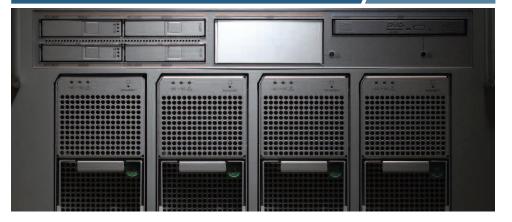# Sun SPARC® Enterprise
M5000 Server
Mainframe-class RAS in a value-priced server

> Combining the power of the Solaris™ Operating System with RAS features traditionally found on mainframe-class systems, the midrange Sun SPARC® Enterprise™ M5000 server delivers leading reliability, flexibility, and binary compatibility in a value-priced server. Built on the lastest quad-core SPARC64 VII or dual-core SPARC64 VI processor, the Sun SPARC Enterprise M5000 server provides enterprise-class service levels for medium to large databases, scientific/-engineering applications, and consolidation/virtualization projects.

Highlights

- Mix and match the boards with earlier versions of the SPARC processor in a single system for continued investment protection

- Binary compatibility with earlier versions of your applications

- Scalable, mainframe-class computing for the open systems market

- Advanced virtualization technologies, methodologies, and services, which make Sun SPARC Enterprise servers ideal for consolidation

- Solaris™ Application Guarantee for maximum investment protection

- Up to eight quad-core, SPARC64 VII or dual-core SPARC64 VI processors

- Maximum system utilization through hardware partitioning, with up to four Dynamic Domains, providing granularity down to a single socket

- Leading performance, utilization, and speed to implementation through Sun's high availability, Solaris 10 Adoption, and Consolidation services, combined with a global support network

Investment protection and mainframe-class RAS in a highly flexible system

Uniquely protect IT investments with the Sun SPARC Enterprise M5000 servers. Scale out as needed with "in-box" upgrades by mixing and matching different speeds/generations of SPARC64 processors in existing and new M-series servers. Benefit from Sun's long term SPARC® Enterprise road map and "future-proof" investments with the Sun SPARC Enterprise M5000 server.

What's more, a surprising number of mainframe-class RAS features come standard in the Sun SPARC Enterprise M5000 server, including automatic recovery with instruction retry, up to 256 GB of system memory with error-correcting code (ECC) protection and extended ECC support, guaranteed data path integrity, total SRAM and register protection, and configurable memory mirroring. Plus, the disks, power supply, and fans are redundant and hot-swappable, and the I/O cards are hot-swappable as well. Other Solaris 10 features that further enhance system reliability include Predictive Self-Healing, which automatically identifies and isolates faults and provides guidance when remediation is needed.

To enhance flexibility, the Sun SPARC Enterprise M5000 server supports up to four Dynamic Domains—CPU board-level domains for large, mission-critical workloads that depend on maximum isolation, and single-socket-level domains for finer granularity with high isolation. For additional flexibility, each system can support thousands of Solaris Containers, which enable a single Solaris 10 OS instance to support many isolated execution environments.

Solaris: the world's most advanced OS

The Solaris 10 OS is preinstalled on every Sun SPARC Enterprise M5000 server and is an integral part of the the system's advanced design. Sun goes so far as to guarantee that applications written for the Solaris 10 OS are 100 percent binary compatible with SPARC/Solaris applications built for earlier versions of the OS. And the Solaris 10 OS also supports Dynamic Tracing (DTrace), Solaris ZFS, cryptographic infrastructures, IP filter, and User and Process Rights Management. In addition, the Solaris OS provides industry-leading network identity services, plus Web and application services, collaboration and communication services, portal services, and clustering.

Sun SPARC Enterprise M5000 Server

Processor

Up to eight SPARC64 VII quad-core processors or eight dual-core SPARC64 VI processors

SPARC V9 Architecture, ECC protected

Cache per SPARC64 Level 1	• SPARC64 VII: 64 KB D-cache and 64 KB I-Cache • SPARC64 VI: 128 KB D-cache and 128 KB I-Cache
Cache per SPARC64 Level 2	• 5 MB on-chip
Clock speed	• SPARC64 VII: 2.4 GHz • SPARC64 VI: 2.15 GHz

