Sun Fire™ V250 Server
Just the Facts

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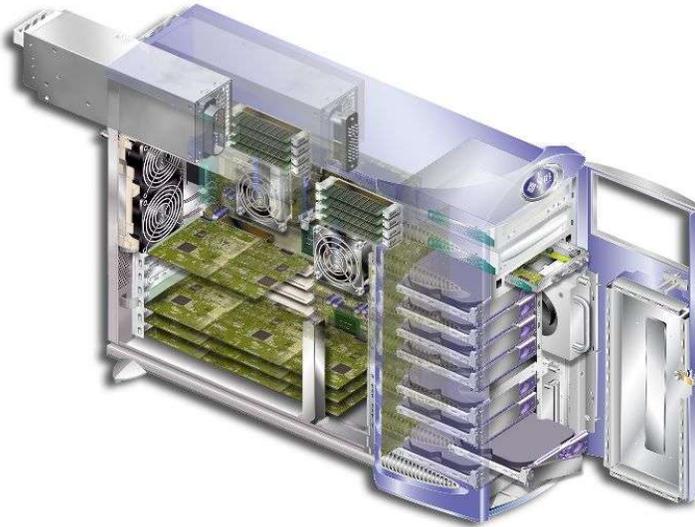
Sun continues to build on its reputation for developing secure and reliable solutions with the introduction of the Sun Fire V250, a two-processor tower server. The tower server market represents a large share of the overall server market despite the growing popularity of rack-optimized and blade server products. According to the IDC worldwide quarterly server forecast (September, 2002), the two-processor tower server (with $7.2 billion in annual revenues in 2002) represents about 54% of overall two processor server market revenue. Further, the two-processor tower server market is expected to grow by approximately 25% between 2002 and 2006 in terms of units sold.

The Sun Fire V250 server – powered by up to two 1.06 or 1.28 GHz UltraSPARC IIIi processors – will offer customers a reliable and secure two processor tower server at PC server pricing. The V250 brings Sun's enterprise-level reliability, availability and serviceability to the low end user. In addition, the V250 will offer a free comprehensive software suite that will optimize total cost of ownership and uptime while reducing complexity.

The V250 is a feature-rich server that includes up to 8 GB of DDR memory, up to eight hot-swap 73GB UltraSCSI hard disk drives, six 64-bit PCI slots, Advanced Lights Out Manager (ALOM), a System Configuration Card (SCC) and four USB ports among other features.

The V250 is catered to customers in the Mid-Market (100-1000 employee companies), branch office deployments, and enterprise application development workgroups. The critical-to-quality (CTQ) requirements for these customers include low cost of acquisition, business critical reliability, key application support, low complexity and high security. The target industries for the V250 include banking, manufacturing, retail, government and healthcare. The V250 is geared towards applications such as email, file and print, web server, ERP, security, application development, small database and business intelligence.

Product Family Placement

The Sun Fire V250 is a new member of the Sun Fire server product line and provides an upgrade path for customers of the Enterprise 250 server product. Building on the proven reliability and security of UltraSPARC/Solaris, the V250 provides a Unix-based 64-bit two-processor tower server at Windows-based 32-bit system pricing.

Sun Fire V250 - Feature Comparison with V240 and E250

Features	Sun Fire V250	Sun Enterprise 250	Sun Fire V240
Rack or Tower	Tower	Tower	Rack
Number of processors	1–2	1–2	1–2
CPU type	UltraSPARC IIIi	UltraSPARC II	UltraSPARC IIIi
CPU speed	1.06/1.28 GHz	400 MHz	1.06/1.28 GHz
Level 2 cache	1 MB internal cache	2 MB internal cache	1 MB internal cache
Minimum/maximum memory	512 MB / 8 GB	256 MB / 2 GB	512 MB / 8 GB
O/S	Solaris 8 / 9	Solaris 8	Solaris 8 / 9
PCI slots	6 (3 x 66 MHz/64bits, 3 x 33/66 MHz/64bits)	4 (3 x 33 MHz/64bits, 1 x 33/66 MHz/64bits)	3 (1 x 66 MHz/64bits, 2 x 33 MHz/64bits)
Network connections	1 x built-in 10/100/1000Base-T Ethernet port	1 x built-in 10/100 Ethernet port	4 x built-in 10/100/1000Base-T Ethernet ports
I/O connections	2 x serial, 1 x parallel, 4 x USB, 1 x 10MB/s Ethernet, 1 x Ultra SCSI	2 x serial, 1 x parallel, 1 x 10MB/s Ethernet, 1 x Ultra SCSI	2 x serial, 2 x USB, 1 x 10MB/s Ethernet, 1 x LVD SCSI
Number of disks and type	8 x Ultra160 SCSI 73 GB	6 x UltraSCSI 36 GB	4 x Ultra160 SCSI 36 GB (73 GB GA + 1 Qtr)
Remote management	ALOM (standard)	RSC	ALOM (standard)
System Configuration Card	Standard	None	Standard
Power supplies	2 (redundant)	2 (redundant)	2 (redundant)
Height / Depth	19in / 24in.	20 / 28.8 in.	2 U / 24in.
Maximum power	460 Watts	360 Watts	470 Watts
Heat dissipation	2150 BTU/hr maximum	1980 BTU/hr maximum	1228 BTU/hr maximum
Optional features	DVD-ROM	DVD-ROM	Integrated SSL card option, DVD-ROM
Maximum shipping weight	31 kg (68.2 lb.)	53 kg (118 lb.)	26 kg (57.3 lb.)

