

Sun™ SPARC® Enterprise M9000 Server

Mainframe Reliable Computing with Industry-leading Virtualization Capabilities



Highlights

- Scalable, mainframe-class computing for the open systems market
- Sun's advanced virtualization technologies plus proven methodologies and services make Sun SPARC Enterprise servers the ultimate consolidation systems
- Maximum investment protection with the Solaris Application Guarantee
- Highly scalable product line, going from a single-socket system to a 64-socket, 256-thread system
- Expands from 32 CPUs to 64 CPUs by adding an expansion cabinet
- Sun's High Availability, Solaris 10 Adoption, and Consolidation services, combined with a global support network, for improved performance, maximum IT asset utilization, fast time to implementation, and a focus on strategic business objectives



Many large organizations depend on a wide array of demanding applications that require mission-critical, 24x7 performance — and for those enterprises, there's the high-end Sun™ SPARC® Enterprise™ M9000 server. It delivers the reliability of traditional mainframes, without the cost, complexity, and vendor lock-in. And with the advanced SPARC64 VI processor and Solaris™ 10 Operating System as its foundation, the Sun SPARC Enterprise M9000 server is optimized for enterprise-class applications such as ERP, CRM, BIDW, large databases, HPC/scientific/engineering applications, and large-scale OLTP.

The RAS and scalability features of a mainframe

Mainframe-class RAS features come standard in the Sun SPARC Enterprise M9000 server, including automatic recovery with instruction retry, up to 2 TB of system memory error-correcting code (ECC) protection with extended ECC support, guaranteed data-path integrity, total SRAM and register protection, configurable memory mirroring, and many more. What's more, major system components, such as the power supplies, I/O units, CPU memory boards, and service processors, are redundant and hot-swappable, for increased availability and serviceability.

Solaris 10: the most advanced OS on the planet

The Sun SPARC Enterprise M9000 server is built on the Solaris 10 OS, which comes preinstalled on every system. The Solaris 10 OS delivers a

host of revolutionary new features, including Dynamic Tracing (DTrace), Solaris ZFS, cryptographic infrastructures, IP filter, and User and Process Rights Management. Predictive Self-Healing automatically identifies and isolates faults and provides guidance when remediation is required. And fault isolation is provided down to the ASIC level.

Advanced virtualization and consolidation

Sun SPARC Enterprise servers are some of the industry's best consolidation platforms, thanks to their advanced virtualization features. The Sun SPARC Enterprise M9000 server supports up to 24 Dynamic Domains, enabling massive server consolidation and virtualization. Each physical domain can also be further optimized through the use of Solaris Containers, which allow each Sun SPARC Enterprise M9000 server to support thousands of software partitions.

Sun SPARC Enterprise M9000 Server

Processor

CPU	Up to 32 SPARC64 VI dual-core processors (up to 64 processors with expansion cabinet) SPARC V9 architecture, ECC protected
Cache per SPARC64 Level 1	128-KB D-cache and 128-KB I-cache
Cache per SPARC64 Level 2	5-MB to 6-MB on-chip
Clock speed	2.28 GHz to 2.4 GHz

System

System bus	High-speed, low-latency interconnect with redundant data, address, and response crossbar interconnect
Two redundant service processors	
Up to 24 Dynamic Domains	

32 CPU system

CPU	Up to eight CPU memory boards; up to four processors and 128-GB memory per board based on 4-GB DIMMs
Main memory	Up to 1 TB
I/O	Up to eight I/O units (IOU) with eight PCIe slots each/64 PCIe slots per system; up to 224 PCIe and PCI-X slots with the optional External I/O Expansion Unit
System bus bandwidth (memory)	368-GB/s peak, 134.3-GB/s stream (copy)
System bus bandwidth (IO)	122-GB/s peak

64 CPU system

CPU	Up to 16 CPU memory boards; up to four processors and 128-GB memory per board based on 4-GB DIMMs
Main memory	Up to 2 TB
I/O	Up to 16 I/O units (IOU) with eight PCIe slots each/128 PCIe slots per system; up to 288 PCIe and PCI-X slots with the optional External I/O Expansion Unit