System

CPU	• One or four CPU (CMU), two CPUs per board
Main memory	• Up to 256 GB per domain/system, using 4 GB DIMMs (32 GB per memory board x eight boards)
I/O	• Up to 10 I/O slots with eight PCIe slots each and two PCI-X (four PCIe and one PCI-X per I/O tray) • Up to 50 PCIe or PCI-X slots with optional External I/O Expansion Unit
System bus	• High-speed, low-latency interconnect system bus with redundant data, address, and response crossbar interconnect
System bus bandwidth (memory)	• 64 GB/sec peak, 24.831 GB/sec stream (copy)
System bus bandwidth (I/O)	• 16 GB/sec peak

Service processor for system management

Up to four Dynamic Domains

Storage

Boot device	• Up to four internal, 2.5 in. SAS boot disks
External	• Direct, SAN or NAS attached to Sun StorageTek™ compatible tape libraries and disk arrays, including StorageTek 3X00, 5X00, 6X00, and 9X00 families

Resource management

Dynamic Domains

Solaris 10 Resource Manager including Solaris Containers

Software

Operating system	• SPARC64 VII: Solaris 10 (8/07) • SPARC64 VI: Solaris 10 (11/06)
Languages	• C, C++, Pascal, FORTRAN, Java™
Networking	• ONC™/NFS™, TCP/IP, SunLink™, Netware
System monitoring	• Sun Management Center • Solaris Web Start • Solstice Domain Manager • Solstice Enterprise Manager™ • Solstice Backup™ • xVM Ops Center
Value added software	• VERITAS File System • VERITAS Volume Manager • Sun Cluster™ • Sun HPC ClusterTools™ • Sun Java Enterprise System

Environmental

AC power	• 100–240 VAC 1-phase (50/60 Hz), 12 A per power cord, two to four power cords
Plug	• NEMA-L6-20P (U.S.) or IEC 309-IP44 (INTL) IEC 60320 C19 connector
Receptacle type	• IEC 60320 C20
Operating temperature	• 5°C to 35°C (41°F to 95°F), 20% to 80% relative humidity, noncondensing
Nonoperating temperature	• -20°C to 60°C (-4°F to 140°F) 8% to 93% relative humidity, noncondensing
Altitude	• Up to 3000 m (9,842 ft.)

Regulations (meets or exceeds the following requirements)

Safety	• CSA/UL-60950, EN60950, IEC950 CB Scheme with all national deviations
RFI/EMC	• EN55022/CISPR22 Class A, FCC CFR47 Part 15 Class A, EN61000-3-2, EN61000-3-3
Immunity	• EN55024, EN61000-4-2, -4-3, -4-5, -4-6, -4-8, and -4/11
Regulatory markings	• CE, FCC, ICES, C-tick, VCCI, GOST-R, BSMI, MIC, CSA/UL
Other marks	• WEEE and Chinese RoHS

Key RAS features

End-to-end ECC protection; guaranteed data-path integrity; automatic recovery with instruction retry; total SRAM and register protection; ECC and Extended ECC protection for memory, memory mirroring, and Predictive Self-Healing; fault-isolated Dynamic Domains; Dynamic Reconfiguration; Auto Diagnosis and Recovery; online upgrades; concurrent maintenance of disks, fans, and power supplies; redundant network connections; redundant storage connections; live operating system upgrades; journaling file system; hardened I/O drivers; CPU off-lining; memory page retirement; and cluster support.

Learn More

The Sun SPARC Enterprise M5000 server belongs to a family of midrange servers designed to satisfy a large range of workloads and applications. For more information, visit **sun.com/m5000** or talk to a local Sun sales representative.

Sun Upgrade Advantage Program

The Sun Upgrade Advantage Program (UAP) offers investment protection programs to migrate customers from Sun and competitor platforms, with discounts for trade-in of qualified Sun and competitive servers toward new Sun SPARC Enterprise servers. For more information visit sun.com/ibb/enterprise.

Dimensions and weight

H:	44.0 cm (17.33 in.)
W:	44.4 cm (17.48 in.)
D:	81.0 cm (31.9 in.)
Weight:	275lb. (125 kg)

Remote services

Sun Connect

Services

Sun 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. Sun's expertise helps you address key datacenter challenges, including consolidation, availability, clustering, optimization, and disaster recovery. Leverage Sun's more than 25 years of relentless innovation and depth of expertise to help you architect and deploy a reliable, high-performance Sun SPARC Enterprise M5000 solution that gives you a competitive edge.

Sun™ System Performance Packs combine top-rated SunSpectrum℠ support with your Sun SPARC Enterprise M5000 server to provide optimized services that save you money compared to purchasing them separately. Sun System Performance Packs include integrated hardware and OS coverage, including Sun technical support, expedited hardware service, SunVIP℠ support, and premium online resources such as on-demand health checks and OS update services.