Dell PowerVault MD3 iSCSI Array Series

The Dell™ PowerVault™ MD3 iSCSI array series offers 10Gb Ethernet iSCSI SAN solutions that are ideal for entry-level storage consolidation in virtualized environments that require high availability and high performance without sacrificing ease of use. Designed for flexibility, the MD3 iSCSI array series support a range of drive types, enclosures and RAID levels all within a single array.

10Gb Ethernet-based network storage

PowerVault MD3 iSCSI arrays offer exceptional performance and flexibility for storage consolidation and scalability to meet your business demands. Now it's simple to improve storage utilization by combining storage resources, increasing availability with redundant hardware, and streamlining the backup process.

iSCSI storage, ideal for virtual server environments

Implement your high performance network storage solution for less with MD3 iSCSI array series using low-cost 10GBASE-T Ethernet technology. Along with significant savings in hardware, IP SANs can also lower training investment. Ethernet is a familiar technology, so there's usually no learning curve.

Now you can effectively consolidate storage to support the value of your virtual environment with the performance to meet both IOPS-intensive as well as high bandwidth applications. MD3 storage systems are fully-qualified for use in virtualized application environments with VMware® ESX™ and Microsoft® Hyper-V® software.

Keep pace with the latest technology

MD3 iSCSI arrays offer maximum performance and capacity at an affordable price. They easily handle the application demands of large databases with increased processing capability. These arrays also support solid-state drives (SSD) to meet the most demanding I/O requirements. An optional High-Performance Tier (HPT) feature is available to increase array I/O and throughput performance and enables the SSD cache feature to improve your read performance by storing frequently read data and making it quickly accessible. A maximum of 16GB cache is available with the dual controller option, leveraging 8GB cache per controller.

Gain a new level of management efficiency

MD3 iSCSI arrays are managed by the advanced MD Storage Manager software, an intuitive client-based Java application designed for easy user interaction with the system no matter what your level of familiarity with storage systems. It offers two different management paths and features an enterprise window that monitors multiple arrays through a single interface.

With the MD Storage Manager, all administrative tasks, including configuration, reconfiguration, expansion, maintenance and performance-tuning, can be performed without system downtime or interruption to array performance. MD Storage Manager's configuration flexibility includes the ability to mix RAID levels, segment sizes, array sizes and cache policies all within a single storage array.

Deployment scalability and flexibility

Scale easily: Up to 64 servers can be connected to a single MD3 10Gb iSCSI array. Storage capacity can be expanded up to a base of 120 hard drives[1] on all MD3 iSCSI models. If additional capacity is needed, the 2U models can scale by simply hot-plugging additional PowerVault MD1200 or MD1220 expansion enclosures to grow capacity up to 192 hard drives.[1] 4U dense arrays can scale up to 180 hard drives[1] in just 12U using two MD3060e expansion enclosures.

Mix and match drives: 2U arrays hold up to 12 x 3.5" or 24 x 2.5" drives, and support additional expansion through the MD1200 enclosure (12 x 3.5") or MD1220 enclosure (24 x 2.5"). Both the 4U dense array and the MD3060e expansion enclosure hold up to 60 hard drives (3.5" and 2.5").

Optional features

Premium features are now bundled into two options. One option is designed to support the high demand for performance and includes the HPT feature. If protecting data is a priority, then the pre-packaged Data Protection features ensure the full suite of premium data protection options are available.

Snapshots: Supports up to 128 snapshots per virtual disk and a total of 512 snapshots per system in the Premium Feature Key, which provides additional data availability.

Virtual disk copy (VDC): VDC is full copy of an existing virtual disk at any point in time, often used for decision support and application development testing. Reads and writes are supported while doing a virtual copy.

Self-encrypting drives (SEDs): With SEDs, if a drive is removed from the array or powered down, the data on that drive is encrypted and useless to anyone who attempts to access it without the appropriate security authorization.

HPT: Meet the most demanding performance requirements for your organization to remain productive and competitive.

SSD cache: Helps improve performance when combined with the HPT option, supporting up to 5TB data with the 8GB cache controller.

Remote replication: Asynchronous replication of data over a common IP network increases the flexibility of backing up data.

Standard features

Reliable storage is enhanced with software features that provide added data protection, improved virtualization and ease of management. The integration of VMware VAAI helps improve performance where you need it, freeing your server from storage related tasks. Dynamic Disk Pools (DDP) simplifies data management and improves storage efficiencies with self-healing dynamic disk rebalancing, without the worries of traditional RAID configurations. With just a few clicks you can add or delete disks from DDP to increase or decrease your pools size as needed. DDP supports up to 20 disk pools and can support up to 120 SSDs.[2]

Other software feature enhancements include thin provisioning, vCenter Plug-in and enabling VASA and SRA. The high density models have standard features to ensure high performance for general purpose computing or applications with high bandwidth requirements, including HTP and SSD cache.

