Dell™ PowerVault™ MD3200, MD3200i, MD3600i and MD3600f Series Storage Arrays Support Matrix

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Dell PowerVault is deprecating support for Operating Systems supported with prior versions of Controller Firmware. Dell PowerVault will continue support of OSes supported with prior versions of Controller Firmware on a commercially reasonable basis.

Introduction

This document provides information on supported software and hardware for Dell PowerVault MD3200, MD3200i, MD3600i and MD3600f series storage arrays as well as usage considerations, recommendations and rules.

NOTE: Unless specified, all information in this document is applicable to the latest version of firmware and software listed below.

Dell PowerVault M32/36 Series Storage Array Rules*

The following are the connectivity and consideration rules for the MD3200, MD3200i, MD3600i and MD3600f series arrays:

RULE	MD3200 & MD3220 (SAS)	MD3200i & MD3220i (1Gbps iSCSI)	MD3600i & MD3620i (10Gbps iSCSI)	MD3600f & MD3620f (8Gbps Fibre Channel)	Notes
Maximum number of host servers a single storage array can connect to with one RAID Controller Module installed:	4	64	64	64	
Maximum number of host servers a single storage array can connect to with two RAID Controller Modules installed:	8 (4 if using high availability)	64	64	64	
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)	N/A	N/A	N/A	
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).	√	N/A	N/A	N/A	
Maximum number of MD32/36 series storage arrays a host server may connect to:	2 (HA)	4	4	4	
Connecting an MD3200 series SAS array, an MD3200i series iSCSI array and an MD3600i series iSCSI array to the same host is supported.	√	√	√	The I/O co-existence between the Fibre Channel and any other protocol on same host is not supported.	
Support for up to 96 physical disks (system default configuration). Up to seven MD1200 and/or MD1220 series expansion enclosures can be attached to an MD storage array. Any mixture of MD1200 and MD1220 enclosures for a total of 96 physical disks is supported.	√	√	√	√	Applicable to firmware versions 07.75.xx.xx and 07.70.xx.xx
Support for up to 120 physical disks (system default configuration). Up to nine MD1200 and/or MD1220 series expansion enclosures can be attached to an MD storage array. Any mixture of MD1200 and MD1220 enclosures for a total of 120 physical disks is supported.	√	√	√	√	Applicable to firmware version 07.80.xx.xx
Support for up to 192 physical disks through a premium feature option. Up to fifteen MD1200 and/or MD1220 series expansion enclosures can be attached to an MD storage array. Any mixture of MD1200 and MD1220 enclosures for a total of 192 physical disks is supported.	√	√	√	√	Applicable to firmware version 07.80.xx.xx

Maximum number of physical disks in a RAID0, RAID1/10 is 96.	√	√	√	√	Applicable to firmware versions 07.75.xx.xx and 07.70.xx.xx
Maximum number of physical disks in a RAID0, RAID1/10 is 120.	√	√	√	√	Applicable to firmware version 07.80.xx.xx
Maximum number of physical disks in a RAID5 or RAID6 disk group is 30.	√	√	√	√	
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. Where applicable it is 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 several Linux multi-path drivers is not supported. When using a MD3200 or MD3600 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 or MD3600 series cannot be used for booting.	√	√	√		
Disk Groups can be migrated between a Dell PowerVault MD3200/3200i/3600i/3600f by following the appropriate Disk Group migration procedure***	√	√	√	√	
All iSCSI Host ports on a controller have to be at the same port speed	N/A	Only 1Gbps Supported	√	N/A	
iSCSI Host ports will only auto-negotiate to the port speed set in MDSM	N/A	Only 1Gbps Supported	√	N/A	
If the iSCSI initiators are connected to MD3200i and/or MD3600i series through the network switches, make sure that your switches support IEEE 802.3x flow control, and the flow control is enabled for both sending and receiving on all switch ports and server NIC ports. If you do not enable the flow control, your iSCSI storage array may experience the degradation of the I/O performance. In addition to enabling the Ethernet IEEE 802.3x flow control it is also recommended to disable unicast broadcast storm control on the switch ports connected to the iSCSI initiators and target arrays and turn on the "PortFast" mode of the spanning tree protocol (STP) on the switch ports connected to the iSCSI initiators and target arrays. Please note that turning the "PortFast" mode on is different from turning off the whole operation of STP on the switch. With "PortFast" on, the STP is still enabled on the switch ports. Do not turn STP off because it may affect the entire network and can leave the network vulnerable to physical topology loops.	N/A	√	√	N/A	
To get the optimal I/O performance, avoid having more than one iSCSI session originating from one host iSCSI port to the same controller. Ideally, the iSCSI host NIC should be connected to only one iSCSI target port on the storage subsystem.	N/A	√	√	N/A	

For convenience, regarding Dell Oracle Tested and Validated solutions involving MD arrays, please refer to the following site < http://en.community.dell.com/techcenter/enterprise-solutions/w/oracle_solutions/current-release.aspx >	√	√	√	√	
The number of VD copies is limited to a - maximum of 511 with a maximum of 8 concurrent copies	√	√	√	√	Applicable to firmware version 07.80.xx.xx
The number of Snapshots is limited to a - maximum of 256 per array - maximum of 8 per VD	√	√	√	√	Applicable to firmware version 07.80.xx.xx
The number of Remote Replicas is limited to - maximum of 16 pairs	N/A	N/A	N/A	√	Applicable to firmware version 07.80.xx.xx

* Please also refer to the Hardware Installation section of the MD3200 or MD3200i or MD3600i series Owner's Manual.

