

# Sun Fire™ V215 and V245 Servers

## *Just the Facts*

SunWIN Token 475669

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## Revision History

| Version | Date      | Revisions/Comments                                                                                                                                                                                                                                                                                          |
|---------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         | 9/12/2006 | Initial version                                                                                                                                                                                                                                                                                             |
|         | 2/9/2007  | Sun StorageTek 9900 series now fully supported<br>Updates to supported external storage arrays<br>Correction to USB port specifications:<br>- V215 – one front and two rear, all USB 2.0<br>- V245 - two USB 1.1 front and two USB 2.0 rear                                                                 |
|         | 3/1/2007  | Support for 146 GB disk drive, XRB-SS2CD-146G10KZ                                                                                                                                                                                                                                                           |
|         | 4/6/2007  | Revised maximum BTU/hour for V215<br>Options SGXPCI1SCSILM320-Z and SGXPCI1SCSILM320-Z corrected, i.e. no dash in third character position.                                                                                                                                                                 |
|         | 4/20/2007 | Only one full-length PCI-X slot in V245, maximum number of adapters reduced to one from two for;<br>SGXPCI2SCSILM320-Z<br>SG-XPCI1FC-EM2<br>SG-XPCI2FC-EM2<br>SG-XPCI2FC-QF2-Z<br>SG-XPCI1FC-QL2<br>X4422A-2                                                                                                |
|         | 8/3/2007  | Two SG-XPCI1FC-EM2, SG-XPCI2FC-EM2 and SG-XPCI1FC-QL2 adapters supported on V245                                                                                                                                                                                                                            |
|         | 10/9/2007 | Inclusion of SunStorageTek 3310 SCSI array,<br>Inclusion of riser cards, X8424A-Z, X8425A-Z, X8426A-Z and X8427A-Z<br>- support for X2156A-2 serial, asynchronous adapter, SAI/P<br>- support for X7295A XVR-2500 graphics adapter<br>- increased limits for short, Ethernet or Fibre Channel PCIe adapters |
|         | 8/13/2008 | Support added for X4447A-Z                                                                                                                                                                                                                                                                                  |



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# Sun Fire™ V215 and V245 Server Positioning

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Figure 1. Sun Fire™ V215 and V245 Servers

## Introduction

The Sun Fire™ V215 and V245 servers are ready to deploy, low-cost, thin servers, loaded with all the components customers need for deployment in front-end web infrastructure. The Sun Fire V215 and V245 servers are powered by up to two 1.5-GHz UltraSPARC™ IIIi processors in a 1 or 2RU form factor, and are designed to help Sun expand its leadership position in the rack-optimized server market. Loaded with several, industry-unique features designed to increase availability, speed throughput, enhance performance, simplify management and serviceability, these servers make ideal 2P-capable server solutions.

Designed to provide on going platform availability & Solaris 9 support for a huge installed base these platforms' innovative features like four Gigabit Ethernet ports make the Sun Fire V215 and V245 servers popular for Edge Computing.

The Sun Fire V215 server is a ready-to-deploy system platform that comes standard with the Solaris Operating System, the Sun Java™ Enterprise System 2005Q4 software, system management functions, and a variety of I/O connectivity options.

By adopting low-, mid-, and high-end configurations together with four integrated Gigabit Ethernet ports the Sun Fire V215 and V245 servers can span the market from an entry-level 1P system to a fully featured 2P system.

The Sun Fire V215 and V245 servers are RoHS compliant.



## Features, Functions, and Benefits

| Feature                                                                                                                                                                                                                               | Function                                                                                                                                                                                       | Benefit                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Dual processor server in a 1 RU (V215) or 2RU (V245) form factor</li> </ul>                                                                                                                    | <ul style="list-style-type: none"> <li>Increased density</li> </ul>                                                                                                                            | <ul style="list-style-type: none"> <li>More processing power in the same space, which lowers real estate costs</li> </ul>                                                                                 |
| <ul style="list-style-type: none"> <li>Four integrated Gigabit Ethernet ports</li> </ul>                                                                                                                                              | <ul style="list-style-type: none"> <li>Provides increased throughput and redundancy</li> </ul>                                                                                                 | <ul style="list-style-type: none"> <li>Increases efficiency of network traffic and provides redundancy</li> </ul>                                                                                         |
| <ul style="list-style-type: none"> <li>Comes standard with exceptional hardware and software functionality that the competition charges extra for or does not offer</li> </ul>                                                        | <ul style="list-style-type: none"> <li>Solaris OS, Sun Java Enterprise System 2005Q4 software, system management functions, variety of I/O connectivity options</li> </ul>                     | <ul style="list-style-type: none"> <li>A complete, ready-to-deploy system platform</li> </ul>                                                                                                             |
| <ul style="list-style-type: none"> <li>Comes with integrated Advanced Lights Out Management, Sun MC and SNMP support. Plus easy-to-use provisioning and patch management software through Solaris OS and N1 System Manager</li> </ul> | <ul style="list-style-type: none"> <li>Cradle-to-grave management support</li> </ul>                                                                                                           | <ul style="list-style-type: none"> <li>Simplifies system management and reduces costs by providing numerous, standard management features</li> </ul>                                                      |
| <ul style="list-style-type: none"> <li>64-bit architecture</li> </ul>                                                                                                                                                                 | <ul style="list-style-type: none"> <li>Allows computer to handle 64 bits of data simultaneously (versus 32 bits)</li> </ul>                                                                    | <ul style="list-style-type: none"> <li>Increased scalability of computer and applications; ideal for applications that require large files, large numbers of files, or a large number of users</li> </ul> |
| <ul style="list-style-type: none"> <li>World-class services organization</li> </ul>                                                                                                                                                   | <ul style="list-style-type: none"> <li>Peace of mind that all service needs will be handled painlessly</li> <li>“One stop shop”</li> </ul>                                                     | <ul style="list-style-type: none"> <li>Increases return on investment and lowers total cost of ownership</li> </ul>                                                                                       |
| <ul style="list-style-type: none"> <li>Two or four PCI slots</li> </ul>                                                                                                                                                               | <ul style="list-style-type: none"> <li>For external connections to additional storage, clustering, graphics, etc.</li> </ul>                                                                   | <ul style="list-style-type: none"> <li>Increases flexibility</li> </ul>                                                                                                                                   |
| <ul style="list-style-type: none"> <li>Binary and application compatibility through an end-to-end SPARC/Solaris architecture from single processor to multi-processor servers</li> </ul>                                              | <ul style="list-style-type: none"> <li>Increases operation efficiency while eliminating costs for application porting</li> </ul>                                                               | <ul style="list-style-type: none"> <li>Provides investment protection</li> </ul>                                                                                                                          |
| <ul style="list-style-type: none"> <li>Includes four built-in 10/100/1000BASE-T Ethernet ports, one serial communications port, three (V215) or four (V245) USB ports, and a 100MB/sec. Ethernet port</li> </ul>                      | <ul style="list-style-type: none"> <li>The Sun Fire V215 and V245 servers lead the industry in terms of memory capacity and number of I/O ports for a compact form factor (1RU/2RU)</li> </ul> | <ul style="list-style-type: none"> <li>Increases return on investment</li> </ul>                                                                                                                          |
| <ul style="list-style-type: none"> <li>Front-accessible, hot-plug disks, hot swap fans, redundant power supplies, reliable Solaris OS, and four integrated Gigabit Ethernet ports</li> </ul>                                          | <ul style="list-style-type: none"> <li>Various functions are designed to keep the system up and costs down</li> </ul>                                                                          | <ul style="list-style-type: none"> <li>Maximizes uptime for mission-critical environments</li> </ul>                                                                                                      |



| Feature                                                                                                        | Function                                                                                                                                                                                                      | Benefit                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• JBus interconnect operating at 3.01 GB/sec.</li> </ul>                | <ul style="list-style-type: none"> <li>• High-bandwidth interconnect ensures scalability with minimal contention and latency between processing and I/O subsystems</li> </ul>                                 | <ul style="list-style-type: none"> <li>• Increases efficiency</li> </ul>                                                                                     |
| <ul style="list-style-type: none"> <li>• Front and back LEDs and physical security features</li> </ul>         | <ul style="list-style-type: none"> <li>• Lights show server status (power, fault, etc.)</li> <li>• Physical security features prevent access to enclosed hardware and apps from unauthorized users</li> </ul> | <ul style="list-style-type: none"> <li>• Increases productivity, availability, and security</li> </ul>                                                       |
| <ul style="list-style-type: none"> <li>• Advanced Lights Out Management (ALOM)</li> </ul>                      | <ul style="list-style-type: none"> <li>• Monitors and reports system and component status, meaning less need for on-site staff.</li> </ul>                                                                    | <ul style="list-style-type: none"> <li>• Increases productivity and availability by allowing remote management via network or serial connections.</li> </ul> |
| <ul style="list-style-type: none"> <li>• Standard with telescopic rail kit and cable management arm</li> </ul> | <ul style="list-style-type: none"> <li>• These features help make servicing systems in a rack easier</li> </ul>                                                                                               | <ul style="list-style-type: none"> <li>• Reduce service time</li> </ul>                                                                                      |

## Product Family Placement

The Sun Fire V215 and V245 servers are the latest in the Sun Fire entry-level server product line and provide an upgrade path for customers from the Sun Fire V100/V120, Sun Fire V210/V240, and other servers with one to two processor(s). Based on the UltraSPARC IIIi technology and the JBus architecture, the Sun Fire V215 and V245 servers provide customers with a high level of compute power and fast data transfer throughput at a competitive price.



