# MAINFRAME RELIABILITY WITH The INDUSTRY-LEADING VIRTUALIZATION

#### **KEY FEATURES**

- A compact footprint with high performance and reliability.
- Scales up to 64 cores.
- Ideal for data center integration and virtualization.
- The 16-core 2.8 GHz SPARC64 X and the 3.4 GHz SPARC64 X+ processors and the 8-core 3.7 GHz SPARC64 X+ processor, 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 Oracle VM Server for SPARC and Oracle 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.
- The server is managed by the independent service processor's eXtended System Control Facility (XSCF).
- Firmware updates during system operation.

## FUJITSU M10-4 SERVER

The Fujitsu M10-4 server is a high-performance, highly reliable midrange server that is ideal for data center integration and virtualization. It can be configured with as many as 64 processor cores, large memory, and large disk capacity. The Fujitsu M10-4 uses the latest SPARC64 X ("ten") and X+ ("ten plus") processors. Customers can enjoy the benefits of Capacity on Demand (COD) with core-level CPU Activation to grow processor resources one core at a time. Innovative Software on Chip (SWOC) capabilities of the SPARC64 X / SPARC64 X+ processors deliver dramatic performance by implementing key software functions directly in the processor. The Fujitsu M10-4 server enables highly flexible system configuration with a suite of built-in virtualization technologies included at no cost: Oracle VM Server for SPARC and the Oracle Solaris Zones.



#### Protect Your Investment with Reliability, Availability, Serviceability, and Flexibility

The Fujitsu M10-4 server has many mainframe-class reliability, availability, and serviceability (RAS) features, such as automatic recovery with instruction retry, up to 4 TB of system memory with error-correcting code (ECC) protection with extended ECC support, guaranteed data path integrity, and configurable memory mirroring. In addition, the disks, I/O cards, power supplies, and fans are redundant and hot-swappable. To enhance flexibility, multiple independent logical domains can be configured with Oracle VM Server for SPARC. For additional flexibility, multiple Oracle Solaris Zones can be configured and processor/memory resource allocation can be changed dynamically. Both Oracle VM Server for SPARC and the Oracle Solaris Zones feature of Oracle Solaris are included in all Fujitsu M10 servers at no cost.

#### 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 M10-4 server supports Oracle Solaris 10 and Oracle Solaris 11. In addition, Oracle Solaris 8 and Oracle Solaris 9 are available to use in Oracle Solaris Legacy Containers. Oracle Solaris 10 and later also 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.



Processor           CPU         SPARC64 X: 16-core, SPARC64 X: 16-core or 8-core, dual-threaded SPARC Val 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         2.8 GHz (16-core SPARC64 X) / 3.4 GHz (16-core SPARC64 X+) / 3.7 GHz (8-core SPARC64 X+) - Extended Floating-Point Processing           Software on Chip features         - SIMD Single Instruction Multiple Data Vector Processing           - Decimal Floating-Point Processing, IEEE 754 standard and Oracle Number are supported. - Extended Floating-Point Processing, IEEE 754 standard and Oracle Number are supported. - Cryptographic Processing. Supported encryption modes are AES, DES, 3DES, RSA and SHA.           System         - Oracle Solaris Into With Ope on Floating-Point Processing           CPU         Up to four CPUs (two CPUs per board/two boards per server)           Main memory         Up to 170 Express 30 sto with optional PCI expansion unit - 4-port GEE, 1-port SAS, 2-port USB           Mamory bandwidth (per onit)         102 GBsace           Service processor         One per unit           Software         - Oracle Solaris 11.1 or later - Oracle Solaris 10.17/3 or later           Operating system         - Oracle Solaris 2F2 (default life system)           Software Included         - Software ondiguration and health, domain configuration and status, eror oracle Solaris 10.17/3 or l	Fujitsu M10-4 Server Specifications			
