



Dell - NexentaStor Reference Architecture Datasheet

Dell and Nexenta Deliver Highly Available,
Full-featured, Unified Storage



NexentaStor is Nexenta's flagship Software Defined Storage (SDS) platform, allowing thousands of customers all around the world to transform their storage infrastructure, increase flexibility and agility, simplify management and dramatically reduce costs without compromising on availability, reliability, or functionality.

Running on Dell hardware, NexentaStor delivers unified file and block storage services, scales from tens of terabyte to petabyte configurations, and includes all data management functionality.

NexentaStor is Software Defined Storage with SMARTS: Security, Manageability, Availability, Reliability, (lower) TCO, and Scalability.

Leveraging ZFS hybrid storage pools and other value-added enhancements, Dell and Nexenta reference architectures are Flash-ready. Write-intensive SSDs are used as ZFS intent-log to reduce write latency and read-intensive SSDs are used as a cache to reduce read latency and improve performance. The hybrid Flash system was designed to achieve the right balance of cost and performance for any given workload.

Dell-Nexenta reference architectures are ideally suited to support demanding enterprise applications in physical or virtual infrastructure, virtual desktop infrastructure, high performance digital media applications, and large-scale archive repositories. Dell-Nexenta certified reference architecture configurations scale up to 1PB of storage raw capacity.

There are three main reference architecture building blocks: storage controller (R720 or R730), storage enclosures (MD1200, MD1220, MD1400, MD1420, or MD3060e), and NexentaStor 4.0 software.

Features

Unified File and Block Services

- 10GbE NFSv3, NFSv4,
- 10GbE CIFS, SMB 2.1
- 10GbE iSCSI
- 8Gbps Fibre Channel

Data Availability and Integrity

- Active/Active controllers
- ZFS 256-bit block level checksums
- RAID 10 and multi-parity software RAID (n+1, n+2, n+3)
- Asynchronous replication

Data Services and Optimization

- Flash and HDD hybrid pools
- ZFS Copy On Write
- Unlimited writable snapshots
- Thin provisioning
- Inline data compression

Scalability and Management

- 44TB to 1PB raw capacity
- CLI and Web UI
- SNMP and REST API

Reference Architecture Configurations - 13G

	Entry Level ND-44-13G	Midrange ND-88-13G	Midrange Expanded ND-176-13G	Large ND-224-13G	Large Expanded ND-456-13G	Backup and Archive ND-960-13G
NexentaStor SKUs on Dell S&P	A6996189 16TB A7166467 32TB	A6996198 8TB A6996189 16TB A6996184 64TB	A6996189 16TB A7166467 32TB A6996193 128TB	A7166467 32TB A6996184 64TB A6996193 128TB	A6996198 8TB A6996184 64TB A6996193 128TB A6996138 256TB	A6996184 64TB A6996193 128TB A6996138 256TB A7312723 512TB
Raw Capacity	44TB	88TB	176TB	224TB	456TB	960TB
Data Drive #	44	44	88	112	228	240
Form Factor (total system)	8U	12U	20U	12U	20U	20U
Memory (total system)	192GB	192GB	192GB	512GB	512GB	512GB
Read Cache	Up to 800GB	Up to 800GB	Up to 1.6TB	Up to 1.6TB	Up to 1.6TB	N/A
10GbE port	2	2	2	2	2	2
Software	NexentaStor 4.0					
Protocol	NFS v3, v4, CIFS, SMB 2.1, FC, iSCSI					
Client OS	RHEL, Windows, VMware, Hyper-V, OpenStack, CloudStack					

