



# Dell™ PowerVault™ MD Series Support Matrix

This document describes the support provided for PowerVault MD 34XX/38XX Series RAID Controller Firmware Version 08.25.11.60

Dell Engineering  
May 2017

## Revisions

| Date           | Description                                                                                                                                                                                                                                           |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| June 2015      | <ul style="list-style-type: none"> <li>Updated RAID controller NVSRAM and supported physical disk drive models</li> </ul>                                                                                                                             |
| July 2015      | <ul style="list-style-type: none"> <li>Updated supported physical disks section</li> <li>Updated supported Management Software</li> <li>Updated supported operating systems</li> <li>Updated Dell PowerVault MD-Series storage array rules</li> </ul> |
| September 2015 | <ul style="list-style-type: none"> <li>Updated AppAware section</li> <li>Added column to the HDD that specifies if a HDD is SED capable</li> <li>Updated version of CFW and HSW</li> </ul>                                                            |
| October 2015   | <ul style="list-style-type: none"> <li>Updated supported physical disks section</li> <li>Updated storage array rules for all models section</li> <li>Updated expansion enclosures section</li> <li>Updated the Windows ODX support section</li> </ul> |
| November 2015  | <ul style="list-style-type: none"> <li>Updated the Windows ODX support section</li> </ul>                                                                                                                                                             |
| March 2016     | <ul style="list-style-type: none"> <li>Discontinuing support of the VSS and VDS hardware providers.</li> <li>Updated version of CFW and HSW</li> <li>Updated supported physical disks section</li> <li>Updated supported operating systems</li> </ul> |
| July 2016      | <ul style="list-style-type: none"> <li>Added support for VMware with Fibre Channel Direct Connect</li> <li>Updated version of CFW and HSW</li> <li>Updated supported physical disks section</li> <li>Updated supported operating systems</li> </ul>   |
| October 2016   | <ul style="list-style-type: none"> <li>Updated version of CFW</li> <li>Updated supported physical disks section</li> </ul>                                                                                                                            |
| December 2016  | <ul style="list-style-type: none"> <li>Updated supported physical disks section</li> <li>Updated version of CFW and HSW</li> <li>Updated supported operating systems</li> <li>Updated storage array rules for dense array section</li> </ul>          |
| February 2017  | <ul style="list-style-type: none"> <li>Updated version of CFW</li> </ul>                                                                                                                                                                              |
| May 2017       | <ul style="list-style-type: none"> <li>Updated the supported physical disks section</li> <li>Updated version of CFW</li> <li>Updated the supported Operating Systems section</li> <li>Updated storage array rules</li> </ul>                          |



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## Notes, Cautions, and Warnings

**Note:** A note indicates important information that helps you make better use of your computer.

**Caution:** A caution indicates potential damage to hardware or loss of data if instructions are not followed.

**Warning:** A warning indicates a potential for property damage, personal injury, or death.

**Note:** This Support Matrix contains the latest compatibility and interoperability information. If you observe inconsistencies between this information and other MD-series documentation, consider this document superseding.



# 1 Introduction

This document provides information about supported software and hardware for Dell PowerVault MD3400, MD3420, MD3800i, MD3820i, MD3800f, MD3820f, MD3460, MD3860i, and MD3860f storage arrays, and usage considerations, recommendations, and rules.

**Note:** Unless specified, all information in this document is applicable to the latest RAID controller firmware version available at [Dell.com/support](http://Dell.com/support).



## 2 Changes in version A17

- Updated the supported physical disks section
- Updated version of CFW
- Updated the supported Operating Systems section
- Updated storage arrays rules



### 3 Supported data protocols

Table 1 Dell PowerVault MD-Series models and supported data protocols

| Dell PowerVault MD array model <sup>3</sup> | Data protocol                                                              |
|---------------------------------------------|----------------------------------------------------------------------------|
| MD3400 <sup>1</sup>                         | 12 Gbps direct attached SAS storage array with 12 drives (3.5 inch)        |
| MD3420 <sup>1</sup>                         | 12 Gbps direct attached SAS storage array with 24 drives (2.5 inch)        |
| MD3800i <sup>1</sup>                        | 10 Gbps iSCSI network storage array with 12 drives (3.5 inch)              |
| MD3820i <sup>1</sup>                        | 10 Gbps iSCSI network storage array with 24 drives (2.5 inch)              |
| MD3800f <sup>1</sup>                        | 16 Gbps Fibre Channel (FC) network storage array with 12 drives (3.5 inch) |
| MD3820f <sup>1</sup>                        | 16 Gbps FC network storage array with 24 drives (2.5 inch)                 |
| MD3460 <sup>2</sup>                         | 12 Gbps direct attached SAS storage dense array                            |
| MD3860i <sup>2</sup>                        | 10 Gbps iSCSI network storage dense array                                  |
| MD3860f <sup>2</sup>                        | 16 Gbps FC network storage dense array                                     |

#### NOTES:

<sup>1</sup> Dell PowerVault MD3400, MD3420, MD3800i, MD3820i, MD3800f, and MD3820f models support 120 physical disk drive slots in base configuration. With premium feature activation, 192 physical disk drive slots are supported.

<sup>2</sup> Dell PowerVault MD3x60i/MD3x60f dense array has default 120 drive slots support (with 20 drives minimum), and 180 drive slots support with PFK.

<sup>3</sup> Premium Feature Key (PFK) is optional on all models.



## 4 Dell PowerVault MD-Series storage array rules

This section contains both general and model-specific connectivity and consideration rules for Dell PowerVault MD storage arrays. The rules listed in Table 2 apply only to all storage array models. For rules applying to specific Dell PowerVault MD models, see Table 3 and Table 4.

**Note:** The Dell PowerVault MD3460, MD3860i, and MD3860f platforms are supported in dual-RAID controller (duplex) configurations only.

Table 2 MD-Series Storage Array rules for all models

| Rule                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | MD34x0 Series                        | MD38x0i series | MD38x0f series |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|----------------|----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 12 Gbps SAS                          | 10 Gbps iSCSI  | 16 Gbps FC     |
| Maximum number of host servers a single storage array can connect to with one RAID controller module installed                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 4                                    | 64             | 64             |
| Maximum number of host servers a single storage array can connect to with two RAID controller modules installed                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 8<br>(4, if using high availability) | 64             | 64             |
| Maximum number of Dell 12 Gbps SAS HBA cards supported in a single host server attached to single array. (Dell recommends you to use two Dell 12Gb SAS HBA cards for all redundant cabling configurations.)                                                                                                                                                                                                                                                                                                                                                        | 2<br>(each card has two ports)       | N/A            | N/A            |
| Unused ports on a Dell 12 Gbps SAS HBA card already connected to a Dell PowerVault MD3460 cannot connect to another device (such as a tape drive or other model storage array).                                                                                                                                                                                                                                                                                                                                                                                    | ✓                                    | N/A            | N/A            |
| Maximum number of Dell PowerVault MD Series Storage Arrays a host server may connect to.                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2 (HA)                               | 4              | 4              |
| A hot-spare for a disk group must be a physical disk drive 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 Dell PowerVault 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 a best practice to specify both management port IP addresses on the SMcli invocation:<br>SMcli 192.168.129.101 192.168.129.102 -c (2U Array)<br>SMcli 192.168.128.101 192.168.128.102 -c (4U Dense Array) | ✓                                    | ✓              | ✓              |



| Rule                                                                                                                                                                                                               | MD34x0 Series | MD38x0i series | MD38x0f series |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|----------------|
|                                                                                                                                                                                                                    | 12 Gbps SAS   | 10 Gbps iSCSI  | 16 Gbps FC     |
| On Linux systems, Device Mapper multipath drivers are required for multipath support.                                                                                                                              | ✓             | ✓              | ✓              |
| Coexistence of several Linux multi-path drivers is not supported. When using a Dell PowerVault MD3400 or MD3800 series array with Linux host servers, only the Linux Device Mapper failover driver is supported.** | ✓             | ✓              | ✓              |
| Virtual disks on Dell PowerVault MD Series Storage Arrays cannot be used for booting.                                                                                                                              | ✓             | ✓              | ✓              |
| Disk Groups can be migrated between a Dell PowerVault MD3460/3860i/3860f by following the appropriate disk group migration procedure***                                                                            | ✓             | ✓              | ✓              |
| Maximum size of a virtual disk in a dynamic disk pool: 64TB                                                                                                                                                        | ✓             | ✓              | ✓              |
| Disk pools cannot be migrated.                                                                                                                                                                                     | ✓             | ✓              | ✓              |
| Maximum capacity (disk space) for each array for dynamic disk pooling.                                                                                                                                             | 1024 TB       | 1024 TB        | 1024 TB        |
| Maximum SSD cache size allowed depends on the installed RAM per controller:<br>∞ 4GB RAM per controller supports up to 4TB SSD read cache<br>∞ 8GB RAM per controller supports up to 5TB SSD read cache            | ✓             | ✓              | ✓              |
| All iSCSI host ports on a controller must have the same port speed                                                                                                                                                 | N/A           | ✓              | N/A            |
| Maximum 12 Gbps SAS cable length supported is 6m.                                                                                                                                                                  | ✓             | ✓              | ✓              |



