



Sun™ Storage J4000 Array Family

Scalable, reliable and cost-effective solutions for open storage infrastructures



Highlights

- **Open storage innovation** – Sun Storage J4000 arrays act as building blocks to deliver break-through economics, enterprise-class quality and reliability
- **Extreme scalability** – Easily scale from two to 192 drives behind a single SAS HBA
- **Breakthrough pricing** – Low acquisition costs for the Sun Storage J4000 arrays coupled with Sun's no cost, award-winning Solaris™/ZFS operating system means minimal investment
- **Highest storage density** – The Sun Storage J4000 array family offers best-in-class density, with up to 12 drives per rack unit
- **High performance** – Delivers up to 72 Gb/sec total bandwidth using 3Gb/sec (x4-wide) SAS ports
- **Groundbreaking ZFS technology** – When using ZFS it prevents data corruption, provides virtually unlimited snapshots, and all data is checksummed. ZFS streamlines administration and allows resources to be shared, reducing time to perform some functions by orders of magnitude—from hours to seconds
- **Heterogeneous support** – The J4000 array family supports Solaris, Windows, and Linux operating systems
- **Advanced hardware RAID protection** – Leverage the Sun StorageTek SAS RAID HBA, including Sun StorageTek RAID Manager software, with the Sun Storage J4000 array family for a robust set of high-performance RAID functionality



If you're looking for a cost-effective way to extend from incremental to bulk storage capabilities and manage data with a simplistic and effective "single pane of glass" management framework while providing exceptional performance, security and data integrity, you are not alone.

A paradigm shift in storage networking

Advancing technology has resulted in servers with processing power that outpaces OS and application requirements. Servers are now capable of utilizing compute power to take on additional tasks.

Sun™ Storage J4000 family arrays take advantage of this capability by shifting data management to the server. Sun Storage J4000 arrays connect directly to your servers via one or more high-speed SAS interfaces and provide external disk storage to the server. Customers can connect Sun Storage J4000 arrays to four types of qualified operating server environments: Solaris, OpenSolaris, Linux, or Windows.

If you're looking for high data capacity at an affordable price point, you're right in the mainstream. As more and more companies move their core businesses to the Internet, the way the world manages data is starting to change. Both Web 2.0 companies and existing enterprises face exponential data growth and the need for horizontal scalability as their business needs scale.

Sun is leading the open storage revolution by offering the highly scalable and reliable Sun Storage J4000 arrays, which deliver break-through economics when combined with Sun's industry-leading servers.

The arrays offer the most scalability, connectivity, and reliability in comparison with competing solutions. When combined with OpenSolaris they make ideal storage building blocks for customers seeking to reduce their reliance on proprietary, higher-priced storage hardware and software from other storage vendors.

At prices that range from very competitive to just plain jaw-dropping, the Sun Storage J4000 array family's reliable, high-performance storage includes Sun StorageTek™ Common Array Manager (CAM) software to provide a simple-to-use interface for your arrays. As a powerful common manager for Sun Storage J4000 arrays as well as for Sun's modular storage 2500, 6100, and 6500 series, CAM takes the complexity out of storage management—enabling you to accelerate deployment while you simplify your environment and improve utilization.

For customers who require low-cost and high-quality storage using simple add-on-disk to extend their server storage capacities, the Sun Storage J4200 is the right choice. For customers seeking high-performance bulk storage with lowest cost per gigabyte, the Sun Storage J4400 and Sun Storage J4500 are the ideal fit.

Sun Storage J4000 array family with Sun StorageTek SAS RAID Host Bus Adapter (HBA)

For customers who require host-based hardware RAID, Sun offers the Sun StorageTek SAS RAID HBA. Supporting both SAS and SATA disk drives as well as advanced hardware RAID via Sun StorageTek RAID Manager software, these hardware RAID HBAs offer exceptional flexibility to deliver advanced data protection and the ability to scale their direct-attached and external storage solutions—all in an extremely cost-effective manner.