CPU         dual-threaded SPARC V9 architecture, Error Checking and Correction (ECC) protection           Primary cache per corea         64 K data cache and 64 K instruction cache           Secondary cache per processo         24 MB           Clock speed         2.8 GHz (16-core SPARC64 X) / 3.4 GHz (16-core SPARC64 X+) / 3.7 GHz (8-core SPARC64	Processor			
Secondary cache per processor     24 MB       Clock speed     2.8 GHz (16-core SPARC64 X) / 3.4 GHz (16-core SPARC64 X+) / 3.7 GHz (8-core SPARC64 X+)       Software on Chip features     • SIMD Single Instruction Multiple Data Vector Processing       Software on Chip features     • Extended Ploating-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 four CPUs (two CPUs per board/two boards per server)       Main memory     Up to 4 TB, with 64 GB DIMM <i>VO</i> • 11 PCI Express 3.0 short, low-profile slots (eight lanes) <i>VO</i> • 11 PCI Express 3.0 short, low-profile slots (eight lanes) <i>VO</i> • 01 PCI Express 3.0 short, low-profile slots (eight lanes) <i>VO</i> • 01 PCI Express 3.0 short, low-profile slots (eight lanes) <i>VO</i> • 01 PCI Express 3.0 short, low-profile slots (eight lanes) <i>VO</i> • 01 PCI Express 3.0 short, low-profile slots (eight lanes) <i>VO</i> • 01 PCI Express 3.0 short, low-profile slots (eight lanes) <i>VO</i> • 01 PCI Express 3.0 short, low-profile slots (eight lanes) <i>VO</i> • 01 PCI Express 3.0 short, low-profile slots (eight lanes) <i>VO</i> • 01 PCI Express 3.0 short, low-profile slots (eight lanes) <i>VO</i> • 02 Cold Slots 11.1 or later       Operating system	CPU			
Clock speed     2.8 GHz (16-core SPARC64 X) / 3.4 GHz (16-core SPARC64 X+) / 3.7 GHz (6-core SPARC64 X+)       Software on Chip features     • SIND Single Instruction Multiple Data Vector Processing       • Extended Floating-Point Registers     • Decimal Floating-Point Registers       • Decimal Floating-Point Registers     • Decimal Floating-Point Registers       • Decimal Floating-Point Processing, LEE F54 standard and Oracle Number are supported.     • Cryptographic Processing, Supported encryption modes are AES, DES, 3DES, RSA and SHA.       System     • Decimal Floating-Point Processing, UPE F54 standard and Oracle Number are supported.       CPU     Up to four CPUs (two CPUs per board/two boards per server)       Main memory     Up to 4 TB, with 64 GB DIMM       i/O     • Dip to 1 TPC Express 3.0 short, low-profile slots (eight lanes)       i/O     • Up to 1 PC Express 3.0 short, low-profile slots (eight lanes)       i/O     • Up to Express slots with optional PC expansion unit       • -aport GBE, 1-port SAS, 2-port USB       Memory bandwidth (per chip)     102 GB/sec       Software     Up to eight 900 GB or 600 GB internal 2.5-in. SAS HDDs or 400 GB SAS SSDs       Software     • Oracle Solaris 11.1 or later       Operating system     • Oracle Solaris 11.2 which includes Oracle VM Server for SPARC       Software     • Oracle Solaris 2FS (default file system)       Management software     • SSCF Gontraver, which managages hardware configuration and health, domain configurat	Primary cache per core	64 K data cache and 64 K instruction cache		
