Dell™ PowerVault™ MD3000 Support Matrix

This document provides information on supported software and hardware for Dell PowerVault MD3000 systems.

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**.

How to Differentiate Between First- and Second-Generation System Software

Information in this support matrix is divided into two distinct environments: first-generation MD3000 firmware and second-generation MD3000 firmware. Second-generation firmware enables a new feature set with optimized functionality, including support for RAID 6, greater than 2TB virtual disk capacity, and SMART battery support.

To determine your firmware level:

1. From a management station, connect to the MD3000 using MD Storage Manager.
2. Select the **Support** tab.
3. Click on **Storage Array Profile** and look for the firmware version.
   If the version is 06.xx.xx.xx: The firmware is first-generation.
   If the version is 07.xx.xx.xx: The firmware is second-generation.

To determine your MD Storage Manager version:

1. From MD Storage Manager, select the Support tab.
2. Click on **About Modular Disk Storage Manager**.
   If the version is 02.xx.xx.xx: The firmware is first-generation.
   If the version is 03.xx.xx.xx: The firmware is second-generation.

Dell PowerVault MD3000 Rules

The following are the connectivity and consideration rules for the MD3000:

Table 1. Considerations

Rule	First Gen.	Second Gen.
A single MD3000 can connect to a maximum of four hosts.*	√	√
A maximum of two SAS 5/E cards are supported in a single host. It is recommended to use two SAS 5/E cards for all redundant cabling configurations.	√	√
Unused ports on a SAS 5/E card already connected to an MD3000 cannot be connected to another device (such as a tape drive or other storage).	√	√

Rule	First Gen.	Second Gen.
The management Ethernet part of the RAID controller module must be connected to a switch port that is configured to use **Auto-Negotiate**	√	√
Connecting an MD3000 and MD3000i to the same host is supported.		√
Up to two MD1000 expansion enclosures can be attached to the MD3000 for a total of 45 SAS and/or SATA physical disks.	√	√
Attached MD1000 expansion enclosures must be run in unified mode.	√	√
The enclosure can contain a mixture of SAS and SATA II physical disks.	√	√
Do not mix SAS and SATA disks in a disk group.	√	√
A hot spare for a disk group must be a physical disk of equal or greater size than any of the member disks.	√	√
The hot spare for a disk group with SAS physical disks must be a SAS disk.	√	√
The hot spare for a disk group with SATA physical disks must be a SATA disk.	√	√
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".	√	√
Only the Dell Linux MPP multi-path driver should be loaded on a Linux host server***	√	√
MD3000 and MD3200 series supported on a single Linux host.***		√
Dell MPP drivers are required for multi-path support (refer to Table 8). Linux open framework dm-mpp (multi-path) drivers are not supported with the MD3000.	√	√
Virtual disks on an MD3000 cannot be used for booting.	√	√
Maximum Virtual Disk Size cannot exceed 2 Terabytes.	√	
Each virtual disk is limited to a maximum of 30 physical	√	

Rule	First Gen.	Second Gen.
disks		
A server may connect to a maximum of one MD3000	√	
A server may connect to a maximum of two MD3000 storage arrays		√
Virtual disk size can exceed 2TB and is limited by the type of RAID group, number of drives in the RAID group and the size of the drives (Up to 45 disks can be used in RAID 0 and 44 disks in RAID 10. RAID 5 and RAID 6 are limited to a maximum of 30 disks)		√
Disk Groups can be migrated between a Dell PowerVault MD3000 and a Dell PowerVault MD3000i by following the appropriate Disk Group migration procedure**		√
Refer to MD3xxx series coexistence whitepaper for additional information on how to use the MD3000 with the MD3000i or the MD3200 series of arrays on a single host.		√

* Refer to "Hardware Installation" in the Dell PowerVault Modular Disk 3000 Systems Installation Guide available at **support.dell.com/manuals**.

** Refer to Disk Group Migration section of the MDSM User's Guide

*** For 2nd Gen arrays, refer to coexistence whitepaper for supporting MD3000 and MD3200 series products on a single host.

Supported Operating Systems

Table 2. Supported Operating Systems for PowerVault MD3000 Host Servers

Operating System	First Gen.	Second Gen.	Required Hotfixes
Microsoft® Windows Server® 2003 32-bit Standard and Enterprise SP1	√		KB950903 and KB943545 provide required storport driver updates
Microsoft® Windows Server® 2003 32-bit Standard and Enterprise R2 and SP2	√	√	KB950903 and KB943545 provide required storport driver updates
Microsoft Windows Server 2003 Standard and Enterprise x64 Edition SP1	√		KB950903 and KB943545 provide required storport driver updates
Microsoft Windows Server 2003 Standard and Enterprise x64	√	√	KB950903 and KB943545

Operating System	First Gen.	Second Gen.	Required Hotfixes
Edition R2 and SP2			provide required storport driver updates
Microsoft Windows Storage Server 2003 SP1	√		KB950903 and KB943545 provide required storport driver updates
Microsoft Windows Storage Server 2003 R2	√	√	KB950903 and KB943545 provide required storport driver updates
Microsoft Windows Unified Data Storage Server 2003 Standard and Enterprise x64 SP1	√		KB950903 and KB943545 provide required storport driver updates
Microsoft Windows Unified Data Storage Server 2003 Standard and Enterprise x64 SP2	√	√	KB950903 and KB943545 provide required storport driver updates
Microsoft Windows 2000 Advanced Edition SP4*	√		
Microsoft Windows Server 2008 SP1, SP2 32-bit Standard and Enterprise	√	√	
Microsoft Windows Server 2008 SP1, SP2 x64 Standard and Enterprise	√	√	
Microsoft Windows Server 2008 SP1, SP2 DataCenter edition	√	√	
Microsoft Windows Server 2008 SP1, SP2 Server Core Standard and Enterprise	√	√	
Microsoft Windows Server 2008 R2 x64 Standard and Enterprise		√	
Microsoft Windows Server 2008 R2 DataCenter edition		√	
Microsoft Windows Server 2008 R2 Server Core Standard and Enterprise		√	
Windows Server 2008 supporting	√	√	KB950050 needed.

