

Dell PowerVault FluidFS Network Attached Storage

SUPPORT MATRIX

System Version 2.0.6730

*Revised:
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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.

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NOTE: This Support Matrix contains the latest compatibility and interoperability information. Should you encounter inconsistencies between this information and other documentation, this document should be considered superseding.

Changes in This Version

For more information on the updates in this version of FluidFS, see the *Dell PowerVault FluidFS NAS Solutions Release Notes For Maintenance Release 2.0.6730* at dell.com/support/manuals.

Introduction

This document provides information on supported software and hardware for the PowerVault NX3610, NX3600, NX3500 as well as usage considerations, recommendations and rules.

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

Table 1. MD-Series Models and Data Protocols Supported

	NX3500	NX3600	NX3610
Number of controllers per appliance	2	2	2
Max number of appliances per deployment	1	1	2
Max number of Virtual Disks presented to cluster	v.1=16 v.2=32	32	32
Max Size of Virtual Disk presented to cluster	v.1=15TB v.2=32TB	32TB	32TB
Supported backend storage	MD3200i MD3220i MD3600i MD3620i MD3260i MD3660i	MD3200i MD3220i MD3600i MD3620i MD3260i MD3660i	MD3600i MD3620i MD3260i MD3660i
Max number of MD-Series arrays per deployment	1	1	2
Supported RAID level on MD-Series array	1/10,5,6	1/10,5,6	1/10,5,6
Network cables required per appliance	12	8	8
Network switch ports required per appliance	10	8	8
Client ports per appliance	4	4	4

	NX3500	NX3600	NX3610
Interconnect ports per appliance	4	N/A	N/A
iSCSI SAN ports per appliance	4	4	4
Network ports	RJ-45	RJ-45	RJ-45
Max concurrent CIFS connections per appliance	200 ¹	200 ¹	1500 ²
Max snapshot schedules per Volume	512	512	512
Max snapshot schedules per Cluster	10,000	10,000	10,000
Max CIFS shares per Volume	1,024	1,024	1,024
Max CIFS shares per Cluster	1,024	1,024	1,024
Max NFS exports per Volume	1,024	1,024	1,024
Max NFS exports per Cluster	1,024	1,024	1,024
Maximum number of quotas	100000	100000	100,000
User Mapping support	NTFS & UNIX	NTFS & UNIX	NTFS & UNIX

FluidFS OS Supported Versions for PowerVault

NX3500	NX3600/3610
1.0.393 (RTS)	
1.0.400	
1.0.424	
1.0.425	
2.0.4700	2.0.4700
2.0.5100	2.0.5100

¹ Each controller can handle a maximum of 200 concurrent connections, however, if during a controller reboot or failure the number of connections exceeding 200 will be dropped. Therefore the maximum number listed is per appliance not per controller.

² Each controller can handle a maximum of 1500 concurrent connection, however if during a controller reboot or failure the number of connections exceeding 1500 will be dropped. Therefore the maximum number listed is per appliance not per controller.

NX3500	NX3600/3610
2.0.6110	2.0.6110
2.0.6220	2.0.6220
2.0.6370	2.0.6370

FluidFS Protocol Support

Functionality	V1.0	V2.0
Supports signed communication between FluidFS and AD	No	Yes
Supports signed communication between FluidFS and clients	No	Yes
Domain administrator or OU administrator account required to join FluidFS to active directory	Yes	Yes

Distribution	Client Protocol	Functionality	V1.0	V2.0
2003 , 2003R2, 2008, 2008R2 64bit	NTLM/KRB	Active directory single domain	Supported	Supported
2003 , 2003R2, 2008, 2008R2 64bit	NTLM/KRB	Active directory forest	Supported	Supported
2003 , 2003R2, 2008, 2008R2 64bit	NTLM/KRB	Active directory trust (1 way)	Supported	Supported
2003 , 2003R2, 2008, 2008R2 64bit	NTLM/KRB	Active directory requires signing in	Supported	Supported
2003 , 2003R2, 2008, 2008R2 64bit	NTLM/KRB	Active directory requires TSL/SSL	Not Supported	Not Supported
2003 , 2003R2, 2008, 2008R2 64bit	NTLM/KRB	Samba Active directory server	Supported	Supported
2003 , 2003R2, 2008, 2008R2 32bit, 64bit	DNS	windows DNS	Supported	Supported
Any Linux platform	DNS	Linux DNS	Supported	Supported
Any platform	NTP	NTP server	Supported	Supported
Any Linux platform	LDAP	OpenLDAP repository 2.1	Supported	Supported
Any Linux platform	LDAP	OpenLDAP repository 2.2	Supported	Supported

