

SUN SPARC ENTERPRISE M9000 SERVER

MAINFRAME RELIABILITY WITH
INDUSTRY-LEADING VIRTUALIZATION
AND EXTREME SCALABILITY

KEY FEATURES

- Optimized for 24x7 mission critical computing and large shared memory applications
- Mainframe class reliability, availability, serviceability (RAS)
- Unmatched investment protection with no forklift upgrades - upgrade individual components, not the whole system
- 100% binary compatibility with earlier versions of your applications
- Mix and match up to 32 or 64 quad-core SPARC64 VII/VII+ processors and/or dual-core SPARC64 VI processors in the same system
- Built-in, no-cost, and flexible virtualization technology
- Ideal consolidation platform with up to 24 Dynamic Domains and support for thousands of Oracle Solaris Containers
- Expands from 32 CPUs to 64 CPUs by adding an expansion cabinet
- Up to 288 PCIe or PCI-X slots with the external I/O expansion unit

With mainframe-class features, the high-end Sun SPARC Enterprise® M9000 server is Oracle's highest performance and largest multiprocessor Enterprise server delivering massive scalability, up to 64 processors and 256 cores to handle the largest workloads. Built on advanced SPARC64 VII/VII+ quad-core or SPARC64 VI dual-core processors and Oracle 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 that require mission-critical RAS features.



The Sun SPARC Enterprise M9000 Server delivers mainframe reliability and extreme scalability for the largest workloads.

Investment Protection, RAS, and Scalability Features

Oracle's Sun SPARC Enterprise M9000 server provides the highest reliability and unmatched investment protection with no forklift upgrades that enterprise customers require. Sun's long term SPARC Enterprise roadmap, binary compatibility and mix and match of different speeds/generations of SPARC64 processors, provide the level of investment protection and reliability not offered by IBM or HP.

In addition, mainframe-class RAS features come standard in the Sun SPARC Enterprise M9000 server, including automatic recovery with instruction retry, up to 4 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 are redundant and hot-swappable, for increased availability and serviceability.

Oracle Solaris: The World's Most Advanced Operating System

Only Oracle legally assures investment protection with Oracle Solaris with 100% binary compatibility for the past 15 years and counting. The SPARC Enterprise M9000 server is preinstalled with Oracle Solaris 10. Oracle Solaris 10 also delivers revolutionary features,

including Dynamic Tracing (DTrace), Oracle Solaris ZFS, cryptographic infrastructures, IP filter, and User and Process Rights Management.

Advanced Virtualization and Consolidation

Sun SPARC Enterprise servers are among the industry's best consolidation virtualization platforms. The Sun SPARC Enterprise M9000 server supports as many as 24 Dynamic Domains, enabling massive server consolidation and virtualization. Each physical domain can be further optimized via Oracle Solaris Containers, supporting thousands of software partitions.

Sun SPARC Enterprise M9000 Server Specifications

Processor	
CPU	Choice of as many as 32 SPARC64 VII+/VII quad-core or 32 SPARC64 VI dual-core processors (up to 64 processors with expansion cabinet)
SPARC V9 architecture, ECC-protected	
Cache per SPARC64 Level 1	<ul style="list-style-type: none"> SPARC64 VII+/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	<ul style="list-style-type: none"> SPARC64 VII+: 12 MB on chip SPARC64 VII: 6 MB on chip SPARC64 VI: 5 MB – 6 MB on chip
Clock speed	<ul style="list-style-type: none"> SPARC64 VII+: 3.0GHz SPARC64 VII: 2.88 GHz SPARC64 VI: 2.28 GHz – 2.4 GHz
System	
System bus	<ul style="list-style-type: none"> High-speed, low-latency interconnect with redundant data, address, and response crossbar
Two redundant service processors	
As many as 24 Dynamic Domains	
32-CPU System	
CPU	<ul style="list-style-type: none"> As many as eight CPU memory boards; as many as four processors and up to 256 GB memory per board, based on 8 GB DIMMs
Main memory	<ul style="list-style-type: none"> Up to 2 TB
I/O	<ul style="list-style-type: none"> As many as eight I/O units (IOUs) 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)	<ul style="list-style-type: none"> 368 GB/sec peak, 114.9 GB/sec stream (copy)
System bus bandwidth (I/O)	<ul style="list-style-type: none"> 122 GB/sec peak Note: Calculated theoretical maximum value
64-CPU System	
CPU	<ul style="list-style-type: none"> As many as 16 CPU memory boards; as many as four processors and up to 256 GB memory per board, based on 8 GB DIMMs
Main memory	<ul style="list-style-type: none"> Up to 4 TB