## Sun Fire V215 and V245 Server Feature Comparison

| Features                                                              | Sun Fire V215 Server                                                                                    | Sun Fire V245 Server                                                                                                                                                           |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of processors                                                  | One or two                                                                                              |                                                                                                                                                                                |
| CPU type                                                              | UltraSPARC IIIi                                                                                         |                                                                                                                                                                                |
| CPU speed                                                             | 1.5 GHz                                                                                                 |                                                                                                                                                                                |
| Level 2 cache                                                         | 1 MB internal                                                                                           |                                                                                                                                                                                |
| Maximum Memory                                                        | 16 GB<br>(eight slots x 512-MB, 1-GB, and 2-GB DDR1 DIMMs)                                              |                                                                                                                                                                                |
| O/S                                                                   | Solaris 9 and 10 OS                                                                                     |                                                                                                                                                                                |
| PCI slots                                                             | One PCI-X 133-MHz/64 bit full height/short slot<br>One PCI-E low-profile 8-lane slot with 16X connector | One PCI-X 133-MHz/64 bit full height/full length<br>One PCI-X 133-MHz/64 bit full height/short<br>Two PCI-E low-profile slots with 16X connector (one x4 lane and one x8 lane) |
| Network connections                                                   | Four built-in Gigabit Ethernet ports                                                                    |                                                                                                                                                                                |
| I/O connections                                                       | One USB 2.0 front<br>Two USB 2.0 rear                                                                   | Two USB 1.1 front<br>Two USB 2.0 rear                                                                                                                                          |
| Number and type of disks (max.)                                       | Two 73-GB 10K RPM SAS 2.5-inch                                                                          | Four 73-GB 10K RPM SAS 2.5-inch                                                                                                                                                |
| Remote management                                                     | ALOM                                                                                                    |                                                                                                                                                                                |
| Power supplies                                                        | One or two redundant hot-plug 550W                                                                      |                                                                                                                                                                                |
| MAX power (min. config)<br>(Power calculated with 85% PSU efficiency) | 141.1 Watts<br>(1 x 1.5 GHz processor, 2 x 512-MB DIMMS, 1 x 73-GB HDD)                                 | 144.5 Watts<br>(1 x 1.5 GHz processor, 2 x 512-MB DIMMS, 1 x 73-GB HDD)                                                                                                        |
| MAX power (max config)<br>(Power calculated with 85% PSU efficiency)  | 292.4 Watts<br>(2 x 1.5GHz processor, 8 x 2-GB DIMMS, 2 x 73-GB HDD, DVD, 2 x PCI cards)                | 350.2 Watts<br>(2 x 1.5GHz processor, 8 x 2-GB DIMMS, 4 x 73-GB HDD, DVD, 4 x PCI cards)                                                                                       |
| TYPICAL Power (min config)<br>(measured at 240V/50Hz)                 | 131.2 Watts<br>(1 x 1.5 GHz processor, 2 x 512-MB DIMMS, 1 x 73-GB HDD)                                 | 134.4 Watts<br>(1 x 1.5 GHz processor, 2 x 512-MB DIMMS, 1 x 73-GB HDD)                                                                                                        |
| TYPICAL Power (max config)<br>(measured at 240V/50Hz)                 | 271.9Watts<br>(2 x 1.5 GHz processor, 8 x 2-GB DIMMS, 2 x 73-GB HDD, DVD, 2 x PCI cards )               | 325.7 Watts<br>(2 x 1.5GHz processor, 16 x 1-GB DIMMS, 4 x 73-GB HDD, DVD, 4 x PCI cards)                                                                                      |
| Heat dissipation (min config)                                         | 536 BTU/hr                                                                                              | 494.2 BTU/hr                                                                                                                                                                   |
| Heat dissipation (max config)                                         | 1,000 BTU/hour                                                                                          | 1,198 BTU/hour                                                                                                                                                                 |
| Height/Depth                                                          | 1U/24 in.                                                                                               | 2U/24 in.                                                                                                                                                                      |
| DVD multi drive                                                       | Optional                                                                                                |                                                                                                                                                                                |



## Comparison to Two-Way Sun Fire Servers

| Feature                          | Sun Fire V215                                                                | Sun Fire V245                                                                                    | Sun Fire T1000                                                                                                             | Sun Fire T2000                                                        |
|----------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| <b>Product Positioning</b>       | Entry-level SPARC server                                                     | Entry-level data SPARC server                                                                    | 32 threads in a 1RU server for world-record performance                                                                    | Flexible 4-way server, tuned for multi-threaded applications          |
| <b>CPU Number</b>                | One or two processors                                                        | One or two processors                                                                            | One<br>6 or 8 cores per processor                                                                                          | Up to four<br>4, 6, or 8 cores per processor                          |
| <b>CPU Type</b>                  | 1.5-GHz UltraSPARC IIIi                                                      | 1.5-GHz UltraSPARC IIIi                                                                          | 1.0-GHz UltraSPARC T1                                                                                                      | 1.0/1.2-GHz UltraSPARC T1                                             |
| <b>Level 2 Cache</b>             | 1 MB                                                                         | 1 MB                                                                                             | 3 MB                                                                                                                       | 3 MB                                                                  |
| <b>Memory (Max.)</b>             | 16 GB                                                                        | 16 GB                                                                                            | 16 GB                                                                                                                      | 32 GB                                                                 |
| <b>System Bus</b>                | 3.01 GB/sec. JBus                                                            | 3.01 GB/sec. JBus                                                                                | 134 GB/sec. crossbar switch                                                                                                | 134 GB/sec. crossbar switch                                           |
| <b>Internal Storage</b>          | Two 73-GB drives                                                             | Four 73-GB drives                                                                                | One internal bay 80-GB SATA drive                                                                                          | Four 73-GB SFF SATA; up to 292 GB                                     |
| <b>Removable Media</b>           | DVD Multi drive                                                              | DVD Multi drive                                                                                  | —                                                                                                                          | DVD-R/CD-RW                                                           |
| <b>PCI slots</b>                 | One PCI-X 133-MHz full height/short<br>One PCI-E low-profile/short           | Two PCI-X 133-MHz full height slots; one short and one long<br>Two PCI-E low-profile/short slots | One PCI-E slot low-profile/short                                                                                           | Three PCI-E slots, two PCI-X slots<br>All slots are low-profile/short |
| <b>Integrated Network</b>        | Four 10/100/1000 Ethernet                                                    | Four 10/100/1000 Ethernet                                                                        | Four 10/100/1000 Ethernet                                                                                                  | Four 10/100/1000 Ethernet                                             |
| <b>I/O Connections</b>           | 1 x USB 2.0 front<br>2 x USB 2.0 rear<br>1 x RJ45 serial communications port | 2 x USB 1.1 front<br>2 x USB 2.0 rear<br>1 x RJ45 serial communications port                     | One DB9 serial port                                                                                                        | Four USB 1.1 ports                                                    |
| <b>RAS Features</b>              | Hot-plug disks, hot-swap power supplies, ALOM, and SSCC, ASR                 | Hot-plug disks, hot-swap power supplies, ALOM, and SSCC, ASR                                     | ALOM, low component count, hot-swappable power supplies and fans, hot-plug hard disk drives, environmental monitoring, ASR |                                                                       |
| <b>Input Power (110/240 VAC)</b> | Two 550W redundant hot-swap                                                  | Two 550W redundant hot-swap                                                                      | One 300 W                                                                                                                  | Two 450W hot-swap (N+1)                                               |
| <b>Form Factor</b>               | 1RU rack optimized, 24-inch depth                                            | 2RU rack optimized, 24-inch depth                                                                | 1RU rack optimized, 24-inch depth                                                                                          | 2RU rack optimized, 24-inch depth                                     |
| <b>Minimum OS</b>                | Solaris 10 6/06<br>Solaris 9 HW 9/05                                         | Solaris 10 6/06<br>Solaris 9 HW 9/05                                                             | Solaris 10                                                                                                                 | Solaris 10                                                            |



## The UltraSPARC IIIi Versus the UltraSPARC T1 Processors

There are several simple guidelines to use to help customers choose between servers with the UltraSPARC IIIi and the UltraSPARC T1 processors.

- **The UltraSPARC IIIi CPU is more suited for:**
  - Mixed application workloads
  - Applications that use floating-point calculations heavily
  - Applications that are single threaded (or not highly multithreaded)
  - Situations that require the Solaris 9 OS
  - Situations that require up full height/ full length PCI-X slots
- **The UltraSPARC T1 CPU provides better price/performance for:**
  - Web and other applications that can take advantage of the multithreaded capabilities (CMT) of the processor

## Key Messages

With the introduction of the Sun Fire V215 and V245 servers, Sun continues to offer customers value, innovation, and choice for small, rackmounted servers.

### Value

- **True System Approach:** The Sun Fire V215 and V245 servers come pre-loaded and pre-tested with Solaris 10 OS, and a trial version of the Sun Java Enterprise System 2005Q4 software, system management functionality, and high-speed network connectivity.
- **Cradle-to-Grave Management Support:** The Sun Fire V215 and V245 servers come 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. Add in N1 System Manager to provide comprehensive infrastructure life-cycle management capabilities for discovering, provisioning, monitoring, and managing Sun servers from a single unified Web console.
- **World-class Services:** Whether it's a entry Sun Fire V215 server or a multimillion-dollar Sun Fire 25K 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, no matter how many processors, which 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 V215 and V245 servers come standard with telescopic rail kit, cable management arm, and hot-swap system fans.

### Innovation

- **Robust and Compact Design:** The system architecture of the Sun Fire V215 and V245 servers lead the industry in terms of memory capacity and number of I/O ports in a compact, 1RU or 2RU form



factor. Features include four built-in Gigabit Ethernet ports and one serial communications port. The V215 has one USB port in the front and two USB ports in the rear, all USB 2.0. The V245 has two USB 1.1 ports in the front and two USB 2.0 ports in the rear.

- **Maximized Uptime:** The Sun Fire V215 and V245 servers offer RAS features such as redundant power supplies, front-accessible, hot-plug disks, an easy-to-use SSCC (Socketed System Configuration Chip), and the reliable Solaris OS.

## Availability

General availability of the RoHS-compliant Sun Fire V215 and V245 servers was 12 October 2006.



# Selling Highlights

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## Market Value Proposition

Based on the latest SPARC®/Solaris™ OS technology, the Sun Fire™ V215 and V245 servers provide high performance and security in ultra-dense, rack-optimized packages, designed to significantly improve network performance for web services needs.

Support for Solaris 9 OS allows continuity for organizations who have a significant expertise and investment associated with Solaris 9 OS, thereby reducing the cost, risk, and complexity of delivering new, higher-performing systems, while preserving investments in existing IT infrastructure and skills.

- **Density:** Higher density servers decrease operating costs by more efficiently using existing data center space. The primary value proposition for the Sun Fire V215 and V245 servers is to maximize CPU processing/memory density per square foot of floor space, satisfying the need for dense server solutions.
- **Performance:** UltraSPARC IIIi technology-based, dual-processor, rack-optimized server with 32- or 64-bit computing performance and with low power consumption.
- **Affordability:** The Sun Fire V215 and V245 servers are affordable, feature rich, fully fledged SPARC/Solaris OS servers. The Sun Fire V215 and V245 servers offer tremendous value by integrating high-speed network connections, remote management, serviceability features and a software stack.
- **Familiarity:** The Sun Fire V215 and V245 servers allow customers to leverage their SPARC/Solaris OS expertise to administer the server.
- **Availability:** The Sun Fire V215 and V245 servers provide an economical approach to deploying services redundantly. The Sun Fire V215 and V245 servers' 1RU/2RU sizes and low cost allow the product to be used as a basis for redundantly deploying services for higher availability when compared to competing alternatives. Four built-in Gigabit Ethernet ports also provide redundancy.
- **Reliability:** The Sun Fire V215 and V245 servers provide standard Sun reliability that is well established in the Internet market. Solaris OS technology provides proven reliability, robustness, and binary compatibility. With the Solaris Operating System, Sun delivers a trustworthy, universal platform to meet the needs of today's businesses—from small startups to large Fortune 1000 enterprises.
- **Manageability:** Advanced Lights Out Manager (ALOM) builds on the best aspects of Remote System Control (RSC) and LOMLite 2 deployed in other servers to give enhanced features and Ethernet access.
- **Added Value:** With four integrated Gigabit Ethernet ports the Sun Fire V215 and V245 servers provide added value to customers who would discover that obtaining the same functionality via PCI cards would be far more expensive.

