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DELL EMC NX WINDOWS NAS SERIES CONFIGURATION GUIDE

Dell EMC NX Windows NAS Series storage appliances combine the latest Dell EMC PowerEdge technology with Windows Storage Server 2016 from Microsoft for rapid deployment, easy management, and enhanced performance.

The best of both worlds

The Dell EMC NX Windows NAS Series is an affordable storage solution for customers who want the simplicity of Microsoft® Windows Server® together with the power of Dell EMC servers and storage — all in a ready-to-deploy NAS appliance. Available in three base models, Dell EMC NX storage appliances are designed to meet the needs of companies of all sizes:

* Dell EMC NX3240: 2U NAS appliance with up to two Intel® Xeon® processors and Up to 192TB of raw disk space. The NX3240 is an ideal storage solution for small and midsized companies.

* Dell EMC NX3340: 1U gateway appliance for large companies that require the utmost in capacity and availability. Two NX3340 appliances are typically deployed as a clustered frontend to a Dell EMC SC or PS Series or Dell EMC PoweVault ME4 Series storage arrays.

* Dell EMC NX430: 1U NAS appliance that pairs an Intel Xeon Processor E3-1220 v5 with up to 40TB of raw disk capacity. The NX430 is a great entry-level NAS solution, as well as an ideal storage solution for remote offices and branch offices.

New storage innovations from Microsoft

All Dell EMC NX Windows NAS Series storage appliances ship with Microsoft Windows Storage Server 2016 preinstalled for fast and easy deployment. Based on Windows Server 2016, Windows Storage Server 2016 Standard includes all of the major storage innovations in Microsoft's latest server operating system:

* Storage-agnostic, block-level, synchronous replication between servers or clusters

* Enhancements to Storage quality of service (QoS), data deduplication and ReFS

Affordable NAS appliances with the power of Microsoft Windows Storage Server 2016

* Fast and easy deployment

* Enhanced manageability, reliability, and performance

* Award-winning Dell EMC PowerEdge 13th and 14th generation hardware Dell EMC

* Simple, fast and affordable Dell EMC PowerVault ME4 Series Storage

Small/midsized businesses

Small and midsized businesses will find the Dell EMC NX3240 to be a powerful, reliable, easyto- use storage appliance that enables efficient and adaptable data sharing. Based on the PowerEdge 14th generation R740xd rack server, the NX3240 supports both file (SMB and NFS) and block (iSCSI) protocols, and is easily managed using the Microsoft server management interface (Server Manager) or Dell EMC's iDRAC9.

Figure 1 illustrates a typical deployment model for small and midsized businesses. Solution components shown are listed in table 1. For detailed NX3240 specifications, see table 4

Dell EMC NX3240 highlights

* Dual-socket, 2U rack mount NAS server

* Intel Xeon Bronze Processor family

* Up to 64GB memory

* SATA, NL-SAS or SAS drive options

* Up to 12 3.5" HDDs in front bay and 4 3.5" HDDs in mid bay for data; two 2.5" drives for the operating system

