

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 mid-sized 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 PowerVault ME4 Series storage arrays.
- Dell EMC NX440: 1U NAS appliance that pairs an Intel Xeon Processor E-2124 with up to 48TB of raw disk capacity. The NX440 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 servers
- Simple, fast and affordable Dell EMC PowerVault ME4 Series Storage

Small/mid-sized businesses

Small and mid-sized businesses will find the Dell EMC NX3240 to be a powerful, reliable, easy-to-use storage appliance that enables efficient and adaptable data sharing. Based on the 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 mid-sized 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 or Silver 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

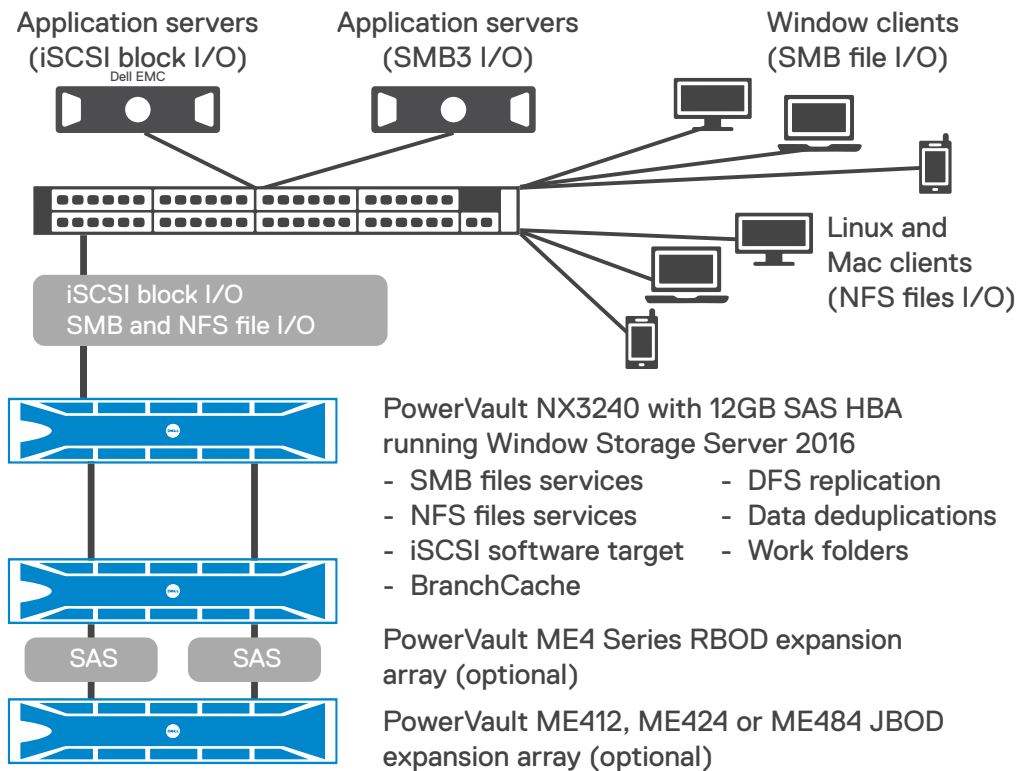


Figure 1 - Deployment model for small or midsize businesses

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/midsize businesses

Large businesses

Large businesses will appreciate the power and flexibility of the Dell EMC NX3340, a 1U gateway appliance based on PowerEdge 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.

Dell EMC NX3340 highlights

- Dual-socket, 1U rack mount NAS server and gateway
- Intel Xeon Silver 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 illustrates a typical deployment model for large businesses. Solution components shown are listed in table 2. For detailed NX3340 specifications, see table 4.