| Rule                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | MD34x0 Series | MD38x0i series | MD38x0f series |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 12 Gbps SAS   | 10 Gbps iSCSI  | 16 Gbps FC     |
| <p>If the iSCSI initiators are connected to Dell PowerVault MD3800i 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.</p> <p>If you do not enable the flow control, your iSCSI storage array may experience the degradation of the I/O performance.</p> <p>In addition to enabling the Ethernet IEEE 802.3x flow control, Dell recommends that you 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.</p> <p>Note that turning on the "PortFast" mode is different from turning off the whole operation of STP on the switch. With "PortFast" on, STP is still enabled on the switch ports. Turning off STP may affect the entire network and can leave the network vulnerable to physical topology loops.</p> | N/A           | ✓              | N/A            |
| For 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 must connect to only one iSCSI target port on the storage subsystem.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | N/A           | ✓              | N/A            |
| For Dell-Oracle Tested and Validated solutions on the Dell PowerVault MD arrays, refer to the following site <a href="http://en.community.dell.com/techcenter/enterprise-solutions/w/oracle_solutions/current-release.aspx">http://en.community.dell.com/techcenter/enterprise-solutions/w/oracle_solutions/current-release.aspx</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ✓             | ✓              | ✓              |
| The number of Virtual Disk (VD) copies is limited to a maximum of 511 with a maximum of 8 concurrent copies (applicable to RAID controller firmware version 08.10.05.60 or later).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ✓             | ✓              | ✓              |
| Remote replication is not supported in simplex mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | N/A           | ✓              | ✓              |
| For Fibre Channel and iSCSI controllers, if you use the SAS host ports, they must be connected to a SAS HBA on a separate host.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N/A           | ✓              | ✓              |
| Maximum number of iSCSI sessions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | N/A           | 512 per port   | N/A            |



| Rule                                                                                                                                                                                                                                                                                                           | MD34x0 Series | MD38x0i series | MD38x0f series |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|----------------|
|                                                                                                                                                                                                                                                                                                                | 12 Gbps SAS   | 10 Gbps iSCSI  | 16 Gbps FC     |
| Replication within iSCSI topology between MD32x0i, MD36x0i, or MD38x0i arrays is supported regardless of connection speed. Replication between iSCSI and FC topology is not supported.                                                                                                                         | N/A           | ✓              | N/A            |
| Replication within FC topology between MD36x0f or MD38x0f arrays is supported regardless of connection speed. Replication between iSCSI and FC topology is not supported.                                                                                                                                      | N/A           | N/A            | ✓              |
| Online Physical Disk Firmware Upgrade is supported                                                                                                                                                                                                                                                             | ✓             | ✓              | ✓              |
| When using physical disks of 6 TB or larger capacity, it is recommended to use either a RAID 6 Disk Group or a Dynamic Disk Pool (DDP). Due to the increased amount of time taken to reconstruct and copy-back, the chances for a second drive failure increases on either a RAID 1/10 or a RAID 5 Disk Group. | ✓             | ✓              | ✓              |
| Data Assurance capable drives are supported in the array, however the Data Assurance feature is not an available option for these arrays.                                                                                                                                                                      | ✓             | ✓              | ✓              |

Table 3 Dell PowerVault MD-Series Storage Array rules for non-dense, 2U models only (Dell PowerVault MD3400, MD3420, MD3800i, MD3820i, MD3800f, and MD3820f).

| Rule                                                                                                                                                                                                | MD3400 series | MD3800i series | MD3800f series        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|-----------------------|
|                                                                                                                                                                                                     | 12 Gbps SAS   | 10 Gbps iSCSI  | 16 Gbps Fibre Channel |
| Support for up to 120 physical disk drive slots (system default configuration).                                                                                                                     |               |                |                       |
| Up to nine MD1200 and/or MD1220 series expansion enclosures can be attached to a Dell PowerVault MD storage array. Any mixture of MD1200 and MD1220 enclosures for 120 physical slots is supported. | ✓             | ✓              | ✓                     |



| Rule                                                                                                                                                                                                                          | MD3400 series | MD3800i series | MD3800f series        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|-----------------------|
|                                                                                                                                                                                                                               | 12 Gbps SAS   | 10 Gbps iSCSI  | 16 Gbps Fibre Channel |
| Support for up to 192 physical disk drive slots using a premium feature option.                                                                                                                                               |               |                |                       |
| Up to 15 MD1200 and/or MD1220 series expansion enclosures can be attached to a Dell PowerVault MD storage array. Any mixture of MD1200 and MD1220 enclosures for a total of 192 physical slots is supported.                  | ✓             | ✓              | ✓                     |
| Maximum number of physical disk drives in a RAID5 or RAID6 disk group is 30. There is no limitation with RAID0 and RAID10 disk groups.                                                                                        | ✓             | ✓              | ✓                     |
| Attached MD1200 series expansion enclosures must be run in unified mode.                                                                                                                                                      | ✓             | ✓              | ✓                     |
| The number of snapshots is limited to: <ul style="list-style-type: none"> <li>• Maximum of 512 snapshots per array</li> <li>• Maximum of 128 snapshot per VD</li> <li>• Maximum of 32 snapshots per snapshot group</li> </ul> | ✓             | ✓              | ✓                     |
| The number of remote replicas is limited to: <ul style="list-style-type: none"> <li>• Maximum of 32 for each array</li> </ul>                                                                                                 | N/A           | ✓              | ✓                     |

Table 4 Dell PowerVault MD-Series Storage Array rules for dense, 4U models only (Dell PowerVaultMD3460, MD3860i, and MD3860f)

| Rule                                                                                                                             | MD3460 series | MD3860i series | MD3860f series        |
|----------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|-----------------------|
|                                                                                                                                  | 12 Gbps SAS   | 10 Gbps iSCSI  | 16 Gbps Fibre Channel |
| Support for up to 120 physical disk drive slots (system default configuration).                                                  |               |                |                       |
| You can attach one Dell MD3060e enclosure to a Dell PowerVault MD dense storage array.                                           | ✓             | ✓              | ✓                     |
| Support for up to 180 physical slots through a premium feature option.                                                           |               |                |                       |
| You can attach up to two Dell MD3060e enclosures to a Dell PowerVault MD dense storage array, for a total of 180 physical slots. | ✓             | ✓              | ✓                     |



| Rule                                                                                                                                   | MD3460 series | MD3860i series | MD3860f series        |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|-----------------------|
|                                                                                                                                        | 12 Gbps SAS   | 10 Gbps iSCSI  | 16 Gbps Fibre Channel |
| Maximum number of physical disk drives in a RAID5 or RAID6 disk group is 30. There is no limitation with RAID0 and RAID10 disk groups. | ✓             | ✓              | ✓                     |
| A minimum of 20 SAS HDDs or SSDs are required in each Dell PowerVault MD3x60 enclosure (4 in front slots of each drawer)               | ✓             | ✓              | ✓                     |



## 5 Default IPv4 settings for the management ports on the Power Vault MD-Series Storage 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 are used:

Table 5 Default IPv4 management port addresses

| <b>MD3400/MD3420/MD3800x/MD3820x</b> |                 |               |
|--------------------------------------|-----------------|---------------|
| Controller/port                      | IPv4 address    | Subnet mask   |
| Controller 0, Port 1                 | 192.168.129.101 | 255.255.255.0 |
| Controller 1, Port 1                 | 192.168.129.102 | 255.255.255.0 |
| <b>MD3460/MD3860x</b>                |                 |               |
| Controller/port                      | IPv4 address    | Subnet mask   |
| Controller 0, Port 0                 | 192.168.128.101 | 255.255.255.0 |
| Controller 1, Port 0                 | 192.168.128.102 | 255.255.255.0 |

### 5.1 Default IPv4 settings for the iSCSI ports on PowerVault MD38x0i Storage Arrays

**Note:** No default gateway is set.

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

Table 6 Default iSCSI port IPv4 addresses on MD38x0i storage arrays

| 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   |



## 6 Supported RAID controller firmware and NVSRAM

**Note:** Dell recommends gathering support information before performing any firmware upgrade.

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

Table 7 Latest RAID controller firmware and NVSRAM versions

| Software                 | Version          |
|--------------------------|------------------|
| RAID controller Firmware | 08.25.11.60      |
| RAID controller NVSRAM   | N2701-825890-004 |



## Supported iSCSI software initiators

Table 8 Supported iSCSI Initiators

| Operating system             | SW initiator vendor | SW initiator version | Notes            |
|------------------------------|---------------------|----------------------|------------------|
| Windows Server OS            | Microsoft           | RTM or later         | Included with OS |
| Red Hat Enterprise Linux     | Red Hat             | RTM or later         | Included with OS |
| SUSE Linux Enterprise Server | SUSE                | RTM or later         | Included with OS |
| VMware vSphere               | VMware              | RTM or later         | Included with OS |

**Note:** For more information about OS support, refer to Supported operating systems section of this document.



## 8 Supported protocol offload (TOE/iSCSI) adapters

Standard Gigabit and 10 Gigabit Ethernet adapters are supported when used with supported software iSCSI initiators. Hosts must have a standards compliant iSCSI initiator to access Dell PowerVault MD Series storage. Initiator support is provided by the initiator or operating system vendor. Dell PowerVault does not support Converged Network Adapters (CNA) in Converged mode. Although Dell PowerVault does not endorse or support initiators directly, this support matrix provides some useful configuration information for common initiators.