Easy-to-use RAID management

Sun StorageTek RAID Manager software enables easy, remote configuration, monitoring, and management of RAID arrays through secure encrypted communications. Designed as a highly intuitive tool, the software simplifies RAID array creation and management through the use of mouse-based navigation, single-pass configuration wizards, pop-up tips, and context-sensitive online help. The software supports an extensive set of RAID types, including RAID levels 0, 1, 10, 1E, 5, 6, 50, 5EE, and 60.

Sun Storage J4000 array family with ZFS

The Solaris Zettabyte File System (ZFS), available at no added cost with the Sun Storage J4000 array family and Sun Servers running Open Solaris/Solaris 10, is designed from the ground up to offer robust data protection and increasing RAS to meet demanding data requirements. Solaris ZFS contains many powerful features—including end-to-end data checksums to dramatically improve data integrity, and self-healing data—which together can reduce downtime by 32 to 52 percent.

Downloadable at no additional cost, Solaris ZFS uses virtual storage pools to make it easy to expand or contract the Sun Storage J4000 arrays simply by adding or deleting drives. Solaris ZFS will significantly reduce costs by streamlining storage administration and allowing resources to be shared among file systems.

The time required to perform some functions will be reduced by orders of magnitude—from hours to just seconds.

Sun Storage J4200 array features

The Sun Storage J4200 array provides high-availability, cost-effective 2U storage. It supports up to 12 3.5-inch SATA or SAS hard drives. In addition, the Sun Storage J4200 array supports fully hot swappable and redundant I/O modules, power supplies and cooling modules. Each I/O module in the Sun Storage J4200 provides two x4-wide SAS ports for host connectivity and an additional x4-wide SAS expansion port for a total of 36 Gb/sec of bandwidth.

Powerful scalability

Each Sun Storage J4200 array system supports up to a total of 48 SAS or SATA hard disks. Its storage capacity per tray is up to 3.6 TB for SAS hard disks (300 GB per disk) or 12 TB for SATA hard disks (1 TB per disk), yielding up to 48 TB in total scalability. The Sun Storage J4200 supports these SAS drive types: 73 GB, 146 GB, and 300 GB; and these SATA drive types: 250 GB, 500 GB, 750 GB, and 1 TB.

High performance

The Sun Storage J4200 array offers up to six 3 Gb/sec SAS ports (3 ports per SAS I/O module) which provide up to 72 Gb/sec total bandwidth via four (x4-wide) SAS host/uplink ports (48 Gb/sec bandwidth) and two (x4-wide) SAS expansion ports (24 Gb/sec bandwidth), for exceptional performance across all disks. The active-active dual I/O module architecture also supports the system's high performance.

Sun Storage J4400 array features

The Sun Storage J4400 array provides high-availability, cost-effective 4U storage. Its hard disk carriers support up to 24 3.5-inch SATA or SAS hard disks in a 4 RU form factor. In addition, the Sun Storage J4400 array supports fully hot swappable and redundant I/O modules, power supplies and cooling modules. Each I/O module in the Sun Storage J4400 provides two x4-wide SAS ports for host

connectivity and an additional x4-wide SAS expansion port for a total of 36 Gb/sec of bandwidth.

Outstanding scalability

Each Sun Storage J4400 array system supports up to a total of 192 SAS or SATA hard disks. Its storage capacity per tray is up to 7.2 TB for SAS hard disks (300 GB per disk) or 24 TB for SATA hard disks (1 TB per disk), yielding up to 192 TB in total scalability. The Sun Storage J4400 supports these SAS drive types: 73 GB, 146 GB, and 300 GB; and these SATA drive types: 500 GB, 750 GB, and 1 TB.

High performance

The Sun Storage J4400 array offers up to six 3 Gb/sec SAS ports (3 ports per SAS I/O module) which provide up to 72 Gb/sec total bandwidth via four (x4-wide) SAS host/uplink ports (48 Gb/sec bandwidth) and two (x4-wide) SAS expansion ports (24 Gb/sec bandwidth), for exceptional performance across all disks. The active-active dual I/O module architecture also supports the system's high performance.

Sun Storage J4500 array features

By leveraging state-of-the-art storage technologies, the Sun Storage J4500 array delivers the highest storage density available. Fully populated with 48 3.5 inch SATA hard disks, it supports 48 TB in a 4U form factor. In addition, the Sun Storage J4500 array supports fully hot-swappable and redundant HDDs, power supplies and cooling modules.