** Dell Linux MPP drivers for the MD3000 can coexist with the Device Mapper driver used for the MD3200 and MD3600 series. Refer to *"Linux DM Installation Details for Dell PowerVault MD Series Storage Arrays"* for supporting MD3000, MD3200 and MD3600 series products on a single Linux host.

*** Refer to the Disk Group Migration section of the MD3200 or MD3200i or MD3600i series Owner's Manuals.

Default IPv4 settings for the Management Ports on the MD3200i/MD3600i arrays

NOTE: No default gateway is set.

By default, the management ports on the storage array are set to DHCP. If DHCP fails, the following IPv4 settings will be used:

Controller/Port	IPv4 address	Subnet Mask
Controller 0	192.168.128.101	255.255.255.0
Controller 1	192.168.128.102	255.255.255.0

Default IPv4 settings for the iSCSI Ports on an MD32x0i array

NOTE: No default gateway is set.

By default, the iSCSI ports on the storage array are set to the following static IPv4 settings:

Controller/Port	IPv4 address	Subnet Mask	Port #
Controller 0, Port 0	192.168.130.101	255.255.255.0	3260
Controller 0, Port 1	192.168.131.101	255.255.255.0	3260
Controller 0, Port 2	192.168.132.101	255.255.255.0	3260
Controller 0, Port 3	192.168.133.101	255.255.255.0	3260
Controller 1, Port 0	192.168.130.102	255.255.255.0	3260
Controller 1, Port 1	192.168.131.102	255.255.255.0	3260
Controller 1, Port 2	192.168.132.102	255.255.255.0	3260
Controller 1, Port 3	192.168.133.102	255.255.255.0	3260

Default IPv4 settings for the iSCSI Ports on an MD36x0i array

NOTE: No default gateway is set.

By default, the iSCSI ports on the storage array are set to the following static IPv4 settings:

Controller/Port	IPv4 address	Subnet Mask	Port #
Controller 0, Port 0	192.168.130.101	255.255.255.0	3260
Controller 0, Port 1	192.168.131.101	255.255.255.0	3260
Controller 1, Port 0	192.168.130.102	255.255.255.0	3260
Controller 1, Port 1	192.168.131.102	255.255.255.0	3260

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:

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

Software	Version
RAID Controller Firmware	07.80.62.60
RAID Controller NVSRAM	N26X0-780890-001 for MD3200 and MD3200i series (SAS and 1Gb/s iSCSI storage arrays)
	N26X0-780890-901 for MD3600i and MD3600f series (10Gb/s iSCSI and Fibre Channel storage arrays)

Supported SAS Host Bus Adapters

Please go to **support.dell.com** to download the latest supported version of the 6Gbps SAS HBA firmware and drivers for your specific server hardware platform.

Host Bus Adapter Name
Dell 6Gbps SAS HBA

Supported iSCSI Software Initiators

Operating System	SW Initiator 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
VMware ESX	VMware	RTM or later	Included w/OS
Citrix XenServer	Citrix	RTM or later	Included w/OS

Supported Protocol Offload (TOE / iSCSI) Adapters

Hosts must have a standards compliant iSCSI initiator to access MD Series storage. Initiator support is provided by the initiator/operating system vendor. Dell Powervault does not support Converged Network Adapters(CAN) in Converged mode. Although Powervault does not endorse or support initiators directly, this support matrix provides some useful configuration information for common initiators.

Dell's Powervault MD Series Arrays will work with any ***RFC 3720*** iSCSI compliant initiators. The initiator MUST support all mandatory iSCSI features (IPSec is not required). This information is subject to change without notice. Dell is not responsible for any errors in this information.

Also be sure to read the initiator documentation and release notes from the particular vendors, as well as the MD Series release notes for up to date configuration recommendations.

Fibre Channel SFP+ Transceiver Support

Description	Manufacturer	Mfr. Part Number
8G FC SFP+	JDSU	PLRXPL-VC-SH4-23-N
8G FC SFP+	Finisar	FTLF8528P2BCV-LS
8G FC SFP+	Avago	AFBR-57D7APZ

Supported Hard Disk Drives

Only hard disk drives with a Dell P/N from the table below are supported. All other hard disk drives purchased from the Dell Software and Peripheral store with a part number other than specified below are not supported.

Form Factor	Dell P/N	Model	Capacity	Speed	Vendor
2.5”	X143K	MBD2147RC	146GB	10K	Fujitsu
2.5”	U706K	MBD2300RC	300GB	10K	Fujitsu
2.5”	W328K	MBE2147RC	146GB	15K	Fujitsu
2.5”	R727K	MBE2073RC	73GB	15K	Fujitsu
2.5”	T855K	HUC103014CSS600	146GB	10K	Hitachi
2.5”	U709K	HUC103030CSS600	300GB	10K	Hitachi
2.5”	CXF82	HUC109030CSS600	300GB	10K	Hitachi
2.5”	W330K	HUC151414CSS600	146GB	15K	Hitachi
2.5”	R730K	HUC151473CSS600	73GB	15K	Hitachi
2.5”	X1MCH	LB150S	149GB	SSD	Pliant
2.5”	X160K	ST9146803SS	146GB	10K	Seagate
2.5”	R744K	ST9300503SS	300GB	10K	Seagate
2.5”	T871K	ST9300603SS	300GB	10K	Seagate
2.5”	U733K	ST9146752SS	146GB	15K	Seagate
2.5”	X162K	ST9146852SS	146GB	15K	Seagate
2.5”	61XPF	ST9146853SS	146GB	15K	Seagate
2.5”	W345K	ST973452SS	73GB	15K	Seagate
2.5”	R734K	ST9500430SS	500GB	7.2K	Seagate
2.5”	W335K	ST9500431SS	500GB	7.2K	Seagate
2.5”	YJ0GR	HUC106030CSS600	300GB	10K	Hitachi
2.5”	8WP8W	HUC106060CSS600	600GB	10K	Hitachi
2.5”	G76RF	HUC109060CSS600	600GB	10K	Hitachi
2.5”	H5WGN	HUC109090CSS600	900GB	10K	Hitachi
2.5”	745GC	ST9300605SS	300GB	10K	Seagate
2.5”	81N2C	ST9300453SS	300GB	15K	Seagate
2.5”	H8DVC	ST9300653SS	300GB	15K	Seagate
2.5”	R72NV	ST9600205SS	600GB	10K	Seagate
2.5”	7T0DW	ST9600204SS	600GB	10K	Seagate
2.5”	8MP93	ST9600104SS	600GB	10K	Seagate
2.5”	8JRN4	ST9900805SS	900GB	10K	Seagate
2.5”	XRRVX	ST9900605SS	900GB	10K	Seagate

