

Sun Fire™ V240 Server (RoHS Compliant)

Just the Facts

[\(SunWIN token# 367480\)](#)

Last Updated: 30th October 2006



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Sun Fire™ V240 Server Positioning



Figure 1. Sun Fire™ V240 Server

Introduction

The Sun Fire V240 is a datacenter-class 2U server loaded with high availability and expandability features. The ideal application server or system platform when uptime is critical. The Sun Fire™ V240 server—powered by a 1.34GHz and two 1.5GHz UltraSPARC™ IIIi processors in a compact 2 RU form factor—will help Sun expand its leadership position in the 2P, rack-optimized server market. Loaded with numerous, industry-unique features designed to increase availability, speed throughput, enhance performance, and simplify management and serviceability the Sun Fire V240 server makes an ideal 2P-capable server solution.

The Sun Fire V240 server is an innovative, feature-rich 2P/2U server designed to “wow” customers—not only Sun loyalists, but also users of competitive dual-processor, 2U servers. Innovative features like Security Protocol Acceleration, four Gigabit Ethernet ports, three PCI slots, redundant power supplies and PC pricing will make the Sun Fire V240 server a popular server for e-Commerce in mission critical environments.

The Sun Fire V240 server, along with its sister product, the Sun Fire V210 server, is the ONLY ready-to-deploy system platform that comes standard with the Solaris™ Operating Environment, the Sun Java Enterprise System 2005Q1 software, system management functions, and a variety of I/O connectivity.

Among the firsts for the Sun Fire V240 server:

- The FIRST UltraSPARC IIIi-based, dual-processor, rack-optimized server with 64-bit computing performance at PC prices.

- The FIRST with FOUR integrated Gigabit Ethernet ports
- The FIRST with a low-cost, integrated Secure Socket Layer card option, the Sun Crypto Accelerator 500, on the system motherboard

The Sun Fire V240 server also comes standard with the industry's ONLY System Configuration Card (SCC).

The Sun Fire V240 server is an UltraSPARC IIIi-based 2 CPU rack server in the Volume Systems Products (VSP) family. With PC prices, the Sun Fire V240 server will enable Sun to compete with x86 servers running Windows in this rapidly growing market space.

The Sun Fire V240 server (along with the Sun Fire V210 server) will change that, allowing Sun to increase market share in the volume space by offering a strategic upgrade path for customers.

New Features

62% increase in performance, with 70% improvement in price/performance. Customers continue to reap benefits of sun's innovation dividend with higher speed CPU's (V210 1.34GHz & V240 1.34GHz/1.5GHz) offering improvements in both performance and price/performance.

Benchmarking data demonstrates that when the new processors are coupled with Solaris 10, performance can increase by 62%. This performance is delivered with a price premium of only 5%, thereby delivering 70% improvement in price/performance.

The Sun Fire V240 server delivers the industry's premier UNIX solution by combining highly integrated features with the best OS on the planet into a low cost package to return greatest value for horizontally scaled workloads.

TCP-H World Record

New TPC-H @ 100GB world record price/performance on Sun Fire V240 [US-IIIi at 1.5 GHz] using Solaris 10.

- Result is: **\$12 Qph@100 at 1712 Qph @ 100GB ***
- World record price/performance for all TPC-H submissions at 100GB.
- Maximum gains when coupled with Solaris 10.

The result will be posted on: <http://www.tpc.org/>

*Results have been temporarily withdrawn pending re-submission of pricing.

Performance benchmarks

SF V240 (2xUSIIIi – 1.5GHz)/SPECcpu2000 – [4GB mem, Sol 10, Studio 9]

1-Way Int Base/Peak: 698/794

FP Base/Peak: 1136/1271

2-Way Int_rate Base/Peak : 16.2/18.4

FP_rate Base/Peak: 26.3/29.4

Product Family Placement

The Sun Fire V240 server is the latest in the Sun Fire server product line and provides an upgrade path for customers from the Sun Fire 280R and other low-end servers. The Sun Fire V240 server also serves as an upgrade from the Sun Fire V210 server. Based on UltraSPARC IIIi technology and the J-Bus architecture, the Sun Fire V240 server provides customers with high compute power and fast data transfer throughput at a competitive price.

Sun Fire V240 and Sun Fire V210 Server Feature Comparison

The following table compares some features of the Sun Fire V240 server to those of the Sun Fire V210 server.

| Features | Sun Fire V240 Server | Sun Fire V210 Server |
|--|---|--|
| Number of processors | 1–2 | 1–2 |
| CPU type | UltraSPARC IIIi | UltraSPARC IIIi |
| CPU speed | 1.34 GHz, 1.5GHz | 1.34 GHz |
| Level 2 cache | 1 MB internal cache | 1 MB internal cache |
| Minimum/maximum memory | 512 MB / 16 GB | 512 MB /16 GB |
| O/S | Solaris 8 beginning with HW 7/03 OS (with mandatory patch 109885-15) Solaris 9 beginning with 12/03 Solaris 10 OS | Solaris 8 beginning with HW 7/03 OS (with mandatory patch 109885-15) Solaris 9 beginning with 12/03 OS Solaris 10 OS |
| PCI slots | 3 (1 x 66 MHz/64bit, 2 x 33 MHz/64bit) | 1 (66 MHz/64bit) |
| Network connections | 4 x built-in 10/100/1000Base-T Ethernet ports | 4 x built-in 10/100/1000Base-T Ethernet ports |
| I/O connections | 2 x serial, 2 x USB, 1 x 10MB/s Ethernet, 1 x LVD SCSI | 2 x serial, 2 x USB, 1x10 MB/s Ethernet, 1 x LVD SCSI |
| Number of disks and type (max) | 4 x Ultra160 SCSI 146 GB | 2 x Ultra160 SCSI 146 GB |
| Remote management | ALOM (standard) | ALOM (standard) |
| System Configuration Card | Standard | Standard |
| Power supplies | 2 (redundant) | 1 |
| Height / Depth | 2 U / 24 in. | 1 U / 24 in. |
| Max power (min. config) (Power calculated with 72% PSU efficiency) | 233 Watts (1 x 1.34 GHz processor, 2 x 256-MB DIMMS, 1 x 73-GB HDD) | 222 Watts (1 x 1.34 GHz processor, 2 x 256-MB DIMMS, 1 x 73-GB HDD) |
| Max power (max config) (Power calculated at 220V/50Hz) | 479 Watts 2 x 1.5GHz processor, 8 x 1-GB DIMMS, 2 x 73-GB HDD) | 425 Watts (2 x 1.34GHz processor, 8 x 1-GB DIMMS, 2 x 73-GB HDD) |
| TYPICAL Power (min config) (measured at 240V/50Hz) | 200 Watts (1 x 1.34 GHz processor, 2 x 256-MB DIMMS, 1 x 73-GB HDD) | 179 Watts (1 x 1.34 GHz processor, 2 x 256-MB DIMMS, 1 x 73-GB HDD) |
| TYPICAL Power (max config) (measured at 240V/50Hz) | 329 Watts 2 x 1.5GHz processor, 8 x 1-GB DIMMS, 2 x 73-GB HDD) | 296Watts (2 x 1.34GHz processor, 8 x 1-GB DIMMS, 2 x 73-GB HDD) |
| Heat dissipation (min config) | 798 BTU/hr | 759 BTU/hr |

| Features | Sun Fire V240 Server | Sun Fire V210 Server |
|--------------------------------------|--|--|
| Heat dissipation (max config) | 1639 BTU/hr | 1456 BTU/hr |
| Optional features | Integrated SSL card option, DVD-ROM | Integrated SSL card option, DVD-ROM |
| Maximum shipping weight | 26.5 kg | 19.5 kg |

Key Messages

With the introduction of the Sun Fire V240 server, Sun continues to offer customers value, innovation, and choice.

