



NetApp Interoperability Matrix

NetApp® FCP, iSCSI SAN and NAS (NFS) Support

Fibre Channel, iSCSI SAN and NAS (NFS) deployments require configuration attention to ensure that host OS stack and infrastructure, and other ecosystem components interoperate correctly with NetApp storage systems. There are many component variations, and the matrices below define the components and versions that have been qualified and which can be used to construct SAN and NAS configurations that are supported end-to-end by NetApp (subject to the notes that identify special conditions). The list of supported configurations grows on a daily basis. For information about adding configurations, or obtaining support for your particular configuration via the NetApp Product Variance Request process, please contact your NetApp account team or partner.

If you experience technical issues with NetApp storage systems in configurations not listed in the NetApp SAN and NAS Support Matrix, the NetApp Technical Support Center will diagnose and support the configuration on a best-efforts basis, and resolution may require changing the configuration to one currently listed in the matrices or working with your account team or partner through the NetApp Product Variance Request process.

Models Supporting NetApp Storage System FCP, iSCSI and NFS

NetApp storage systems are built on a common operating system infrastructure - Data ONTAP®. Unless otherwise noted in the matrices, support by the Data ONTAP operating system is the criterion used to determine whether a system configuration is qualified in a particular environment rather than the particular hardware model of the system. All system models that run a qualified Data ONTAP version are equivalent for support purposes. The NetApp storage systems below run the Data ONTAP operating system and support the FCP, iSCSI and NFS protocols (list refers to stand-alone and high-availability storage systems). Refer to the Host Operating System matrices above for details about Data ONTAP versions qualified with a particular host. FAS2020 (Data ONTAP 7.2.2L1 only), FAS2050 (Data ONTAP 7.2.2L1 only) FAS250 (NFS and iSCSI only), FAS270, GF270 (NFS and iSCSI only) FAS3020, FAS3050, V3020, V3050 FAS3040, V3040, FAS3070, V3070 (Data ONTAP 7.2.1.1 and later; SSI and Standby cfmodes for FCP) FAS6030, FAS6070, V6030, V6070 (Data ONTAP 7.2 and later) FAS920, FAS940, FAS960, FAS980, GF920, GF940, GF960, GF980 F87 (NFS and iSCSI only), F810 (NFS and iSCSI only), F820 (NFS and iSCSI only), F825, GF825 (NFS and iSCSI only), F840 (NFS and iSCSI only), F880 (supported thru Data ONTAP 7.1.x) R100, R150, R200

Nondisruptive Upgrade of Data ONTAP® Software with FCP, iSCSI and NAS (NFS) Storage Systems

NetApp supports nondisruptive upgrade (NDU) of Data ONTAP with FAS and V-Series storage systems that support FCP, iSCSI or NFS protocols. NDU requires high-availability storage configurations (clustered systems), and NDU means that host applications continue to run during the Data ONTAP upgrade process without receiving I/O errors. NDU within Data ONTAP release families (Minor NDU), continues to be supported. Minor NDU support began with Data ONTAP 7.0, is

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supported with all subsequent generally available Data ONTAP releases and generally supported (non-PVR) FCP and iSCSI configurations, except as noted in "Supported Configurations" below, and refers to the ability to nondisruptively upgrade Data ONTAP from, for example, version 7.0.1 to 7.0.2. End users may perform Minor NDU as documented in the Data ONTAP Upgrade Guides - <http://now.netapp.com/NOW/knowledge/docs/ontap/rel723/>. NDU between Data ONTAP release families (Major NDU), is supported beginning with Data ONTAP 7.2.3. Major NDU is supported with generally supported (non-PVR) FCP, iSCSI or NFS configurations, and refers to the ability to upgrade from Data ONTAP 7.0.6 to 7.2.3, or from Data ONTAP 7.1.2 to 7.2.3. The FCP, iSCSI or NFS configuration for which Major NDU is sought must support both the source (beginning Data ONTAP release) and destination Data ONTAP releases, e.g., 7.0.6 and 7.2.3. End users may perform Major NDU by following the instructions in the Data ONTAP Upgrade Guide and supplemental documentation supplied by NetApp, after verifying their configuration with NetApp.

To verify a configuration for Major NDU support and receive the Major NDU supplemental procedure “Nondisruptive Upgrades to Data ONTAP Software on Systems with FCP, iSCSI and NFS Hosts: Procedure”:

- Access <http://now.netapp.com/NOW/knowledge/docs/san/overviews/ndu.htm>
- Complete the short online questionnaire to confirm the configuration parameters for the environment in which Major NDU is desired.
- NetApp will review the configuration parameters for the environment and return a message within two business days confirming that Major NDU is supported in the requested environment and providing the supplemental procedure, or noting that Major NDU is not supported for the requested environment and the configuration items that would require adjustment in order to perform Major NDU.