Storage consolidation for virtualized environments

Dell PowerVault MD3 iSCSI Series technical specifications

Feature	MD3800i	MD3820i	MD3860i	MD3060e
Drives	12 x 3.5" SAS, NL-SAS, SSD, SED	24 x 2.5" SAS, NL-SAS, SSD, SED	Mix and match up to 60 x 3.5" and 2.5" SAS, NL-SAS, SSD, SED	
Drive capacity	• SAS 15K RPM: 300GB, 450GB[3], 600GB[3] • NL-SAS 7.2K RPM: 500GB, 1TB[3], 2TB[3], 3TB[3], 4TB[3], 6TB, 8TB • SAS 10K RPM: 600GB • SSD: 200GB, 400GB, 800GB (WI); 400GB, 800GB, 1.6TB (MU); 800GB, 1.6TB (RI) (available with 3.5" HDD carriers)	• SAS 15K RPM: 146GB[3], 300GB[3], 600GB[3] • SAS 10K RPM: 146GB, 300GB[3], 600GB[3], 900GB[3], 1.2TB[3], 1.8TB • NL-SAS 7.2K RPM: 500GB[3], 1TB[3], 2TB • SSD: 200GB, 400GB, 800GB (WI); 400GB, 800GB, 1.6TB (MU); 800GB, 1.6TB (RI)	• 3.5" NL-SAS 7.2K RPM: 500GB, 1TB, 2TB[3], 3TB[3], 4TB[3], 6TB, 8TB • 2.5" SAS 15K RPM: 146GB[3], 300GB[3], 600GB[3] • 2.5" SAS 10K RPM: 146GB, 300GB[3], 600GB[3], 900GB[3], 1.2TB[3] • 2.5" NL-SAS 7.2K RPM: 500GB[3], 1TB[3], 2TB • SSD: 200GB, 400GB, 800GB (WI); 400GB, 800GB, 1.6TB (MU); 800GB, 1.6TB (RI) (available with 3.5" HDD carriers)	
Expansion capabilities[1]	Up to 192 drives using the MD1200 or MD1220		Up to 180 drives using the MD3060e	Up to 2 dense expansion enclosures per MD3860f array
Connection	2 x 10GBASE-T iSCSI and 2 x 12Gb SAS ports per controller			6Gb SAS
Controllers	Single 4GB cache; Dual 4GB or 8GB cache		Dual 4GB or 8GB cache	Dual Expansion Management
Maximum cache	16GB (8GB per controller)			Controller dependent
Maximum host	64			
Form factor	2U rack enclosure — Dell ReadyRails™ II static rails for tool-less mounting in 4-post racks with square or unthreaded round holes or tooled mounting in 4-post threaded-hole racks		4U rack enclosure	4U rack enclosure
Management software	MD Storage Manager			Managed with controller
Standard features	DDP[2], Thin Provisioning, VAAI, vCenter Plug-in, VASA, SRA, SED, Microsoft Windows ODX		DDP[2], Thin Provisioning, VAAI, vCenter Plug-in, VASA, SRA, HPT, SSD cache, SED, Microsoft Windows ODX	Controller dependent
Optional features	Snapshot, VDC, SEDs, HPT, asynchronous and synchronous remote replication, HDD expansion option[1]		Snapshot, VDC, asynchronous and synchronous remote replication, HDD expansion option[1]	
OS support	Microsoft® Windows®, VMware®, Microsoft Hyper-V®, Red Hat® and SUSE®			
RAID levels	Support for RAID levels 0, 1, 10, 5, 6; Up to 180/192[1] physical disks per group in RAID 0, 10; Up to 30 physical disks per group in RAID 5, 6; Up to 512 virtual disks; DDP[2]			Managed with controller
Physical dimensions	2U - 8.68 cm (3.42") x 44.63 cm (17.57") x 60.20 cm (23.70")	2U - 8.68 cm (3.42") x 44.63 cm (17.57") x 54.90 cm (21.61")	4U - 17.78 cm (7") x 48.26 cm (19") x 82.55 cm (32.5")	4U - 17.78 cm (7") x 48.26 cm (19") x 82.55 cm (32.5")
Maximum weight	29.30 kg (64.6 lb)	24.22 kg (53.4 lb)	105.20 kg (232.0 lb)	105.20 kg (232.0 lb)
Environment				
Power	AC: 600W peak output DC: 700W Wattage: 2U arrays support DC power supply		AC: 1755W	
Heat dissipation (max)	2047 BTU/hr		5988 BTU/hr	
Voltage	100 to 240V AC 48V DC		220V AC, auto ranging	
Frequency range	50/60Hz			
Temperature	Operating: 10° to 35°C (50° to 95°F) with a maximum temperature gradation of 10°C per hour; 2U arrays support Fresh Air cooling, up to 35°C			
Relative humidity	Operating: 20% to 80% (non-condensing) with a maximum humidity gradation of 10% per hour			
Altitude	Operating: -16 m to 3048 m (-50 ft to 10,000 ft) NOTE: For altitudes above 2950 ft, the maximum operating temperature is derated 1°F/550 ft.		Operating: -30.5 m to 3000 m (-100 ft to 9,840 ft) NOTE: For altitudes above 2950 ft, the maximum operating temperature is derated 1.8°F/1000 ft.	
OEM-ready version available on certain models	From bezel to BIOS to packaging, your servers can look and feel as if they were designed and built by you. For more information, visit Dell.com/OEM.			

[1] Premium Feature Key required for expansion beyond 120 drives.
[2] MD38x0i arrays are limited to a maximum of 20 DDPs per array.
[3] SED available.

End-to-end technology solutions

Reduce IT complexity, lower costs and eliminate inefficiencies by making IT and business solutions work harder for you. You can count on Dell for end-to-end solutions to maximize your performance and uptime. A proven leader in Servers, Storage and Networking, Dell Enterprise Solutions and Services deliver innovation at any scale. And if you're looking to preserve cash or increase operational efficiency, Dell Financial Services™ has a wide range of options to make technology acquisition easy and affordable. Contact your Dell Sales Representative for more information.**

Simplify Your Storage at Dell.com/PowerVaultMD3.