VALUE

- **True System Approach:** The Sun Fire V240 server comes pre-loaded and pre-tested at no extra cost with Solaris OS, the Sun Java Enterprise System 2005Q1 software, system management functionality, and high-speed network connectivity.
- **Cradle-to-Grave Management Support:** The Sun Fire V240 server comes with integrated Advanced Lights Out Manager (common to Sun's new Blade servers), Sun™ Management Center software, SNMP support, and easy-to-use provisioning and patch management software through Solaris OS.
- **World-class Services:** Whether it's a sub-\$1000 Sun Fire V100 server or a multimillion-dollar Sun Fire 15K server, customers are supported by Sun's world-class Services organization.
- **Investment Protection:** Customers get binary and application compatibility through an end-to-end SPARC®/Solaris architecture from 1 to 106 processors that increases operation efficiency while eliminating costs for application porting. In addition, Sun offers added values that are consistent through the volume systems products line, such as front-to-back cooling, integrated remote management features, rack optimization, and hot-swappable components.
- **Serviceability:** The Sun Fire V240 server comes standard with telescopic rail kit, cable management arm, hinged lid and flip down bezel.

INNOVATION

- **Latest Processor Technology:** The Sun Fire V240 server is the first platform to deploy the latest low-cost, high-performance UltraSPARC IIIi processor technology designed for low-end systems. Sun Fire V240 server runs at 1.34 GHz or 1.5GHz.
- **Robust and Compact Design:** The system architecture of the Sun Fire V240 server leads the industry in terms of memory capacity and number of I/O ports in a compact form factor. Features include four built-in 10/100/1000Base-T Ethernet ports, 4 drive bays, an Ultra160 LVD SCSI port, three PCI slots, two serial ports, two USB ports, a 10MB/s Ethernet port, and redundant power supplies. The Sun Fire V240 server can accommodate an optional Sun™ Crypto Accelerator 500 card for SSL encryption, which provides network security without sacrificing a PCI slot. All these features are packed in a 2 RU form factor.
- **Maximizes Uptime:** The Sun Fire V240 server offers RAS features such as front-accessible, hot-swap disks, an easy-to-use System Configuration Card, redundant power supplies, and the reliable Solaris OS.

CHOICE

Multiple Architectural Choices: Sun offers a family of low-end servers to accommodate customer IT requirements. Customer can choose among the Solaris OS on UltraSPARC (Example: Sun Fire V240), the Solaris OS on x86 (Example: Sun LX50), or Linux on x86 platforms (Example: Sun LX50).

In addition, the Sun Fire V240 server helps customers:

- **REDUCE** real estate costs and increase return on investment with a high density (2P/2U) form factor. The Sun Fire V240 server (along with the Sun Fire V210 server) is the **FIRST** ultra-dense UltraSPARC IIIi-based, dual-processor, rack-optimized system.
- **ALLEVIATE** shrinking IT budget pressures with PC prices.
- **IMPROVE** network performance and efficiency. The Sun Fire V240 server (along with the Sun Fire V210 server) is the **FIRST** system with four built-in Gigabit Ethernet ports.
- **PROVIDE** fast and secure Web transactions without sacrificing CPU cycles and taking up a PCI slot. The Sun Fire V240 server (along with the Sun Fire V210 server) is the **FIRST** system with a low-cost integrated SSL card option on the system motherboard.
- **ENHANCE** manageability with pre-installed Advanced Lights Out Management (ALOM) and Sun Management Console software.
- **ACHIEVE** high availability for mission-critical applications with redundant, hot-swap components and serviceability with a pre-installed System Configuration Card that can transfer system identity from one system to another. Built-in quad Gigabit Ethernet ports also provide redundancy.
- **ENABLES** binary compatibility from 1 to 106 processors. The SPARC/Solaris platform is one of the industry's most scalable, reliable, and secure architectures.

Availability

General availability of the RoHS compliant V240 1.34/1.5Ghz configurations is planned for February 2006.

Target Users

The Sun Fire V240 server is an ideal platform for small application server or e - Commerce. It is also ideal for users who require high CPU density per rack, the ability to scale horizontally, proven server management tools, RAS features, and reliable technology from an established vendor.

Target Markets

- Financial services
- Education
- Service Providers
- Government
- Discrete Manufacturing
- Retail

Target Applications

- Application Server
- Web Server
- eCommerce
- Portal Gateway
- Security

Selling Highlights

Market Value Proposition

Based on the latest SPARC/Solaris technology, the Sun Fire V240 server provides high performance and security in an ultra-dense, rack-optimized package, designed to significantly improve network performance for Web services needs at PC prices.

Customers reap the rewards of Sun's innovation dividend through higher performance UltraSPARC IIIi systems which deliver performance and price/performance improvements of 67%. This enables customers to improve service levels while reducing costs. Customers have the benefit of being able to run Solaris OS, the industry's most advanced and popular UNIX operating system which reduces cost, risk and complexity of delivering networked applications and services, while preserving investments in existing IT infrastructure and skills.

- **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. The Sun Fire V240 server includes the following RAS features to help customers achieve high availability:
 - Redundant, hot-swappable power supplies with independent power cords
 - Built-in quad Gigabit Ethernet ports for redundancy
 - Hot-swappable, front-accessible disk drives, with software mirroring
 - Serviceability to include front and rear LEDs, no side access, and a removable host ID
 - Full Sun™ Cluster 3.X software support
- **Performance:** The first UltraSPARC IIIi-based, dual-processor, rack-optimized server with 64-bit computing performance and with low power consumption.
- **Reliability:** The Sun Fire V240 server provides standard Sun reliability that is well established in the Internet market. Solaris technology provides proven reliability, robustness, and binary compatibility. With the Solaris Operating Environment, Sun delivers a trustworthy, universal platform to meet the needs of today’s businesses—from small-to-medium companies to large Fortune 1000 enterprises.
- **Density:** Higher density servers decrease operating costs by more efficiently using existing data center space. A goal and major value proposition for the Sun Fire V240 server is to provide a maximized CPU processing/memory density per square foot of floor space. The demand in the market for dense server solutions is high.
- **Security:** With an optional Sun Crypto Accelerator 500 card and the robust Solaris Operating Environment, the Sun Fire V240 server gives customers security and protection which is either lacking, or more expensive to implement, in competitive solutions.
- **Manageability:** Advanced Lights Out Manager (ALOM) is featured on the Sun Fire V240 server. ALOM builds on the best aspects of LOMLite2 and Remote System Control (RSC) deployed in other servers to give enhanced features and Ethernet access.