software on Chip features <ul> <li>SIMD Single Instruction Multiple Data Vector Processing.</li> <li>Extended Floating-Point Processing. IEEE 754 standard and Oracle Number are supported.</li> <li>Cryptographic Processing. Supported encryption modes are AES, DES, 3DES, RSA and SHA.</li> </ul> System              CPU         Up to four CPUs (two CPUs per board/two boards per server)              Main memory              Up to 4 TB, with 64 GB DIMM            Main memory              Up to 71 PCI Express 3.0 stnr, low-profile slots (eight lanes)             . Up to 71 PCI Express 3.0 stnr, low-profile slots (eight lanes)             . Up to 71 PCI Express 3.0 stnr, low-profile slots (eight lanes)             . Up to 71 PCI Express 3.0 stnr, low-profile slots (eight lanes)             . Up to 71 PCI Express 3.0 stnr, low-profile slots (eight lanes)             . Up to 71 PCI Express 3.0 stnr, low-profile slots (eight lanes)             . Up to 71 PCI Express 3.0 stnr, low-profile slots (eight lanes)             . Up to 71 PCI Express 3.0 stnr, low-profile slots (eight lanes)             . Up to 628/sec             . Oracle Solaris 11.1 or later             . Oracle Solaris 11.1 or later             . Oracle Solaris 11.1 or later             . Oracle Solaris 2FS (default file system)             . XSCF monitoring/control facility             . XSCF monitoring/control facility             . XSCF monitoring/control facility             . XSCF monitoring/control facility             . XSCF software, which manages hardware configuration and health, domain configuration and status, error monitor, and notification             System monitoring             . Dracle Solaris 0 1/13 or later             . Dracle Solaris 2FS (default file systems             . XSCF monitoring/control facility             . XS	Secondary cache per processor	24 MB		
Software on Chip features <ul> <li>Extended Floating-Point Registers</li> <li>Decimal Floating-Point Processing. UEEE 754 standard and Oracle Number are supported.</li> <li>Cryptographic Processing. Supported encryption modes are AES, DES, 3DES, RSA and SHA.</li> </ul> System <ul> <li>CPU</li> <li>Up to fur CPUs (two CPUs per board/two boards per server)</li> <li>Main memory</li> <li>Up to 4 TB, with 64 GB DIMM</li> <li>I TP CI Express 30 short, low-profile slots (eight lanes)</li> <li>Up to 71 PCI Express slots with optional PCI expansion unit</li> <li>4-4 port ObE, 1-port SAS, 2-port USB</li> </ul> Memory bandwidth (per chip)         102 GB/sec           Service processor         One per unit           Storage <ul> <li>Up to 4 rB, with 64 GB Old BO r 600 GB internal 2.5-in. SAS HDDs or 400 GB SAS SSDs</li> </ul> Software <ul> <li>Oracle Solaris 11.1 or later</li> <li>Oracle Solaris 11.2 which includes Oracle VM Server for SPARC</li> <li>Oracle Solaris 11.2 which includes Oracle VM Server for SPARC</li> <li>Oracle Solaris 275 (default file system)</li> <li>XSCF software, which manages hardware configuration and health, domain configuration and status, error monitori, and notification</li> </ul> System monitoring     Oracle Enterprise Manager Ops Center           Built-in, no-cost Oracle VM Server for SPARC and Oracle Solaris Zones provide the flexibility and power of up to 128 virtual systems in a single puiltisu M10-4 server.           Applications certified	Clock speed	2.8 GHz (16-core SPARC64 X) / 3.4 GHz (16-core SPARC64 X+) / 3.7 GHz (8-core SPARC64 X+)		
Software on Chip features <ul> <li>Decimal Floating-Point Processing. Supported encryption modes are AES, DES, 3DES, RSA and SHA.</li> <li>System</li> <li>CPU</li> <li>Up to four CPUs (two CPUs per board/two boards per server)</li> <li>Main memory</li> <li>Up to 4 TB, with 64 GB DIMM</li> <li>11 PCI Express 3.0 short, low-profile slots (eight lanes)</li> <li>Up to 71 PCI Express 3.0 short, low-profile slots (eight lanes)</li> <li>Up to 71 PCI Express 3.0 short, low-profile slots (eight lanes)</li> <li>Up to 71 PCI Express 3.0 short, low-profile slots (eight lanes)</li> <li>Up to 71 PCI Express slots with optional PCI expansion unit</li> <li>4-port GBE, 1-port SAS, 2-port USB</li> </ul> <li>Memory bandwidth (per chip)</li> <li>102 GB/sec</li> <li>Service processor</li> <li>One per unit</li> <li>Storage</li> <li>Internal device</li> <li>Up to eight 900 GB or 600 GB internal 2.5-in. SAS HDDs or 400 GB SAS SSDs</li> <li>Software</li> <li>Oracle Solaris 11.1 