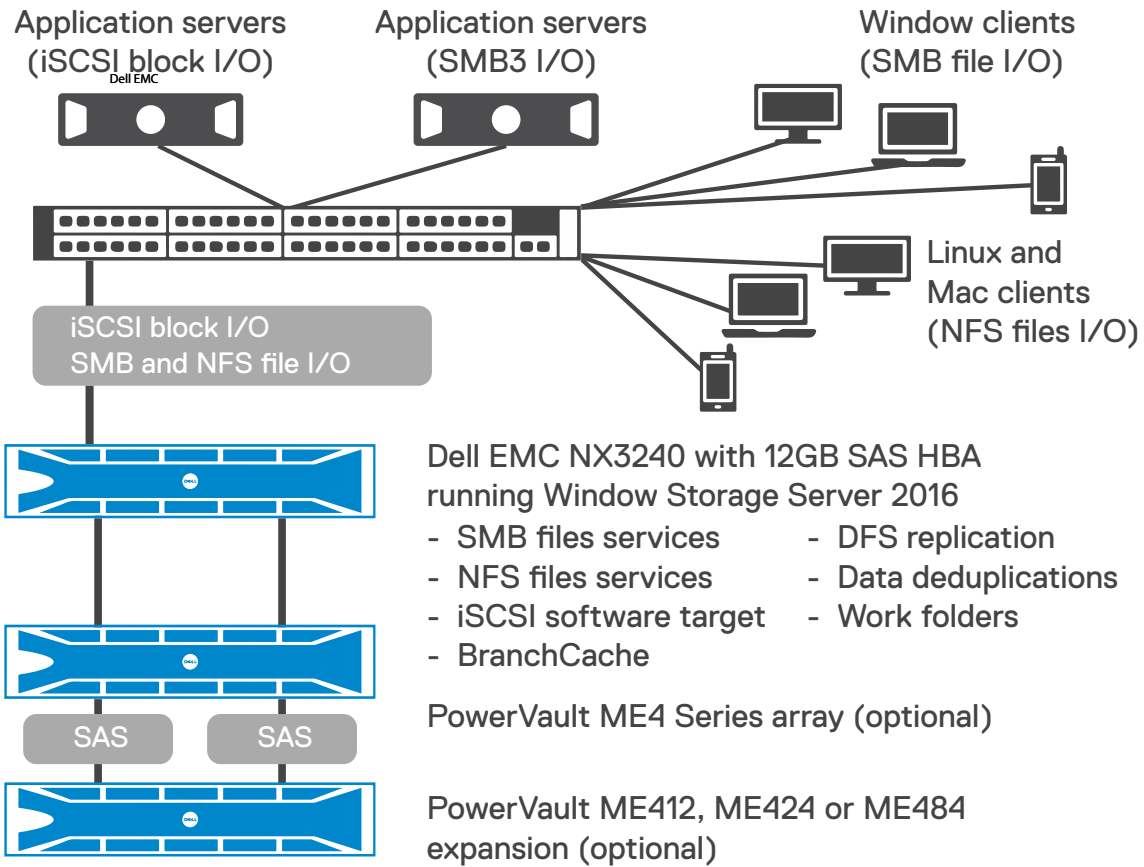* Up to 192TB raw capacity when using 12TB NL-SAS drives

Application servers (iSCSI block I/O)

Application servers (SMB3 I/O)

Window clients (SMB file I/O)

iSCSI block I/O
SMB and NFS file I/O

Linux and Mac clients (NFS files I/O)

Dell EMC NX3240 with 12GB SAS HBA running Window Storage Server 2016
- SMB files services   - DFS replication
- NFS files services   - Data deduplications
- iSCSI software target - Work folders
- BranchCache

PowerVault ME4 Series array (optional)

SAS   SAS

PowerVault ME412, ME424 or ME484 expansion (optional)

Figure 1 - Deployment model for small or midsized businesses

Component	product	Quantity
Storage appliance	Dell EMC NX3240	1
Client-side switch	Dell Networking switch	1
External RBOD array (optional – for expansion)	Dell EMC PowerVault ME4 Series	1
External JBOD (optional – for expansion)	Dell EMC PowerVault ME412, ME424 or ME484	1 or more
SAS Host Bus Adapter Card (optional – for expansion)	Dell 12Gbps SAS HBA	1
Windows Storage Server 2016 Standard	Preinstalled on Dell EMC NX3240	N/A

Table 1 - Solution components for small/midsized businesses

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Large businesses

Large businesses will appreciate the power and flexibility of the Dell EMC NX3340, a 1U gateway appliance based on PowerEdge 14th generation R640 rack server. It provides built-in clustering and failover capabilities for high availability, can scale to 64 cluster nodes, and supports both file (SMB and NFS) and block (iSCSI) protocols. The NX3340 is typically deployed in a two-node cluster connected to one of Dell EMC SC or Dell EMC PowerVault ME4 Series storage arrays for DAS and SAN.