Operating System	First Gen.	Second Gen.	Required Hotfixes
Hyper-V			Microsoft Hyper-V Server 2008 and Microsoft Hyper-V Server 2008 R2 are not supported.
Windows Server 2008-R2 supporting Hyper-V		√	Microsoft Hyper-V Server 2008 and Microsoft Hyper-V Server 2008 R2 are not supported.
Windows Server 2008-R2-SP1 supporting Hyper-V		√	Microsoft Hyper-V Server 2008, Microsoft Hyper-V Server 2008 R2 and Microsoft Hyper-V Server 2008-R2-SP1 are not supported.
VMware ESX 3.5 and VMware ESX 3i version 3.5	√	√	
VMware ESX 4.0 and 4.1		√	
Citrix XenServer Dell Edition 4.1	√		
Citrix XenServer Dell Edition 5.0	√	√	
Citrix XenServer Dell Edition 5.5		√	
Red Hat® Enterprise Linux® V3.0 with Update6 (AS, ES, WS), 32 bit and 64 bit (2.4 kernel)	√		
Red Hat Enterprise Linux V4.0 Update 4, Update 5, Update 6, (AS, ES, WS), 32 bit and 64 bit (2.6 kernel; No XEN support)	√		
Red Hat Enterprise Linux V4.0 Update 7, Update 8 (AS, ES, WS), 32 bit and 64 bit (2.6 kernel; No XEN support)		√	
Red Hat Enterprise Linux V5.0, V5.0 Update 1 and V5.0 Update 3 (AS, ES, WS), 32 bit and 64 bit (2.6 kernel; No XEN support)	√		
Red Hat Enterprise Linux V5.0		√	

Operating System	First Gen.	Second Gen.	Required Hotfixes
Update 2 and V5.0 Update 3, Update 4, Update 5 (AS, ES, WS), 32 bit and 64 bit (2.6 kernel; No XEN support)			
SUSE® Linux Enterprise Server V9.0 x64 Service Pack 2, Service Pack 3 (2.6 kernel; No XEN support)	√		
SUSE® Linux Enterprise Server V9.0 x64 Service Pack 4 (2.6 kernel; No XEN support)	√	√	
SUSE Linux Enterprise Server V10.0 x64 Service Pack 1 (2.6 kernel; No XEN support)	√		
SUSE Linux Enterprise Server V10.0 x64 Service Pack 2, Service Pack 3 (2.6 kernel; No XEN support)		√	
SUSE Linux Enterprise Server V11 and V11 SP1 x64 (2.6 kernel; No XEN support)		√	
Microsoft Windows 7 (management station only, no I/O)		√	
Microsoft Windows XP Professional SP2 (management station only, no I/O attached)	√	√	
Microsoft Windows Vista® (management station only, no I/O attached)	√	√	
XEN kernel not supported	√	√	

Host Server Support

NOTE: Only for the latest BIOS information, see the specific server website at **support.dell.com**.

Table 3. Dell Servers Supported with the MD3000 (all firmware)

Server

Server
PowerEdge™ 1800
PowerEdge 1850
PowerEdge 1900
PowerEdge 1950
PowerEdge 2800
PowerEdge 2850
PowerEdge 2900
PowerEdge 2950
PowerEdge 2970
PowerEdge 6800
PowerEdge 6850
PowerEdge 6950
PowerVault NX1950
PowerEdge R210
PowerEdge R300
PowerEdge R900
PowerEdge R805v
PowerEdge R905v
PowerEdge R610
PowerEdge R710
PowerEdge R715

Server
PowerEdge R810
PowerEdge R910
PowerEdge T410
PowerEdge T610
PowerEdge T710

Supported Expansion Enclosures

The MD3000 supports up to two additional MD1000 expansion enclosures.

Table 4. PowerVault MD3000 RAID Controller

Expansion Enclosure	Current Firmware Revision	Notes
MD1000	A04	Firmware revisions prior to A03 are not compatible with the MD3000 and must be updated prior to attachment.

Supported Physical Disks

NOTE: Only Dell-provided physical disks are supported. Physical disks not purchased from Dell will be marked as uncertified and will not be usable. Refer to the MD3000 Drivers and Downloads section on **support.dell.com** for the latest available physical disk firmware.

NOTE: The Dell PowerVault does not support Fujitsu SATA and Maxtor physical disks.

Table 5. Supported Physical Disks for PowerVault MD3000 Systems

Drive	Model Number
Fujitsu (AL9LX) SAS 36 GB 15K RPM	MAX3036RC
Fujitsu (AL9LX) SAS 73 GB 15K RPM	MAX3073RC

