Sun™ Java Workstation W1100z and Sun™ Java Workstation W2100z

Just the Facts

SunWIN Token # 409804

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1.0 Sun Java Workstations W1100z/W2100z

Introduction

The Sun™ Java Workstations W1100z/W2100z are the first in a new line of AMD Opteron™ x86-based workstations that demonstrate Sun's commitment to deliver the most compelling x86 workstations on the market. With a single architecture, the Sun Java Workstations W1100z/W2100z support both 32-bit and 64-bit operating systems and applications, offering high flexibility for customers who want to run existing 32-bit x86 operating systems and applications and at the same time, migrate to the next-generation 64-bit operating systems and applications.

Figure 1-1: The Java Workstations W1100z and W2100z

The new Sun Java Workstations W1100z/ W2100z are positioned for the future of 64-bit technical client computing. Designed with up to two AMD Opteron processors, the Sun Java Workstations W1100z/ W2100z enable simultaneous 32-bit and 64-bit computing at a competitive price with no compromise in performance.

Product Family Placement

The Sun Java Workstations W1100z/ W2100z complement and broaden Sun's workstation portfolio. Whereas the Sun Blade™ 2500 and Sun Blade 1500 workstations offer the best SPARC© systems running with the proven and robust Solaris™ Operating Systems for customers who have standardized on SPARC-based systems and demand binary compatibility from 1-way to 106-way systems in their IT deployment, the Sun Java Workstations W1100z/ W2100z offer the best performance for x86 applications in a mini-tower workstation and address customer needs for compatibility of x86 32-bit applications with the seamless ability to move into the future of 64-bit computing.

Sun Java Workstations W1100z/W2100z and Sun Blade 2500/1500 Workstations

The Sun Java Workstations W1100z/ W2100z will enable customers to:

- Run both 32-bit and 64-bit x86 applications
- Get more MIPS/$
- Run more applications (Solaris x86 OS, Linux, and Windows)

The Sun Blade 2500/1500/150 workstations are ideal for customers who:

- Want to protect their investments in the SPARC/Solaris knowledge base
- Require binary compatibility with Sun SPARC processors
- Want to run particular applications available only on SPARC/Solaris

Table 1-1 shows how the x86-based Sun Java Workstations W1100z/ W2100z compare to the SPARC-based Sun Blade 2500 and 1500 workstations.

Table 1-1: Sun W1100z/W2100z Workstations and Sun Blade 2500/1500 Workstations Features Comparison

Features	Sun Java Workstations W1100z/W2100z	Sun Blade 2500 Workstation	Sun Blade 1500 Workstation
Processor Type	AMD Opteron processor	Sun UltraSPARC© IIIi processor	Sun UltraSPARC IIIi processor
Processor Speed	• 1.8 GHz (Model 144/244) or • 2.0 GHz (Model 146/246) or • 2.2 GHz (Model 148/248) or • 2.4 GHz (Model 150/250) • 2.6 GHz (No Model 152/ Model 252 for W2100z only)	1.28GHz	1.062GHz
Level 2 cache	1 MB	1 MB	1 MB
CPU interconnect	3 HyperTransport™ links per CPU (6.4 GB/s per link)	J-Bus (128-bit @ 167MHz)	J-Bus (128-bit @ 167MHz)
Maximum memory	8 GB/16 GB of PC3200 (aka DDR-400 ECC registered DIMMs), in pairs (4 DIMM slots per CPU)	8 GB of PC2100 (aka DDR-266 ECC registered DIMMs), in pairs (4 DIMM slots per CPU)	4 GB of PC2100 (aka DDR-266 ECC registered DIMMs), in pairs (4 DIMM slots per CPU)
Graphics Accelerators	• NVIDIA NVS280 • NVIDIA FX500 • NVIDIA FX1100 • NVIDIA FX3000 • NVIDIA FX4000	• Sun XVR-100 • Sun XVR-600 • Sun XVR-1200	• Sun XVR-100 • Sun XVR-600
Networking	LOM 1 x Gigabit Ethernet	LOM 1x Gigabit Ethernet	LOM 1x Gigabit Ethernet
Optical	• DVD-ROM / CD-RW (Standard) • 16x Dual Layer DVD Recorder (Optional)	DVD-ROM (Standard)	DVD-ROM (Standard)
Hard disk drives	• Up to four Ultra320 SCSI or • Up to two UltraATA-100	Up to two U320 SCSI	Up to two ATA
FireWire/USB Ports	Two /Five	Two /Six	Two /Six
Audio	AC '97	AC '97	AC '97
Parallel/Serial	One parallel / Two serial	One port each	One port each
PCI-X slots	Five 64-bit PCI-X slots (1 half-length @ 133 MHz, 1 half-length @ 100 MHz, 3 full-length @ 100 Mhz)	Six 64-bit PCI-X slots (3 full-length at 66MHz, 3 full-length at 33MHz)	Five 64-bit PCI-X slots (1 full-length at 64-bit/66MHz, 3 full-length at 64-bit/33MHz, 1 full-length at 32-bit/33MHz)
O/S Support	• Solaris 9 OS (x86 Platform Edition HW 4/04) • Red Hat Enterprise Linux WS v3 – x86 (32-bit) • Red Hat Enterprise Linux WS v3 – AMD64 (64-bit) • SuSE Linux Enterprise Server 9 for AMD64 & Intel EM64T (64-bit) • Windows XP Professional (WHQL only. W2100z only.)	Solaris 8 HW 5/03 Pre-installed	Solaris 8 HW 5/03 Pre-installed
Height	462 mm (18.2 inches)	483 mm (19.0 in)	459.9 mm (18.1 in)

Features	Sun Java Workstations W1100z/W2100z	Sun Blade 2500 Workstation	Sun Blade 1500 Workstation
Width	200 mm (7.9 inches)	210 mm (8.3 in)	175 mm (6.9 in)
Depth	557 mm (21.9 inches)	490 mm (19.3 in)	465.1 mm (18.3 in
Weight	24 kg (53 lbs) fully configured	22.5 kg (49.6 lbs) fully configured	14.8 kgs (33 lbs) fully configured
Power supply	550W	465W	360W
Pricing	Competitive relative to other 2P/1U Xeon-based workstations	The lowest relative to other 2P RISC workstations	The lowest relative to other 1P RISC workstations

2.0 Key Highlights

With the introduction of the Sun Java Workstations W1100z/ W2100z, Sun offers one of the fastest mini-tower workstations available. The Sun Java Workstations W1100z/ W2100z provide high performance with new 64-bit applications and with existing 32-bit x86 applications. With support for multiple 32-bit and 64-bit operating systems, the Sun Java Workstations W1100z/ W2100z offer the flexibility customers need in order to run their choice of applications using the same hardware architecture, while minimizing hardware support costs and reducing IT training costs. Coupled with competitive pricing, a one-year base warranty, and next-business-day support, the Sun W1100z/W2100z workstations offer among the best total costs of ownership (TCO) on workstations.

Performance

- **High-performance, high-throughput, single- and dual-processor workstation.** The Sun Java Workstations W1100z/ W2100z are among the highest-performance workstations for both 64-bit and 32-bit x86 applications. To provide such high levels of performance, the Sun Java Workstations W1100z/ W2100z are built with a robust set of workstation features, including:
    - Support for single or dual AMD Opteron processors with AMD HyperTransport technology and an integrated dual-channel memory controller
    - Support for up to an industry-leading 16 GB of ECC-protected memory in a mini-tower workstation
    - Wide range of visualization-class graphics accelerators
    - High bandwidth memory subsystem with error correction
    - Gigabit Ethernet
    - Five high-speed PCI-X expansion slots that enable high-speed system interconnect, such as external Ultra320 SCSI, additional Gigabit Ethernet adapters, etc.
    - Expandable, high-performance storage options
- **World-class benchmarks**. The Sun W1100z and W2100z workstations demonstrate world-class benchmarks on SPECintRate2000, SPECfpRate2000, SPECviewperf, Stream (memory bandwidth), as well as MCAE, EDA, oil and gas benchmarks .

Value

- **Competitive pricing**. The Sun Java Workstations W1100z/ W2100z compete head-to-head with any x86 workstation (Xeon, Itanium, Opteron, or any other processor). With price points similar to the mini-tower Xeon workstations, as well as high performance 32-bit x86 capability, the Sun Java Workstations W1100z/ W2100z can replace any such Xeon-based workstations. In addition, with outstanding 64-bit performance and low prices, the Sun W1100z and W2100z workstations are expected to depress the emerging Itanium dual-processor workstations.
- **Compatibility/ISV Certification**. Sun maintains strategic partnerships with leading workstation Independent Software Vendors (ISVs) to certify the Sun Java Workstations W1100z/ W2100z for compatibility. Through rigorous validation, Sun helps ensure flawless compatibility in the most complex and technically demanding computing environments. The Sun Java Workstations W1100z/ W2100z have been tuned for optimal performance with each application and deliver a best-in-class price-performance ratio for commodity 64-bit workstations in their class.
- **Investment protection**. By using the same architecture to run 32-bit and 64-bit operating systems and applications, the Sun W1100z/W2100z workstations help customers protect their investments in 32-bit operating systems/applications, while giving them a simplified migration path to 64-bit operating systems/applications. With the Sun Java Workstations W1100z/ W2100z, customers can take advantage of today's improved 32-bit performance enhancements and protect their 32-bit investments while retaining the ability to upgrade to 64-bit operating systems and applications as needed.
- **World-Class Services**. The Sun Java Workstations W1100z/ W2100z are supported by the world-class Sun Services organization, which provides a wide range of services to help customers reduce cost and complexity, accelerate network deployment, and deliver mobility with security—all from a single source.

