

# Dell Storage NX Windows NAS Series Configuration Guide

Dell Storage NX Windows NAS Series storage appliances combine the latest Dell PowerEdge technology with Windows Storage Server 2012 R2 from Microsoft for rapid deployment, easy management, and enhanced performance.

## The best of both worlds

The Dell Storage 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 hardware — all in a ready-to-deploy NAS appliance. Available in three base models, Dell Storage NX storage appliances are designed to meet the needs of companies of all sizes:

- Dell Storage NX3230: 2U NAS appliance with up to two Intel® Xeon® processors and up to 48TB<sup>1</sup> of raw disk space. The NX3230 is an ideal storage solution for small and midsized companies.
- Dell Storage NX3330: 1U gateway appliance for large companies that require the utmost in capacity and availability. Two NX3330 appliances are typically deployed as a clustered frontend to a Dell Storage SC or PS Series or PowerVault MD3 primary storage arrays.
- Dell Storage NX430: 1U NAS appliance that pairs an Intel Xeon Processor E3-1220 v5 with up to 32TB 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 Storage NX Windows NAS Series storage appliances ship with Microsoft Windows Storage Server 2012 R2 preinstalled for fast and easy deployment. Based on Windows Server 2012 R2, Windows Storage Server 2012 R2 Standard includes all of the major storage innovations in Microsoft's latest server operating system:

- Improvements to the Server Message Block 3.0 (SMB3) protocol for better performance and reliability
- Work Folders, which enables a secure BYOD (bring-your-own-device) environment
- New Storage Spaces functionality for storage virtualization, including storage tiering and dual-parity storage spaces
- Many enhancements to data deduplication, Microsoft Hyper-V® support and DFS replication

### Affordable NAS appliances with the power of Microsoft Windows Storage Server 2012 R2

- Fast and easy deployment
- Enhanced manageability, reliability, and performance
- Award-winning Dell PowerEdge 13th generation hardware

## Small/mid-sized businesses

Small and mid-sized businesses will find the Dell Storage NX3230 to be a powerful, reliable, easy-to-use storage appliance that enables efficient and adaptable data sharing. Based on the Dell PowerEdge 13th generation R730xd rack server, the NX3230 supports both file (SMB and NFS) and block (iSCSI) protocols, and is easily managed using the Microsoft server management interface (Server Manager) or Dell's iDRAC8.

Figure 1 illustrates a typical deployment model for small and mid-sized businesses. Solution components shown are listed in table 1. For detailed NX3230 specifications, see table 4.

### Dell Storage NX3230 highlights

- Dual-socket, 2U rack mount NAS server
- Intel Xeon Processor E5-2600 product family
- Up to 32GB memory
- SATA, NL-SAS or SAS drive options
- Up to 12 hot-swap 3.5" drives for data; two 2.5" drives for the operating system
- Up to 96TB raw capacity when using 8TB NL-SAS drives