Key Messages

The Sun Fire V250 is a high-performance 2-processor tower server that delivers peace of mind, providing a reliable and secure office in a box at PC server pricing. It is an ideal solution for customers who are looking for:

– Business critical reliability

– Application support

– Comprehensive Manageability

– High security

Update all this after we have final messaging agreed. Based on the UltraSPARC IIIi technology and the JBus architecture, the Sun Fire V250 server provides customers with high compute power and fast data transfer throughput. Solaris superior reliability and security provide maximum uptime, network security and peace of mind – all at Wintel / Lintel pricing

Reliability

- Sun / Solaris reliability at Wintel / Lintel pricing, bringing business-critical reliability to the low end tower market space
- Easy access to hot swap components, dual redundant power

Fully Integrated Solution

- Full suite of enterprise applications, including web, e-mail, security, firewall / VPN, and productivity, all pre-loaded at no extra cost to the user
- Solaris operating system pre-loaded on all systems

Manageability

- Sun's superior remote management capability built in as a standard feature
- Easy manageability and maintenance from remote locations to leverage central sys admin expertise

Flexibility

- Excellent expandability
- Large internal storage capacity
- Ideal for front end, backbone or intermediate tiers
- Built according to Sun's commitment to full binary compatibility and scalability

Innovation

The FIRST UltraSPARC IIIi based, dual-processor, Tower optimized server

- Industry's ONLY System Configuration Card (SCC), which comes standard with V250
  - Increase system availability and serviceability
- One of the MOST reliable architecture – SPARC/Solaris
  - Provide one of the industry's highest reliable and secured architecture, that are binary-compatible from 1 to 106 processors

Choice

Sun Fire V250 Server helps customers to:

- Scale system to suit the specific application needs with features such as, six PCI slots, over 500GB of internal storage and a maximum of 8GB memory

- Achieve high availability for mission critical applications with redundant/hot-swap components and System Configuration card

- Alleviate the shrinking IT budget pressure with the aggressive price point

In addition:

- Sun Brand - The Sun brand stands for high quality, reliable network servers

- Scalability - SPARC/Solaris products range from 1 processor to 100+ processors.

Availability

The Sun Fire V250 was launched on September 16, 2003.

Target Users and Markets

The Sun Fire V250 is primarily targeted towards customers in the following areas:

- Mid-Market

- Branch office deployments

- Enterprise application development

These encompass Banking, Manufacturing, Retail, Government and Healthcare.

Target Applications

The Sun Fire V250 server is a general-purpose server suitable for the following applications:

- E-Mail

- File and Print

- Web Server

- ERP

- Security

- Application Development

- Small Database

- Business Intelligence

Selling Highlights

Market Value Proposition

The Sun Fire V250 tower server delivers peace of mind, providing a reliable and secure office in a box at PC server pricing. The Sun Fire V250 will targets 3 categories of customers: (1) Mid-Market customers; (2) Branch office deployments; (3) Enterprise workgroups including application development. The Sun Fire V250's free, pre-loaded software suite is a substantial value across target markets. The comprehensive suite optimizes total cost of ownership and uptime while reducing complexity. Additionally, the Sun Fire V250 will have unique appeal in each of its target areas.

Mid-Market (MM) penetration is an important initiative for SMI. MM customers often cannot afford datacenter infrastructures (including external storage systems). The Sun Fire V250 expandability and form factor allow for stand-alone deployment and over ½ terabyte of internal storage. SPARC/Solaris reliability and security are critical for these single point of failure deployments. Sun Fire V250 aggressive price points are at or below most Wintel competition (for example pricing for an 8GB configuration is currently 25%+ below competitive offerings). Fitting in with Sun's "Low Cost Computing" initiative is a key for success in the competitive 2P tower server market space.

Branch office deployments also value expandability, reliability and security attributes. Additionally, manageability is essential for branch offices. Advanced Lights Out Manger (ALOM) delivers comprehensive remote manageability, increasing customer flexibility and lowering IT costs. ALOM is integrated across the Fiesta server product line.

The Sun Fire V250 is also ideal for many Enterprise workgroups. For example, application development workgroups often require dedicated infrastructures. The combination of high memory/storage/PCI expandability, integrated developer tools software and SPARC/Solaris reliability result in a market leading developer solution.

- **Reliability:** The Sun Fire V250 provides standard Sun reliability that is well established in the Internet market. Proven Solaris reliability, robustness, and binary compatibility. In Solaris, Sun delivers a trustworthy, universal platform to meet the needs of businesses— from small startups to large Fortune 1000 enterprises**.**

- **Availability:** There are few metrics more important than "system uptime". Sun's success with customers lies in the ability to deliver systems and applications that are ready whenever a customer is online. This means all the time, around the globe. Volume Servers is doing its part in achieving high availability for its customers through the implementation of the following RAS features:
  - Redundant, hot swap power supplies with separate power cords
  - Hot swap, front accessible disk drives, with software mirroring
  - Advanced Lights Out Management (ALOM)
  - Serviceability to include removable Host ID, disks and power supply.
  - Full SunCluster 3 support

- **Manageability:** The Remote Management Center (RMC) running the Advanced Lights Out Manager (ALOM) enables both remote and local management of the Sun Fire V250. RMC builds on the best aspects of LOMLite2 & RSC to give enhanced features & Ethernet access.

- **Security**: With the robust Solaris operating environment and Sun Screen firewall the Sun Fire V250 gives customers security and protection which is either lacking, or more expensive to implement, in competitive solutions.

Features Functions and Benefits

Features, functions, and benefits of the Sun Fire V250 server include:

Feature	Function	Benefit
• Dual processor server in a Tower form factor	• High performance in a deskside server package	• Enables key business applications to be deployed locally
• Powered by Sun's latest processor technology	• The Sun Fire V250 server is the latest platform to deploy the low-cost, high-performance >1 GHz UltraSPARC IIIi processor technology.	• Provides increased performance
• Comes standard with exceptional hardware and software functionality that the competition charges extra for or does not offer	• Solaris OE, Java Enterprise System services and development software stack, system management functions, variety of I/O connectivity, SCC	• A complete, ready-to-deploy system platform
• Industry's only System Configuration Card (SCC) comes standard	• Contains the system's host ID,MAC and IP address, which is easily transferrable to a standby system	• Increases system availability and serviceability by allowing customers to quickly bring a system up or down
• Comes with integrated Advanced Lights Out Manager, Sun MC and SNMP support. Plus easy-to-use provisioning and patch management software through Solaris OE	• Cradle-to-grave management support	• Simplifies system management and reduces costs by providing numerous, standard management features
• 64-bit architecture	• Allows computer to handle 64 bits of data simultaneously (versus 32 bits)	• Increased scalability of computer and applications. Ideal for applications that require large files, large numbers of files, or a large number of users.
• World-class Services organization	• Piece of mind that all service needs will be handled painlessly. "One stop shop."	• Increases return on investment and lowers total cost of ownership.
• Six PCI slots (3 x 33 MHz and 3 x 33/66 MHz, all at 64-bits)	• For external connections to additional storage, etc.	• Increases flexibility.
• Binary and application compatibility through an end-to-end SPARC/Solaris architecture from 1 to 106 processors	• Increases operation efficiency while eliminating costs for application porting.	• Provides investment protection.
• Front-accessible, hot-swap disks, easy-to-use System Configuration Card (SCC), reliable Solaris OE	• Various functions but all intended to keep the system up and costs down	• Maximizes uptime for mission-critical environments
• JBus interconnect operating at 2.56 GB/s.	• High-bandwidth interconnect ensures scalability with minimal contention and latency between processing and I/O subsystems.	• Increases efficiency
• Advanced Lights Out Manager (ALOM)	• Monitors and reports system and component status, meaning less need for on-site staff.	• Increases productivity and availability by allowing remote management via network or serial connections.