Flexibility

Support for multiple operating systems. The Sun Java Workstations W1100z/ W2100z prove their high flexibility by providing support for multiple operating systems, including 32-bit Solaris 9 operating systems, 32-bit and 64-bit Red Hat Enterprise Linux, and 64-bit SuSE Linux Enterprise Server 9. The Solaris 9 x86 operating system will initially be available only in 32-bit format, followed by 64-bit format as soon as it is available later in 2005. Customers can purchase either Solaris or Linux operating systems from Sun and obtain complete system support from Sun. For customers who deploy 32-bit Windows XP Professional, the Sun W2100z workstation is WHQL certified. Customers will need to seek support for these operating systems from a third party as Sun does not provide support for any of the Windows operating systems.

- **Multiple graphics options.** The Sun Java Workstations W1100z/ W2100z support a wide variety of workstation-class graphics accelerators. Currently supporting graphics accelerators from NVIDIA, the Sun Java Workstations W1100z/ W2100z will broaden their support to other leading graphics accelerators vendors, such as ATI. The multiple graphics options of the Sun Java Workstations W1100z/ W2100z allow customers to achieve the next level of creativity with OpenGL high-performance graphics and support for multiple displays and visualization software.

Innovation

- **Latest processor technology.** The Sun Java Workstations W1100z/ W2100z are the first Sun workstations to feature the AMD Opteron processor with HyperTransport technology and an integrated memory controller, enabling true 64-bit computing on an x86 architecture. HyperTransport technology delivers exceptional bandwidth, alleviating the constraints that typically limit performance.
- **Robust and Compact Design.** The Sun Java Workstations W1100z/ W2100z feature a mini-tower form factor along with five USB 2.0 ports, two IEEE 1394a (FireWire) ports, one built-in Gigabit Ethernet port, Ultra320 SCSI interfaces, and multiple PCI-X slots.
- **ECC and chipkill technologies.** The Sun Java Workstations W1100z/W2100z utilize ECC memory and chipkill technologies. ECC detects errors and corrects memory errors before they spread, helping to ensure the integrity of the data stored in memory. Chipkill technology allows a single DRAM chip to fail (not the DIMM, just a single chip on the DIMM) without causing an entire system failure.

3.0 Target Markets and Customers

The Sun Java Workstations W1100z/ W2100z are targeted at customers in Fortune 1000 companies who:
- Are evaluating Xeon-based workstations for memory-intensive, I/O-bound applications or performance-bound applications
- Are looking for an easy migration to 64-bit computing
- Require visualization class graphics
- Are open to the best solution (not bounded by Intel solutions)

The Sun Java Workstations W1100z/ W2100z are also targeted at existing Sun customers who are interested in broadening their choice of deployment platforms to 64-bit computing. For those customers considering the 64-bit Itanium architecture, the Sun Java Workstations W1100z/ W2100z offer much better pricing, similar levels of 64-bit performance, and x86 software compatibility. Choosing the Sun Java Workstations W1100z/ W2100z would enable these customers to get the best performance, at the lowest prices, and still be able to run their existing 32-bit x86 applications—the best of all worlds.

Tables 3-1 and 3-2 show the target markets, target customers, and target customer needs for the Sun Java Workstations W1100z/ W2100z.

Table 3-1: Target Markets and Customers of the Sun Java Workstations W1100z

Sun Java Workstation W1100z Target Markets	Sun Java Workstations W1100z Target Customers	Sun Java Workstations W1100 Target Customer Needs
• Consumer Electronics • Higher Education • Government • Telco	• Software developers who develop and test commercial applications and datasets	• Flexible, low-cost development platform that supports 32-bit and 64-bit computing environments • Support for multiple operating systems • Eliminate issues associated with transitioning software applications and datasets
• Semiconductor manufacturers • Motherboard manufacturers • PCB manufacturers	• Electronic engineers who design and layout PCBs • Electronic engineers who design and verify complex ASICs	• High-performance CPUs • Entry-level professional 3D graphics • Large memory capacity • Low cost
• Automobile • Aerospace • Heavy machinery	• Mechanical engineers who design automobiles and aircraft and simulate crash tests of automobiles and aircraft	• Large amounts a memory • Increased I/O bandwidth

Table 3-2: Sun Java Workstation W2100z Target Markets and Customers

Sun Java Workstation W2100z Target Markets	Sun Java Workstation W2100z Target Customers	Sun Java Workstation W2100z Target Customer Needs
• Energy	• Geophysicists who want high-end graphics for compute-intensive applications such as seismic data visualization and interpretation, terrain visualization, and reservoir engineering	• Highest possible performance in CPU • Highest possbile performance in 3D graphics
• Government	• Defense electronics researchers who want mission-critical workstations to perform combat simulations	• Large memory capacity • High-quality 3-D graphics • Ability to manage large textures
• Higher Education • Government • Healthcare	• Scientific computing researchers who need to manipulate large datasets	• High-performance CPUs • High-quality 3-D graphics

4.0 Sun Java Workstation W1100z/W2100z Features

Features Comparison

Table 4-1 shows how the Sun Java Workstations W1100z/ W2100z compare.

Table 4-1: Sun W1100z and W2100z Workstation Features Comparison

	Sun Java Workstation W1100z	Sun Java Workstation W2100z
Processor Type	One AMD Opteron 100-series CPU	Two AMD Opteron 200-series CPUs
Processor Speed	1.8 GHz (Model 144) to 2.4 GHz (Model 150)	1.8 GHz (Model 244) to 2.6 GHz (Model 252)
Memory	Up to 8 GB of PC3200 Registered ECC Memory .	Up to 16 GB of PC3200 Registered ECC Memory
Graphics	NVIDIA NVS280, NVIDIA FX500, NVIDIA FX1100 NVIDIA FX3000, NVIDIA FX4000	
Networking	Gigabit Ethernet	
Optical Drives	DVD-ROM / CD-RW Standard (16x Dual Layer DVD Recorder Optional)	
Hard Disk Drive	Up to 160 GB (2x 80GB) of UltraATA-100	Up to 584 GB (4x 146GB) of Ultra320 SCSI
USB 2.0	Five ports	
FireWire	Two ports	
Audio	AC '97	
Parallel/Serial	One parallel (D-25 pin) / Two serial (DB-9-M)	
Height	462 mm (18.2 inches)	
Width	200 mm (7.9 inches)	
Depth	557 mm (21.9 inches)	
Weight	24 kg (53 lbs)	

Features, Functions, and Benefits

Table 4-2 describes the main features, functions, and benefits offered by the Sun Java Workstations W1100z/W2100z.

Table 4-2: Features, Functions, and Benefits of the Sun Java Workstations W1100z/W2100z

Feature	Function	Benefit
Up to two AMD Opteron 64-bit processors (W2100z only).	Delivers simultaneous 32-bit and 64-bit enterprise-class computing for increased scalability of systems and applications without requiring dramatic instruction-set changes and recompilation. Dual processor provides the ability to handle heavy duty tasks, such as manipulation of large datasets.	Provides high performance while ensuring investment protection.
AMD HyperTransport technology and 128-bit wide DDR memory controller.	HyperTransport provides a high-speed connection between processors and core logic while the integrated memory controller reduces latency by pooling memory resources into a single coherent space, alleviating CPU bandwidth constraints that typically limit performance in other x86 architectures.	Increases performance and productivity.
Embedded dual channel memory controller per processor.	Enables a high-speed, bi-directional communications link between the CPU and main memory at a bandwidth of 6.4 GB/sec.	Increases productivity and reduces time to market.
Support for up to 16 GB of PC3200 (aka DDR-400) registered ECC memory in 8 slots (4 slots per CPU).	Provides flexible memory configuration to support a variety of applications and computing tasks.	Increases performance and productivity.
Chipkill memory support.	Allows a single DRAM chip to fail (not the DIMM just a chip on the DIMM) and the system will continue to run.	Increases memory reliability, reduces downtime, and allows DIMM replacement to occur at regularly-scheduled service intervals.

Feature	Function	Benefit
Flexible graphics accelerator options.	Gives customers a choice of four graphics accelerators ranging from 2D to high-performance 3D, and provides the capability to visualize, analyze, and solve the most complex data sets.	Enables customers to choose the graphics card that suits their needs.
Four independent PCI-X buses.	Provides five PCI-X slots.	Offers efficient I/O utilization for I/O-bound applications.
Support for up to four Ultra320 SCSI or up to two UltraATA-100 disk drives.	Enables fast access to internal storage.	Increased application performance and disk swapping flexibility.
Rich connectivity suite.	Offers five USB 2.0 ports, 2 FireWire ports, and 1 Gigabit Ethernet port that enable convenient connections to peripheral devices.	Provides a flexible platform to meet changing business requirements.
Solaris 9 HW 4/04 Operating System, x86 Platform Edition support.	Runs Solaris x86 applications	Enables customers to run popular applications on one of the most robust, reliable operating systems available.
Qualification to run 32-bit and 64-bit standard Linux distributions.	Enables the Sun W1100z and W2100z workstations to run popular, off-the-shelf, standard Linux distributions and Linux packages from the top Linux vendors and Linux ISVs.	Gives customers the flexibility to choose which operating system best suits their needs.
Windows XP Professional WHQL-certified.	Enables the Sun Java Workstation W2100z to run Windows operating systems and applications.	Gives customers the flexibility to choose which operating system best suits their needs.
One year, next business day warranty.	Provides a robust and competitive service offering for warranty-level support	Peace of mind to customers knowing their Sun W1100z/W2100z workstation is covered by a legendary global services organization.
Same business day and 7x24 hardware support options.	Competitively priced, industry-standard hardware service and support options to meet the customer's service and system availability requirements.	Allows customers to choose which option best suits their needs and helps protect their investments in Sun hardware.