Figure 2 illustrates a typical deployment model for large businesses. Solution components shown are listed in table 2. For detailed NX3340 specifications, see table 4.

Dell EMC NX3340 highlights

- Dual-socket, 1U rack mount NAS server and gateway
- Intel Xeon Bronze Processor family
- Up to 64GB memory
- Two or four hot-swap 2.5" NL-SAS or SAS drives for the operating system depending on the level of redundancy desired
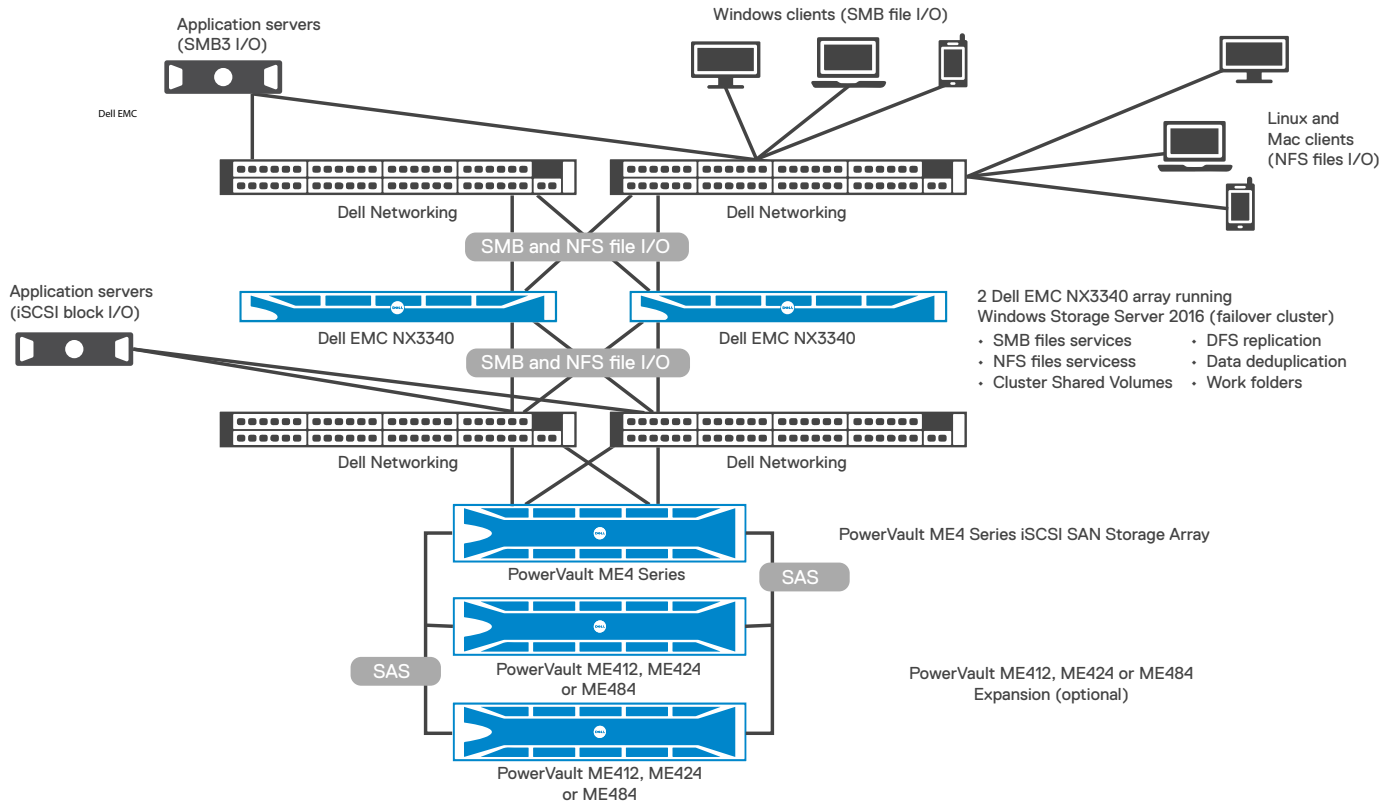