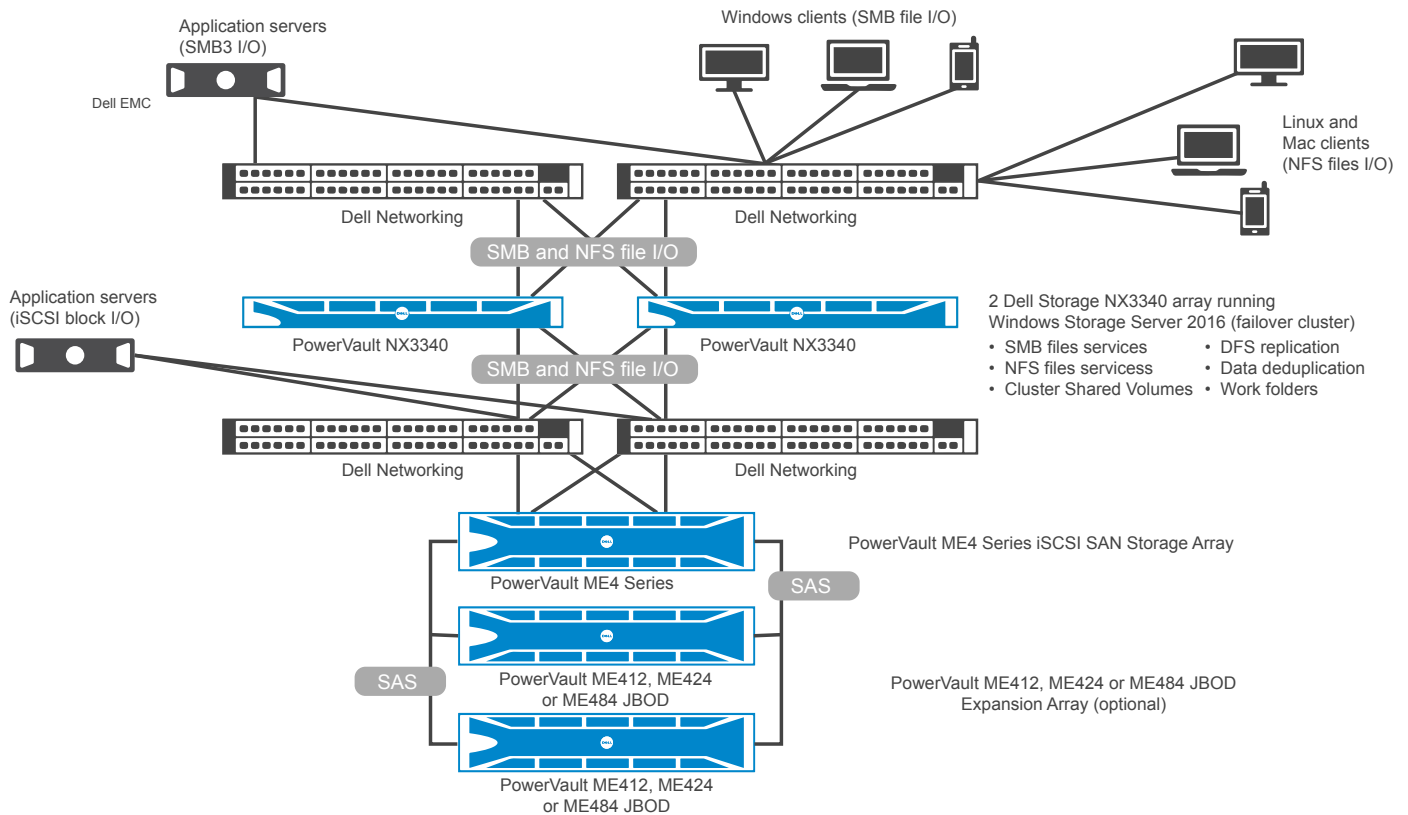


Figure 2 - Deployment model for large businesses

Component	Product	Quantity
Storage appliance	Dell EMC NX3340	2
Client-side switch	Dell Networking switch	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

Remote/branch offices

Based on PowerEdge R340 server platform, the Dell EMC NX440 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 48TB of storage when populated with four 12TB 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.

Dell EMC NX440 highlights

- Single-socket, 1U rack mount NAS server
- Intel Xeon Processor E-2124
- Up to four hot-swap 3.5" NL-SAS or SATA drives for data and operating system (operating system partition is 120GB)
- Up to 48TB raw capacity

Figure 3 illustrates a typical deployment model for remote/branch offices. Solution components shown are listed in table 3. For detailed NX440 specifications, see table 4.