Drive	Model Number
Fujitsu (AL9LX) SAS 146 GB 15K RPM	MAX303147RC
Fujitsu (AL10LX) SAS 73 GB 15K RPM	MBA3073RC
Fujitsu (AL10LX) SAS 146 GB 15K RPM	MBA3147RC
Fujitsu (AL10LX) SAS 300 GB 15K RPM	MBA3300RC
Hitachi (Ultrastar 15K147) SAS 36 GB 15K RPM	HUS151436VLS300
Hitachi (Ultrastar 15K147) SAS 73 GB 15K RPM	HUS151473VLS300
Hitachi (Ultrastar 15K147) SAS 146 GB 15K RPM	HUS151414VLS300
Hitachi (Ultrastar 15K300) SAS 73 GB 15K RPM	HUS153073VLS300
Hitachi (Ultrastar 15K300) SAS 146 GB 15K RPM	HUS153014VLS300
Hitachi (Ultrastar 15K300) SAS 300 GB 15K RPM	HUS153030VLS300
Hitachi (Ultrastar 15K450) SAS 300 GB 15K RPM	HUS154530VLS300
Hitachi (Ultrastar 15K450) SAS 450 GB 15K RPM	HUS154545VLS300
Hitachi SAS 300GB 15K RPM	HUS156030VLS600
Hitachi SAS 450GB 15K RPM	HUS156045VLS600
Hitachi SAS 600GB 15K RPM	HUS156060VLS600
Seagate (15K.4) SAS 36 GB 15K RPM	ST336754SS
Seagate (15K.4) SAS 73 GB 15K RPM	ST373454SS
Seagate (15K.4) SAS 146 GB 15K RPM	ST3146854SS
Seagate (15K.5) SAS 73 GB 15K RPM	ST373455SS
Seagate (15K.5) SAS 146 GB 15K RPM	ST3146855SS
Seagate (15K.5) SAS 300 GB 15K RPM	ST3300655SS
Seagate (15K.6) SAS 146GB 15K RPM	ST3146356SS
Seagate (15K.6) SAS 300GB 15K RPM	ST3300656SS
Seagate (15K.6) SAS 450GB 15K RPM	ST3450856SS
Seagate (Cheetah 15K.7) SAS 146GB 15K RPM	ST3300657SS-H
Seagate (Cheetah 15K.7) SAS 300GB 15K RPM	ST3300657SS
Seagate (Cheetah 15K.7) SAS 450GB 15K RPM	ST3450857SS
Seagate (Cheetah 15K.7) SAS 600GB 15K RPM	ST3600057SS
Seagate (T10) SAS 73 GB 10K Performance	ST373355SS
Seagate (T10) SAS 146 GB 10K Performance	ST3146755SS
Seagate (T10) SAS 300 GB 10K Performance	ST3300555SS
Seagate (TNS) SAS 400 GB 10K RPM	ST3400755SS
Seagate (Cheetah NS 10K.2) SAS 600GB 10K RPM	ST3600002SS
Hitachi (Ultrastar A7K1000) SATA 500 GB 7.2K RPM	HUA721050KLA330
Hitachi (Ultrastar A7K1000) SATA 750 GB 7.2K RPM	HUA721075KLA330
Hitachi (Ultrastar A7K1000) SATA 1 TB 7.2K RPM	HUA721010KLA330

Drive	Model Number
Hitachi (Ultrastar A7K2000) SATA 2TB 7.2K RPM	HUA722020ALA330
Hitachi (Deskstar 7K500) SATA 500 GB 7.2K RPM	HDS725050KLA360
Seagate (Barracuda ES.1) SATA 500 GB 7.2K RPM	ST3500630NS
Seagate (Barracuda ES.1) SATA 750 GB 7.2K RPM	ST3750640NS
Seagate (Barracuda ES.2) SAS 500 GB 7.2K RPM	ST3500620SS
Seagate (Barracuda ES.2) SAS 750 GB 7.2K RPM	ST3750630SS
Seagate (Barracuda ES.2) SAS 1 TB 7.2K RPM	ST31000640SS
Seagate (Barracuda ES.2) SATA 500 GB 7.2K RPM	ST3500320NS
Seagate (Barracuda ES.2) SATA 750 GB 7.2K RPM	ST3750330NS
Seagate (Barracuda ES.2) SATA 1 TB 7.2K RPM	ST31000340NS
Seagate (Constellation ES) SAS 500GB 7.2K RPM	ST3500414SS
Seagate (Constellation ES) SAS 1TB 7.2K RPM	ST31000424SS
Seagate (Constellation ES) SAS 2TB 7.2K RPM	ST32000444SS
Seagate (Constellation ES) SATA 500GB 7.2K RPM	ST3500514NS
Seagate (Constellation ES) SATA 1TB 7.2K RPM	ST31000524NS
Seagate (Constellation ES) SATA 2TB 7.2K RPM	ST32000644NS
Western Digital (RE1) SATA 500 GB 7.2K RPM	WD500YS-18MPB1[2]
Western Digital (RE2) SATA 500 GB 7.2K RPM	WD5001ABYS-18YNA0
Western Digital (GP250RE2) SATA 1 TB 5.4K RPM	WD1000FYPS-18ZKB0
Western Digital (XL320RE) SATA 500 GB 7.2K RPM	WD5002ABYS-18B1B0
Western Digital (XL333RE) SATA 750GB 7.2K RPM	WD7502ABYS-18A6B0
Western Digital (XL333RE) SATA 1TB 7.2K RPM	WD1002FBYS-18A6B0
Western Digital (EP500M) SATA 2TB 5.4K RPM	WD2002FYPS-18U1B0
Western Digital (EP500M) SATA 2TB 5.4K RPM	WD2002FYPS-18W3B0
Western Digital (EX500M) SATA 2TB 7.2K RPM	WD2003FYYS-18W0B0
Western Digital (EX500M) SATA 1TB 7.2K RPM	WD1003FBYX-18Y7B0
Western Digital (EX500S) SATA 500GB 7.2K RPM	WD5003ABYX-18WE

Drive	Model Number
	RA0

[1] WD2500YS-18SHB1 and WD2500YS-18SHB0 can be upgraded via firmware to reach the same level as WD2500YS-18SHB2

[2] WD500YS-18MPB0 can be upgraded via firmware to reach the same level as WD500YS-18MPB1

Supported Management Software (Windows Server, except Windows 2000)

Table 6. Management Software Supported with the MD3000 for Windows Servers Except Windows 2000

Software	First Generation	Second Generation	Notes
MD3000 Resource CD	1.3.69, A05	2.2.0.17, A11	
Dell Modular Disk Storage Manager	02.71.G6.07	03.35.G6.79	Component of Resource CD. This version also supports management of the MD3000i.
Dell OpenManage™ Management Station	5.4	6.4	x86 only.
Dell Modular Disk Storage Manager VDS/VSS Hardware Provider	09.71.G6.02	10.60.G6.01	Available on Resource CD. KB931300 required before use*
MPIO driver	01.02.36.19	01.03.0306.409	Multipath software—installed during MDSM host or typical installation.