Features, Functions, and Benefits

| Feature | Function | Benefit |
|--|---|---|
| <ul style="list-style-type: none"> Dual processor server in a 2 RU form factor | <ul style="list-style-type: none"> Increased density | <ul style="list-style-type: none"> More processing power in the same space, which lowers real estate costs |
| <ul style="list-style-type: none"> Powered by Sun's latest processor technology | <ul style="list-style-type: none"> The Sun Fire V240 server is the first platform to deploy the latest low-cost, high-performance 1.34 GHz or 1.5GHz UltraSPARC IIIi processor technology. | <ul style="list-style-type: none"> Provides increased performance |
| <ul style="list-style-type: none"> Four integrated Gigabit Ethernet ports | <ul style="list-style-type: none"> Provides increased throughput and redundancy | <ul style="list-style-type: none"> Increases efficiency of network traffic and provides redundancy |
| <ul style="list-style-type: none"> Integrated Security Protocol Accelerator | <ul style="list-style-type: none"> Delivers on-board SSL encryption | <ul style="list-style-type: none"> Provides fast and secure Web transactions without sacrificing CPU cycles and a PCI slot |
| <ul style="list-style-type: none"> Comes standard with exceptional hardware and software functionality that the competition charges extra for or does not offer | <ul style="list-style-type: none"> Solaris OS, Sun Java Enterprise System 2005Q1 software, system management functions, variety of I/O connectivity, SCC | <ul style="list-style-type: none"> A complete, ready-to-deploy system platform |
| <ul style="list-style-type: none"> Industry's only System Configuration Card (SCC) comes standard | <ul style="list-style-type: none"> Contains the system's host ID, MAC and IP address, which is easily transferrable to a standby system | <ul style="list-style-type: none"> Increases system availability and serviceability by allowing customers to quickly bring a system up or down |
| <ul style="list-style-type: none"> Comes with integrated Advanced Lights Out Manager, Sun MC and SNMP support. Plus easy-to-use provisioning and patch management software through Solaris OS | <ul style="list-style-type: none"> Cradle-to-grave management support | <ul style="list-style-type: none"> Simplifies system management and reduces costs by providing numerous, standard management features |

| Feature | Function | Benefit |
|--|--|--|
| <ul style="list-style-type: none"> 64-bit architecture | <ul style="list-style-type: none"> Allows computer to handle 64 bits of data simultaneously (versus 32 bits) | <ul style="list-style-type: none"> Increased scalability of computer and applications. Ideal for applications that require large files, large numbers of files, or a large number of users. |
| <ul style="list-style-type: none"> World-class Services organization | <ul style="list-style-type: none"> Piece of mind that all service needs will be handled painlessly. “One stop shop.” | <ul style="list-style-type: none"> Increases return on investment and lowers total cost of ownership. |
| <ul style="list-style-type: none"> Three PCI slots (2 x 33 MHz and 1 x 33/66 MHz, all at 64-bits) | <ul style="list-style-type: none"> For external connections to additional storage, etc. | <ul style="list-style-type: none"> Increases flexibility. |
| <ul style="list-style-type: none"> Binary and application compatibility through an end-to-end SPARC/Solaris architecture from 1 to 106 processors | <ul style="list-style-type: none"> Increases operation efficiency while eliminating costs for application porting. | <ul style="list-style-type: none"> Provides investment protection. |
| <ul style="list-style-type: none"> The Sun Fire V240 server leads the industry in terms of memory capacity and number of I/O ports for a compact form factor (2 RU) | <ul style="list-style-type: none"> Includes 4 built-in 10/100/1000 Base-T Ethernet ports, an Ultra160 LVD SCSI port, two serial ports, two USB ports, and a 10MB/s Ethernet port. Also accommodates an optional Sun Crypto Accelerator 500 card without sacrificing a PCI slot. | <ul style="list-style-type: none"> Increases return on investment. |
| <ul style="list-style-type: none"> Front-accessible, hot-swap disks, easy-to-use System Configuration Card (SCC), reliable Solaris OS, and four integrated Gigabit Ethernet ports | <ul style="list-style-type: none"> Various functions but all intended to keep the system up and costs down | <ul style="list-style-type: none"> Maximizes uptime for mission-critical environments |
| <ul style="list-style-type: none"> J-bus interconnect operating at 2.67 GB/s. | <ul style="list-style-type: none"> High-bandwidth interconnect ensures scalability with minimal contention and latency between processing and I/O subsystems. | <ul style="list-style-type: none"> Increases efficiency |

| Feature | Function | Benefit |
|--|--|--|
| <ul style="list-style-type: none"> • Front and back LEDs and physical security features | <ul style="list-style-type: none"> • Lights show server status (power, fault, etc.). Physical security features prevent access to enclosed hardware and apps from unauthorized users. | <ul style="list-style-type: none"> • Increases productivity, availability, and security. |
| <ul style="list-style-type: none"> • Advanced Lights Out Manager (ALOM) | <ul style="list-style-type: none"> • Monitors and reports system and component status, meaning less need for on-site staff. | <ul style="list-style-type: none"> • Increases productivity and availability by allowing remote management via network or serial connections. |

Applications

The Sun Fire V240 server is a general-purpose server suitable for the following applications:

- Application server
- ERP/CRM/e-commerce
- Web server
- Security
- Portal gateway

All of these listed applications benefit from multiprocessor performance improvements and customers will make the choice to move certain services on to multiprocessor devices based on trade-offs between several criteria, the most significant of which are price and performance.

Compatibility

Sun Fire V240 servers have been qualified to be compatible with external storage devices such as Sun StorEdge™ disk arrays listed in the Mass Storage and Media section in this document.

Enabling Technology

Technology Overview

The Sun Fire V240 server is the next-generation server available for high-density, compute-intensive environments. Design characteristics are focused on a low-entry price point and high performance, serviceability, and reliability. The Sun Fire V240 server is powered by either one or two UltraSPARC IIIi CPUs and can be configured with up to 16 GB of memory to support any application to offer the widest flexibility in service delivery.

The Sun Fire V240 server is targeted at Tier 1 and Tier 2 applications like Web servers, media streaming, caching, security, and application servers. The architecture and design of the server provides an extremely powerful and well-balanced system to eliminate bottlenecks and maintain service availability.

