

# Sun SPARC® Enterprise M4000 Server

Mainframe-class RAS in a value-priced server



Companies can't afford to have business-critical services off-line. To meet these increasing demands for compute services, platforms must be flexible and provide a cost-effective growth path. Combining the power of the Solaris™ Operating System with mainframe RAS features, the midrange Sun SPARC® Enterprise™ M4000 server boasts reliability, flexibility, and binary compatibility in a value-priced server. Built on the latest and most advanced SPARC64 VII quad-core or SPARC64 VI dual-core processors, the Sun SPARC Enterprise M4000 server delivers enterprise-class service levels for essential business applications, databases, and smaller consolidation 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, making Sun SPARC Enterprise servers ideal for consolidation
- Investment protection with the unique Solaris™ Application Guarantee
- Up to four quad-core SPARC64 VII or dual-core SPARC64 VI processors
- Maximum system utilization through hardware partitioning, with up to two physical Dynamic Domains, with 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, scalability, reliability, and flexibility

With the Sun SPARC Enterprise M4000 servers you can protect your IT investment and scale out as needed with “in-box” upgrades. The option to mix and match different speeds/generations of SPARC64 processors in existing and new M-series servers uniquely protects investments and enables easy and low-cost upgrades not offered by IBM or HP.

In addition, mainframe-class RAS features come standard in the Sun SPARC Enterprise M4000 server, including automatic recovery with instruction retry, up to 128 GB of system memory error-correcting code (ECC) protection with extended ECC support, guaranteed data path integrity, total SRAM and register protection, and configurable memory mirroring. In addition, the disks, power supply, and fans are redundant and hot-swappable, while the I/O cards are also hot-swappable. Many features unique to the Solaris 10 OS enhance system reliability even further, including Predictive Self-Healing, which automatically identifies and isolates faults and provides specific guidance when action is required.

For more flexibility, the Sun SPARC Enterprise M4000 server supports up to two Dynamic Domains, with a high level of granularity: CPU board-level domains for large, mission-critical workloads requiring maximum isolation, and single-socket-level domains for finer granularity with high isolation. For maximum flexibility, each system can support thousands of Solaris Containers, which can create many private execution environments within a single Solaris OS instance.

## Solaris: the world's most advanced OS

The foundation of the Sun SPARC Enterprise M4000 server is the Solaris 10 OS, which comes preinstalled on every system. Sun guarantees—in writing—that the Solaris 10 OS is 100 percent binary compatible with applications written for earlier Solaris versions. The Solaris 10 OS also supports Dynamic Tracing (DTrace), the Solaris Zettabyte File System (ZFS), crypto-graphic infrastructures, IP filters, and User and Process Rights Management. What's more, the Solaris OS provides services for identity management, Web and application access, collaboration and communication, portals, and clustering.

## Sun SPARC Enterprise M4000 Server

### Processor

Up to four SPARC64 VII quad-core or SPARC64 VI dual-core processors	
SPARC V9 Architecture, ECC protected	
Cache per SPARC64 Level 1	<ul style="list-style-type: none"> <li>SPARC64 VII: 64 KB D-cache and 64 KB I-Cache</li> <li>SPARC64 VI: 128 KB D-cache and 128 KB I-Cache</li> </ul>
Cache per SPARC64 Level 2	<ul style="list-style-type: none"> <li>5 MB on-chip</li> </ul>
Clock speed	<ul style="list-style-type: none"> <li>SPARC64 VII: 2.4 GHz</li> <li>SPARC64 VI: 2.15 GHz</li> </ul>

### System

CPU	<ul style="list-style-type: none"> <li>One or two CPU boards (CMU), two CPUs per board</li> </ul>
Main memory	<ul style="list-style-type: none"> <li>Up to 128 GB per domain/system, using 4 GB DIMMs (32 GB per memory board x four boards)</li> </ul>
I/O	<ul style="list-style-type: none"> <li>Up to five I/O slots with four PCIe slots and one PCI-X on one I/O tray</li> <li>Up to 25 PCIe or PCI-X slots with the optional External I/O Expansion Unit</li> </ul>
System bus	<ul style="list-style-type: none"> <li>High-speed, low-latency interconnect system bus with redundant data, address, and response crossbar interconnect</li> </ul>
System bus bandwidth (memory)	<ul style="list-style-type: none"> <li>32 GB/sec peak, 12,566 GB/sec stream (copy)</li> </ul>
System bus bandwidth (I/O)	<ul style="list-style-type: none"> <li>8 GB/sec peak</li> </ul>
Service processor for system management	Up to two Dynamic Domains

