

Sun StorageTek™ 2540 Array

Affordable, reliable, and great price-to-performance storage



As a member of the Sun modular series of arrays, the Sun StorageTek™ 2540 array is specifically designed for a wide range of users. It brings together 4 Gb/sec FC host connectivity, SAS and SATA drive-side technology, and intuitive Sun StorageTek Common Array Manager software to create a robust solution that's equally adept in an entry-level storage area network (SAN) for the small to medium business (SMB) and integrating into an existing storage network within the enterprise.

Highlights

- Supports existing FC infrastructures and entry-level SANs for low-cost growth
- SAS technology ensures reliability with point-to-point architecture and dual-ported drives
- Investment protection with autonegotiating 4 Gb/sec FC connectivity
- Support for high-performance SAS and/or high-capacity SATA drives within the same tray addresses the needs of tiered storage and ILM solutions
- Sun StorageTek Common Array Manager (CAM) software—simple to implement and manage with an intuitive and familiar user interface
- Premium key-enabled features offer additional functionality and flexibility

Satisfying a wide range of storage demands

Both Enterprise and the SMB face their own distinct challenges. The enterprise buyer, with departmental and remote offices, is searching for a reliable and self-administrable storage solution from a name they can trust. And the current SMB administrator, with unconsolidated directly attached storage (DAS), requires a more efficient and networked storage solution. While each of these organizations faces its own unique storage demands, Sun can satisfy both of these markets' data requirements with the affordable, available, and high-performance Sun StorageTek 2540 array.

Sun expertise in external storage system development was the intellectual groundwork for the Sun StorageTek 2540 array—ensuring best-of-breed technology and reliability. The Sun StorageTek 2540 array combines Sun's time-proven designs with advanced front-end 4 Gb/sec FC host connectivity and next-generation SAS backend technology to enable an organization's productivity through data consolidation, availability, performance, and scalability.

With four auto-negotiating 4 Gb/sec FC host ports and 256 volumes per array, the Sun StorageTek 2540 array supports direct attachment of two to four servers, or provides

additional server attachment through FC SAN connectivity. This makes it a great array solution for businesses that want to initially deploy the Sun StorageTek 2540 array as a directly attached array, and then seamlessly transition to a SAN when ready. Additionally, the Sun StorageTek 2540 array is a great fit for existing SANs, as it can easily integrate into 1, 2, and 4 Gb/sec FC infrastructures and provide robust and reliable storage at an affordable price.

Start small, grow big

The Sun StorageTek 2540 array's modular design creates an affordable entry point without sacrificing future scalability—enabling customers to start small and grow big when they're ready. Dual-active controllers and up to 12 SAS and/or SATA drives combine to create a fully featured and highly available storage system in a 2 U enclosure. And when capacity and/or performance requirements change, the Sun StorageTek 2540 array's scalability supports up to 36 additional drives.

Simple installation and management

Common Array Manager's (CAM's) web-like and task-based management interface significantly reduces the complexity of installation, configuration, management, and diagnostic tasks. Online capacity expansion, data-volume creation, and host-to-volume mappings give the

user control of their array and the ability to make quick changes when necessary. Accessible from anywhere in the world with use of a secure Internet connection, CAM includes automated diagnostics so users can focus on precise, predictable, and repeatable results. CAM also scales across Sun's entire modular disk portfolio and is provided at no additional cost.

Premium features offer additional functionality and replication features to an organization's

storage system, only when and if their storage demands call for it. As businesses continue to grow, administrators have the flexibility to add premium features to support data utilization and protection requirements.

- Sun StorageTek Storage Domains logically divide a single array into multiple arrays by defining which host or host group can access each volume in the array. Additional domains are available through a licensable upgrade.

Learn More.

For more information about the Sun StorageTek 2540 array visit sun.com/st2500

- Sun StorageTek Data Snapshot creates capacity-efficient, point-in-time volume images, providing a logical volume for such uses as file restoration and backup.

Sun StorageTek 2540 Array Specifications

Sun StorageTek 2540 array

Controller card	• Dual and single SAS RAID controller
Cache size (with ECC protection)	• 512 MB or 1 GB/controller (up to 2 GB/system)
Host interfaces / link speeds	• Two to four FC host ports per controller tray
Other interfaces	• Up to two 10/100 Base-T Ethernet • Up to two nine-pin RS232 serial ports per dual controller tray
RAID levels	• 0, 1, (1+0), 3, 5, 6 (p+q)
Cache battery backup	• Up to 72 hours (depending on cache size)
Integrated data services	• StorageTek Data Snapshot (optional) – Basic: 4 snaps/vol, Enhanced: 8 snaps/vol • Sun StorageTek Volume Copy (optional) • StorageTek Storage Domains – 2 domains included; (optional 4, 8, 16 or 32)
Dynamic capacity expansion	• Five to 48 drives – 730 GB to 48.0 TB
Expansion tray	• Up to three expansion trays
Drive depopulation	• Scales from five to 12 hard disk drives per tray
Volume	• Up to 256 (32/host)
Global hot spares	• Up to 30
Maximum array capacity	• 21.6 TB (450 GB SAS drives) • 48.0 TB (1.0 TB SATA drives)