Major NDU Supported Configurations:

- Data ONTAP 7.0.6 to 7.2.3; 7.1.2 to 7.2.3.
- All cfmodes supported with the Data ONTAP source and destination levels supported with the FCP or iSCSI host configuration.
- FC disk drives only; Major NDU is not currently supported with systems using ATA or a mixture of ATA and FC drives.
- Storage System Parameters: FAS 980 and GF980 - 100 volumes (FlexVol or traditional), 200 LUNs, 1000 snapshots. FAS3050, FAS960, V3050, GF960 - 50 volumes (FlexVol or traditional), 100 LUNs, 500 snapshots. FAS3020, FAS940, FAS920, FAS270, V3020, GF940, GF920 (iSCSI only) - 25 volumes (FlexVol or traditional), 50 LUNs, 250 snapshots.

Note: the FAS6030, FAS6070, FAS3070, FAS3040, FAS2050, FAS2020, V6030, V6070, V3070, V3040 launched with support of Data ONTAP 7.2 and later. Data ONTAP releases earlier than 7.2 are not applicable to these platforms, so Major NDU support is not applicable currently.

- Maximum storage controller CPU utilization (% as measured by sysstat) = 50%.
- Maximum disk performance utilization (% as measured by sysstat) = 50%.
- Major NDU is supported with generally supported (non-PVR) FCP, iSCSI and NFS host operating system and I/O stack configurations, except the following configurations which are not currently supported with Major NDU:
 - FCP with HP-UX Veritas Storage Foundation, NetWare, Egenera
 - iSCSI with Solaris, Linux, HP-UX is not currently supported from 7.0.6 to 7.2.3 (Major NDU is supported from 7.1.2 to 7.2.3)

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- iSCSI with NetWare and Egenera

- SnapDrive and SnapManager with generally supported (non-PVR) FCP and iSCSI host operating system and I/O stack configurations, with both source and destination Data ONTAP release support.

- Fabric and Director switch support with generally supported (non-PVR) FCP configurations, with both source and destination Data ONTAP release support.

Major NDU is not supported currently with the following configurations:

- ATA disk drives

- SnapMirror and SnapVault must be disabled during Major NDU

- MetroCluster

- FCP with HP-UX Veritas Storage Foundation configurations, NetWare, Egenera.

- iSCSI with Solaris, Linux, HP-UX from Data ONTAP 7.0.6 to 7.2.3 (note: Major NDU is supported with these host configurations with Data ONTAP 7.1.2 to 7.2.3)

- iSCSI with NetWare and Egenera

- PVR-based configurations

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NetApp Interoperability Matrix
Windows Server 2003

Windows Server 2003

Name	State	Notes	Protocol	SnapDrive	Host-OS	NTAP-OS	Host-Util	Host-Multipath	SW-Initiator	Other

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Windows Server 2003

Name	State	Notes	Protocol	SnapDrive	Host-OS	NTAP-OS	Host-Util	Host-Multipath	SW-Initiator	Other
SDW Windows 2003 id067	Supported	592,593,597,1090,1101,1102,1847	iSCSI	SnapDrive 6.0 for Windows (64-bit, x64); SnapDrive 6.0 for Windows (32-bit, x86); SnapDrive 6.0.1 for Windows (64-bit, x64); SnapDrive 6.0.2 for Windows (32-bit, x86); SnapDrive 6.0.2 for Windows (64-bit, x64); SnapDrive 6.0.1 for Windows (32-bit, x86)	Microsoft Windows Server 2003 SE (SP2 32-bit, x86); Microsoft Windows Server 2003 EE (SP2 32-bit, x86); Microsoft Windows Server 2003 SE (SP2 64-bit, x64); Microsoft Windows Server 2003 EE (SP2 64-bit, x64); Microsoft Windows Server 2003 R2 SE (SP2 64-bit, x64); Microsoft Windows Server 2003 R2 SE (SP2 32-bit, x86); Microsoft Windows Server 2003 R2 EE (SP2 32-bit, x86); Microsoft Windows Server 2003 R2 EE (SP2 64-bit, x64)	NetApp Data ONTAP 7.2 (7.2.1 P1D9); NetApp Data ONTAP 7.2 (7.2.3); NetApp Data ONTAP 7.2 (7.2.4); NetApp Data ONTAP 7.2 (7.2.4L1); NetApp Data ONTAP 7.2 (7.2.2L1); NetApp Data ONTAP 7.2 (7.2.2); NetApp Data ONTAP 7.2 (7.2.1.1); NetApp Data ONTAP 7.2 (7.2.1); NetApp Data ONTAP 7.2 (7.2P2); NetApp Data ONTAP 7.2 (7.2P1); NetApp Data ONTAP 7.2 (7.2); NetApp Data ONTAP 7.1 (7.1.2.1); NetApp Data ONTAP 7.1 (7.1.2); NetApp Data ONTAP 7.1 (7.1.1.1); NetApp Data ONTAP 7.1 (7.1.1); NetApp Data ONTAP 7.1 (7.1.0.1); NetApp Data ONTAP 7.1 (7.1); NetApp Data ONTAP 7.3 (7.3.1); NetApp Data ONTAP 7.2 (7.2.6.1); NetApp Data ONTAP 7.3 (7.3.0); NetApp Data ONTAP 7.2 (7.2.5.1); NetApp Data ONTAP 7.1 (7.1.3); NetApp Data ONTAP 7.2 (7.2.6); NetApp Data ONTAP 7.2 (7.2.5)	NetApp iSCSI Windows Host Utilities 5.1; NetApp iSCSI Windows Host Utilities 5.0; NetApp iSCSI Windows Host Utilities 4.1	NetApp Data ONTAP DSM 3.3; NetApp Data ONTAP DSM 3.2R1; Microsoft iSCSI DSM	Microsoft S/W Initiator 2.07; Microsoft S/W Initiator 2.06; Microsoft S/W Initiator 2.08	