or later</li> <li>Oracle Solaris 2FS (default file system)</li> <li>Oracle Solaris 2FS (default file system)</li> <li>Accel solaris 2FS (default file system)</li> <li>XSCF monitoring/control facility</li> <li>XSCF software, which manages hardware configuration and health, domain configuration and status, error monitor, and notification</li> <li>System monitoring</li> <li>Oracle Enterprise Manager Ops Center</li> <li>Built-In, no-coad Oracle VM Server for SPARC and Oracle Solaris 2noes provide the flexibility and power of up to 128 virtual systems in a single Fujitsu M10-4 server.</li> <li>Applications certified only for Oracle Solaris 8 or Oracle Solaris 7 may be installed in an Oracle Solaris 10 1/13 guest domain.</li> <li>Reliability, Availability, and Serviceability</li> <li>Automatic recovery with instruction retry</li> <li>A</li>	Ooffware on Ohio features	SIMD Single Instruction Multiple Data Vector Processing		
• 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 four CPUs (two CPUs per board/two boards per server)         Main memory       Up to 4 TB, with 64 GB DIMM         I/O       • 11 PCI Express 30 short, low-profile slots (eight lanes)         I/O       • Up to 71 PCI Express 30 short, low-profile slots (eight lanes)         I/O       • Up to 71 PCI Express slots with optional PCI expansion unit         • 4-port GbE, 1-port SAS, 2-port USB         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       • Oracle Solaris 11.1 or later         Operating system       • Oracle Solaris 11.1 or later         • Oracle Solaris 11.2 which includes Oracle VM Server for SPARC         • Oracle Solaris 2FS (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         Wirtualization		Extended Floating-Point Registers		
System           CPU         Up to four CPUs (two CPUs per board/two boards per server)           Main memory         Up to 4 TB, with 64 GB DIMM           I/O         • 11 PCI Express 3.0 short, low-profile slots (eight lanes)           I/O         • Up to 71 PCI Express slots with optional PCI expansion unit • 4-port GbE, 1-port SAS, 2-port USB           Memory bandwidth (per chip)         102 GB/sec           Service processor         One per unit           Storage	Software on Onip realures	Decimal Floating-Point Processing. IEEE 754 standard and Oracle Number are supported.		
CPU         Up to four CPUs (two CPUs per board/two boards per server)           Main memory         Up to 4 TB, with 64 GB DIMM           I/O         • 11 PCI Express 3.0 short, low-profile slots (eight lanes)           · Up to 71 PCI Express slots with optional PCI expansion unit         • 4-port GbE, 1-port SAS, 2-port USB           Memory bandwidth (per chip)         102 GB/sec           Service processor         One per unit           Storage         •           Up to 9 to eight 900 GB or 600 GB internal 2.5-in. SAS HDDs or 400 GB SAS SSDs           Software         • Oracle Solaris 11.1 or later           Operating system         • Oracle Solaris 11.2 which includes Oracle VM Server for SPARC           Software Included         • Oracle Solaris 11.2 which includes Oracle VM Server for SPARC           Management software         • XSCF solaris ZFS (default file system)           × XSCF solaris ZFS (default file system)         • XSCF solaris ZFS (default file system)           Virtualization         Øperating control facility           Virtualization         Built-in, no-cost Oracle VM Server for SPARC and Oracle Solaris 2 monolity and power of up to 128 virtual systems in a single Fujitsu M10-4 server. Applications certified only for Oracle Solaris 8 or Oracle Solaris 9 may be installed in an Oracle Solaris logacy zone in an Oracle Solaris 10 1/13 guest domain.           Reliability, Availability, and Serviceability         • End-to-end ECC protection		Cryptographic Processing. Supported encryption modes are AES, DES, 3DES, RSA and SHA.		