Enabling Technology

Technology Overview

The Sun Fire V250 is the next generation server available for small office server environments. Design characteristics are focused on low entry price point and high performance, serviceability and reliability. The V250 is powered by either one or two UltraSPARC IIIi CPUs and can be configured with up to 8 GB of memory to support any application to offer the widest flexibility in service delivery.

The V250 is targeted at applications such as email, Web servers, office productivity, security and as a general purpose application server. The architecture and design of the server provides an extremely powerful and well balanced system to eliminate bottlenecks and maintain service availability.

Sun Fire V250 servers are floor standing tower systems. Access to the system configuration card, disks, DVD and optional DAT is at the front, behind a lockable door. I/O and power connections are at the rear of the chassis.

UltraSPARC IIIi Processor

The UltraSPARC IIIi processor is a highly integrated processor that implements the 64-bit, SPARC V9 architecture and Sun Microsystems' VIS instruction set. The UltraSPARC IIIi processor contains primary data and instruction caches and a unified L2-Cache. It also contains a SDRAM memory controller, a JBUS controller and sophisticated power management capabilities.

A high performance integrated processor, the UltraSPARC IIIi processor is used with a wide range of applications. Its RISC architecture and VIS instruction set make it ideally suited for compute servers and embedded applications in tele-communications and imaging. Support for the Visual Instruction Set (VIS) is the means to accelerate multimedia, networking encryption and Java processing.

UltraSPARC IIIi CPUs are field replaceable. This allows not only easy servicing but also provides for simple speed upgrades to the server when future, faster CPUs are available. The Memory Controller is integrated to each CPU. It is in charge of addressing and retrieving memory data. Memory is divided into "local", which is accessible by the CPU itself, and "foreign" where the data has to be retrieved from the memory controlled by the opposite CPU. There is a minimal overhead when retrieving "foreign" data transactions because of the fact that addressing and data transfers are realized in completely separate buses.

The motherboard is fitted with one or two UltraSPARC IIIi processors.

Each contains the following core elements.

- Integer execution unit
- Floating point and graphics unit
- 32kB level 1 instruction cache
- 64kB level 1 data cache, 4 way set-associative
- 1MB (256k x32) level 2 data cache, 4 way set-associative
- Memory controller, DDR-1 SDRAM, ECC
- JBus interface controller

System Bus (JBus)

The system bus provides high throughput paths clocked at 152MHz when using the 1.06 GHz CPUs and at 160MHz when the 1.280GHz CPUs are installed. The data bus width is 144 bits which includes 128 data bits and 16 ECC bits.

Two ASICs named JIO provide the connectivity and PCI buses (two per chip). The higher throughput and the reduced number of chips provide simplicity in design and also reduced cost.

The data bus is completely separate from the addressing bus, so no clock cycles are used up to transfer data while addressing memory or other devices.

Memory

The memory databus is 137 bits wide, comprising 128 bits of data and 9 bits of ECC. Since the DIMMs used 72 bits wide, the DIMMs are added in pairs and the DIMMs within a pair should be an exact match.

The two processors each have four dedicated DIMM sockets, arranged in two banks.

For optimum performance when a processor has all four DIMM slots populated, all four DIMMs should have identical specification to allow interleaving between banks. For a 2 processor system the memory configurations for the two processors should be identical.

Registered DIMMs conforming to the JEDEC PC2100 DDR-1 SDRAM standard are used. The DIMM slots have a JEDEC MO-206 compliant footprint and have 184 pins.

The memory controller can concurrently support 256MB, 512MB and 1GB DDR-1 SDRAM parts. The addressable memory space of the controller is 16GB, however the currently qualified DIMMs allow up to 8 GB of memory to be configured on a two processor system.

Connectivity

Networking

The networking capabilities of this server include an on-board RJ45 10/100/1000 Gigabit/Fast Ethernet for high throughput. This gigabit Ethernet interface supports 10BASE-T, 100BASE-TX and 1000BASE-T operation conforming to the IEEE802.3 specification. The controller negotiates the maximum possible transfer speed when a network link is established by connection to a hub. The RJ45 connector provides a TIA/EIA-568-A compliant connection to CAT5 cabling.

Serial Ports

Sun Fire V250 provides two serial ports. The serial port on the ALOM card has an RJ45 connector. The other serial port has a male DB9 connector conforming to TIA/EIA-574. The interface levels are compatible with TIA/EIA-232-F.

Parallel Port

The parallel port is a female DB25 connector located on the rear-panel.

USB

For additional connectivity, four 12Mbits/s USB v1.1 ports are available where keyboard, mouse, modem, printer and USB drives can be installed among other products. Device speeds of 1.5Mbit/s and 12Mbit/s are supported. The ports share an OHCI compliant controller with hub. Each port has a USB1.1 "series A" receptacle.

PCI Slots

For additional connectivity or expansion, six PCI slots are available, all of which have a 64 bit connector and accept any card size up to full-length. Three have a "3.3V" keyed connector and accept both 33MHz and 66MHz cards (the motherboard initializes automatically to the appropriate frequency) and three have a "5V" keyed connector and accept only 33MHz cards.

Storage

Hard Disk Drives

Internally, up to 8 drives can be installed on the Sun Fire V250 for additional capacity and availability. A Ultra3SCSI LVD (160MB/s) connector for external storage is included.

The hard drive connectors are the SCA-2 type which accept Sun hot-swap drives. In the Sun Fire V250 system the drives are configured for "sequential" start-up. In this mode the drive motors start individually at 12s intervals in a sequence determined by their SCSI id (beginning with *HDD0*).