System bus bandwidth (memory)	737-GB/s peak, 219.3-GB/s stream (copy)
System bus bandwidth (I/O)	244-GB/s peak

Storage

External boot devices supported	Sun StorageTek™ 2540, 3120, 3510FC, 9980, 9985
External	Direct, SAN or NAS attached to Sun StorageTek compatible tape libraries and disk arrays, including StorageTek 3X00, 5X00, 6X00, and 9X00 families

32 CPU system

Up to 32 internal, 2.5-in. SAS boot disks/four per IOU

64 CPU system

Up to 64 internal, 2.5-in. SAS boot disks/four per IOU

Resource management

Dynamic Domains
Solaris 10 Resource Manager including Solaris Containers

Software

Operating System	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™
Value-added software	VERITAS File System VERITAS Volume Manager Sun Cluster™ Sun HPC ClusterTools™ Sun Java Enterprise System

Environmental

32 CPU system

Power Option 1	AC power: 200–240 VAC 1-phase (50/60 Hz), 30 A Power cords: Five cords (10 with the optional dual power feed; 3 m/9.8 ft in length) Plug: NEMA-L6-30P or EN60309 (32A)
Power Option 2	AC power: 208 VAC 3-phase DELTA (50/60 Hz), 80 A Power cords: Two direct-wired power connections; includes DPF
Power Option 3	AC power: 415 VAC 3-phase STAR (50/60 Hz), 50 A Power cords: Two direct-wired power connections, includes DPF

64 CPU system

Power Option 1	AC power: 200–240 VAC 1-phase (50/60 Hz), 30 A Power cords: 10 cords (20 with the optional dual power feed; 3 m/9.8 ft in length) Plug: NEMA-L6-30P or EN60309 (32A)
Power Option 2	AC power: 208 VAC 3-phase DELTA (50/60 Hz), 80 A Power cords: Four direct-wired power connections; includes DPF
Power Option 3	AC power: 415 VAC 3-phase STAR (50/60 Hz), 50 A Power cords: Four direct-wired power connections, includes DPF
Operating temperature	5°C to 32°C (41°F to 89.6°F), 20% to 80% relative humidity, noncondensing
Nonoperating temperature	0°C to 50°C (32°F to 122°F), 8% to 80% relative humidity, noncondensing
Altitude	Up to 3000 m (9,843 ft)

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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; full hardware redundancy; fault-isolated Dynamic Domains; Dynamic Reconfiguration; Auto Diagnosis and Recovery; online upgrades; concurrent maintenance; redundant network connections; redundant storage connections; hardened operating system kernel; live operating system upgrades; journaling file system; hardened I/O drivers; CPU off-lining; memory page retirement; and cluster support.

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 Enterpriseservers. For more information visit sun.com/ibb/enterprise/see.

32 CPU systems	64 CPU systems
H: 180 cm (70.9 in.)	H: 180 cm (70.9 in.)
W: 85 cm (33.5 in.)	W: 167.4 cm (65.9 in.)
D: 126 cm (49.6 in.)	D: 126 cm (49.6 in.)
Weight: 940 kg (2,068 lb)	Weight: 1880 kg (4,136 lb)

Optional Power Expansion Cabinet

(Required for 1-phase DPF or 3 phase power distribution; one cabinet required for the 32 CPU system, two for the 64 CPU system)	
H:	180 cm (70.9 in.)
W:	31.7 cm (12.5 in.)
D:	124.4 cm (49 in.)
Weight:	350 kg (770 lb)

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 M9000 solution that gives you a competitive edge.

Sun System Performance Packs combine top-rated SunSpectrumSM support with your Sun SPARC Enterprise M9000 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, SunVIPSM support, and premium online resources such as on-demand health checks and OS update services.

Learn more

The Sun SPARC Enterprise M9000 server belongs to a family of servers designed to satisfy a large range of workloads and applications. For more information, visit sun.com or talk to a local Sun sales representative.