Dell PowerVault MD3200/MD3220 Series

The Dell™ PowerVault™ MD3200/MD3220 series of storage arrays is a high-performance 6Gb shared storage solution providing high availability data access. As the next generation of our directly connected shared Serial Attached SCSI (SAS) arrays, this series offers exceptional flexibility and scalability and is ideal for consolidating up to four servers in clustered or virtualized environments. The PowerVault MD3200 array is well suited for deployments where cost per GB is a key requirement. The PowerVault MD3220 array is an optimal solution when cost/performance (IOPS) is a primary consideration.

A dedicated, high availability shared storage solution

The PowerVault MD3200/MD3220 series of arrays raises the bar for scalability and flexibility in the entry-level storage space. You can connect up to four high-availability servers or eight non-redundant servers for balanced performance in mixed virtualized workloads. MD3200 series arrays are ideal for Microsoft® Hyper-V™ and VMware® ESX virtual environments.

Support even the most performance-hungry applications

MD3200/MD3220 series arrays deliver an exceptional price/performance ratio. 6Gb/s SAS doubles the throughput capability of previous generation SAS arrays. These arrays meet the demands of large database applications with:

- Increased processing capability
- Four SAS ports per controller
- High Performance Tier firmware upgrade to boost performance

MD3200/MD3220 series arrays also support solid state drives (SSD) for the most demanding I/O applications.

Gain a new level of management efficiency

MD3200/MD3220 series arrays are managed by the advanced MD Storage Manager software, an intuitive, easy to use 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 systems through a single interface.

Wizard-based array management helps simplify the configuration process. MD Storage Manager detects and alerts you to problems, and launches an automatic Recovery Guru to help you troubleshoot and resolve the problem. It's simple—the expertise is built into the software.

The PowerVault vCenter plug-in and vSphere Storage APIs - Storage Awareness (VASA) provides VMware administrators with powerful capabilities designed to increase their productivity and simplify their jobs.

Deployment scalability and flexibility

Scale up. Mix and match drive types to create a tiered data environment.

Scale Easily: Up to 8 servers in a non-HA configuration or 4 servers in a High Availability configuration can be directly connected to a single MD3200 or MD3220 storage system. Storage capacity can be expanded up to a base of 120 hard drives, with an option to grow to 192 hard drives. Scaling capacity is as simple as hot plugging in additional PowerVault MD1200 and/or PowerVault MD1220 expansion enclosures.

Mix and Match Drives: MD3200 arrays can hold up to twelve (12) 3.5 inch form factor hard drives and MD3220 arrays hold up to twenty-four (24) 2.5 inch drives. Both the MD1200 enclosure, which houses a total of twelve 3.5" hard drives, and the MD1220 enclosure, which houses a total of twenty-four 2.5" drives, can be added behind MD3200 series arrays, enabling you to mix 3.5" and 2.5" drives in the same array. This flexibility enables data tiering for optimizing system performance.

Optional data protection

Snapshots: Take point-in-time snapshots of data for backup and other operations. The MD3200/MD3220 series supports up to 16 snapshots per virtual disk and a total of 256 snapshots per system. Snapshot scheduler and Snapshot Rollback are features included in the Premium Feature Key providing additional data availability.

Virtual Disk Copy (VDC): Make exact, point-in-time full replications of existing virtual disks for decision support and software development testing. Reads and writes are supported while doing a virtual copy.

Self-encrypting Drives (SEDs): SEDs encrypt everything written to the drive and de-crypt everything read from the drive. Once an SED is secured, it becomes "locked" and unreadable by unauthorized persons if the drive is ever removed from the array.

Additional hard drives Premium Feature Key

Ability to add up to 192 hard drives providing additional capacity to the MD Series of arrays.