Figure 1 - Deployment model for small or mid-sized businesses

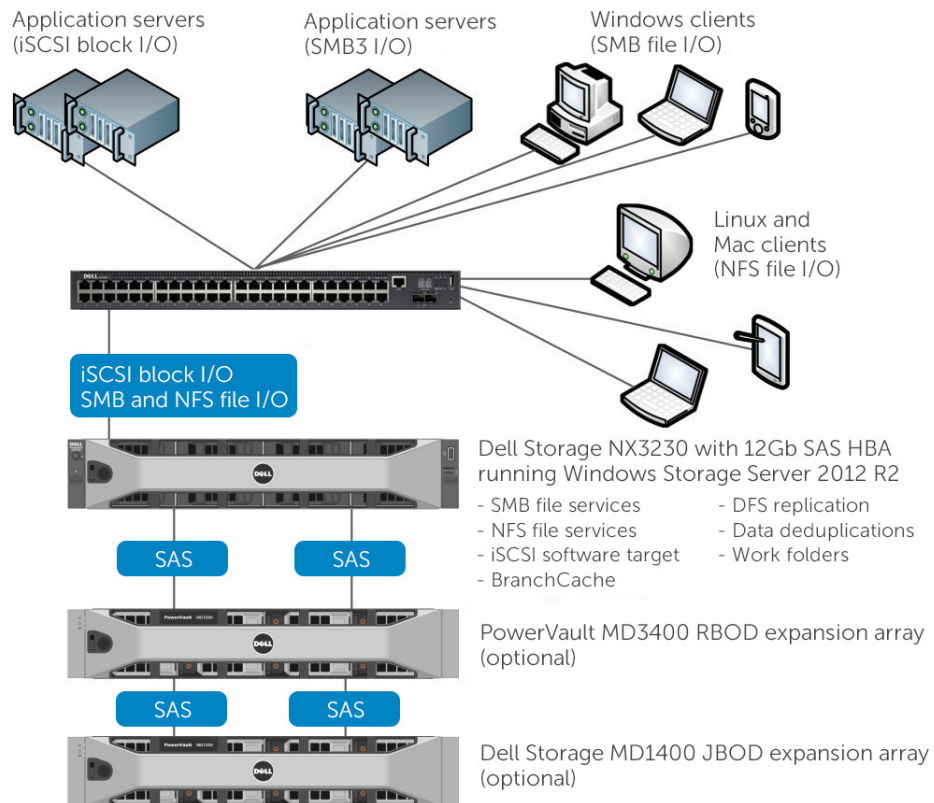


Table 1 - Solution components for small/mid-sized businesses

Component	Dell product	Quantity
Storage appliance	Dell Storage NX3230	1
Client-side switch	Dell Networking N2000	1
External RBOD array (optional – for expansion)	Dell Storage MD3400	1
External JBOD array (optional – for expansion)	Dell Storage MD1200	1 or more
SAS Host Bus Adapter Card (optional – for expansion)	Dell 6Gbps SAS HBA	1
Windows Storage Server 2012 R2 Standard	Preinstalled on Dell Storage NX430	N/A

## Large businesses

Large businesses will appreciate the power and flexibility of the Dell Storage NX3330, a 1U gateway appliance based on Dell PowerEdge 13th generation R630 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 NX3330 is typically deployed in a two-node cluster connected to one of Dell Storage SC or PS Series or PowerVault MD3 primary storage arrays.

Figure 2 illustrates a typical deployment model for large businesses. Solution components shown are listed in table 2. For detailed NX3330 specifications, see table 4.

### Dell Storage NX3330 highlights

- Dual-socket, 1U rack mount NAS server and gateway
- Intel Xeon Processor E3-1220 v5
- Up to 32GB<sup>1</sup> memory
- Two or four hot-swap 3.5" NL-SAS or SAS drives for the operating system depending on the level of redundancy desired