Sun Fire V240 servers have the following system architectural features:

- UltraSPARC IIIi (Jalapeno) processor(s) with integrated 1 MB of on-chip (internal) L2 cache
- Superscalar SPARC V9 processor technology
- J-Bus system databus
- Networking
- Optional Sun Crypto Accelerator 500 card
- ALOM
- Low power consumption

UltraSPARC IIIi Processor

The UltraSPARC IIIi processor is a highly integrated processor that implements the 64-bit, SPARC V9 architecture and Sun's Visual Instruction Set (VIS). The UltraSPARC IIIi processor contains primary data and instruction caches and a unified L2 cache. It also contains an SDRAM memory controller, a J-Bus 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 technology set make it ideally suited for computer servers and embedded applications in telecommunications and imaging. Support for 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," in which data has to be retrieved from the memory controlled by the opposite CPU. There is a minimal overhead when retrieving foreign data transactions because addressing and data transfers are realized in completely separate buses.

The supported memory is DDR-1 SDRAM PC2100 DIMM configurable in 8 DIMM slots, 4 per processor, and they are divided in two banks of 2 equal size DIMMS. The available capacity per DIMM will be 256 MB, 512 MB, 1 GB and 2 GB. Mixing of DIMM sizes is permitted between

banks, however, there will be a slight performance impact (due to sub optimal interleaving). DIMMs must be installed in pairs and must be of the same size and manufacturer for each bank.

System Bus

The system bus provides high throughput paths clocked at 167 MHz when the 1.34/1.5 GHz 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 J-Bus 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 to transfer data while addressing or other devices.

Networking

With four on-board RJ45 10/100/1000Base-T Gigabit Fast Ethernet ports for high throughput, the networking capabilities of the Sun Fire V240 server are unprecedented.

Also included are one RS-232/423 asynchronous serial port and a 10Base-T Ethernet interface which allows ALOM access for control of the server including power switching and on-board processors access.

For additional storage capabilities, two USB ports are available to attach USB Jazz and Zip drives and other supported products.

Internally, up to four drives can be installed on the Sun Fire V240 server for additional capacity and availability options like RAID. For external storage, an Ultra3SCSI LVD connector (160 MB/s) is included.

For additional networking connectivity or storage redundancy, three PCI slots (2 x 33 MHz and 1 x 33/66 MHz, all at 64-bits) are available on the Sun Fire V240 server.

Sun Crypto Accelerator 500 Card

The optional Sun Crypto Accelerator 500 card, based on the BroadComm BCM 5822 coprocessor, provides SSL, RSA, and DES among other encryption protocols without the need to take up a PCI slot. This gives added flexibility by not having to dedicate CPU cycles to key functionality required by applications deployed in Tier 1 and Tier 2.

For Solaris 10 support Via version 2.0 of the SCA500 then visit the Sun Download Center for a free download at:

<http://www.sun.com/download/products.xml?id=422e7576>

ALOM

Advanced Lights Out Manager provides remote administration via a CLI with interfaces to Ethernet networks or serial ports. 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—a simple mouse click on the remote management console, and the server is powered on. 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 |

System Architecture

Overview

Sun Fire V240 servers can be mounted in industry standard 19-in. racks (check compatibility for non Sun racks) and come with standard telescopic rails and cable management arm. The system is 24 inches deep from the rear face of the mounting flanges to the rear of the system. The air flow direction is from front to back and internal fans are included. Access to the system configuration card and I/O and power connections are at the rear of the chassis.

Reliability, Availability, and Serviceability (RAS)

Reliability

- Solaris Operating Environment
- UltraSPARC platform
- ECC
- Automatic System Reconfiguration (ASR) around failed components such as (not CPUs)

Availability

- The Sun Fire V240 server's low cost and small form factor allow redundant deployment in a compact space to increase overall service availability.
- Maximum availability is provided with features such as Advanced Lights Out Manager (ALOM), Automatic Server Restart (ASR), and hot-swappable disks.
- Customers can have a separate service per server and provide more services within the small footprint. This eliminates sharing servers and increases availability if the system goes down—only one server would be affected.
- The System Configuration Card (SCC) allows transfer of a system's host ID and configuration to another server while routine maintenance is performed with minimal downtime.
- Built-in quad Gigabit Ethernet ports provide redundancy.

Serviceability

- Toolless access allows for ease of service and maintenance.
- Front-accessible, hot-swappable drives.
- The SCC can be switched easily by pulling out the card and replacing it, without removing the cover and without special tools.
- The ALOM module allows administrators to monitor and manage power status at the sub-board level remotely. With the ASR feature, administrators can configure the Sun Fire V240 server to restart automatically.
- Indicator lights on the front and back of the chassis allow problems to be detected and isolated easily.
- A fault indicator light stays on following a fault even if the system has been powered off.
- Rear power switch provides easy access.
- Rackmount slides and cable management arm are included for easy installation and removal of a unit.

Installation Data

Sun Fire V240 Server Specifications

Processor Options

| | |
|--------------|---|
| Processor | One or two 1.34 GHz or 1.5GHz UltraSPARC processors |
| Architecture | 64-bit, 4-way Superscalar SPARC V9 |
| Cache | 64 KB data, 32 KB instructions and 1 MB integrated L2 |

Note: no CPU upgrade kits available

Main Memory

| |
|---|
| 4 DIMM slots per processor, registered DDR-1 SDRAM (PC2100) 128 bit plus ECC databus. |
| System configurations from 512 MB to 16 GB |

Standard/Integrated Interfaces

| | |
|--|--|
| Network | Four 10/100/1000Base-T Ethernet ports |
| 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) |
| USB | Two OHCI 1.0-compliant interfaces, supporting dual speeds of 12 and 1.5 Mbits/s each |
| Expansion bus | Three internal PCI 2.2 compliant expansion slots: One full-length 64-bit 33/66 MHz 3.3V Two full-length 64-bit 33 MHz 5V |
| System Configuration Card and reader (removable) | Front accessible for transfer of system configuration information, including host ID, MAC address and NVRAM |
| Security | Optional Sun Crypto 500 accelerator card, offering security protocol acceleration via a daughter card |

Keyboard and Mouse Support

| | |
|-------------|------------------------------|
| 320-1273-01 | USB Keyboard |
| 370-3632-01 | USB Mouse |
| X3538A | US UNIX/ UNIXUNIV./ EUR.UNIX |
| X3564A | ITALIAN COUNTRY KIT |
| X3558A | UK UNIX COUNTRY KIT |
| X3559A | EUROPEAN UNIX COUNTRY KIT |