Each drive has three service indicators for compliance with the Sun Service Indicator Standard. The drives are accessible from the front of the system behind the lockable front door.

Removable Media Drive Bays

Sun Fire V250 also contains two 5.25" bays to allow removable media drives to be fitted. These drives are accessible through the enclosure bezel, even when the front door is locked.

The upper bay is dedicated to an IDE 16X speed DVD-ROM drive. The lower bay is reserved for an LVD SCSI DAT drive.

SCSI Busses

The Sun Fire V250 SCSI controller provides two independent SCSI busses, this allows each bus to operate in different electrical modes and allows optimal flexibility and performance on the external bus.

Sun Fire V250 supports all SPI-3 modes of operation, allowing synchronous burst data transfer rates of 80 megawords per second (ultra 160 SCSI). LVD mode is required to support ultra 160 SCSI speeds.

To support connection to legacy equipment, the external bus has multimode capability and will switch to SE mode if an SE device is detected. This has no affect on the internal bus, which is logically and physically independent.

The external port uses a 68 way EIA-700A0AF VHDCI connector (SPI-3 shielded connector alternative 4). The port supports transfer rates to 160MB/s.

Server Management

System Configuration Card (SCC)

Sun Fire V250 uses a system configuration card to store network MAC addresses and other platform-dependent data used to configure the system during initialization. This allows easier transfer of software that is host bound. The SCC is accessible from the front of the system behind the lockable front door.

Visual Indicators

As far as practicable, Sun Fire V250 conforms to the Sun Service Indicator Standard with regard to status indicators.

*   System service indicators are included on the front panel only.

*   The PSUs have service indicators located on their rear panels.

*   Service indicators are included for each hard disk, located next to their bays. These indicators are viewable only when the front door is open.

System Switches

The On/Standby Switch controls only the power state of the server. The On/Standby switch is a momentary switch and has two operation modes:

*   Press and immediately release
    *   If server on (with Solaris running) software performs orderly shutdown to Standby state
    *   If server on (with Solaris not running) has no effect
    *   If server in Standby state, server enters On power state

*   Press and hold down for more than 4 seconds
    *   If server on, immediate shutdown to Standby state
    *   If server off , server enters On power state

The System Control Switch is a four position rotary switch which provides control over various aspects off the server's operation.

The Normal position is the default mode. The Diagnostics position ensures full POST during system boot. The Locked position write protects the ALOM, OBP and POST flash memory. The Forced Standby position disables the On/Standby switch, remote power control and also write protects the ALOM flash memory.

Both switches are located behind the lockable front door.

ALOM

ALOM provides management interfaces for remote control of the server. It is also responsible for monitoring and reporting the operational status of the system. ALOM is capable of power-cycling and resetting the host system.

ALOM provides both Ethernet and asynchronous serial user interfaces. The serial interface offers a combined console and management CLI. The network port uses an RJ45 connector for connection to CAT 5 cabling. This port is dedicated to the ALOM and supports a transfer rate of 10Mb/s only. Both interfaces remain accessible when the system is in the Standby state.

Monitoring capabilities provide detailed logs for easy troubleshooting. The power-on/power-off functionality allows for full control of service availability, since the server can be remotely powered on with no physical user intervention. Granular user access control gives more control over who can access which areas of the server, whether for monitoring or system level shutdown capabilities.

The following table compares key features among RSC, LOMLite 2, and ALOM.

Features	RSC	LOMLite 2	ALOM
Serial interface	Yes	Yes	Yes
Ethernet interface	Yes	No	Yes
Host-side interface and admin utility	Yes	Yes	Yes
Hardware environmental monitoring and management (fans, power, temperature, PSU, FRU ID, LED, hot-plug)	No	Yes	Yes
Host control (power, reset, LEDs)	Yes	Yes	Yes
Server watchdog (OS monitor and restart)	No	Yes	Yes
Self watchdog and reset	No	Yes	Yes
Event logging	Yes	Yes	Yes
Logging host console	Yes	Yes	Yes
Maximum number of multiple users	4	4	16
E-mail notification	Yes	No	Yes
Out-of-box functionality	No	Yes	Yes
SCC support	No	Yes	Yes
Optimized boot time	Yes	Yes	Yes
CLI	Yes	Yes	Yes
GUI	Yes (Java)	No	No
Telnet via Ethernet	Yes	No	Yes
FRU ID	No	No	Yes
Non-volatile events	No	Yes	Yes
Remote SYS log events	No	No	Yes

Power Supply

The Sun Fire V250 PSUs are accessible at the rear of the enclosure. There are two 460W PSUs configured in a (1+1) redundant, current-sharing configuration and support hot-swap.

A PSU is prepared for removal in response to a user request. ALOM will issue a warning and deny the request if the PSU is critical to system availability. If the conditions for acceptance are met the Illuminate the Okay-to-Remove indicator for the PSU is lit and the PSU can be removed.

The power inlet connectors are mounted on the rear faces of the PSUs, each PSU having a single IEC 60320-1 connector.

Reliability, Availability, and Serviceability (RAS)

The Sun Fire V250 provides many features designed to increase the availability and ease the maintenance of the the system.

Reliability Features

- ECC memory

- Environmental monitoring

Availability Features

- Redundant power supplies

- Hot plug fans

- Automatic System Recovery (ASR) – Allows auto-unconfigure of failed memory at boot.

- Automatic Server Restart – A watchdog timer that automatically reboots the system if it hangs.

- Advanced Lights-out Management (ALOM)

- Solaris 8 and 9 OE and Sun Cluster 3

Serviceability

- Service indicator LEDs for easy troubleshooting

- Hot-swap disks and power supplies

- System Configuration Card (SCC)

Cooling and Air Flow

The Sun Fire V250 product enclosure is cooled by two system fans mounted at the front of the enclosure and two at the rear. The two front fans are blowers mounted adjacent to the drive bays. The air flow direction is from front left to back.

In addition to the enclosure fans, each processor is fitted with a CPU cooler and fan.

MTBF

The MTBF for the Sun Fire V250 server varies depending upon configuration. Refer to `http://ras4sun.sfbay/` for more information.