2.5”	9W5WV	ST91000640SS	1TB	7.2K	Seagate
2.5”	XKGH0	ST91000642SS	1TB	7.2K	Seagate
2.5”	55RMX	ST9500620SS	500GB	7.2K	Seagate
2.5”	740Y7	MBF2300RC	300GB	10K	Toshiba
2.5”	5R6CX	MBF2600RC	600GB	10K	Toshiba
2.5”	6DFD8	MK1401GRRB	146GB	15K	Toshiba
2.5”	NWH7V	MK3001GRRB	300GB	15K	Toshiba
2.5”	X79H3	WD3000BKHG	300GB	10K	Western Digital
2.5”	CWHNN	WD3001BKHG	300GB	10K	Western Digital
2.5”	C5R62	WD6000BKHG	600GB	10K	Western Digital
2.5”	96G91	WD6001BKHG	600GB	10K	Western Digital
2.5”	4X1DR	WD9000BKHG	900GB	10K	Western Digital
3.5”	T875K	HUS156045VLS600	450GB	15k	Hitachi
3.5”	W348K	HUS156060VLS600	600GB	15k	Hitachi
3.5”	X150K	HUS156030VLS600	300GB	15K	Hitachi
3.5”	F617N	ST3300657SS	300GB	15K	Seagate
3.5”	X163K	ST3450757SS	450GB	15K	Seagate
3.5”	R749K	ST3450857SS	450GB	15K	Seagate
3.5”	T873K	ST3600957SS	600GB	15K	Seagate
3.5”	W347K	ST3600057SS	600GB	15K	Seagate
3.5”	U738K	ST31000424SS	1TB	7.2K	Seagate
3.5”	X164K	ST31000425SS	1TB	7.2K	Seagate
3.5”	R755K	ST32000444SS	2TB	7.2K	Seagate
3.5”	1D9NN	ST32000645SS	2TB	7.2K	Seagate
3.5”	4WKK8	ST32000444SS	2TB	7.2K	Seagate
3.5''	W350K	ST32000445SS	2TB	7.2K	Seagate
3.5''	U717K	ST3500414SS	500GB	7.2K	Seagate
3.5”	R752K	ST3600002ss	600GB	10K	Seagate
3.5”	91K8T	ST33000650SS	3TB	7.2K	Seagate
3.5”	09JYJ	ST33000650SS	3TB	7.2K	Seagate
3.5”	698PM	ST33000652SS	3TB	7.2K	Seagate
3.5”	6VNCJ	ST500NM0001	500GB	7.2K	Seagate
3.5”	740YX	ST1000NM0001	1TB	7.2K	Seagate
3.5”	YGG39	ST1000NM0001	1TB	7.2K	Seagate
3.5”	67TMT	ST2000NM0001	2TB	7.2K	Seagate
3.5”	7RGK3	ST2000NM0001	2TB	7.2K	Seagate
3.5”	7KXJR	MK1001TRKB	1TB	7.2K	Toshiba
3.5”	WDC07	MK2001TRKB	2TB	7.2K	Toshiba
3.5”	0V8G9	WD1000FYYG	1TB	7.2K	Western Digital
3.5”	YY34F	WD2000FYYG	2TB	7.2K	Western Digital
3.5”	VYRKH	HUS723020ALS640	2TB	7.2K	Hitachi
3.5”	CWJ92	HUS723030ALS640	3TB	7.2K	Hitachi
2.5''	6K55X	MK2001GRZB	200GB	SSD	Toshiba
2.5''	R2PJ7	MK4001GRZB	400GB	SSD	Toshiba

Refer to the MD32xx/MD32xxi Drivers and Downloads section on **support.dell.com** for the latest available physical disk firmware.

Supported Expansion Enclosures

MD32/36 series storage arrays support a maximum of 192 physical disk slots (with premium feature activation). These additional slots can provided by up to 15 MD1200 expansion enclosures, seven MD1220 expansion enclosures, or a combination of both. When a combination of expansion enclosures is used, total number of disk drive slots in the system cannot exceed 192. For a system without premium feature activation, this physical disk limit is 120.