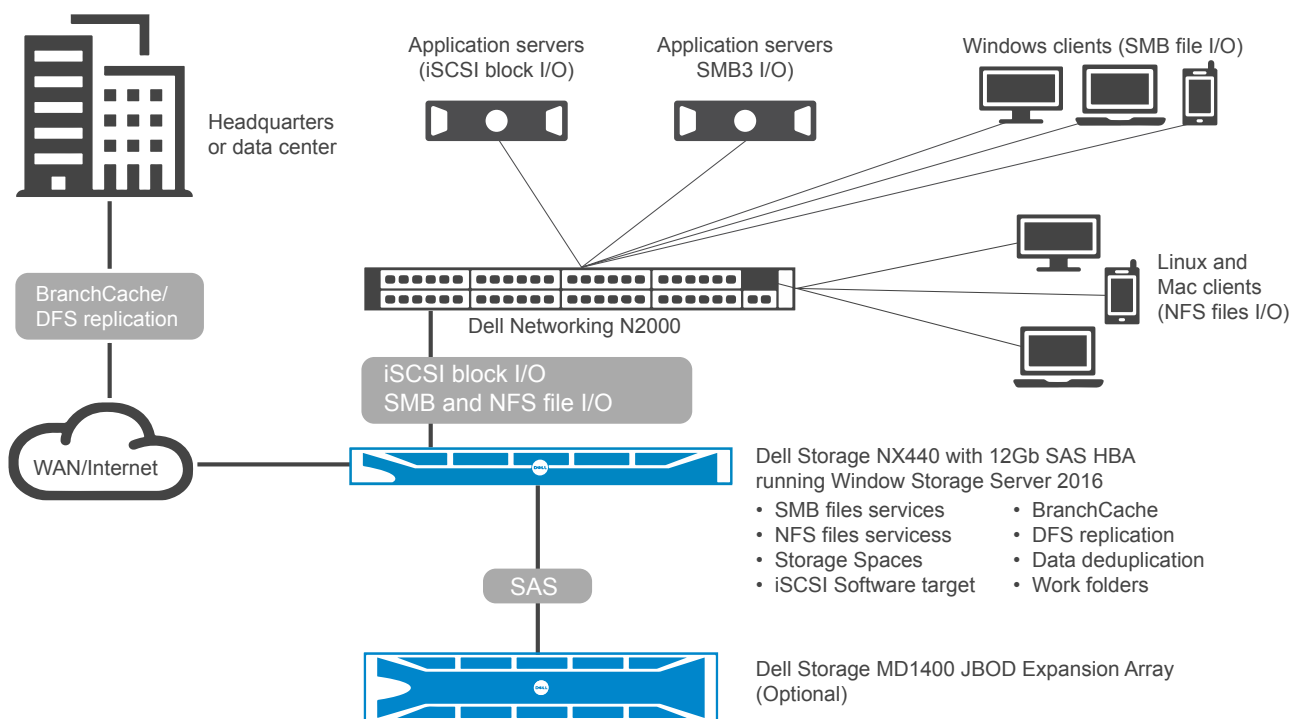


Figure 3 - Deployment model for remote/branch offices

Component	Product	Quantity
Storage appliance	Dell EMC NX440	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	1
Windows Storage Server 2016 Standard	Preinstalled on Dell EMC NX440	N/A

Table 3 - Solution components for branch/remote offices

Product Configurations	Dell EMC NX3240	Dell EMC NX3340	Dell EMC NX440
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	48TB raw capacity (with 12TB NL-SAS, SATA)
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, 8TB, 10TB, 12TB NL-SAS 7.2K: 2TB, 4TB, 8TB, 10TB, 12TB
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 card and attach MD1400/MD1420 expansion modules
Technical Highlights	Dell EMC NX3240	Dell EMC NX3340	Dell EMC NX440
Form factor	2U rack-mount system	1U rack-mount system	1U rack-mount system
	Single and Dual	Dual	Single
Processors	Intel Xeon Bronze 3204, 1.9G, 6C/6T, 8.25MB Cache or Intel Xeon Silver 4208, 2.1G, 8C/16T, 11MB Cache or Intel Xeon Silver 4214, 2.2G, 12C/24T, 16.5MB Cache	Intel Xeon Silver 4208, 2.1G, 8C/16T, 11MB Cache or Intel Xeon Silver 4214, 2.2G, 12C/24T, 16.5MB Cache	Intel Xeon E-2124, 3.3G, 4C, 8M Cache
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 H730P (internal drives)
External RAID	PERC H840 (optional)	PERC H840 (optional)	Not available
Power	Dell EMC NX3240	Dell EMC NX3340	Dell EMC NX440
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

Chassis	Dell EMC NX3240	Dell EMC NX3340	Dell EMC NX440
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 inches) Width: 482.00 mm (18.98 inches) with rack latches Maximum Depth: 573.6 mm (22.58 inches) Maximum Weight 13.2 kg (29.10 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 slots (one x8 PCIe low-profile and one x16 PCIe full-height)
Systems/data management	Dell EMC NX3240	Dell EMC NX3340	Dell EMC NX440
Management	Dell OpenManage™ Essentials, iDRAC9 Enterprise		
Data protection features	Replication (DFS-R), Snapshots (VSS) Optional TPM 1.2/2.0		

Table 4 - Dell EMC NX Series Specifications

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

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