Figure 2 - Deployment model for large businesses

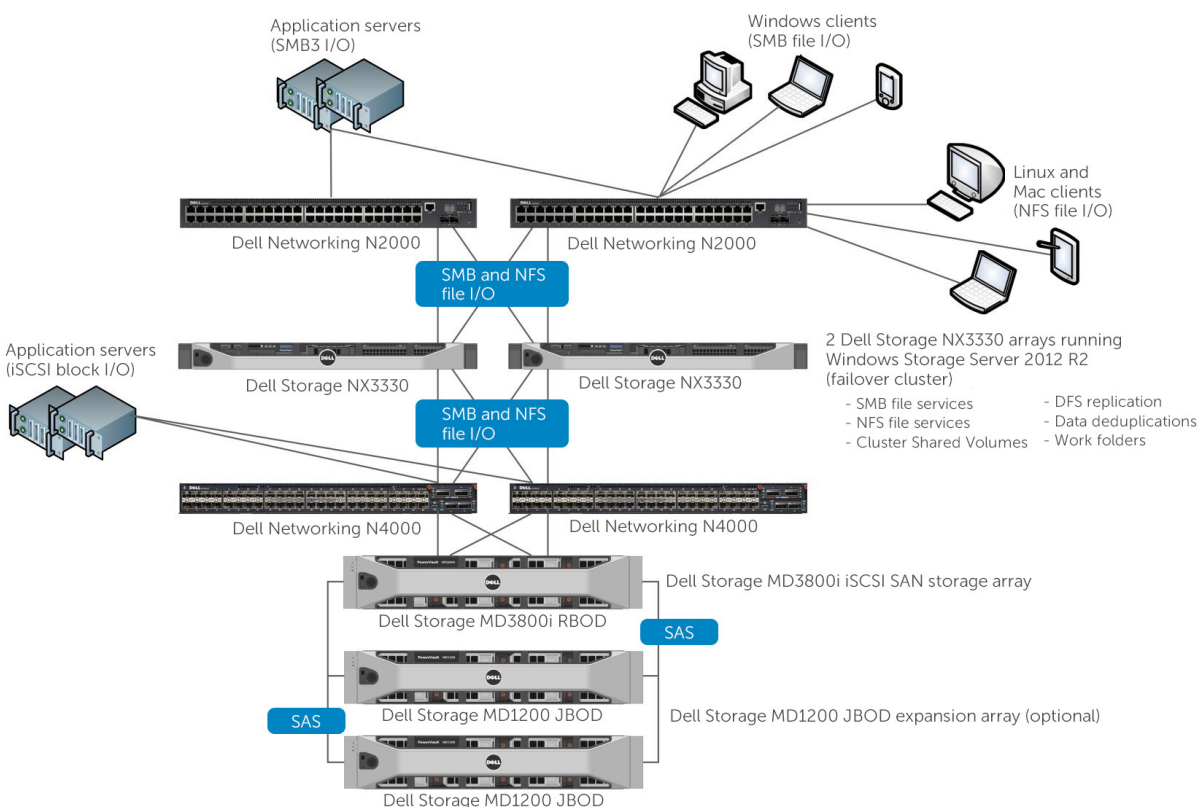


Table 2 - Solution components for large businesses

Component	Dell product	Quantity
Storage appliance	Dell Storage NX3330	2
Client-side switch	Dell Networking N2000	2
SAN switch	Dell Networking N4000	2
Primary storage array (RBOD)	Dell Storage MD3800i	1
External JBOD array (optional – for expansion)	Dell Storage MD1200	1 or more
Windows Storage Server 2012 R2 Standard	Preinstalled on Dell Storage NX3330	N/A

## Remote/branch offices

Based on Dell PowerEdge 12th generation R320 server platform, the Dell Storage 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 2012 R2 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 2012 R2 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 Storage 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 32TB raw capacity