Enclosure Model	Firmware Version
MD1200	1.01
MD1220	1.01

Supported Management Software

MD3200/MD3200i/MD3600i/MD3600f

Consolidated Resource DVD supporting all MD products listed above

Windows

Software Component	Version	Notes
MD3200 series Resource DVD	3.0.1.18	
Modular Disk Storage Manager	10.80.G6.47	
Modular Disk Configuration Utility	1.5.0.20	Supported on iSCSI only
MD3200 series VDS/VSS Providers*	D0.80.36.10 / S0.80.36.10	
MD Storage Array vCenter Plug-in	see *vCenter Plug-in Support* table below	
MD Storage Array VASA Provider (iSCSI and Fibre-Channel only)	see *VASA Provider Support* table below	Supported on: Windows Server® 2003 SP2 (32-bit or 64-bit versions) Windows Server® 2008 R2 (64-bit version only)
MD Storage Array Storage Replication Adpater (SRA) (Fibre-Channel only)	see *Storage Replication Adapter Support* table below	

* Maximum number of concurrent backups supported while using the VSS provider with Clustered Shared Volumes is 2

Linux

Software Component	Version	Notes
MD3200 series Resource DVD	3.0.1.18	
Modular Disk Storage Manager	10.80.G6.47	
Modular Disk Configuration Utility	1.5.0.20	Supported with iSCSI storage arrays only.
MD3200 series Device Mapper		See section on *Supported Device Mapper Software*

vCenter Plug-in Support

vCenter Version	VMware version supported	Notes
2.2	iSCSI and Fibre Channel: ESX/ESXi 4.1 ESX/ESXi 4.0 ESX/ESXi 3.5 SAS: ESX/ESXi 4.1 only	
2.3 (32-bit)	All protocols: ESX/ESXi 4.1 ESX/ESXi 4.0 ESX/ESXi 3.5	
2.3 (64-bit)	All protocols: ESX/ESXi 5.0	
2.4 (All versions)	All protocols: ESX/ESXi 4.0 or later	

VASA Provider Support

(supported on MD3200i, MD3220i, MD3600i, MD3620i, MD3600f and MD3620f only)

VASA Version	VMware version supported	Notes
1.0	vSphere™ Client 5.0 vCenter Server 5.0	Available from: http://www.dell.com/support/drivers/us/en/usgen1/DriverDetails/DriverFileFormats?DriverId=hdhfy vCenter must be installed on separate server than the VASA Provider See the *MD Storage Array VMware VASA 1.0 Provider User's Guide* for more information

Storage Replication Adapter 1.1 Support

(supported on MD3600f and MD3620f only)

SRA Version	VMware version supported	Notes
1.1	vSphere™ Client 4.1 vCenter Server 4.1, 4.0 or 3.5	See the *MD Storage Array Storage Replication Adapter 1.1 Installation and Configuration Guide* for more infomation
5.0	vSphere Client 5.0 vCenter Server 5.0 Site Recovery Manager (SRM) 5.0	See the *MD Storage Array VMware Storage Replication Adapter 5.0 Installation and Configuration Guide* for more infomation

Supported Operating Systems

Where clustering is supported by the operating system, it is also supported on the MD3200, MD3200i, MD3600i and MD3600f series storage arrays, subject to the following limitations:

Windows 2008: Maximum iSCSI nodes is 16; maximum SAS nodes is 4; maximum FC nodes is 16
Windows 2003: Clustering not supported with MD3200, MD3200i, MD3600i and MD3600f series Storage Arrays

Operating System	SAS Host Server	iSCSI Host Server	Management Station	Fibre Channel Host Server	Notes & Required Hotfixes
Windows Server 2008 R2 SP1					
Windows 2008 R2 SP1 Standard and Core	√	√	√	√	**KB2522766**
Windows 2008 R2 SP1 Enterprise and Core	√	√	√	√	**KB2522766**
Windows 2008 R2 SP1 Data Center and Core	√	√	√	√	**KB2522766**
Windows 2008 R2 SP1 Foundation	√	√	√	√	**KB2522766**
Windows 2008 R2 SP1 Web and Core			√		**KB2522766**
Windows 2008 Storage Server R2 SP1 all editions	√	√	√	√	**KB2522766**
Windows 2008 R2 SP1 HPC Server	√	√	√	√	**KB2522766**
Windows Server 2008 R2					
Windows 2008 R2 Standard and Core	√	√	√	√	**KB979711, KB978000, KB980663, KB974672, KB981892 KB2522766**
Windows 2008 R2 Enterprise and Core	√	√	√	√	**KB979711, KB978000, KB980663, KB974672, KB981892 KB2522766**
Windows 2008 R2 Data Center and Core	√	√	√	√	**KB979711, KB978000, KB980663, KB974672, KB981892 KB2522766**
Windows 2008 R2 Foundation	√	√	√	√	**KB979711, KB978000, KB980663, KB974672, KB981892 KB2522766**
Windows 2008 R2 Web and Core			√		
Windows 2008 Storage Server R2 all editions	√	√	√	√	**KB979711, KB978000, KB980663, KB974672, KB981892 KB2522766**
Windows 2008 R2 HPC Server	√	√	√	√	**KB979711, KB978000, KB980663, KB974672, KB981892 KB2522766**
Windows Server 2008					
Windows 2008 SP2 Standard and Core (x86, x64)	√	√	√	√	**KB2522766**
Windows 2008 SP2 Enterprise and Core (x86,x64)	√	√	√	√	**KB2522766**
Windows 2008 SP2 Data Center and Core (x86, x64)	√	√	√	√	**KB2522766**
Windows 2008 SP2 Foundation (x86, x64)	√	√	√	√	**KB2522766**