	Entry Level ND-44-13G	Midrange ND-88-13G	Midrange Expanded ND-176-13G	Large ND-224-13G	Large Expanded ND-456-13G	Backup and Archive ND-960-13G
Controller	2x R730					
CPU	E5-2609 v3 1.9GHz, 6-core, 2-socket			E5-2643 v3 3.4GHz, 6-core, 2-socket		
DRAM	96GB (12x 8GB)			256GB (16x 16GB)		
Boot Drive	2TB (2x 1TB NL SAS 7.2k 3.5)					
SAS HBA	2x LSI 9300-8e	4x LSI 9300-8e		2x LSI 9207-8e	4x LSI 9207-8e	
NIC	1x Intel X520 10GbE DA/SPF+					
Storage Enclosure	2x MD1420 (24-bay)	4x MD1400 (12-bay)	8x MD1400 (12-bay)	2x MD3060e (60-bay)	4x MD3060e (60-bay)	4x MD3060e (60-bay)
Data HDD	1TB NL SAS 7.2k 2.5	2TB NL SAS 7.2k 3.5				4TB NL SAS 7.2k 3.5
Data Drive #	44	44	88	112	228	240
L2ARC	Up to 800GB (0 – 2x 400GB)		Up to 1.6TB (0 – 4x 400GB)			N/A
ZIL/SLOG	2x Toshiba Phoenix M2 200GB SSD	2x ZeusRAM Z4RZF3D-8UC 3.5	4x ZeusRAM Z4RZF3D-8UC 3.5	8x ZeusRAM Z4RZF3D-8UC 3.5	N/A	

Each of these Reference Architectures have an associated DellStar number for ease in ordering the complete system. Please consult your Dell Sales representative.



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Reference Architecture Configurations - 12G

	Entry Level ND-44-12G	Midrange ND-88-12G	Midrange Expanded ND-176-12G	Large ND-224-12G	Large Expanded ND-456-12G	Backup and Archive ND-960-12G
NexentaStor SKU on Dell S&P	A6996189 16TB A7166467 32TB	A6996198 8TB A6996189 16TB A6996184 64TB	A6996189 16TB A7166467 32TB A6996193 128TB	A7166467 32TB A6996184 64TB A6996193 128TB	A6996198 8TB A6996184 64TB A6996193 128TB A6996138 256TB	A6996184 64TB A6996193 128TB A6996138 256TB A7312723 512TB
Raw Capacity	44TB	88TB	176TB	224TB	456TB	960TB
Data Drive #	44	44	88	112	228	240
Form Factor (total system)	8U	12U	20U	12U	20U	20U
Memory (total system)	192GB	192GB	192GB	512GB	512GB	512GB
Read Cache	Up to 800GB	Up to 800GB	Up to 1.6TB	Up to 1.6TB	Up to 1.6TB	N/A
10GbE port	2	2	2	2	2	2
Software	NexentaStor 4.0					
Protocol	NFS v3, v4, CIFS, SMB 2.1, FC, iSCSI					
Client OS	RHEL, Windows, VMware, Hyper-V, OpenStack, CloudStack					

	Entry Level ND-44-12G	Midrange ND-88-12G	Midrange Expanded ND-176-12G	Large ND-224-12G	Large Expanded ND-456-12G	Backup and Archive ND-960-12G
Controller	2 x R720					
CPU	E5-2609 v2 2.4GHz, 4-core, 2-socket			E5-2643 v2 3.3GHz, 4-core, 2-socket		
DRAM	96GB (12x 8GB)			256GB (16x 16GB)		
Boot Drive	2TB (2x 1TB NL SAS 7.2k 3.5)					
SAS HBA	2x LSI 9207-8e	4x LSI 9207-8e				
NIC	1x Intel X520 10GbE DA/SPF+					
Storage Enclosure	2x MD1220 (24-bay)	4x MD1200 (12-bay)	2x MD3060e (60-bay)	4x MD3060e (60-bay)		
Data HDD	1TB NL SAS 7.2k 2.5	2TB NL SAS 7.2k 3.5				4TB NL SAS 7.2k 3.5
Data Drive #	44	44	88	112	228	240
L2ARC	Up to 800GB (0 – 2x 400GB)			Up to 1.6TB (0 – 4x 400GB)		N/A
ZIL/SLOG	2x Toshiba Phoenix M2 200GB SSD	2x ZeusRAM Z4RZF3D-8UC 3.5	4x ZeusRAM Z4RZF3D-8UC 3.5	8x ZeusRAM Z4RZF3D-8UC 3.5		N/A

Each of these Reference Architectures have an associated DellStar number for ease in ordering the complete system. Please consult your Dell Sales representative.



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