5.0 System Architecture

External Connectivity Ports

The Sun Java Workstations W1100z/ W2100z contain a rich suite of connectivity ports, as shown in Table 5-1. Most ports are conveniently located in the front and the back, providing easy access to peripherals, connectors, and visual indicators.

Table 5-1: Sun Java Workstations W1100z/W2100z I/O ports

Port Type	Front	Back
USB 2.0	2	3
FireWire (IEEE 1394a)	1	1
Gigabit Ethernet	0	1
Audio	2	3
Parallel	0	1
Serial	0	2

Figure 5-1 shows the front view of the Sun Java Workstations W1100z/W2100z. The CD/DVD-ROM always occupies the first external drive bay. The hard disk drive LED shows the activity of the 146-GB or 73-GB Ultra320 SCSI HDD (Sun Java Workstation W2100z only) or the 80-GB UltraATA HDD (Sun Java Workstation W1100z only). The system fault LED functionality will evolve over time. For the first release of the Sun W1100z/W2100z workstation, the System Fault LED will light up on any BIOS hardware error, including memory errors, POST errors (h/w), and machine check exceptions. Future releases of the Sun Java Workstations W1100z/ W2100z will support CPU overheating, fan speed failure, and other errors. The LED in the front panel provides only limited information—the PC Check diagnostic utility included with the Sun Java Workstations W1100z/ W2100z should be used to gain detailed information about the system.

Rounding out the front panel, the Sun Java Workstations W1100z/ W2100z provides convenient attachment to external portable hard drives or digital cameras via two USB 2.0 connectors and one IEEE 1394a (FireWire) connector. Additionally, an input for a microphone and an output for headphones are also included. The remaining complementary connectors are provided in the rear panel.

Figure 5-1: Sun Java Workstations W1100z/W2100z—Front View

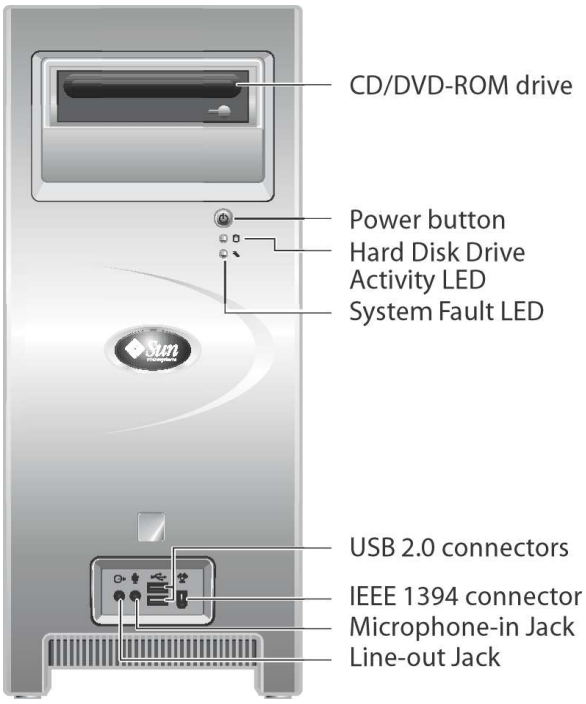

Figure 5-2 shows the rear view of the Sun Java Workstations W1100z/ W2100z. It contains the remaining USB ports, IEEE 1394a (FireWire) ports, and the audio ports introduced earlier. Starting from the top of the chassis, the Sun Java Workstations W1100z/ W2100z provide a parallel port and two serial ports. Next, two USB 2.0 ports and the remaining IEEE 1394a port are located. The final USB 2.0 port and the RJ-45 Gigabit Ethernet connector is next, followed by the remaining audio connectors (audio out, audio in, microphone in).

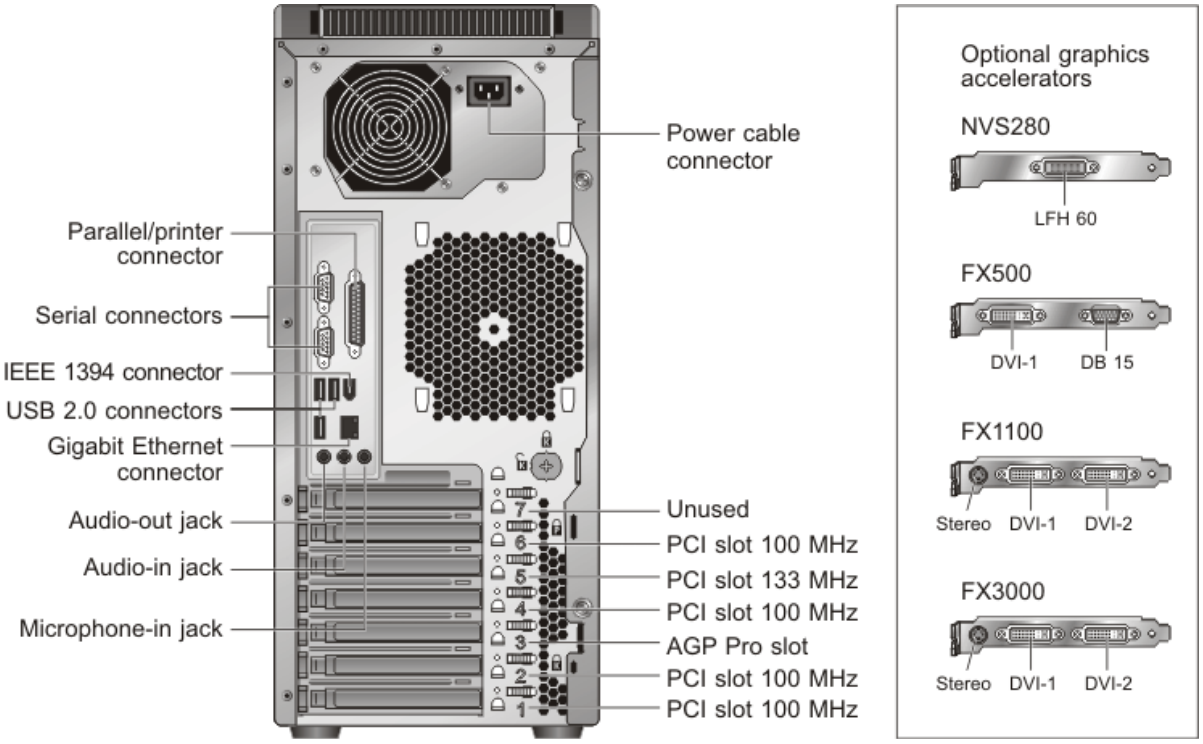

Figure 5-2: Sun W1100z/W2100z Workstation—Rear View

Expansion Slots

The Sun Java Workstations W1100z/ W2100z each have six expansion slots:

- One AGP 8x slot
- One PCI-X slot operating at 133 MHz
- Four PCI-X slots operating at 100 MHz

The AGP slot is always occupied by the graphics card. No other cards should ever be inserted into that slot. The Sun Java Workstations W1100z/ W2100z are not available without a graphics card. PCI-X slots can be used for optional cards such as Gigabit Ethernet, Ultra320 SCSI Adapter. Table 5-2 explains the layout of the expansion slots.

Table 5-2: Sun Java Workstations W1100z/W2100zExpansion Slot Layout

Slot	Type	Color	Description
Slot 1	PCI-X 100MHz 64 bit	White	Open slot (nearest to power supply)
Slot 2	PCI X 133MHz 64-bit	White	Open slot
Slot 3	PCI X 100MHz 64-bit	Black	Open slot
AGP	AGP 8x	Brown	Occupied by graphics card
Slot 4	PCI-X 100MHz 64 bit	White	Open slot
Slot 5	PCI-X 100MHz 64 bit	White	Open slot (farthest from power supply)

Motherboard

The heart of the new Sun Java Workstations W1100z/ W2100z is the motherboard. Both workstations are based on a common motherboard that utilizes the expansion card to gain one Advanced Graphics Port (AGP) and three PCI-X slots. The Sun Java Workstation W2100z has an additional processor card that enables dual processing. Figure 5-3 shows the motherboard layout for the Sun Java Workstations W1100z/ W2100z.

