Simulate. Analyze. Verify.

The integrated, supported Compute Grid solution offering exceptional quality and performance for throughput computing: The Sun Fire™ V60x Compute Grid rack system.

Key Highlights

The Ideal Grid Computing Solution: The Sun Fire™ V60x Compute Grid rack system is a combination of hardware and management software preconfigured and integrated for fast and easy deployment.

Price and Performance: Serving as the management and compute nodes, Sun's entry-level servers populate the rack system for a low-cost, scalable solution.

High Density, Small Footprint: The Sun Fire V60x Compute Grid rack system is delivered in a Sun™ Rack 900 to ease the demand of coveted floor space in your data center.

Centralized Management Node: Cluster Grid Manager, preloaded with Sun™ ONE Grid Engine Enterprise Edition and Sun™ Control Station software, keeps all management resources in one location—reducing administration headaches.

System Administration Made Easy: Sun Control Station offers unparalleled performance and health monitoring, as well as software provisioning features.

Improved Resource Utilization and Productivity: The integrated Sun ONE Grid Engine Enterprise Edition manages the needs of Grids to maximize resources.

Supports Linux Distribution: Fully tested with Linux and a variety of development tools.

World-Class Sun Support: A single, highly responsive source for the sales, service, and consulting expertise you've grown to trust for all of your Sun products.

Delivering superior price, performance, and management for Grid Computing in a single rack. The Sun Fire V60x Compute Grid rack system is an integrated solution for Electronic Design Automation, Mechanical Computer-Aided Engineering, Petroleum, Life Sciences, and any other organization that requires excellent price/performance for their compute-intensive applications.

Low-cost, widely scalable, and extremely reliable, the Sun Fire V60x is used as the hardware platform for Cluster Grid Manager and as the compute nodes. Combined with Gigabit Ethernet switch(es), a terminal server, and KVM (Keyboard/Video/Mouse) shelf, Sun's entry-level servers are the building blocks for a turnkey solution. Using a collection of Sun Fire V60x servers, the Sun Compute Grid rack system delivers a powerful hardware and software solution designed for rapid deployment, expandability, and reliability to meet your specific business needs.

The Sun Fire V60x Compute Grid rack system can be easily monitored and managed using Sun Control Station and Sun ONE Grid Engine Enterprise Edition. Together, these products form a powerful compute resource management solution. Once configured, a Web-user interface permits remote access to both Sun Control Station and Sun ONE Grid Engine Enterprise Edition. Sun Control Station also provides unparalleled performance monitoring, health monitoring, and software provisioning capabilities. Sun ONE Grid Engine Enterprise Edition features innovative dynamic scheduling and resource management to enforce site-specific management polices. Policy management enables an organization to assign and enforce resource entitlement—helping multiple projects or departments share compute resources.

The Sun Fire V60x Compute Grid rack system delivers the proven hardware and software solution that can enable your organization to meet and exceed its most challenging Grid Computing objectives. Choose from our standard configuration, or design your own rack system through our configure-to-order offering. And our portfolio of expert sales, support, and professional services can provide a one-stop technology source to ensure that your installation achieves maximum utilization and performance right from the start.

Sun Fire V60x Compute Grid Rack System Specifications

Rack: Sun Rack 900

EIA Units	38U
Caster Rating	500 lb. per caster
Rack Dimensions (W x D x H)	23.6 x 35.4 x 74.0 in./60 x 90 x 188 cm
Weight	1600 lb./727 kg fully populated with all options
Power (fully loaded)	40A at 208 V AC

Compute Node: Sun Fire V60x

Processor	2.8-GHz or 3.06-GHz Xeon
Multi-processing	Dual processor
L2 Cache	512 KB
Front Side Bus	533 MHz
RAM memory	2 GB
Disk	36-GB Ultra320 disk
Media Device	CD/Floppy
Expansion Slots	2 x PCI-X (64-bit, 100-MHz), 1 full-height/length, 1 low-profile
I/O	2 GbE, 1 Ultra320 SCSI, 1 serial, 2 USB
Form Factor	1RU
Weight	35 lb.
Software	No preloaded software

Management Node: Cluster Grid Manager

Hardware	Sun Fire V60x: Dual 3.06-GHz Xeon processor, 2 GB of memory, 2 x 36-GB internal Ultra320 disk
Software Preloaded:	
Operating System	Red Hat Enterprise Linux 2.1 (ES Edition)
Workload Management Software	Sun ONE Grid Engine Enterprise Edition 5.3 (license for 32 compute nodes)
System Management Software	Sun Control Station 2.0 (license for 32 compute nodes)

