Sun Fire™ E25K Server

Massively scalable, highly available data center server.

Delivering on Sun’s Throughput Computing Vision, the Sun Fire™ E25K server is a large-scale shared memory system with Chip Multithreading (CMT) UltraSPARC IV processor technology offering over 2x the performance of Sun’s previous generation servers in the same footprint. The Sun Fire E25K server delivers sophisticated availability, scalability and manageability features that meet the highest levels of mission-critical computing.

An ideal platform for mainframe migration and technical computing, the Sun Fire E25K server is a 72-processor (up to 144 threads) datacenter system optimized for high-volume databases as well as customer management, decision support, High-performance Technical Computing (HPTC) and other consolidated and mission-critical applications. The Sun Fire E25K server is designed to deliver the highest levels of reliability and availability through full hardware redundancy, Dynamic Reconfiguration and Predictive Self-Healing. With up to 18 fault-isolated domains and thousands of Solaris Containers, the Sun Fire E25K server provides unprecedented security, resource optimization and investment protection. The Sun Fire E25K server utilizes Solaris OS capabilities to support high reliability and data integrity and Dynamic Tracing to optimize application performance.

The Sun Fire E25K server helps protect IT investments with its ability to mix and match UltraSPARC IV and UltraSPARC III processors in the same domain, at their rated speeds, without disrupting end-user applications. The Sun Fire E25K server delivers a balanced computeability, CPU/memory Uniboards which are hot-swappable across the E4900–E25K line, and an industry-standard PCI subsystem integrated into the chassis for excellent I/O bandwidth. High-end features such as Memory Placement Optimization combine with Sun’s proven multi-threaded Solaris™ Operating System, UltraSPARC IV, the Sun Fireplane interconnect, and the hspPCI plus I/O assemblies for high levels of value and performance. Built-in hardware redundancy; intelligent system monitoring, diagnosis, and recovery; and SRS Net Connect all contribute to uptime of the mission-critical Sun Fire E25K server.

- The flagship UltraSPARC® IV-based server, Sun’s most scalable and powerful server
- Scales up to 72 UltraSPARC IV processors, each with 16 MB of Level 2 cache and executing 144 simultaneous computing threads
- Maximizes uptime with up to 18 Dynamic System Domains, reconfigurable while applications are running
- Investment protection with hot-swappable Uniboard processor/memory boards common across the entire Sun Fire E4900–E25K family with application binary compatibility guarantees
- Solaris™ 8, Solaris 9, and Solaris 10 Operating System
- Exceptional availability via automatic system failover of redundant System Controllers and system clock with no service interruption to users
- Supports over 0.5 TB of memory per domain to handle large in-memory workloads
- Robust capabilities in the Solaris OS such as Predictive Self-Healing to increase reliability, Solaris Containers for increased utilization, and dTrace to optimize application performance
- Dependability enhancements that include a new level of intelligent system monitoring, diagnosis, and recovery
- Respond flexibly to changing business requirements with Capacity on Demand 2.0 for “pay as you grow” computing options
- Mixed CPU support enables growth of infrastructure without costly interruptions
### Sun Fire E25K Server System Requirements

#### Processor
- **Number:** Up to 72

#### Architecture
- UltraSPARC IV and UltraSPARC III Cu, superscalar SPARC V9, ECC protected

#### Cache per processor
- Level 1: Parity-protected 32-KB instruction and 64-KB data on chip (single-bit errors are corrected)
- Level 2: ECC-protected 16-MB external cache on UltraSPARC IV

#### System interconnect
- 150-MHz Sun Fireplane redundant 18x18 data, address, and response crossbar interconnect

#### System
- **Processor/memory boards:** Up to 18 Uimboad CPU/memory boards with four processors each, and up to 32 GB per board; maximum 576 GB per domain
- **I/O:** Up to 72 hot-swappable PCI-/I/O slots; 54 slots are 66 MHz; 18 slots are 33 MHz; supports 10/100 BaseT Ethernet, Gigabit Ethernet, UltraSCSI (LVD and HVD), ATM, FCl, and HIPPI