## Users

The Sun Fire V215 and V245 servers are ideal platforms for front-end web infrastructure for users who demand Sun dependability and true multiprocessor server performance



## Target Markets

- Financial services
- Education
- Service providers
- Telco
- Government
- Discrete manufacturing
- Retail
- ISVs

## Target Applications

- Web servers
- Security
- Application development
- Portal gateway
- Technical computing
- Grid engine

## Applications

The Sun Fire V215 and V245 servers are 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 help eliminate bottlenecks and maintain service availability. The Sun Fire V215 and V245 servers are general-purpose systems suitable for the following applications:

- Web server
- Security
- Application development
- Small database
- Portal gateway
- Application server

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

## Compatibility

Sun Fire V215 and V245 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

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## Technology Overview

The Sun Fire™ V215 and V245 servers are the next-generation systems 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 V215 and V245 servers are powered by either one or two UltraSPARC® IIIi CPUs and can be configured with up to 16GB of memory to support any application to offer the widest flexibility in service delivery.

The enabling technologies for these servers are:

- The UltraSPARC-III processor
- PCI-X/PCI-E
- SAS drives
- Four on-board Gigabit Ethernet ports
- ALOM

## 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 1-MB L2 cache. It also contains a DDR133 memory controller, a JBus controller, and sophisticated power management capabilities.

## Networking

Four on-board RJ45 10/100/1000BASE-T (Copper) Gigabit Fast Ethernet ports provide exceptional networking throughput and the networking connectivity that is typically provided by adding PCI cards.



# System Architecture

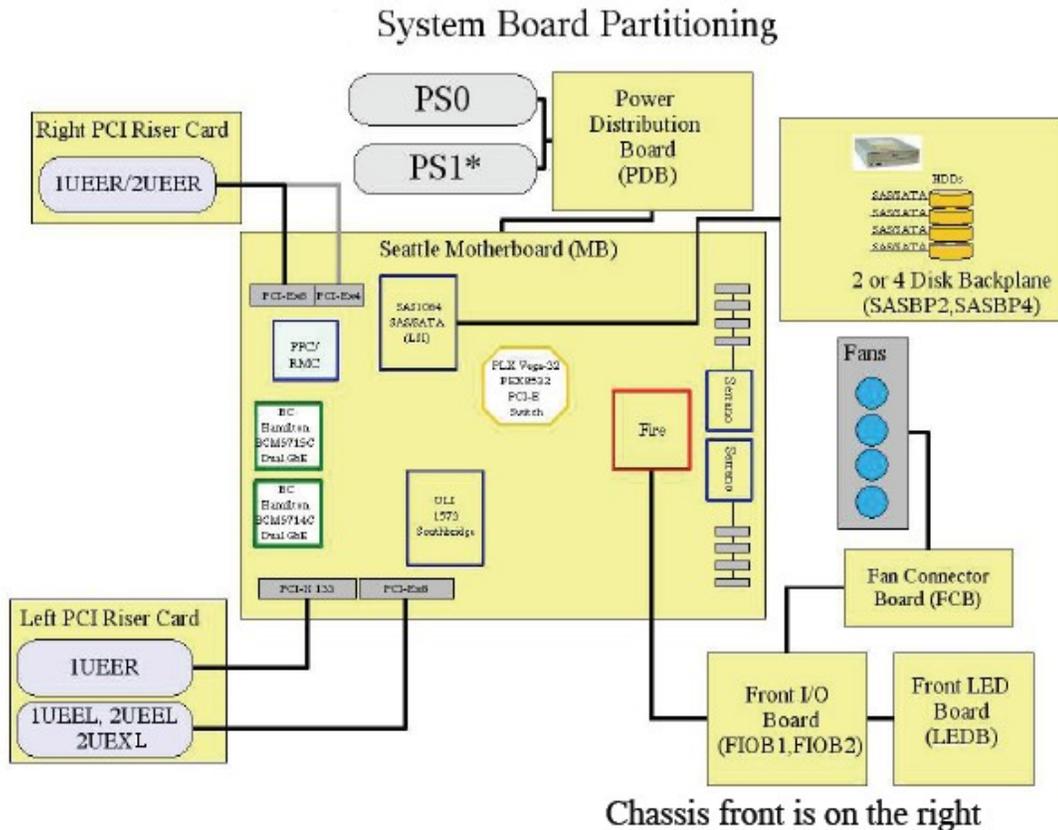


Figure 2. Sun Fire V215/245 architecture

## Overview

The Sun Fire™ V215 and V245 servers are the next-generation systems available for high-density, compute-intensive environments. Design characteristics are focused on a low-entry price point and high performance, serviceability, and reliability.

Sun Fire V215 and V245 servers have the following system architectural features:

- 1.5-GHz UltraSPARC IIIi processor(s) with integrated 1-MB L2 cache
- JBus system databus
- Four Gigabit Ethernet ports
- Serial communications port
- ALOM
- Hardware RAID 0 and 1



## 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 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 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.

A memory controller is integrated to each CPU and manages addressing and retrieving 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.

### System Memory

The Sun Fire V215 and V245 servers include eight DDR1-133 memory slots. Each DIMM slot supports 512-MB, 1-GB, and 2-GB, and DIMMs, with a maximum memory capacity of 16GB per system.

The supported memory is DDR-1 SDRAM PC2700 DIMMs, which are divided in two banks of two equal size DIMMS per CPU. Mixing DIMM sizes is permitted between memory banks, but there is a slight performance impact (due to sub optimal memory interleaving). DIMMs must be installed in pairs and must be of the same size and manufacturer for each bank.

### System JBus

The system JBus is the main memory-coherent interconnect for the Sun Fire V215/245 servers. It joins up to two UltraSPARC IIIi CPUs to the JBus-to-PCI-E bridge, which then interfaces with the system I/O. The system JBus operates at 188 MHz with a 128-bit shared address and data path between each of the JBus devices. The CPU communicates with other CPUs and gains access to system-wide memory through the JBus interconnect.

The JBus-to-PCI-E bridge ASIC is a high-performance bridge that interfaces the following main system interconnects:

- System JBus
- PCI-E switch to communicate with the system I/O

The JBus detects which transactions are targeted for the JBus-to-PCI-E bridge and accepts and queues those transactions for the appropriate destination. When transactions are initiated by the system I/O, the ASIC collects this information to present it to the JBus and to its appropriate target, one of the UltraSPARC IIIi CPU.

In addition to supporting the interconnects, the JBus-to-PCI-E bridge also supports:

- EBus for the boot bus and ALOM communication to JBus-to-PCI-E bridge chip
- Two I<sup>2</sup>C interface masters to handle monitoring and management of I/O devices
- General purpose input and output (GPIO) interfaces to support LEDs



- System reset controllers for conveying what type of reset has occurred, including a system reset, ALOM reset, power-on reset, and an externally initiate reset (XIR)
- Interrupt interface, which represents an integrated interrupt chip (IChip) that handles the additional interrupts generated by PCI-E.

As a part of the RAS functionality offered for the server, JBus data and address lines are protected through the use of parity checks. The JBus provides parity protection on all address and data transfers. One set of parity signals provides parity protection over the multiplexed address/data bus, and another provides parity over the control signals. Address and control parity errors cause a “fatal reset,” while data parity errors are treated on a per-instance basis, depending on the producer and consumer of the data.

## System Storage

Up to two hot-plug serial-attached SCSI 73-GB disks can be configured in the Sun Fire V215 server. Up to four disks can be configured in the Sun Fire V245 system.

The Sun Fire V215 and V245 servers use an intelligent controller. Integrated into the motherboard, the controller resides on the PCI Bus 2B and supports a 64-bit, 66-MHz PCI interface. The on-board controller provides hardware RAID mirroring (RAID 1) capability with higher performance than conventional software RAID mirroring. One pair of hard disk drives can be mirrored using the on-board controller.

Internal disk storage is provided by up to four, 2.5-inch, 10000-rpm, 73-GB, SAS, hot-pluggable disk drives. The basic system includes a disk backplane that accommodates eight low-profile disks capable of data transfer rates of up to 240 MB/sec. Each hard disk drive is connected to the backplane with a standard 80-pin single connector attachment (SCA) interface. Incorporating all power and signal connections into a single connector, SCA technology makes it easy to add or remove hard disk drives from the system. Disks using SCA connectors provide better serviceability than disks using other types of connectors. For external mass-storage devices a PCI-X or PCI-E HBA is required as the servers have no on board external SCSI port.

External multi-disk storage subsystems and redundant array of independent disks (RAID) storage arrays can be supported by installing single-port or dual-port peripheral component interconnect (PCI) host adapter cards along with the appropriate system software. Software drivers supporting SCSI and other types of devices are included in the Solaris Operating System. In addition, the system supports internal hardware stripping (RAID 0) and mirroring (RAID 1) using the on-board SAS controller.

### RAID Implementation

The Sun Fire V215/V245 servers offer RAID 0 and 1 for the internal SAS disk drives via the internal, dual-channel controller.

Software RAID can also be implemented on the internal storage array by either Solaris Volume Manager or VERITAS Volume Manager software. The Sun Fire V215/V245 servers require a license for VERITAS Volume Manager. (See online documentation for these programs for more information.)

## PCI Slots

Maximum permitted power consumption is 25 Watts per PCI card or 100 Watts total across all four PCI slots in V245.



## Sun Fire V215 Server Configuration

Support a maximum of two PCI cards:

- One PCI-X 133MHz/64bit full height
- One PCI-E x8 lane/16-way connector low profile

Both cards are half length.

## Sun Fire V245 Server Configuration

Standard configurations support a maximum of four PCI cards:

- One full-height/full-length PCI-X 133 Mhz/64 bit
- One full-height/short-length PCI-X 133 Mhz/64 bit
- One PCI-E x8/16-way connector low-profile/short and one PCI-E x4/16-way connector low-profile/short

## Alternate Rise Cards

The alternate riser cards provide additional flexibility toward configuring the I/O subsystem. Alternate riser cards are required to support:

- The X2156A-2 serial, asynchronous adapter, SAI/P
  - X8424A-Z for the Sun Fire V215 server, or
  - X8425A-Z for the Sun Fire V245 server
- The X7295A, XVR-2500 graphics adapter
  - X8426A-Z for the Sun Fire V215 server, or
  - X8427A-Z for the Sun Fire V245 server

Alternatively, the X8426A-Z or X8427A-Z can be used to change PCI-X slots to PCIe slots, thereby eliminating all PCI-X slots from these servers. The additional PCIe slot(s) can be used for more PCIe connectivity and/or redundancy.