Distribution	Client Protocol	Functionality	V1.0	V2.0
Any Linux platform	LDAP	OpenLDAP repository 2.3	Supported	Supported
Any Linux platform	LDAP	OpenLDAP repository 2.4	Supported	Supported
2003 , 2003R2, 2008, 2008R2	LDAP	LDAP on Active directory (extending AD scheme to include UID/GID for NFS users)	Not Supported	Not Supported
Any Linux platform	NIS RPC	NIS (Network information services)	Supported	Supported
2003 , 2003R2,	NIS RPC	Windows Services for UNIX	Not Supported	Not Supported
2008, 2008R2	NIS RPC	Services for NFS	Not Supported	Supported
Any platform	NIS+	NIS+ server	Not Supported	Not Supported
Any platform	LDAP	Authenticated LDAP bind	Not Supported	Not Supported
Windows XP SP4	SMB 1.0	CIFS client behavior	Known Issue ³	Supported
Windows Vista	SMB 1.0	CIFS client behavior	Not Supported	Not Supported
Windows 7,SP1	SMB 1.0	CIFS client behavior	Supported	Supported
Windows 2000 SP4	SMB 1.0	CIFS client behavior	Supported	Supported
Windows 2003 SP3 , 2003R2 32bit	SMB 1.0	CIFS client behavior	Supported	Supported
Windows 2003 SP2 , 2003R2 64bit	SMB 1.0	CIFS client behavior	Supported	Supported
Windows 2008 , SP1 , 2008R2 x64	SMB 1.0	CIFS client behavior	Supported	Supported
Windows 2008 R2 , SP1 x86	SMB 1.0	CIFS client behavior	Supported	Supported
Any platform	SMB 2.0	CIFS client behavior	Not Supported	Not Supported
Any Linux platform	SMB 1.0	CIFS client behavior	Not Supported	Supported
MAC OSX 10.x	SMB 1.0	MAC client CIFS connection	Not Supported	Supported
CentOS 4.x,5.x,6.x x86	NFS V3.0	client NFS behavior	Supported	Supported
CentOS 4.x,5.x,6.x	NFS V3.0	client NFS behavior	Supported	Supported

³ Offline files with Microsoft XP are not supported.

Distribution	Client Protocol	Functionality	V1.0	V2.0
x86_64				
Ubuntu 9,10,11	NFS V3.0	client NFS behavior	Supported	Supported
SUSE 9 SP4,10 SP4, 11 SP2 x86	NFS V3.0	client NFS behavior	Supported	Supported
SUSE 9 SP4,10 SP4, 11 SP2 x86_64	NFS V3.0	client NFS behavior	Supported	Supported
Debian 6.0.x	NFS V3.0	client NFS behavior	Supported	Supported
RHEL 4,5,6 x86	NFS V3.0	client NFS behavior	Supported	Supported
RHEL 3 x86	NFS V3.0	client NFS behavior	Supported	Supported
Fedora 10,11,12,13, 14,15,16 x86	NFS V3.0	client NFS behavior	Supported	Supported
Mandrake 5,6,7,8,9	NFS V3.0	client NFS behavior	Supported	Supported
Solaris 10 , 11 x86	NFS V3.0	client NFS behavior	Supported	Supported
Solaris 10 , 11 x86_64	NFS V3.0	client NFS behavior	Supported	Supported
Solaris 10 , 11 sparc_64	NFS V3.0	client NFS behavior	Supported	Supported
Oracle Enterprise Linux 5.x, 6.x	NFS V3.0	client NFS behavior	Supported	Supported
IBM-AIX 5.3 , 6.11	NFS V3.0	client NFS behavior	Supported	Supported
HP-UX 11i V1 (HP-UX 11.11), V2 (HP-UX 11.23),V3 (HP-UX 11.31)	NFS V3.0	client NFS behavior	Supported	Supported
VMware ESX4.x	NFS V3.0	client NFS behavior	Supported	Supported
VMware ESXi5.0	NFS V3.0	client NFS behavior	Supported	Supported
Any platform	NFS V4.0	NFS client behavior	Not Supported	Not Supported

Browser Support for FluidFS Management

	Version 1.0	Version 2.0
Internet Explorer 9.0	Supported	Supported
Internet Explorer 8.0	Supported	Supported
Mozilla Fire Fox 17.0	Supported	Supported

Google Chrome (all versions)	Not supported	Not supported
Safari (all versions)	Not supported	Not supported

Quota Considerations

1. For NAS volumes with mixed security styles, a unique quota must be set for both the Windows (Active Directory) users and UNIX (LDAP or NIS) users. The quotas for the Windows and UNIX user will be independent of each other even if the users are mapped (automatically or manually).
2. For NAS volumes with NTFS or UNIX style permissions, only one unique quota must be set. User mapping functionality handles cross protocol interoperability. The UNIX and Windows user shares the same quota for both Windows and UNIX accounts that are mapped.
3. In general, mixed security style is not recommended. It is recommended to use NTFS in mixed environments.