I/O	<ul style="list-style-type: none"> As many as 16 IOUs with eight PCIe slots each/128 PCIe slots per system; as many as 288 PCIe and PCI-X slots with the optional External I/O Expansion Unit
System bus bandwidth (memory)	<ul style="list-style-type: none"> 737 GB/sec peak, 224.401 GB/sec stream (copy)
System bus bandwidth (I/O)	<ul style="list-style-type: none"> 244 GB/sec peak <p>Note: Calculated theoretical maximum value</p>
Storage	
External boot devices supported	<ul style="list-style-type: none"> Oracle's Sun StorageTek 2540, 3120, 3510FC, 9980, 9985
External	<ul style="list-style-type: none"> Direct, SAN, or NAS attached to Sun StorageTek-compatible tape libraries and disk arrays, including the Sun StorageTek 3X00, 5X00, 6X00, and 9X00 families
32-CPU system	<ul style="list-style-type: none"> As many as 32 internal 2.5-in. SAS boot disks/4 per IOU
64-CPU system	<ul style="list-style-type: none"> As many as 64 internal 2.5-in. SAS boot disks/4 per IOU
Resource Management	
Dynamic Domains	
Oracle Solaris 10 Resource Manager, including Oracle Solaris Containers	
Software	
Operating system	<ul style="list-style-type: none"> SPARC64 VII+ (3.0 GHz): Oracle Solaris 10 (9/10), (10/09), or Solaris 10 versions (5/09), (10/08), (5/08) and (8/07) with Oracle Solaris 10 10/09 Patch Bundle and the Sun Alert Patch Cluster SPARC64 VII (2.88GHz): Oracle Solaris 10 (9/10), (10/09) or Oracle Solaris 10 versions (5/09), (10/08), (5/08), and (8/07) with Oracle Solaris 10 10/09 Patch Bundle and the Sun Alert Patch Cluster SPARC64 VI (2.28GHz, 2.4GHz): Oracle Solaris 10 (11/06) or later
Languages	<ul style="list-style-type: none"> C, C++, Pascal, FORTRAN, Java
Networking	<ul style="list-style-type: none"> ONC/NFS, TCP/IP, SunLink, NetWare
System monitoring	<ul style="list-style-type: none"> Sun Management Center Oracle Solaris Web Start Solstice Domain Manager Solstice Enterprise Manager Solstice Backup Oracle Enterprise Manager Ops Center 11g
Value-added software	<ul style="list-style-type: none"> VERITAS File System VERITAS Volume Manager Sun Cluster Sun HPC ClusterTools Sun Java Enterprise System
Environmental	
32-CPU System	