Feature	Dell™ PowerVault™ MD3200 Series
Hard Disk Drives	MD3200 – Up to twelve (12) 3.5 inch SAS, Near-line SAS and SSD drives; MD3220 – Up to twenty-four (24) 2.5 inch SAS, Near-line SAS and SSD drives
3.5" Drive Performance and Capacities	15,000 RPM SAS drives available in 300GB, 450GB and 600GB 7,200 RPM Near-line SAS drives available in 500GB, 1TB, 2TB and 3TB
2.5" Drive Performance and Capacities	15,000 RPM SAS drives available in 73GB and 146GB 10,000 RPM SAS drives available in 146GB and 300GB 7,200 RPM Near-line SAS drives available in 500GB Solid State Drive (SSD) available in 149GB (available in 3.5" HDD carriers)
Expansion Capabilities	Expand up to a base of 120 hard drives with an optional Premium Feature Key to scale up to 192 total drives using MD1200 and/or MD1220 expansion enclosures
Host Connectivity	
Single Controller Models	Supports up to 4 servers directly connected
Dual Controller Models	Supports up to 8 servers directly connected in a non-HA configuration or 4 servers in a HA configuration
Storage Controllers and RAID Levels	
Storage Controllers	Each controller contains 2GB of battery-backed cache Dual controllers operate in an active-active environment mirroring each other's cache Cache protection is provided via flash memory for permanent data protection
RAID Levels	Support for RAID levels 0, 1, 10, 5, 6 Up to 120 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
Array Management and Optional Premium Features	
Array Management	2nd generation Modular Disk Storage Manager Multi-path software provides failover management of redundant data paths between the server and storage array
Optional Premium Features	Snapshots: Up to 16 snap shots per virtual disk and 256 per system Snapshots Plus Virtual Disk Copy: Up to 16 simultaneous virtual disk copies High Performance Tier firmware upgrade increases array IO and throughput performance Additional Hard Drives - capacity up to 192 hard drives
Back-Panel Connectors (per controller)	
Host Connectivity	Four x4 6Gb SAS (SFF8088 mini connector)
Expansion Connectivity	One x4 6Gb SAS (SFF8088 mini connector)
Remote Management	One RJ-45 1Gb Ethernet
Service Management	One PS/2 Serial
LED Indicators	
Front Panel	1 two-color LED indicator for system status, 1 single-color LED indicator for power, 1 LED unused in this system
Hard Drive Carrier	1 single-color activity LED, 1 two-color LED status indicator per drive
Storage Controller	1 one-color LED power indicator, 1 one-color LED controller fault indicator, 1 one-color LED controller identifier, 1 one-color LED cache activity indicator, 1 one-color LED battery fault indicator
Power Supply/Cooling Fan Module	3 one-color LED status for AC status, DC status and power supply cooling fan fault
Power Supplies (per supply)	
Wattage	600 W peak output
Maximum Heat Dissipation	150 W
Input Voltage Range	90 to 264 VAC
Frequency Range	47 to 63 Hz
Maximum Input Current at Rated Power	55 A for 10ms or less, 25 A for 10-150ms
Available Hard Drive Power (per slot)	
Supported Continuous Consumption	3.5" drive: 25 Watts; 2.5" drive: 12 Watts
Physical	
Height x Width x Depth	MD3200: 8.68cm (3.42") x 44.63cm (17.57") x 56.1cm (22.09"); MD3220: 8.68cm (3.42") x 44.63cm (17.57") x 50.8 (20")
Weight	MD3200: 29.3kg (64.59 lbs.) (maximum configuration); MD3220: 24.2kg (53.35 lbs.) (maximum configuration)
Environmental	
Expanded Temperature Operating Range	Continuous Operation: 10C to 35C, 10% to 80% relative humidity (RH) with a 26C max dew point. De-rate maximum allowable dry bulb temperature at 1°C/300 meters above 900 meters (1 degree F per 550 feet) 10% of annual operating hours: 5C to 40C, 5% to 85%RH with a 26C max dew point. For temperatures between 35 and 40C, de-rate maximum allowable dry bulb temperature 1°C/175 meters above 950 meters (1 degree F per 319 feet)
Relative Humidity	1% of annual operating hours: -5C to 45C, 5% to 90%RH, with a 26C max dew point. For temperatures between 40 and 45C, de-rate maximum allowable dry bulb temperature 1°C/125 meters above 950 meters (1 degree F per 228 feet)
Altitude	Operating: -16 to 3048 m (-50 to 10,000 ft) Note: For altitudes above 2950 feet, the maximum operating temperature is de-rated 1°F/550 ft.

Simplify your storage at Dell.com/PowerVault

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