Dell Storage Enclosure Support Matrix

This document outlines support for the Dell PowerVault MD3060e.

Notes, Cautions, and Warnings

Contents

1   Introduction

When you use an enclosure for server expansion, and connect the enclosure to servers or other enclosures, it is referred to as a storage enclosure. This document provides information about supported software, firmware, and hardware for Dell Storage when used as a storage enclosure.

> NOTE: When the Dell PowerVault MD3060e is used for MD3 Series Storage Array expansion, it is referred to as an expansion enclosure. For information about the Dell PowerVault MD3060e when used as an expansion enclosure, refer to the *MD3 Series Storage Array* support matrix.

> NOTE: This Support Matrix contains the latest compatibility and interoperability information. This document supersedes all other documentation information.

1.1   Changes in A08

- Updated supported physical disk drives
- Added JBOD controller support section

2   Dell Storage enclosure rules

This section contains consideration rules for the Dell Storage enclosures.

Table 1   Dell Storage Enclosure Rules

Components	Dell PowerVault MD3060e
Maximum number of servers: • 2 Windows servers • 1 Linux server	✓
Maximum SAS cable length	4 m
Maximum number of Dell Storage enclosures in a configuration	4
Maximum number of solid state drives (SSDs) in a storage enclosure	25
Maximum number of SSDs in a storage enclosure drawer	5
Recommended Linux Multipath Policy. (On Linux systems, Device Mapper Multipath is required with multipath configurations).	Failover
Recommended Windows failover policy. (On Windows systems, MPIO is required with multipath configurations).	Failover-only

3 JBOD controller support

Table 2   JBOD Controller Support for 3060e

Controller	Support
Dell 12Gb SAS HBA	Dell PowerEdge 13th generation servers only[1]
LSI 9207-8e SAS HBA	Dell PowerEdge 12th generation servers and Dell PowerEdge 13th generation servers
ATTO R680[2]	Dell PowerEdge 12th generation servers and Dell PowerEdge 13th generation servers
MD3 RBOD Expansion	Dense MD3 arrays

(1) Limited system management functionality with FC430, FC630, and FC830

(2) The ATTO ExpressSAS R680 RAID adapter is sold and fulfilled through S&P, with technical support for the controller by the vendor. ATTO experts are based in the U.S. (8am to 8pm EST Monday through Friday) with English as the primary support language. ATTO warranty terms are 3 year, with repair for replacement in 5-10 business days of receipt.

3.1 Management Tools Statement

When used as expansion for PowerVault MD3 dense arrays, management for the PowerVault MD3060e is provided by the MD Storage Manager (MDSM). Refer to the appropriate MD Series Storage Arrays Deployment Guide for information about MDSM.

In supported server direct attach environments, the PowerVault MD3060e is managed by management software tools in the Operating System. The PowerVault MD3060e is not integrated with Dell OpenManage or the Dell Remote Access Controller (iDRAC) and may require changes to customer systems management methods. Refer to the MD3060e Deployment Guide for further information regarding Storage Enclosure Management Software.

4   Supported storage enclosure firmware

Dell Storage enclosures have two Enclosure Management Modules (EMMs). You must have both EMMs at the same firmware level and you must upgrade each EMM individually. EMMs do not automatically synchronize firmware versions.

Table 3   Storage Enclosure Firmware

Enclosure Model	Minimum Version Required
Dell PowerVault MD3060e	039D

5 Supported operating systems (OSs)

Where clustering is supported by the operating system, it is also supported on the Dell Storage enclosure, subject to the following limitations:

Table 4   Operating System Support

Operating System	SAS Host Server	Notes and Required Hotfixes
Windows		
Windows Server 2012 R2 Standard Server and Core	✓	Ensure you apply the latest OS updates.
Windows Server 2012 R2 Datacenter Server and Core	✓	Ensure you apply the latest OS updates.
Linux		
Red Hat Enterprise Linux 7.0 or later	✓	Ensure you apply the latest OS updates.
Red Hat Enterprise Linux 6.5 or later	✓	Ensure you apply the latest OS updates.
SUSE Linux Enterprise Server 12 or later	✓	Ensure you apply the latest OS updates.
SUSE Linux Enterprise Server 11.3 or later	✓	Ensure you apply the latest OS updates.
Ubuntu 14.4	✓	Ensure you apply the latest OS updates.
Ubuntu 12.04 LTS	✓	Ensure you apply the latest OS updates.
VMware		
VMware vSphere EXSi 5.5 or later	✓	Storage Enclosure CLI only

6 Supported SAS host bus adapters (HBAs)

The following HBAs are supported with the Dell storage enclosures:

- LSI 9207-8e SAS HBA (for Dell PowerEdge 12th and 13th generation servers)
- Dell 12 Gbps SAS HBA (for Dell PowerEdge 13th generation servers); Support for 3 dense enclosures only

You can obtain the supported HBA drivers and firmware from the Dell support website.