The XVR-2500 graphics adapter and the serial, asynchronous adapter require different riser cards. As there is only one position in both the Sun Fire V215 and V245 servers into which the alternate riser card can be inserted, these two options are incompatible.

## I/O Ports

### Network Connectivity

With four on-board RJ45 10/100/1000BASE-T (Copper) Gigabit Fast Ethernet ports for high throughput, the networking capabilities of the Sun Fire V215 and V245 servers are exceptional.

Also included are one asynchronous RJ45 serial communication port (not POSIX compliant) and a 100BASE-T Ethernet interface which allows ALOM access for control of the server including power switching and on-board processor access.



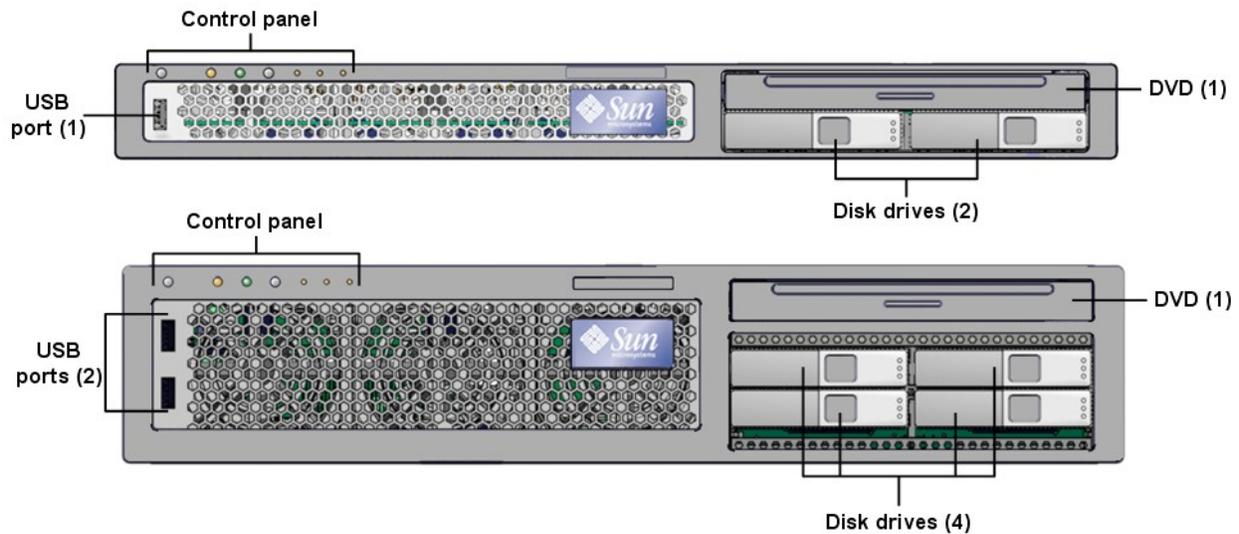
## Other Ports

For additional storage capabilities, three USB ports are available on the Sun Fire V215 server and four on the Sun Fire V245 server to attach USB devices.

Internally, up to two drives can be installed on the Sun Fire V215 and four on Sun Fire V245 servers. Additional networking connectivity or external storage can be supported using an host bus adapter.



## Front Panel Features



**Figure 3. Sun Fire V215 (top) and V245 (bottom) front panels**

The main features accessible to the user on the front panel include the one or two USB ports (on left). All USB ports on the V215 comply with the 2.0 standard; on the V245 the front two ports are USB 1.1 and the rear two ports comply with the USB 2.0 standard. Access to the hot-plug disk drives, and access to the DVD-Dual drive is also available from the front panel.

Located in the upper-left corner of the front panel is the standard set of service indicators, which are controlled by the ALOM service processor. The LED meaning and functionality is summarized as follows:

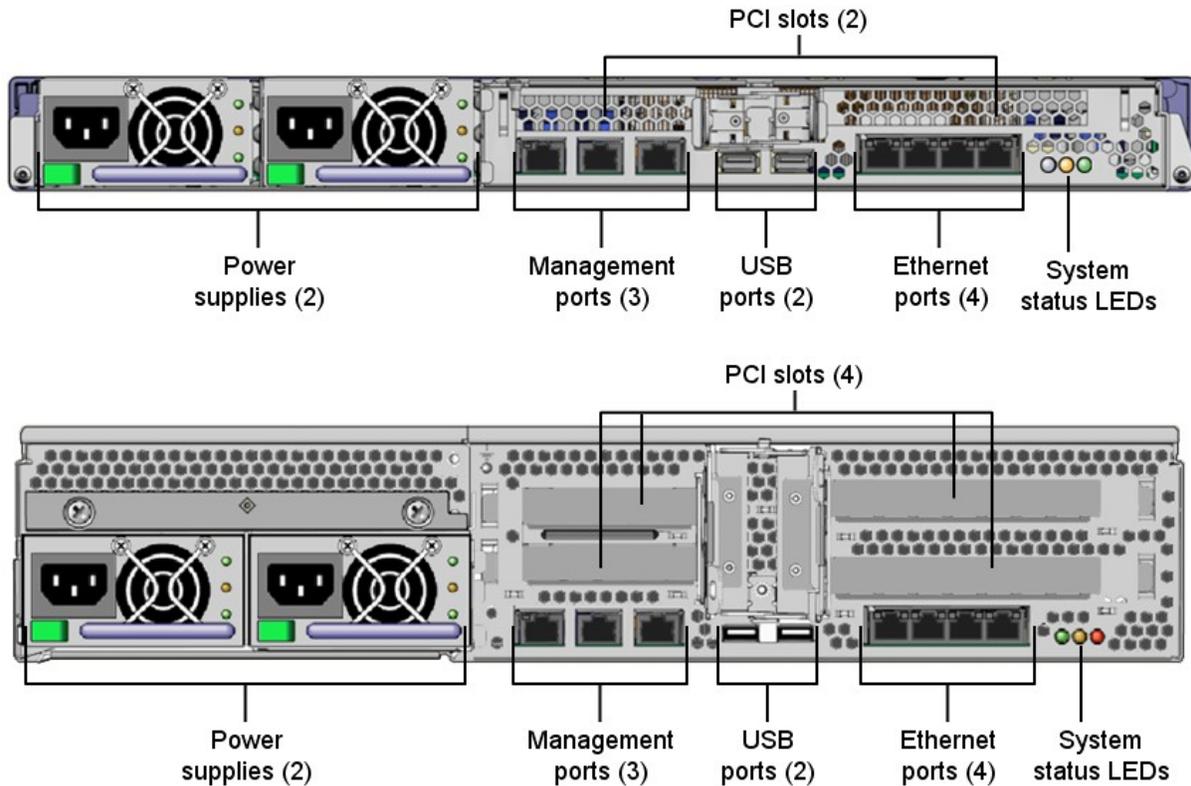
- White LED is the *Locator* indicator (blinking).
- Yellow LED is the *Service Required* indicator.
- Green LED is the *Running* indicator.

Note that in the Sun Fire V215 and V245 systems, the blue “OK to Remove” indicator is not used at the chassis level, since the chassis is not a hot-plug FRU. In addition to the Service Indicator LEDs, three other LEDs provide system fault information:

- Amber LED-1 indicates fan failure.
- Amber LED-2 indicates power supply failure.
- Amber LED-3 indicates CPU over temp failure.



## Back Panel Features



**Figure 4. Sun Fire V215 (top) and V245 (bottom) back panels**

The main features accessible to the user on the rear panel include the two 550W power supplies, as well as all the I/O connectors. The back panel includes these features:

- System status LEDs
- Two inlets for AC power supplies
- PCI card slots
- External data ports, including the following:
  - One serial-RJ-45 communications port (not POSIX compliant) (management console port)
  - Two USB 2.0 compliant ports
  - Four Gigabit Ethernet ports
  - One Ethernet management RJ-45 port



# Reliability, Availability, and Serviceability (RAS)

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The Sun Fire™ V215 and V245 servers include these reliability, availability, and serviceability features.

## Reliability

- Solaris™ 10 Operating System
- UltraSPARC® platform
- ECC memory
- N+1 redundant power supplies
- Hot-swap system fans
- Hot-swap disk drives
- Automatic System Reconfiguration (ASR) around failed components such as memory, PCI slots, Ethernet ports, USB controller (but not individual ports) and SCSI controller (but not individual drives). Note: CPUs cannot be isolated.

## Availability

- The Sun Fire V215 and V245 servers' low cost and small form factors 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-plug disks.
- Customers can have a separate service per server and provide more services within the same small footprint. This eliminates sharing servers and increases availability if the system goes down—only one server would be affected.
- The SSCC (Socketed System Configuration Chip) 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.
- Redundant power supplies and hot swap fans

## Serviceability

- Toolless access allows for ease of service and maintenance.
- Front-accessible, hot-plug drives.
- The SSCC can be switched easily by pulling it out the card and replacing it in another system.
- 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 V215 and V245 servers 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 servicing of a unit within a rack.

## Sun Advanced Lights-Out-Manager (ALOM)

Sun Advanced Lights Out Manager (ALOM) system controller is a secure server management tool that comes pre-installed on the Sun Fire V215 and V245 servers. It lets you monitor and control your server over a serial line or over a network. The ALOM system controller provides remote system administration for geographically distributed or physically inaccessible systems. You can connect to the ALOM system controller using a local alphanumeric terminal, a terminal server, or a modem connected to its serial management port, or over a network using its 100BASE-T network management port.

When you first power on the system, the ALOM system controller provides a default connection to the system console through its serial management port. After initial setup, you can assign an IP address to the network management port and connect the network management port to an Ethernet network. You can run diagnostic tests, view diagnostic and error messages, reboot your server, and display environmental status information using the ALOM software, even if the operating system is down or the system is powered off. The ALOM system can also send email alerts on hardware failures, or other important events that can occur on the server.

The ALOM system provides the following features:

- Default system console connection through its serial management port to an alphanumeric terminal, terminal server, or modem
- Network management port for remote monitoring and control over a network, after initial setup
- Remote system monitoring and error reporting, including diagnostic output
- Remote reboot, power-on, power-off, and reset functions
- Ability to monitor system environmental conditions remotely
- Ability to run diagnostic tests using a remote connection
- Ability to remotely capture and store boot and run logs, for review or replay later
- Remote event notification for over-temperature conditions, power supply faults, system shutdown, or system resets
- Remote access to detailed event logs
- Operation of system indicators
- Fan speed monitoring and adjustment
- Temperature monitoring and alerts
- Power supply health monitoring and control
- USB over current monitoring and alerts
- Hot-plug configuration change monitoring and alerts



- Dynamic FRUID data transactions
- Secure shell access (SSH)
- Out of band SNMP agent

## Automatic System Recovery (ASR)

The system provides for automatic system recovery (ASR) from component failures in memory modules, PCI cards, Ethernet ports, USB and SCSI controllers (although not individual ports or drives). Isolation of CPUs is not possible.