Windows 2008 SP2 Web and Core (x86, x64)			√		**KB2522766**
Windows 2008 Small Business Server SP2 (x86, x64)	√	√	√	√	**KB2522766**
Windows 2008 Essential Business Server SP2 (x86, x64)	√	√	√	√	**KB2522766**
Windows 2008 Storage Server SP2 Server, all editions, (x86, x64)	√	√	√	√	**KB2522766**
Windows 2008 HPC Server SP2 Server, all editions (x86, x64)	√	√	√	√	**KB2522766**
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 6.2 (base, AP, DT w/WS option)(x64 only)	√	√	√	√	
Red Hat Enterprise Linux 6.1 (base, AP, DT w/WS option)(x64 only)	√	√	√	√	
Red Hat Enterprise Linux 6.0 (base, AP, DT w/WS option)(x64 only)	Not Supported	Not Supported	√	Not Supported	RHEL 6.0 is not supported as a host operating system attached to MD-Series storage arrays. RHEL 6.1 is recommended.
Red Hat Enterprise Linux 5.8 (base, AP, DT w/WS option)(x86, x64)	√	√	√	√	
Red Hat Enterprise Linux 5.7 (base, AP, DT w/WS option)(x86, x64)	√	√	√	√	
SUSE Linux Enterprise Server					
SUSE® Linux Enterprise Server 11.2(x64 only)	√	√	√	√	

SUSE® Linux Enterprise Server 11.1 (x64 only)	√	√	√	√	
SUSE Linux Enterprise Server 10.4 (x64 only)	√	√	√	√	
SUSE Linux Enterprise Server 10.3 (x64 only)	√	√	√	√	Supported with firmware versions 07.75.xx.xx and 07.70.xx.xx
Virtualization Hosts / Hypervisors**					
Citrix XenServer	√	√		√	for supported XS releases please see http://hcl.xensource.com/
VMware ESXi 5.0 / 5.0 U1	√	√		√	* for supported array FW versions, please see VMware HCL * Hardware iSCSI initiators are not supported. * Supported path policies: MRU, RR
VMware ESX/ESXi 4.1 U*x*	√	√		√	* for supported array FW versions, please see VMware HCL *Supported path policies: MRU, RR
VMware ESX/ESXi 4.1	√	√		√	* for supported array FW versions, please see VMware HCL *Supported path policies: MRU, RR
VMware ESX/ESXi 4.0 U*x*	√	√		√	* for supported array FW versions, please see VMware HCL * Supported path policies: MRU, RR
VMware ESX/ESXi 4.0	√	√		√	* for supported array FW versions, please see VMware HCL * Supported path policies: MRU, RR
Microsoft Hyper-V Server 2008 R2 SP1	√	√			
Microsoft Server 2008 R2 SP1 with Hyper-V	√	√	√	√	
Microsoft Hyper-V Server 2008 R2	√	√			**KB979711, KB978000, KB980663, KB974672, KB981892 KB2522766**
Microsoft Server 2008 R2 with Hyper-V	√	√	√	√	**KB979711, KB978000, KB980663, KB974672, KB981892 KB2522766**
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)			√		

** NOTE: The VMWare HCL only lists the major version number for the MD platforms (for example, it lists 07.80 instead of 07.80.xx.xx). This indicates support for all firmware versions 07.80.xx.xx released by Dell.

Supported Device Mapper Software

Operating System	Component	Supported Version
SUSE Linux Enterprise Server 10 SP3	scsi_dh_rdac DKMS package	scsi_dh_rdac-1.3.1.2-3dkms.noarch.rpm
SUSE Linux Enterprise Server 10 SP4	scsi_dh_rdac DKMS package	scsi_dh_rdac-1.9.1.1-1dkms.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-1.5.1.3-1dkms.noarch.rpm
	multipath-tools	Multipath-tools-0.4.8-40.6.1.x86_64.rpm
SUSE Linux Enterprise Server 11 SP1	scsi_dh_rdac DKMS package	scsi_dh_rdac-1.5.2.2-1dkms.noarch.rpm
Red Hat Enterprise Linux 5.4	scsi_dh_rdac DKMS package	scsi_dh_rdac-1.4.1.2-3dkms.noarch.rpm
Red Hat Enterprise Linux 5.4+	scsi_dh_rdac DKMS package	scsi_dh_rdac-1.4.1.2-3dkms.noarch.rpm
Red Hat Enterprise Linux 5.5	scsi_dh_rdac DKMS package	scsi_dh_rdac-1.4.2.1-3dkms.noarch.rpm
Red Hat Enterprise Linux 5.6	scsi_dh_rdac DKMS package	scsi_dh_rdac-1.7.1.4-1dkms.noarch.rpm
Red Hat Enterprise Linux 5.7	scsi_dh_rdac DKMS package	Native
Red Hat Enterprise Linux 6.1	scsi_dh_rdac DKMS package	scsi_dh_rdac-1.8.1.1-1dkms.noarch.rpm
Red Hat Enterprise Linux 6.2	scsi_dh_rdac DKMS package	scsi_dh_rdac-1.8.2.1-1dkms.noarch.rpm

Supported Fibre Channel Host Bus Adapters

Host Bus Adapter Name	Fabric Configuration	Direct-attach Configuration	Available from
Qlogic*			www.qlogic.com
QLE2560/62	√	√	
QLE2460/62	√	√	
QLE220**	√	√	
QME2472	√	√	
QME2572	√	√	
Emulex*			www.emulex.com
LPe16000/2	√		
LPe12000/2	√	√	
LPe 11002	√	√	
LPe 1150	√	√	
LPe 1105-M4	√	√	
LPe 1205M	√	√	
Brocade*			www.brocade.com
BR815/BR825	√	√ Device Driver Version 3.0.1.0 only	

* See ***Required Timeout Settings for Fibre Channel Host Bus Adapters*** for required timeout settings by manufacturer.

Required Timeout Settings for Fibre Channel Host Bus Adapters

This table shows required timeout settings for all Dell-supported fibre channel (FC) HBAs, by manufacturer and OS. Make sure that any FC HBA connected to your MD3600f storage array has these timeout values set as shown.

