

M700 SAN Disk Array



M700 Disk Array Unit + Disk Enclosure

At a Glance

- Highly Scalable (up to 2.96PB¹)
- High Performance, Availability and Efficiency
- Virtualization-compatible
- Superior Dependability
- Secure Erase Technology – Methodology defined by the US Department of Defense²

Overview

NEC's M700 SAN Disk Array is an ideal storage solution for data-intensive, mission-critical environments that require both high availability and high-performance in the datacenter. Easy to operate, the M700 is well-suited for use in virtualized settings with its flexibility for scaling and support with VMware APIs.

The M700 features multiple host interfaces including 8Gbps Fibre Channel and 10Gbps/1Gbps iSCSI options. All interfaces can be deployed concurrently.

Simultaneously supports Solid State Drives, Nearline SAS and traditional SAS HDDs in the same enclosure, enabling flexible, tiered storage architecture.

Internal storage data can now be completely erased using methods based on those defined by the United States Department of Defense (²) with the use of NEC's Secure Erase Technology now available on all M-Series SAN solutions. This option provides users with added security reducing the risk of leaking data due to a failure to properly erase information on a hard disk drive.

Solution

- **PerforCache** improves disk array response speeds by using SSDs as a secondary cache in the following manners:
 - Reduces access to spinning drives in the event of a cache miss
 - Frequent random read data is stored in the SSD L2 cache and provided for the next access
 - Moves data from cache memory to the L2 cache and improves response for a write request if there are many
 - When a controller is not available due to a failure, PerforCache uses the L2 cache in place of cache memory and prevents the response time of write requests from slowing down
- **PerforOptimizer** automatically reallocates stored data to an optimal location for using the disk array efficiently. Data can be moved either at the Logical Disk level or at the Block level.
- **960 x 4TB Nearline SAS disk drives** provide 3.03PB of usable capacity.
- **VirtualCachePartitioning** provides high stability in a virtual environment by setting limits to the disk array cache memory for each tenant to secure the I/O bandwidth.
- **DynamicDataReplication** replicates and snapshots within the array.
- **RemoteDataReplication** replicates between arrays.
- **RemoteDataReplication/DisasterRecovery** an enhanced feature of RemoteDataReplication for ensuring coherency of multiple Replication Volumes by grouping multiple Master Volumes and Replication Volumes.
- **PathManager** makes redundant access paths between the host adapter and the M700 SAN disk array. Provides for dynamic load balancing.

¹Using 4TB drives

²A high security disk data erasure technique based on the United States Department of Defense's DOD5220.22-M disk erasure method

Hardware Specifications

Host Ports	8 Gbps or 16 Gbps Fibre Channel	8 to 48 ports	
	10 Gbps or 1 Gbps iSCSI	4 to 24 ports	
	Interface Mix Supported	8 to 40 - 8 or 16 Gbps FC and 4 to 20 - 1 or 10 Gbps iSCSI	
Configuration		12 drives per 3.5" Disk Array Unit/Disk Enclosure / 24 drives per 2.5" Disk Array Unit/Disk Enclosure	
		Both 3.5" and 2.5" disk enclosures can be used within the same configuration	
		SAS disk drives, Nearline SAS disk drives and SSD can be intermixed within a Disk Array Unit or a Disk Enclosure	
Cache Memory	Capacity	48 or 96GB	
	Backup	Flash memory	
Supported RAID Levels		1, 5, 6, 10, 50, 60, Triple Mirror	
Supported Operating Systems		Windows, Linux, VMware, HP-UX, AIX, Solaris	
Maximum Usable Capacity		3033TB	
Disk Drives	Capacity	SAS HDD	300GB (2.5" 10,000rpm/2.5" 15,000rpm/3.5" 15,000rpm) 450GB, 600GB (2.5" 10,000rpm/3.5" 15,000 rpm) 900GB, 1.2TB (2.5" 10,000rpm)
		Nearline SAS HDD	1TB (2.5"/ 3.5" 7,200rpm) 2TB, 3TB, 4TB (3.5" 7,200rpm)
		SAS Encrypted	600GB (3.5" 15,000rpm Encrypted/2.5" 10,000rpm Encrypted)
		Nearline SAS Encrypted	4TB (3.5" 7,200rpm Encrypted)
		SSD	200GB, 800GB (2.5"/3.5")
	Interface Speed	SAS	6 Gbps
Number of Disk Drives		3 to 960	
Power Requirements		AC 100 – 240V single phase 50/60Hz	

M-series Standard Software Overview

Solution Pack	Contents	Function
Base Software	Storage Manager Express	Manage flexible and powerful functions on single array through embedded intuitive GUI
	Storage Manager	Extend storage management capability across multiple arrays using single pane of glass GUI
	Storage Manager Command	Control the M-series with CLI commands
	ThinProvisioning	Minimize cost and utilize storage efficiently with virtualized capacity
	StoragePowerConserver	Spin down the inactive disk drives for energy efficiency
	AccessControl	Define volume access rights for secure shared storage
	VMware Cooperation	Collaborate with VMware through vSphere Web Client Plug-in, vCenter Plug-in, VASA Provider, VAAI and Storage Replication Adapter
	PathManager	Manage multi path connection for high availability
	PerformanceMonitor	Monitor real time performance and load on storage through Storage Manager GUI
	PerformanceNavigator	Analyze monitored log data graphically for insightful diagnostics
	DynamicDataReplication Express (M100 only)	Replicate / Snapshot volumes within same system using GUI / CLI (Non-disruptive copy is available with Local Replication Pack)

M-series Optional Software Overview

Solution Pack	Contents	Function
Advanced Performance Pack (also offered individually)	PerforOptimizer (Auto Data Tiering)	Move data to the most effective storage automatically based on access characteristics
	PerforCache (Write/Read SSD Cache)	Use SSD as secondary cache for performance improvement
	VirtualCachePartitioning (M300/M500/M700 only)	Allocate cache memory to applications to ensure maximum application performance with guaranteed cache availability
Local Replication Pack	DynamicDataReplication	Replicate / Snapshot volumes within same system using non-disruptive command for host or storage manager GUI / CLI
	ReplicationControl SQL	Non-disruptive back up of Microsoft SQL server
	ReplicationControl File System	Non-disruptive back up of file system
Remote Replication Pack	RemoteDataReplication	Replicate volumes between systems
	DisasterRecovery (M500/M700 only)	Replicate atomic groups (application level) for application level recovery
Data Security Pack	SecureErasure	Delete data using DoD5220.22-M method to prevent unwanted recovery of classified data
	VolumeProtect	Prevent data modification by setting access rights and data retention period to satisfy compliance requirements (WORM)
Data Migration	DataMigration	Migrate data directly between NEC disk systems without affecting network

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