Figure 3 - Deployment model for remote/branch offices

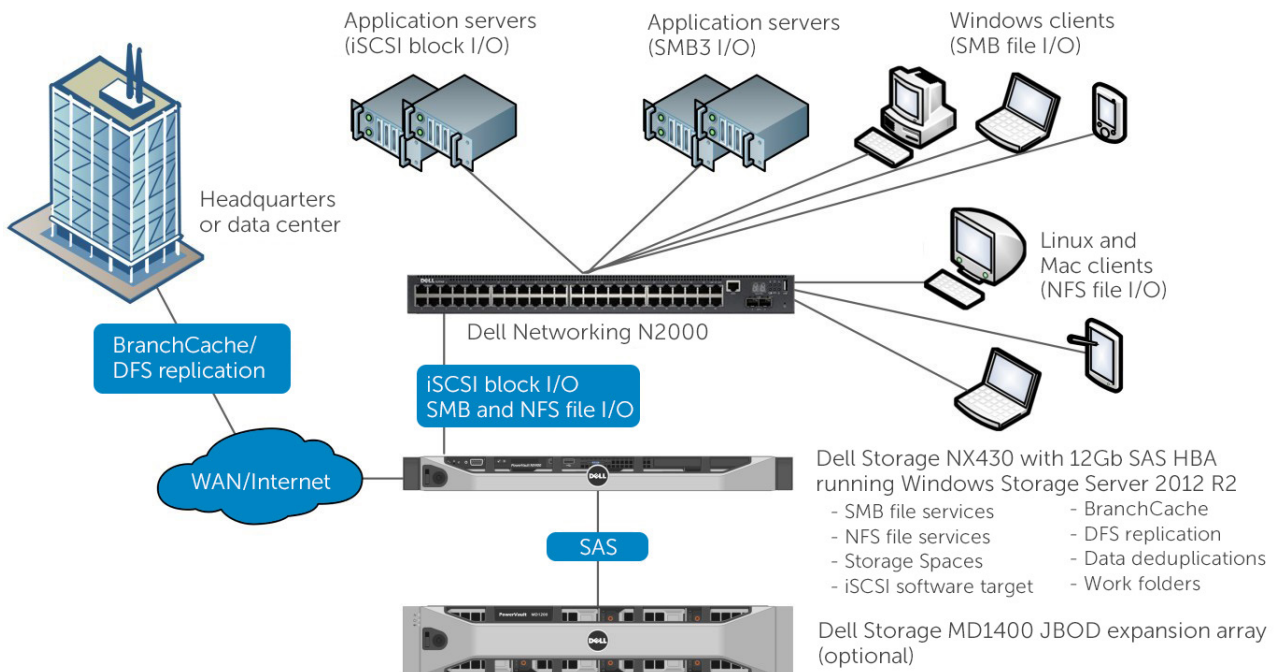


Table 3 - Solution components for branch/remote offices

Component	Dell product	Quantity
Storage appliance	Dell Storage NX430	1
Client-side switch	Dell Networking N2000	1
External JBOD array (optional – for expansion)	Dell Storage MD1400	1 or more
SAS Host Bus Adapter Card (optional – for expansion)	Dell 12G SAS HBA or PERC H830	1
Windows Storage Server 2012 R2 Standard	Preinstalled on Dell Storage NX430	N/A