Figure 2 - Deployment model for large businesses

Component	product	Quantity
Storage appliance	Dell EMC NX3340	2
Client-side switch	Dell Networking switches	2
SAN switch	Dell Networking switches	2
Primary storage array (RBOD)	Dell EMC PowerVault ME4 Series	1
External JBOD (optional – for expansion)	Dell EMC PowerVault ME412, ME424 or ME484	1 or more
Windows Storage Server 2016 Standard	Preinstalled on Dell EMC NX3340	N/A

Table 2 - Solution components for large businesses

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Remote/branch offices

Based on PowerEdge 13th generation R330 server platform, the Dell EMC NX430 is a great entry-level NAS solution, as well as an ideal storage solution for remote offices and branch offices. This turnkey NAS appliance comes with Windows Storage Server 2016 Standard or Workgroup preinstalled and delivers up to 32TB of storage when populated with four 8TB SATA drives. BranchCache and DFS replication (both included in Windows Storage Server 2016 Standard) enable bandwidth-efficient data synchronization between a remote office/branch office and a main data center.

Figure 3 illustrates a typical deployment model for remote/branch offices. Solution components shown are listed in table 3. For detailed NX430 specifications, see table 4.

Dell EMC NX430 highlights

- Single-socket, 1U rack mount NAS server
- Intel Xeon Processor E3-1220 v5
- Up to four hot-swap 3.5" NL-SAS or SAS drives for data and operating system (operating system partition is 120GB)
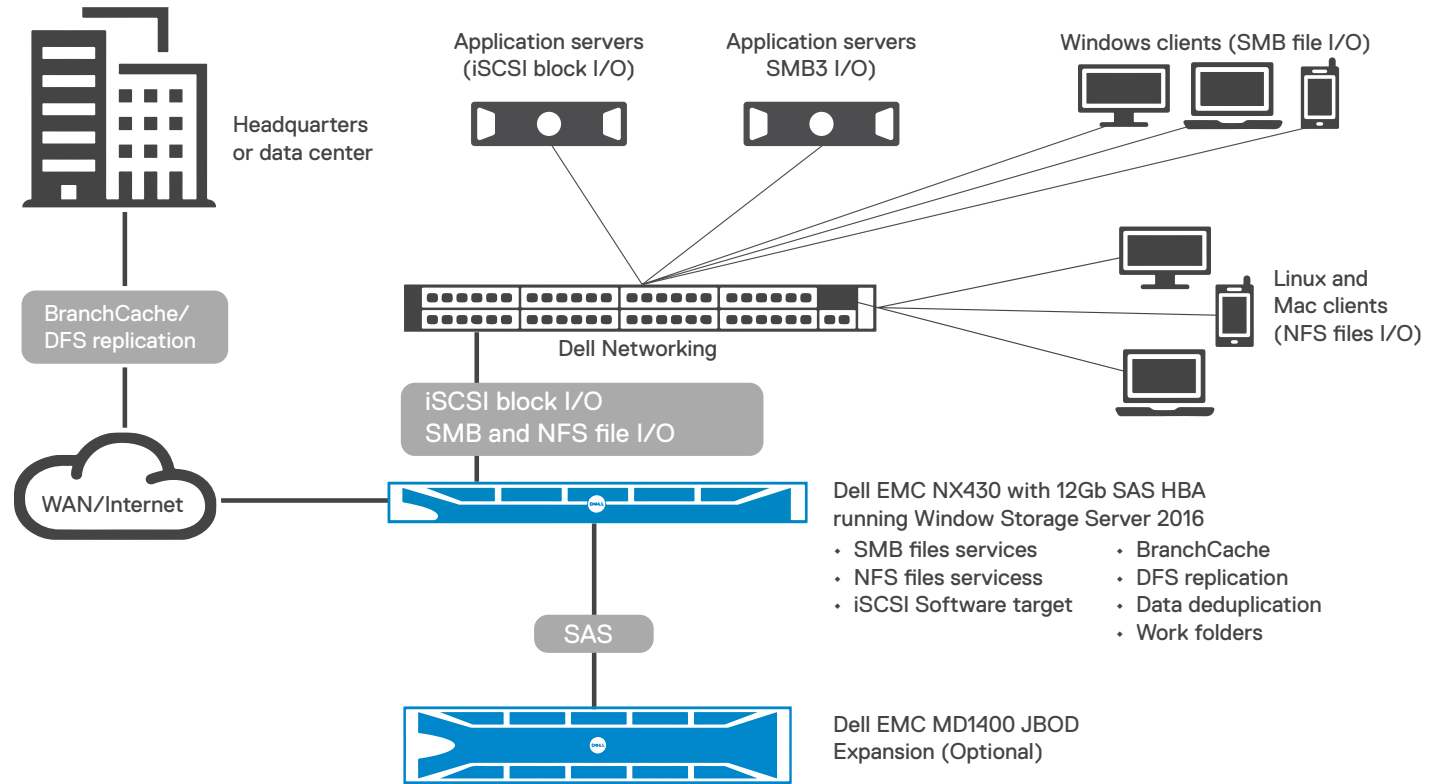- Up to 40TB raw capacity