Use one of these manufacturer utilities to set these values on your HBA:

- *Brocade© Command Line Utility* (BCU)
- *Emulex® HBAnyware®* or *OneCommand™ Manager*
- *QLogic SANsurfer FC HBA Manager*

HBA Manufacturer	Timeout Parameter	Required Value (in seconds)
Qlogic		
Windows Server 2003 Release 2 (with Service Pack 2)	LinkDownTimeout PortDownRetryCount	70 70
Windows Server 2008 Release 2	LinkDownTimeout PortDownRetryCount	10 10
Windows Server 2008 Release 2 (with Service Pack 2)	LinkDownTimeout PortDownRetryCount	10 10
Linux only	qlport_down_retry	10
Emulex		
Windows only	LinkTimeout NodeTimeout	10 10
Linux only	lpfc_devloss_tmo	10
Brocade		
Windows and Linux	pathtov	10

Supported HBAs, Required Drivers and Firmware

Supported on MD3600f/MD3620f array firmware levels:

Firmware: 07.75.20.62 with NVSRAM: N26x0-775890-009
Firmware: 07.80.41.60 with NVSRAM: N26x0-780890-901
Firmware: 07.80.62.60 with NVSRAM: N26X0-780890-901

Operating System on Host Server	**Brocade** BR815/BR825	**Emulex** LPe16000/2 LPe12000/2 LPe1205M LPe11002 LPe1150 LPe1105-M4	**Qlogic** QLE2460/62 QLE2560/62 QLE220 QME2472 QME2572
Windows Server 2003 (Service Pack 2)	**Device driver version:** 2.2.0.2 **BIOS:** 2.2.0.2	**Device driver version:** 2.40.005 **Firmware: 1.11a5** **Adapter Boot Version:** 5.03a7 **Required patches:** KB932755 **Recommended patches:** KB945119	**Device driver version:** 9.1.8.25 **BIOS:** 2.10 **Firmware:** 5.01.03 **Required patches:** KB932755 KB939315 KB950903
		Device driver version: 2.50.007 LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 LPe12000/2 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13 **Required patches:** KB932755	
		Device driver version: 2.70.018 LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 **Adapter Boot Version:** 5.03A13 LPe12000/2 **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 6.03A11 LPe16000/2 **Firmware:** 1.0.11.114 **Adapter Boot Version:**	

		8.00A14 **Required patches:**	
Windows Server 2008 (Service Pack 2)	**Device driver version:** 2.2.0.2 **BIOS:** 2.2.0.2	**Device driver version:** 2.40.005 **Firmware: 1.11a5** **Adapter Boot Version:** 5.03a7 No patches required	**Device driver version:** 9.1.8.25 **BIOS:** 2.10 **Firmware:** 5.01.03 No patches required
	Device driver version: 3.0.1.0 **BIOS:** 3.0.1.0	**Device driver version:** 2.50.007 LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 LPe12000/2 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13	**Device driver version:** 9.1.9.27 **BIOS:** 3.00 **Firmware:** 5.04.01 No patches required This level does not support QLE220
		Device driver version: 2.70.018 LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 **Adapter Boot Version:** 5.03A13 LPe12000/2 **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 6.03A11 LPe16000/2 **Firmware:** 1.0.11.114 **Adapter Boot Version:** 8.00A14 **Required patches:**	
Windows Server 2008 Release 2 (Service Pack 1)	**Device driver version:** 2.3.0.0 **BIOS:** 2.3.0.0	**Device driver version**: 2.40.005 **Firmware: 1.11a5** **Adapter Boot Version:** 5.03a7 No patches required	**Device driver version:** 9.1.8.25 **BIOS:** 2.10 **Firmware:** 5.01.03 No patches required
	Device driver version: 3.0.1.0 **BIOS:** 3.0.1.0	**Device driver version:** 2.50.007 LPe11002 LPe1150 LPe1105-M4	**Device driver version:** 9.1.9.27 **BIOS:** 3.00 **Firmware:** 5.04.01 No patches required This level does not support QLE220

		Firmware: 2.82A4 LPe12000/2 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13	
		Device driver version: 2.70.018 LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 **Adapter Boot Version:** 5.03A13 LPe12000/2 **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 6.03A11 LPe16000/2 **Firmware:** 1.0.11.114 **Adapter Boot Version:** 8.00A14 **Required patches:**	
VMware ESX(i) 5.0	**Device driver version:** OS native	**Device driver version:** OS native **Firmware: 1.11a5** **Adapter Boot Version:** 5.03a7	OS native
	Device driver version: 3.0.1.0 **BIOS:** 3.0.1.0	**Lpfc Driver:** 8.2.2.105.34 LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 LPe12000/2 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13	**Device driver version:** 911.k1.1-19vmw **BIOS:** 3.00 **Firmware:** 5.04.01 No patches required This level does not support QLE220
		Lpfc Driver: 8.2.2.126.50 LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 **Adapter Boot Version:** 5.03A13 LPe12000/2 **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:**	