Supported PCI Cards

| Marketing Part Number | Description | Maximum number supported |
|------------------------|--|--------------------------|
| X4444A/X4445A | Sun Quad Gigabit Ethernet | 2 |
| X4422A-2 | Dual Gigabit Ethernet and Dual SCSI Adapter | 2 |
| X2156A-2 | Serial Asynchronous Interface PCI Bus Adapter 3.0 | 2 |
| X1155A/X1355A-2 | High Speed Serial Interface- 4 port 2.0 | 2 |
| X6727A | PCI Dual FC Network Adapter | 2 |
| SG-XPCI1FC-QL2 | Sun StorEdge 2GB PCI single fibre channel network adapter | 2 |
| SG-XPCI2FC-QF2-Z | Sun StorEdge 2GB PCI dual fibre channel network adapter | 2 |
| SG-XPCI1FC-EM2 | Emulex 2Gb Single Channel FC HBA | 2 |
| SG-XPCI2FC-EM2 | Emulex 2Gb Dual Channel FC HBA | 2 |
| SG-XPCI1FC-EM4-Z | Single port 4Gb FC | 1 |
| SG-XPCI2FC-EM4-Z | Dual port 4Gb FC | 1 |
| SG-XPCI1FC-QF4 | QLogic Single port 4Gb FC HBA | 1 |
| SG-XPCI2FC-QF4 | QLogic Dual port 4Gb FC HBA | 1 |
| X7296A | Sun (TM) XVR-100 Graphics Accelerator | 1 |
| SG-(X)PCI2SCSI-LM320-Z | Dual Ultra320 SCSI Host Adapter (Jasper 320) - Jasper 320 supported for connectivity to the L25/L100 tapes. | 3 |
| X4111A | Crypto board for SSL/IPSec-Copper-Crypto Accelerator 4000 | 1 |
| X4112A | Crypto board for SSL/IPSec-Fibre-Crypto Accelerator 4000 | 1 |
| X4150A-2 | GigaSwift Ethernet UTP PCI Adapter (GCS) | 3 |
| X4151A-2 | GigaSwift Ethernet UTP PCI Adapter (GCS) | 3 |

| Marketing Part Number | Description | Maximum number supported |
|------------------------------|--|---------------------------------|
| X1157A | Sun ATM PCI Adapter 4.0.155 Mbps MMF Interface (Mangeto) | 1 |
| X1333A-4 | Infiniband PCI-X Host Channel Adapter | 1 |
| X4455A | 10Gb Ethernet HBA | 2 |
| X6799A | Single 1Gb FC HBA | 2 |
| X3152A | Infiniband switch 9 port | 1 |

Subject to individual Max power of 25W with a combined power of 45W across 3PCI slots.

Mass Storage and Media

| | |
|---------------|---|
| Internal disk | Up to two hot-swap Ultra160SCSI 73/146-GB disks. Mixed mirrored disc drives are supported for the V240 using the combinations: 2x73GB & 2x146GB or 1x73GB & 1x146GB |
| Internal DVD | One Slim-line ATAPI DVD-ROM (optional) |
| External disk | Sun StorEdge S1 array* Sun StorEdge 3310 SCSI array* Sun StorEdge 3120 SCSI Array* Sun StorEdge 3120 SCSI Array Sun StorEdge 3510 FCAL array Sun StorEdge 3511 FCAL array Sun StorEdge 3520 FCAL array Sun StorEdge 5310 array Sun StorEdge 6410 array Sun StorEdge 9990,9985,9980,9970, 9960, 9910 series Sun StorEdge D240 Media Tray |
| External tape | Sun StorageTek DAT 72 Tape Sun StorageTek L8 Tape Autoloader (Solaris 8 & 9, LT02 & SDLT320) Sun StorageTek L25 (Solaris 9 only, LT02) Sun StorageTek L100 (Solaris 9 only, LT02) Sun StorageTek L500 Sun StorageTek C2* Sun StorageTek C4* |

* Indicates support for direct attachment to server external SCSI port

Software

| | |
|-------------------------------------|---|
| Operating environment | Solaris 8 beginning with HW 7/03 Operating System (mandatory patch 109885-15 required) Solaris 9 beginning with 12/03 Operating System. Solaris 10 Operating System |
| Languages | C/C++, FORTRAN, Java programming language, all other standard Sun-supported languages |
| Networking | ONC™, NFS, TCP/IP, SunLink™, OSI, MHS, IPX™/SPX |
| Management | Sun Management Center, SunVTS™, SRS Ready, SRM, ALOM |
| High availability | Sun™ Cluster 3.0 |
| Sun Java Enterprise System Software | See Software section on page 20 for full list of pre-installed software. |

Power Supplies

| | |
|---|-------|
| One power supply required, two for redundancy (hot swappable) with separate power cords | |
| Maximum DC output | 400 W |

Environment

| | |
|--------------------------|--|
| AC power | 90–264 V AC (47–63 Hz) |
| Operating temperature | 5° C to 40° C (41° F to 104° F), 10% to 90% relative humidity, noncondensing, 27° C max wet bulb |
| Nonoperating temperature | -40° C to 65° C (-40° F to 149° F), up to 93% relative humidity, noncondensing, 38° C max wet bulb |
| Altitude (operating) | Up to 3000 m, maximum ambient temperature is derated by 1° C per 500 m above 500 m |
| Altitude (nonoperating) | Up to 12000 m |
| Acoustic noise | Less than 7.1B sound power in ambient temperature of up to 24C. |

Regulations

| | |
|--|--|
| Meets or exceeds the following requirements: | |
| Safety | IEC60950, UL/CSA60950, EN60950. |
| RFI/EMI | FCC Class A, Part 15 47 CFR, EN55022, CISPR 22 |
| Immunity | EN55024 |
| Certifications Safety EMC | cULus Mark, TUV GS Mark, CE Mark, S-Mark, CCC, GOST. CE Mark (93/68/EEC), FCC authorized Class A, ICES, VCCI, BSMI, CTICK, MIC, CCC, GOST. |

Dimensions and Weight

| | |
|---|---|
| Chassis Height Width Depth Weight (w/o packaging) | 87.66 mm (3.4 in.) 425 mm (16.73 in.) 635 mm (25 in.) 18.7 kg maximum |
| Enclosure | Fits into a standard 19-inch wide rack. Four post rack kit adjustable between 720 mm and 925 mm. Check compatibility for non Sun racks. |

Shock and Vibration Testing

The shock tests are performed to assure that unit can withstand the relatively infrequent non repetitive shocks or transient vibrations in handling, transportation, and service. Environment shock test are also used to measure an item's fragility, which packing may be designed to protect, if necessary.

The vibration tests determine the resistance of the unit to vibration stresses expected in its shipment and application environments.

Shock Test

a. Standalone Operating Shock

| Acceleration/ Duration | Shock spectrum | Duration |
|------------------------|----------------|--|
| 5.5G/11ms | Half sine±3% | 10±10% in 6 directions (±X, ±Y, ±Z) |

b. Standalone Non-Operating Shock

| Acceleration/ Duration | Shock spectrum | Duration |
|------------------------|----------------------------|--|
| 33 Gs/11ms | Half sine (G level) ±3% | 3±10% pluses in 6 directions (±X, ±Y, ±Z) |

Vibration Test

a. Standalone Operating Vibration

| Axes | Acceleration | Wave | Frequency range (Hz) | Duration |
|--------|--------------|-----------|----------------------|--|
| X axis | 0.25G | Sine Wave | 5-500-5 | 1 octave/minute 10 sweep (5 up, 5 down) |
| Y axis | 0.25G | | | |
| Z axis | 0.25G | | | |

b. Standalone Non-operating Vibration

| Axes | Acceleration | Wave | Frequency range (Hz) | Duration |
|--------|--------------|-----------|----------------------|--|
| X axis | 1.2G | Sine Wave | 5-500-5 | 1 octave/minute 10 sweep (5 up, 5 down) |
| Y axis | 1.2G | | | |
| Z axis | 1.2G | | | |

Requirements and Configuration

System Requirements

Thermally and electrically 14 Sun Fire V240 server units can fit into a next-generation rack, Sun Fire rack and 10 server units in a StorEdge rack. For more information, go <http://www.sun.com/servers/rack/> or contact an integration manager. Customers can contact their account team or go to <http://www.sun.com/integration> for program information.