Dell PowerVault MD Series Arrays 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.

**Caution:** Hardware initiators are not supported by Dell.

Read the initiator documentation and Release Notes from the particular vendors, and the Dell PowerVault MD-Series Release Notes for up-to-date configuration recommendations.



## 9 Fibre Channel SFP+ transceiver support

Table 9 Supported Fibre Channel SFP+ transceivers

| Description             | Manufacturer | Mfr. part number | Dell P/N |
|-------------------------|--------------|------------------|----------|
| 16G SFP (FC) Short wave | Finisar      | FTLF8529P3BCVA   | TDTCP    |



## 10 Supported physical disks

**Caution:** Only physical disk drives with a Dell P/N listed in Table 10 are supported. All other physical disk drives purchased from the Dell Software and Peripheral store with a part number other than specified in the list are not supported.

Refer to the “MD3400/MD3800i/MD3860i/MD3860f Drivers and Downloads” section on [Dell.com/support](http://Dell.com/support) for the latest available physical disk drive firmware.

Table 10 Supported physical disk drive models

| Dell P/N | Form Factor | Model           | Capacity | Speed | Vendor           | SED |
|----------|-------------|-----------------|----------|-------|------------------|-----|
| 6R5R8    | 2.5"        | LB206M          | 200GB    | SSD   | Pliant (SanDisk) | No  |
| 8C38W    | 2.5"        | LB406M          | 400GB    | SSD   | Pliant (SanDisk) | No  |
| DPF1J    | 2.5"        | LB806M          | 800GB    | SSD   | Pliant (SanDisk) | No  |
| D3K4J    | 2.5"        | LB406R          | 400GB    | SSD   | Pliant (SanDisk) | No  |
| 5Y05N    | 2.5"        | LB806R          | 800GB    | SSD   | Pliant (SanDisk) | No  |
| F06P1    | 2.5"        | LB1606R         | 1.6TB    | SSD   | Pliant (SanDisk) | No  |
| TPWNJ    | 2.5"        | LB206S          | 200GB    | SSD   | Pliant (SanDisk) | No  |
| 8NW1H    | 2.5"        | LB406S          | 400GB    | SSD   | Pliant (SanDisk) | No  |
| 2XR0K    | 2.5"        | LT0200MO        | 200GB    | SSD   | SanDisk          | No  |
| C06VX    | 2.5"        | LT0400MO        | 400GB    | SSD   | SanDisk          | No  |
| 989R8    | 2.5"        | LT0800MO        | 800GB    | SSD   | SanDisk          | No  |
| JDTGX    | 2.5"        | LT1600MO        | 1.6TB    | SSD   | SanDisk          | No  |
| J19XM    | 2.5"        | LT0800RO        | 800GB    | SSD   | SanDisk          | No  |
| 2M61G    | 2.5"        | LT1600RO        | 1.6TB    | SSD   | SanDisk          | No  |
| M7KYX    | 2.5"        | LT0200WM        | 200GB    | SSD   | SanDisk          | No  |
| T2TPF    | 2.5"        | LT0400WM        | 400GB    | SSD   | SanDisk          | No  |
| FHFNJ    | 2.5"        | LT0800WM        | 800GB    | SSD   | SanDisk          | No  |
| MFC6G    | 2.5"        | MZILS400HEGR0D3 | 400GB    | SSD   | Samsung          | No  |
| HF06W    | 2.5"        | MZILS800HEHP0D3 | 800GB    | SSD   | Samsung          | No  |
| W5PP5    | 2.5"        | MZILS1T6HEJH0D3 | 1.6TB    | SSD   | Samsung          | No  |
| 8RC8K    | 2.5"        | MZILS3T2HMLH0D3 | 3.2TB    | SSD   | Samsung          | No  |
| 8Y64H    | 2.5"        | MZILS480HEGR0D3 | 480GB    | SSD   | Samsung          | No  |
| 7FNRX    | 2.5"        | MZILS960HEGR0D3 | 960GB    | SSD   | Samsung          | No  |
| 086DD    | 2.5"        | MZILS1T9HEJH0D3 | 1.92TB   | SSD   | Samsung          | No  |



| Dell P/N | Form Factor | Model           | Capacity | Speed | Vendor  | SED |
|----------|-------------|-----------------|----------|-------|---------|-----|
| JR1HP    | 2.5"        | MZILS3T8HMLH0D3 | 3.84TB   | SSD   | Samsung | No  |
| 6K55X    | 2.5"        | MK2001GRZB      | 200GB    | SSD   | Toshiba | No  |
| R2PJ7    | 2.5"        | MK4001GRZB      | 400GB    | SSD   | Toshiba | No  |
| K41XJ    | 2.5"        | PX02SMF020      | 200GB    | SSD   | Toshiba | No  |
| HKK8C    | 2.5"        | PX02SMF040      | 400GB    | SSD   | Toshiba | No  |
| TC2MH    | 2.5"        | PX02SMF080      | 800GB    | SSD   | Toshiba | No  |
| G4V45    | 2.5"        | PX02SMB160      | 1.6TB    | SSD   | Toshiba | No  |
| CV6W8    | 2.5"        | PX02SSF020      | 200GB    | SSD   | Toshiba | No  |
| 2H9WV    | 2.5"        | PX02SSF040      | 400GB    | SSD   | Toshiba | No  |
| PG19T    | 2.5"        | PX02SSB080      | 800GB    | SSD   | Toshiba | No  |
| N9PTK    | 2.5"        | PX03SNF080      | 800GB    | SSD   | Toshiba | No  |
| 0MXR2    | 2.5"        | PX03SNB160      | 1.6TB    | SSD   | Toshiba | No  |
| GM5R3    | 2.5"        | PX04SMB040      | 400GB    | SSD   | Toshiba | No  |
| M91TJ    | 2.5"        | PX04SMB080      | 800GB    | SSD   | Toshiba | No  |
| 77K16    | 2.5"        | PX04SMB160      | 1.6TB    | SSD   | Toshiba | No  |
| 63GYR    | 2.5"        | PX04SMB320      | 3.2TB    | SSD   | Toshiba | No  |
| N5Y85    | 2.5"        | PX04SVB048      | 480GB    | SSD   | Toshiba | No  |
| YYC10    | 2.5"        | PX04SVB096      | 960GB    | SSD   | Toshiba | No  |
| 4XC39    | 2.5"        | PX04SVB192      | 1.92TB   | SSD   | Toshiba | No  |
| GYMY9    | 2.5"        | PX04SVB384      | 3.84TB   | SSD   | Toshiba | No  |
| 06VJ7    | 2.5"        | PX04SRB048      | 480GB    | SSD   | Toshiba | No  |
| 4KG4X    | 2.5"        | PX04SRB096      | 960GB    | SSD   | Toshiba | No  |
| R87FK    | 2.5"        | PX04SRB192      | 1.92TB   | SSD   | Toshiba | No  |
| M09K5    | 2.5"        | PX04SRB384      | 3.84TB   | SSD   | Toshiba | No  |
| HPNDJ    | 2.5"        | PX04SHB020      | 200Gb    | SSD   | Toshiba | No  |
| YT53C    | 2.5"        | PX04SHB040      | 400GB    | SSD   | Toshiba | No  |
| RVCY3    | 2.5"        | PX04SHB080      | 800GB    | SSD   | Toshiba | No  |
| Y9VX5    | 2.5"        | PX04SHB160      | 1.6TB    | SSD   | Toshiba | No  |
| 43PCJ    | 2.5"        | PX05SVB048Y     | 480GB    | SSD   | Toshiba | No  |
| 503M7    | 2.5"        | PX05SVB096Y     | 960GB    | SSD   | Toshiba | No  |
| V0K7V    | 2.5"        | PX05SVB192Y     | 1.92TB   | SSD   | Toshiba | No  |
| 3DDFT    | 2.5"        | PX05SVB384Y     | 3.84TB   | SSD   | Toshiba | No  |
| JG XK2   | 2.5"        | PX05SRB048Y     | 480GB    | SSD   | Toshiba | No  |
| MW GK7   | 2.5"        | PX05SRB096Y     | 960GB    | SSD   | Toshiba | No  |
| 0FYFW    | 2.5"        | PX05SRB192Y     | 1.92TB   | SSD   | Toshiba | No  |
| XCRDV    | 2.5"        | PX05SRB384Y     | 3.84TB   | SSD   | Toshiba | No  |
| 5VHHG    | 2.5"        | PX05SMB040Y     | 400GB    | SSD   | Toshiba | No  |
| CN3JH    | 2.5"        | PX05SMB080Y     | 800GB    | SSD   | Toshiba | No  |
| GVTYD    | 2.5"        | PX05SMB160Y     | 1.6TB    | SSD   | Toshiba | No  |
| R1YFC    | 2.5"        | PX05SMB320Y     | 3.2TB    | SSD   | Toshiba | No  |



