Dell™ PowerVault™ MD3200 and MD3200i Series Support Matrix

Introduction

This document provides information on supported software and hardware for Dell PowerVault MD3200 Series and MD3200i Series storage arrays as well as usage considerations, recommendations and rules.

Dell PowerVault M3200 Series and MD3200i Series Rules

The following are the connectivity and consideration rules for the MD3200 Series and MD3200i Series arrays:

RULE	MD3200 & MD3220 (SAS)	MD3200i & MD3220i (iSCSI)
Maximum number of host servers a single MD3200 Series array can connect to with one RAID Controller Module installed:	4	32
Maximum number of host servers a single MD3200 Series array can connect to with two RAID Controller Modules installed:	8 (4 if using high availability)	32
Maximum number of Dell 6GbSAS HBA cards supported in a single host server attached to single array. (It is recommended to use two Dell 6Gb SAS HBA cards for all redundant cabling configurations.)	2 (each card has two ports)	Not applicable to iSCSI configurations
Unused ports on a Dell 6Gb SAS HBA card already connected to an MD3200 cannot be connected to another device (such as a tape drive or other model storage array).	√	Not applicable to iSCSI configurations
Maximum number ofMD3200 Series arrays a host server may connect to:	2 (HA)	4
Connecting a MD3200 Series SAS array and a MD3200iSeries iSCSI array to the same host is supported.	√	√
TOTAL of 96 slots --- Up to seven MD1200 Series expansion enclosures can be attached to a MD3200 array. A mixture of MD1200 and MD1220 enclosures for a total of 96 SAS physical disks.	√	√
Attached MD1200 Series expansion enclosures must be run in unified mode.	√	√
A hot spare for a disk group must be a physical disk of equal or greater size than any of the member disks.	√	√
When using out-of-band management with SMcli by specifying the RAID Controller management port IP addresses on the MD Storage Array, SMcli commands that change the attributes of a virtual disk, virtual disk copy, or snapshot virtual disk, must have management access to the owning RAID Controller Module to complete. Where applicable it is a best practice	√	√

to specify both management port IP addresses on the SMcli invocation: "SMcli 192.168.128.101 192.168.128.102 -c".		
Co-existence of multiple Linux multi-pathing drivers is not supported. When using a MD3200 Series array with Linux host servers only the Linux Device Mapper failover driver is supported.	√	√
On Linux systems Device Mapper multi-pathing drivers are required for multi-path support	√	√
Virtual disks on an MD3200 Series cannot be used for booting.	√	√
RAID 5 and RAID 6 disk groups are limited to a maximum of 30 physical disks	√	√
Disk Groups can be migrated between a Dell PowerVault MD3200 and a Dell PowerVault MD3200i by following the appropriate Disk Group migration procedure**	√	√

* Refer to the Hardware Installation section of the MD3200 and MD3220 Storage Array Owner's Manual and the MD3200i and MD3220i Storage Array Owner's Manual.

** Refer to the Disk Group Migration section of the MD3200 and MD3220 Storage Array Owner's Manual and the MD3200i and MD3220i Storage Array Owner's Manual.

Supported Controller Firmware and NVSRAM

NOTE: It is advisable to gather support information before performing any firmware upgrade. This can be performed from the support tab of the MD Storage Manager application.

NOTE: Only drivers and firmware released by Dell are supported. For the latest driver and firmware releases, see the Downloads section at support.dell.com.

To determine your firmware and NVSRAM levels:

From a management station, connect to the storage array using MD Storage Manager.
Select the **Support** tab.
Click on **Storage Array Profile** and look for the firmware and NVSRAM versions.

Software	Version	Notes
Controller Firmware	07.70.06.63	
Controller NVSRAM	N26X0-770890-005	

Supported SAS Host Bus Adapters

Please see support.dell.com for the latest supported firmware and driver versions.

Adapter Name
Dell 6Gbps SAS HBA

Supported iSCSI Software Initiators

Operating System	SW Initator Vendor	SW Initiator Version	Notes
Windows 2003 R2 SP2	Microsoft	2.08, 2.07	Available via MS download
Windows 2008 R2 SP2	Microsoft	RTM or later	Included w/OS
Windows 2008 SP2	Microsoft	RTM or later	Included w/OS
Red Hat Enterprise Linux	Red Hat	RTM or later	Included w/OS
Suse Linux Enterprise Server	Suse	RTM or later	Included w/OS

Supported Protocol Offload (TOE / iSCSI) Adapters

Standard Gigabit Ethernet adapters are supported when used with supported software iSCSI initiators.
The following list of hardware initiators is also supported.

Please see support.dell.com for the latest supported firmware and driver versions.

Adapter Name
Broadcom – 5708
Broadcom – 5709
Broadcom – 5709c
Broadcom – 5721j
Emulex OneConnect 10G CNA

Support Hard Disk Drives

Only Dell-provided hard disk drives are supported. Hard disk drives not purchased from Dell will be marked as uncertified and will not be usable. Refer to the MD3200/MD3200i Drivers and Downloads section for the latest available physical disk firmware.