The Sun Fire V240 server supports Solaris 8 Operating Environment beginning with HW 7/03/ Solaris 9 Operating Environment beginning with 12/03, and Solaris 10.

System Configuration

The Sun Fire V240 server has the following standard components:

- 1 or 2 x 1.34 GHz or 2 x 1.5 GHz UltraSPARC IIIi processor(s)
- 16 GB system main memory (256-MB, 512-MB, 1-GB and 2-GB DDR-1 DIMMS. Mixing of DIMM sizes is permitted between memory banks, however, performance will be impacted slightly (due to sub optimal memory interleaving). DIMMs must be installed in pairs and must be of the same size and manufacturer per bank.
- AC power supply
- 19-inch rackmount kit
- One 66-MHz / 64-bit PCI slot
- Two 33-MHz / 64-bit PCI slot
- Four disk drive bays
- One UltraSCSI 160 external port; one UltraSCSI 160 internal port
- Solaris 10 Operating System is pre-installed
- Sun Java Enterprise System 2005Q1
- System configuration card and reader
- Advanced Lights Out Manager (ALOM)
- Two USB ports
- Four 10/100/1000Base-T Ethernet ports
- One 10Base-T Ethernet port for ALOM
- Two serial ports (one for ALOM)

Licensing/Usage - The Sun Fire V240 server comes with a Solaris 8 and 9 server license for unlimited users.

Interconnect - The Sun Fire V240 server comes standard with four Ethernet 10/100/1000Base-T Ethernet ports without having to use the PCI expansion slot.

System Management

System Administration

Refer to <http://docs.sun.com> for information about system administration.

MTBF

The MTBF for the Sun Fire V240 server varies depending upon configuration. Refer to the Sun internal only site <http://ras4sun.sfbay/> for more information.

Software

The Sun Fire V240 standard configurations with the following part numbers (N32-XMB1C1512HA, N32-XKB2C1204HB & N32-XKB2C1808HB) now come with Solaris 10 Operating System pre-installed and Sun Java Enterprise System 2005Q1 software with the following applications pre-installed :

o Network Identity Services

Sun Java™ System Directory Server 5 2005Q1

Sun Java™ System Access manager 6 2005Q1

Sun Java™ System Directory Proxy Server 5 2005Q1

o Web and Application Services

Sun Java™ System Application Server Enterprise Edition 8.1 2005Q1

Sun Java™ System Message Queue 3 2005Q1 Enterprise Edition

Sun Java™ System Web Server 6.1 Service Pack 4 2005Q1

o Portal Services

Sun Java™ System Portal Server 6 2005Q1

Sun Java™ System Portal Server Mobile Access 6 2005Q1

Sun Java™ System Portal Server Secure Remote Access 6 2005Q1

o Communication and Collaboration Services

Sun Java™ System Messaging Server 6 2005Q1

Sun Java™ System Calendar Server 6 2005Q1

Sun Java™ System Instant Messaging 7 2005Q1

o Availability Services

Sun™ Cluster 3.1 9/04

Sun Cluster Agents for Sun(TM) ONE Services (Web, App, Directory, Messaging and Calendar Servers and Message Queue)

o Security Services

The Java Enterprise System's Security services span the entire System. Security services provide consistent single sign-on to online resources. They protect content using the latest security standards and resilient authentication and access control options.

Operating System

The Sun Fire V240 server supports Solaris 8 Operating System beginning with HW 7/03 (mandatory patch 109885-15 required), Solaris 9 Operating System beginning with 12/03, and Solaris 10.

Ordering Information

The following are part numbers and descriptions for each Sun Fire V240 server configuration. Prices for the Sun Fire V240 server start at \$3695.

| Order Number | Title and Description |
|------------------------|---|
| N32-XM41C1512HA | 1 x 1.34GHz / 2 x 256MB RAM / 1 x 73GB Drives |
| N32-XK42C1204HB | 2 x 1.5GHz / 4 x 512MB RAM / 2 x 73GB Drives |
| N32-XK42C1808HB | 2 x 1.5GHz / 8 x 1GB RAM / 2 x 73GB Drives |

Options

| X-option number | X-options |
|-------------------------|--|
| X7702A-4 | 2 x 256-MB memory expansion DIMM |
| X7703A-4 | 2 x 512-MB memory expansion DIMM |
| X7704A-4 | 2 x 1-GB memory expansion DIMM |
| X7711A-4 | 2 x 2-GB memory expansion DIMM |
| X7428A-4 | Redundant universal power supply (AC) |
| XRA-SC1CB-73G10K | 73-GB, 10K RPM, 1-inch SCSI hard drive |
| X5268A | Internal 146GB 10K Ultra 3 SCSI HDD Drives |
| X7410A-4 | Internal slim DVD-ROM drive |
| X7405A-4 | Sun Crypto Accelerator 500 card |
| X311L | Localized power cord kit (North America/Asia) |
| X312L | Localized power cord kit (Continental Europe) |
| X314L | Localized power cord kit (Switzerland) |
| X317L | Localized power cord kit (U.K.) |
| X383L | Localized power cord kit (Denmark) |
| X384L | Localized power cord kit (Italy) |
| X386L | Localized power cord kit (Australia) |
| X320A | Localized power cord kit (Japan) |
| X340L | Localized power cord kit (North American twist lock) |

Field Replaceable Units

The following field replaceable units (FRUs) are available for Sun Fire V240 servers. Customers can choose to have hot standby servers and use the system configuration card feature or replace individual components.

| FRU Part Number | Field Replaceable Units (FRUs) |
|---------------------|---|
| F375-3344 | FRU, MOTHERBOARD, 1 x 1.34 GHz, 0 MB |
| F375-3346 | FRU, MOTHERBOARD, 2 x 1.5GHz, 0 MB |
| F540-6775 | FRU,DDR1,DIMMX2,256MB,SPD1.0 |
| F540-6776 | FRU,DDR1,DIMMX2,512MB,SPD1.0 |
| F540-6777 | FRU,DDR1,DIMMX2,1GB,SPD1.0 |
| F540-6402 | FRU,DDR1,DIMMX2,2GB,SPD1.0 |
| F300-1846-01 | FRU, ASSY, PSU, 400W, A178 |
| F371-0821 | FRU, ASSY, POWER, DIST, PCB |
| F540-6600 | HDD, 73 GB, 1-INCH, 10K, SCSI3, SD/PLT |
| F540-6602 | HDD, 146 GB, 1-INCH, 10K, SCSI3, SD/PLT |
| F371-1108-01 | FRU, DRV, DVD, SLIMLINE |
| F371-0838 | FRU, ASSY, SCCR, BOARD |
| F370-5155-02 | SYSTEM, CONFIG, CARD, UNIVERSAL |
| F371-0992-01 | FRU, ASSY, FAN, 60MM |
| F371-0796 | FRU, ASSY, 2U, INTERFACE, BOARD |
| F371-0991-01 | FRU, ASSY, HCM, BOARD |
| F371-0799-01 | FRU, ASSY, PCI, RISER, CARD |
| F530-3566 | FRU, CBL, RME KEYSWITCH |
| F371-1134-01 | FRU, KIT, CABLE, SET |
| F371-0066-02 | FRU, RACK SLIDER, CABLE MAN KIT |
| F371-0882-01 | FRU, BEZEL, FRONT, PLASTIC |
| F371-1404-01 | FRU, 3v LITHIUM BAT, N31/N32 |

Note: Due to the frequency that the last 2 digits of the FRU part number can change they are shown as -xx in the table above.