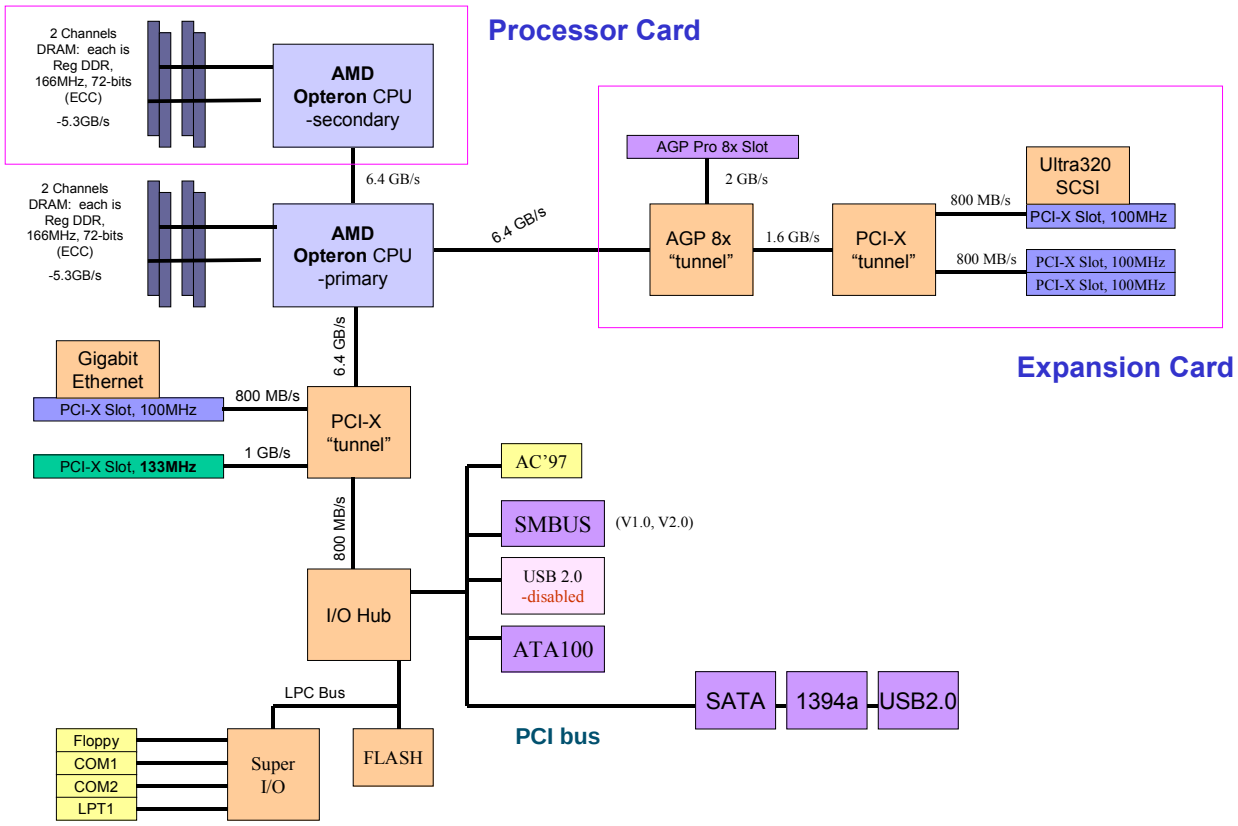

Figure 5-3: Sun W1100z/W2100z Workstation Motherboard Layout.

The AMD Opteron Processor

The Sun Java Workstations W1100z/ W2100z are powered by the AMD Opteron processor, which enables simultaneous 32-bit and 64-bit computing. The AMD Opteron processor is designed to run existing 32-bit applications with outstanding performance and offers customers a simplified migration path to 64-bit computing. This revolutionary processor provides a dramatic increase in compatibility, performance, and investment protection.

The Sun Java Workstation W1100z is based on the AMD Opteron 100 series 1-way processor and is available in a 1-way configuration ONLY. The Sun Java Workstation W2100z is based on two AMD Opteron 200 series 2-way processor. Table 5-3 shows the AMD Opteron processor features and benefits.

Table 5-3: AMD Opteron Processor Features and Benefits

Feature	Benefit
Simultaneous 32-bit and 64-bit computing capabilities.	Allows users to run 32-bit and/or 64-bit applications and operating systems without sacrificing performance.
Support for up to three coherent HyperTransport links, with up to 19.2 GB/s peak bandwidth per processor.	Provides substantial I/O bandwidth for current and future application needs.
256 Terabytes of memory address space.	Creates a significant performance benefit for applications in which large (or multiple) datasets are held in memory.
Scales from 1-way to 8-way processing across entire data or compute centers utilizing the same hardware and software infrastructure.	Allows for maximum flexibility in IT infrastructure, helping contribute to bottom line success.
Integrated memory controller.	Yields fast computational processing for increased performance and productivity.

Chipsets

The AMD-8000™ series of chipset are designed to support the AMD Opteron processor. Implementing HyperTransport technology as the system backbone, these core-logic elements deliver outstanding performance and design flexibility. This chipset consists of several building-block components that can be used together in a variety of system designs.

The AMD-8151™ HyperTransport™ AGP 3.0 Tunnel component provides AGP 3.0 capability to the Sun W1100z and W2100z workstations. AGP, or Advanced Graphics Port, is a 2 GB/sec interface with intelligent memory management dedicated strictly for graphics. AGP enables the Sun W1100z and W2100z workstations to offer high-performance, off-the-shelf graphics accelerators. Included in the AMD-8151™ chipset component are the following high-level features:

- AGP 3.0 (AGP-8x) interface
- HyperTransport™ tunnel

The AMD-8131™ HyperTransport™ PCI-X 1.0 Tunnel component provides high-speed PCI-X 1.0 capability to platforms requiring high-performance I/O expansion. The AMD-8131™ chipset component high-level feature-set includes the following features:

- Dual PCI-X 1.0 interface (supporting 133MHz, 100Mhz, 66MHz, and Legacy-PCI speeds)
- HyperTransport™ tunnel
- APIC

The AMD-8111™ HyperTransport™ I/O Hub component integrates the system I/O functions into a single component, thus serving as the system "I/O Hub." The AMD-8111™ chipset component high-level feature-set includes the following features:

- HyperTransport™ interface
- 10/100 Ethernet (upgraded to Gigabit Ethernet on the Sun W1100z and W2100z workstations)
- EIDE Controller, supporting up to ATA-100
- AC'97 Audio
- USB 1.1 (upgraded to USB 2.0 on Sun W1100z and W2100z workstations)
- I/O buses: PCI, LPC, SMbus, and APIC

Memory

Previously available only in high-performance 64-bit processors such as the Sun UltraSPARC IIIi, the AMD Opteron processor incorporates an integrated memory controller and improves the way typical x86 processors access main memory, resulting in increased bandwidth, reduced memory latencies, and increased processor performance.

The 128-bit wide integrated DDR DRAM memory controller is capable of yielding a memory bandwidth of 6.4 GB/s and supports up to four registered DDR DIMMs. The Sun Java Workstation W1100z can reach up to a maximum of 8GB (using 2-GB DIMMs in 4 DIMM slots) and supports only industry-standard registered ECC PC3200 DIMMs in 512-MB, 1-GB, and 2-GB configurations. All DIMMs are available only in pairs from Sun and must only be installed in pairs. Table 5-4 explains the paths for upgrading memory on the Sun Java Workstation W1100z.

Table 5-4: Memory Upgrade Paths for the Sun Java Workstation W1100z

From	To	Actions	Remaining DIMM Sockets
Sun Java Workstation W1100z w/ 512 MB (1x 512-MB DIMM)	1 GB	• Remove existing single 512-MB DIMM (Do not leave in) • Install one 1-GB memory kit (two 512-MB DIMMs)	• 2
	2 GB	• Remove existing 512-MB DIMM (Do not leave in) • Install one 2-GB memory kit (two 1-GB DIMMs) or two 1-GB memory kit (four 512-MB DIMMs)	• 2 (if using one 2-GB memory kits) • 0 (if using two 1-GB memory kits)
	4 GB	• Remove existing 512-MB DIMM (Do not leave in) • Install two 2-GB memory kits (four 1-GB DIMMs)	• 0
	8 GB	• Remove existing 512-MB DIMM (Do not leave in) • Install two 4-GB memory kits (four 2-GB DIMMs)	• 0
Sun Java Workstation W1100z w/ 1GB (2x 512-MB DIMMs)	2 GB	• Leave in two 512-MB DIMMs • Install one 1-GB memory kit (two 512-MB DIMMs)	• 0
	4GB	• Remove existing two 512-MB DIMMs (Do not leave in) • Install one 4-GB Memory Kit (two 2-GB DIMMs) or two 2-GB memory kits (four 1-GB DIMMs)	• 2 (if using one 4-GB memory kit) • 0 (if using two 2-GB memory kits)
	8GB	• Remove existing two 512-MB DIMMs (Do not leave in) • Install two 4-GB memory kits (four 2-GB DIMMs)	• 0

The Sun Java Workstation W2100z has two 128-bit wide, integrated DDR DRAM memory controllers that are capable of yielding a memory bandwidth of 12.8 GB/s and supports up to eight registered DDR DIMMs. The Sun Java Workstation W2100z can reach up to a maximum of 16 GB (using 2-GB DIMMS in 8 DIMM slots) and supports only industry-standard registered ECC PC3200 DIMMs in 512-MB, 1-GB, and 2-GB configurations. All DIMMs are available only in pairs from Sun and must only be installed in pairs. Table 5-5 explains the paths for upgrading memory on the Sun Java Workstation W2100z.