Software	First Generation	Second Generation	Notes
VMware vCenter plugin	N/A	2.1	Download plugin executable from Dell driver support web site. For 32 bit Windows, download and install SMIA-vCenter-WS32-01.00.3650.0007.exe. For 64 bit Windows, download and install SMIA-vCenter-WSX64-01.00.3650.0007.exe. The supported VMware version is ESX4.1.

*Refer to VDS/VSS readme on the resource CD for installation and usage details

Supported Management Software for Windows (Windows 2000 only)

Table 7. Management Software Supported with the MD3000 for Windows 2000 only

Software	First Generation	Second Generation	Notes
MD3000 Resource CD	1.2.48, A04	N/A	
Dell Modular Disk Storage Manager	02.70.G6.07	N/A	Component of Resource CD. This version also supports management of the MD3000.
Dell OpenManage™ Management Station	5.3.0.1	N/A	x86 only. OpenManage IT Assistant 8.2 supported.
Dell Modular Disk Storage Manager VDS/VSS Hardware Provider	09.70.G6.02	N/A	Available on Resource CD. KB931300 required before use*
MPIO driver	01.02.36.19	N/A	Multipath software—installed during MDSM

Software	First Generation	Second Generation	Notes
			host or typical installation.

*Refer to VDS/VSS readme on the resource CD for installation and usage details

Supported Management Software for Linux

Table 8. Management Software Supported with the MD3000 for Linux Servers

Software	First Generation	Second Generation	Notes
MD3000 Resource CD	1.3.69, A05	2.2.0.17, A11	
Dell Modular Disk Storage Manager (Linux)	02.70.G6.10	03.35.G6.50	Component of Resource CD
MPP driver	09.01.B6.75[1] 09.00.A6.01[2] 09.01.C6.06[3]	09.03.0B06.0234[1] 09.03.0C06.0452.2[3]	Multipath software. Installed from Resource CD.

[1] For RHEL4, and SLES9
[2] For RHEL3
[3] For SLES10, SLES11 and RHEL5

NOTE: The Dell PowerVault MD3000 does not support Device-Mapper Multipath for Linux based solutions.

Supported Languages

The Dell PowerVault MD Storage Manager is available in the following languages: English, Simplified Chinese, Japanese, French, German and Spanish.

Supported MD3000 Controller Firmware and NVSRAM

Table 9. 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

Software	First Generation	Second Generation	Notes
Controller	06.70.17.60, A03	07.35.39.64, A11	

Software	First Generation	Second Generation	Notes
Firmware			
Duplex Controller NVSRAM	N133X-670890-001	N133X-735890-005	Default NVSRAM for MD3000 used in most typical configurations
Controller NVSRAM for Single Port Clustering	N133X-670890-701	N133X-735890-705	Single Port MS Cluster NVSRAM for MD3000 that has a single host port per controller used in clustering configuration.

Supported SAS 5/E Revisions

Table 10. SAS 5/E Minimum Revision Requirements for PowerVault MD3000 Systems

Component	First Generation	Second Generation
Firmware/BIOS	00.10.51.00 06.12.05.00	00.10.51.00 06.12.05.00
Windows 2000 Server	1.24.04.40	N/A
Windows Server 2003	1.28.03.01	1.28.03.01
Windows Server 2003 x64	1.28.03.01	1.28.03.01
Windows Server 2008	1.28.03.01	1.28.03.01
Windows Server 2008 x64	1.28.03.01	1.28.03.01
Windows Server 2008 R2	N/A	Native version
Red Hat Enterprise Linux V3.0 x86	2.06.62.00-2	N/A
Red Hat Enterprise Linux V4.0 x86 and x64	3.12.29.00-4	3.12.29.00-6
Red Hat Enterprise Linux V5.0 x86 and x64	4.00.38.02-2	4.00.38.02-3
SUSE Linux Enterprise Server 9 x86_x64	3.12.29.00-4	3.12.29.00-6
SUSE Linux Enterprise Server 10 x64	4.00.38.02-2	4.00.38.02-3

Component	First Generation	Second Generation
SUSE Linux Enterprise Server 11 X64	N/A	Native version

Supported Enterprise Solutions

Solution	Web Address	Notes
Oracle Database Solution	www.dell.com/10g	Refer to the Tested and Validated Configurations sub-heading
SQL Database Solution	www.dell.com/sql	Refer to the Tested and Validated Configurations sub-heading
High Availability Clustering on Windows	www.dell.com/ha	Refer to the Dell Cluster Configuration Support Matrices
High Availability Clustering on Red Hat Linux	www.dell.com/ha	Refer to the Dell Cluster Configuration Support Matrices
VMware Virtualization Solution	www.dell.com/vmware	Refer to the Resources sub-heading for any additional information
XenServer Virtualization Solution	www.dell.com/xenserver	Refer to the Citrix XenServer Dell Edition Solution Guide for reference configuration information
Windows Server 2008 Virtualization Solution	www.dell.com/hyper-v	Refer to Windows 2008 Hyper-V Dell Edition Solution Guide for reference configuration information
Exchange Server Solution	www.dell.com/exchange	Refer to the ESRP Articles for the MD3000 ESRP article

Supported Hardware Configurations

NOTE: The following PowerVault MD3000 hardware configurations are supported only on Dell qualified hardware.

