M100 DISK ARRAY

AN ENTRY-LEVEL DEVICE WITH THE OPERABILITY AND FUNCTIONALITY OF A HIGHER CLASS

- **High performance & availability**
- **Advanced eco features**
- **Easy to install & operate**
- **Extremely economical**

Complete setup in a matter of minutes

Simplified initial setup procedure: with the preinstalled management software, just select the desired capacity and RAID level, and let M100 Disk Array perform its own settings to enable the best performance.

User-friendly GUI for storage management

The highly visual Web browser screens let you quickly grasp the status of storage capacity, disk load, and connected servers. Even first-time users, can easily make changes to the replication settings or capacity, and can handle fault in the event of a failure.

Advanced power-saving design

M100 Disk Array slashes previous power consumption levels to achieve one of the best power ratings in the industry. It uses a power-efficient processor and autonomously controls the operating mode to reduce the power consumption of the entire system. Low-power components have been used to the greatest extent possible.

Easily ramp up capacity and performance

M100 Disk Array offers a newly developed Advanced Dynamic Pool technology. Pool capacity can be increased simply by adding hard disk drives. The data will be automatically organized into the optimal configuration to raise the performance of the entire data pool.

Non disturbing data backup

M100 Disk Array provides a snapshot function to save only the modified data and a function to replicate an entire data volume without disrupting operations. The replicated volume can be used for tape backup, batch processing, or tests, using actual data.

Thin provisioning in virtual environment

Answering needs, the capacity of physical volumes can be allocated to virtual drives and hard disk drives added without disrupting operations. In this way, capacity usage is optimized, improving utilization, reducing initial investment layout, and lowering power consumption. There is no inefficient stoppage and schedule adjustement.

Advanced eco features

- Silent and Autonomously switches to low-power mode
- Uses a power-efficient processor with a TDP (thermal design power) of 30 W
- Includes a highly efficient power supply
- Operates in environments with temperatures up to 40ºC, reducing air conditioning usage

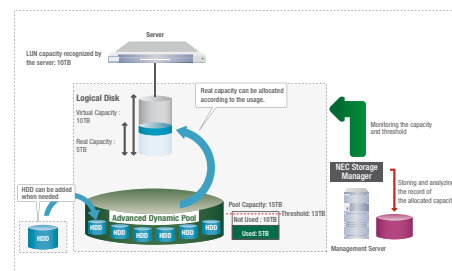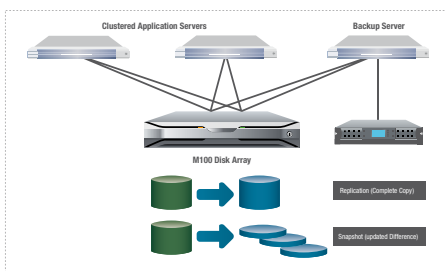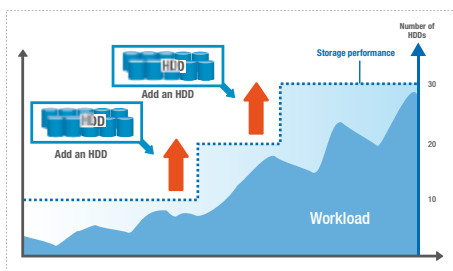## High performance & availability

- Uses duplication and redundancy design for critical components
- Capacity and performance can be increased just by adding hard disk drives
- Can be managed remotly through status monitoring and log acquisition
- Uses a high-speed interface

Extremely economical

- Excellent cost-performance ratio
- Bundled management software
- iSCSI interface enables economical system configuration

Easy to install & operate

- No management server required
- Setup is simple and quick
- Can be easily managed and operated thanks to an intuitive, user-friendly GUI (CLI supported)
- Executes self-diagnosis and displays appropriate response measures if faults occur
- Firmware updates can be applied during operation

SPECIFICATIONS

MODEL	M100 DISK ARRAY SUPPORTING 3,5" DRIVE	M100 DISK ARRAY SUPPORTING 2,5" DRIVE
Chassis structure (rack mount)	Seven disk enclosures supporting 3.5" drives or three disk enclosures supporting 2.5" drives can be connected to the disk array controller.	Three disks enclosures supporting 2,5" drives or six disk enclosures supporting 3,5" drives can be connected to the disk array controller.
	The disk array controller or disk enclosure can house up to 12 drives	The disk array controller or disk enclosure can house up to 24 drives
Host interface	Fibre Channel (8Gbps), iSCSI (1 Gbps or 10 Gbps)	
Number of host ports *1	FC: 8 or 4, iSCSI: 4	
Cache memory *2 — Capacity *1	8GB	
Cache memory *2 — Backup method	Save to flash memory	
RAID level *2	RAID-0, 1, 5, 6, 10, 50, 60, TM	
Drive specifications — Disk interface	SAS (6Gbps)	
Drive specifications — Type / Capacity / Rotation speed — SAS HDD	3.5" 300 GB, 450 GB, 600 GB (15,000 rpm)	2.5" 300 GB, 450 GB, 600 GB (10.000 rpm)
Drive specifications — Type / Capacity / Rotation speed — Nearline SAS HDD	3.5" 1 TB, 2 TB (7,200 rpm)	2.5" 1 TB (7,200 rpm)
Drive specifications — Type / Capacity / Rotation speed — SSD	3.5" 400 GB	2.5" 100 GB
Drive specifications — Type / Capacity / Rotation speed — Encryption SAS HDD	3.5" 600 GB (15,000 rpm)	2.5" 600 GB (10,000 rpm)
Device capacity *3 *4 (maximum capacity) — SAS HDD	48.9 TB	48.9 TB
Device capacity *3 *4 (maximum capacity) — Nearline SAS HDD	166.8 TB	83.7 TB
Device capacity *3 *4 (maximum capacity) — SAS SSD	3.7 TB	897 GB
Device capacity *3 *4 (maximum capacity) — Encryption SAS HDD	48.9 TB	48.9 TB

