Dell PowerVault MD3 Storage Array Series

The Dell™ PowerVault™ MD3 Series is affordable, reliable and versatile to meet a variety of storage requirements. Whether you need to consolidate your storage, support the demands of data intensive applications, or optimize your virtual environments, the MD3 Series has been designed to meet your growing business needs. The versatility of the MD3 Series lets you decide the protocol, supports a wide range of drive types, and has many optional premium software features that you can add as you choose.

Keeping pace with the latest technology

The new 16Gb Fibre Channel, 10GbE iSCSI and 12Gb SAS controllers offer the latest technology in high-speed connectivity. The MD3 models offer improved performance and double the existing bandwidth.[1] Your data should be available when you need it. The MD3 Series offers 8GB cache on dual controller options in SAS, iSCSI or Fibre Channel providing up 16GB total cache per array. The next generation of MD3 has the efficiency you need to meet your demanding I/O requirements. You get high availability and high performance without sacrificing ease of use.

Gain a new level of management efficiency

The MD Storage Manager software, an intuitive client-based Java application, manages the MD3 Series arrays. Designed for easy user interaction, it offers two different management paths, and features an enterprise window that monitors multiple systems through a single interface.

The multiprotocol MD Storage Manager can manage all administrative tasks, including configuration, reconfiguration, expansion, maintenance and performance tuning, and 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.

Versatile options your way

Reduce the effort required to store and manage your data. The MD3 Series is available in 12 x 3.5" hard drive or 24 x 2.5" hard drive form factors, or in the high-density enclosure that holds up to 60 x 2.5" or 3.5" hard drives. And because your storage needs are almost guaranteed to grow, capacity can be added as you need it. The 12- and 24-drive form factors can scale up to 192 drives[2] when attached to the PowerVault MD1200 or MD1220 expansion enclosure. The 60-HDD array can expand to 180 drives[2] with its own, specially designed high-density enclosure.

Reliable storage is enhanced with software features that provide added data protection, improved virtualization and ease of management. With optional remote replication and enhanced snap features, your data can be protected at any global location. The integration of VMware VAAI helps improve performance where you need it, freeing your server from storage related tasks.

Data management is simplified with dynamic disk pools (DDP). DDP has been designed to improve storage efficiencies with self-healing dynamic disk rebalancing, without the worries of traditional RAID configurations. Other feature enhancements include thin provisioning and SSD cache, which help improve performance when combined with the high-performance tiering (HPT) option.

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.

High bandwidth, smaller footprint

The MD3 family includes the high-density enclosure with built-in HPT. If your industry is manufacturing, oil/gas, healthcare or video surveillance, the MD3 has the high bandwidth that you need to manage your data.

The high-density enclosures take up less space than if you purchased the smaller form factor enclosures with an equal number of hard drives by using just 4U. With this smaller footprint comes the added benefit of saving on power and cooling expenses.

Reliable storage to meet a variety of business requirements

Dell PowerVault MD3 Series technical specifications

Feature	MD3 SAS	MD3 10GBASE-T	MD3 Fibre Channel
Number of drives/form factor	12/2U: MD3800f/MD3800i/MD3400 24/2U: MD3820f/MD3820i/MD3420 60/4U: MD3860f/MD3860i/MD3460/MD3060e		
Drive types	SAS, NL-SAS, SSD, SED		
3.5" drive options[2]	SAS 15K RPM: 300GB, 450GB[3], 600GB[3] NL-SAS 7.2K RPM: 500GB, 1TB[3], 2TB[3], 3TB[3], 4TB[3], 6TB, 8TB, 10TB SAS 10K RPM: 600GB SSD: 200GB, 400GB, 800GB (WI); 400GB, 800GB, 1.6TB (MU); 800GB, 1.6TB (RI) (available with 3.5" HDD carriers)		
2.5" drive options	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)		
Expansion capabilities[4]	Up to 192 drives using MD1200 and/or MD1220 expansion enclosures: MD3820f/MD3800f/MD3820i/MD3800i/MD3420/MD3400 Up to 180 drives using MD3060e dense enclosures: MD3860f/MD3860i/MD3460		
Connection	4 x 12Gb SAS	2 x 10GBASE-T iSCSI and 2 x 12Gb SAS ports per controller	4 x 16Gb Fibre Channel and 2 x 12Gb SAS ports per controller
Host connectivity	Single controller: supports up to 4 servers directly connected; Dual controller: supports up to 8 servers directly connected in a non-HA configuration or 4 servers in a HA configuration	Single or Dual controllers support up to 64 servers on 12-drive and 24-drive 2U arrays Dual controllers on dense 60-drive 4U arrays Single controller: 2GB, 4GB cache Dual controller: 2GB, 4GB. 8GB cache	
RAID levels	Support for RAID levels 0, 1, 10, 5, 6; Up to 180/192[4] 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[7]		
Dynamic Disk Pools[5]	DDP available on all models, separate or parallel to traditional RAID		
OS support	Microsoft® Windows®, VMware®, Microsoft Hyper-V®, Red Hat® and SUSE®		
Optional premium features			
Snapshots	Up to 128 snapshots per virtual disk and 512 per system (optional on all models)		
Snapshots plus VDC	511 VDCs in sum but maximum 8 simultaneous VDCs on the array (optional on all models)		
HPT	Standard on MD3860f, MD3860i, MD3460		
Remote Replication	Asynchronous and synchronous remote replication		
Array Management	Modular Disk Storage Manager		
Physical dimensions			
Height x width x depth	MD3800f/MD3800i/MD3400i: 8.68 cm (3.42") x 44.63 cm (17.57") x 56.1 cm (22.09") MD3820f/MD3820i/MD3420: 8.68 cm (3.42") x 44.63 cm (17.57") x 50.8 cm (20") MD3860f/MD3860i/MD3460/MD3060e: 17.78 cm (7.0") x 48.26 cm (19.0") x 82.55 cm (32.5")		
Maximum weight	MD3800f/MD3800i/MD3400: 29.3kg (64.59 lb) MD3820f/MD3820i/MD3420: 24.2kg (53.35 lb) MD3860f/MD3860i/MD3460/MD3060e: 105.24kg (232 lb)		
Rails	MD3 2U versions support 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		
Environment			
Power	Wattage: MD3 2U versions support DC power supply MD3 2U models — AC: 600W peak output; DC: 700W MD3 dense models — AC: 1755W		
Heat dissipation (max)	MD3 2U models: 2047 BTU/hr — MD3 dense models: 5988 BTU/hr		
Voltage	MD3 2U models: 100V to 240V AC; 48V DC — MD3 dense models: 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 MD3 2U models 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	MD3 2U models: Operating: -16 m to 3048 m (-50 ft to 10,000 ft) (For altitudes above 2950 ft, the maximum operating temperature is derated 1°F/550 ft) MD3 dense models: Operating: -30.5 m to 3000 m (-100 ft to 9,840 ft) (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] Based on the current MD34xx models.
[2] 10K and 15K 3.5" HDDs are not supported on MD3 Dense arrays.
[3] SED available.
[4] Expansion beyond 120 drives is based on the purchase of a premium feature for additional drives.
[5] MD34x0, MD38x0i, and MD38x0f arrays are limited to a maximum of 20 DDPs per array.

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.**

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