The ASR features allow the system to resume operation after experiencing certain non-fatal hardware faults or failures. Automatic self-test features enable the system to detect failed hardware components and an auto-configuring capability designed into the system's boot firmware allows the system to deconfigure failed components and restore system operation. As long as the system is capable of operating without the failed component, the ASR features allows the system to reboot automatically, without operator intervention.

During the power-on sequence, if a faulty component is detected, the component is effectively disabled and, if the system remains capable of functioning, the boot sequence continues. In a running system, some types of failures (such as a memory module) can bring down the system. If this happens, the ASR functionality enables the system to reboot immediately if it is possible for the system to run without the failed component. This prevents a faulty hardware component from keeping the entire system down or causing the system to crash repeatedly.

*Note: ASR functionality is not enabled until you activate it. Control over the system's ASR functionality is provided by a number of OpenBoot™ PROM commands and configuration variables.*



# System Specification

| <b>Processor/Memory</b>                                                                 |                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processors                                                                              | One or two 1.5-GHz UltraSPARC® IIIi processor(s)<br>64-bit, 4-way Superscalar SPARC® V9<br>64-KB data cache, 32-KB instruction cache, and 1-MB L2 cache                                                                                                                         |
| Main memory                                                                             | <ul style="list-style-type: none"> <li>• Eight DIMM slots, registered DDR-1 SDRAM (PC2700 128 bit plus ECC databus)</li> <li>• System configurations up to 16 GB</li> </ul>                                                                                                     |
| <b>Standard Integrated Interfaces</b>                                                   |                                                                                                                                                                                                                                                                                 |
| Network                                                                                 | Four 10/100/1000BASE-T Ethernet ports                                                                                                                                                                                                                                           |
| Network management                                                                      | One 10/100BASE-T Ethernet port                                                                                                                                                                                                                                                  |
| Serial management                                                                       | One TIA/EIA-232-F (RJ45) port                                                                                                                                                                                                                                                   |
| Serial <ul style="list-style-type: none"> <li>• USB</li> <li>• Expansion bus</li> </ul> | <ul style="list-style-type: none"> <li>• One OHCI 2.0 compliant on the V215 or two OHCI 1.1 compliant interfaces on the V240 on the front plus two OHCI 2.0 compliant interfaces at the rear of both systems</li> <li>• RJ45 asynchronous serial communications port</li> </ul> |
| <b>Mass Storage and Media</b>                                                           |                                                                                                                                                                                                                                                                                 |
| Internal disk                                                                           | Up to two hot-plug SAS 73-GB disks (V215) and four (V245).<br>Built in hardware RAID 0 and 1                                                                                                                                                                                    |
| Internal DVD                                                                            | Standard slim-line IDE DVD-multi drive supported via 5.75-inch W x 1.62-inch H (half-height) bay, with the following format options: <ul style="list-style-type: none"> <li>• DVD -R/RW</li> <li>• DVD +R/RW</li> <li>• CD -R/RW</li> <li>• CD +R/RW</li> </ul>                 |
| <b>Power</b>                                                                            |                                                                                                                                                                                                                                                                                 |
| Power supplies                                                                          | Up to two redundant power supplies<br>Maximum DC output of 550W, 12V DC isolated output, 3.3V stand by                                                                                                                                                                          |
| <b>Dimensions and Weight</b>                                                            |                                                                                                                                                                                                                                                                                 |
| Chassis <ul style="list-style-type: none"> <li>• Height</li> </ul>                      | V215 44.45 mm (1.7 in.), V245 88.9mm (3.5 in.)                                                                                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• Width</li> </ul>                               | V215 and V245 457.2 mm (18 in.)                                                                                                                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>• Depth</li> </ul>                               | V215 and V245 609.6 mm (24 in.)                                                                                                                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>• Weight (w/o packaging)</li> </ul>              | 19.84 kg maximum for V215, 22.24kg for V245                                                                                                                                                                                                                                     |
| Enclosure                                                                               | Fits into a standard 19-inch wide EIA rack. The chassis design accommodates standard four-post racks and cabinets.                                                                                                                                                              |



## Environmental Specifications

| Feature                            | Specification                                                                                  |
|------------------------------------|------------------------------------------------------------------------------------------------|
| AC power                           | 90–264 V AC (47–63 Hz)                                                                         |
| Operating temperature at sea level | 5°C to 35°C (41°F to 95°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 7.3B sound power in ambient temperature of up to 24°C.                               |

## Regulations

The Sun Fire V215 and V245 servers are RoHS compliant. These servers meet or exceed the following requirements.

| Feature        | Specifications                                                                        |
|----------------|---------------------------------------------------------------------------------------|
| Safety         | IEC60950, UL/CSA60950, EN60950.                                                       |
| RFI/EMI        | FCC Class A, Part 15 47 CFR, EN55022, CISPR 22                                        |
| Immunity       | EN55024                                                                               |
| Certifications |                                                                                       |
| • Safety       | cULus Mark, TUV GS Mark, CE Mark, S-Mark, CCC, GOST                                   |
| • EMC          | CE Mark (93/68/EEC), FCC authorized Class A, ICES, VCCI, BSMI, CTICK, MIC, CCC, GOST. |
| • RoHS         | Compliant with lead in solder exemption                                               |

## 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 handing, 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

### Standalone Operating Shock

| Acceleration/ Duration | Shock spectrum | Duration                |
|------------------------|----------------|-------------------------|
| 5.0G/11ms              | Half sine      | 10 times/each direction |

### Standalone Non-Operating Shock

| Acceleration/ Duration | Shock spectrum | Duration                |
|------------------------|----------------|-------------------------|
| 30 Gs/11ms             | Half sine      | 10 times/each direction |

## Vibration Tests

### Standalone Operating Vibration

| Axes   | Acceleration | Wave      | Frequency range (Hz) | Duration                   |
|--------|--------------|-----------|----------------------|----------------------------|
| X axis | 0.20G        | Sine Wave | 5-500-5              | 1 octave/minute<br>5 sweep |
| Y axis | 0.20G        |           |                      |                            |
| Z axis | 0.20G        |           |                      |                            |

### Standalone Non-operating Vibration

| Axes   | Acceleration | Wave      | Frequency range (Hz) | Duration                   |
|--------|--------------|-----------|----------------------|----------------------------|
| X axis | 1.0G         | Sine Wave | 5-500-5              | 1 octave/minute<br>5 sweep |
| Y axis | 1.0G         |           |                      |                            |
| Z axis | 1.0G         |           |                      |                            |

## System Requirements

Thermally and electrically up to 36 Sun Fire™ V215 or 21 V245 server units can fit into a Sun Rack 42. For the Sun Fire rack this is 16 Sun Fire V215 or 8 Sun Fire V245 servers, and for a Sun StorEdge™ rack up to 29 Sun Fire V215 servers and up to 18 Sun Fire V245 servers. 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.

## Software Specifications

| Feature               | Description                                                                           |
|-----------------------|---------------------------------------------------------------------------------------|
| Operating environment | 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, SNMPv3 MIB                      |



| Feature                             | Description                                                   |
|-------------------------------------|---------------------------------------------------------------|
| High availability                   | Sun™ Cluster 3.x                                              |
| Sun Java Enterprise System Software | See Software section for full list of pre-installed software. |



# System Management

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## System Administration

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

### MTBF

The MTBF for the Sun Fire™ V215 and V245 servers varies depending upon configuration. Refer to the Sun internal only site <http://ras4sun.sfbay/> for more information.

## Licensing/Usage

The Sun Fire V215 and V245 servers come with a Solaris™ 10 OS server license for unlimited users.

## Operating System

The Sun Fire V215 and V245 servers come preinstalled with the Solaris 10 06/06 Operating System, although Solaris 9 9/06 HW is also supported. The Solaris 10 OS includes these features:

- Solaris Trusted Extensions (\*Future Solaris 10 update\*)
- Solaris Security Toolkit 4.2
- Sun StorEdge™ SAN 3.3.10

## Java Enterprise System Software

The Sun Fire V215 and V245 servers standard configurations come with the following software (or later versions) preinstalled:

- Studio 11 software
- 
- Sun Java™ Enterprise System Release 4 (2005Q4) software or latest version, including the following:
  - Sun Java System Access Manager 7 2005Q4
  - Sun Java System Application Server SE/EE 8.1 2005Q4
  - Sun Java System Calendar Server 6 2005Q4
  - Sun Java System Communications Express 6 2005Q4
  - Sun Java System Communications Services Delegated Administrator 6 2005Q4
  - Sun Java System Directory Server Enterprise Edition 5.2 2005Q4
  - Sun Java System DS Setup 6 2005Q4
  - Sun Java System Instant Messaging 7 2005Q4



- Sun Java System Message Queue EE 3.6 2005Q4
- Sun Java System Messaging Server 6 2005Q4
- Sun Java System Portal Server 6 2005Q4
- Sun Java System Portal Server Secure Remote Access 2005Q4
- Sun Java System Portal Server Mobile Access 2005Q4
- Sun Java System Web Proxy Server 4.0.1 2005Q4
- Sun Java System Web Server 6.1 2005Q4 SP5
- Sun™ Cluster 3.1 8/05 and All Sun Cluster Agents
- Service Registry 3 2005Q4

The following software also comes with the Sun Fire V215 and V245 servers, but is not preinstalled:

- SunVTS™ 6.2



# Ordering Information

The following are part numbers and descriptions for each Sun Fire™ V215 and V245 server standard configurations.