Figure 3 - Deployment model for remote/branch offices

Component	product	Quantity
Storage appliance	Dell EMC NX430	1
Client-side switch	Dell Networking switch	1
External JBOD (optional – for expansion)	Dell EMC MD1400	1 or more
SAS Host Bus Adapter Card (optional – for expansion)	Dell 12G SAS HBA or PERC H830	1
Windows Storage Server 2016 Standard	Preinstalled on Dell EMC NX430	N/A

Table 3 - Solution components for branch/remote offices

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Product Configurations	Dell EMC NX3240	Dell EMC NX3340	Dell EMC NX430
Storage	Up to 12x3.5" HDDs in front bay, 4x3.5" HDDs in mid bay and 2x3.5" HDDs in rear bay (2.5" OS HDDs in carrier)	2x2.5" HDDs for OS (RAID 1) or 4x2.5" HDDs for OS (RAID 5)	Always 4x3.5" drives identical in capacity and type
Max internal capacity	192TB raw capacity (with 12TB NL-SAS)	Leverages shared storage arrays attached via SAS, iSCSI or FC	40TB raw capacity (with 10TB) NL-SAS)
Types of data	File and Block (Microsoft iSCSI target)		
Drive capacities	SATA (7.2K): 2TB, 4TB NL-SAS (7.2K): 4TB, 8TB, 8TB FIPS, 10TB, 12TB SAS (10K): 600GB, 1.2TB, 1.2TB FIPs, 1.8TB SAS (15K): 600GB	NL-SAS (10K) 600GB for OS (2 or 4 drives required)	SATA (7.2K): 1TB, 2TB, 4TB, 6TB, 8TB NL-SAS (7.2K): 1TB, 2TB, 4TB, 6TB, 8TB, 10TB
External expansion	Not preconfigured for external expansion. To enable expansion add supported SAS HBA or PERC H840 card and attach MD1400/MD1420 expansion modules	Each platform in a clustered configuration	Not preconfigured for external expansion. To enable expansion add supported SAS HBA or PERC H830 card and attach MD1400/MD1420 expansion modules