Redundant Configurations

Figure 1. Redundant Data Paths for Single-HBA Host Servers

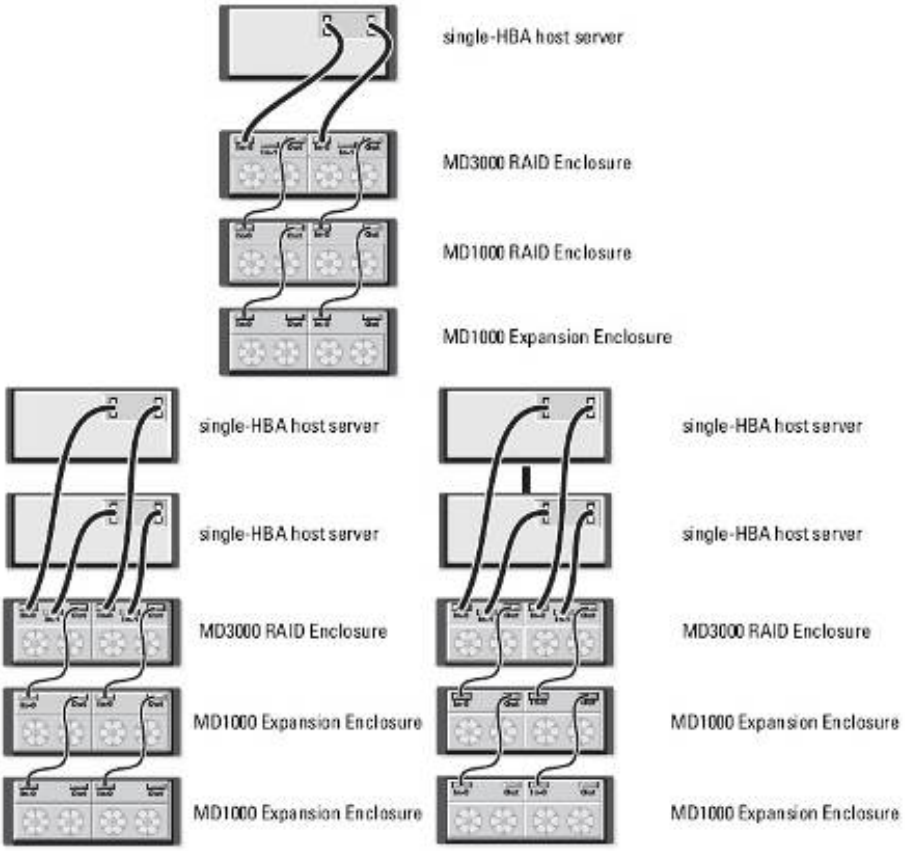


Figure 2 through Figure 4 show redundant, high-availability cabling configurations on one and two hosts. If any single path fails, at least one HBA is still connected to one RAID controller.

Figure 2. Cabling a Single Host Using Redundant Data Paths

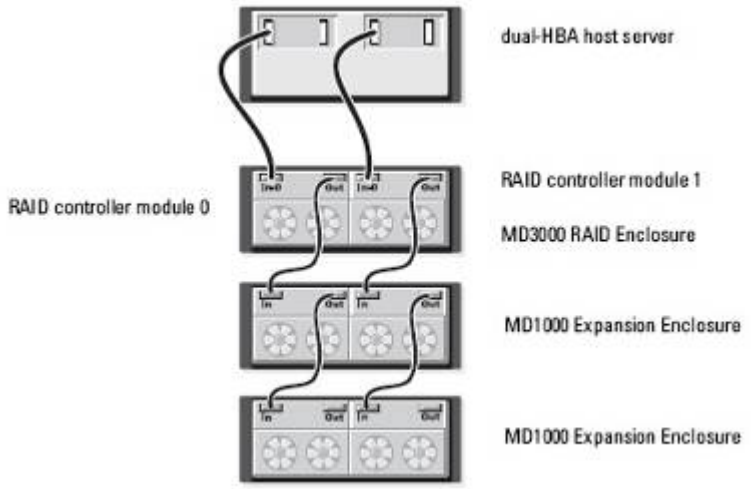


Figure 3. Cabling a Single Host Using Four Cable Connections

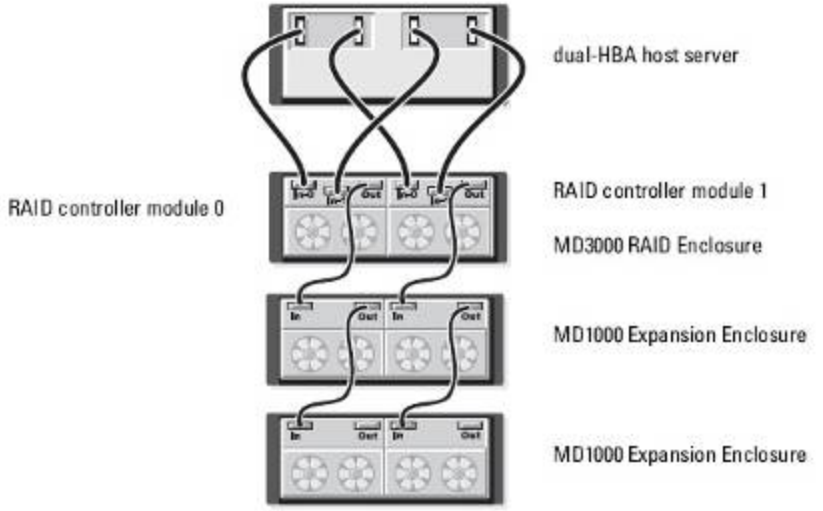
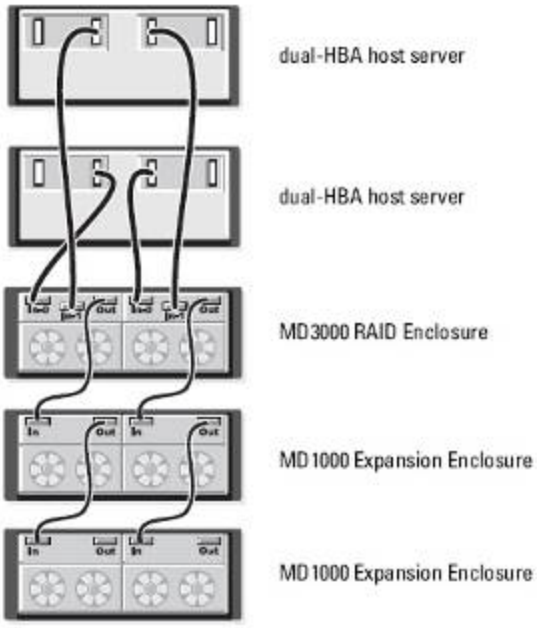


Figure 4. Cabling Two Hosts Using Redundant Data Paths



Non-Redundant Configurations

Figure 5 through Figure 8 show one, two, three, and four hosts with each connected to only one RAID controller module. The hosts can share storage space, but without redundant paths. If one path were to fail, the server on that path would be disconnected from the storage array.