Table 4 - NX Series specifications

Product configurations	NX430	NX3230	NX3330
Storage	Always 4 3.5" internal drives that must be identical in capacity and type	Up to 12 3.5" hard drives and 2 2.5" rear accessible hot-swap drives for OS	Up to 4 2.5" drives
Max internal capacity	32TB raw capacity (with 8TB NL-SAS)	96TB raw capacity (with 8TB NL-SAS)	Leverages shared storage arrays attached via SAS, iSCSI or FC
Types of data	File and Block (Microsoft iSCSI target)	File and Block (Microsoft iSCSI target)	File and Block
Drive capacities	SATA (7.2K): 1TB, 2TB, 4TB, 6TB, 8TB NL-SAS (7.2K): 1TB, 2TB, 4TB, 6TB, 8TB	SAS (10K or 15K): 146GB, 300GB, 450GB, 600GB, 900GB NL-SAS (7.2K): 1TB, 2TB, 4TB, 6TB, 8TB	300GB 10K SAS
External expansion	Dell Storage RBOD and JBOD (JBODs require PERC or OS level RAID)	Not preconfigured for expansion. To enable expansion with non-redundant storage, add a PERC card and attach PowerVault MD1200 expansion module(s).	Gateway to PowerVault MD3, Dell Storage SC or PS Series
Technical highlights	NX430	NX3230	NX3330
Form factor	1U rack mount system	2U rack mount system	1U rack mount system
Processor	Intel Xeon Processor E3-1220 v5, 3GHz, 8M Cache, 80W, 4C	Intel Xeon Processor E5-2609 v3, 1.9GHz, 15M Cache, 85W or Intel Xeon Processor E5-2630 v3 2.4GHz, 20M Cache, 85W	Intel Xeon Processor E5-2609 v3, 1.90GHz, 15M Cache, 85W or Intel Xeon Processor E5-2630 v3 2.4GHz, 20M Cache, 85W
File access protocols	CIFS, NFS, FTP, SMB3, SMB Direct (RDMA)	CIFS, NFS, FTP, SMB3, SMB Direct (RDMA)	CIFS, NFS, FTP, SMB3, SMB Direct (RDMA)
Block access protocols	Microsoft iSCSI Target	Microsoft iSCSI Target	Leverages shared storage backend for block access
OS supported	Microsoft Windows Storage Server 2012 R2 Standard or Microsoft Windows Storage Server 2012 Workgroup	Microsoft Windows Storage Server 2012 R2 Standard	Microsoft Windows Storage Server 2012 R2 Standard
Standard RAID options	RAID5	OS HDDs (on rear 2.5" HDDs) is always RAID1. Data HDDs can be configured from factory in RAID5 or RAID6 (minimum 4 HDDs). The RAID configuration for the data HDDs can be changed.	RAID 1 or RAID 5
Custom RAID options	RAID 0, 1, 5, 6 and 10 with the PowerEdge Raid Controller (PERC) H730	RAID (custom-configurable options) 0, 1, 5, 10, 50, 6 with PERC H730	Redundant and non-redundant hot-plug 750W PSU options
External RAID controller	PERC H730 (internal drives) or H830 (optional for external drives)	PERC H830 (optional for external storage)	PERC H830 (optional for external storage)
Power	NX430	NX3230	NX3330
AC Power/Max Current	Redundant, 750W (Platinum)	Redundant and non-redundant hot-plug 750W and 1100W PSU options	Redundant and non-redundant hot-plug 750W PSU options
Chassis	NX430	NX3230	NX3330
Dimensions	Max weight: 13.8 kg (30.42 lb) Height: 4.28 cm (1.68") Width with rack latches: 48.24 cm (18.99") Width without rack latches: 43.4 cm (17.08") Depth with redundant power supply unit: 67.73 cm (26.66") (includes bezel)	Max weight: 32.5 kg (71.65 lb) Height: 8.73 cm (3.44") Width: 48.2 cm (18.98") Depth: 68.40 cm (26.92") (excludes bezel)	Max weight: 19.3 kg (42.55 lb) Height: 4.28 cm (1.68") Width: 48.2 cm (18.98") Depth: 70.05 cm (27.57") (excludes bezel)
Availability	Hot-plug hard drives, hot-plug power	Hot-plug hard drives, hot-plug power	Hot-plug hard drives, hot-plug power
Cluster support	Not recommended	No	Yes, up to 64 nodes
Rack support	ReadyRails™ sliding rails with optional cable management arm for 4-post racks (optional adapter brackets required for threaded hole racks)	ReadyRails II sliding rails for tool-less mounting in 4-post racks with square or unthreaded round holes or tooling mounting in 4-post threaded hole racks, with support for optional toolless cable management arm	ReadyRails II sliding rails for tool-less mounting in 4-post racks with square or unthreaded round holes or tooling mounting in 4-post threaded hole racks, with support for optional toolless cable management arm
Slots	2 PCIe (both with Gen 3): Slot 1: PCIe x8 connector with x4 bandwidth; half-length/half-height Slot 2: PCIe x16 connector with x8 bandwidth; half-length/full-height	6 PCIe slots: Two x16 full length, full height One x8 full length, full height Three x8 half length, half height	2 PCIe slots: Two x16 slots, half height, half length
System/data management	NX430	NX3230	NX3330
Management	Dell OpenManage™ featuring Dell Management Console, iDRAC8 Enterprise, Native Java RDP plug-in, or Windows Server management interface (Server Manager)		
Data protection features	DFS-R (replication), VSS (snapshots)		
Data management features	Data deduplication with compression FCI (file classification infrastructure) FSRM (File Server Resource Manager)		

\* 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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