Main memory         Up to 4 TB, with 64 GB DIMM           I/O         • 11 PCI Express 3.0 short, low-profile slots (eight lanes)           I/O         • Up to 71 PCI Express slots with optional PCI expansion unit           • 4-port GbE, 1-port SAS, 2-port USB           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         • Oracle Solaris 11.1 or later           Operating system         • Oracle Solaris 11.2 which includes Oracle VM Server for SPARC           Software Included         • Oracle Solaris 21.2 which includes Oracle VM Server for SPARC           Software Included         • Oracle Solaris 21.2 which includes Oracle VM Server for SPARC           Software Included         • Oracle Solaris 21.2 which includes Oracle VM Server for SPARC           Software Included         • Oracle Solaris 20 Sectore           Virtualization         Susce Software, which manages hardware configuration and health, domain configuration and status, error monitor, and notification           Virtualization         Oracle Enterprise Manager Ops Center           Built-in, no-cost Oracle VM Server for SPARC and Oracle Solaris 2 may be installed in an Oracle Solaris 10 1/13 guest domain.           Reliability, Availability, and Serviceabili	System			
I/O       • 11 PCI Express 3.0 short, low-profile slots (eight lanes)         I/O       • Up to 71 PCI Express slots with optional PCI expansion unit         • 4-port GbE, 1-port SAS, 2-port USB         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       Oracle Solaris 11.1 or later         Operating system       • Oracle Solaris 11.2 which includes Oracle VM Server for SPARC         Software Included       • Oracle Solaris 7E's (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         Built-in, no-cost Oracle VM Server for SPARC and Oracle Solaris 2 may be installed in an Oracle Solaris legacy zone in an 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, Availability, and Serviceability       • End-to-end ECC protection         • Guaranteed data path integrify       • Automatic recovery with instruction retry         • Dynamic L1 and L2 cache way degradation       • ECC and Extended ECC protection for memory, memory mirrori	CPU	Up to four CPUs (two CPUs per board/two boards per server)		
I/O       • Up to 71 PCI Express slots with optional PCI expansion unit         • 4-port GbE, 1-port SAS, 2-port USB         Memory bandwidth (per chip)       102 GB/sec         Service processor       One per unit         Storage       Up to eight 900 GB or 600 GB internal 2.5-in. SAS HDDs or 400 GB SAS SSDs         Software       • Oracle Solaris 11.1 or later         Operating system       • Oracle Solaris 11.2 which includes Oracle VM Server for SPARC         Software Included       • Oracle Solaris 2FS (default file system)         Management software       • SSCF monitoring/control facility         Ystem monitoring       Oracle Enterprise Manager Ops Center         System monitoring       Oracle Solaris 10 1/13 out alser or yower of up to 128 virtual systems in a single Fujitsu M10-4 server. Applications centified only for Oracle Solaris 5 or Oracle Solaris Zones provide the flexibility and power of up to 128 virtual systems in a single Fujitsu M10-4 server. Applications centified only for Oracle Solaris 10 1/13 guest domain.         Reliability, Availability, and Servezebility       • 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         Key features       • ECC and Extended ECC protection for memory, memory mirroring, periodic memory patrol, and predictive	Main memory	Up to 4 TB, with 64 GB DIMM		
• 4-port GbE, 1-port SAS, 2-port USB         Memory bandwidth (per chip)       102 GB/sec         Service processor       One per unit         Storage       Up to eight 900 GB or 600 GB internal 2.5-in. SAS HDDs or 400 GB SAS SSDs         Software       Operating system         Operating system       • Oracle Solaris 11.1 or later         Software Included       • Oracle Solaris 12.5 (default file system)         Software Included       • Oracle Solaris 2FS (default file system)         Management software       • XSCF monitoring/control facility         System monitoring       • XSCF software, which manages hardware configuration and health, domain configuration and status, error monitor, and notification         System monitoring       Oracle Exterprise Manager Ops Center         Virtualization       Built-in, no-cost Oracle VM Server for SPARC and Oracle Solaris Zones provide the flexibility and power of up to 128 virtual systems in a single Fujitsu M10-4 server. Applications certified only for Oracle Solaris 8 or Oracle Solaris 9 may be installed in an Oracle Solaris 10 1/13 guest domain.         Reliability, Availability, and Serveebility       • Lend-to-end ECC protection         • Guaranteed data path integrify       • 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         • Hat-pluggable HDD/SSD, PSU, F		11 PCI Express 3.0 short, low-profile slots (eight lanes)		