Table 5-5: Memory Upgrade Path for the Sun Java Workstation W2100z

From	To	Actions	Remaining DIMM Sockets
Sun Java Workstation W2100z w/ 2 GB (4x 512-MB DIMMs)	4 GB	• Leave in four 512-MB DIMMs • Add one 2-GB memory kit (two 1-GB DIMMs)	• 2
	8 GB	– Remove all existing DIMMs (Do not leave in) – Install two 4-GB memory kits (four 2-GB DIMMs) or four 2-GB memory kits (eight 1-GB DIMMs)	• 4 (if using two 4-GB memory kits) • 0 (if using four 2-GB memory kits)
	16 GB	• Remove all existing DIMMs • Install four 4-GB memory kits (eight 2-GB DIMMs)	• 0
Sun Java Workstation W2100z w/ 4 GB (4x 1-GB DIMMs)	8 GB	– Leave in all existing DIMMs – Add two 2-GB memory kits (four 1-GB DIMMs) or one 4-GB memory kit (two 2-GB DIMMs)	• 0 (if using two 2-GB memory kits) • 2 (if using one 4-GB memory kit)
	16GB	– Remove all existing DIMMs. – Install four 4-GB memory kits (eight 2-GB DIMMs)	• 0

NOTE: The DIMMs used in the Sun Java Workstations W1100z/ W2100z have gone through extensive testing and qualification before being added to Sun's approved vendor list. Note that not all vendors perform equally, and some third-party memory vendors do not provide the reliability and quality Sun customers expect. Sun recommends that customers use only Sun-qualified memory for maximum reliability.

Expansion Bays

The Sun Java Workstations W1100z/ W2100z each have six expansion bays: two external and four internal. The first external bay is always occupied by the DVD-ROM/CD-RW drive. Table 5-6 describes the different expansion bays.

Note: The Sun Java Workstations W1100z/ W2100z initially will support only two internal hard drives. Up to four internal hard drives will be supported after General Availability.

Table 5-6: Sun W1100z and W2100z Workstation Expansion Bays

Bay	Type	Description
Bay 1	External	Occupied with DVD-ROM/CD-RW drive
Bay 2	External	Open bay for 16x Dual Layer DVD Recorder
Bay 3	Internal	Open bay for HDD (Ultra320 or UltraATA)
Bay 4	Internal	Open bay for HDD (Ultra320 or UltraATA)
Bay 5	Internal	Do not occupy
Bay 6	Internal	Open bay for HDD (Ultra320 only)
Bay 7	Internal	Open bay for HDD (Ultra320 only)

Storage

The Sun Java Workstation W1100z is available in standard configuration with UltraATA-100 drives only and the option to add one more UltraATA drive for a maximum of two drives. The Sun Java Workstation W1100z is not available with SCSI in a standard configuration.

The Sun Java Workstation W2100z is available in standard configuration with Ultra320 SCSI drives only and the option to add up to three more Ultra320 drive for a maximum of four drives. The Sun Java Workstation W2100z is not availble with UltraATA in a standard configuration.

6.0 Operating Systems

Sun Java Workstations W1100z/W2100z Operating Systems Support

The Sun Java Workstations W1100z/ W2100z are 64-bit workstations that offer the widest available range of operating systems support—more than other workstations offered by Sun's competitors. The Sun Java Workstations W1100z/ W2100z support multiple 32-bit and 64-bit operating systems, including Linux and Solaris. The Sun Java Workstation W2100z is also Windows XP Professional WHQL (Windows Hardware Qualification Lab) certified. Table 6-1 shows the different operating systems supported on the Sun W1100z/W2100z workstations.

Table 6-1: Supported Operating Systems

Operating System		Qualified?	Pre-installed Option at the Factory?	Sold by Sun?
Red Hat Enterprise Linux 3.0 WS v3 - x86	32-bit	Yes	No	Yes
Red Hat Enterprise Linux 3.0 WS v3 - AMD64	64-bit	Yes	No	Yes
SuSE Linux Enterprise Server 9 for AMD64 & Intel EM64T	64-bit	Yes	No	Yes
Solaris 9 HW 4/04 - x86 Platform Edition	32-bit	Yes	No	Yes
MS Windows XP Professional	32-bit	Yes	No	No

Red Hat Enterprise Linux 3.0 WS v3—x86, Red Hat Enterprise Linux 3.0 WS v3—AMD64, and Solaris x86 can be ordered from Sun. Support contracts are also available for these operating systems.

The Sun Java Workstation W2100z has been qualified by the Microsoft Hardware Quality Labs (WHQL) and have earned the "Compatible with Windows" designation as a certified platform to run the Microsoft Windows XP Professional Operating system. The Sun Java Workstation W2100z is listed on the Microsoft Hardware Compatibility List (HCL) which can be seen by visiting the Microsoft Windows Hardware and Driver Central (WHDC) at http://www.microsoft.com/whdc/hcl/search.mspx. While qualified to run the Microsoft Windows XP Professional operating systems, these operating systems are not available from Sun for either purchase or support. Sales and support for the Microsoft operating system can be obtained from a Microsoft certified partner.

The Sun Java Workstation W2100z/W1100z have been qualified by Red Hat's Hardware Certification Program as a certified platform to run the Red Hat Enterprise Linux 3.0 WS v3 – x86 Operating System and the Red Hat Enterprise Linux 3.0 WS v3 – AMD64 Operating System. Full detail of certification is listed on the Red Hat Hardware Compatibility which can be seen by visiting http://hardware.redhat.com/hcl/?pagename=hcl&view=certified&vendor=427&class=3#list.

The Sun Java Workstation W2100z/W1100z have been qualified by Novell's Hardware Certification Program as a certified platform to run the SUSE® LINUX Enterprise Server 9 for AMD64® & Intel® EM64T® Operating System. Full detail of certification is listed on Novell's Hardware Certification Program which can be seen by visiting http://developer.novell.com/yes/79330.htm

7.0 Supported Graphics Accelerators

Five graphics cards can be installed in the Sun Java Workstations W1100z/ W2100z:

- NVIDIA Quadro NVS280
- NVIDIA Quadro FX500
- NVIDIA Quadro FX1100
- NVIDIA Quadro FX3000
- NVIDIA Quadro FX4000

NVIDIA Quadro NVS280

The NVIDIA Quadro NVS280 Graphics Accelerator is a professional 2-D graphics card with dual-display capabilities. The Sun Java Workstations W1100z/ W2100z support only one NVIDIA Quadro NVS280 graphics accelerator card at a time. The Quadro NVS280 includes:

- 64 MB of 200MHz DDR SDRAM
- Dual 350-MHz integrated RAMDACs
- Maximum power of 13W
- Dual TMDS transmitters
- AGP8x support with fast writes
- Single high-density connector to support dual analog or digital displays
- Quality drivers for easy installation and manageability

Table 7-1: NVIDIA Quadro NVS280 Screen Resolutions and Refresh Rates

Resolution	Color Bits	Refresh Rate (Hz)
320 x 200	8, 16, 32	60, 70, 75
320 x 240	8, 16, 32	60, 70, 75
400 x 300	8, 16, 32	60, 70, 75
480 x 360	8, 16, 32	60, 70, 75
512 x 384	8, 16, 32	60, 70, 75
640 x 400	8, 16, 32	60, 70, 72, 75, 85, 100, 120
640 x 480	8, 16, 32	60, 70, 75, 85, 100, 120
800 x 600	8, 16, 32	60, 70, 72, 75, 85, 100, 120
800 x 600	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1152 x 864	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1280 x 960	8, 16, 32	60, 70, 75, 85, 100, 120
1280 x 1024	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1600 x 900	8, 16	60, 70, 75, 85, 100
1600 x 900	32	60, 70, 75, 85
1600 x 1200	8, 16	60, 70, 72, 75, 85, 100, 120
1600 x 1200	32	60, 70, 72, 75, 85, 100
1792 x 1344	8, 16, 32	60, 75
1856 x 1392	8, 16, 32	60, 75
1920 x 1080	8, 16	60, 70, 72, 75, 85, 100
1920 x 1080	32	60, 70, 72, 75, 85
1920 x 1200	8, 16	60, 70, 72, 75, 85, 100
1920 x 1200	32	60, 70, 72, 75, 85
1920 x 1440	8, 16	60, 70, 72, 75, 85
1920 x 1440	32	60, 70, 72, 75
2048 x 1536	8, 16	60, 70, 72, 75
2048 x 1536	32	60

NVIDIA Quadro FX500

The NVIDIA Quadro FX500 Graphics Accelerator is a professional, entry-level 3-D graphics card with dual-display capabilities. The Sun Java Workstations W1100z/ W2100z support only one NVIDIA Quadro FX500 graphics accelerator card at a time. The Quadro FX500 includes:

- 128 MB of 128-bit DDR SDRAM
- Dual 270-MHz integrated RAMDACs
- Maximum power of 11.6W
- Dual TMDS transmitters
- AGP8x support with fast writes
- DVI-I and VGA connectors to support dual analog or digital displays
- Quality drivers for easy installation and manageability