Figure 5. Cabling a Single Host with a Non-Redundant Data Path

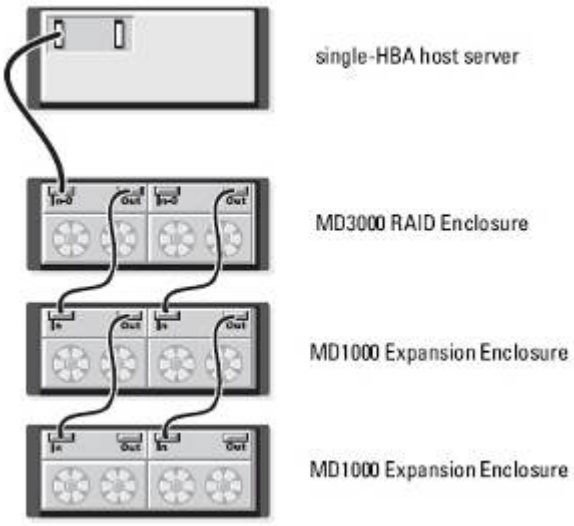


Figure 6. Cabling Two Hosts with Non-Redundant Data Paths

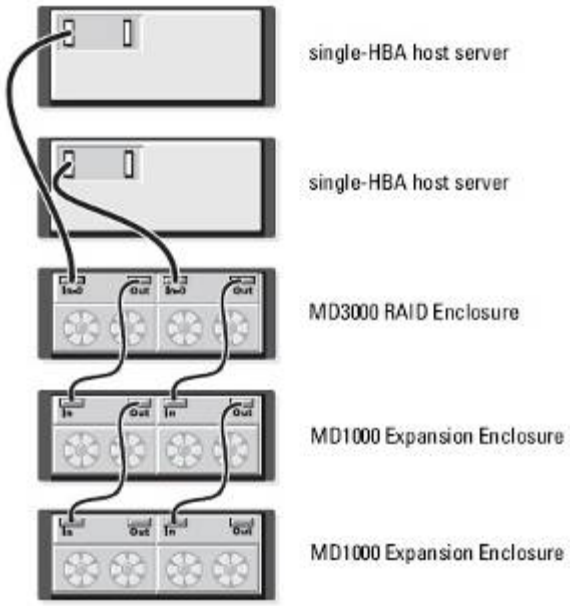


Figure 7. Cabling Three Hosts with Non-Redundant Data Paths

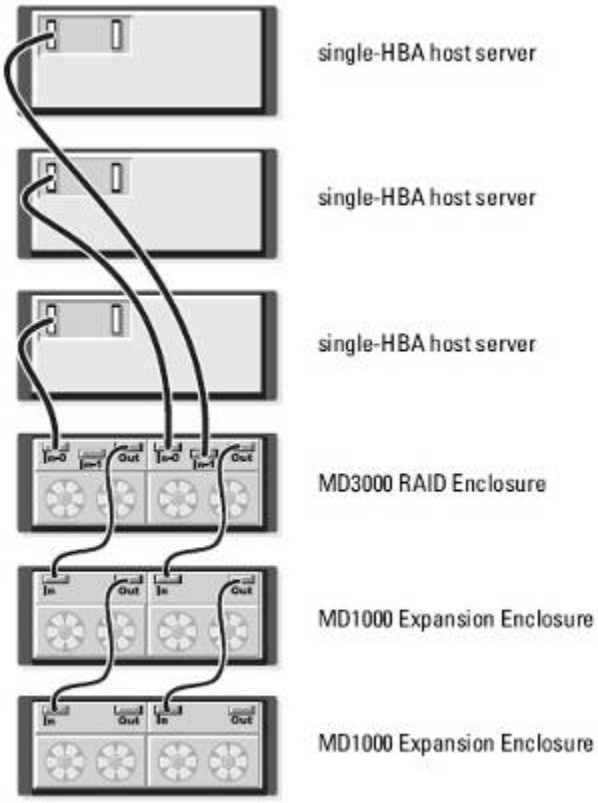
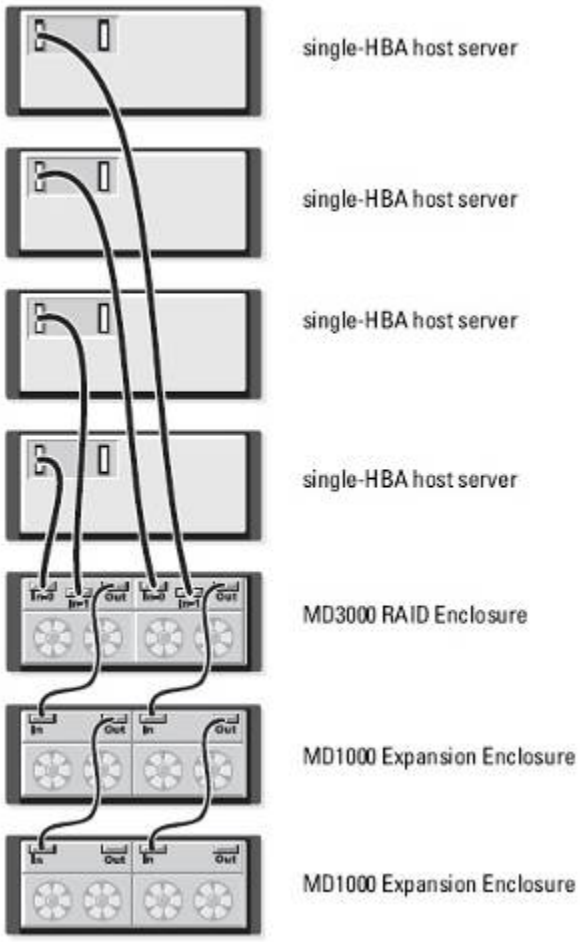