Extreme scalability

Each Sun Storage J4500 array system supports up to a total of 192 SATA hard disks. Its storage capacity per tray is 48 TB for SATA hard disks (1 TB per disk). This means up to 192 TB in total scalability at initial release, with 480 TB total scalability planned for future release. The Sun Storage J4500 supports these SATA drive types: 500 GB, 750 GB, and 1 TB.

The Sun Storage J4200 and J4400 Arrays coupled with Sun SAS HBAs have demonstrated world record array price/performance benchmark capabilities in the Storage Performance Council's Benchmark-1™ (SPC-1).
www.storageperformance.org

High performance

The Sun Storage J4500 array comes with four 3 Gb/sec SAS ports which deliver an unusually high 48 Gb/sec total bandwidth via two (x4-wide) SAS host/uplink ports (24 Gb/sec bandwidth) and two (x4-wide) SAS expansion ports (24 Gb/sec bandwidth), for exceptional performance across all disks.

Sun Storage J4000 array family services portfolio

The Sun Storage J4000 array family is enhanced as a cost-effective solution by a range of services from Sun that optimize and manage storage performance which includes:

- Multi-year warranty that offers a competitive baseline of hardware and phone support
- Added control in selecting enhanced levels of service, depending on your performance needs, that help you avoid operational risk and expedite problem resolution
- StorageTek CAM software, included with each Sun Storage J4000 array, that offers a remote services feature called Auto Service Request (ASR) that shortens problem resolution by initiating a service request with Sun Services
- Although Sun Storage J4000 arrays are designed for self-installation, installation assistance is also offered with Sun Enterprise Installation Services (EIS)

Engage the storage experts

Sun StorageTek service professionals help you address storage challenges by delivering integrated services and solutions that optimize and manage storage performance over the life of your data. Our recognized world-class service and customer care give you confidence that your technology investment is protected and that your business will be responsive to change. We can help you pinpoint opportunities to reduce costs, mitigate business risk, and better leverage information assets. Our consulting and managed services offer clear and simple choices in solutions that address your regulatory concerns, complex storage growth, resource management, and scalability challenges. Covering over 125 countries, more than 2100 dedicated storage service professionals can help you gain and sustain measurable results with the reliability and flexibility that you require.

Sun Storage J4000 Array Family Specifications

Sun Storage J4000 array family

I/O module	J4200/J4400: Dual and single SAS I/O modules J4500: Single SAS I/O module
Interfaces/link speeds	J4200/J4400: Three or six 3 Gb/sec SAS ports per tray J4500: Four 3 Gb/sec SAS ports per tray
Bandwidth	J4200/4400: Up to 72 Gb/sec total bandwidth: 4 (x4-wide) SAS host/uplink ports (48 Gb/sec bandwidth) 2 (x4-wide) SAS expansion ports (24 Gb/sec bandwidth) 4500: Up to 48 Gb/sec total bandwidth: 2 (x4-wide) SAS host/uplink ports (24 Gb/sec bandwidth) 2 (x4-wide) SAS expansion port (24 Gb/sec bandwidth)
RAID levels	
HW (with RAID HBA)	RAID levels 0, 1, 10, 1E, 5, 6, 50, 5EE, 60
SW (w/ZFS)	RAID levels 0,1,5,6
Drive population	J4200: Scales from two to 12 hard disk drives per tray J4400: Scales from 12 to 24 hard disk drives per tray J4500: Fully populated at 48 hard disk drives per tray
Dynamic capacity expansion	J4200: Two to 48 drives, 146 GB to 36 TB J4400: Twelve to 192 drives, 876 GB to 192 TB J4500: 48 to 192 drives, 24 TB to 192 TB (Planned to scale to 480 TB by end of calendar year)
Volume	
with HW RAID HBA	512 TB per LUN
with ZFS	Virtually unlimited