## Sun Fire V215 Server Part Numbers

All configurations include the following features:

- Four on-board 10/100/1000 Mbit Ethernet connections
- One PCI-X full-height/short slot plus one PCI-E low-profile/short slot
- Three USB ports (one USB 2.0 on the front, two USB 2.0 on the back)
- Pre-installed Solaris™ 10 Operating System and Sun Java™ Enterprise System software
- Rackmount kit

| Order Number                                                                         | Title and Description                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>215-ELZ1C11GC1</b><br><b>215-ELZ1C11GC1-IP</b> (for CRS factory integration only) | Sun Fire V215 server 1U entry configuration: <ul style="list-style-type: none"> <li>• One 1.5-GHz processor</li> <li>• 1-GB memory (2 x 512-MB DIMMs)</li> <li>• One 73-GB SAS SCSI disk</li> <li>• One power supply unit</li> </ul>       |
| <b>215-ELZ2C12GC2</b><br><b>215-ELZ2C12GC2-IP</b> (for CRS factory integration only) | Sun Fire V215 server 1U medium configuration: <ul style="list-style-type: none"> <li>• Two 1.5-GHz processors</li> <li>• 2-GB memory (4 x 512-MB DIMMs)</li> <li>• Two 73-GB SAS SCSI disks</li> <li>• n + 1 power supply units</li> </ul> |
| <b>215-ELZ2C18GC2</b><br><b>215-ELZ2C18GC2-IP</b> (for CRS factory integration only) | Sun Fire V215 server 1U high configuration: <ul style="list-style-type: none"> <li>• Two 1.5-GHz processors</li> <li>• 8-GB memory (8 x 1-GB DIMMs)</li> <li>• Two 73-GB SAS SCSI disks</li> <li>• n + 1 power supply units</li> </ul>     |



## Sun Fire V245 Server Part Numbers

All configurations include the following features:

- Four on-board 10/100/1000Mbit Ethernet connections
- One PCI-X full height/short slot, one PCI-X full-height/long slot, plus two PCI-E low-profile/short slots
- Four USB ports (two USB 1.1 on the front, two USB 2.0 on the back)
- Pre-installed Solaris 10 Operating System and Sun Java Enterprise System software
- Rackmount kit

| Order Number                                                                           | Title and Description                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>245-ELZ1C11GC1</b><br><b>245-ELZ1C11GC1-IP</b> (for CRS factory integration only)   | Sun Fire V245 server 2U entry configuration: <ul style="list-style-type: none"> <li>• One 1.5-GHz processor</li> <li>• 1-GB memory (2 x 512-MB DIMMs)</li> <li>• One 73-GB SAS SCSI disk</li> <li>• One power supply unit</li> </ul>      |
| <b>245-ELZ2C12GC2</b><br><b>245-ELZ2C12GC2-IP</b> (for CRS factory integration only)   | Sun Fire V245 server 2U medium configuration: <ul style="list-style-type: none"> <li>• Two 1.5-GHz processors</li> <li>• 2-GB memory (4 x 512-MB DIMMs)</li> <li>• Two 73-GB SAS SCSI disks</li> <li>• n + 1 power supply unit</li> </ul> |
| <b>245-ELZ2C18GC2</b><br><b>245-ELZ2C18GC2-IP</b> (for CRS factory integration only)   | Sun Fire V245 server 2U high configuration: <ul style="list-style-type: none"> <li>• Two 1.5-GHz processors</li> <li>• 8-GB memory (8 x 1-GB DIMMs)</li> <li>• Two 73-GB SAS SCSI disks</li> <li>• n + 1 power supply unit</li> </ul>     |
| <b>245-ELZ2C116GC4</b><br><b>245-ELZ2C116GC4-IP</b> (for CRS factory integration only) | Sun Fire V245 server 2U XL configuration: <ul style="list-style-type: none"> <li>• Two 1.5-GHz processors</li> <li>• 16-GB memory (8 x 2-GB DIMMs)</li> <li>• Four 73-GB SAS SCSI disks</li> <li>• n + 1 power supply unit</li> </ul>     |



# Options

**Note:** One power cord is required per power supply. These servers support a maximum of two power supplies.

**Note:** CPU upgrade kits are not available.

**Note:** Only one riser card may be added/replaced within a system. The alternate riser cards, X8424A-Z, X8425A-Z, X8426A-Z and X8427A-Z are required to support the X2156A-2, serial asynchronous adapter, SAI/P or X7295A, XVR-2500 graphics adapter. The PCIe riser cards convert all PCI-X I/O slots within a system to PCIe, i.e. there will be no PCI-X slots remaining. Therefore, the XVR-2500 graphics adapter and the serial asynchronous adapter are incompatible.

With the inclusion of the X8426A-Z or X8427A-Z, the number of short, Ethernet or Fibre Channel PCIe adapters is increased to two on the Sun Fire V215 server and four on the Sun Fire V245 server.

| Part Number                                         | Description                                                                                                                                                                                               | Max V215 | Max V245 |  |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|--|
| <b>Memory</b>                                       |                                                                                                                                                                                                           |          |          |  |
| (X)8703A                                            | 2 x 512-MB DDR1 memory expansion DIMM                                                                                                                                                                     | 4        | 4        |  |
| (X)8704A                                            | 2 x 1-GB DDR1 memory expansion DIMM                                                                                                                                                                       | 4        | 4        |  |
| (X)8711A                                            | 2 x 2-GB DDR1 memory expansion DIMM                                                                                                                                                                       | 4        | 4        |  |
| <b>Internal Storage and Removable Media Devices</b> |                                                                                                                                                                                                           |          |          |  |
| (X)RB-SS2CD-73G10KZ                                 | SAS 2.5-inch 73 GB, 10,000-rpm drive (X option)                                                                                                                                                           | 2        | 4        |  |
| (X)RB-SS2CD-146G10KZ                                | SAS 2.5-inch 146 GB, 10,000-rpm drive (X option)<br><b>NOTE:</b> XRA-SS2CD-146G10KZ is the identical drive with a different list price and discount code. It is intended for other servers such as T2000. | 2        | 4        |  |
| (X)8410A-Z                                          | DVD-Dual drive                                                                                                                                                                                            | 1        | 1        |  |
| <b>Redundant Power Supply</b>                       |                                                                                                                                                                                                           |          |          |  |
| (X)8428A-Z                                          | Optional redundant power supply                                                                                                                                                                           | 1        | 1        |  |
| <b>Power Cords (all kits are RoHS compliant)</b>    |                                                                                                                                                                                                           |          |          |  |
| X311L                                               | Localized power cord kit, North America/Asia                                                                                                                                                              | 2        | 2        |  |
| X312L                                               | Localized power cord kit, Continental Europe                                                                                                                                                              | 2        | 2        |  |
| X314L                                               | Localized power cord kit, Switzerland                                                                                                                                                                     | 2        | 2        |  |
| X317L                                               | Localized power cord kit, U.K.                                                                                                                                                                            | 2        | 2        |  |
| X383L                                               | Localized power cord kit, Denmark                                                                                                                                                                         | 2        | 2        |  |
| X384L                                               | Localized power cord kit, Italy                                                                                                                                                                           | 2        | 2        |  |
| X386L                                               | Localized power cord kit, Australia                                                                                                                                                                       | 2        | 2        |  |
| X312G                                               | Localized power cord kit, Korea                                                                                                                                                                           | 2        | 2        |  |
| X312E                                               | Localized power cord kit, China                                                                                                                                                                           | 2        | 2        |  |



| Part Number                                | Description                                                                                            | Max V215 | Max V245 |        |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------|----------|----------|--------|
| X312F                                      | Localized power cord kit, Argentina                                                                    | 2        | 2        |        |
| X320A                                      | Localized power cord kit, Japan                                                                        | 2        | 2        |        |
| X332A                                      | Localized power cord kit, Taiwan                                                                       | 2        | 2        |        |
| X340L                                      | Localized power cord kit, U.S. twist lock                                                              | 2        | 2        |        |
| <b>PCI SCSI Adapters</b>                   |                                                                                                        |          |          |        |
| SGXPCI1SCSILM320-Z                         | PCI single channel Ultra-3 differential SCSI host adapter                                              | 1        | 2        | PCI-X  |
| SGXPCI2SCSILM320-Z                         | PCI dual channel Ultra-3 differential SCSI host adapter                                                | 1        | 1        | PCI-X  |
| <b>PCI Communication (Serial) Adapters</b> |                                                                                                        |          |          |        |
| X1355A-2                                   | High-speed serial interface-4 port 2.0                                                                 | 1        | 2        | PCI-66 |
| X2156A-2                                   | Serial asynchronous adapter, SAI/P<br>(Requires an alternate riser card, either X8424A-Z or X8425A-Z0) | 1        | 2        | PCI    |
| <b>PCI Ethernet Network Adapters</b>       |                                                                                                        |          |          |        |
| X4150A-2                                   | GigaSwift Ethernet UTP PCI adapter (GCS)                                                               | 1        | 2        | PCI    |
| X4445A                                     | Sun Quad GigaSwift PCI-X Ethernet UTP adapter                                                          | 1        | 2        | PCI    |
| X4447A-Z                                   | Quad Gigbit Ethernet PCI-e adapter, UTP                                                                | 1        | 2        | PCI-E  |
| X4151A-2                                   | GigaSwift Ethernet UTP PCI adapter (GFS)                                                               | 1        | 2        | PCI    |
| X7280A-2 <sup>1</sup>                      | Dual-port Gigabit Ethernet (copper) (No Solaris 9 OS support)                                          | 1/2      | 2/4      | PCI-E  |
| X7281A-2 <sup>11</sup>                     | Dual-port Gigabit Ethernet (Fibre Channel) (No Solaris 9 OS support)                                   | 1/2      | 2/4      | PCI-E  |
| <b>PCI Fibre Channel Adapters</b>          |                                                                                                        |          |          |        |
| SG-XPCI1FC-QL2                             | Single-port Fibre Channel PCI-X HBA                                                                    | 1        | 2        | PCI-X  |
| SG-XPCI2FC-QF2-Z                           | Sun StorEdge 2-Gbit PCI dual Fibre Channel network adapter                                             | 1        | 1        | PCI-X  |
| SG-XPCI1FC-EM2                             | Emulex 2-Gbit single-channel FC HBA                                                                    | 1        | 2        | PCI-X  |
| SG-XPCI2FC-EM2                             | Emulex 2-Gbit dual-channel FC HBA                                                                      | 1        | 2        | PCI-X  |
| SG-XPCI1FC-QF4                             | Single-port 4-Gbit FC                                                                                  | 1        | 2        | PCI-X  |
| SG-XPCI1FC-EM4-Z                           | Single-port 4-Gbit FC                                                                                  | 1        | 2        | PCI-X  |
| SG-XPCI2FC-QF4                             | Dual-port 4-Gbit FC                                                                                    | 1        | 2        | PCI-X  |
| SG-XPCI2FC-EM4-Z                           | Dual-port 4-Gbit FC                                                                                    | 1        | 2        | PCI-X  |
| SG-XPCIE2FC-QF4 <sup>1</sup>               | Dual-port 4-Gbit FC (No Solaris 9 OS support)                                                          | 1/2      | 2/4      | PCI-E  |
| SG-XPCIE2FC-EM4 <sup>1</sup>               | Dual-port 4-Gbit FC (No Solaris 9 OS support)                                                          | 1/2      | 2/4      | PCI-E  |

<sup>1</sup> The higher number of adapters supported is available only with the alternate riser cards, i.e. X8426A-Z for the Sun Fire V215 server or X8427A-Z for the Sun Fire V245 server.