Technical Highlights	Dell EMC NX3240	Dell EMC NX3340	Dell EMC NX430
Form factor	2U rack-mount system	1U rack-mount system	1U rack-mount system
	Single and Dual	Dual	Single
Processors	Intel® Xeon® Bronze 3104, 1.7G, 6C/6T, 8M Cache or Intel® Xeon®3106 1,7G, 8C/8T, 11M Cache or Intel® Xeon® Silver 4114, 2.2G, 10C/20T, 14M Cache	Intel® Xeon® Bronze 3106 1.7G, 8C/8T, 11M Cache or Intel® Xeon® Silver 4114, 2.2G, 10C/20T, 14M Cache	Intel Xeon E3-1220v5, 3.0G, 8M Cache, 80W, 4C
File access protocols	CIFS, NFS, FTP, SMB3.0, SMB Direct (RDMA)	CIFS, NFS, FTP, SMB3.0, SMB Direct (RDMA)	CIFS, NFS, FTP, SMB3.0, SMB Direct (RDMA)
Block access protocols	Microsoft iSCSI target	Leverages shared storage backend for block access	Microsoft iSCSI target
Operating system	Microsoft Windows Storage Server 2016 Standard Edition	Microsoft Windows Storage Server 2016 Standard Edition	Microsoft Windows Storage Server 2016 Standard Edition and Workgroup Edition
Internal RAID options	Standard options: OS HDDs (on rear 2.5" HDDs) is always RAID1. Data HDDs can be configured from factory in RAID5 or RAID6 (minimum 4 HDDs) PERC H730 (internal drives)	Standard options: two HDDs for OS (RAID 1) or four HDD for OS (RAID 5) PERC H730 (internal drives)	Always four HDDs for OS (RAID 5) PERC H730 (internal drives)
External RAID	PERC H840 (optional)	PERC H840 (optional)	PERC H830 (optional)

Power	Dell EMC NX3240	Dell EMC NX3340	Dell EMC NX430
AC Power/Mac Current	Redundant and non-redundant hot-plug 750W and Redundant 1100W PSU	Redundant and non-redundant hot-plug 750W PSU	Redundant and non-redundant hot-plug 350W PSU

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Chassis	Dell EMC NX3240	Dell EMC NX3340	Dell EMC NX430
Bezel	LCD Bezel with Quick Sync 2 (at-the-box management)	LCD Bezel with Quick Sync 2 (at-the-box management)	Standard bezel
Dimensions	Height: 86.8mm (3.42") Width: 482.0mm (18.98", with rack ears) Maximum Depth: 715.5mm Maximum weight: 28.1 kg (61.95 lbs)	Height: 42.8mm (1.68") Width: 482.0mm (18.98", with rack ears) Maximum Depth: 705.05mm Maximum weight: 21.9 kg (48.28 lbs)	Height: 42.8 mm (1.68 in) Width: 482.4 mm (18.99 in) with rack latches Maximum Depth: 677.3 mm (26.66 in) Maximum weight: 13.4 kg (29.54 lb)
Availability	Hot-plug hard drives, hot-plug redundant power, hot-plug redundant cooling, ECC memory		
Cluster support	Not recommended	Yes, up to 64 nodes	Not recommended
Slots	Four PCIe 3.0 slots (four with x8 bandwidth)	Three PCIe 3.0 slots (all x16 bandwidth)	Two PCIe 3.0 slots (one x8 bandwidth, one x16 bandwidth)
Systems/data management	Dell EMC NX3240	Dell EMC NX3340	Dell EMC NX430
Management	Dell OpenManage™ Essentials, iDRAC9 Enterprise		Dell OpenManage™ Essentials, iDRAC8 Express or Enterprise
Data protection features	Replication (DFS-R), Snapshots (VSS)		
	Optional TPM 1.2/2.0		

Table 3 - Solution components for branch/remote offices

* GB means 1 billion bytes, TB equals 1 trillion bytes and PB equals 1 quadrillion bytes; total accessible capacity varies depending on operating environment

Maximize your TCO at Dell.com/Storage

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