| Dell P/N | Form Factor | Model           | Capacity | Speed | Vendor  | SED |
|----------|-------------|-----------------|----------|-------|---------|-----|
| T6TWN    | 2.5"        | HUC101212CSS600 | 1.2 TB   | 10K   | HGST    | No  |
| K9VCF    | 2.5"        | HUC101830CSS204 | 300GB    | 10K   | HGST    | No  |
| 10DR3    | 2.5"        | HUC101860CSS204 | 600GB    | 10K   | HGST    | No  |
| 87GNY    | 2.5"        | HUC101812CSS204 | 1.2TB    | 10K   | HGST    | No  |
| RF9T8    | 2.5"        | HUC101818CS4204 | 1.8TB    | 10K   | HGST    | No  |
| VTHDD    | 2.5"        | HUC101818CS4204 | 1.8TB    | 10K   | HGST    | No  |
| RDKH0    | 2.5"        | HUC101830CSS204 | 300GB    | 10K   | HGST    | No  |
| P6GJX    | 2.5"        | HUC101860CSS204 | 600GB    | 10K   | HGST    | No  |
| 9XNF6    | 2.5"        | HUC101812CSS204 | 1.2TB    | 10K   | HGST    | No  |
| 5VNKK    | 2.5"        | HUC101830CSS200 | 300GB    | 10K   | HGST    | No  |
| 6DWVP    | 2.5"        | HUC101860CSS200 | 600GB    | 10K   | HGST    | No  |
| 0KV02    | 2.5"        | HUC101812CSS200 | 1.2TB    | 10K   | HGST    | No  |
| 851GV    | 2.5"        | HUC156030CSS204 | 300GB    | 15K   | HGST    | No  |
| 4J5P1    | 2.5"        | HUC156060CSS204 | 600GB    | 15K   | HGST    | No  |
| 0N0T4    | 2.5"        | HUC156030CSS204 | 300GB    | 15K   | HGST    | No  |
| TRCN6    | 2.5"        | HUC156060CSS204 | 600GB    | 15K   | HGST    | No  |
| T855K    | 2.5"        | HUC103014CSS600 | 146GB    | 10K   | Hitachi | No  |
| U709K    | 2.5"        | HUC103030CSS600 | 300GB    | 10K   | Hitachi | No  |
| YJ0GR    | 2.5"        | HUC106030CSS600 | 300GB    | 10K   | Hitachi | No  |
| 8WP8W    | 2.5"        | HUC106060CSS600 | 600GB    | 10K   | Hitachi | No  |
| CXF82    | 2.5"        | HUC109030CSS600 | 300GB    | 10K   | Hitachi | No  |
| G76RF    | 2.5"        | HUC109060CSS600 | 600GB    | 10K   | Hitachi | No  |
| H5WGN    | 2.5"        | HUC109090CSS600 | 900GB    | 10K   | Hitachi | No  |
| R730K    | 2.5"        | HUC151473CSS600 | 73GB     | 15K   | Hitachi | No  |
| W330K    | 2.5"        | HUC151414CSS600 | 146GB    | 15K   | Hitachi | No  |
| 745GC    | 2.5"        | ST9300605SS     | 300GB    | 10K   | Seagate | No  |
| R72NV    | 2.5"        | ST9600205SS     | 600GB    | 10K   | Seagate | No  |
| 8JRN4    | 2.5"        | ST9900805SS     | 900GB    | 10K   | Seagate | No  |
| XRRVX    | 2.5"        | ST9900605SS     | 900GB    | 10K   | Seagate | Yes |
| 7T0DW    | 2.5"        | ST9600204SS     | 600GB    | 10K   | Seagate | No  |
| 8MP93    | 2.5"        | ST9600104SS     | 600GB    | 10K   | Seagate | Yes |
| X160K    | 2.5"        | ST9146803SS     | 146GB    | 10K   | Seagate | No  |
| T871K    | 2.5"        | ST9300603SS     | 300GB    | 10K   | Seagate | No  |
| 148J7    | 2.5"        | ST9300503SS     | 300GB    | 10K   | Seagate | Yes |
| PGHJG    | 2.5"        | ST300MM0006     | 300GB    | 10K   | Seagate | No  |
| 7YX58    | 2.5"        | ST600MM0006     | 600GB    | 10K   | Seagate | No  |
| 2RR9T    | 2.5"        | ST900MM0006     | 900GB    | 10K   | Seagate | No  |
| TNX32    | 2.5"        | ST900MM0036     | 900GB    | 10K   | Seagate | Yes |
| 3P3DF    | 2.5"        | ST900MM0007     | 900GB    | 10K   | Seagate | No  |



| Dell P/N | Form Factor | Model        | Capacity | Speed | Vendor  | SED |
|----------|-------------|--------------|----------|-------|---------|-----|
| RMCP3    | 2.5"        | ST1200MM0007 | 1.2TB    | 10K   | Seagate | No  |
| 4RYFR    | 2.5"        | ST1200MM0027 | 1.2TB    | 10K   | Seagate | Yes |
| W345K    | 2.5"        | ST973452SS   | 73GB     | 15K   | Seagate | No  |
| X162K    | 2.5"        | ST9146852SS  | 146GB    | 15K   | Seagate | No  |
| 89TH4    | 2.5"        | ST9146752SS  | 146GB    | 15K   | Seagate | Yes |
| YJ2KH    | 2.5"        | ST300MM0088  | 300GB    | 15K   | Seagate | No  |
| R95FV    | 2.5"        | ST600MM0088  | 600GB    | 15K   | Seagate | No  |
| WXPCX    | 2.5"        | ST1200MM0088 | 1.2TB    | 15K   | Seagate | No  |
| NCT9F    | 2.5"        | ST300MP0026  | 300GB    | 15K   | Seagate | No  |
| FPW68    | 2.5"        | ST600MP0036  | 600GB    | 15K   | Seagate | No  |
| XTH17    | 2.5"        | ST900MP0026  | 900GB    | 15K   | Seagate | No  |
| RT8MY    | 2.5"        | DL900MP0136  | 900GB    | 15K   | Seagate | No  |
| V2KWT    | 2.5"        | ST1200MM0108 | 1.2TB    | 10K   | Seagate | Yes |
| 43N12    | 2.5"        | ST1800MM0018 | 1.8TB    | 10K   | Seagate | No  |
| WHR0G    | 2.5"        | ST1800MM0078 | 1.8TB    | 10K   | Seagate | Yes |
| VJ7CD    | 2.5"        | ST1800MM0168 | 1.8TB    | 10K   | Seagate | No  |
| 2M5JK    | 2.5"        | ST300MM0078  | 300GB    | 10K   | Seagate | No  |
| D1F14    | 2.5"        | ST600MM0238  | 600GB    | 10K   | Seagate | No  |
| FR6W6    | 2.5"        | ST1200MM0198 | 1.2TB    | 10K   | Seagate | No  |
| RVDCJ    | 2.5"        | ST1800MM0198 | 1.8TB    | 10K   | Seagate | No  |
| 7FJW4    | 2.5"        | ST300MP0005  | 300GB    | 15K   | Seagate | No  |
| 4HGTJ    | 2.5"        | ST600MP0005  | 600GB    | 15K   | Seagate | No  |
| 4X0XG    | 2.5"        | ST600MP0025  | 600GB    | 15K   | Seagate | Yes |
| 61XPF    | 2.5"        | ST9146853SS  | 146GB    | 15K   | Seagate | No  |
| H8DVC    | 2.5"        | ST9300653SS  | 300GB    | 15K   | Seagate | No  |
| 81N2C    | 2.5"        | ST9300453SS  | 300GB    | 15K   | Seagate | Yes |
| 55RMX    | 2.5"        | ST91000640SS | 1TB      | 7.2K  | Seagate | No  |
| 9W5WV    | 2.5"        | ST9500620SS  | 500GB    | 7.2K  | Seagate | No  |
| XKGH0    | 2.5"        | ST91000642SS | 1TB      | 7.2K  | Seagate | Yes |
| R734K    | 2.5"        | ST9500430SS  | 500GB    | 7.2K  | Seagate | No  |
| NV0G9    | 2.5"        | ST9500431SS  | 500GB    | 7.2K  | Seagate | Yes |
| XY986    | 2.5"        | ST2000NX0273 | 2TB      | 7.2K  | Seagate | No  |
| 56M6W    | 2.5"        | ST1000NX0453 | 1TB      | 7.2K  | Seagate | No  |
| FVX7C    | 2.5"        | ST2000NX0433 | 2TB      | 7.2K  | Seagate | No  |
| Y6W8N    | 2.5"        | ST2000NX0453 | 2TB      | 7.2K  | Seagate | Yes |
| D4N7V    | 2.5"        | ST1000NX0473 | 1TB      | 7.2K  | Seagate | No  |
| TMVN7    | 2.5"        | ST2000NX0463 | 2TB      | 7.2K  | Seagate | No  |
| 3NKW7    | 2.5"        | AL14SEB030N  | 300GB    | 7.2K  | Toshiba | No  |
| 453KG    | 2.5"        | AL14SEB060N  | 600GB    | 7.2K  | Toshiba | No  |



