# SUN STORAGE 2500-M2 ARRAY

HIGH AVAILABILITY, RELIABILITY AND PERFORMANCE AT AN AFFORDABLE PRICE

KEY FEATURES/BENEFIT

- Optimized for the Oracle stack increasing performance, reducing TCO
- Supports existing FC and SAS2 infrastructures and entry-level SANs and DAS for low-cost growth
- SAS2 technology ensures reliability with point-to-point architecture and dual-ported drives
- Optional software features such as snapshot and volume copy for enhanced data protection
- 2x performance improvement with performance enhancer software
- Investment protection with auto-negotiating 8 Gb/sec FC connectivity
- Rugged design with NEBS level 3 certification for tough environments
- Sun Storage Common Array Manager software—simple to implement and manage with an intuitive and familiar user interface
- The Sun Storage 2500-M2 Array is fully integrated, certified and tested with Oracle's Netra product portfolio providing a highly available solution for telecommunication customers
- The Sun Storage 2500-M2 Array is the ideal foundation storage for diverse IT projects in the small enterprise such as virtualized environments, data protection with Oracle Tape Libraries and new or existing Oracle database deployments

*Oracle's Sun Storage 2500-M2 Array is designed for customers, within, or looking to move to, Oracle environments, providing midrange features at an entry level price. It brings together the latest Fibre Channel (FC) and SAS2 technologies with Oracle's intuitive Sun Storage Common Array software to create a robust solution that's equally adept in a direct attach (DAS) or storage area network (SAN) for the small or midsize business or for integrating into an existing storage network within the enterprise. In addition, the 2500-M2's rugged design is perfect for customers such as Network Equipment Providers (NEP's) who are looking for a rugged NEBS Level 3 certified design.*

## Affordable, Reliable Entry Level Storage

Oracle's expertise in external storage system development provides the intellectual groundwork for the Sun Storage 2500-M2 Array - ensuring best-of-breed technology and reliability. The Sun Storage 2500-M2 Array combines Oracle's time-proven designs with advanced front-end 8 Gb/sec FC and 6 Gb/sec SAS2 host connectivity and next-generation SAS2 backend technology to enable an organization's productivity through data consolidation, availability, performance, and scalability.

The Sun Storage 2500-M2 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 SAS2 drives combine to create a full-featured and highly available storage system in a 2U enclosure. And when capacity or performance requirements change, the Sun Storage 2500-M2 Array's scalability supports up to 180 additional drives for a total of 192 drives.

The Sun Storage 2500-M2 Array supports direct attachment of up to eight 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 Storage 2500-M2 Array as a directly attached array, and then seamlessly transition to a SAN when ready.

## Integrated and Optimized for the Oracle Stack

Oracle Optimized Solutions are predefined solutions that integrate the complete application stack so that customers can lower their TCO, mitigate risk and improve productivity and efficiency. The 2500-M2 array is fully integrated into several of these solutions including the World Record TPC-H@3000GB benchmark for Oracle Database 11g highlighting the power of the Oracle's integrated hardware and software solutions.

In addition to the above, the Sun Storage 2500-M2 Array is designed to work in conjunction with Oracle's Netra Servers in industries such as telecommunications that require highly available, NEBS Level 3 certified equipment. With NEBS Level 3 certification, redundant controllers and available DC power options, it perfectly complements Netra servers in rugged environments.

## Simple Installation and Management

The Sun Storage Common Array Manager's (CAM) 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 users control of their arrays and the ability to make quick changes when necessary. Accessible from anywhere in the world with a secure internet connection, the Sun Storage CAM includes automated diagnostics so users can focus on precise, predictable, and repeatable results. Sun Storage CAM also scales across Oracle's entire modular disk portfolio and is provided at no additional cost.

<table>
<tr><th colspan="2">Sun Storage 2500-M2 Array</th></tr>
<tr><td>Controller Card</td><td>Cache Size (with ECC Protection)</td></tr>
<tr><td>• 2540-M2: Dual FC RAID controller<br>• 2530-M2: Dual SAS RAID controller</td><td>2 or 4 GB<br>2 GB</td></tr>
<tr><td colspan="2">Host Interfaces/Link Speeds</td></tr>
<tr><td colspan="2">• 2540-M2: four 2/4/8Gbpsec auto-negotiating FC ports (8 ports upgrade option)<br>• 2530-M2: four 1.5/3/6Gbpsec auto-negotiating SAS2 ports</td></tr>
<tr><td colspan="2">Other Interfaces</td></tr>
<tr><td colspan="2">• Up to two 10/100/1000 BaseT Ethernet<br>• Up to two nine-pin RS232 serial ports per dual controller tray</td></tr>
<tr><td>RAID Levels</td><td>Cache Battery Backup</td></tr>
<tr><td>0, 1, 10, 3, 5, 6, (P+Q)</td><td>Battery-backed cache is de-staged to flash upon power loss</td></tr>
<tr><td colspan="2">Integrated Data Services (optional)</td></tr>
<tr><td colspan="2">• Sun Storage Domain License: up to 128 (two included)<br>• Sun Storage Snapshot License: up to 256 per array with Snapshot Rollback<br>• Sun Storage Volume Copy License: up to 512 per array<br>• Performance Enhancer (Turbo) Software<br>• Sun Storage Replication: up to 16 volumes</td></tr>
<tr><td>Dynamic Capacity Expansion</td><td>Expansion Trays</td></tr>
<tr><td>5 to 192 drives</td><td>Up to 15 expansion trays</td></tr>
<tr><td>Drive Depopulation</td><td>Maximum Array Capacity</td></tr>
<tr><td>Scales from 5 to 12 hard disk drives per controller or expansion tray</td><td>115 TB</td></tr>
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## Disk Drives