Upgrades

Upgrade Ordering

| Order Number | Title and Description |
|----------------------------|---|
| ALW-04-S-B-N32 | From Ultra 2, 5, 10, Netra T1 100, or T200 to Sun Fire V240 2 CPU configs only |
| ALW-06-S-B-N32 | From Sun Fire V100, Sun Fire V120, and Netra 120 to Sun Fire V240 2 CPU configs only |
| ALW-08-S-B-N32 | From Sun Fire 280R, E250, E220R, and Netra 20 to Sun Fire V240 2 CPU configs only |
| ALW-04-S-Z1-N32-CNS | From eligible Sun or competitive server(s) to Sun Fire V240 2 CPU configs only |
| ALW-04-S-Z1-N32 | From other competitive system older than 2 years to Sun Fire V240 2 CPU configs only |
| ALW-06-S-Z2-N32 | From other competitive system less than 2 years old to Sun Fire V240 2 CPU configs only |

Service and Support

Sun Services offers a full range of services to assist customers who deploy the Sun Fire V240 server. Whether it is architecture services, implementation services, or services to help customers manage the servers once released to production, Sun Services has the right services during every phase of the project's life cycle.

Sun Services is providing unbundled software and hardware support for added flexibility and choice. Support offerings for the Sun Fire V240 server include Sun Software Support Services for all Sun software.

Sun Software Support Services

SunSM Software Standard Support

The Sun Software Standard Support offering provides customers with a comprehensive support plan. Features include:

- Extended local business hours (12 hour) for telephone and online support (5x12)
- Four (4) business hour response on Priority 1 (Urgent) requests
- Two (2) authorized contacts
- Online incident submission and tracking
- Software updates and patches
- Access to online self-solve resources

SunSM Software Premium Support

The SunSM Software Premium Support offering is designed for critical environments where high availability is a priority and round-the-clock support is a customer requirement. In addition to all of the features of the Standard support level, this level of service offers:

- 24/7 coverage with live call transfer for Priority 1 (Urgent) requests
- Three (3) authorized contacts per 8-hour shift

Optional Services

Both the Standard and Premium offerings give customers the option to purchase the following to enhance their service plans:

- Dedicated or Assigned Service Account Manager (SAM)
- Dedicated Technical Support Engineer (TSE)
- Additional authorized contacts
- SunSpectrumSM hardware-only support
- Next business day on-site response

Additional support services may be available on a custom quote basis. For more information on Sun Support Services can be found at <http://www.sun.com/service/support>.

SunSpectrum Hardware-Only Support

For customers who prefer Sun engineers to provide hardware service, the one year limited warranty can be upgraded to SunSpectrum Hardware-Only support which offers a next business day on-site response.

The Online Support Center

The Online Support Center (OSC) provides Web-based solutions anytime, anywhere. Providing high-quality availability services has always been a top priority at Sun. As a pioneer in web-based customer solutions, Sun continues to utilize the power and versatility of the Internet to offer customers a broad variety of online service offerings.

The online answer/transaction process can save customers valuable time by eliminating the time spent waiting on the phone for a customer service representative. The Online Support Center empowers the user by offering anywhere, anytime access to Web-based support, training, and consulting solutions for Sun hardware and software products. The site serves as a portal for proactive service offerings, systems support features, and resource links.

For more information on the above support offerings, please visit:
<http://www.sun.com/service/support>.

Warranty

Sun Fire V240 servers have a one year, next business day warranty.

Education and Learning Solutions

Sun Fire V210 and Sun Fire V240 Server Maintenance and Troubleshooting (WZI-3715)

Course format: Web-based training as part of the Web Learning Center. Training is available for Internal training and to Partners (NOTE: This is not a customer course.)

Target Audiences: Sun Support Services and Partners

Content: Installing, configuring, diagnosing, and repairing the Sun Fire V210 and Sun Fire V240 servers

Internal audiences include:

- OEM FEs and Support Engineers
- FEs
- Partner FEs
- SSEs
- Solution Center TSEs

External audiences may include:

- OEM FEs and Support Engineers
- Customers Support Engineers (Self-maintainers)

After going through the complete training program, learners should be able to:

- Describe the Sun Fire V210 and Sun Fire V240 servers
- Describe the system architecture
- Locate and describe major system components
- Perform FRU removal and replacement procedures
- Install and configure server-specific packages
- Troubleshoot server-related errors and problems

Prerequisites:

1. Experience with maintaining Sun hardware preferred
OR
1. Solaris Essentials for System Maintainers (SM-101)
2. Solaris System Administration II
3. Sparc Desktop System Maintenance (SM-210)

Solaris Operating System Courseware and Certification

Sun offers flexible training options for the Solaris Operating System ranging from individual courses to certifications. Sun provides students with the knowledge to successfully install, manage, and troubleshoot the Solaris Operating System.

Sun Fire Server Skills Package

Sun Fire Skills Packages are prepackaged training solutions which contain the recommended courseware that will deliver the skills needed to effectively manage and optimize the customer's Sun Fire V240 server in their computing environment. Once a skills package order has been received, an education manager will contact the customer to develop a tailored training program. Please contact a local Sun Education representative for details on availability and pricing of these learning solutions.

Security Courseware

To ensure the data stored on a Sun server is implemented and maintained in a secure environment, Sun training helps enterprises understand how to develop and implement solid security strategies to protect their critical data. Sun's security courses listed below teach corporations how to deploy and manage Sun security products for maximum protection of the massive amounts of corporate data which will reside on their Sun server system.

Education Consulting Services

Education Consulting Services allows customers to make the most out of training and provide optimal return on total IT investment by assessing requirements, delivering solutions, and measuring results. And, customers can bridge the gap between training and organizational goals by aligning IT structure, people, and skills with business objectives. Sun's Education Consulting Services help companies change the way learning takes place by creating custom training solutions that allow people to develop the right skills at the right time.

For more information on training and the above courseware, please visit:
<http://suned.sun.com>.

Professional Services

Architecture Services

Sun's Architecture Services assist customers in identifying new IT solutions from concept, design, and deployment that are built against the customer's long-term technology strategy and architected for sustained business growth.