		6.03A11 LPe16000/2 **Firmware:** 1.0.11.114 **Adapter Boot Version:** 8.00A14	
VMware ESX 4.1	**Device driver version:** OS native No patches required	**Device driver version:** OS native **Firmware: 1.11a5** **Adapter Boot Version:** 5.03a7 No patches required	OS native **BIOS:** 2.02 **Firmware:** 4.03.01 No patches required
		Lpfc Driver: 8.2.1.105.34 LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 LPe12000/2 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13	**Device driver version:** 841.k1.34-1vmw **BIOS:** 3.00 **Firmware:** 5.04.01 No patches required This level does not support QLE220
		Lpfc Driver: 8.2.0.126.50 LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 **Adapter Boot Version:** 5.03A13 LPe12000/2 **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 6.03A11 LPe16000/2 **Firmware:** 1.0.11.114 **Adapter Boot Version:** 8.00A14	
VMware ESX 4.0	**Device driver version:** OS native	**Device driver version:** OS native **Firmware(FC4): 1.11a5** **Adapter Boot Version:** 5.03a7	OS native
	Device driver version: 3.0.1.0 **BIOS:** 3.0.1.0	**Lpfc Driver:** 8.2.0.105.34 LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 LPe12000/2 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13	**Device driver version:** 841.k1.34-1vmw **BIOS:** 3.00 **Firmware:** 5.04.01 No patches required This level does not support QLE220
		Lpfc Driver: 8.2.0.126.50	

		LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 **Adapter Boot Version:** 5.03A13 LPe12000/2 **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 6.03A11 LPe16000/2 **Firmware:** 1.0.11.114 **Adapter Boot Version:** 8.00A14	
RHEL 6.1 No Support for RHEL 6.0	**Device driver version:** 2.3.0.2 **BIOS:** 2.3.0.0	**Device driver version:** OS native **Firmware: 1.11a5** **Adapter Boot Version:** 5.03a7	**Device driver version:** OS native **BIOS:** 3.0 **FW**: 5.04.01
	Device driver version: 3.0.1.0 **BIOS:** 3.0.1.0	**Device driver version:** 8.3.5.44.4p LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 LPe12000/2 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13	**Device driver version:** 8.03.07.08.6.0-k **BIOS:** 3.0 **FW**: 5.04.01 This level does not support QLE220
		Device driver version: 8.3.5.44.4p LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 **Adapter Boot Version:** 5.03A13 LPe12000/2 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13	
		RHEL 6.1 & 6.2 **Device driver version:** 8.3.5.68.1p LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4	

		Adapter Boot Version: 5.03A13 LPe12000/2 **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 6.03A11 LPe16000/2 **Firmware:** 1.0.11.114 **Adapter Boot Version:** 8.00A14	
RHEL 5.x	RHEL 5.4 Not supported RHEL 5.5 **Device driver version:** 2.2.0.0 **BIOS:** 2.2.0.0 RHEL 5.6 **Device driver version:** 2.3.0.0 **BIOS:** 2.3.0.0 **Device driver version:** 3.0.1.0 **BIOS:** 3.0.1.0 RHEL 5.7 **Device driver version:** 3.0.1.0 **BIOS:** 3.0.1.0	RHEL 5.4 **Device driver version:** 8.2.0.86 **Firmware: 1.11a5** **Adapter Boot Version:** 5.03a7 RHEL 5.5 **Device driver version:** 8.2.0.86 **Firmware: 1.11a5** **Adapter Boot Version:** 5.03a7 RHEL 5.6 **Device driver version:** inbox **Firmware: 1.11a5** **Adapter Boot Version:** 5.03a7 RHEL 5.7 **Device driver version:** 8.2.0.106.1p LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 **Adapter Boot Version:** 5.03A13 LPe12000/2 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13 RHEL 5.7 & 5.8 **Device driver version:** 8.2.0.128.1p LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 **Adapter Boot Version:** 5.03A13	RHEL 5.4 **Device driver version:** OS native **BIOS:** 3.0 **FW:** in box RHEL 5.5 **Device driver version:** OS native **BIOS:** 3.00 **Firmware:** in box RHEL 5.6 **Device driver version:** OS native **BIOS:** 2.1 **Firmware:** 5.04.01(d5) RHEL 5.7 **Device driver version:** 8.03.07.09.5.6-k **BIOS:** 3.0 **Firmware:** 5.04.01 This level does not support QLE220

		LPe12000/2 **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 6.03A13 LPe16000/2 **Firmware:** 1.0.11.114 **Adapter Boot Version:** 8.00A14	
SLES 11	**Device driver version:** 2.3.0.0 **BIOS:** 2.3.0.0	**Device driver version:** inbox **Firmware: 1.11a5Adapter Boot Version:** 5.03a7	**Device driver version:** OS native **BIOS:** 2.12 **Firmware:** 5.03.02(d5)
	Device driver version: 3.0.1.0 **BIOS:** 3.0.1.0		
SLES 11 (Service Pack 1)	**Device driver version:** 2.3.0.0 **BIOS:** 2.3.0.0	**Device driver version:** 8.3.5.25 **Firmware: 1.11a5** **Adapter Boot Version:** 5.03a7	QLE2560 **Device driver version:** OS native QLE2562 **Device driver version:** OS native **BIOS:** 2.12 **Firmware:** 5.03.02(d5)
		Device driver version: 8.3.5.68.1p LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 **Adapter Boot Version:** 5.03A13 LPe12000/2 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13	
	Device driver version: 3.0.1.0 **BIOS:** 3.0.1.0	SLES 11 SP1 & SP2 **Device driver version:** 8.3.5.68.1p LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 **Adapter Boot Version:** 5.03A13 LPe12000/2 **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13 LPe1205M	**Device driver version:** 8.03.07.08.11.1-k **BIOS:** 3.0 **Firmware:** 5.04.01 This level does not support QLE220