NetApp Interoperability Matrix

Windows Server 2003

Name	State	Notes	Protocol	SnapDrive	Host-OS	NTAP-OS	Host-Util	Host-Multipath	SW-Initiator	Other
SDW Windows 2003 id066	Supported	592,593,597,1090,1101,1102,1184,1847,2342	FC	SnapDrive 6.0.2 for Windows (32-bit, x86); SnapDrive 6.0.1 for Windows (64-bit, x64); SnapDrive 6.0.1 for Windows (32-bit, x86); SnapDrive 6.0 for Windows (32-bit, x86); SnapDrive 6.0.2 for Windows (64-bit, x64); SnapDrive 6.0 for Windows (64-bit, x64)	Microsoft Windows Server 2003 SE (SP2 32-bit, x86); Microsoft Windows Server 2003 SE (SP2 64-bit, x64); Microsoft Windows Server 2003 EE (SP2 32-bit, x86); Microsoft Windows Server 2003 EE (SP2 64-bit, x64); Microsoft Windows Server 2003 R2 SE (SP2 64-bit, x64); Microsoft Windows Server 2003 R2 SE (SP2 32-bit, x86); Microsoft Windows Server 2003 R2 EE (SP2 32-bit, x86); Microsoft Windows Server 2003 R2 EE (SP2 64-bit, x64)	NetApp Data ONTAP 7.2 (7.2.3); NetApp Data ONTAP 7.2 (7.2.1 P1D9); NetApp Data ONTAP 7.2 (7.2.4); NetApp Data ONTAP 7.2 (7.2.4L1); NetApp Data ONTAP 7.2 (7.2.2L1); NetApp Data ONTAP 7.2 (7.2.2); NetApp Data ONTAP 7.2 (7.2.1.1); NetApp Data ONTAP 7.2 (7.2.1); NetApp Data ONTAP 7.2 (7.2P2); NetApp Data ONTAP 7.2 (7.2P1); NetApp Data ONTAP 7.2 (7.2); NetApp Data ONTAP 7.1 (7.1.2.1); NetApp Data ONTAP 7.1 (7.1.2); NetApp Data ONTAP 7.1 (7.1.1.1); NetApp Data ONTAP 7.1 (7.1.1); NetApp Data ONTAP 7.1 (7.1); NetApp Data ONTAP 7.1 (7.1.0.1); NetApp Data ONTAP 7.3 (7.3.1); NetApp Data ONTAP 7.2 (7.2.6.1); NetApp Data ONTAP 7.3 (7.3.0); NetApp Data ONTAP 7.2 (7.2.5.1); NetApp Data ONTAP 7.1 (7.1.3); NetApp Data ONTAP 7.2 (7.2.6); NetApp Data ONTAP 7.2 (7.2.5)	NetApp FCP Windows Host Utilities 4.0; NetApp FCP Windows Host Utilities 5.0; NetApp FCP Windows Host Utilities 5.1	NetApp Data ONTAP DSM 3.2R1; NetApp Data ONTAP DSM 3.3	N/A	