| Part Number                     | Description                                                                                                                                                                                       | Max V215 | Max V245 |       |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|-------|
| SG-XPCIE1FC-QF4 <sup>1</sup>    | Single-port 4-Gbit FC (No Solaris 9 OS support)                                                                                                                                                   | 1/2      | 2/4      | PCI-E |
| SG-XPCIE1FC-EM4 <sup>1</sup>    | Single-port 4-Gbit FC (No Solaris 9 OS support)                                                                                                                                                   | 1/2      | 2/4      | PCI-E |
| <b>Alternate Riser Cards</b>    |                                                                                                                                                                                                   |          |          |       |
| X8424A-Z                        | PCI-X Riser Card Assembly, 1UXXL, for V215.<br>(Modifies PCI-X I/O slot to accommodate X2156A-2 serial asynchronous adapter, SAI/P.)                                                              | 1        | N/A      | PCI-X |
| X8425A-Z                        | PCI-X Riser Card Assembly, 2UEXL, for V245.<br>(Modifies PCI-X I/O slot to accommodate X2156A-2 serial asynchronous adapter, SAI/P.)                                                              | N/A      | 1        | PCI-X |
| X8426A-Z                        | PCIe Riser Card Assembly, 1UEEL, for V215.<br>Changes PCI-X 133 MHz full height/short I/O slot to PCIe x8. (Required for XVR-2500 graphics adapter.)                                              | 1        | N/A      | PCIe  |
| X8427A-Z                        | PCIe Riser Card Assembly, 2UEEL, for V245.<br>Changes two PCI-X 133 MHz, full height, one long and one short I/O slots to two PCIe x8. (Required for XVR-2500 graphics adapter.)                  | N/A      | 1        | PCIe  |
| <b>PCI Combination Adapters</b> |                                                                                                                                                                                                   |          |          |       |
| X4422A-2                        | Sun dual Gigabit Ethernet + dual SCSI adapter                                                                                                                                                     | 1        | 1        | PCI   |
| <b>Graphics</b>                 |                                                                                                                                                                                                   |          |          |       |
| X7295A                          | Sun XVR-2500 graphics adapter<br>(Requires an alternate riser card, either X8426A-Z or X8427A-Z.)                                                                                                 | 1        | 1        | PCIe  |
| X7296A                          | Sun XVR-100 graphics accelerator, 2D graphics, 24-bit color, 64-MB frame buffer memory, single slot PCI, max. resolution 1920x1200, DVI and HD-15 connectors, dual video support *RoHS-compliant* | 1        | 1        | PCI   |
| X4240A                          | Sun XVR-300 graphics accelerator                                                                                                                                                                  | 1        | 1        | PCI-E |
| <b>Crypto</b>                   |                                                                                                                                                                                                   |          |          |       |
| X6000A/X6099A                   | Mars Crypto HSM 6000 (No Solaris 9 support)                                                                                                                                                       | 1        | 1        | PCI-E |
| <b>Monitors</b>                 |                                                                                                                                                                                                   |          |          |       |
| X7147A                          | 17-inch CRT (RoHS compliant)                                                                                                                                                                      |          |          |       |
| X7198A                          | 19-inch LCD (RoHS compliant)                                                                                                                                                                      |          |          |       |
| X7199A                          | 21-inch CRT (RoHS compliant)                                                                                                                                                                      |          |          |       |
| X7197A                          | 24-inch LCD (RoHS compliant)                                                                                                                                                                      |          |          |       |

| <b>Racks</b> |                          |                     |                     |                     |                     |
|--------------|--------------------------|---------------------|---------------------|---------------------|---------------------|
| Part Number  | Description              | Max V215 with 2xPSU | Max V245 with 2xPSU | Max V215 with 1xPSU | Max V245 with 1xPSU |
| SR900-36N    | Sun Rack 900-36N (alloy) | 18                  | 17                  | 24                  | 17                  |
| SR9-XKL038A  | Sun Rack 900-38          | 18                  | 18                  | 24                  | 18                  |



| Racks       |                           |     |    |    |    |
|-------------|---------------------------|-----|----|----|----|
| SR900-38    | Sun Rack 900-38 (alloy)   | 18  | 18 | 24 | 18 |
| SR1000-38   | Sun Rack 1000-38 (alloy)  | 18  | 18 | 24 | 18 |
| SR1000-42   | Sun Rack 1000-42 (alloy)  | 18  | 20 | 24 | 20 |
| SG-XARY030A | StorEdge (Delorean) rack  | 29? | 18 |    |    |
| SF-XCAB     | Sun Fire (Serengeti) rack | 16  | 8  |    |    |

## Keyboard and Mouse Support

| Part Number | Description                        |
|-------------|------------------------------------|
| 320-1273-01 | USB keyboard                       |
| 370-3632-01 | USB mouse                          |
| X3538A      | U.S. UNIX/UNIX univ./European UNIX |
| X3564A      | Italian country kit                |
| X3558A      | UK UNIX country kit                |
| X3559A      | European UNIX country kit          |
| X3583A      | UNIX power cordless country kit    |
| X3791A      | Type 7 - Arabic                    |
| X3766A      | Type 7 - Australian                |
| X3790A      | Type 7 - Belgian                   |
| X3782A      | Type 7 - Chinese                   |
| X3763A      | Type 7 - Danish                    |
| X3765A      | Type 7 - Dutch/Netherlands         |
| X3868A      | Type 7 - Euro Universal            |
| X3767A      | Type 7 - Finish                    |
| X3732A      | Type 7 - French                    |
| X3733A      | Type 7 - German                    |
| X3764A      | Type 7 - Italian                   |
| X3756A      | Type 7 - Japanese                  |
| X3755A      | Type 7 - Korean                    |
| X3760A      | Type 7 - Norwegian                 |
| X3761A      | Type 7 - Portuguese                |
| X3785A      | Type 7 - Russian                   |
| X3762A      | Type 7 - Spanish                   |
| X3736A      | Type 7 - Swedish                   |
| X3734A      | Type 7 - Swiss-French              |
| X3735A      | Type 7 - Swiss-German              |
| X3754A      | Type 7 - Taiwanese                 |



| Part Number | Description             |
|-------------|-------------------------|
| X3787A      | Type 7 - Turkish-Q      |
| X3737A      | Type 7 - UK             |
| X3731A      | Type 7 - US/Canadian PC |

## Supported External Options

| Feature       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| External disk | Sun StorEdge A5100/A5200 array<br>Sun StorEdge S1 array<br>Sun StorEdge T3B array<br>Sun StorageTek D240 Media Tray<br>Sun StorageTek 3120 SCSI array and SCSI RAID/JBOD array<br>Sun StorageTek 3310 SCSI array<br>Sun StorageTek 3320 array<br>Sun StorageTek 3320 array<br>Sun StorageTek 3510 FC RAID/JBOD array<br>Sun StorageTek 3511 FC array with SATA RAID/JBOD<br>Sun StorEdge 5310/5320 array<br>Sun StorEdge 6540 array<br>Sun StorageTek 99xx series<br>Sun StorageTek 6130 with management software Unity 3.1<br>Sun StorageTek 6140array                                                                                                                                                                                                                                                                           |
| External tape | Sun StorageTek DAT 72 tape drives, USB and SCSI (desktop and rackmount versions)<br>Sun StorageTek LTO 2 half-height tape drives (desktop and rackmount versions)<br>Sun StorageTek LTO 2 tape drive, desktop<br>Sun StorageTek LTO 3 tape drive, desktop and rackmount versions<br>Sun StorageTek SDLT 600 tape drive, desktop and rackmount versions<br>Sun StorageTek L8 tape autoloader SDLT320 and LT02<br>Sun StorageTek L25 LT02<br>Sun StorageTek L100 LT02<br>Sun StorageTek L500 with LTO 2, LTO 3 and SDLT 600 drives<br>Sun StorageTek C2 autoloader with LTO 2 HH, LTO 3 and SDLT 600 drives<br>Sun StorageTek C4 with LTO 2, LTO 3 and SDLT 600 drives<br>Sun StorageTek C4 Native FC with LTO 3 and SDLT 600 drives (pending approval)<br>FC bridge card for Sun StorEdge C4 with LTO2, LTO 3, and SDLT 600 drives |
| Switches      | Brocade 200E, 3800, 3900, 3250, 3850, 4100, 4900, 24000, 48000<br>McData 4300, 4400, 4500, 4700, 6140, (6064 delete), I10K<br>Qlogic 5200, 5602<br>Sun StorEdge SANbox 2-Gbit Network FC Switch-8, Switch-16, Switch-64                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

## Cables

| Part Number        | Description                                                 | Platform          |
|--------------------|-------------------------------------------------------------|-------------------|
| <b>SCSI Cables</b> |                                                             |                   |
| X1139A             | 2-meter, cable, SCSI 68-pin, Ultra SCSI (supports PCI host) | Sun StorEdge D240 |



| Part Number                 | Description                                                                                                         | Platform                   |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------|
|                             | bus adapter, P/N X1032A - 10/100BASE-T, F/W UltraSCSI)                                                              |                            |
| X3830A                      | 4-meter cable, SCSI 68-pin to VHDC (supports Compact PCI host bus adapter P/N X1232A - 10/100BASE-T, F/W UltraSCSI) | Sun StorEdge D240          |
| X3830B                      | 4-meter Ultra160 SCSI VHDCI/VHDCI                                                                                   | Sun StorEdge 3310 and 3311 |
| X3831B                      | 10-meter Ultra160 SCSI VHDCI/VHDCI                                                                                  | Sun StorEdge 3310 and 3311 |
| X1136A                      | 0.8-meter cable, SCSI, VHDCI/VHDCI                                                                                  | Sun StorEdge 3310 and 3311 |
| X1137A                      | 1.2-meter cable, SCSI, VHDCI/VHDCI                                                                                  | Sun StorEdge 3310 and 3311 |
| X1138A                      | 2-meter cable, SCSI, VHDCI/VHDCI                                                                                    | Sun StorEdge 3310 and 3311 |
| <b>Fibre Channel Cables</b> |                                                                                                                     |                            |
| 537-1004                    | 2-meter fiber-optic cable                                                                                           |                            |
| 537-1006                    | 15-meter fiber-optic cable                                                                                          |                            |
| X9732                       | 2-meter LC to LC fiber-optic cable (Minnow 2U FC)                                                                   |                            |
| X9733                       | 5-meter LC to LC fiber-optic cable (Minnow 2U FC)                                                                   |                            |
| X9734                       | 15-meter LC to LC fiber-optic cable (Minnow 2U FC)                                                                  |                            |
| 537-1004                    | 2-meter fiber-optic cable                                                                                           |                            |
| 537-1006                    | 15-meter fiber-optic cable                                                                                          |                            |
|                             | SAS cable                                                                                                           |                            |
| <b>USB Cables</b>           |                                                                                                                     |                            |
| XxxxxA                      | USB cables                                                                                                          |                            |