Table 7-2: NVIDIA Quadro FX500 Screen Resolutions and Refresh Rates

Resolution	Color Bits	Refresh Rate (Hz)
320 x 200	8, 16, 32	60, 70, 75
320 x 240	8, 16, 32	60, 70, 75
400 x 300	8, 16, 32	60, 70, 75
480 x 360	8, 16, 32	60, 70, 75
512 x 384	8, 16, 32	60, 70, 75
640 x 400	8, 16, 32	60, 70, 72, 75, 85, 100, 120
640 x 480	8, 16, 32	60, 70, 75, 85, 100, 120
800 x 600	8, 16, 32	60, 70, 72, 75, 85, 100, 120
800 x 600	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1152 x 864	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1280 x 960	8, 16, 32	60, 70, 75, 85, 100, 120
1280 x 1024	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1600 x 900	8, 16	60, 70, 75, 85, 100
1600 x 900	32	60, 70, 75, 85
1600 x 1200	8, 16	60, 70, 72, 75, 85, 100, 120
1600 x 1200	32	60, 70, 72, 75, 85, 100
1792 x 1344	8, 16, 32	60, 75
1856 x 1392	8, 16, 32	60, 75
1920 x 1080	8, 16	60, 70, 72, 75, 85, 100
1920 x 1080	32	60, 70, 72, 75, 85
1920 x 1200	8, 16	60, 70, 72, 75, 85, 100
1920 x 1200	32	60, 70, 72, 75, 85
1920 x 1440	8, 16	60, 70, 72, 75, 85
1920 x 1440	32	60, 70, 72, 75
2048 x 1536	8, 16	60, 70, 72, 75
2048 x 1536	32	60

NVIDIA Quadro FX1100

The NVIDIA Quadro FX1100 Graphics Accelerator is a mid-range 3-D graphics card with dual-display capabilities. The Sun Java Workstations W1100z/ W2100z support only one NVIDIA Quadro FX1100 graphics accelerator card at a time. The Quadro FX1100 includes:

- 128 MB of 128-bit DDR SDRAM
- Dual 400-MHz integrated RAMDACs
- Maximum power of 47W
- Hardware-accelerated 16x full-scene anti-aliasing (FSAA)
- 2 DVI-I connectors + Stereo
- AGP8x support with fast writes
- Quality drivers for easy installation and manageability

Table 7-3: NVIDIA Quadro FX1100 Screen Resolutions and Refresh Rates

Resolution	Color Bits	Refresh Rate (Hz)
320 x 200	8, 16, 32	60, 70, 75
320 x 240	8, 16, 32	60, 70, 75
320 x 240	8, 16, 32	60, 70, 75
480 x 360	8, 16, 32	60, 70, 75
512 x 384	8, 16, 32	60, 70, 75
640 x 400	8, 16, 32 ·	60, 70, 72, 75, 85, 100, 120
640 x 480	8, 16, 32	60, 70, 75, 85, 100, 120
800 x 600	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1024 x 768	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1152 x 864	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1280 x 720	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1280 x 960	8, 16, 32	60, 70, 75, 85, 100, 120
1280 x 1024	8, 16, 32 ·	60, 70, 72, 75, 85, 100, 120
1600 x 900	8, 16, 32	60, 70, 75, 85, 100
1600 x 1200	8, 16, 32	60, 70, 72, 75, 85, 100
1792 x 1344	8, 16, 32 ·	60, 75
1856 x 1392	8, 16, 32	60, 75
1920 x 1080	8, 16, 32	60, 70, 72, 75, 85, 100
1920 x 1200	8, 16, 32	60, 70, 72, 75, 85
1920 x 1440	8, 16, 32	60, 70, 72, 75, 85
2048 x 1536	8, 16, 32	60, 70, 72, 75, 85
3840 x 2400	8, 16, 32	13, 20, 24, 25

NVIDIA Quadro FX3000

The NVIDIA Quadro FX3000 Graphics Accelerator is a high-end 3-D graphics card with dual-display capability. The Sun Java Workstations W1100z/ W2100z support only one NVIDIA Quadro FX3000 graphics accelerator card at a time. The Quadro FX3000 includes:

- 256MB of 256-bit DDR SDRAM
- Dual 400-MHz integrated RAMDACs
- Maximum power of 67W
- 12 programmable shader units
- 12-bit subpixel precision
- Hardware-accelerated 16x full-scene anti-aliasing (FSAA)
- 2 DVI-I connectors + Stereo
- AGP8x support with fast writes
- Quality drivers for easy installation and manageability

Table 7-4: NVIDIA Quadro FX3000 Screen Resolutions and Refresh Rates

Resolution	Color Bits	Refresh Rate (Hz)
320 x 200	8, 16, 32	60, 70, 75
320 x 240	8, 16, 32	60, 70, 75
400 x 300	8, 16, 32	60, 70, 75
480 x 360	8, 16, 32	60, 70, 75
512 x 384	8, 16, 32	60, 70, 75
640 x 400	8, 16, 32	60, 70, 72, 75, 85, 100, 120
640 x 480	8, 16, 32	60, 70, 75, 85, 100, 120
800 x 600	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1024 x 768	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1152 x 864	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1280 x 720	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1280 x 960	8, 16, 32	60, 70, 75, 85, 100, 120
1280 x 1024	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1600 x 900	8, 16, 32	60, 70, 75, 85, 100
1600 x 1200	8, 16	60, 70, 72, 75, 85, 100
1792 x 1344	8, 16, 32	60, 75
1856 x 1392	8, 16, 32	60, 75
1920 x 1080	8, 16	60, 70, 72, 75, 85, 100
1920 x 1080	32	60, 70, 72, 75, 85
1920 x 1200	8, 16	60, 70, 72, 75, 85, 100
1920 x 1200	32	60, 70, 72, 75, 85
1920 x 1440	8, 16, 32	60, 70, 72, 75, 85
2048 x 1536	8, 16, 32	60, 70, 72, 75, 85
3840 x 2400	8, 16, 32	13, 20, 24, 25

NVIDIA Quadro FX4000

The NVIDIA Quadro FX4000 Graphics Accelerator is an ultra high-end 3-D graphics card with dual-display capability. The SSun Java Workstations W1100z/ W2100z support only one NVIDIA Quadro FX4000 graphics accelerator card at a time. The Quadro FX4000 includes:

- 256MB of 256-bit DDR SDRAM
- Dual 400-MHz integrated RAMDACs
- Maximum power of 110W
- 12 programmable shader units
- 12-bit subpixel precision
- Hardware-accelerated 16x full-scene anti-aliasing (FSAA)
- 2 DVI-I connectors + Stereo
- AGP8x support with fast writes
- Quality drivers for easy installation and manageability

Table 7-4: NVIDIA Quadro FX3000 Screen Resolutions and Refresh Rates

Resolution	Color Bits	Refresh Rate (Hz)
320 x 200	8, 16, 32	60, 70, 75
320 x 240	8, 16, 32	60, 70, 75
400 x 300	8, 16, 32	60, 70, 75
480 x 360	8, 16, 32	60, 70, 75
512 x 384	8, 16, 32	60, 70, 75
640 x 400	8, 16, 32	60, 70, 72, 75, 85, 100, 120
640 x 480	8, 16, 32	60, 70, 75, 85, 100, 120
800 x 600	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1024 x 768	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1152 x 864	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1280 x 720	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1280 x 960	8, 16, 32	60, 70, 75, 85, 100, 120
1280 x 1024	8, 16, 32	60, 70, 72, 75, 85, 100, 120
1600 x 900	8, 16, 32	60, 70, 75, 85, 100
1600 x 1200	8, 16	60, 70, 72, 75, 85, 100
1792 x 1344	8, 16, 32	60, 75
1856 x 1392	8, 16, 32	60, 75
1920 x 1080	8, 16	60, 70, 72, 75, 85, 100
1920 x 1080	32	60, 70, 72, 75, 85
1920 x 1200	8, 16	60, 70, 72, 75, 85, 100
1920 x 1200	32	60, 70, 72, 75, 85
1920 x 1440	8, 16, 32	60, 70, 72, 75, 85
2048 x 1536	8, 16, 32	60, 70, 72, 75, 85
3840 x 2400	8, 16, 32	13, 20, 24, 25

8.0 Environment and Regulations

Environment

The Sun Java Workstations W1100z/ W2100z plan to meet or exceed the following environmental specifications.

Table 8-1: Environmental Specifications Met by the Sun Java Workstations W1100z/W2100z

	Sun Java Workstations W1100z/W2100z
AC Power	100-120; 220-240 V AC, 47–63 Hz, typical 2 CPU config 0.39 KVA; Maximum 0.875 KVA
Operating	5° C to 35° C (41° F to 95° F); 20% to 93% relative humidity, non-condensing
Non-operating	-40° C to 65° C (-40° F to 158° F); 93% relative humidity, non-condensing
Operating Acoustic Noise	5.1 bels
Idling Acoustic Noise	5.0 bels

Regulations

The Sun Java Workstations W1100z/ W2100z plan to meet or exceed the following regulations.

Table 8-2: Regulations Met by the Sun Java Workstations W1100z/W2100z

	Sun Java Workstations W1100z/W2100z
Safety	UL/CSA-60950, EN 60950, IEC 60950 CB
Ergonomics	EK1-1TB-2000
RFI/EMC	EN 55022/CISPR22 Class B, FCC CFR47 Part 15 Class B; EN 6100-3-2, EN 61000-3-3
Immunity	EN 55024
Regulatory Markings	UL/cUL, TUV-GS, CE FCC, ICES-003, C-Tiek, VCCI, GOST-R, BSMI CCC, S-Mark
Power Management	TBD

9.0 Ordering and Availability

Sun Java Workstation W1100z Standard Configurations

The following are part numbers and descriptions for the Sun Java Workstation W1100z factory standard configurations.