| Dell P/N | Form Factor | Model           | Capacity | Speed | Vendor          | SED |
|----------|-------------|-----------------|----------|-------|-----------------|-----|
| N9VVV    | 2.5"        | AL14SEB090N     | 900GB    | 7.2K  | Toshiba         | No  |
| 89D42    | 2.5"        | AL14SEB120N     | 1.2TB    | 7.2K  | Toshiba         | No  |
| 740Y7    | 2.5"        | MBF2300RC       | 300GB    | 10K   | Toshiba         | No  |
| 5R6CX    | 2.5"        | MBF2600RC       | 600GB    | 10K   | Toshiba         | No  |
| MTV7G    | 2.5"        | AL13SEB300      | 300GB    | 10K   | Toshiba         | No  |
| 5TFDD    | 2.5"        | AL13SEB600      | 600GB    | 10K   | Toshiba         | No  |
| RC34W    | 2.5"        | AL13SEB900      | 900GB    | 10K   | Toshiba         | No  |
| GP3FR    | 2.5"        | AL14SEB18EQ     | 1.8TB    | 10K   | Toshiba         | No  |
| 2TRM4    | 2.5"        | AL14SEB18EQY    | 1.8TB    | 10K   | Toshiba         | No  |
| 6DFD8    | 2.5"        | MK1401GRRB      | 146GB    | 15K   | Toshiba         | No  |
| NWH7V    | 2.5"        | MK3001GRRB      | 300GB    | 15K   | Toshiba         | No  |
| 4GN49    | 2.5"        | AL13SXB300N     | 300GB    | 15K   | Toshiba         | No  |
| 990FD    | 2.5"        | AL13SXB600N     | 600GB    | 15K   | Toshiba         | No  |
| 0RVDT    | 2.5"        | AL13SXB30EN     | 300GB    | 15K   | Toshiba         | No  |
| DYDW0    | 2.5"        | AL13SXB60EN     | 600GB    | 15K   | Toshiba         | No  |
| X79H3    | 2.5"        | WD3000BKHG      | 300GB    | 10K   | Western Digital | No  |
| C5R62    | 2.5"        | WD6000BKHG      | 600GB    | 10K   | Western Digital | No  |
| CWHNN    | 2.5"        | WD3001BKHG      | 300GB    | 10K   | Western Digital | No  |
| 96G91    | 2.5"        | WD6001BKHG      | 600GB    | 10K   | Western Digital | No  |
| 4X1DR    | 2.5"        | WD9001BKHG      | 900GB    | 10K   | Western Digital | No  |
| F9KW8    | 2.5"        | WD3002BKTG      | 300GB    | 10K   | Western Digital | No  |
| V1TX2    | 2.5"        | WD6002BKTG      | 600GB    | 10K   | Western Digital | No  |
| 99NCV    | 2.5"        | WD9002BKTG      | 900GB    | 10K   | Western Digital | No  |
| WTJVV    | 3.5"        | HUS724020ALS640 | 2TB      | 7.2K  | HGST            | No  |
| MY58D    | 3.5"        | HUS724030ALS640 | 3TB      | 7.2K  | HGST            | No  |
| 7J9RN    | 3.5"        | HUS724040ALS640 | 4TB      | 7.2K  | HGST            | No  |
| XP99D    | 3.5"        | HUS726020ALS214 | 2TB      | 7.2K  | HGST            | No  |
| TX8WW    | 3.5"        | HUS726040ALS214 | 4TB      | 7.2K  | HGST            | No  |
| VH6FW    | 3.5"        | HUS726020ALS210 | 2TB      | 7.2K  | HGST            | No  |
| X4FKY    | 3.5"        | HUS726040ALS210 | 4TB      | 7.2K  | HGST            | No  |
| PYM8J    | 3.5"        | HUS726060AL5214 | 6TB      | 7.2K  | HGST            | No  |
| 43V7V    | 3.5"        | HUH728080AL5204 | 8TB      | 7.2K  | HGST            | No  |
| KRDKK    | 3.5"        | HUH721008AL5200 | 8TB      | 7.2K  | HGST            | No  |
| 07FPR    | 3.5"        | HUH721010AL5200 | 10TB     | 7.2K  | HGST            | No  |
| X150K    | 3.5"        | HUS156030VLS600 | 300GB    | 15K*  | Hitachi         | No  |



| Dell P/N | Form Factor | Model           | Capacity | Speed | Vendor  | SED |
|----------|-------------|-----------------|----------|-------|---------|-----|
| T857K    | 3.5"        | HUS156045VLS600 | 450GB    | 15K*  | Hitachi | No  |
| W348K    | 3.5"        | HUS156060VLS600 | 600GB    | 15K*  | Hitachi | No  |
| VYRKH    | 3.5"        | HUS723020ALS640 | 2TB      | 7.2K  | Hitachi | No  |
| CWJ92    | 3.5"        | HUS723030ALS640 | 3TB      | 7.2K  | Hitachi | No  |
| R752K    | 3.5"        | ST3600002SS     | 600GB    | 10K*  | Seagate | No  |
| M525M    | 3.5"        | ST3300657SS     | 300GB    | 15K*  | Seagate | No  |
| H995N    | 3.5"        | ST3450857SS     | 450GB    | 15K*  | Seagate | No  |
| J762N    | 3.5"        | ST3600057SS     | 600GB    | 15K*  | Seagate | No  |
| D32VD    | 3.5"        | ST3450757SS     | 450GB    | 15K*  | Seagate | Yes |
| 5XTFH    | 3.5"        | ST3600957SS     | 600GB    | 15K*  | Seagate | Yes |
| U717K    | 3.5"        | ST3500414SS     | 500GB    | 7.2K  | Seagate | No  |
| U738K    | 3.5"        | ST31000424SS    | 1TB      | 7.2K  | Seagate | No  |
| R755K    | 3.5"        | ST32000444SS    | 2TB      | 7.2K  | Seagate | No  |
| X164K    | 3.5"        | ST31000425SS    | 1TB      | 7.2K  | Seagate | Yes |
| W350K    | 3.5"        | ST32000445SS    | 2TB      | 7.2K  | Seagate | Yes |
| 6VNCJ    | 3.5"        | ST500NM0001     | 500GB    | 7.2K  | Seagate | No  |
| 740YX    | 3.5"        | ST1000NM0001    | 1TB      | 7.2K  | Seagate | No  |
| 67TMT    | 3.5"        | ST2000NM0001    | 2TB      | 7.2K  | Seagate | No  |
| 1D9NN    | 3.5"        | ST32000645SS    | 2TB      | 7.2K  | Seagate | No  |
| 91K8T    | 3.5"        | ST33000650SS    | 3TB      | 7.2K  | Seagate | No  |
| 698PM    | 3.5"        | ST33000652SS    | 3TB      | 7.2K  | Seagate | Yes |
| FNW88    | 3.5"        | ST1000NM0023    | 1TB      | 7.2K  | Seagate | No  |
| 1P7DP    | 3.5"        | ST2000NM0023    | 2TB      | 7.2K  | Seagate | No  |
| 55H49    | 3.5"        | ST3000NM0023    | 3TB      | 7.2K  | Seagate | No  |
| 529FG    | 3.5"        | ST4000NM0023    | 4TB      | 7.2K  | Seagate | No  |
| 6P85J    | 3.5"        | ST4000NM0063    | 4TB      | 7.2K  | Seagate | Yes |
| NWCCG    | 3.5"        | ST6000NM0034    | 6TB      | 7.2K  | Seagate | No  |
| PRNR6    | 3.5"        | ST6000NM0034    | 6TB      | 7.2K  | Seagate | No  |
| GWD7D    | 3.5"        | ST1000NM0005    | 1TB      | 7.2K  | Seagate | No  |
| R7FKF    | 3.5"        | ST2000NM0005    | 2TB      | 7.2K  | Seagate | No  |
| XWM1W    | 3.5"        | ST4000NM0005    | 4TB      | 7.2K  | Seagate | No  |
| DGNTV    | 3.5"        | ST1000NM0045    | 1TB      | 7.2K  | Seagate | No  |
| K7VW5    | 3.5"        | ST2000NM0045    | 2TB      | 7.2K  | Seagate | No  |
| YXG4K    | 3.5"        | ST4000NM0025    | 4TB      | 7.2K  | Seagate | No  |
| RHVWG    | 3.5"        | ST6000NM0095    | 6TB      | 7.2K  | Seagate | No  |
| FCHXF    | 3.5"        | ST4000NM0135    | 4TB      | 7.2K  | Seagate | Yes |
| H0R8N    | 3.5"        | ST1000NM0085    | 1TB      | 7.2K  | Seagate | No  |
| 7RCGV    | 3.5"        | ST2000NM0155    | 2TB      | 7.2K  | Seagate | No  |
| 5JH5X    | 3.5"        | ST4000NM0295    | 4TB      | 7.2K  | Seagate | No  |
| GKWHP    | 3.5"        | ST8000NM0075    | 8TB      | 7.2K  | Seagate | No  |