Networking Interconnect: Gigabit Ethernet Switch

Cisco 3750G-24T Switch:	
Port	24 port
Speed	Gigabit Ethernet
Interface	RJ-45 Copper 10/100/1000 Mb/s
Form Factor	1U stackable

Networking Interconnect: Gigabit Ethernet Switch (continued)

Fabric	32 Gb/s, stackable internal fabric
Latency	Less than 22uS (microseconds)
Cisco 3750G-24TS Switch:	
Port	24 port
Speed	Gigabit Ethernet
Interface	RJ-45 Copper 10/100/1000 Mb/s, optional four Small Form Factor Port fiber uplinks
Form Factor	1.5U stackable
Fabric	32 Gb/s, stackable internal fabric
Latency	Less than 22uS (microseconds)

Terminal Server

Port	48 port
Form Factor	1U

Keyboard/Video/Mouse Shelf

Monitor	15-in. LCD screen, 1024 x 768 pixels
Form Factor	1U expandable shelf

Storage

Local Disks	2 x 36-GB Ultra320 SCSI hard disks in each server
External Storage	V60x provides an external Ultra320 SCSI interface to additional storage devices
PCI Interface Expansion	V60x is qualified to use both SCSI RAID controllers (X5132A) and Fibre Channel PCI (X5133A) cards, providing the ability for a customer to add any amount of additional off-chassis storage

Operating Environment

Cluster Grid Manager:
Red Hat Enterprise Linux 2.1 (ES Edition)

Compute Nodes:
Red Hat 7.3
Red Hat Enterprise Linux 2.1 (ES Edition)

Scalability

One Cluster Grid Manager can support up to 128 compute nodes

Environmental

Operating Temperature:	
2.8-GHz Compute Grid	86˚ F maximum ambient temperature at 0 ft. elevation AMSL 30˚ C maximum ambient temperature at 0 m elevation AMSL
3.06-GHz Compute Grid	77˚ F maximum ambient temperature at 0 ft. elevation AMSL 25˚ C maximum ambient temperature at 0 m elevation AMSL
Non-operating Temperature	-40˚ F to 149˚ F/-40˚ C to 65˚ C

Environmental (continued)

Operating Altitude:	
2.8-GHz Compute Grid	Up to 9000 ft., maximum ambient temperature is derated by 1.8˚ F per 1500 ft. in elevation AMSL above 0 ft. Up to 3000 m, maximum ambient temperature is derated by 1˚ C per 500 m in elevation AMSL above 0 m.
3.06-GHz Compute Grid	Up to 4500 ft., maximum ambient temperature is derated by 1.8˚ F per 1000 ft. in elevation AMSL above 0 ft. Up to 1500 m, maximum ambient temperature is derated by 1˚ C per 300 m in elevation AMSL above 0 m.
Non-operating Altitude	Up to 12,000 m
Operating Humidity	10% to 90% RH at 27˚ C maximum wet bulb (noncondensing)
Non-operating Humidity	10% to 90% RH
Operating Vibration	.25 g's 5 Hz to 500 Hz to 5 Hz, 1.0 Octaves per minute, swept-sine 5 sweeps in X, Y, and Z

Power

Nominal Voltage	200, 208, 220, 230, or 240 V AC
Operating Voltage	Single Phase 180–240 V AC
Frequency	47–63 Hz
Current	64A (4 x 16A) maximum, 40A (4 x 10A) nominal (fully configured)
AC Plug	NEMA L6-20P Domestic IEC 309 16A 3-Position International

Regulations

Meets or exceeds the following regulations:

Safety	UL/CSA-60950, EN60950, IEC950 CB Scheme with all country deviations, IEC825-1, 2, and CFR21 part 1040
Ergonomics	EK1-ITB-2000
RFI/EMI	EN55022/CISPR22 Class A, FCC CFR47 Part 15 Class A, EN61000-3-2, EN61000-3-3
Immunity	EN55024
Regulatory Markings	CE, FCC, ICES-003, C-Tick, VCCI, GOST-R, BSMI, EK, UL/cUL, TUV-GS, CCC, S-Mark A

Services

Onsite software configuration and Grid consulting services are available as optional, fee-based service offerings.

Warranty

Hardware	Three-year

See Also

Sun Fire V60x servers
- Up to 2 Intel Xeon processors
- Up to 6 GB of memory
- Up to 3 Ultra320 SCSI hard drives

More at: http://www.sun.com/servers/entry/v60x

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