Dell PowerVault MD3 Fibre Channel Array Series

The Dell™ PowerVault™ MD3 Fibre Channel array series introduces the next generation of 16Gb/s connectivity. This SAN solution is ideal for entry-level storage consolidation that requires high availability, high performance and business continuity without sacrificing ease of use and reliability.

Fibre Channel-based network storage

PowerVault MD3 Fibre Channel arrays offer exceptional performance, reliability and versatility to meet your business demands. Now it's simple to improve storage utilization by combining storage resources while increasing availability with redundant hardware, and streamlining the backup process. By consolidating data and resources with a single array, using either the standard 2U configuration or the high density 4U model, management complexities are minimized.

Affordable versatility

The MD3 Fibre Channel array series is designed to deliver maximum performance and capacity at an affordable price. This series is available with 3.5", 2.5" or SSD hard drives, in a 2U or 4U standard rack enclosure. If space is a concern, the MD3 high-density array holds up to 60 hard drives in just 4U, improving both power and cooling expenses. The 2U MD3 models are designed to hold 24 x 2.5" drives or 12 x 3.5" drives. Grow your capacity when you want to, how you want to with the expansion enclosures designed for the MD3 arrays.

Ideal for data intensive applications

Implement your high performance network storage solution for less with MD3 Fibre Channel arrays while protecting your existing Fibre Channel investment. Now you can effectively consolidate storage to support the value of your existing Fibre Channel environment with performance to meet both IOP-intensive, high bandwidth applications. MD3 storage arrays are also fully qualified for use in virtualized application environments with VMware® ESX™ and Microsoft® Hyper-V® software.

Keep pace the latest technology

The MD3 Fibre Channel arrays deliver an excellent performance/price ratio. Take advantage of a next-generation array with four 16Gb/s Fibre Channel ports per controller that offers a performance improvement. 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, 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 series arrays are managed by the advanced MD Storage Manager software, an intuitive client-based application. Designed for easy user interaction with the array regardless of your level of familiarity with storage systems. An enterprise window that monitors multiple arrays, through a graphical interface simplifying management through one console.

With the multi-generational and multi-protocol MD Storage Manager, all administrative tasks, including configuration, re-configuration, expansion, maintenance and performance tuning, can be performed with no array downtime and no 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 in a SAN environment can be connected to a single MD3 Fibre Channel storage system. Storage capacity can be expanded up to a base of 120 hard drives[1] on all models. If additional capacity is needed on the 2U models, they can scale by simply hot plugging additional PowerVault MD1200 or MD1220 expansion enclosures to grow capacity up to 192 hard drives.[1] The MD3 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

You can try the MD3 premium features with a 90-day trial license, then buy the features that meet the needs of your environment. Premium features can now be 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: Each virtual disk supports up to 128 snapshots, with a total of 512 snapshots per system. These are typically used when data needs to be "frozen" in time. Snapshot scheduler and Snapshot Rollback are features included in the Premium Feature Key, providing additional data availability.

Virtual disk copy (VDC): VDC is full replication of an existing 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.

SSD cache: Helps improve performance when combined with the HPT option.

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.

Remote replication: To protect data and processes from major regional disasters like earthquakes, fires or large-scale power outages, your organization needs remote replication of data to a secondary site. Also used for testing and deploying new databases without any downtime.

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 SSD drives with up to 1024TB of storage.[2] Other software feature enhancements include thin provisioning, vCenter Plug-in, enabling VASA, and SRA, which are all standard features on the MD3 FC models. The high-density models have standard features to ensure high performance for either general purpose computing or applications with high bandwidth requirements including HPT and SSD cache.