### Storage

Boot device	<ul style="list-style-type: none"> <li>Up to two internal, 2.5 in. SAS boot disks</li> </ul>
External	<ul style="list-style-type: none"> <li>Direct, SAN or NAS attached to Sun StorageTek™ compatible tape libraries and disk arrays, including StorageTek 3X00, 5X00, 6X00, and 9X00 families</li> </ul>

### Resource management

Dynamic Domains	Solaris 10 Resource Manager including Solaris Containers
-----------------	--

### Software

Operating system	<ul style="list-style-type: none"> <li>SPARC64 VII: Solaris 10 (8/07)</li> <li>SPARC64 VI: Solaris 10 (11/06)</li> </ul>
Languages	<ul style="list-style-type: none"> <li>C, C++, Pascal, FORTRAN, Java™</li> </ul>
Networking	<ul style="list-style-type: none"> <li>ONC™/NFS™, TCP/IP, SunLink™, Netware</li> </ul>
System monitoring	<ul style="list-style-type: none"> <li>Sun Management Center</li> <li>Solaris Web Start</li> <li>Solstice Domain Manager</li> <li>Solstice Enterprise Manager™</li> <li>Solstice Backup™</li> <li>xVM Ops Center</li> </ul>
Value added software	<ul style="list-style-type: none"> <li>VERITAS File System</li> <li>VERITAS Volume Manager</li> <li>Sun Cluster™</li> <li>Sun HPC ClusterTools™</li> <li>Sun Java Enterprise System</li> </ul>

### Environmental

AC power	<ul style="list-style-type: none"> <li>100–240 VAC 1-phase (50/60 Hz), 12 A per power cord, one or two power cords</li> </ul>
Plug	<ul style="list-style-type: none"> <li>NEMA-L6-20P (U.S.) or IEC 309-IP44 (INTL) IEC 60320 C19 connector</li> </ul>
Receptacle type	<ul style="list-style-type: none"> <li>IEC 60320 C20</li> </ul>
Operating temperature	<ul style="list-style-type: none"> <li>5°C to 35°C (41°F to 95°F), 20% to 80% relative humidity, noncondensing</li> </ul>
Nonoperating temperature	<ul style="list-style-type: none"> <li>-20°C to 60°C (-4°F to 140°F) 8% to 93% relative humidity, noncondensing</li> </ul>
Altitude	<ul style="list-style-type: none"> <li>Up to 3000 m (9,842 ft.)</li> </ul>

### Regulations (meets or exceeds the following requirements)

Safety	<ul style="list-style-type: none"> <li>CSA/UL-60950, EN60950, IEC950 CB Scheme with all national deviations</li> </ul>
RFI/EMC	<ul style="list-style-type: none"> <li>EN55022/CISPR22 Class A, FCC CFR47 Part 15 Class A, EN61000-3-2, EN61000-3-3</li> </ul>
Immunity	<ul style="list-style-type: none"> <li>EN55024, EN61000-4-2, -4-3, -4-5, -4-6, -4-8, and -4/11</li> </ul>
Regulatory markings	<ul style="list-style-type: none"> <li>CE, FCC, ICES, C-tick, VCCI, GOST-R, BSMI, MIC, CSA/UL</li> </ul>
Other marks	<ul style="list-style-type: none"> <li>WEEE and Chinese RoHS</li> </ul>

### 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; 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 M4000 server belongs to a family of midrange servers designed to satisfy a large range of workloads and applications. For more information, visit [sun.com/m4000](http://sun.com/m4000) 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](http://sun.com/ibb/enterprise).

### Dimensions and weight

H:	• 26.3 cm (10.34 in.)
W:	• 44.4 cm (17.48 in.)
D:	• 81.0 cm (31.9 in.)
Weight:	• 84 kg (185 lb.)

### Remote services

Sun Connect

### Services

From design and implementation to support and smart sourcing, 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 M4000 solution that gives you a competitive edge.

Sun™ System Performance Packs combine top-rated SunSpectrum™ support with your Sun SPARC Enterprise M4000 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.