System Architecture
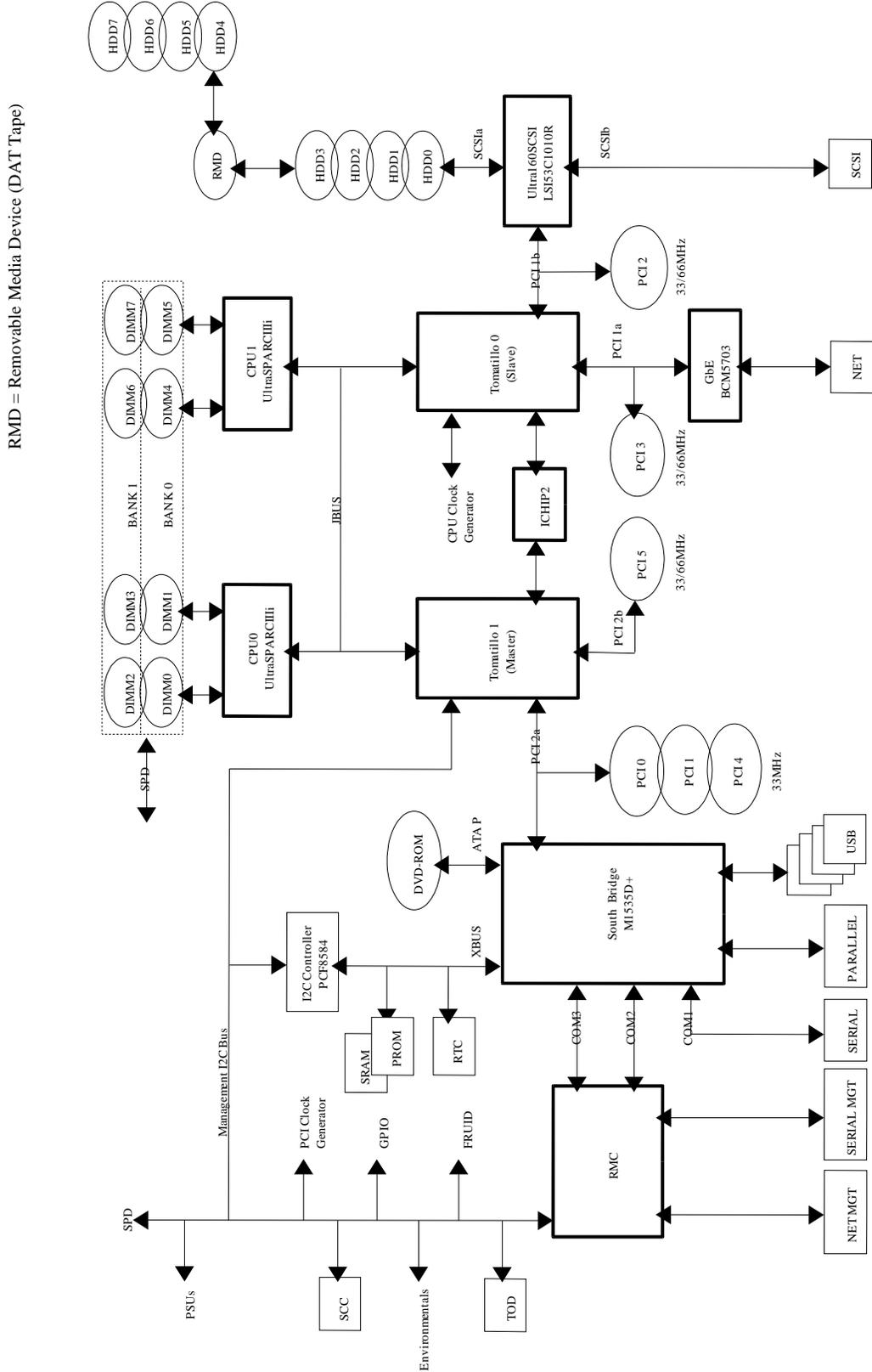
Specifications

Sun Fire V250 Server Specifications

Processor Options

Processor	One or two 1.06-GHz or 1.28-GHz UltraSPARC processors
Architecture	64-bit, 4-way Superscalar SPARC V9
Cache	64 KB data, 32 KB instructions and 1 MB integrated L2

Main Memory

4 DIMM slots per processor, registered DDR-1 SDRAM (PC2100) 128 bit plus ECC databus.
System configurations from 512 MB to 8 GB

Standard/Integrated Interfaces

Network	One 10/100/1000Base-T Ethernet port
Network management	One 10Base-T Ethernet port
Serial management	One TIA/EIA-232-F (RJ45) Port
Serial	One TIA/EIA-232-F asynchronous (DB9) Port
SCSI	One Ultra160SCSI multimode (SE/LVD)
Parallel	One parallel port (DB25)
USB	Four OHCI 1.0-compliant interfaces, supporting dual speeds of 12 and 1.5 Mbits/s each
Expansion bus	Six internal PCI 2.2 compliant expansion slots: Three full-length 64-bit 33/66 MHz 3.3V Three full-length 64-bit 33 MHz 5V
System Configuration Card and reader (removable)	Front accessible for transfer of system configuration information, including host ID
Maximum JBUS Bandwidth	2.56 GB/s
Maximum Memory Bandwidth	4.096 GB/s

Mass Storage and Media

Internal disk	Up to 8 hot-swap Ultra160SCSI 36-GB or 73-GB disks
Internal Storage	One DVD-ROM (atapi) 36GB and 73 GB SCSI disks 4mm DAT SCSI tape

Dimensions and Weight

Height	485.6mm (19.11in.)
Width	251mm (9.88in.)
Depth	613mm (24.15in.)
Weight	21.5kg (47.3 lb.) minimum configuration(1x10064, 2x256MB, 1x73GB, 1PSU, 1DVD)
	31kg (68.2lb.) maximum configuration (8 HDD's, 2PSU's, full memory, DAT and DVD)

Environment

Power Supplies

Dual Redundant power supplies	
Maximum Output	460W
Power Consumption	5.9A with one PSU at 120V, 6.0A with two PSU's at 120V