| Dell P/N | Form Factor | Model        | Capacity | Speed | Vendor          | SED |
|----------|-------------|--------------|----------|-------|-----------------|-----|
| PDFHC    | 3.5"        | ST8000NM0135 | 8TB      | 7.2K  | Seagate         | Yes |
| M40TH    | 3.5"        | ST8000NM0185 | 8TB      | 7.2K  | Seagate         | No  |
| GPP3G    | 3.5"        | MG03SCA100   | 1TB      | 7.2K  | Toshiba         | No  |
| 829T8    | 3.5"        | MG03SCA200   | 2TB      | 7.2K  | Toshiba         | No  |
| 14X4H    | 3.5"        | MG03SCA300   | 3TB      | 7.2K  | Toshiba         | No  |
| 12GYY    | 3.5"        | MG03SCA400   | 4TB      | 7.2K  | Toshiba         | No  |
| 7KXJR    | 3.5"        | MK1001TRKB   | 1TB      | 7.2K* | Toshiba         | No  |
| WDC07    | 3.5"        | MK2001TRKB   | 2TB      | 7.2K* | Toshiba         | No  |
| GDM8H    | 3.5"        | MG04SCA20EN  | 2TB      | 7.2K  | Toshiba         | No  |
| 0F9W8    | 3.5"        | MG04SCA40EN  | 4TB      | 7.2K  | Toshiba         | No  |
| 3PRF0    | 3.5"        | MG04SCA60EE  | 6TB      | 7.2K  | Toshiba         | No  |
| HHX14    | 3.5"        | MG04SCA20ENY | 2TB      | 7.2K  | Toshiba         | No  |
| 1MVTT    | 3.5"        | MG04SCA40ENY | 4TB      | 7.2K  | Toshiba         | No  |
| 0V8G9    | 3.5"        | WD1000FYYG   | 1TB      | 7.2K  | Western Digital | No  |
| YY34F    | 3.5"        | WD2000FYYG   | 2TB      | 7.2K  | Western Digital | No  |
| 440RW    | 3.5"        | WD1001FYYG   | 1TB      | 7.2K  | Western Digital | No  |
| 37MGT    | 3.5"        | WD2001FYYG   | 2TB      | 7.2K  | Western Digital | No  |
| DPTW9    | 3.5"        | WD3001FYYG   | 3TB      | 7.2K  | Western Digital | No  |
| 202V7    | 3.5"        | WD4001FYYG   | 4TB      | 7.2K  | Western Digital | No  |

**Note:**

- 3.5" 15K rpm drives, 3.5" 10K RPM drives, and 3.5" 7.2K RPM drives marked with (\*) are not supported on Dell PowerVault MD dense arrays such as Dell PowerVault MD3460, MD3860i, and MD3860f
- The MD3 arrays can use 12Gbps HDD or SSD, but will negotiate to a speed of 6 Gbps.
- Encrypted SSD drives (SED-SSD) and 4Kn sector size drives are not supported on the MD34/MD38 series arrays:



## 11 Supported expansion enclosures

Dell PowerVault MD3x60 Series Dense Storage Arrays support a maximum of 180 physical disk drive slots (with premium feature activation). These additional slots support is provided only by up to two Dell PowerVault MD3060e expansion enclosures. For a system without premium feature activation, the physical disk drive slot limit is 120.

Table 11 Expansion enclosures supported on Dense (4U) storage arrays

| Enclosure model | Minimum firmware version |
|-----------------|--------------------------|
| MD3060e         | 03.9D                    |

Dell PowerVault MD34xx/38xx series storage arrays support a maximum of 192 physical disk drive slots (with premium feature activation). These additional slots can be provided by up to 15 MD1200 expansion enclosures, seven MD PowerVault MD1220 expansion enclosures, or a combination of both. When a combination of expansion enclosures is used, the total number of physical disk drive slots in the system cannot exceed 192. For a system without premium feature activation, the physical disk drive limit is 120.

Table 12 Expansion enclosures supported on Non-Dense (2U) storage arrays

| Enclosure model | Minimum firmware version |
|-----------------|--------------------------|
| MD1200          | 1.06                     |
| MD1220          | 1.06                     |

**Note:** Attaching a 4U (dense) expansion enclosure to a 2U (non-dense) RAID storage array is not supported. Alternately, a 2U expansion enclosure cannot be attached to a 4U RAID storage array. All EMMs in an expansion stack must be at the same firmware level.



## 12 Supported management software

The Dell PowerVault MD Storage software is composed of the Modular Disk Storage Manager (MDSM) and the Modular Disk Configuration Utility (MDCU). These management utilities are available on the Resource DVD provided with your system and online at **Dell.com/support**. The Dell PowerVault MD storage software is supported on all operating systems and guest operating systems listed in the Supported operating systems section. The management station must meet the following minimum requirements:

- 5 GB of free disk space
- For MDSM and MDCU, a graphical user interface (GUI) is required

The Dell PowerVault MD-Series Resource DVD and other supported management software details are shown in the following tables:

Table 13 Supported management software (Windows)

| Software component                                                      | Version         | Notes                                                                                                                                                                     |
|-------------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dell PowerVault MD Series Dense Storage Arrays Resource DVD             | 6.5.0.1         |                                                                                                                                                                           |
| Modular Disk Storage Manager                                            | 11.25.0306.0026 |                                                                                                                                                                           |
| Modular Disk Configuration Utility                                      | 2.1.0.68        | Supported on iSCSI only                                                                                                                                                   |
| Dell PowerVault MD34XX/38XX series Hardware Provider VDS/VSS Providers* |                 | Dell is discontinuing support of the VSS and VDS hardware providers. For information about deprecation, see the <i>Dell MD Series Storage Arrays Information Update</i> . |
| Dell PowerVault MD Storage Array vCenter Plug-in                        | see Table 15    |                                                                                                                                                                           |



| Software component                                                                      | Version                        | Notes                                                                                                |
|-----------------------------------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------|
| MD Storage Array VASA Provider (iSCSI and Fibre -Channel only)                          | see Table 16                   | Supported on:<br><br>Windows Server® 2008 R2 SP1 (64-bit version only)<br><br>Windows Server 2012 R2 |
| Dell PowerVault MD Storage Array Storage Replication Adapter (SRA) (Fibre Channel only) | See Table 17 in this document. |                                                                                                      |

\* Maximum number of concurrent backups supported while using the HW provider VSS provider with Clustered Shared Volumes is two.

Table 14 Supported management software (Linux)

| Software Component                          | Version         | Notes                               |
|---------------------------------------------|-----------------|-------------------------------------|
| MD Series Dense Storage Arrays Resource DVD | 6.5.0.1         |                                     |
| Modular Disk Storage Manager                | 11.25.0A06.0026 |                                     |
| Modular Disk Configuration Utility          | 2.1.0.68        | Supported with iSCSI storage arrays |

Table 15 Supported management software (VMware vCenter Plug-in)

| vCenter Plug-in version | VMware version supported                                          | Notes                                                       |
|-------------------------|-------------------------------------------------------------------|-------------------------------------------------------------|
| 3.0                     | All protocols:<br>• vSphere 6.5<br>• vSphere 6.0<br>• vSphere 5.5 | This is compatible only with firmware 08.20.11.60 or later. |
| 2.7                     | All protocols<br>vSphere 5.5<br>vSphere 5.1                       | This is compatible only with firmware 08.10.05.60 or later. |



Table 16 Supported management software VASA provider support  
(Supported on Fibre Channel and iSCSI arrays only)

| VASA version | VMware version supported                                                                                       | Notes                                      |
|--------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| 5.5          | vSphere™ Client<br>5.5/6.0/6.5<br>vCenter Server<br>5.5/6.0/6.5<br>Site Recovery Manager<br>(SRM) 5.1 or later | Supported on 08.10.05.60 firmware or later |

Table 17 Supported management software storage replication adapter support

| SRA version | VMware version supported                                                                                   | Notes                                                                                            |
|-------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| 5.1         | vSphere™ Client 5.0/<br>5.1/5.5<br>vCenter Server<br>5.0/5.1/5.5<br>Site Recovery Manager<br>(SRM) 5.1/5.5 | Supported on 08.10.05.60 firmware or later for the following storage arrays: MD38xxi and MD38xxf |