Architecture Services are comprised of an architecture workshop, assessment, and roadmap services.

- Architecture Workshop emphasizes the importance of building architectures with service-level requirements such as reliability, availability, scalability, and security. It can help customers accomplish their business goals and provide them with a high-level action plan for next steps.
- Architecture Assessment examines the technology stack from data center to applications to determine the architecture's ability to operate against a desired set of service level requirements.
- Architecture Roadmap focuses on identifying, prioritizing, and documenting functional and service level requirements of the customer's architecture.

SunReady™ Availability Assessment Service (SRAA)

The SunReady Availability Assessment (SRAA) Service assesses the ability of a customer's IT infrastructure and organization to sustain appropriate access, performance, function, and service levels within limits and expectations defined by the customer and their end users. This service can be applied to a specific environment or business application. Sun's service consultants conduct a comprehensive review of the effectiveness of the customer's technical architecture and operational environment in meeting its availability goals for a particular application environment.

The SRAA helps customers determine their IT infrastructure's ability to meet its service level commitments to end users. It also prioritizes the gaps and risks to improve performance. The SRAA process includes the following:

- A gap analysis that details the IT infrastructure's ability to effectively and efficiently deliver the required service levels for the target application environment.
- A scorecard detailing the strengths and areas of risk followed by a recommended action plan. The scorecard is based upon the gap analysis conducted during the review.

- Recommendations and action plan from SRAA to identify and prioritize risk factors, set appropriate service level expectations for the target application environment, and justify future IT investment for the data center.

Performance and Capacity Planning Services

Sun's highly trained consultants can evaluate customers' server environments and develop a plan to help meet their current and future business needs. With the Sun Performance Analysis and Capacity Planning Services, customers can fully utilize their current assets. By understanding their current system performance and capacity needs, customers can become better informed when making future budgetary decisions related to hardware needs. These services cover server inventory and configuration, performance assessment, resource consumption and future growth potential, system monitoring, and hardware alternatives to accommodate future needs.

Enterprise Security Assessment Service

The Enterprise Security Assessment Service provides a comprehensive security review and assessment of the customer's current security environment to identify security exposures and risks within their policies, processes, procedures, networks, and systems.

Storage Services

Sun's Storage Services can help customers to quickly determine storage issues that may be impacting their ability to meet Service Level Agreements or other goals. Sun can help customers improve total storage utilization across the enterprise as well as their ability to share data between applications.

Migration Services

Sun's migration services is focused on addressing two of the most critical business issues companies face today:

- Total cost of ownership
- Investment protection

Sun's singular focus on SPARC/Solaris technology from single processor to large-scale data center environments offers customers a unique opportunity to improve the reliability, availability, scalability, and serviceability of their data centers, and avoid the daunting prospect of a future "forklift upgrade."

Sun consultants can evaluate the best option for the customer's business for migrating applications, data or both to a new Sun platform.

It is recommended that Sun Client Solutions attend SRT classes to better understand how the Sun Fire V240 server will fit into current strategy. Sun Client Solutions will then work with the product team to determine the need for any Professional Services offerings and their content. For more information, refer to <http://www.sun.com/service>.

Glossary

| | |
|----------------------------|---|
| 1U/2U | One rack unit as defined by the Electronic Industries Alliances (EIA). A vertical measurement equal to 1.75 inches. 2U equals to 3.5 inches. |
| AC | Alternating Current. |
| 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 port, combined console/ALOM serial port, or alarm software that can be tied into SNMP. The ALOM module also has a remote power on/off and cycle. |
| ASIC | Application Specific Integrated Circuit. A chip that is custom designed for a specific application rather than a general-purpose chip such as a microprocessor. The use of ASICs improve performance over general-purpose CPUs because ASICs are hardwired to do a specific job and do not incur the overhead of fetching and interpreting stored instructions. |
| ASR | Automatic Server Restart. A feature of the LOM module that reduces downtime from system lock-up. ASR enables administrators to configure the Sun Fire V240 server to restart automatically in case of a software lock-up. |
| Density | Number of units in a given amount of space. |
| DES | Data Encryption Standard. A NIST-standard secret key cryptography method that uses a 56-bit key. DES decryption is very fast and widely used. |
| Ecache | External cache. Memory cache external to the CPU chip, also referred to as L2 cache. |
| ECC | Error Correcting Code. A type of memory that corrects errors on the fly. |
| 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. And 1000Base-T is also referred to as Gigabit 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. |
| L2 cache | See Ecache. |
| 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. |
| RISC | Reduced Instruction Set Computer. A computer architecture that reduces chip complexity by using simpler instructions. |
| RSA | Rivest-Shamir-Adleman. A highly secure cryptography method developed by RSA Data Security, Inc. It uses a two-part key in which the private key is kept by the owner and the public key is published. RSA is very computation-intensive. |
| SCSI | Small Computer Systems Interface. Pronounced “scuzzy.” A hardware interface that allows the connection of up to 15 peripheral devices to a single bus. |
| SP | Service Provider. |
| SSL | Secure Sockets Layer. The leading security protocol on the Internet. When an SSL session is started, the server sends its public key to the browser, which the browser uses to send a randomly generated secret key back to the server in order to have a secret key exchange for that session. |
| VIS | Visual Instruction Set. VIS is a set of RISC instructions which are extensions to the SPARC V9 open processor architecture and are designed to accelerate applications where multiple data entries require the same instruction, such as multimedia, image processing, and networking applications. |

Materials Abstract

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

| Collateral | Description | Purpose | Distribution | Token # or COMAC Order # |
|---|---|-------------------------|-------------------------|---|
| <i>Sun Fire V240 Server Just the Facts</i> | Reference Guide for the Sun Fire V240 Server (this document) | Training Sales Tool | SunWIN, Reseller Web | 367480 |
| Product Literature | | | | |
| <i>Sun Fire V240 Datasheet</i> | Datasheet | Sales Tool, Training | SunWIN, COMAC | 367477 (DE 1816-0) |
| <i>Sun Fire V210/V240 NDA Customer Presentation</i> | Customer Presentation | Sales Tool, Training | SunWIN, COMAC | 376257 |
| <i>Architecture White Paper</i> | White Paper | Sales Tool, Training | SunWIN, COMAC | 367481 |
| <i>Sun Fire V210/V240 Training Video</i> | Training Video | Sales Tool, Training | SunWIN, COMA C | 367482 (ME 2724-0) |
| <i>Sun Fire V210/V240 One Pager</i> | One Pager | Sales Tool, Training | SunWIN, COMAC | 367483 |
| External Web Site | | | | |
| <i>Sun Fire V240 Server Web Site</i> | http://www.sun.com/servers/entry/v240 | | | |
| Internal Web Site | | | | |
| <i>Sun Fire V240 Server Internal Web Site</i> | http://onestop.sfbay.sun.com/hw/sfv210.shtml | | | |
| Reseller Web Site | | | | |
| <i>Sun Reseller General Information</i> | http://reseller.sun.com | | | |

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.