MODEL	M100 DISK ARRAY SUPPORTING 3,5" DRIVE	M100 DISK ARRAY SUPPORTING 2,5" DRIVE
Number of mounted drives *5	3 to 96	
Supported operating systems *6	Windows, Linux, VMware	
Chassis dimensions (WxDxH) — Disk array controller (U count)	482 x 513.2 x 87.8 mm (2U, no front bezel) / 482 x 545.2 x 87.8 mm (2U, with front bezel) *7	
Chassis dimensions (WxDxH) — Disk enclosure (U count)	482 x 513.2 x 87.8 mm (2U, no front bezel) / 482 x 545.2 x 87.8 mm (2U, with front bezel) *7	
Weight — Disk array controller	31 kg max.	
Weight — Disk enclosure	29 kg max.	
Power conditions	100 to 240 VAC, single-phase 50/60 Hz	
Maximum power consuption (when operating in a 25°C environment) — Disk array controller	400 W	400 W
Maximum power consuption (when operating in a 25°C environment) — Disk enclosure	290 W	290 W
Ambient operating conditions — Temperature	5 to 40°C (41 to 104°F) (while operating), -10 to 60°C (14 to 140°F) (Non operating)	
Ambient operating conditions — Humidity	10 to 80% RH (while operating), 5 to 80% RH (Non-Operating)	

TYPE		PRODUCT NAME	M100 (FC)	M100 (iSCSI)	FEATURE
Storage Management	Device Management	NEC Storage Manager Suite	•	•	Basic storage functions for multi-array management
	Performance Management	NEC Storage PerformanceMonitor Suite	•	•	Bundle of NEC Storage PerformanceMonitor and NEC Storage PerformanceNavigator
		NEC Storage PerformanceMonitor	•	•	Function for real-time performance monitoring of disk array
		NEC Storage PerformanceNavigator	•	•	Function for efficient perfromance analysis
Storage Control	Storage Control	NEC Storage Manager Express *10	•	•	Basic storage management functions embedded in NEC Storage
		NEC Storage ControlCommand Media Kit	•	•	CLI for data replication, power savings, and volume protection on application servers.
	Replication	NEC Storage DynamicDataReplication *11	•	•	Function for volume replication and snapshot within the same disk array
		NEC Storage DynamicDataReplication Express *10 *11	•	•	Embedded CLI for volume replication and snapshot within the same disk array
		NEC Storage RemoteDataReplication *11	•	–	Function for volume replication across different disk arrays
		NEC Storage RemoteDataReplication Asynchronous *11	•	–	Function for volume replication across different disk arrays over a low speed network
		NEC Storage ReplicationControl SQL Option *11	•	•	Option function for non-disruptive backup of Microsoft® SQL Server ™
		NEC Storage ReplicationControl FileSystem Option *11	•	•	Option function for non-disruptive backup of file system
	Resource Control	NEC Storage StoragePowerConserver *10	•	•	Function to save storage power consumption by control of HDD Rotation
		NEC Storage VolumeProtect	•	•	Function for tamper proof and ensure the integrity of volume data
		NEC Storage ThinProvisioning *10 *12	•	•	Function to enhance storage usage efficiency by virtual capacity
	High Availability	NEC Storage PathManager *10	•	•	Path redundancy function

Ref : Datasheet - uk / NEC M100 Disk Array October 2011

*1 : Dual controller model capacity   *2 : The RAID-0 does not include redundancy, so data will be lost if any of the disks fail. NEC strongly recommends using a RAID level with redundancy. Please contact NEC before implementing a RAID-0.   *3 : Capacity is calculated based on a conversion factor of 1GB = 1.000.000.000 bytes and 1 TB = 1.000.000.000.000 bytes.

*4 : The maximum capacity is calculated based on the assumption that a drive with the maximum capacity is selected for each drive and that a RAID-5 is used.   *5 : When using SSD, up to 12 drives can be connected.   *6 : The disk array conncetion might be restricted depending on the operating system used. Contact NEC for details.   *7 : The front bezel is an optional extra.   *10 : Bundled with the diskarray

*11 : Not supported in the Single Controller model   *12 : To be supported from the 4th quarter of 2011

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