## 13 Supported operating systems

Where clustering is supported by the operating system, it is also supported on the PowerVault MD34xx, MD38xxi, and MD38xxf series storage arrays, subject to the following limitations:

Windows Server 2008 R2 – Windows Server 2016

- Maximum iSCSI nodes is 16
- Maximum SAS nodes is 4
- Maximum FC nodes is 16

Table 18 Dell PowerVault MD-Series operating system support

| Operating System                         | Mgmt. station | SAS host server | iSCSI host server | Fibre Channel host server | Notes & required hotfixes |
|------------------------------------------|---------------|-----------------|-------------------|---------------------------|---------------------------|
| <b>Windows Server 2016*</b>              |               |                 |                   |                           |                           |
| Standard server                          | ✓             | ✓               | ✓                 | ✓                         |                           |
| Datacenter server                        | ✓             | ✓               | ✓                 | ✓                         |                           |
| <b>Windows Server 2012 R2 (U1)*</b>      |               |                 |                   |                           |                           |
| Standard server and core                 | ✓             | ✓               | ✓                 | ✓                         | KB2966870                 |
| Datacenter server and core               | ✓             | ✓               | ✓                 | ✓                         | KB2966870                 |
| Foundation server and core               | ✓             | ✓               | ✓                 | ✓                         | KB2966870                 |
| <b>Windows Server 2008 R2 SP1*</b>       |               |                 |                   |                           |                           |
| Windows 2008 R2 SP1 Standard and Core    | ✓             | ✓               | ✓                 | ✓                         | KB2522766<br>KB2637197    |
| Windows 2008 R2 SP1 Enterprise and Core  | ✓             | ✓               | ✓                 | ✓                         | KB2522766<br>KB2637197    |
| Windows 2008 R2 SP1 Data Center and Core | ✓             | ✓               | ✓                 | ✓                         | KB2522766<br>KB2637197    |
| Windows 2008 R2 SP1 Foundation           | ✓             | ✓               | ✓                 | ✓                         | KB2522766<br>KB2637197    |



| Operating System                                | Mgmt. station | SAS host server | iSCSI host server | Fibre Channel host server | Notes & required hotfixes                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------|---------------|-----------------|-------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Windows 2008 R2 SP1 Web and Core                | ✓             |                 |                   |                           | KB2522766<br>KB2637197                                                                                                                                                                                                                                                                                                                                                                                             |
| Windows 2008 Storage Server R2 SP1 all editions | ✓             | ✓               | ✓                 | ✓                         | KB2522766<br>KB2637197                                                                                                                                                                                                                                                                                                                                                                                             |
| Windows 2008 R2 SP1 HPC Server                  | ✓             | ✓               | ✓                 | ✓                         | KB2522766<br>KB2637197                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Red Hat Enterprise Linux (RHEL)</b>          |               |                 |                   |                           |                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Red Hat Enterprise Linux 7.3 (x64 only)         | ✓             | ✓               | ✓                 | ✓                         | Basic Server install (Minimum)                                                                                                                                                                                                                                                                                                                                                                                     |
| Red Hat Enterprise Linux 7.2 (x64 only)         | ✓             | ✓               | ✓                 | ✓                         | Basic Server install (Minimum)                                                                                                                                                                                                                                                                                                                                                                                     |
| Red Hat Enterprise Linux 7.1 (x64 only)         | ✓             | ✓               | ✓                 | ✓                         | <p>Basic Server install (Minimum)</p> <p>The Linux sg driver has been disabled by default in RHEL 7.1 and is required for in-band management. To work around this, manually run <code>modprobe sg</code> or add it to an init script. After the driver is loaded, in-band management will be available.</p> <p>For more information about this issue, refer to <i>RHEL 7.1 Release Notes</i> issue BZ#1186462.</p> |



| Operating System                              | Mgmt. station | SAS host server | iSCSI host server | Fibre Channel host server | Notes & required hotfixes      |
|-----------------------------------------------|---------------|-----------------|-------------------|---------------------------|--------------------------------|
| Red Hat Enterprise Linux 7 (x64 only)         | ✓             | ✓               | ✓                 | ✓                         | Basic Server install (Minimum) |
| Red Hat Enterprise Linux 6.9 (x64 only)       | ✓             | ✓               | ✓                 | ✓                         | Basic Server install (Minimum) |
| Red Hat Enterprise Linux 6.8 (x64 only)       | ✓             | ✓               | ✓                 | ✓                         | Basic Server install (Minimum) |
| Red Hat Enterprise Linux 6.7 (x64 only)       | ✓             | ✓               | ✓                 | ✓                         | Basic Server install (Minimum) |
| Red Hat Enterprise Linux 6.6 (x64 only)       | ✓             | ✓               | ✓                 | ✓                         | Basic Server install (Minimum) |
| Red Hat Enterprise Linux 6.5 (x64 only)       | ✓             | ✓               | ✓                 | ✓                         | Basic Server install (Minimum) |
| <b>SUSE Linux Enterprise Server (SLES)</b>    |               |                 |                   |                           |                                |
| SUSE® Linux Enterprise Server 12.2 (x64 only) | ✓             | ✓               | ✓                 | ✓                         |                                |
| SUSE® Linux Enterprise Server 12.1 (x64 only) | ✓             | ✓               | ✓                 | ✓                         |                                |
| SUSE® Linux Enterprise Server 12 (x64 only)   | ✓             | ✓               | ✓                 | ✓                         |                                |
| SUSE® Linux Enterprise Server 11.4(x64 only)  | ✓             | ✓               | ✓                 | ✓                         |                                |
| <b>Virtualization Hosts / Hypervisors</b>     |               |                 |                   |                           |                                |



| Operating System        | Mgmt. station | SAS host server | iSCSI host server | Fibre Channel host server | Notes & required hotfixes                                                                                                                                                                                  |
|-------------------------|---------------|-----------------|-------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VMware vSphere 6.5      |               | ✓               | ✓                 | ✓                         | <p>* For supported array firmware versions, see VMware <a href="#">HCL</a></p> <p>* Supported path policies: MRU and RR</p> <p>* Direct attached iSCSI connection is not supported with VMware vSphere</p> |
| VMware vSphere 6.0 (U3) |               | ✓               | ✓                 | ✓                         | <p>* For supported array firmware versions, see VMware <a href="#">HCL</a></p> <p>* Supported path policies: MRU and RR</p> <p>* Direct attached iSCSI connection is not supported with VMware vSphere</p> |
| VMware vSphere 6.0 (U2) |               | ✓               | ✓                 | ✓                         | <p>* For supported array firmware versions, see VMware <a href="#">HCL</a></p> <p>* Supported path policies: MRU and RR</p> <p>* Direct attached iSCSI connection is not supported with VMware vSphere</p> |



| Operating System                     | Mgmt. station | SAS host server | iSCSI host server | Fibre Channel host server | Notes & required hotfixes                                                                                                                                                                                 |
|--------------------------------------|---------------|-----------------|-------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VMware vSphere 6.0 (U1)              |               | ✓               | ✓                 | ✓                         | <p>* For supported array firmware versions, see VMware <a href="#">HCL</a></p> <p>*Supported path policies: MRU and RR</p> <p>* Direct attached iSCSI connection is not supported with VMware vSphere</p> |
| VMware vSphere 5.5 (U3)              |               | ✓               | ✓                 | ✓                         | <p>* For supported array firmware versions, see VMware <a href="#">HCL</a></p> <p>*Supported path policies: MRU and RR</p> <p>* Direct attached iSCSI connection is not supported with VMware vSphere</p> |
| VMware vSphere 5.1 (U3)              |               | ✓               | ✓                 | ✓                         | <p>* For supported array firmware versions, see VMware <a href="#">HCL</a></p> <p>*Supported path policies: MRU and RR</p> <p>* Direct attached iSCSI connection is not supported with VMware vSphere</p> |
| Microsoft Hyper-V Server 2016        | ✓             | ✓               | ✓                 | ✓                         |                                                                                                                                                                                                           |
| Microsoft Hyper-V Server 2012 R2     | ✓             | ✓               | ✓                 | ✓                         |                                                                                                                                                                                                           |
| Microsoft Hyper-V Server 2008 R2 SP1 |               | ✓               | ✓                 |                           |                                                                                                                                                                                                           |



| Operating System                            | Mgmt. station | SAS host server | iSCSI host server | Fibre Channel host server | Notes & required hotfixes |
|---------------------------------------------|---------------|-----------------|-------------------|---------------------------|---------------------------|
| Windows Server 2008 R2 SP1 with Hyper-V     | ✓             | ✓               | ✓                 | ✓                         |                           |
| <b>Windows Desktop Operating Systems</b>    |               |                 |                   |                           |                           |
| Windows 10 (x64 only)<br>Pro<br>Enterprise  | ✓             |                 |                   |                           |                           |
| Windows 8.1 (x64 only)<br>Pro<br>Enterprise | ✓             |                 |                   |                           |                           |
| Windows 8 (x64 only)<br>Pro<br>Enterprise   | ✓             |                 |                   |                           |                           |
| Windows 7 (x86, x64)                        | ✓             |                 |                   |                           |                           |

**\*Note:** Core editions of Windows server can manage only storage arrays by using the SMcli client.



## 14 Windows ODX support

The MD34XX or MD38XX Series Storage Arrays support Windows ODX for Windows Server 2012 R2 or later.

