Dell PowerVault MD3 Dense Array Series

The Dell™ PowerVault™ MD3 Dense array series provides a robust solution for high bandwidth environments. Whether you need to consolidate your storage, support the demands of data intensive applications, optimize your virtual environments, support High Performance Computing (HPC) or high bandwidth solutions, the MD3 Dense array is designed to meet your needs. The new 16Gb Fibre Channel, 10GbE iSCSI, and 12Gb SAS controllers offer the latest technology in high speed connectivity. The new models offer improved performance and doubles the existing MD3 bandwidth with the new 8GB cache per controller.

Connectivity your way

Your data should be available when you need it. The MD3 Dense array has dual controller options in either SAS, iSCSI, or Fibre Channel interconnects. Each protocol has the efficiency you need to meet your demanding I/O requirements. You'll get high availability and high performance with built in high performance tiering without sacrificing the ease of use for which the PowerVault MD3 family is known. Maximize your cache with the 8GB cache controller option and double the existing cache to 16GB per array.

High bandwidth, smaller footprint

Reduce the effort required to store and manage your data. The MD3 high-density enclosure holds up to 60 (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 60-HDD array can expand from 60 to 180 drives[2] with its own, specially designed MD3060e high-density expansion enclosure, storing up to 1.8PB of data (using 10TB drives).

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

Gain a new level of management efficiency

Included in the dense enclosure are features that help deliver worry-free storage. The data management infrastructure is simplified with the addition of Dynamic Disk Pools (DDP). DDP has been designed to improve your storage efficiencies with self-healing dynamic disk rebalancing, vastly improved recovery times upon disk failure, and simplified disk provision without the worries of typical RAID configurations. Disk failures are no longer emergencies. 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 25 SSDs per enclosure.[1]

MD Storage Manager software

The MD3 Array series are managed by the advanced MD Storage Manager software, an intuitive client-based application. Designed for easy user interaction with the system no matter what your level of familiarity with storage systems, it offers two 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, that can be performed with no system 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.

Versatile standard features for a proven storage platform

The new PowerVault MD3 Dense array series has the same software features you have come to know on your legacy PowerVault MD3 systems.

High Performance Tier (HPT): HPT is a standard feature on the dense array series. Meet the most demanding performance requirements for your organization to remain productive and competitive.

Dynamic Disk Pooling: DDP virtually eliminates disruptive disk failures. As a drive fails, DDP automatically rebalances the system to provide access to the system within minutes of a drive failure. DDP simplifies disk provisioning, improves rebuild time, and provides more consistent performance.

SSD cache: Helps improve performance by storing frequently accessed data on to one or more dedicated SSD drives.

VMware vStorage API for Array Integration: New virtualization features streamline the environment with the integration of VMware VAAI, helping to improve performance where you need it.

Premium features are bundled when protecting data is a priority. The pre-packaged Data Protection bundle features ensure the full suite of premium data protection options are available.

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.

Snapshots: Each virtual disk supports up to 128 snapshots, with a total of 512 snapshots per system. 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. Reads and writes are supported while creating a virtual copy.

Remote replication: Provides data protection by replicating data to any global location via either Fibre Channel or over a common IP network.

A robust solution for high bandwidth environments

PowerVault MD3 dense array series technical specifications

Feature	MD3460	MD3860i	MD3860f	MD3060e
Drives	60			
Drive type	3.5" NL-SAS, SSD, SED and 2.5" SAS, NL-SAS, SSD, SED			
3.5" drive capacity	NL-SAS 7.2K RPM: 500GB, 1TB[2], 2TB[2], 3TB[2], 4TB[2], 6TB, 8TB, 10TB SSD: 200GB, 400GB, 800GB (WI); 400GB, 800GB, 1.6TB (MU); 800GB, 1.6TB (RI) (available with 3.5" HDD carriers)			
2.5" drive capacity	SAS 15K RPM: 146GB[2], 300GB[2], 600GB[2] SAS 10K RPM: 146GB, 300GB[2], 600GB[2], 900GB[2], 1.2TB[2] NL-SAS 7.2K RPM: 500GB[2], 1TB[2], 2TB SSD: 200GB, 400GB, 800GB (WI); 400GB, 800GB, 1.6TB (MU); 800GB, 1.6TB (RI) 3.5" 10K and 15K HDDs are not supported on the dense model			
Expansion capabilities[3]	Up to 180 drives using the MD3060e			Up to 2 dense expansion enclosures per 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	6Gb SAS
Controllers	Dual			Dual Expansion Management
Maximum cache	MD3860f/MD3860i/MD3460: 16GB (8GB per controller)			Controller dependent
Maximum host	8	64		Controller dependent
Maximum HA host	4			
Form factor	4U rack enclosure			
Management software	MD Storage Manager			Controller dependent
Standard features[1]	DDP, Thin Provisioning, VAAI, vCenter Plug-in, VASA, SRA, HPT, SSD cache, SEDs, Microsoft Windows ODX			
Optional features	Snapshot, VDC, HDD expansion option[3]	Snapshot, VDC, asynchronous and synchronous remote replication, HDD expansion option[3]		
Server support	Dell PowerEdge™ servers	Dell PowerEdge servers Industry-standard servers		Dell PowerVault MD3 Dense array series only
OS support	Microsoft® Windows®, VMware®, Microsoft Hyper-V®, Red Hat® and SUSE®			Controller dependent
RAID levels	Support for RAID levels 0, 1, 10, 5, 6; Up to 180[3] 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[1]			
Physical dimensions (height x width x depth)	17.78cm (7.0") x 48.26cm (19.0") x 82.55cm (32.5")			
Maximum weight	105.20 kg (232.0 lb)			
Environment				
Power	AC: 1755W			
Heat dissipation (max)	5988 BTU/hr			
Voltage	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			
Relative humidity	Operating: 20% to 80% (non-condensing) with a maximum humidity gradation of 10% per hour			
Altitude	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.			
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.			

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.**

[1] MD3460, MD3860i and MD3860f arrays are limited to a maximum of 20 DDPs.
[2] SED available.
[3] Premium Feature Key required for expansion beyond 120 drives.

Simplify Your Storage at Dell.com/PowerVaultMD3.