| Form Factor | Interface |
|---|---|
| 2.5 in. | Dual-ported SAS-II |

**Supported Drives**

SAS drives

- SAS-II: 600 GB 10,000 rpm 2.5 – inch

## Supported Software

- Sun Cluster Software (3.2 or above)
- Red Hat Cluster Suite
- Oracle Real Application Cluster (10g, 11g)

## Management Software Support

Sun Storage Common Array Manager (CAM) software

## Operating System Support

**Sun Storage 2540-M2 (FC)**

- Oracle Enterprise Linux (OEL)
  - 5.7 UEK, 5.8 UEK
  - 6.0, UEK, 6.1 UEK, 6.2 UEK, 6.3 UEK
- RedHat Enterprise Linux 9 (RHEL)
  - 5.6, 5.7
  - 6.1, 6.2, 6.3
- SuSe Enterprise Linux (SLES)
  - 10.4
  - 11.1, 11.2
- Oracle Virtual Machine (OVM)
  - 2.2.2
  - 3.0
- Oracle Solaris
  - 10.0, 10.6, 10.7, 10.8, 10.9. 10.10
  - 11.0 (datapath only)
- VMWare ESX
  - 3.5.3, 3.5.4, 3.5.5,
  - 4.0, 4.1, 4.1.1
  - 5.0
- Microsoft Windows
  - 2003 Server SP2
  - 2008 Server R2 SP2
  - 2012 Server

**Sun Storage 2530-M2 (SAS2)**

- RedHat Enterprise Linux 9 (RHEL)
  - 5.6, 5.7
  - 6.1, 6.2, 6.3
- SuSe Enterprise Linux (SLES)
  - 10.4
  - 11.1, 11.2
- Oracle Solaris
  - 10.0, 10.7, 10.9
- VMWare ESX
  - 3.5.5,
  - 4.1, 4.1.1, 4.1.2
  - 5.0
- Microsoft Windows
  - 2003 Server SP2
  - 2008 Server R2, SP2
  - 2012 Server

## Host Connectivity

- Host/HBA/IP switches multipath driver: Solaris OS and RedHat Linux
- Asymmetrical Logical Unit Access (ALUA): Allows server I/O down multiple paths to a volume
- All HBAs supported in SAN 4.4.12

## Dimensions

- Height: 86.4 mm (3.4 in)

- Width: 482.6 mm (19 in)
- Depth: 552.5 mm (21.75 in)
- Weight (maximum): 57.32 lbs (AC version), 59.96 lbs (DC version)

**Power Requirements**

- Heat Output: 1366 BTU/hr
- AC power: 100-240V ~, 7.0-2.9A, 50/60Hz
- DC power: -42 to -60Vdc, 21.7-15.3A

**Temperature**

- Operating: 10° C to 40° C (50° F to 104° F), Maximum rate of change: 15° C (59° F)/hr
- Storage: -10° C to 50° C (14° F to 122° F). Maximum rate of change: 10° C (50° F)/hr
- Transit: -40° C to 140° C (-40° F to 140° F) Maximum rate of change: 20° C (68° F)/hr

**Relative Humidity**

- Operating: 20% to 80% relative humidity, noncondensing. 10° C (50° F) per hour gradient (max)
- Storage: 10% to 90% relative humidity. 15° C (59° F) per hour gradient (max)
- Transit: 5% to 90% relative humidity. 20° C (68° F) per hour gradient (max)
- Dewpoint: 26° C (79° F) max

**Altitude**

- Operating: 30.5 m (100 ft) below sea level to 3000 m (9840 ft) above sea level
- Storage: 30.5 m (100 ft) below sea level to 3000 m (9840 ft) above sea level
- Transit: 30.5 m (100 ft) below sea level to 12000 m (40000 ft) above sea level

**Regulations**

- Safety Marks: UL, C-UL, CE, BSMI (DoC), GOST
- Emissions/Immunity: FCC Class A, ICES-003 Class A, VCCI Class A, EN55022 Class A/EN55024 (CE), CNS13438 (BSMI DoC), AS/NZS CISPR22 (C-Tick), KN22/KN24 (KC)
- Environmental:  RoHS and WEEE
- NEBS Level 3: GR-63 CORE requirements, GR-1089 CORE requirements

## Contact Us

For more information about Sun Storage 2500-M2 Array, visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.

Oracle is committed to developing practices and products that help protect the environment



**Hardware and Software, Engineered to Work Together**



ORACLE