See the server Owner's Manual for HBA slot location and height requirements.

Table 5   Supported HBA Components

Vendor	Model	Component	Minimum Version Required
LSI	9207-8e	Firmware	20.00.00.00
		Windows driver	2.069.1
		RHEL driver	18.00.00.00-1
		Ubuntu driver	18.00.00.00-1
Dell	12 Gbps SAS HBA	Firmware	03.09.00.00
		Windows driver	2.50.75.01
		RHEL or SLES driver	4.00.01.00
		Ubuntu driver	Not supported on Ubuntu

7   Supported physical disk drives

Refer to the specific Dell storage enclosure **Drivers and Downloads** section on **support.dell.com** for the latest available physical disk drive firmware.

Table 6   Supported Physical Disk Drive Models for the Dell PowerVault MD3060e

Dell Product Number	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
K41XJ	2.5″	PX02SMF020	200GB	SSD	Toshiba	No
HKK8C	2.5″	PX02SMF040	400GB	SSD	Toshiba	No

Dell PowerVault MD3060e						
Dell Product Number	Form Factor	Model	Capacity	Speed	Vendor	SED
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

Dell PowerVault MD3060e						
Dell Product Number	Form Factor	Model	Capacity	Speed	Vendor	SED
T6TWN	2.5"	HUC101212CSS600	1.2 TB	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
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
CXF82	2.5"	HUC109030CSS600	300GB	10K	Hitachi	No
G76RF	2.5"	HUC109060CSS600	600GB	10K	Hitachi	No
H5WGN	2.5"	HUC109090CSS600	900GB	10K	Hitachi	No
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 PowerVault MD3060e						
Dell Product Number	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
K1JY9	2.5"	ST600MM0088	600GB	15K	Seagate	No
36RH9	2.5"	ST1200MM0088	1.2TB	15K	Seagate	No
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
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
6WC9D	2.5"	ST300MP0005	300GB	15K	Seagate	No
V5300	2.5"	ST600MP0005	600GB	15K	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
XY986	2.5"	ST2000NX0273	2TB	7.2K	Seagate	No
56M6W	2.5"	ST1000NX0453	1TB	7.2K	Seagate	No

Dell PowerVault MD3060e						
Dell Product Number	Form Factor	Model	Capacity	Speed	Vendor	SED
56M6W	2.5"	ST2000NX0433	2TB	7.2K	Seagate	No
Y6W8N	2.5"	ST2000NX0453	2TB	7.2K	Seagate	Yes
3NKW7	2.5"	AL14SEB030N	300GB	7.2K	Toshiba	No
453KG	2.5"	AL14SEB060N	600GB	7.2K	Toshiba	No
N9VVV	2.5"	AL14SEB090N	900GB	7.2K	Toshiba	No
89D42	2.5"	AL14SEB120N	1.2TB	7.2K	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
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
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
WTJVY	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

Dell PowerVault MD3060e						
Dell Product Number	Form Factor	Model	Capacity	Speed	Vendor	SED
TX8WW	3.5"	HUS726040ALS214	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
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
GKWHP	3.5"	ST8000NM0075	8TB	7.2K	Seagate	No
PDFHC	3.5"	ST8000NM0135	8TB	7.2K	Seagate	Yes
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

Dell PowerVault MD3060e						
Dell Product Number	Form Factor	Model	Capacity	Speed	Vendor	SED
FCHXF	3.5"	ST4000NM0135	4TB	7.2K	Seagate	Yes
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
GDM8H	3.5"	MG04SCA20EN	2TB	7.2K	Toshiba	No
GDM8H	3.5"	MG04SCA40EN	4TB	7.2K	Toshiba	No
3PRF0	3.5"	MG04SCA60EE	6TB	7.2K	Toshiba	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