#### Storage
- **Standard:** 256+ TB direct connect storage—Fibre Channel (1 GB and 2 GB) and UltraSCSI; Sun StorEdge™ 9900, S2, D240, Sun StorEdge 6x00, and Sun StorEdge 3x00. Direct attach to Sun StorEdge tape libraries and disk arrays, including: Sun StorEdge 3000, 6000, and 9900, providing excellent linear scalability

#### Performance
- **Overall system bandwidth:** Up to 172.8-G/sec. aggregate, up to 115.2-G/sec. peak, up to 43.2-G/sec. sustained
- **Overall I/O bandwidth:** Up to 25.2-G/sec. sustained

#### Availability
- **Standard:** Hot-swap CPU, memory, I/O, power, fans, online upgrades, journaling file system, redundant network connections, redundant storage connections, hardened operating system kernel, hardened I/O drivers

#### Security
- **Domain management:** Dedicated network connections (SC to 18 domains) inside Sun Fireplane interconnect

#### Resource Management
- **Standard:** Sun’s fifth-generation Dynamic System Domains, Solaris Resource Manager, and Bandwidth Manager

#### Software
- **Operating system:** Solaris 8 (02/04), Solaris 9 (04/04), Solaris 10
- **Languages:** C++, Pascal, FORTRAN, Java

#### Networking
- **ONC/INFS, TCP/IP, SunNet OSI, X.25, Start, DCE, Netware**

#### System management
- **Sun MIC 3.5 Version 4; SMS 1.4.1 (or later)**
- **Network/file system management:** Sun QFS, Sun ZFS (future Solaris 10 release), VERITAS Volume Manager, VERITAS File System

#### Environmental
- **AC power:** 200-260 single-phase Vac, 47-61 Hz. Two N+1 power grids, each using six 30-Amp circuits. Second power grid provided for redundancy
- **Optimum:** 22 (72 °F) at 45% noncondensing humidity
- **Range:** 10 °C to 35 °C (50° F to 90° F) at 20% to 80% noncondensing humidity
- **Altitude:** Up to 3048 m (10000 ft.)

#### Regulations (meets or exceeds the following requirements)
- **Safety:** UL 60950, USA
- **Emissions:** EN 55022, Europe
- **EMC:** EN61000-3-2 & 3-3, Europe
- **FCC:** Class A, USA
- **ICES:** 003 Class A, Canada
- **VCCI Class A:** Taiwan
- **BSMI:** Taiwan
- **GOST-R:** Russia
- **MIC:** Korea

#### Key RAS Features
- Full hardware redundancy, fault-isolated Dynamic System Domains, Dynamic Reconfiguration (DR), auto diagnosis and recovery, proactive self diagnostics, online upgrades, concurrent maintenance, end-to-end data integrity including ECC, redundant network connections, redundant storage connections, kernel hot patching, hardened operating system kernel, live operating system upgrades, journaling file system, hardened I/O drivers, CPU off-fining, memory page retirement, after-kernel hot patching, and cluster support

#### Upgrades
- The Sun Upgrade Advantage Program (UAP) offers trade-in value for qualified Sun and competitive servers toward the purchase of replacement Sun Fire E25K server(s). Whether upgrading one system or consolidating many systems to one, Sun UAP offers the flexibility to trade in and receive credit toward the new Sun system purchased. Upgrades are also available for Sun Fire server system components, including processor/memory boards and I/O.

#### Dimensions and Weight
- **Height:** 191 cm (76.25 in.)
- **Width:** 85 cm (33.25 in.)
- **Depth:** 166 cm (65.0 in.)
- **Weight:** 1122 kg (2468 lb.) fully configured

#### Remote Services
- **SRS Net Connect**

#### Services
- Sun provides a worldwide services portfolio that helps enable customers to develop a Sun Fire E25K solution designed for reliability, availability, serviceability, and growth. Sun can assist you to build an architecture plan, assess your current IT infrastructure, improve staff skills and efficiencies, and properly install your Sun Fire E25K system in your environment. Services highlights include: Sun Preventive Services, Enterprise Installation Services, Learning Services, Architecture Services, Migration/Consolidation Services, Sun Managed Services, and the Accredited Installation Provider program. For more information on Sun Services, please visit www.sun.com/service.

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**Get the details on how the Sun Fire E25K combines high performance, availability, and scalability for the data center. Contact your Sun Representative at 1-800-555-5555, or visit sun.com/servers/highend/sunfire_e25k/.**