Table 9-1: Sun Java Workstation W1100z Standard Configurations

Part Number	Description
A58-AWB1-9B-512DLJ	Sun Java Workstation W1100z - "Small" Configuration Single Opteron 144 (1.8GHz) Processor, NVIDIA Quadro NVS280 Graphics Accelerator, 512 MB PC3200 (DDR-400) Memory (1 * 512MB DIMM), 80-GB 7200rpm UltraATA-100 Hard Disk, 1 * DVD-ROM/CD-RW, 1 * 10/100/1000 BaseT Ethernet port, 2 * Serial ports, 1 * Parallel port, 5 * USB 2.0 ports, 2 * IEEE1394a ports, 1 * AGP8x slot, 5 * PCI-X slots , 90-day trial version of Java Desktop System Release 2 pre-installed
A58-AZB1-9C-1GBDLJ	Sun Java Workstation W1100z - "Large" Configuration Single Opteron 150 (2.4GHz) Processor, NVIDIA Quadro FX500 Graphics Accelerator, 1 GB PC3200 (DDR-400) Memory (2 * 512MB DIMM), 80-GB 7200rpm UltraATA-100 Hard Disk, 1 * DVD-ROM/CD-RW, 1 * 10/100/1000 BaseT Ethernet port, 2 * Serial ports, 1 * Parallel port, 5 * USB 2.0 ports, 2 * IEEE1394a ports, 1 * AGP8x slot, 5 * PCI-X slots, 90-day trial version of Java Desktop System Release 2 pre-installed

Sun Java Workstation W1100z X-Options and XATO Options

The following are part numbers and descriptions for the Sun Java Workstation W1100z X-Options and XATO (External Assemble to Order) options.

Table 9-2: Sun Java Workstation W1100z Options

Part Number	Description
A58-AA	Sun Java Workstation W1100z 1P AMD Opteron-based workstation base system - Chassis Motherboard, DVD-ROM/CD-RW Drive, 1x10/100/1000 Ethernet ports, 1x AGP8x Pro slot, 5x PCI-X slots, internal AC Power Supply. XATO ONLY
9203A	ATO Option 2.4-GHz 1P Opteron 150 CPU for Sun Java Workstation W1100z
9202A	ATO Option 2.2-GHz 1P Opteron 148 CPU for Sun Java Workstation W1100z
9201A	ATO Option 2.0-GHz 1P Opteron 146 CPU for Sun Java Workstation W1100z
9200A	ATO Option 1.8-GHz 1P Opteron 144 CPU for Sun Java Workstation W1100z
9210A	ATO Option 4-GB Memory Kit (2x 2GB) for Sun Java Workstation W2100z or Sun Java Workstation W1100z. This memory kit operates at PC3200 (aka DDR-400).
X9210A	X-Option 4-GB Memory Kit (2x 2GB) for Sun Java Workstation W1100z or Sun Java Workstation W2100z. This memory kit operates at PC3200 (DDR-400).
9209A	ATO Option 2-GB Memory Kit (2x 1GB) for Sun Java Workstation W1100z or Sun Java Workstation W2100z. This memory kit operates at PC3200 (aka DDR-400).
X9209A	X-Option 2-GB Memory Kit (2x 1GB) for Sun Java Workstation W1100z or Sun Java Workstation W2100z. This memory kit operates at PC3200 (aka DDR-400).
9208A	ATO Option 1-GB Memory Kit (2x 512MB) for Sun Java Workstation W1100z or Sun Java Workstation W2100z. This memory kit operates at PC3200 (aka DDR-400).
X9208A	X-Option 1-GB Memory Kit (2x 512MB) for Sun Java Workstation W1100z or Sun Java Workstation W2100z. This memory kit operates at PC3200 (DDR-400).
9224A	ATO 80-GB Internal ATA Hard Drive for Sun Java Workstation W1100zwith Java Desktop System Release 2 pre-installed
9222A	ATO 80-GB Internal ATA Hard Drive for Sun Java Workstation W1100zwith Java Desktop System Release 2 for Solaris x86 pre-installed
9217A	ATO 80-GB Internal ATA Hard Drive for Sun Java Workstation W1100z (without pre-installed SW)
X9217A	X-Option 80-GB Internal ATA Hard Drive for Sun Java Workstation W1100z (without pre-installed SW)
9215A	ATO NVIDIA FX4000 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z
X9215A	X-Option NVIDIA FX4000 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z
9214A	ATO NVIDIA FX3000 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z
X9214A	X-Option NVIDIA FX3000 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z

Part Number	Description
9213A	ATO NVIDIA Quadro FX1100 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z.
X9213A	X-Option NVIDIA Quadro FX1100 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z.
9212A	ATO Option NVIDIA FX500 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z.
X9212A	X-Option NVIDIA Quadro FX500 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z.
9211A	ATO NVIDIA Quadro NVS280 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z.
X9211A	X-Option NVIDIA Quadro NVS280 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z.
9221A	ATO Option 16x Dual Layer DVD Recorder for Sun Java Workstation W1100z or Sun Java Workstation W2100z
X9221A	X-Option 16x Dual Layer DVD Recorder for Sun Java Workstation W1100z or Sun Java Workstation W2100z.
X9265A	Ultra320 SCSI dual-channel PCI-X card for the Sun Java Workstation W1100z or Sun Java Workstation W2100z.
X9271A	Single-port Gigabit Ethernet 66-MHz or 133-MHz PCI-X card for the Sun Java Workstation W1100z or Sun Java Workstation W2100z.

Sun Java Workstation W2100z Standard Configurations

The following are part numbers and descriptions for the Sun Java Workstation W2100z factory standard configurations.

Table 9-3: Sun Java Workstation W2100z Standard Configurations

Part Number	Description
A59-NGB2-9E-4GBDQ	Sun Java Workstation W2100z Dual Opteron 252 (2.6GHz) Processor, NVIDIA Quadro FX3000 Graphics Accelerator, 4GB PC3200 (DDR-400) Memory (4 * 1GB DIMM), 73-GB 10Krpm Ultra320 SCSI Hard Disk, 1 * DVD-ROM/CD-RW, 1 * 10/100/1000 BaseT Ethernet port, 2 * Serial ports, 1 * Parallel port, 5 * USB 2.0 ports, 2 * IEEE1394a ports, 1 * AGP8x slot, 5 * PCI-X slots , 90-day trial version of Java Desktop System Release 2 pre-installed
A59-NGB2-9D-2GBDQ	Sun Java Workstation W2100z Dual Opteron 252 (2.6GHz) Processor, NVIDIA Quadro NVS280 Graphics Accelerator, 2GB PC3200 (DDR-400) Memory (4 * 512MB DIMM), 73-GB 10Krpm Ultra320 SCSI, Hard Disk, 1 * DVD-ROM/CD-RW, 1 * 10/100/1000 BaseT Ethernet port, 2 * Serial ports, 1 * Parallel port, 5 * USB 2.0 ports, 2 * IEEE1394a ports, 1 * AGP8x slot, 5 * PCI-X slots , 90-day trial version of Java Desktop System Release 2 pre-installed
A59-NWB2-9D-1GBDQ	Sun Java Workstation W2100z Dual Opteron 244 (1.8GHz) Processor, NVIDIA Quadro NVS280 Graphics Accelerator, 1GB GB PC3200 (DDR-400) Memory (2 * 512MB DIMM), 73-GB 10Krpm Ultra320 SCSI Hard Disk, 1 * DVD-ROM/CD-RW, 1 * 10/100/1000 BaseT Ethernet port, 2 * Serial ports, 1 * Parallel port, 5 * USB 2.0 ports, 2 * IEEE1394a ports, 1 * AGP8x slot, 5 * PCI-X slots , 90-day trial version of Java Desktop System Release 2 pre-installed

Sun Java Workstation W2100z X-Options and XATO Options

The following are part numbers and descriptions for the Sun Java Workstation W2100z X-Options and XATO (External Assemble to Order) options.

Table 9-4: Sun Java Workstation W2100z Options

Part Number	Description
A59-AA	Sun Java Workstation W2100z 2P AMD Opteron-based workstation base system - Chassis Motherboard, DVD-ROM/CD-RW Drive, 1x10/100/1000 Ethernet ports, 1x AGP8x Pro slot, 5x PCI-X slots, internal AC Power Supply. XATO ONLY
9226A	ATO Option 2.6-GHz 2P Opteron 252 CPU for Sun Java Workstation W2100z
9207A	ATO Option 2.4-GHz 2P Opteron 250 CPU for Sun Java Workstation W2100z
9206A	ATO Option 2.2-GHz 2P Opteron 248 CPU for Sun Java Workstation W2100z
9205A	ATO Option 2.0-GHz 2P Opteron 246 CPU for Sun Java Workstation W2100z
9204A	ATO Option 1.8-GHz 2P Opteron 244 CPU for Sun Java Workstation W2100z
9210A	ATO Option 4-GB Memory Kit (2x 2GB) for Sun Java Workstation W1100z or Sun Java Workstation W2100z. This memory kit operates at PC3200 (aka DDR-400).