# Upgrades

## Upgrades to the Sun Fire V215 Server

*Note: CPU upgrade kits are not available.*

| Order Number            | Title and Description                                                                                                                                |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ALW-05-S-J-V215</b>  | FROM: older sun servers TO: Sun Fire V215 Order UG-RMA with this allowance code. Customer must return complete functioning Sun system.               |
| <b>ALW-05-S-Z1-V215</b> | FROM: Non-Sun server 4 or 5 years old TO: Sun Fire V215 Order UG-RMA with this allowance code. Customer must return complete functioning Sun system. |
| <b>ALW-10-S-J-V215</b>  | FROM: Newer Sun Servers TO: Sun Fire V215 Order UG-RMA with this allowance code. Customer must return complete bootable Sun system.                  |
| <b>ALW-10-S-Z2-V215</b> | FROM: Non Sun Server up to 3 years old TO: Sun Fire V215 Order UG-RMA with this allowance code. Customer must return complete functioning system.    |

## Upgrades to the Sun Fire V245 Server

*Note: CPU upgrade kits are not available.*

| Order Number              | Title and Description                                                                                                                                                                           |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ALW-05-S-J-V245</b>    | From: Older Sun servers To: Sun Fire V245 - Order UG-RMA with this allowance code. Customer must return complete bootable system.                                                               |
| <b>ALW-05-S-Z1-V245</b>   | Upgrade From: Non-Sun Servers systems that are 4 or 5 years old. TO: Sun Fire V245 Order UG-RMA with this allowance code. Customer must return complete bootable system.                        |
| <b>ALW-10-S-J-V245</b>    | From:Newer Sun Servers To: Sun Fire V245 Order UG-RMA with this allowance code. Customer must return complete bootable system.                                                                  |
| <b>ALW-10-S-Z2-V245</b>   | Upgrade From: Competitive Servers up to 3 years old TO: Sun Fire V245 Order UG-RMA with this allowance code. Customer must return complete bootable system.                                     |
| <b>ALW-15-S-O-245-CNS</b> | From: Eligible Sun Server(s) To: Sun Fire V245 Server, per terms of Server Consolidation Program. Order CU-CONSOL-RMA with this allowance code Customer must return complete bootable System(s) |
| <b>ALW-15-S-Z-245-CNS</b> | From: Eligible Sun or Competitive Server(s) To: Sun Fire V245 Server. Order CU-CONSOL-RMA with this allowance code Customer must return complete bootable System(s)                             |



# Service and Support

Sun Services offers a full range of services to assist customers who deploy the Sun Fire™ V215 and V245 servers. 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.

## SunSpectrum<sup>SM</sup> Support

While the purchase of a new Sun system gives customers the key to leading technology and processing power, services can help optimize performance and availability. SunSpectrum Service Plans help ensure the customers' systems are running smoothly and meet the demands for availability. Through a combination of technical support, hardware service coverage, and Solaris OS updates, SunSpectrum can resolve technical issues quickly and effectively. From mission-critical services to basic self-maintenance support, customers can get the support they need for their unique requirements.

SunSpectrum Service Plans are priced on a per system per year basis. In addition, the newly introduced “Sun System Performance Packs” offer customers a greater ROI value by combining services with servers, storage or software at the point of sale. Sun System Performance Packs enable a superior price than purchasing the individual components separately--in some cases the price for the combination can be less than the server price alone.

| SunSpectrum Service Plans                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                     |                                                |                                             |                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|---------------------------------------------|-------------------------------------------------|
| Features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Platinum Service Plan<br>Mission-critical Systems                                                                                                                                                                                                                                                                                                                                                   | Gold Service Plan<br>Business-critical Systems | Silver Service Plan<br>Basic System Support | Bronze Service Plan<br>Self-Maintenance Support |
| Telephone and Online Technical Support                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 24/7 Live transfer                                                                                                                                                                                                                                                                                                                                                                                  | 24/7 Live transfer                             | 8-8, M-F Live transfer                      | 8-5, M-F 4hr response                           |
| One-stop Interoperability Assistance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Yes                                                                                                                                                                                                                                                                                                                                                                                                 | Yes                                            | No                                          | No                                              |
| Hardware Service Coverage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 24/7 2hr On-site Service                                                                                                                                                                                                                                                                                                                                                                            | 8-8, M-F 4hr On-site Service                   | 8-5, M-F 4hr On-site Service                | Replacement parts 2nd business day              |
| Solaris™ Releases                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Yes                                                                                                                                                                                                                                                                                                                                                                                                 | Yes                                            | Yes                                         | Yes                                             |
| On-demand Solaris™ Updates                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Yes                                                                                                                                                                                                                                                                                                                                                                                                 | Yes                                            | Yes                                         | Yes                                             |
| Online System Admin Resources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Yes                                                                                                                                                                                                                                                                                                                                                                                                 | Yes                                            | Yes                                         | Yes                                             |
| Support Notification Services                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Yes                                                                                                                                                                                                                                                                                                                                                                                                 | Yes                                            | Yes                                         | Yes                                             |
| SunSpectrum™ eLearning Library                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                 | Yes                                            | Yes                                         | Yes                                             |
| System Health Check Subscription                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Yes                                                                                                                                                                                                                                                                                                                                                                                                 | No                                             | No                                          | No                                              |
| <b>Additional Services for Qualifying Sites</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Customer sites meeting an annual SunSpectrum contract minimum (approximately \$160,000 USD) can receive additional services including the creation of a personalized support plan, periodic support reviews, patch assessments and educational services. For local qualification criteria, visit <a href="http://sun.com/service/support/localinfo.html">sun.com/service/support/localinfo.html</a> |                                                |                                             |                                                 |
| <ul style="list-style-type: none"> <li>• Availability of specific features, coverage hours and response times may vary by location or product.</li> <li>• Response times are determined by customer-defined priority. The response times shown are for service requests designated by the customer as "Priority 1."</li> <li>• To receive the best support, Sun recommends that customers install Sun Net Connect software on SPARC®-based systems. This software creates a secure, customer-controlled link to the Sun Solution Center which helps enable expedited Solaris OS troubleshooting, remote diagnostics, and a number of customer-enabled alerting and reporting functions.</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                     |                                                |                                             |                                                 |



## Sun Software Support Services

Sun Services is providing unbundled software and hardware support for added flexibility and choice. Support offerings for the Sun Fire V215 and V245 servers include Sun<sup>SM</sup> Software Support Services for all Sun software.

### Sun 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 business hour response on Priority 1 (Urgent) requests
- Two authorized contacts
- Online incident submission and tracking
- Software updates and patches
- Access to online self-solve resources

### Sun Software Premium Support

The Sun 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:

- 24x7 coverage with live call transfer for Priority 1 (Urgent) requests
- Three 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
- SunSpectrum program 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 V215 and V245 servers have a one year, next business on site day warranty.

## Education and Learning Solutions

### Sun Fire V215 and Sun Fire V245 Server Maintenance and Troubleshooting (WZT-5190)

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 V215 and Sun Fire V245 servers

Internal audiences include:

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

External audiences might 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 V215 and Sun Fire V245 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:

- Experience with maintaining Sun hardware preferred  
OR
- Solaris Essentials for System Maintainers (SM-101)
- Solaris System Administration II
- 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 that contain the recommended courseware to deliver the skills needed to effectively manage and optimize the customer's Sun Fire V215 and V245 servers in their computing environment. After a skills package order has been received, an education manager contacts 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, visit:  
<http://www.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.

Sun recommends that Sun Client Solutions attend SRT classes to better understand how the Sun Fire V215 and V245 servers fits into current strategy. Professional Services will then work with the product team to determine the need for any Sun Client Solutions offerings and their content. For more information, refer to <http://www.sun.com/service>.



# Glossary

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|                            |                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1U                         | One rack unit as defined by the Electronic Industries Alliances (EIA). A vertical measurement equal to 1.75 inches.                                                                                                                                                                                                                                             |
| 2U                         | Two rack units as defined by the Electronic Industries Alliances (EIA). A vertical measurement equal to 3.5 inches.                                                                                                                                                                                                                                             |
| AC                         | Alternating Current.                                                                                                                                                                                                                                                                                                                                            |
| ALOM                       | Advanced Lights Out Manager. 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 V215 and V245 servers 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. 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. This can be on the CPU chip or external to the CPU.                                                                                                                                                                                                                                      |
| 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.                                                                                                                                                                                |
| Riser card | A module that provides the I/O slots, either PCIe or PCI-X, for adapters                                                                                                                                                                                                                             |
| 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.                                                             |
| SAS        | Serial Attached SCSI (see below).                                                                                                                                                                                                                                                                    |
| 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 are available on SunWIN except where noted otherwise.

| Collateral                                              | Description                                                                                                                       | Purpose              | Distribution  | Token # or COMAC Order # |
|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------|--------------------------|
| <b>Product Literature</b>                               |                                                                                                                                   |                      |               |                          |
| – <i>Sun Fire™ V215 and V245 Servers Just the Facts</i> | Reference Guide (this document)                                                                                                   | Sales Tool, Training | SunWIN, COMAC | 475669                   |
| – <i>Sun Fire V215/V245 Server Datasheet</i>            | Datasheet                                                                                                                         | Sales Tool, Training | SunWIN, COMAC | 475668<br>475670         |
| – <i>Sun Fire V215/V245 NDA Customer Presentation</i>   | Customer Presentation                                                                                                             | Sales Tool, Training | SunWIN, COMAC | 475673                   |
| – <i>Architecture White Paper</i>                       | White Paper                                                                                                                       | Sales Tool, Training | SunWIN, COMAC | 481065                   |
| – <i>Sun Fire V215/V245 Sales Guide</i>                 | One Pager                                                                                                                         | Sales Tool, Training | SunWIN, COMAC | 481066                   |
| – <i>SunFire V215/V245 SWaP NDA presentaiton</i>        | Presentation                                                                                                                      | Sales Tool, Training | SunWIN, COMAC | 486860                   |
| <b>External Web Sites</b>                               |                                                                                                                                   |                      |               |                          |
| – <i>Sun Fire V215 Server Web Site</i>                  | <a href="http://www.sun.com/servers/entry/V215">http://www.sun.com/servers/entry/V215</a>                                         |                      |               |                          |
| – <i>Sun Fire V245 Server Web Site</i>                  | <a href="http://www.sun.com/servers/entry/V245">http://www.sun.com/servers/entry/V245</a>                                         |                      |               |                          |
| <b>Internal Web Sites</b>                               |                                                                                                                                   |                      |               |                          |
| – <i>Sun Fire V215/V245 Server Internal Web Site</i>    | <a href="https://onestop.sfbay.sun.com/hw/seattle/index.shtml?menu">https://onestop.sfbay.sun.com/hw/seattle/index.shtml?menu</a> |                      |               |                          |
| <b>Reseller Web Site</b>                                |                                                                                                                                   |                      |               |                          |
| – <i>Sun Reseller General Information</i>               | <a href="http://reseller.sun.com">http://reseller.sun.com</a>                                                                     |                      |               |                          |



# Competitive Information

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