Environment

AC power	100–240 V (+/- 10%) 47-63Hz
Operating temperature	5º C to 40º C (41º F to 104º F), 10% to 90% relative humidity, noncondensing, 27º C max wet bulb
Nonoperating temperature	-40º C to 65º C (-40º F to 149º F), up to 93% relative humidity, noncondensing, 38º C max wet bulb
Altitude (operating)	Up to 3000 m, maximum operating temperature is derated by 1º C per 500 m above 500 m
Altitude (nonoperating)	Up to 12000 m
Acoustic noise	Less than 6.3 B sound power in ambient temperature of up to 27º C.
Max heat output	2150 BTU/hr

Regulations

Meets or exceeds the following requirements:	
Safety	IEC60950:1999, UL 60950 3rd Edition, CAN/CSA 22.2, NO 60950-00, EN60950:2000
RFI/EMI	FCC, Part 15 47 CFR, EN55022, CISPR 22
Immunity	EN55024
Certifications Safety and EMC	cULus Mark, TUV GS Mark, CE Mark, CE Mark (93/68/EEC) FCC authorized Class A, VCCI, BSMI, C-Tick, MIC, CCC, GOST

Software

Operating environment	Solaris 8 HW 7/03 Operating Environment pre installed Trusted Solaris 8 HW 7/03 Solaris 9 8/03 or later
Languages	C/C++, FORTRAN, Java programming language, all other standard Sun-supported languages
Networking	ONC™, NFS, TCP/IP
Management	Sun MC, SunVTS™, ALOM, inband platform SNMP
High availability	Sun™ Cluster 3.0 and 3.1, Solaris 8 and 9

Pre Loaded Sun Software Stack

The following Sun Software products are currently pre-loaded on the Sun Fire V250. The pre-loaded software is subject to change over time. The license type varies between packages. For details of the licensing terms and conditions refer to the full binary license.

Sun Fire V250 part numbers including "B1" use this version of the software stack.

Package	License
Solaris 9 12/03 (Update 5)	-
Star Office 7.0 Product Update 1	25 users
SunScreen 3.2	Included with Solaris 9
Solaris PC Netlink 2.0	Free
Java ES – Application Server 7.0 Update 1 Standard & Platform Editions	90 Day Evaluation
Java ES – Calendar Server 6.0	200 users per enterprise
Java ES – Directory Proxy Server 5.2	90 Day Evaluation
Java ES – Directory server 5.2	90 Day Evaluation
Java ES – Identity Server 6.1 and Identity Server Instant Messaging Service	90 Day Evaluation
Java ES – Instant Messaging 6.1	200 users per enterprise
Java ES – Message Queue 3.0.1 SP 2, Enterprise & Platform Editions	90 Day Evaluation
Java ES – Messaging Server 6.0	200 users per enterprise
Java ES – Portal Server 6.2 and Portal Server Secure Remote Access	90 Day Evaluation
Java ES – Sun Cluster 3.1 and Sun Cluster Agents for Component products	90 Day Evaluation
Java ES – Web Server 6.1	90 Day Evaluation

The following Sun Software products were pre-loaded on the original Sun Fire V250 configs at GA.

Package	License
Solaris 8 HW 7/03 (PSR 3)	-
Star Office 6.0	25 Users
Sunscreen 3.1 Lite	Free
Solaris PC Netlink 2.0	Free
Sun ONE Application Server 7, Standard Edition	60 days try & buy
Sun ONE Messaging Server 5.2 SP1	200 users per enterprise
Sun ONE Calendar Server 5.1.1	200 users per enterprise
Sun ONE Directory server 5.1 SP2	Free license for 200K entries per enterprise
Sun ONE Instant Messaging 6.0	200 users per enterprise
Sun ONE Web Server 6.0 SP5	60 days try & buy
Sun ONE Active Server Pages v4.0	Free
Sun ONE Grid Engine 5.3 update 3	Free
Sun ONE Studio 4, Enterprise Edition for Java	60 days try & buy
Sun ONE Studio 7, Enterprise Edition	60 days try & buy

For details of the licensing terms and conditions refer to the full binary license.

Compatibility and options

Supported PCI Cards

Marketing Part Number	Description	Maximum number supported
X1034A	Sun Quad FastEthernet QFE/P	3
X1150A/X3150A/X4150A	10/100/1000 Ethernet-Cat5 PCI66 Adapter	2
X1151A/X3151A/X4151A	Gigabit Ethernet-Fiber PCI66 Adapter	2
X1155A	High Speed Serial Interface- 4 port 2.0	3
X1157A	Sun ATM-155/MFiber PCI Adaptor	3
X2134A	Sun PCi III Co-processor	2
X2222A	Dual Fast Ethernet and Dual SCSI PCI Adapter	2
X3769A/X3770A	XVR-100 Graphics Accelerator	2
X3780A	XVR-600 Graphics Accelerator	2
X4422A	Dual Gigabit UTP, Dual 80MB Wide Ultra 80 SE/LVD SCSI PCI Adaptor	1
X4444A	Sun Quad Gigabit Ethernet	1
X6541A	Dual Channel Differential Ultra/Wide SCSI PCI Adapter	1
X6727A	Dual PCI FC 1Gb	1
X6758A[†]	Dual Channel LVD Ultra160 SCSI HBA	3
X6762A	Sun Crypto Accelerator 1000	1
SG-XPCI2FC-QF2	Dual Loop PCI FC 2Gb Host Adapter (was X6768A)	3

† - X6758A is also supported for connection to half of the internal SCSI disks, which then allows for improved redundancy

Supported Storage

Description	Notes
StorEdge 3120 SCSI	
StorEdge 3310 SCSI	
StorEdge 3510 FC	Connect via SG-XPCI2FC-QF2 or X6727A
StorEdge A1000 & D1000 & D2	
StorEdge Unipack and Multipack	
StorEdge L7-DLT8000-HVD	Connection via PCI card only
StorEdge L8 SDLT320 Autoloader tape drive	Connection via on-board SCSI port only
StorEdge L25 & L100 LTO 2 LVD tape libraries	Connection via X6758A, Solaris 9 only

Unless otherwise noted, all external storage is supported via PCI or on-board connection and for both Solaris 8 and 9.

Ordering Information

Configurations

The following are part numbers and descriptions for each Sun Fire V250 server configuration.