Form Factor	Dell P/N	Model	Capacity	Speed	Vendor
3.5"	U717K	ST3500414SS	500GB	7.2K	Seagate
3.5"	U738K	ST31000424SS	1TRB	7.2K	Seagate
3.5"	R755K	ST32000444SS	2TRB	7.2K	Seagate
3.5"	X163K	ST3450757SS	450GB	15K	Seagate
3.5"	T873K	ST3600957SS	600GB	15K	Seagate
3.5"	X164K	ST31000425SS	1TRB	7.2K	Seagate
3.5"	W350K	ST32000445SS	2TRB	7.2K	Seagate
3.5"	F617N	ST3300657SS	300GB	15K	Seagate
3.5"	X150K	HUS156030VLS600	300GB	15K	Hitachi
3.5"	R749K	ST3450857SS	450GB	15K	Seagate

3.5"	T875K	HUS156045VLS600	450Gb	15k	Hitachi
3.5"	W347K	ST3600057SS	600GB	15K	Seagate
2.5"	R734K	ST9500430SS	500GB	7.2K	Seagate
2.5"	R744K	ST9300503SS	300Gb	10K	Seagate
2.5"	U733K	ST9146752SS	146GB	15K	Seagate
2.5"	W335K	ST9500431SS	500GB	7.2K	Seagate
2.5"	R727K	MBE2073RC	73GB	15K	Fujitsu
2.5"	R730K	HUC151473CSS600	73GB	15K	Hitachi
2.5"	W345K	ST973452SS	73GB	15K	Seagate
2.5"	X143K	MBD2147RC	146GB	10K	Fujitsu
2.5"	T855K	HUC103014CSS600	146GB	10K	Hitachi
2.5"	X160K	ST9146803SS	146GB	10K	Seagate
2.5"	W328K	MBE2147RC	146GB	15K	Fujitsu
2.5"	W330K	HUC151414CSS600	146GB	15K	Hitachi
2.5"	X162K	ST9146852SS	146GB	15k	Seagate
2.5"	U709K	ST9146852SS	300GB	10K	Hitachi
2.5"	T871K	ST9300603SS	300GB	10K	Seagate
2.5"	X1MCH	LB150S	149GB	SSD	Pliant

Supported Expansion Enclosures

The MD3200 Series arrays support a maximum of 96 hard driver slots. These additional slots are provided by up to 3 MD1200 enclosures, 7 MD1220 enclosures, or a combination of MD1200 and MD1220 enclosure. When a combination of enclosures is used the total number of disk drive slots in the system cannot exceed 96.

Enclosure Model	Firmware Version	Notes
MD1200	1.01	
MD1220	1.01	

Supported Management Software

MD3200

Windows x86

Software Component	Version	Notes
MD3200 Series Resource DVD	1.0.1.10	
Modular Disk Storage Manager	10.70.36.06	
MD3200 Series VDS/VSS Providers	D0.70.36.08 / S0.70.36.08	

Windows x86_64

Software Component	Version	Notes
MD3200 Series Resource DVD	1.0.1.10	
Modular Disk Storage Manager	10.70.36.06	
MD3200 Series VDS/VSS Providers	D0.70.36.08 / S0.70.36.08	

RHEL

Software Component	Version	Notes
MD3200 Series Resource DVD	1.0.1.10	
Modular Disk Storage Manager	10.70.A6.06	
MD3200 Series Device Mapper		See section on DM

SLES

Software Component	Version	Notes
MD3200 Series Resource DVD	1.0.1.10	
Modular Disk Storage Manager	10.70.A6.06	
MD3200 Series Device Mapper		See section on DM

MD3200i

Windows x86

Software Component	Version	Notes
MD3200i Series Resource DVD	1.0.1.4	
Modular Disk Storage Manager	10.70.36.06	
Modular Disk Configuration Utility	1.2.0.1017	
MD3200i Series VDS/VSS Providers	D0.70.36.08 / S0.70.36.08	

Windows x86_64

Software Component	Version	Notes
MD3200i Series Resource DVD	1.0.1.4	
Modular Disk Storage Manager	10.70.36.06	
Modular Disk Configuration Utility	1.2.0.1017	
MD3200i Series VDS/VSS Providers	D0.70.36.08 / S0.70.36.08	

RHEL

Software Component	Version	Notes
MD3200i Series Resource DVD	1.0.1.4	
Modular Disk Storage Manager	10.70.A6.06	
Modular Disk Configuration Utility	1.2.0.1017	
MD3200i Series Device Mapper		See section on DM

SLES

Software Component	Version	Notes
MD3200i Series Resource DVD	1.0.1.4	
Modular Disk Storage Manager	10.70.A6.06	
Modular Disk Configuration Utility	1.2.0.1017	
MD3200i Series Device Mapper		See section on DM