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Windows Server 2003

Notes

592	MSCS up to 8 nodes.
593	Some features require a minimum version of ONTAP: Space Reclaimer: 7.2.1, SnapVault Backup: 7.2.1, GPT Partitions: 7.2.1, iGroup Mgmt: 7.2, Multistore: 7.2.2
597	Up to two (2) Microsoft Virtual Server Guest OS (x86) per host are supported running SnapDrive and SnapManager type applications in VMware environment.
1090	If using DFM for Protection Manager, DFM 3.7 is required.
1101	If using DFM, NetApp Host Agent for DFM 2.6 is required.
1102	VMware ESX 3.0.2 Update 1 plus patches (ESX-1004210 and 1004211) and later or ESX 3.5 Update 1 and later is required to support W2K3 Guest OS (x86, x64) using RDM LUNs via FCP HBA or iSCSI SW initiator from within the Guest OS.
1184	VMWare ESX 3.5 Update 1 plus patch ESX350-200806401-BG or ESX 3.5 Update 2 and later is required to support QLogic 4-Gbps FCP HBAs such as QLE2460, QLE2462, QLA2460, and QLA2462.
1847	SnapDrive 6.0.1 and later and VMware ESX 3.5 Update 2 and later or ESXi 3.5 Update 2 and later is required to support W2K8 Guest OS (x86, x64) using RDM LUNs via FCP HBA or iSCSI SW initiator from within the Guest OS.
2342	SnapDrive does not support MSCS with FC RDM LUNs in the VMware Guest OS.

NetApp Interoperability Matrix
Windows Server 2008

Windows Server 2008

Name	State	Notes	Protocol	SnapDrive	Host-OS	NTAP-OS	Host-Util	Host-Multipath	SW-Initiator	Other
SDW Windows 2008 id003	Supported	592,1090,1442	FC	SnapDrive 6.0.1 for Windows (64-bit, x64); SnapDrive 6.0.2 for Windows (32-bit, x86); SnapDrive 6.0.2 for Windows (64-bit, x64); SnapDrive 6.0.2 for Windows (IA64); SnapDrive 6.0 for Windows (32-bit, x86); SnapDrive 6.0.1 for Windows (32-bit, x86); SnapDrive 6.0 for Windows (IA64); SnapDrive 6.0 for Windows (64-bit, x64); SnapDrive 6.0.1 for Windows (IA64)	Microsoft Windows Server 2008 SE (32-bit, x86); Microsoft Windows Server 2008 EE (64-bit, x64); Microsoft Windows Server 2008 SE (64-bit, x64); Microsoft Windows Server 2008 EE (32-bit, x86); Microsoft Windows Server 2008 EE (IA64)	NetApp Data ONTAP 7.3 (7.3.1); NetApp Data ONTAP 7.3 (7.3.0)	NetApp FCP Windows Host Utilities 5.1; NetApp FCP Windows Host Utilities 5.0	Microsoft MS DSM	N/A	

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Windows Server 2008

Name	State	Notes	Protocol	SnapDrive	Host-OS	NTAP-OS	Host-Util	Host-Multipath	SW-Initiator	Other
SDW Windows 2008 id002	Supported	592,593,1090,1442,1847	iSCSI	SnapDrive 6.0.2 for Windows (IA64); SnapDrive 6.0.2 for Windows (32-bit, x86); SnapDrive 6.0.1 for Windows (IA64); SnapDrive 6.0 for Windows (64-bit, x64); SnapDrive 6.0.1 for Windows (32-bit, x86); SnapDrive 6.0 for Windows (32-bit, x86); SnapDrive 6.0 for Windows (IA64); SnapDrive 6.0.2 for Windows (64-bit, x64); SnapDrive 6.0.1 for Windows (64-bit, x64)	Microsoft Windows Server 2008 EE (IA64); Microsoft Windows Server 2008 SE (32-bit, x86); Microsoft Windows Server 2008 EE (64-bit, x64); Microsoft Windows Server 2008 EE (32-bit, x86); Microsoft Windows Server 2008 SE (64-bit, x64)	NetApp Data ONTAP 7.2 7.2.4; NetApp Data ONTAP 7.2 7.2.3; NetApp Data ONTAP 7.2 7.2.1; NetApp Data ONTAP 7.2 7.2.4L1; NetApp Data ONTAP 7.2 7.2.2L1; NetApp Data ONTAP 7.2 7.2.2; NetApp Data ONTAP 7.2 7.2.1.1; NetApp Data ONTAP 7.2 7.2P2; NetApp Data ONTAP 7.2 7.2P1; NetApp Data ONTAP 7.2 7.2; NetApp Data ONTAP 7.1 7.1.2.1; NetApp Data ONTAP 7.1 7.1.2; NetApp Data ONTAP 7.1 7.1.1.1; NetApp Data ONTAP 7.1 7.1.1; NetApp Data ONTAP 7.1 7.1; NetApp Data ONTAP 7.1 7.1.0.1; NetApp Data ONTAP 7.3 (7.3.1); NetApp Data ONTAP 7.2 (7.2.6.1); NetApp Data ONTAP 7.3 (7.3.0); NetApp Data ONTAP 7.2 (7.2.5.1); NetApp Data ONTAP 7.1 (7.1.3); NetApp Data ONTAP 7.2 (7.2.6); NetApp Data ONTAP 7.2 (7.2.5)	NetApp iSCSI Windows Host Utilities 5.1; NetApp iSCSI Windows Host Utilities 5.0; NetApp iSCSI Windows Host Utilities 4.1	NetApp Data ONTAP DSM 3.3; NetApp Data ONTAP DSM 3.2R1; Microsoft MS DSM	Microsoft S/W Initiator bundled_with_OS	