Power Option 1	<ul style="list-style-type: none"> AC power: 200 V AC – 240 V AC 1-phase (50/ 60 Hz), 30 A Power cords: five cords (10 with the optional dual power feed; 3 m (9.8 ft) long Plug: NEMA-L6-30P or EN60309 (32A)
Power Option 2	<ul style="list-style-type: none"> AC power: 208 V AC 3-phase DELTA (50/60 Hz), 80 A Power cords: 2 direct-wired power connections; includes dual power feed
Power Option 3	<ul style="list-style-type: none"> AC power: 415 V AC 3-phase STAR (50/60 Hz), 50 A Power cords: two direct-wired power connections; includes dual power feed
64-CPU System	
Power Option 1	<ul style="list-style-type: none"> AC power: 415 V AC 1-phase (50/60 Hz), 30 A Power cords: 10 cords (20 with the optional dual power feed; 3 m (9.8 ft) long Plug: NEMA-L6-30P or EN60309 (32A)
Power Option 2	<ul style="list-style-type: none"> AC power: 208 V AC 3-phase DELTA (50/60 Hz), 80 A Power cords: two direct-wired power connections; includes dual power feed
Power Option 3	<ul style="list-style-type: none"> AC power: 415 V AC 3-phase STAR (50/60 Hz), 50 A Power cords: four direct-wired power connections; includes dual power feed
Operating temperature	<ul style="list-style-type: none"> 5° C to 32° C (41° F to 89.6° F), 20% – 80% relative humidity, noncondensing
Nonoperating temperature	<ul style="list-style-type: none"> 0° C to 50° C (32° F to 122° F), 8% – 80% relative humidity, noncondensing
Altitude	<ul style="list-style-type: none"> Up to 3,000 m (9,843 ft)
Regulations (meets or exceeds the following requirements)	
Safety	<ul style="list-style-type: none"> CSA/UL-60950, EN60950, IEC950 CB Scheme with all national deviations
RFI/EMC	<ul style="list-style-type: none"> EN55022/CISPR22 Class A, FCC CRF47 Part 15 Class A, EN61000-3-2, EN61000-3-3
Immunity	<ul style="list-style-type: none"> EN55024, EN61000-4-2, -4-3, -4-5, -4-6, -4-8, and -4/11
Regulatory markings	<ul style="list-style-type: none"> CE, FCC, ICES, C-tick, VCCI, GOST-R, BSMI, MIC, CSA/UL
Other marks	<ul style="list-style-type: none"> WEEE and Chinese RoHS
Key RAS Features	
<p>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; autodiagnosis and recovery; online upgrades; concurrent maintenance; redundant network connections; redundant storage connections; live operating system upgrades; journaling file system; hardened I/O drivers; CPU offlining; memory page retirement; and cluster support.</p>	

Dimensions and Weight	
32-CPU System	64-CPU System
Height: 180 cm (70.9 in.)	Height: 180 cm (70.9 in.)
Width: 85 cm (33.5 in.)	Width: 167.4 cm (65.9 in.)
Depth: 126 cm (49.6 in.)	Depth: 126 cm (49.6 in.)
Weight: 940 kg (2,072 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	
Height : 180 cm (70.9 in.)	
Width: 31.7 cm (12.5 in.)	
Depth: 124.4 cm (49 in.)	
Weight: 350 kg (770 lb)	

Warranty

Visit oracle.com/sun/warranty for Oracle's global warranty support information on Sun products.

Services

Complete Portfolio of Services from Installation to Operations Management

Oracle Advanced Customer Services offers complete lifecycle management from installation, configuration, management and support for your Sun SPARC Enterprise M9000 servers. Oracle product experts configure, integrate and test your new server technology using Oracle's implementation best practices. To increase the efficiency of your IT team, Oracle services experts offer Oracle Operations Management that provides 24x7 monitoring and management services across the entire IT infrastructure. And, Oracle Premier Support provides the award-winning support you need to maximize the return on your Sun SPARC Enterprise M9000 server investment. From unlimited 24/7 access to Sun system specialists, to critical patches, essential product updates, and exclusive online resources — only Oracle provides integrated support for your entire stack, applications to disk

Visit oracle.com/acs for information on Oracle Advanced Customer Services offerings for Oracle server products.

Contact Us

For more information about Oracle's Sun SPARC Enterprise M9000 server, please visit oracle.com/sun or call +1-800-786-0404 to speak to an Oracle representative.



Oracle is committed to developing practices and products that help protect the environment

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