Memory bandwidth (per chip)         102 GB/sec           Service processor         One per unit           Storage         Up to eight 900 GB or 600 GB internal 2.5-in. SAS HDDs or 400 GB SAS SSDs           Software         Oracle Solaris 11.1 or later           Operating system         • Oracle Solaris 11.1 or later           Software Included         • Oracle Solaris 11.2 which includes Oracle VM Server for SPARC           Software Included         • Oracle Solaris ZFS (default file system)           Management software         • XSCF monitoring/control facility           System monitoring         Oracle Solaris ZPS (default file system)           Virtualization         Sulti-in, no-cost Oracle VM Server for SPARC and Oracle Solaris Zones provide the flexibility and power of up to 128 virtual systems in a single Fujitsu M10-4 server.           Applications certified only for Oracle Solaris 8 or Oracle Solaris 9 may be installed in an Oracle Solaris (gaazy zone in an Oracle Solaris 9 to 1/3 guest domain.           Reliability, Availability, and Servetexeability         • End-to-end ECC protection           Guaranteed data path integrity         • Automatic recovery with instruction retry           Very features         • End-to-end ECC protection for memory, memory mirroring, periodic memory patrol, and predictive self-healing           Hardware redundarcy in memory, HDD/SSD, PSU, PSU, PSU, PSU, PSU, PSU, PSU, PSU	I/O	Up to 71 PCI Express slots with optional PCI expansion unit		
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           Operating system         • Oracle Solaris 10 1/13 or later           Software Included         • Oracle Solaris 11.2 which includes Oracle VM Server for SPARC           Noracle Solaris ZFS (default file system)         • XSCF monitoring/control facility           Management software         • XSCF monitoring/control facility           System monitoring         Oracle Enterprise Manager Ops Center           Built-in, no-cost Oracle VM Server for SPARC and Oracle Solaris Zones provide the flexibility and power of up to 128 virtual systems in a single Fujitsu M10-4 server.           Applications certified only for Oracle Solaris 10 1/13 guest domain.           Reliability, Availability, and Serviceability           Key features           Key features           Virtualization		4-port GbE, 1-port SAS, 2-port USB		
Storage           Internal device         Up to eight 900 GB or 600 GB internal 2.5-in. SAS HDDs or 400 GB SAS SSDs           Software <ul></ul>	Memory bandwidth (per chip)	102 GB/sec		
Internal device         Up to eight 900 GB or 600 GB internal 2.5-in. SAS HDDs or 400 GB SAS SSDs           Software         • Oracle Solaris 11.1 or later           Operating system         • Oracle Solaris 10 1/13 or later           Software Included         • Oracle Solaris 11.2 which includes Oracle VM Server for SPARC           Management software         • Oracle Solaris 2FS (default file system)           • XSCF monitoring/control facility         • 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           Wirtualization         Built-in, no-cost Oracle VM Server for SPARC and Oracle Solaris 2 may be installed in an Oracle Solaris legacy zone in an Oracle Solaris 10 1/13 guest domain.           Reliability, Availability, and Serviceability         • 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         • Hot-pluggable HDD/SSD, PSU, PCI card, and fan	Service processor	One per unit		
Internal device         Up to eight 900 GB or 600 GB internal 2.5-in. SAS HDDs or 400 GB SAS SSDs           Software         • Oracle Solaris 11.1 or later           Operating system         • Oracle Solaris 10 1/13 or later           Software Included         • Oracle Solaris 11.2 which includes Oracle VM Server for SPARC           Management software         • Oracle Solaris 2FS (default file system)           • XSCF monitoring/control facility         • 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           Wirtualization         Built-in, no-cost Oracle VM Server for SPARC and Oracle Solaris 2 may be installed in an Oracle Solaris legacy zone in an Oracle Solaris 10 1/13 guest domain.           Reliability, Availability, and Serviceability         • 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         • Hot-pluggable HDD/SSD, PSU, PCI card, and fan	Storage			