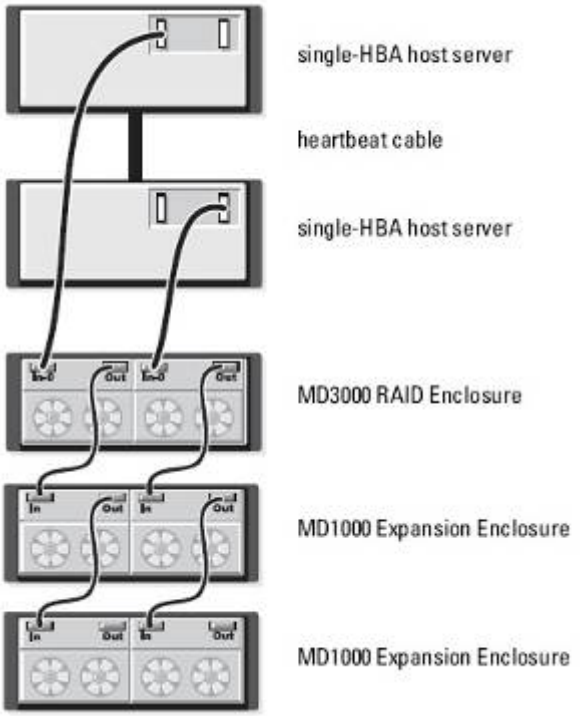
Figure 8. Cabling Four Hosts with Non-Redundant Data Paths



Cluster Configurations

Figure 9 shows a non-redundant two-node cluster using a single port of one HBA installed in the host to connect to the MD3000 RAID enclosure. Figure 10 shows a redundant two-node cluster configuration using a single RAID enclosure. Figure 11 shows a redundant two-node cluster configuration using dual HBAs.

Figure 9. Cabling a Two-Node Cluster (Single HBA, Non-Redundant Data Paths from Each Node)



NOTE: This configuration is supported with Windows Clustering only.

Figure 10. Cabling a Two-Node Cluster (Single HBA, Redundant Data Paths from Each Node)

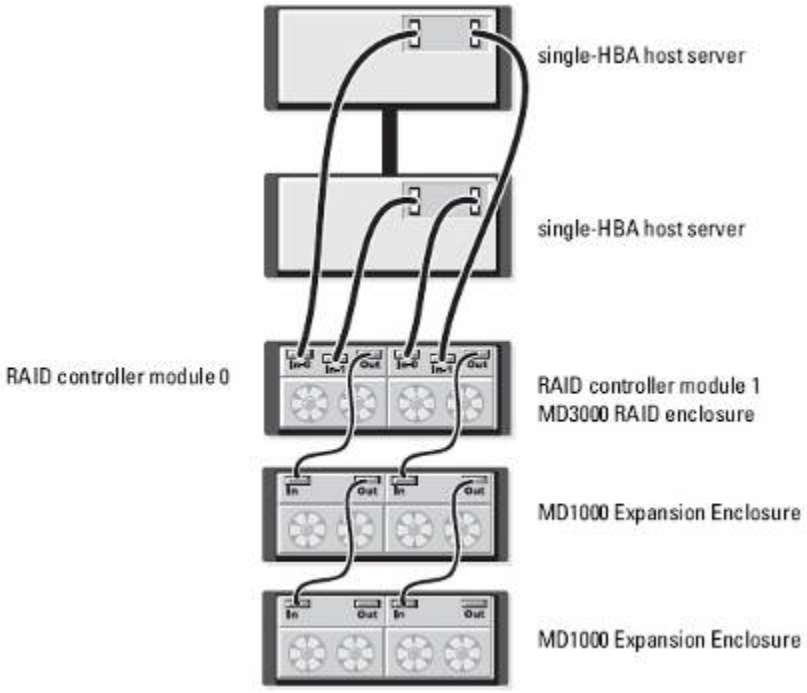
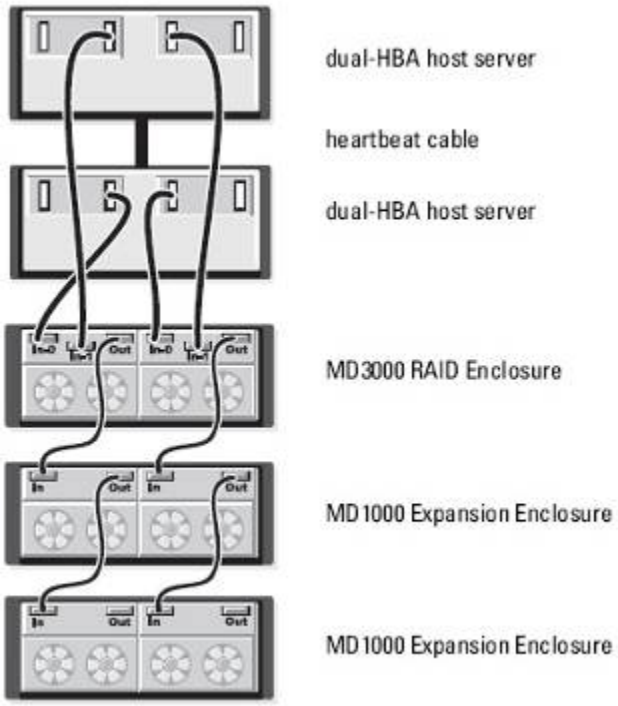


Figure 11. Cabling a Two-Node Cluster (Dual HBA, Redundant Data Paths from Each Node)



Configurations with two MD3000s

Figure 12 and Figure 13 show supported configurations connecting two MD3000s to 1 or 2 hosts. Figure 12 shows a single host connected to two separate MD3000 storage arrays. Figure 13 shows two hosts connected to two separate MD3000 storage arrays. **These configurations are only supported with Second Generation firmware on the MD3000 storage arrays.**