Introducing the new MD3, the next generation of affordable storage

PowerVault MD3 Fibre Channel Array Series Tech Specs

Feature	MD3600f/MD3800f	MD3620f/MD3820f	MD3660f/MD3860f	MD3060e
Number of drives	12	24	60	
Drive type	3.5" SAS, NL-SAS, SSD	2.5" SAS, NL-SAS, SSD	Mix and match 3.5" and 2.5" SAS, NL-SAS and SSD	
Drive capacity	• 15K RPM SAS: 300GB, 600GB • 7.2K RPM NL-SAS: 500GB, 1TB, 2TB, 3TB, 4TB • SSD: 200GB, 400GB; read-intensive SSD: 800GB, 1.6TB (available with 3.5" HDD carriers)	• 15K RPM SAS: 146GB, 300GB • 10K RPM SAS: 300GB, 600GB, 900GB, 1.2TB • 7.2K RPM NL-SAS: 500GB, 1TB • SSD: 200GB, 400GB; read-intensive SSD: 800GB, 1.6TB	• 3.5" 7.2K RPM NL-SAS: 500GB, 1TB, 2TB, 3TB, 4TB • 2.5" 15K RPM SAS: 146GB, 300GB • 10K RPM SAS: 300GB, 600GB, 900GB, 1.2TB • 7.2K RPM NL-SAS: 500GB, 1TB • SSD: 200GB, 400GB; read-intensive SSD: 800GB, 1.6TB (SSDs available with 3.5" HDD carriers) The 3.5" 10K and 15K HDDs are not supported on the dense model	
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 MD3660f or MD3860f array
Connection	MD36x0f: 8Gb Fibre Channel MD38x0f: 16Gb Fibre Channel			6Gb SAS
Controllers[3]	MD36x0f: Single 2GB cache or dual 2GB or 4GB cache MD38x0f: Dual 4GB or 8GB cache			Dual Expansion Management
Maximum cache	MD36x0f: 8GB (4GB per controller) MD38x0f: 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[2]	DDP, thin provisioning, VAAI, vCenter Plug-in, VASA, SRA, SEDs		DDP, thin provisioning, VAAI, vCenter Plug-in, VASA, SRA, HPT, SSD cache, SEDs	Controller dependent
Optional features	Snapshot, VDC, HPT, remote replication, HDD expansion option[1]		Snapshot, VDC, remote replication, HDD expansion option[1]	
OS support	Microsoft® Windows®, VMware®, Microsoft Hyper-V®, Citrix® XenServer®, 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, 1, 10; Up to 30 physical disks per group in RAID 5, 6; Up to 512 virtual disks; DDP[2]			Managed with controller
Physical dimensions (height x width x depth)	8.68cm (3.42") x 44.63cm (17.57") x 56.1cm (22.09")	8.68cm (3.42") x 44.63cm (17.57") x 50.8cm (20")	17.78cm (7.0") x 48.26cm (19.0") x 82.55cm (32.5")	17.78cm (7.0") x 48.26cm (19.0") x 82.55cm (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	2U arrays (MD3800f/MD3820f/MD3620f/MD3600f) support DC power AC: 600W peak output DC: 700W		AC: 1755W	
Heat dissipation (max)	2047 BTU/hr		5988 BTU/hr	
Voltage	100 to 240 VAC 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 (MD3800f/MD3820f/MD3620f/MD3600f) 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: -16m to 3048m (-50 to 10,000 ft) NOTE: For altitudes above 2950 feet, the maximum operating temperature is derated 1°F/550 ft.		Operating: -30.5m to 3000m (-100 ft to 9,840 ft) NOTE: For altitudes above 2950 ft, the maximum operating temperature is derated 1.8°F/1000 ft.	

Global services and support

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.

OEM-ready version available

From bezel to BIOS to packaging, your storage arrays can look and feel as if they were designed and built by you.[4] For more information, visit Dell.com/OEM.

[1] Premium Feature Key required for expansion beyond 120 drives.
[2] MD36x0f arrays are limited to a maximum of 10 DDPs up to 1024TB. MD38x0f arrays are limited to a maximum of 20 DDPs per array up to 1024TB.
[3] 2GB available as single or dual controller option; 4GB and 8GB only available as dual controller option.
[4] OEM-ready available on certain models.

Simplify Your Storage at Dell.com/PowerVaultMD3

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