

M300 SAN Disk Array



At a Glance

- Improved Power Consumption
- High Performance and Reliability
- Easy-to-Use Navigation
- Virtualization-Compatible
- Flexible Tiering and Scalability

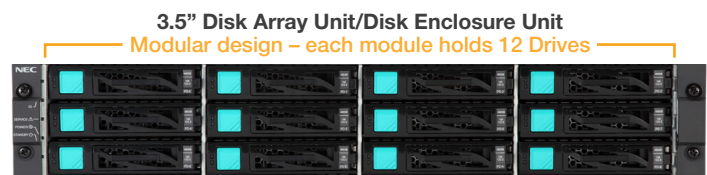
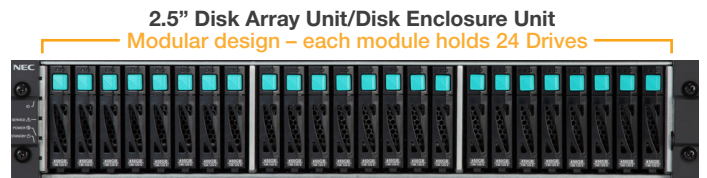
Overview

The NEC M300 SAN Disk Array is the perfect storage solution for the mission-critical datacenter that is looking to improve their green footprint with reduced power consumption without having to sacrifice any of the performance or reliability needed for demanding operations. Through the use of a power-efficient processor with a TDP (thermal design power) of 30W the M300 autonomously controls the operating mode to reduce power consumption of the entire system.

With its newly simplified navigational GUI, that even a first-time user can use confidently and effortlessly, systems administrators can easily apply changes to the M300's replication settings, capacity and monitor disk loads.

Ideal for use in any virtualized datacenter with its flexibility for scaling and support with VMware APIs.

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



Solution

- **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 band width
- **ThinProvisioning** uses actual volume efficiently and reduces operational expense
- **DynamicDataReplication** replicates and snapshots within the array
- **RemoteDataReplication** replicates between arrays
- **StoragePowerConserver** spins down disk drives and reduces the system running cost
- **PathManager** makes redundant access paths and provides load balancing dynamically
- **Encrypted HDDs** aids in data security
- **Solid State Drives** enhance PerforCache and PerforOptimizer features

- **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.

Hardware Specifications

| | | | |
|-----------------------------|------------------------|--|--|
| Host Ports | 8 Gbps Fibre Channel | 8 ports | |
| | 10 Gbps or 1Gbps iSCSI | 4 ports | |
| | 6 Gbps SAS | 8 ports | |
| | Dual Interface | 8Gbps FC 4 ports + 1Gbps iSCSI 4 ports dual interface controller | |
| 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 | 8 or 16GB | |
| | 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 | | 303TB (1TB = 1,024^4B, 1GB = 1,024^3B) | |
| 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 | | 3-96(3.5")/144(2.5") | |
| 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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HW12003 | v.8.29.14

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