		Firmware: 2.00A5 **Adapter Boot Version:** 6.03A11 LPe16000/2 **Firmware:** 1.0.11.114 **Adapter Boot Version:** 8.00A14	
SLES 10 (Service Pack 3)	**Device driver version:** 2.3.0.0 **BIOS:** 2.3.0.0	**Device driver version:** 8.2.0.86 **Firmware: 1.11a5** **Adapter Boot Version:** 5.03a7	QLE2560 **Device driver version:** OS native QLE2562 **Device driver version:** OS native **BIOS:** 2.12 **Firmware:** 5.03.02(d5)
	Device driver version: 3.0.1.0 **BIOS:** 3.0.1.0		
SLES 10 (Service Pack 4)	**Device driver version:** 2.3.0.0 **BIOS:** 2.3.0.0	**Device driver version:** 8.2.0.86 **Firmware: 1.11a5** **Adapter Boot Version:** 5.03a7	QLE2560 **Device driver version:** OS native QLE2562 **Device driver version:** OS native **BIOS:** 2.12 **Firmware:** 5.03.02(d5)
	Device driver version: 3.0.1.0 **BIOS:** 3.0.1.0	**Device driver version:** 8.2.0.106.1p LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 LPe12000/2 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13	**Device driver version:** 8.03.07.08.10.3-k **BIOS:** 3.0 **Firmware:** 5.04.01 This level does not support QLE220
		Device driver version: 8.3.5.68.1p LPe11002 LPe1150 LPe1105-M4 **Firmware:** 2.82A4 **Adapter Boot Version:** 5.03A13 LPe12000/2 **Firmware:** 2.00A5 **Adapter Boot Version:** 5.03A13 LPe1205M **Firmware:** 2.00A5 **Adapter Boot Version:** 6.03A11 LPe16000/2 **Firmware:** 1.0.11.114 **Adapter Boot Version:** 8.00A14	

Supported Brocade and Dell PowerConnect FOS levels

Supported on MD3600f/MD3620f array firmware levels

Firmware: 07.75.20.62 with NVSRAM: N26x0-775890-009
Firmware: 07.80.41.60 with NVSRAM: N26x0-780890-901
Firmware: 07.80.62.60 with NVSRAM: N26X0-780890-901

Switches	Firmware	Description
Brocade		
200E	FOS 6.2.2	Brocade 4Gb 16 port FC switch
4100	FOS 6.4.1a	Brocade 4Gb 32 port FC switch
4100	FOS 6.4.2	Brocade 4Gb 64 port FC switch
4900	FOS 6.4.1a	Brocade 4Gb 64 port FC switch
4900	FOS 6.4.2	Brocade 4Gb 64 port FC switch
5000	FOS 6.4.1a	Brocade 4Gb 32 port FC switch
5000	FOS 6.4.2	Brocade 4Gb 32 port FC switch
300	FOS 6.4.1a	Brocade 8Gb 24 port FC switch
	FOS 6.4.2	
	FOS 7.0.1	
5100	FOS 6.4.1a	Brocade 8Gb 40 port FC switch
	FOS 6.4.2	
	FOS 7.0.1	
5300	FOS 6.4.1a	Brocade 8Gb 80 port FC switch
	FOS 6.4.2	
	FOS 7.0.1	
6505	FOS 7.0.1	Brocade 16Gb 24 port FC switch
6510	FOS 7.0.0b	Brocade 16Gb 48 port FC switch
	FOS 7.0.1	
DCX & DCX-4S	FOS 6.4.1a	Director class switch chassis
	FOS 6.4.2	
	FOS 7.0.1	
DCX8510-4	FOS 7.0.0b	Director class switch chassis
	FOS 7.0.1	
DCX8510-8	FOS 7.0.0b	Director class switch chassis
	FOS 7.0.1	
FC8-48		48 port 8Gb FC blade module for DCX an DCX8510 chassies
FC8-32		32 port 8Gb FC blade module for DCX an DCX8510 chassies
FC8-16		16 port 8Gb FC blade module for DCX an DCX8510 chassies
FC16-32		32 port 16Gb FC blade module for DCX8510 chassies
FC16-48		48 port 16Gb FC blade module for DCX8510 chassies
Dell PowerConnect B-DCX-4S	FOS 6.4.1a	Dell PowerConnect Director class switch chassis
	FOS 6.4.2	
	FOS 7.0.1	
Dell PowerConnect DCX8510-4	FOS 7.0.0b	Director class switch chassis
	FOS 7.0.1	
Dell PowerConnect DCX8510-8	FOS 7.0.0b	Director class switch chassis
	FOS 7.0.1	

FC8-48		48 port 8Gb FC blade module
FC8-32		32 port 8Gb FC blade module
FC8-16		16 port 8Gb FC blade module
FC16-32		32 port 16Gb FC blade module
FC16-48		48 port 16Gb FC blade module

Supported Dell M1000e Fibre Channel IOMs

Supported on MD3600f/MD3620f array firmware levels

Firmware: 07.75.20.62 with NVSRAM: N26x0-775890-009
Firmware: 07.80.41.60 with NVSRAM: N26x0-780890-901
Firmware: 07.80.62.60 with NVSRAM: N26X0-780890-901

Fibre Channels IOMs	Firmware	Description
M5424	FOS 6.4.1a	24 port 8/4 Gb FC blade switch module
	FOS 6.4.2	
	FOS 7.0.1	
M5424-N	FOS 6.4.1a	24 port 8/4 Gb FC SAN module
	FOS 6.4.2	
	FOS 7.0.1	
FC8PT		16 port 8Gb FC Pass-through module

Tested Brocade, Cisco and Qlogic Fibre Channel Routers

FCIP Routers	Description
Brocade*	
7500	Brocade 7500 Extension switch
7800	Brocade 7800 Extension switch
Cisco*	
9216i	MDS 9216i Multilayer Fabric Switch
Qlogic*	
6142	SANbox 6142

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