frequently Asked Questions

What is Fujitsu M10-1 server?
The Fujitsu M10-1 is a one-rack-unit (1U) server powered by the latest SPARC64 X+ processors. The Fujitsu M10-1 server can be expanded from a minimum of 2 cores to a maximum of 16 cores (or 8 cores with the 8-core 3.7GHz SPARC64 X+ processor) in stages by using CPU Activation. CPU Activation reduces the initial investment but allows for easy and economical growth. The Fujitsu M10-1 supports up to 1TB of main memory and three PCI Express 3.0 short, low-profile slots, or up to 23 PCI Express slots with the optional PCI Expansion Unit.

What are the changes in the SPARC64X+ processors that lead to the dramatic improvements in the performance of Fujitsu M10-1 server?
The SPARC64 X+ processor on the Fujitsu M10-1 has 16 dual-thread cores and 22MB of L2 cache or 8 dual-thread cores and 24MB of L2 cache compared to the 4 dual-thread cores and 11MB of L2 cache of the SPARC64 VII+ processor in the previous generation of SPARC M-Series servers. The SPARC64 X+ processor applies supercomputer technology to business applications, achieving dramatically higher performance. Specifically, Software on Chip and System on Chip technologies include the following innovations:

Software on Chip
Software on Chip features are designed to accelerate specific workloads involving large scale data processing, decimal number execution, and cryptographic processing. Application developers can take advantage of these innovations through the familiar Oracle Solaris Studio Compilers and Oracle Solaris facilities. Software on Chip technology enables significant performance improvements by implementing functions previously performed by software into the CPU hardware in the following areas:

• Single Instruction Multiple Data (SIMD) instructions:
  SIMD instructions are supported in the SPARC64 X+ processor. Up to eight 8-bit data can be compared at the same time. This function will accelerate searching large amounts of data, compressing/decompressing data, in-memory database operations, etc.

• Decimal floating-point operation:
  The SPARC64 X+ processor has a decimal floating-point operation unit. This hardware processing unit can directly and quickly execute decimal floating-point operations that were previously executed by software. Oracle Number and the IEEE754-2008 standard operations are supported.

• Encryption arithmetic:
  The SPARC64 X+ processor includes an encryption processing unit which enables high-speed encryption/decryption processing without external adaptors or complex software. The SPARC64 X+ encryption unit supports AES, DES, 3DES, RSA and SHA. The SPARC64 X+ processor can improve data security with full database encryption.

System on Chip
The SPARC64 X+ processor integrates CPU, four memory controllers, two IO controllers, and a high-speed interconnect into a single chip for higher bandwidth and reduced latency which improves performance. In addition, a reduction in the number of components improves reliability and reduces the system size.

Why should I use the Fujitsu M10-1 server?
The Fujitsu M10-1 server is ideal for mission-critical computing, scalability, and investment protection and is an ideal platform when running single-threaded applications such as database, business analytics and business intelligence (BA/BI) applications, data mining, and batch processing. The 1U size provides a lot of computer power in a small package.

What virtualization technologies are available for the Fujitsu M10-1 server?
The no-cost virtualization of the Fujitsu M10-1 server enables configuration flexibility to improve server utilization. Multiple and independent logical domains can be configured using Oracle VM Server for SPARC. Also, multiple Oracle Solaris Zones can be configured inside a logical domain. Resource allocation of CPU/memory between zones can be changed dynamically.

What is CPU Activation?
The CPU Activation feature of SPARC 64 X+ processors, also known as "capacity on demand", allows users to pay only for the processor cores that they need. The Fujitsu M10-1 server can be configured with as few as two processor cores out of a maximum of 16 (or 8 cores with the 8-core 3.7GHz SPARC64 X+ processor) and activation licenses can be purchased later as compute requirements grow. Processor core activation licenses can be purchased in pairs. CPU Activation optimizes resources in a timely manner in accordance with workloads requirements. New per core licenses can be activated using CPU Activation without stopping the system. Core activation licenses can be moved from one Fujitsu M10-1 server to other Fujitsu M10-1 servers. Furthermore, in the case of a CPU core failure unlicensed cores will automatically take the place of the failed core.

What is the memory, storage, and expansion options supported on the Fujitsu M10-1 server?
It supports up to 1TB of memory using 64GB DIMM, three PCI Express I/O slots, and up to eight 900GB or 600GB internal, 2.5in SAS HDDs and 400GB SSD. The data on the internal disk can be further protected using the built-in HW RAID support. The I/O connectivity can scale up to 23 PCI slots by connecting the external PCI Expansion Unit, which enables mid-range class scalability.

What are the system management options available for the Fujitsu M10-1 server?
The Fujitsu M10-1 server includes the eXtended System Control Facility (XSCF), which is driven by an integrated system service processor that also has power management and power capping capabilities to help reduce power consumption and energy costs. Oracle Enterprise Manager Ops Center can be used to manage all aspects of hardware and virtualization configuration, maintenance and provisioning integrated with the complete Oracle stack. Oracle Enterprise Manager Ops Center is provided at no charge to customers that have Oracle support for their Fujitsu M10 servers.

What are the operating systems that have been certified to run on the Fujitsu M10-1 server?
The Fujitsu M10-1 server supports Oracle Solaris 11 and Oracle Solaris 10. Oracle Solaris 8 and 9 can run on the Fujitsu M10-1 server with Oracle Solaris Legacy Containers.

What software is pre-installed on the Fujitsu M10-1 server?
Oracle Solaris 11

What are the power and cooling requirements for the Fujitsu M10-1 server?
The online power calculator provides guidance for estimating the electrical and heat loads for typical operating conditions. Click here to access the requirements.
http://jp.fujitsu.com/platform/server/sparc/tool/power/m10-1-e.html

What are the service and support options?
Oracle offers tailored mission critical services and support options. Comprehensive product installation, configuration, optimization and on-going monitoring and tailored support are available from Oracle Advanced Customer Services. Oracle service professionals deliver the technical product expertise, tools, best practices and project management knowledge to help ensure a smooth and highly optimized implementation.

Can I choose my system configuration?
The Fujitsu M10-1 server is ordered as "Assemble to Order-ATO" which allows for customer control of the configuration.

Where can I get more information?
The Fujitsu M10-1 server data sheet provides additional detailed information:
http://www.oracle.com/us/products/servers-storage/servers/sparc/fujitsu-m10/fujitsu-m10-1/m10-1-ds-1924203.pdf or http://www.oracle.com/goto/fujitsu-m10-1

Contact your Oracle Sales representative directly, call 1-800-Oracle1 or email acsdirect_us@oracle.com or visit oracle.com/acs for additional information about Oracle Advanced Customer Services.