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         System monitoring       • XSCF software, which manages hardware configuration and health, domain configuration and status, error monitor, and notification         System monitoring       Oracle Enterprise Manager Ops Center         Built-in, no-cost Oracle VM Server for SPARC and Oracle Solaris Zones provide the flexibility and power of up to 128 virtual systems in a single Fujitsu M10-4 server.         Applications certified only for Oracle Solaris 0 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, and liquid cooling pump       • Hot-pluggable HDD/SSD, PSU, PCI card, and fan	-	Up to eight 900 GB or 600 GB internal 2.5-in. SAS HDDs or 400 GB SAS SSDs		
Operating system       • Oracle Solaris 10 1/13 or later         Software Included       • Oracle Solaris 11.2 which includes Oracle VM Server for SPARC         Management software       • XSCF monitoring/control facility         Management software       • XSCF software, which manages hardware configuration and health, domain configuration and status, error monitor, and notification         System monitoring       Oracle Enterprise Manager Ops Center         Built-in, no-cost Oracle VM Server for SPARC and Oracle Solaris Zones provide the flexibility and power of up to 128 virtual systems in a single Fujitsu M10-4 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         Key features       • 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       • Hot-pluggable HDD/SSD, PSU, PCI card, and fan         • Live operating system upgrades       • Live operating system upgrades	Software			
• 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)       • XSCF monitoring/control facility         Management software       • XSCF monitoring/control facility         System monitoring       • Oracle Enterprise Manager Ops Center         Built-in, no-cost Oracle VM Server for SPARC and Oracle Solaris Zones provide the flexibility and power of up to 128 virtual systems in a single Fujitsu M10-4 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         • EC and Extended ECC protection         • 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         • Hot-pluggable HDD/SSD, PSU, PCI card, and fan         • Live operating system upgrades		Oracle Solaris 11.1 or later		
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<ul><li>Hot-pluggable HDD/SSD, PSU, PCI card, and fan</li><li>Live operating system upgrades</li></ul>				
Live operating system upgrades		Hardware redundancy in memory, HDD/SSD, PSU, fan, and liquid cooling pump		
		Hot-pluggable HDD/SSD, PSU, PCI card, and fan		
<ul> <li>Firmware updates during system operation</li> </ul>		Live operating system upgrades		
		Firmware updates during system operation		



### Fujitsu M10-4 Server Specifications – continued

Environment				
AC power	200 V to 240 V ±10% (50/60 Hz)			
Power consumption	Maximum 2,765 W (SPARC64 X), 3,082 W (SPA	RC64 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	• 9,954 kJ/hr, 9,434 BTU/hr (SPARC64 X) / 11,1	• 9,954 kJ/hr, 9,434 BTU/hr (SPARC64 X) / 11,100 kJ/hr, 10,520BTU/hr (SPARC64 X+)		
Dimensions and Weight				
Height	17.5 cm (6.9 in.)			
Width	44.0 cm (17.3 in.)			
Depth	74.6 cm (29.4 in.)			
Weight	58 kg (127.9 lb.)			
Regulations				
Safety	• UL60950-1, 2nd Edition + A1	• IEC60825-2		
	• CSA C22.2 No. 60950-1-07 + A1	CB Scheme with all country deviations		
	• EN60950-1:2006 + A1:2010 +A2:2011	CNS14336&GB4943 through exemption		
	• IEC60950-1:2005, 2nd Edition + A1:2009	• CNS14336		
	(evaluated to all CB countries)	S-Mark		
	• CFR21 Part 1040	<ul> <li>GOST-R certification mark</li> </ul>		
	• IEC60825-1			
RFI/EMC	• EN55022:2010	• EN61000-3-2:2006 + A1:2009 + A2:2009		
	• VCCI (2012)	• EN61000-3-3:2008		
	• FCC Part-15 (2012)	• JIS C 61000-3-2 (2011)		
	• CNS13438:2006 (CISPR 22:2005 +A1:2005)	ICES-003 Class A		
	KCC     COST D contification mode	AS/NZS CISPR 22 (2009)		
	GOST-R certification mark	• CISPR 22:2008		
	S-Mark	. IEC61000 4 5		
Immunity	• EN55024:2010	• IEC61000-4-5		
	• IEC61000-4-2	• IEC61000-4-6		
	• IEC61000-4-3	• IEC61000-4-8		
Tala assuming the set	• IEC61000-4-4	• IEC61000-4-11		
Telecommunications	EN 300 386 V1.4.1 (2008)			



#### Warranty

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#### 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 M10-4 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 M10-4 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