**Note:** ODX is disabled by default and must be enabled using an SMcli command. For more information, see the *Dell PowerVault MD 34XX/38XX Series Storage Arrays CLI Guide* at [Dell.com/support](http://Dell.com/support).



## 15 ALUA support on supported host operating systems

The following operating systems supported by your Dell PowerVault MD Series storage arrays support ALUA natively. Configuration steps are not required to enable ALUA on these operating systems.

- Microsoft Windows 2008R2 SP1 and later
- Microsoft Windows Server 2012 R2 and later
- Microsoft Windows 2016 and later
- Red Hat Enterprise Linux 6.5 and later
- SUSE Linux Enterprise Server 11 with Service Pack 4 and later
- VMware vSphere ESXi 5.1 and later

For more information about the ALUA configuration, see the *MD Series Administrator's Guide* available at **Dell.com/support**.



## 16 Supported device mapper software

Table 19 Supported device mapper software

| Operating system                  | Component | Supported Version |
|-----------------------------------|-----------|-------------------|
| SUSE Linux Enterprise Server 12.2 | Native    | Native            |
| SUSE Linux Enterprise Server 12.1 | Native    | Native            |
| SUSE Linux Enterprise Server 12   | Native    | Native            |
| SUSE Linux Enterprise Server 11.4 | Native    | Native            |
| Red Hat Enterprise Linux 7.3      | Native    | Native            |
| Red Hat Enterprise Linux 7.2      | Native    | Native            |
| Red Hat Enterprise Linux 7.1      | Native    | Native            |
| Red Hat Enterprise Linux 7        | Native    | Native            |
| Red Hat Enterprise Linux 6.9      | Native    | Native            |
| Red Hat Enterprise Linux 6.8      | Native    | Native            |
| Red Hat Enterprise Linux 6.7      | Native    | Native            |
| Red Hat Enterprise Linux 6.6      | Native    | Native            |
| Red Hat Enterprise Linux 6.5      | Native    | Native            |



## 17 Supported SAS host bus adapters

Go to **Dell.com/support** to download the latest supported version of the 12Gbps SAS HBA firmware and drivers for your specific server hardware platform.

**Note:** The LSI 9300-8e HBA is compatible with all Dell PowerEdge 11<sup>th</sup>, 12<sup>th</sup>, and 13<sup>th</sup> generation servers that have a PCI Express (PCIe) x8 slot.

**Warning:** Do not connect the SAS HBA cables to the connectors on a Dell PowerEdge 11th and 12th generation servers, when the servers are powered on. The cables may be difficult to insert into the HBA connectors and might need some manipulation.

Table 20 Supported 12Gbps SAS HBAs

| Vendor | Model           | Dell P/N                                    |
|--------|-----------------|---------------------------------------------|
| LSI    | 9300-8e         | 156NC<br>J91FN                              |
| Dell   | 12 Gbps SAS HBA | T93GD (Low profile)<br>2PHG9 (Full profile) |

**Note:** The Dell 12Gbps SAS HBA is only supported in Dell PowerEdge 13th generation servers.



## 18 Supported Fibre Channel host bus adapters

Table 21 Supported Fibre Channel HBAs

| Host bus adapter name | Direct-attach config** | Fabric config | Dell P/N                        | Available from                                     |
|-----------------------|------------------------|---------------|---------------------------------|----------------------------------------------------|
| <b>Qlogic*</b>        |                        |               |                                 |                                                    |
| QLE2660               | ✓                      | ✓             | 0187V<br>TC40H<br>(low-profile) | Dell                                               |
| QLE2662               | ✓                      | ✓             | 9J1RG<br>7JKH4<br>(low-profile) | Dell                                               |
| QLE2670               | ✓                      | ✓             |                                 | <a href="http://www.qlogic.com">www.qlogic.com</a> |
| QLE2672               | ✓                      | ✓             |                                 | <a href="http://www.qlogic.com">www.qlogic.com</a> |
| QLE2560               | ✓                      | ✓             |                                 | <a href="http://www.qlogic.com">www.qlogic.com</a> |
| QLE2562               | ✓                      | ✓             |                                 | <a href="http://www.qlogic.com">www.qlogic.com</a> |
| <b>Emulex*</b>        |                        |               |                                 |                                                    |
| LPe16000              | ✓                      | ✓             | W12YJ<br>XRNN5<br>(low-profile) | Dell                                               |
| LPe16002              | ✓                      | ✓             | 4G6WF<br>HD2MG<br>(low-profile) | Dell                                               |
| LPe 12000             | ✓                      | ✓             |                                 | <a href="http://www.emulex.com">www.emulex.com</a> |
| LPe 12002             | ✓                      | ✓             |                                 | <a href="http://www.emulex.com">www.emulex.com</a> |

\* See Required timeout settings for Fibre Channel host bus adapters for required timeout settings by manufacturer.

\*\*Only certain OSs support direct attach configurations. See Supported Fibre Channel direct-attach configuration operating systems for detailed list



## 19 Supported Fibre Channel direct-attach configuration operating systems

This solution supports the following list of direct-attached configuration operating systems.

- Microsoft Windows Server 2016
- Microsoft Windows Server 2012 R2
- Microsoft Windows Server 2008 R2 SP1
- Red Hat Enterprise Linux 7.0 or later
- Red Hat Enterprise Linux 6.5 or later
- SUSE Linux Enterprise Server 12.0 or later
- VMware vSphere 5.5 (U3) or later
- VMware vSphere 6.0 or later
- VMware vSphere 6.5 or later



## 20 Required timeout settings for Fibre Channel host bus adapters

Table 22 shows required timeout settings for all Dell-supported Fibre Channel (FC) HBAs, by manufacturer, and OS. Ensure that any FC HBA connected to your PowerVault MD3860f storage array has these timeout values set as listed in Table 22.

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

- Emulex® HBAnyware® or OneCommand™ Manager
- QLogic SANsurfer FC HBA Manager

Table 22 Fibre Channel HBA timeout values (by Manufacturer)

| HBA manufacturer           | Timeout rarameter  | Required value (in seconds) |
|----------------------------|--------------------|-----------------------------|
| <b>Qlogic</b>              |                    |                             |
| Windows Server 2008 R2 SP1 | LinkDownTimeout    | 10                          |
|                            | PortDownRetryCount | 10                          |
| Linux only                 | qlport_down_retry  | 10                          |
| <b>Emulex</b>              |                    |                             |
| Windows only               | LinkTimeout        | 10                          |
|                            | NodeTimeout        | 10                          |
| Linux only                 | lpfc_devloss_tmo   | 10                          |



## 21 Supported fibre channel switches

Supported only on Fibre Channel (FC) storage arrays running the most current RAID firmware versions.

Table 23 Supported Fibre Channel switches

| Switches             | Description                                     |
|----------------------|-------------------------------------------------|
| <b>Dell</b>          |                                                 |
| S5000                | 48 port unified switch                          |
| <b>Brocade</b>       |                                                 |
| 300                  | 8 Gbps 24 port FC switch                        |
| 5100                 | 8 Gbps 40 port FC switch                        |
| 5300                 | 8 Gbps 80 port FC switch                        |
| 8000                 | 8 Gbps 8 port FC switch                         |
| 6505                 | 16 Gbps 24 port FC switch                       |
| 6510                 | 16 Gbps 48 port FC switch                       |
| 6520                 | 16 Gbps 96 port FC switch                       |
| DCX                  | Director class switch chassis                   |
| DCX-4S               | Director class switch chassis                   |
| 48000                | Director class switch chassis                   |
| DCX8510-x            | Director class switch chassis                   |
| <b>Qlogic SANbox</b> |                                                 |
| 3800                 | 8 Gbps 8 port FC switch                         |
| 5800                 | 8 Gbps scalable up to 120 ports FC switch stack |
| <b>Cisco</b>         |                                                 |
| Nexus 5548UP         | 8 Gbps 48 port FC switch                        |



| Switches     | Description                   |
|--------------|-------------------------------|
| Nexus 5596UP | 8 Gbps 96 port FC switch      |
| 9148         | 8 Gbps 48 port FC switch      |
| 9506         | 8 Gbps 192 port FC switch     |
| 9509         | 8 Gbps 48 port FC switch      |
| 9513         | 8 Gbps 528 port FC switch     |
| 9710         | Director class switch chassis |