NOTE: Multiple MD3000 arrays connected to one or more servers might not be qualified on the solutions listed in the Supported Enterprise Solutions table shown earlier in this document. To see if this configuration has been qualified please go to the appropriate solution web site to review the reference architecture

Figure 12. Single Host connected to Two MD3000 Storage Arrays

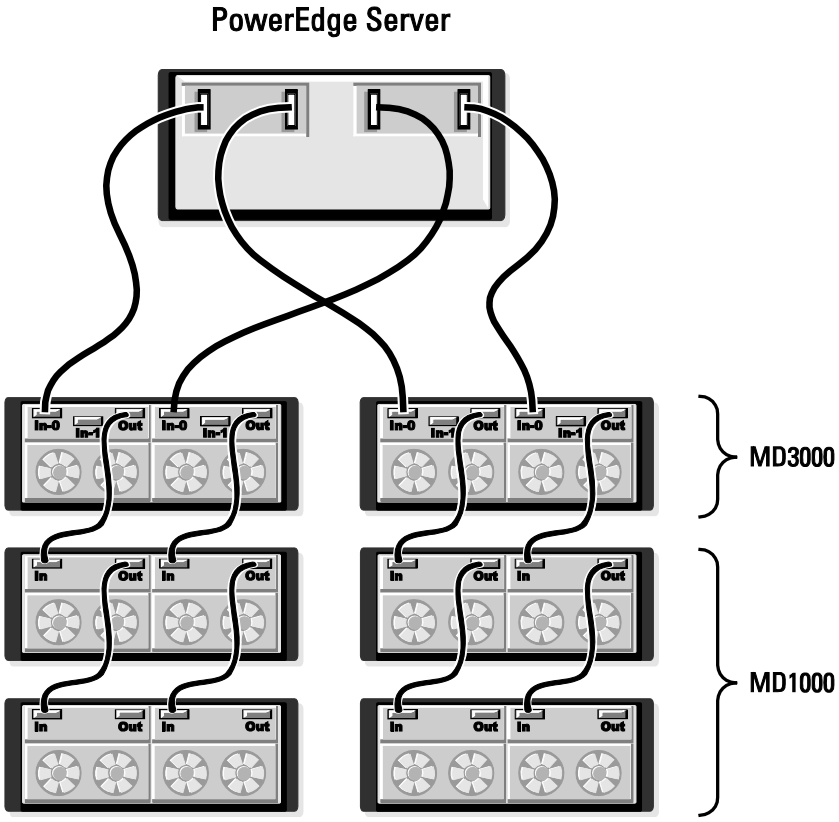
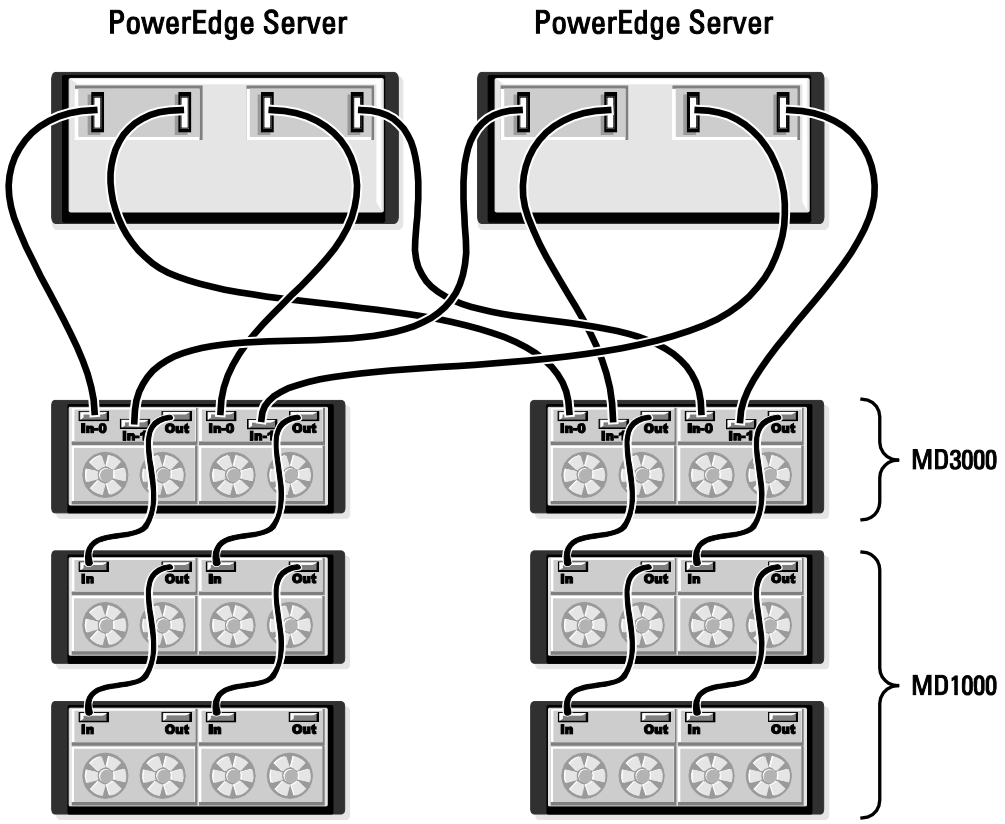


Figure 13. Two Hosts connected to Two MD3000 Storage Arrays



Information in this document is subject to change without notice.

© 2010 Dell Inc. All rights reserved.

Reproduction of these materials in any manner whatsoever without the written permission of Dell Inc. is strictly forbidden.

Trademarks used in this text: *Dell*, *PowerVault*, *PowerEdge*, *Dell OpenManage*, and the *DELL* logo are trademarks of Dell Inc.; *Microsoft*, *Windows*, *Windows Server*, and *Windows Vista* are either trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries; *Red Hat* and *Red Hat Enterprise Linux* are registered trademarks of Red Hat Inc. in the U.S. and other countries; *SUSE* is a registered trademark of Novell, Inc., in the United States and other countries.

Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Dell Inc. disclaims any proprietary interest in trademarks and trade names other than its own.