Disk drives

Form factor	• 3.5-in., low –profile
Interface	• Dual-ported SAS
Supported drives/system per tray capacity, raw, unformatted: SAS drives	• 146 GB, 15,000 rpm, 3 Gb/sec, 1.75 TB per tray • 300 GB, 15,000 rpm, 3 Gb/sec, 3.6 TB per tray • 400 GB, 10,000 rpm, 3 Gb/sec, 4.8 TB per tray • 450 GB 10,000 rpm, 3 Gb/sec, 5.4 TB per tray
SATA drives	• 500 GB 7,200 rpm 3 Gb/sec, 6.0 TB per tray • 750 GB 7,200 rpm 3 Gb/sec, 9.0 TB per tray • 1.0 TB 7,200 rpm 3 Gb/sec, 12.0 TB per tray

Supported software

- Sun Cluster Software
- Sun StorageTek™ Enterprise Backup Software (EBS)
- Veritas NetBackup (NBU)
- Oracle® Database – Oracle Real Application Clusters (RAC)
- Red Hat Enterprise Linux – Red Hat Cluster Suite
- Windows Server 2003 – Server Cluster

Management software support

StorageTek Common Array Manager (CAM) – included

Operating system support

- Solaris™ Operating System 9, 10 – and x86
- Microsoft Windows 2003, 2008
- SUSE Linux 9, 10
- Red Hat Enterprise Linux 4, 5
- VMware ESX 3.0.2 and higher

Host connectivity

Host/HBA/IP switches Multipath driver	• The Solaris OS, as well as native drivers for other operating systems including Windows. RDAC drivers for Linux • All HBAs supported in SAN 4.4.12
---------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------

Warranty

Duration	• Three years (parts exchange)
Phone support	• 8 a.m.-5 p.m., Mon.-Fri.
Other	• Additional support and extended on-site coverage available through Sun Services

Dimensions

Height x width x depth	• 86.1 mm (3.39 in.) x 448.6 mm (17.66 in.) x 540 mm (21.26 in.)
Weight (maximum)	• 59.55 lbs.

Power requirements

AC power	• 515 W (+5V @ 19A/+12V @35A)
DC power	• 17A max operating (-42 to -60 V DC)

Environmental (operating)

Temperature	• 10°C to 40°C (50°F to 104°F) without battery • 10°C to 40°C (50°F to 104°F), 10°C to 35°C (50°F to 95°F) with battery
Relative humidity	• 20-80% noncondensing
Operating altitude	• 68.3 kPa (3,200m), 40°C, four-hour dwell
Operating shock	• 5.5Gs, 11 ms, half-sine, 10 shocks per direction, all six directions
Operating vibration	• All three axes: 0.25Gs, 5 to 500 Hz, swept-sine, five sweep cycles, one octave per minute
Heat output	• 460 W (1,570 BTU/hr.)

Environmental (nonoperating)

Temperature (storage)	• 10°C to 50°C (-14°F to 122°F) without battery, -10°C to 45°C (-14°F to 113°F) with battery (three month maximum)
Temperature (transit)	• 40°C to 60°C (-40°F to 140°F) without battery, -20°C to 60°C (-4°F to 113°F) with battery (one week maximum)
Humidity (storage)	• 10-90%, max dew point is 26°C (79°F), 10% per hour gradient
Humidity (transit)	• 5-95%, max dew point is 26°C (79°F), 10% per hour gradient
Altitude	• 18.8 kPa (12,200m), 40°C, four-hour dwell
Shock (storage)	• 20Gs, 8.0 ms square wave in each direction along x, y, and z axes
Shock (transit)	• 33Gs, 11 ms, half-sine, three shocks per direction, all six directions
Vibration	• All three axes: 1.2Gs, 5 to 500 Hz, swept-sine, five sweep cycles, one octave per minute

Regulations

Safety and emissions	• FCC Class A, VCCI Class A, EN55022 Class A, EN 55024 UL BSM, C-Tick, RoHS, and WEEE
NEBS Level 3	• GR-63 CORE requirements, GR-1089 CORE requirements