Supported Operating Systems

Where clustering is supported by the operating system it is supported by the MD3200 Series and MD3200i Series storage arrays, subject to the following limitations:
Windows 2008: Max iSCSI nodes 16, max SAS nodes 4
Windows 2003: Clustering is nott supported with MD3200 Series and MD3200i Series Storage Arrays
RHEL: Max iSCSI nodes 16, max SAS nodes 4
SLES: Max iSCSI nodes 16, max SAS nodes 4

Operating System	SAS Host Server	iSCSI Host Server	Management Station	Notes & Required Hotfixes
Windows Server 2008 R2				
Windows 2008 R2 SP2 Standard and Core	√	√	√	KB979711
Windows 2008 R2 SP2 Enterprise and Core	√	√	√	KB979711
Windows 2008 R2 SP2 Data Center and Core	√	√	√	KB979711
Windows 2008 R2 SP2 Foundation	√	√	√	KB979711
Windows 2008 R2 SP2 Web and Core			√	
Windows 2008 Storage Server R2 SP2 all editions	√	√	√	KB979711
Windows 2008 R2 SP2 HPC Server	√	√	√	KB979711
Windows Server 2008				
Windows 2008 SP2 Standard and Core (x86, x64)	√	√	√	KB970525, KB974201
Windows 2008 SP2 Enterprise and Core (x86,x64)	√	√	√	KB970525, KB974201
Windows 2008 SP2 Data Center and Core (x86, x64)	√	√	√	KB970525, KB974201
Windows 2008 SP2 Foundation (x86, x64)	√	√	√	KB970525, KB974201
Windows 2008 SP2 Web and Core (x86, x64)			√	
Windows 2008 Small Business Server SP2 (x86, x64)	√	√	√	KB970525, KB974201
Windows 2008 Essential Business Server SP2 (x86, x64)	√	√	√	KB970525, KB974201
Windows 2008 Storage Server SP2 Server, all editions, (x86, x64)	√	√	√	KB970525, KB974201
Windows 2008 HPC Server SP2 Server, all editions (x86, x64)	√	√	√	KB970525, KB974201

Window Server 2003 R2				
Windows 2003 R2 SP2 Standard (x86, x64)	√	√	√	KB950903, KB931300
Windows 2003 R2 SP2 Enterprise (x86,x64)	√	√	√	KB950903, KB931300
Windows 2003 Small Business Server R2 SP2 all editions (x86 only)	√	√	√	KB950903, KB931300
Windows Storage Server 2003 R2 SP2 all editions, (x86, x64)	√	√	√	KB950903, KB931300
Windows Unified Data Storage Server 2003 SP2 all editions, (x64)	√		√	KB950903, KB931300
Red Hat Enterprise Linux				
Red Hat Enterprise Linux 5.5 (base, AP, DT w/WS option)(x86, x64)	√	√	√	
Red Hat Enterprise Linux 5.4+ (base, AP, DT w/WS option (x86, x64)	√	√	√	Dell unique kernel patch required for certain Dell servers.
Red Hat Enterprise Linux 5.4 (base, AP, DT w/WS option) (x86, x64)	√	√	√	
Suse Linux Enterprise Server				
Suse® Linux Enterprise Server 11 SP1 (x64 only)	√	√	√	
Suse Linux Enterprise Server 11 (x64 only)	√	√	√	
Suse Linux Enterprise Server 10 SP3 (x64 only)	√	√	√	
Virtualization Hosts / Hypervisors				
Citrix XenServer 5.6.0 Retail Edition	√	√		
VMware ESX/ESXi 4.1	√	√		
Microsoft Hyper-V Server 2008 R2 SP2	√	√		
Microsoft Server 2008 R2 SP2 with Hyper-V	√	√	√	
Microsoft Hyper-V Server 2008 SP2	√	√		
Microsoft Server 2008 SP2 with Hyper-V	√	√	√	
Windows Desktop Operating Systems				
Windows 7 (x86, x64)			√	
Windows Vista SP2 (x86, x64)			√	
Windows XP SP3 (x86, x64)			√	

Supported Device Mapper Software

Operating System	Component	MimimumVersion
Suse Linux Enterprise Server 10 SP3	scsi_dh_rdac DKMS package	scsi_dh_rdac-1.3-dkms.noarch.rpm
Suse Linux Enterprise Server 11	Kernel Version	kernel-default-2.6.27.39-0.3.1
	scsi_dh_rdac DKMS package	scsi_dh_rdac-1.5-dkms.noarch.rpm
	multipath-tools	Multipath-tools-0.4.8-40.6.1.rpm
Suse Linux Enterprise Server 11 SP1	All native in OS distribution	N/A
Red Hat Enterprise Linux 5.4	scsi_dh_rdac DKMS package	scsi_dh_rdac-1.4-dkms.noarch.rpm
Red Hat Enterprise Linux 5.4+	scsi_dh_rdac DKMS package	scsi_dh_rdac-1.4-dkms.noarch.rpm
Red Hat Enterprise Linux 5.5	All native in OS distribution	N/A

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