Order Number	Title and Description	Announced
A50-XUB1-DV-512AV1	1 x 1.06GHz, 512 MB (2x256MB), 1 x 36GB, 1 PSU, DVD ROM	16. Sep. 2003
A50-XWB2-DV-204AV2	2 x 1.28 GHz, 2 GB (4x512MB), 2 x 73GB, 2 PSU, DVD ROM	16. Sep. 2003
A50-XWB2-DV-202AV2	2 x 1.28 GHz, 2 GB (2x1024MB), 2 x 73GB, 2 PSU, DVD ROM	14. Oct. 2003
A50-XWB2-DV-819AV2	2 x 1.28 GHz, 8 GB (8x1024MB), 2 x 73GB, 2 PSU, DVD ROM	16. Sep. 2003
A50-XUB1-B1-512HA1*	1 x 1.06GHz, 512 MB (2x256MB), 1 x 73GB, 1 PSU, DVD ROM	1. Jun. 2004
A50-XWB2-B1-202HB1*	2 x 1.28 GHz, 2 GB (2x1024MB), 2 x 73GB, 2 PSU, DVD ROM	1. Jun. 2004
A50-XWB2-B1-819HB1*	2 x 1.28 GHz, 8 GB (8x1024MB), 2 x 73GB, 2 PSU, DVD ROM	1. Jun. 2004

* Note, These configs come with updated software pre-install

Options

Order number	Option Description	Maximum number supported
X7402A / X7602A	2 x 256MB DIMMS	4
X7403A / X7603A	2 x 512MB DIMMS	4
X7404A / X7604A	2 x 1GB DIMMS	4
X5267A	36GB HDD	8
XRA-SC1CB-73G10K	73GB HDD	8
X7414A	460W AC PSU	2
X7420A	1.06 GHz CPU Upgrade	1
X6296A	DDS-4 DAT internal tape drive	1
SG-XTAPDAT72-5F68	DAT 72 internal tape drive	1

Field Replaceable Units

The following field replaceable units (FRUs) are available for Sun Fire V250 servers. Customers can choose to have hot standby servers and use the system configuration card feature or replace individual components.

Sun Fire V250 Unique FRUs

FRU Part Number	Field Replaceable Units (FRUs)	CRU
F375-3146	Motherboard, 0 MB, 1x1.06GHz CPU	N
F375-3147	Motherboard, 0 MB, 2x1.06GHz CPU	N
F375-3176	Motherboard, 0 MB, 1x1.280GHz CPU	N
F375-3130	Motherboard, 0 MB, 2x1.280GHz CPU	N
F300-1588	460W PSU	Y
F370-5646	SCC CARD READER+Cable	N
F370-5962	HDD Blower	N
F370-6114	Cable Kit	N
F370-5959	8 Drive SCSI Backplane	N
F370-5961	Power Distribution Board	N
F370-6084	Rear Dual Fan assembly	N
F370-5960	Front door/hinge assembly	Y

Sun existing FRUs

FRU Part Number	Field Replaceable Units (FRUs)	CRU
F540-4904	Hard Disk Drive 36GB 10K RPM	Y
F370-5155	SCC Card	Y
F501-6346	RMC PCBA	N
F370-5686	CPU Heatsink, with Fan	N
F540-5455	Hard Disk Drive 73GB 10K RPM	Y
F370-5565	256MB DDR1 DIMM x2 DIMM	N
F370-4939	512MB DDR1 DIMM x2DIMM	N
F370-4940	1GB DDR1 DIMM x2DIMM	N
F370-5690	DVD Drive	N
F390-0027	DDS4 DAT Drive	N

Upgrades

Upgrade Paths

Upgrades for the Sun Fire V250 are available through the Sun Upgrade Advantage Program (UAP). Customers can trade in their current Sun or non-Sun systems for a trade-in value that is applied to the purchase price of their new Sun Fire V250. System components will also be eligible for trade-in through the Upgrade Advantage Program.

Please refer to the product announcement for details on where you can find additional information on the Upgrade Advantage Program, qualified systems, qualified components and the return policy. See also http://www.sun.com/ibb

Upgrade Ordering

Order Number	Title and Description
ALW-04-S-Z1-A50	From: 2 to 5 year old non-Sun system. Upgrade To: Sun Fire V250, 2 CPU system only. Order UG-RMA with this allowance code. Customer must return complete bootable system.
ALW-05-S-Z2-A50	From: Up to 2 year old non-sun system Upgrade To: Sun Fire V250, A50. 2 cpu configurations only. Order UG-RMA with this allowance code. Customer must return complete bootable system.
ALW-08-S-O-A50-CNS	Upgrade From: Eligible Sun or non-sun Server(s). Upgrade To: Sun Fire V250 Workgroup Server per terms of Server Consolidation Program. 2 cpu configruations only. Order CU-CONSOL-RMA with this allowance code Customer must return complete bootable System(s)
ALW-12-S-O-A50-CNS	Upgrade From: Eligible Sun or non-sun Server(s). Upgrade To: Sun Fire V250 Workgroup Server per terms of Server Consolidation Program. 2 cpu configruations only. Order CU-CONSOL-RMA with this allowance code Customer must return complete bootable System(s)
ALW-04-S-L-A50	Upgrade From: Ultra 2, 5, 10, Netra 100,T200, X1 Upgrade TO: Sun Fire V250, A50, 2CPU configurations only. Order UG-RMA with this allowance code. Customer must return complete bootable system
ALW-05-S-B-A50	Upgrade From:Enterprise 250, E220R Upgrade To: Sun Fire V250, A50 Allowance can be used for a 2 CPU system only. Order UG-RMA with this allowance code. Customer must return complete bootable system.

Service and Support

The SunSpectrum℠ program is an innovative and flexible service offering that allows customers to choose the level of service best suited to their needs, ranging from mission-critical support for maximum solution availability to backup assistance for self-support customers. The SunSpectrum program provides a simple pricing structure in which a single fee covers support for an entire system, including related hardware and peripherals, the Solaris Operating Environment software, and telephone support for Sun software packages. The majority of Sun's customers today take advantage of the SunSpectrum program, underscoring the value that it represents. Customers should check with their local Sun Enterprise Services representatives for program and feature availability in their areas.