FluidFS Replication

	Version 1.0	Version 2.0
Maximum number of replication partners	16	16
Maximum number of active replications	10 outgoing and 20 incoming	10 outgoing and 20 incoming
Maximum Replication policies per appliance	100	256
Single NAS Volume to Single NAS Volume	Yes	Yes
Single NAS Volume to Multiple NAS Volumes	No	No
Cascading replication of single volume	No	No

Replication Considerations

1. Replication partners must have the same number of processors.
2. Replication partners must have the same number of controllers.
3. Target replication partners must be running the same version of FluidFS or N-1 as the source replication partner.
 - a. v.1 can replicate to v.1 or v.2
 - b. v.2 can replicate to v.2

c. v.2 cannot replicate to v.1

PowerVault Replication

		Target				
		NX3500 FluidFS v1 1 appliance	NX3500 FluidFS v2 1 appliance	NX3600 FluidFS v2 1 appliance	NX3610 FluidFS v2 1 appliance	NX3610 FluidFS v2 2 appliances
Source	NX3500 FluidFS v1 1 appliance	Yes	Yes	Yes	No	No
	NX3500 FluidFS v2 1 appliance	No	Yes	Yes	No	No
	NX3600 FluidFS v2 1 appliance	No	Yes	Yes	No	No
	NX3610 FluidFS v2 1 appliance	No	No	No	Yes	No
	NX3610 FluidFS v2 2 appliances	No	No	No	No	Yes

Antivirus Application Support

Application	FluidFS
Symantec ScanEngine 5.2	Supported
Symantec Protection Engine for Cloud Services	Supported
Exclude Path	511
Antivirus - File Extensions name	254
Antivirus - Max # Servers	4
Antivirus - Max Servers name length	254 (CLI)

NDMP Backup Agent Information

NDMP Protocol versions supported	FluidFS
V2	Supported
V3	Supported
V4	Supported
NDMP DMA Server	IPV4 only
NDMP Max DMA servers	3 servers
NDMP Password length	1-31 chars
NMDP User name length	1 - 63 bytes

Backup and Restore Application Support

Application	FluidFS
Symantec BackupExec 2010R3	Certified
Symantec BackupExec 2012	Certified
Symantec NetBackup 7.0	Certified
CommVault Simpana 9.0	Certified
IBM Tivoli	Certified

NDMP Environmental Variables Supported

NDMP Environmental Variables Supported	Description	Default
TYPE	Specifies the type of backup or restore application. The valid values are "dump" and "tar". For "dump" type backup, the NDMP Server will generate inode based file history. For "tar" type backup, the NDMP Server will generate file based file history. Values are case-sensitive.	dump
FILESYSTEM	Specifies the path to be used for backup. The path must be a directory.	N/A
LEVEL	Specifies the dump level for the backup operation. Valid values are "0" to "9".	0
HIST	Specifies how file history is to be generated. The supported values are "d", "f", "y", and "n". The value "d" specifies that node/dir format file history will be generated. The value "f" specifies that	Y

NDMP Environmental Variables Supported	Description	Default
	file based file history will be generated. The value "y" specifies that the default file history type (which is the node/dir format) will be generated. The value "n" means that no file history will be generated.	
DIRECT	Specifies whether the restore is a Direct Access Retrieval. Valid values are "Y" and "N".	Y
UPDATE	Specifies whether the dump level and dump time for a backup operation should be updated on the NDMP Server so subsequent backups can reference the dump level from previous backups. Valid values are "Y" and "N".	Y
EXCLUDE	Specifies a pattern for matching to files that are not to be backed up. The environment variable is a list of string separated by comma. Each entry will be used to match to nodes encountered during backup. The string can contain an asterisk ("*") as the wild card character. At most 32 comma separated strings will be supported. Entries containing "," should be escaped with the "\" character. Entries containing the "\" character should also be escaped with the "\\" character.	No default exclude pattern
RECURSIVE	Specifies whether the restore should be recursive or not. Valid values are "Y" and "N". If this variable is set to "N", then only the files that are the immediate children of the restore target are restored.	Y
RESTORE_OVERWRITE	Specifies whether the restore operation should overwrite existing files with the backup data. Valid values are "Y" and "N".	Y
LISTED_INCREMENTAL	<p>This environment controls behavior similar to the "listed incremental" option of the tar application. Using this environment variable, the user can specify whether additional directory listing is added to the backup stream during incremental backup so that the recovery operation can handle files and directories deleted between the incremental backups.</p> <p>During backup, if this variable is set, then additional directory listing will be added to the backup data stream. Because of the additional process required, this could impact the backup data stream size and performance.</p> <p>During recovery, if this variable is set and if the backup data stream was generated with this variable turned on, then NDMP server will handle deleting files and directories that are deleted between incremental backups.</p> <p>Setting this variable will require additional processing time and enlarge the backup data stream size (how much it change will depend on the number of elements in the backup data set). If this feature is not important to the end user, it should not be set.</p>	N