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Windows Server 2008

Name	State	Notes	Protocol	SnapDrive	Host-OS	NTAP-OS	Host-Util	Host-Multipath	SW-Initiator	Other
SDW Windows 2008 id001	Supported	592,593,1090,1442,1847	FC	SnapDrive 6.0.2 for Windows (IA64); SnapDrive 6.0.2 for Windows (32-bit, x86); SnapDrive 6.0.1 for Windows (IA64); SnapDrive 6.0 for Windows (64-bit, x64); SnapDrive 6.0.1 for Windows (32-bit, x86); SnapDrive 6.0 for Windows (32-bit, x86); SnapDrive 6.0 for Windows (IA64); SnapDrive 6.0.2 for Windows (64-bit, x64); SnapDrive 6.0.1 for Windows (64-bit, x64)	Microsoft Windows Server 2008 EE (32-bit, x86); Microsoft Windows Server 2008 SE (32-bit, x86); Microsoft Windows Server 2008 EE (64-bit, x64); Microsoft Windows Server 2008 EE (IA64); Microsoft Windows Server 2008 SE (64-bit, x64)	NetApp Data ONTAP 7.2 7.2.4L1; NetApp Data ONTAP 7.2 7.2.4; NetApp Data ONTAP 7.2 7.2.3; NetApp Data ONTAP 7.2 7.2.1; NetApp Data ONTAP 7.2 7.2.2L1; NetApp Data ONTAP 7.2 7.2.2; NetApp Data ONTAP 7.2 7.2.1.1; NetApp Data ONTAP 7.2 7.2P2; NetApp Data ONTAP 7.2 7.2P1; NetApp Data ONTAP 7.2 7.2; NetApp Data ONTAP 7.1 7.1.2.1; NetApp Data ONTAP 7.1 7.1.2; NetApp Data ONTAP 7.1 7.1.1.1; NetApp Data ONTAP 7.1 7.1.1; NetApp Data ONTAP 7.1 7.1; NetApp Data ONTAP 7.1 7.1.0.1; NetApp Data ONTAP 7.3 (7.3.1); NetApp Data ONTAP 7.2 (7.2.6.1); NetApp Data ONTAP 7.3 (7.3.0); NetApp Data ONTAP 7.2 (7.2.5.1); NetApp Data ONTAP 7.1 (7.1.3); NetApp Data ONTAP 7.2 (7.2.6); NetApp Data ONTAP 7.2 (7.2.5)	NetApp FCP Windows Host Utilities 5.1; NetApp FCP Windows Host Utilities 5.0; NetApp FCP Windows Host Utilities 4.0	NetApp Data ONTAP DSM 3.2R1; NetApp Data ONTAP DSM 3.3	N/A	

Notes

592	MSCS up to 8 nodes.
593	Some features require a minimum version of ONTAP: Space Reclaimer: 7.2.1, SnapVault Backup: 7.2.1, GPT Partitions: 7.2.1, iGroup Mgmt: 7.2, Multistore: 7.2.2

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1090	If using DFM for Protection Manager, DFM 3.7 is required.
1442	SnapDrive 6.0 and later for Windows in the Hyper-V child OS supports only the iSCSI Software Initiator. Microsoft support of the Hyper-v child OS consists of x86, x64 processor architecture, running Windows Server 2003 or Windows Server 2008.
1847	SnapDrive 6.0.1 and later and VMware ESX 3.5 Update 2 and later or ESXi 3.5 Update 2 and later is required to support W2K8 Guest OS (x86, x64) using RDM LUNs via FCP HBA or iSCSI SW initiator from within the Guest OS.