Disk drives

Form factor	3.5-inch
Interface	SAS SATA
Supported drive types	
J4200	SAS drives: 73 GB, 146 GB, 300 GB; 15,000 rpm SATA II drives: 250 GB, 500 GB, 750 GB, 1TB; 7200 rpm
J4400	SAS drives: 73 GB, 146 GB, 300 GB; 15,000 rpm SATA II drives: 500 GB, 750 GB, 1 TB; 7200 rpm
J4500	SATA II drives: 500 GB, 750 GB, 1 TB; 7200 rpm

Management software support

Sun StorageTek Common Array Manager (CAM)
Sun StorageTek RAID Manager software

Operating system (OS) support

J4200/J4400/J5400: Solaris (SPARC and X64), Red Hat Enterprise Linux, SUSE Linux Enterprise Server, Microsoft Windows Server

Host connectivity

Host/HBA See <https://extranet.storitek.com/interop/interop>

Warranty

Duration	Three years — parts exchange
Phone support	8 a.m.–5 p.m., Mon.–Fri.
Remote services	Auto Service Request
Other	Additional support and extended onsite coverage available through Sun System Pack

Dimensions

Height x width x depth	J4200: 3.44 in. x 17.52 in. x 24.39 in. (87.4 mm x 445.0 mm x 619.39 mm) including bezel and SAS connector; including bezel and power supply handles, depth is 24.03 in. (610.4 mm) J4400: 6.88 in. x 17.52 in. x 24.02 in. (174.8 mm x 445.0 mm x 610.2 mm) including SAS connector; including thumb screws, depth is 23.24 in. (590.3 mm) J4500: 6.89 in. x 17.28 in. x 29.52 in. (175.05 mm x 439.0 mm x 749.90 mm)
Weight (maximum)	J4200: 61.73 lb. (28 Kg) J4400: 110.23 lb. (50 Kg) J4500: 170 lb. (77 Kg)

Power

Input voltage	J4200/J4400: 88-264 VAC J4500: 90-264 VAC
Input frequency	J4200/J4400: 47-63 Hz J4500: 47-63 Hz
Output power	J4200: 500W J4400: 760W J4500: 1500W
Power consumption	J4200: 106.54 VA; 100.4W J4400: 110.62 VA; 100W J4500: VA; 1100W maximum

Operating Environment

Heat output	J4200: 352.8 Watts (1204 BTU/hour) J4400: 662 Watts (2123 BTU/hour) J4500: 1020 Watts (3515 BTU/hr)
Temperature	J4200/J4400/J4500: 35°F to 95°F (0°C to 35°C) maximum
Humidity (non-condensing)	J4200/J4400/J4500: 20% to 80% maximum
Altitude	J4200/J4400/J4500: 0 to 9843 feet (3000 meters)
Shock	J4200/J4400: 31G +/-5%, with pulse duration of 2.6 ms or less half-sine, bottom side tested only J4500: 3.0G, 11 ms half-sine
Vibration	J4200/J4400: 0.25G (peak), 3 to 200 Hz sweep @ 1/2 octave per minute, bottom side tested only J4500: Swept sine, vertical (Z) axis: 0.15G, 0-peak, 5 Hz to 500 Hz; swept sine, horizontal (X,Y) axes: 0.10G, 0-peak, 5 Hz to 500 Hz

Regulations

Electromagnetic emissions standards	J4200/J4400: FCC Class A; CE: Specific requirements in effect from July 1, 2001; VCCI for Japan; CCC for China; BSMI for Taiwan/CNS/3438; C-TICK for Australia and New Zealand J4500: ICES-003; VCCI for Japan; GOST R2; BSMI2; C-TICK for Australia and New Zealand; MIC; Part 15 47 CFR; EN 55022, EN300-396:v1.31; CISPR 22
Safety standards	J4200/J4400: UL/CUL for U.S. with Canada/UL60950-1;TUV for Germany/EN60950-1; CB (by TUV): IEC60950-1; BSMI for Taiwan/CNS14336; CCC for China J4500: IEC60950; UL/CSA60950; EN60950; CB scheme with all country differences; cULus Mark; CE Mark; GOST R; S-Mark

Learn More

To learn more about the Sun Storage J4000 array family, talk with your Sun representative or visit sun.com/j4000