Part Number	Description
X9210A	X-Option 4-GB Memory Kit (2x 2GB) for Sun Java Workstation W1100z or Sun Java Workstation W2100z. This memory kit operates at PC3200 (DDR-400).
9209A	ATO Option 2-GB Memory Kit (2x 1GB) for Sun Java Workstation W1100z or Sun Java Workstation W2100z. This memory kit operates at PC3200 (aka DDR-400).
X9209A	X-Option 2-GB Memory Kit (2x 1GB) for Sun Java Workstation W1100z or Sun Java Workstation W2100z. This memory kit operates at PC3200 (aka DDR-400).
9208A	ATO Option 1GB Memory Kit (2x 512MB) for Sun Java Workstation W1100z or Sun Java Workstation W2100z. This memory kit operates at PC3200 (aka DDR-400).
X9208A	X-Option 1-GB Memory Kit (2x 512MB) for Sun Java Workstation W1100z or Sun Java Workstation W2100z. This memory kit operates at PC3200 (DDR-400).
9220A	ATO Option 146-GB Internal Ultra320 SCSI Hard Drive for Sun Java Workstation W2100z (without pre-installed SW)
X9220A	X-Option 146-GB Internal Ultra320 SCSI Hard Drive for Sun Java Workstation W2100z (without pre-installed SW)
9223A	ATO Option 73-GB Internal Ultra320 SCSI Hard Drive for Sun Java Workstation W2100z with Java Desktop System Release 2 for Solaris x86 pre-installed
9225A	ATO Option 73-GB Internal Ultra320 SCSI Hard Drive for Sun Java Workstation W2100z with Java Desktop System Release 2 pre-installed
X9219A	X-Option 73-GB Internal Ultra320 SCSI Hard Drive for Sun Java Workstation W2100z (without pre-installed SW).
9215A	ATO NVIDIA FX4000 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z
X9215A	X-Option NVIDIA FX4000 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z
9214A	ATO NVIDIA FX3000 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z
X9214A	X-Option NVIDIA FX3000 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z
9213A	ATO NVIDIA Quadro FX1100 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z.
X9213A	X-Option NVIDIA Quadro FX1100 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z.
9212A	ATO Option NVIDIA FX500 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z.
X9212A	X-Option NVIDIA Quadro FX500 Graphics Accelerator for Sun Java Workstation W1100z or Sun W2100z Workstation.
9211A	ATO NVIDIA Quadro NVS280 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z.
X9211A	X-Option NVIDIA Quadro NVS280 Graphics Accelerator for Sun Java Workstation W1100z or Sun Java Workstation W2100z.
9216A	ATO Option DVD +/- R/RW Drive ("Burner") for Sun Java Workstation W1100z or Sun Java Workstation W2100z
X9216A	X-Option DVD +/- R/RW Drive ("Burner") for Sun Java Workstation W1100z or Sun Java Workstation W2100z.
X9265A	Ultra320 SCSI dual-channel PCI-X card for the Sun Java Workstation W1100z or Sun Java Workstation W2100z.
X9271A	Single-port Gigabit Ethernet 66-MHz or 133-MHz PCI-X card for the Sun Java Workstation W1100z or Sun Java Workstation W2100z.

Sun Java Workstations W1100z/W2100z Display Options

The following are part numbers and descriptions for the various Sun Java Workstations W1100z/W2100z display options.

Table 9-5: Sun Java Workstations W1100z/W2100z Display Options

Part Number	Description
X7134A	Sun 24.1-inch LCD
X7149A	Sun 22-inch flat screen AG CRT
X7144A	Sun 19-inch Sun TFT flat panel LCD
X7147A	Sun 17-inch Sun color CRT

Country Kits

The following are part numbers and descriptions for the country kits available for the Sun Java W1100z/W2100z.

Table 9-6: Sun Java Workstations W1100z/W2100z Country Kits

Part Number	Description
X3531A	North American Universal ("PC style")
X3532A	French
X3533A	German
X3534A	Swiss-French
X3535A	Swiss-German
X3536A	Swedish
X3537A	United Kingdom
X3538A	United States UNIX
X3539A	Japanese UNIX
X3554A	Taiwanese
X3555A	Korean
X3556A	Japanese
X3538A	United Kingdom UNIX
X3509A	European UNIX
X3560A	Norwegian
X3561A	Portuguese
X3562A	Spanish
X3563A	Danish
X3564A	Italian
X3565A	Dutch (Netherlands)
X3566A	Australian
X3567A	Finnish
X3508A	European Universal
X3582A	Chinese
X3583A	Euro UNIX (Power Cordless)

Availability

The Sun Java Workstations W1100z and W2100z workstations were Revenue Released on June 28, 2004.

10.0 Sun Enterprise Services Offerings

Sun Enterprise Services now provides three service offerings: the SunClient℠ program for low-level, low-cost support, the SunSpectrum℠ program for high-level support and mission-critical response, and Sun Hardware Only Support Service. All three support programs are available as service offerings for the Sun W1100z and W2100z workstations.

SunClient Program

There is a way to reduce hardware and software support costs for network computers and Sun workstations. The SunClient support program is a suite of offerings that is separate, yet complementary to the SunSpectrum program. SunClient Support provides:

- A choice for optimizing low-cost workstation support
- Flexibility to select only the services needed
- Administrative simplicity, saving time and money
- Access to world-class UNIX® networking experts

Table 10-1: SunClient Program Features

Feature	SunClient Maintenance	SunClient Central Maintenance	SunClient Software Tech Support Option*
Systems approach coverage	*	*	
Solaris and unbundled software technical support			*
9 a.m.-5 p.m., M-F telephone coverage	*	*	*
8 a.m.-5 p.m., M-F on-site coverage	* † ‡	* ‡	
Response times (phone/on site)	4-hour callback/next business day response	4-hour callback/second business day response	4-hour callback
Centralized on-site repair of multiple units		*	Not Applicable
Patches	Not Applicable	Not Applicable	*
SunSolve℠ license	Not Applicable	Not Applicable	*
SunSolve EarlyNotifier℠ Service	Not Applicable	Not Applicable	*
Software Updates	Not Applicable	Not Applicable	Not Applicable

* Can only be sold as an option to SunClient Maintenance or SunClient Central Maintenance.
† Next business day on-site response requires that the request for service be received by 3:00 p.m. If the call is received after 3:00 p.m., service will be provided on the second business day.
‡ Customers located more than 50 miles from an authorized service provider or reseller will be charged an additional fee for service activity.

Table 10-2: SunClient Program Features and Benefits

Features	Benefits
Unbundled hardware and software support	Flexibility. Customers select the type and amount of coverage needed for their desktop systems so service dollars are targeted where they are needed most. Cost savings. Customers pay only for the support services needed.
Next business day (SunClient Maintenance) or second business day (SunClient Central Maintenance) on-site response	Cost efficiency. Because Sun can more efficiently manage spare inventory and labor scheduling, the savings can be passed on to the customer.
Single contract with choice of automatic warranty upgrade	Simplicity. One contract covers a predefined number of systems at one low price. New systems acquired can be upgraded to the SunClient service level.
SunClient Central Maintenance	Cost savings. Sun realizes an economy of scale by repairing multiple systems with one visit and leverages existing support infrastructures, so cost efficiency is maximized while duplication of effort is minimized.
Service delivery by Sun experts	Consistency. Selected desktops can be deployed anywhere with assurance of cost-effective, quality service and support.

For more information, visit the SunClient Support (external) Web site at: http://www.sun.com/service/support/sunclient.

The SunSpectrum Program

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

SunSpectrum program support contracts are available both during and after the warranty program. Customers may choose to uplift the service and support agreement to meet their business needs by purchasing a SunSpectrum contract.

The four levels of SunSpectrum support contracts are outlined below.

Table 10-3: SunSpectrum Support Contracts

Program	Description
Mission-Critical SunSpectrum Platinum℠ Support	Designed to support client-workstation, mission critical solutions by focusing on failure prevention, rapid recovery and year-round technical services planning. Support is provided 24x7.
Business-Critical SunSpectrum Gold℠ Support	Includes a complete package of proactive and responsive services for customers who require maximum uptime for their strategic business-critical systems. Support is provided 24x7.
System Coverage SunSpectrum Silver℠ Support	Combines the service expertise, responsive on-site support and technical support by telephone and SunSolve CD/on-line services. Support is provided 8 AM to 8 PM Monday through Friday.
Self-Directed SunSpectrum Bronze℠ Support	Provided for customers who rely primarily upon their own in-house service capabilities. Enables customers to deliver high quality service by giving them access to UNIX® expertise, Sun certified replacement parts, software releases and technical tools. Support is provided 8 AM to 5 PM Monday through Friday.

SunSpectrum Hardware Only Support

In-warranty or out-of-warranty, Sun Hardware Only Support provides an affordable, convenient way to maintain Sun systems. With easy access to Sun technical support and quick system repair or replacement, and to Sun's Online Support Center, Sun Hardware Only Support has customers covered so they can truly get the most out of their time and investment in Sun technologies.

The extended features of Sun Hardware Only Support now allow customers to choose the service that best supports their business needs by offering a choice of coverage hours and response times, which include:

- Technical support during hours that suit the customer's business requirements
- Hardware service with a choice of coverage hours and response times ranging from next business day to 7x24 support
- Online support capabilities including Web-based service requests, service status, access to technical resources, and more

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 any of the above Sun support offerings, please visit:
http://www.sun.com/service/support.