

# M500 SAN Storage Array



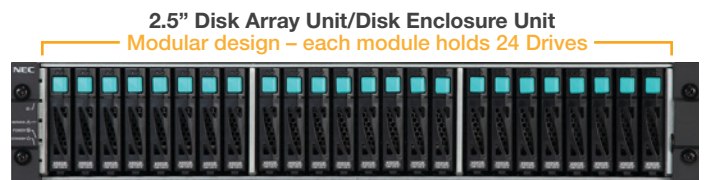
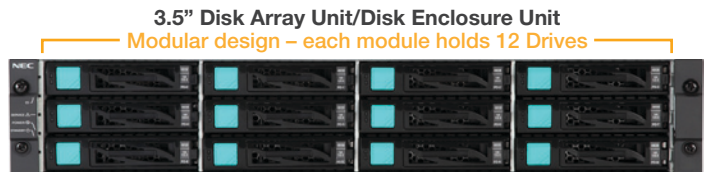
## At a Glance

- Superior Dependability
- High Efficiency
- Easy Operation
- Virtualization-compatible
- High Performance
- High Availability

## Overview

NEC's M500 SAN storage arrays are a great choice for very scalable, mission-critical, high performance, primary or tiered storage. These SAN storage arrays are easy to operate, dependable and efficient. They are also well-suited for use in virtualized environments by virtue of their great scalability, LUN lock stability, support for VMware APIs and flexibility.

NEC M500 SAN arrays feature state-of-the-art host interfaces: 8 Gbps Fibre Channel, 10Gbps/1Gbps iSCSI. Both interfaces can be deployed concurrently. M500 offers 3.5" and 2.5" drives. 2.5" drives are attractive due to their lower power and space consumption. 3.5" drives by contract offer the best storage density per spindle. M500 simultaneously supports SAS HDD, NearLine SAS HDD, and SSD in the same enclosures, enabling flexible tiered storage architecture.



## Solution

- **Fully redundant** system architecture delivers up to 99.999% availability
- **Active-active controllers** ensures high performance and dependability via multi-pathing software
- **Flash memory** on cache assures superior data protection
- **Encrypted HDDs** minimize the risk of data loss
- **SuperPhoenix™ technology** eliminates data corruption undetected by other systems
- **WORM** enables greater security via tamper-resistance
- **Snapshots and replication** deliver robust data protection
- **Super Phoenix** technology reduces HDD degradation and unnecessary RAID rebuilds caused by unrecoverable errors. This lowers storage maintenance and service cost.
- **2.5" drives** reduce power and space consumption
- **Power off RAID groups** reduce power consumption
- **Thin Provisioning** enables smart capacity over-provisioning thus reducing storage cost
- **Command Line Interface (CLI)** automates management

- **Browser-based GUI** provides an easy-to-use remote and multi-array single management console.
- **Performance Monitor and Performance Navigator** are designed to optimize system performance
- **VAAI** enables automation and server off-load.
- **Data Migration** enables high speed movement of data from NEC S/D/M-Series to M-Series arrays.
- **Expand RAID groups dynamically** by adding HDDs one at a time or in groups; data remains online and accessible
- **Grow LUNs online** without reconfiguring RAID groups
- **Up to 384 Drives** in a single RAID group
- **Performance Optimizer** automatically locates data on disk to maximum access performance.
- **Performance Cache** improves data access speed by using SSD as cache.
- **RDR/DR** enhances disaster recovery

\* Please consult NEC Sales for Availability

## Hardware Specifications

Model		3.5" Drive Model & 2.5" Drive Model	
Host Ports	8 Gbps Fibre Channel	8 or 16 ports	
	10 Gbps or 1Gbps iSCSI	4 or 8 ports	
	I/F Mix(*)	8GFC x8 ports + 1G or 10G iSCSI x4 ports	
Configuration		Max 0 drives/Base Unit Max 12 drives/3.5" enclosure Max 24 drives/2.5" enclosure	
		3.5" and 2.5" enclosures can be used within the same system	
		SAS HDD/Nearline SAS HDD/SAS SSD intermix within an enclosure	
Cache Memory	Capacity	12, 24 or 48 GB	
	Backup	Flash memory	
Supported RAID Levels		1,5,6,10,50,60,TM	
Supported Operating Systems		Windows, Linux, Vmware, HP-UX, AIX, Solaris	
Maximum Physical Capacity		768TB	
Disk Drives	Capacity	SAS HDD	300 GB, 450 GB, 600 GB(2.5"/3.5", 15,000 rpm) 600 GB(2.5"/3.5", 15,000 rpm/Encryption HDD)
		Nearline SAS HDD	1 TB(2.5"/3.5", 7,200 rpm) 2 TB(3.5", 7,200 rpm)
		SAS SSD	100GB(2.5") 400GB(3.5")
	Interface Speed	SAS	6 Gbps
Number of Disk Drives		3-384	
Power Requirements		AC 100 – 240V single phase 50/60Hz	

## Software Specifications

Objective	NEC Storage Software	Function
Storage Control	Storage Base Product(*1)	Basic storage control function
	Storage Manager Express (*1)	Basic storage management function
	Storage Manager(*1)	Basic storage function for multi-array management
Access Control	Access Control (*1)	LUN masking function for sharing or exclusive use of storage
Performance Management	Performance Monitor Suite	Bundle of NEC Storage PerformanceMonitor and NEC Storage PerformanceNavigator
	Performance Monitor	Function for real-time performance monitoring
	Performance Navigator	Function for efficient performance analysis
	Performance Optimizer	Function to reallocate data optimally according to access frequency
	Performance Cache	Function to use SSD as second cache for performance improvement
High Availability	Path Manager(*1)	Path redundancy function
Data Protection	Dynamic Data Replication	Function for volume replication and snapshot within the same system
	Remote Data Replication (*2)	Function for volume replication across different disk array
	Remote Data Replication Asynchronous(*2)	Function for volume replication across different disk array over a low speed network
	Remote Data Replication Upgrade(*2)	Upgrade to RDR from RDR Asynchronous
	Remote Data Replication/Disaster Recovery(*2)	Function to enhance RDR for disaster recovery
	Dynamic Snap Volume	Function for creating snapshot
	Replication Control SQL Option	Function for non-disruptive back-up of Microsoft SQL Server
	Replication Control File System Option	Function for non-disruptive back-up of file system
	Volume Protect	Function for tamper proof and ensure the integrity of volume data
Energy Conservation	Storage Power Conserver (*1)	Function to save storage power consumption by control of HDD rotation
	Thin Provisioning (*1)	Function to enhance storage usage efficiency by virtual capacity
Scalability	Data Migration (*2)	Function for high speed data migration from NEC S/D/M-Series to M-Series

\*1: Bundled SW w/ Base Unit, \*2: iSCSI model doesn't support

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