FEATURE	SUNSPECTRUM PLATINUM℠ Mission-critical Support	SUNSPECTRUM GOLD℠ Business-critical Support	SUNSPECTRUM SILVER℠ Systems Support	SUNSPECTRUM BRONZE℠ Self Support
Systems Features				
Systems approach coverage	Yes	Yes	Yes	Yes
System availability guarantee	Customized	No	No	No
Account Support Features				
Service account management team	Yes	No	No	No
Local customer support management	No	Yes	No	No
Personal technical account support	Yes	Yes	Option	No
SunStart℠ installation service	Yes	No	No	No
Account support plan	Yes	Yes	No	No
Software release planning	Yes	No	No	No
On-site account reviews	Monthly	Semiannual	No	No
Skills assessment	Yes	No	No	No
Site activity log	Yes	Yes	No	No
Coverage / Response Time				
Standard telephone coverage hours	7 day/24 hour	7 day/24 hour	8 a.m.–8 p.m., Monday–Friday	8 a.m.–5 p.m., Monday–Friday
Standard on-site coverage hours	7 day/24 hour	8 a.m.–8 p.m., Monday–Friday	8 a.m.–5 p.m., Monday–Friday	N/A
7-day/24-hour telephone coverage	Yes	Yes	Option	Option
7-day/24-hour on-site coverage	Yes	Option	Option	N/A
7-day/12-hour on-site coverage	No	Option	No	No
5-day/24-hour on-site coverage	No	Option	No	No
Customer-defined priority setting	Yes	Yes	Yes	Option
• Urgent (phone/on-site)	Live transfer/ 2 hour	Live transfer/ 4 hour	Live transfer/ 4 hour	4 hour / N/A

FEATURE	SUNSPECTRUM PLATINUM℠ Mission-critical Support	SUNSPECTRUM GOLD℠ Business-critical Support	SUNSPECTRUM SILVER℠ Systems Support	SUNSPECTRUM BRONZE℠ Self Support
• Serious (phone/on-site)	Live transfer/ 4 hour	2 hour/next day	2 hour/next day	4 hour / N/A
• Not critical (phone/on-site)	Live transfer/ customer convenience	4 hour/ customer convenience	4 hour/ customer convenience	4 hour / N/A
2-hour on-site response	Yes	Option	Option	N/A
Additional contacts	Option	Option	Option	Option
Premier Support Features				
Mission-critical support team	Yes	For urgent problems	No	No
Sun Vendor Integration Program (SunVIP℠)	Yes	Yes	No	No
Software patch management assistance	Yes	No	No	No
Field change order (FCO) management assistance	Yes	No	No	No
Hardware Support Delivery				
Replacement hardware parts	On-site technician	On-site technician	On-site technician	Courier
Two day parts delivery	N/A	N/A	N/A	Yes
Overnight parts delivery	N/A	N/A	N/A	Option
Same-day parts delivery	Yes	Yes	Yes	Option
Remote Systems Diagnostics				
Remote dial-in analysis	Yes	Yes	Yes	Yes
Remote systems monitoring	Yes	Yes	No	No
Remote predictive failure reporting	Yes	Yes	No	No
Software Enhancements and Maintenance Releases				
Solaris Operating Environment enhancement releases	Yes	Yes	Yes	Yes
Patches and maintenance releases	Yes	Yes	Yes	Yes
Sun unbundled software enhancements	Option	Option	Option	Option

Warranty

Sun Fire V250 servers have a one year, next business day, onsite hardware warranty. The recommended level of service is Silver. Sun Spectrum instant upgrades are available.

Education

Classes may be required depending on customer interest and requirements. Refer to `http://suned.sun.com` for more information.

Glossary

ASR	Automatic server restart. A feature of the ALOM module that reduces downtime from system lock-up. ASR enables administrators to configure the Sun Fire V250 server to restart automatically in case of a software lock-up.
Ethernet 10/100/1000BASE-T	The most widely used LAN access method defined by the IEEE 802.3 standard; uses standard RJ-45 connectors and telephone wire. 100BASE-T is also referred to as Fast Ethernet.
FRU	Field replaceable unit.
General-purpose server	A server designed to perform any type(s) of function(s). General-purpose servers typically require skilled IT professionals and system administrators to maintain them.
Host ID	The unique identifier assigned to the host computer.
Hot-pluggable	A feature that allows an administrator to remove a drive without affecting hardware system integrity.
Hot-swappable	A feature that allows an administrator to remove and/or replace a device without affecting software integrity. This means that, while the system does not need to be rebooted, the new component is not automatically recognized by the system.
I/O	Input/output. Transferring data between the CPU and any peripherals.
ALOM	Advanced Lights out management. A service and availability feature that monitors the system board, fan power and rpm, and temperature via a dedicated ALOM serial and/or Ethernet port, combined console/LOM serial port, or alarm software that can be tied into SNMP. The LOM module also has a remote power on/off and cycle.
MTBF	Mean time between failures. The average time a component works without failure.
MTTR	Mean time to repair. The average time it takes to repair a component.
RAM	Random access memory.
SCSI	Small computer systems interface. Pronounced "scuzzy." A hardware interface that allows the connection of up to 15 peripheral devices to a single bus.

Materials Abstract

All materials will be available on SunWIN except where noted otherwise.

Collateral	Description	Purpose	Distribution	Token # or COMAC Order #
Product Literature (partial list)				
• *Sun Fire V250 Server Just the Facts*	Reference Guide for the Sun Fire V250 Server (this document)	Training Sales Tool	SunWIN, Reseller Web	384544
• *Sun Fire V250 Datasheet*	Datasheet	Training Sales Tool	SunWin, COMAC	384534
• *Sun Fire V250 Presentation*	Customer Presentation	Training Sales Tool	SunWin, COMAC	384535
• *Sun Fire V250 Technical Presentation*	Customer Technical Presentation	Training Sales Tool	SunWin, COMAC	384543
• *Sun Fire V250 VCP Selling Guide*	Selling Guide	Training Sales Tool	SunWin, COMAC	384545
External Web Site	`http://www.sun.com/servers/entry/v250/`			
• *Sun Fire V250 Server Web Site*				
Internal Web Site	`http://onestop.central.sun.com/hw/sfv250.shtml`			
• *Sun Fire V250 Server Internal Web Site*				
Reseller Web Site	`http://reseller.sun.com`			
• *Sun Reseller General Information*				

Competitive Information

Refer to the Sun internal only site `http://competitive.central` or `http://partner.sun.com/competition` for the competitive information.

Future/Roadmap

Refer to the Sun internal only site `http://systems.sfbay` for information about future enhancements.