



# Supermicro - NexentaStor Reference Architecture Datasheet

## Supermicro 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 Supermicro 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, Supermicro 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.

Supermicro and 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. Supermicro and Nexenta reference architectures configurations scale up to 1.5PB of storage raw capacity.

There are three main reference architecture building blocks: storage controller (SSG-6027R-NEX1, SSG-6027R-NEX2, SYS-6028U-NEX1, and SYS-6028U-NEX2), storage enclosures (847E26-RJBOD1, 216BE2C-R741JBOD, and 847E2C-R1K28JBOD), 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

- 20TB to 1.5PB raw capacity
- CLI and Web UI
- SNMP and REST API

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# Reference Architecture Configurations X10

	NSM-20-X10	NSM-54-X10	NSM-82-X10	NSM-166-X10	NSM-340-X10	NSM-508-X10	NSM-1408-X10
<b>SMC NexentaStor Software SKU</b>	SFT-NX-ENG8TB SFT-NX-ENG16TB SVC-NX-SVCP50101	SFT-NX-ENG8TB SFT-NX-ENG16TB SFT-NX-ENG32TB SFT-NX-PNHACLUS SVC-NX-SVCP50120	SFT-NX-ENG8TB SFT-NX-ENG16TB SFT-NX-ENG64TB SFT-NX-PNHACLUS SVC-NX-SVCP50120	SFT-NX-ENG8TB SFT-NX-ENG32TB SFT-NX-ENG128TB SFT-NX-PNHACLUS SVC-NX-SVCP50120	SFT-NX-ENG8TB SFT-NX-ENG16TB SFT-NX-ENG64TB SFT-NX-ENG256TB SFT-NX-PNHACLUS SVC-NX-SVCP50121	SFT-NX-ENG512TB SFT-NX-PNHACLUS SVC-NX-SVCP50121	SFT-NX-ENG128TB SFT-NX-ENG256TB SFT-NX-ENG1024TB SFT-NX-PNHACLUS SVC-NX-SVCP50121
<b>SMC NexentaStor Solution SKU</b>	SRS-NSM020-SN0B-01	SRS-NSM054-HA2B-01	SRS-NSM082-HA1B-01	SRS-NSM166-HA2B-01	SRS-NSM340-HA4B-01	SRS-NSM508-HA6B-01	SRS-NS1408-HA8B-01
<b>Raw Capacity</b>	20TB	54TB	82TB	166TB	340TB	508TB	1408TB
<b>Data Drive #</b>	10	45	41	83	170	254	352
<b>Form Factor (total system)</b>	2U	8U	8U	12U	20U	28U	36U
<b>Memory (total system)</b>	96GB	196GB	196GB	196GB	512GB	512GB	512GB
<b>Read Cache</b>	N/A	400GB	400GB	800GB	800GB	800GB	N/A
<b>10GbE port</b>	2	4	4	8	8	8	8
<b>Software</b>	NexentaStor 4.0						
<b>Protocol</b>	NFS v3, v4, CIFS, SMB 2.1, FC, iSCSI						
<b>Client OS</b>	RHEL, Windows, VMware, Hyper-V, OpenStack, CloudStack						

	NSM-20-X10	NSM-54-X10	NSM-82-X10	NSM-166-X10	NSM-340-X10	NSM-508-X10	NSM-1408-X10
<b>Controller</b>	1x SYS6028U-NEX1	2x SYS6028U-NEX1			2x SYS6028U-NEX2		
<b>CPU</b>	E5-2609 v3 1.9GHz, 6-core, 2-socket				E5-2643 v3 3.4GHz, 6-core, 2-socket		
<b>DRAM</b>	96GB (12x 8GB)				256GB (16x 16GB)		
<b>Boot Drive</b>	2TB (2x 1TB SAS 7.2k 3.5)						
<b>SAS HBA</b>	2x AOC3008L-L8e (IT mode)	1x AOC-SAS-9300-8e		2x AOC-SAS-9300-8e	2x AOC-SAS-9300-16e	3x AOC-SAS-9300-16e	4x AOC-SAS-9300-16e
<b>NIC</b>	1x AOC-STGN-12S			2x AOC-STGN-12S			
<b>Data HDD</b>	10x 2TB 7.2k SAS	N/A					
<b>Storage Enclosure</b>	N/A	2x 216BE2C-R741JBOD (24-bay)	1x 847E2C-R1K-28JBOD (44-bay)	2x 847E2C-R1K-28JBOD (44-bay)	4x 847E2C-R1K-28JBOD (44-bay)	6x 847E2C-R1K-28JBOD (44-bay)	8x 847E2C-R1K-28JBOD (44-bay)
<b>Data HDD</b>	N/A	1.2TB SAS 10k 2.5"	2TB SAS 7.2k 3.5"				4TB SAS 7.2k 3.5"
<b>Data Drive #</b>	10	45	41	83	170	254	352
<b>L2ARC</b>	N/A	400GB MLC (1x 400GB)			800GB MLC (2x 400GB)		N/A
<b>ZIL/SLOG</b>	N/A	2x 400GB SSD	2x ZeusRAM	4x ZeusRAM		8x ZeusRAM	N/A

Note 1: Chassis management for these storage enclosures is targeted for delivery by end of Q2 2015

Note 2: Motherboard BIOS for the SMC X10 RA is 1.01

# Reference Architecture Configurations X9

	NSM-20	NSM-54	NSM-84	NSM-170	NSM-348	NSM-520	NSM-1440
<b>SMC NexentaStor Software SKU</b>	SFT-NX-ENG8TB SFT-NX-ENG16TB SVC-NX-SVCP0101	SFT-NX-ENG8TB SFT-NX-ENG16TB SFT-NX-ENG32TB SFT-NX-PNHACLUS SVC-NX-SVCP0120	SFT-NX-ENG8TB SFT-NX-ENG16TB SFT-NX-ENG64TB SFT-NX-PNHACLUS SVC-NX-SVCP0120	SFT-NX-ENG16TB SFT-NX-ENG32TB SFT-NX-ENG128TB SFT-NX-PNHACLUS SVC-NX-SVCP0120	SFT-NX-ENG32TB SFT-NX-ENG64TB SFT-NX-ENG256TB SFT-NX-PNHACLUS SVC-NX-SVCP0121	SFT-NX-ENG8TB SFT-NX-ENG512TB SFT-NX-PNHACLUS SVC-NX-SVCP0121	SFT-NX-ENG32TB SFT-NX-ENG128TB SFT-NX-ENG256TB SFT-NX-ENG1024TB SFT-NX-PNHACLUS SVC-NX-SVCP0121
<b>Raw Capacity</b>	20TB	54TB	84TB	170TB	348TB	520TB	1440TB
<b>Data Drive #</b>	10	27	42	85	174	260	360
<b>Form Factor (total system)</b>	2U	8U	8U	12U	20U	28U	36U
<b>Memory (total system)</b>	96GB	196GB	196GB	196GB	512GB	512GB	512GB
<b>Read Cache</b>	N/A	400GB	400GB	800GB	800GB	800GB	N/A
<b>10GbE port</b>	2	4	4	8	8	8	8
<b>Software</b>	NexentaStor 4.0						
<b>Protocol</b>	NFS v3, v4, CIFS, SMB 2.1, FC, iSCSI						
<b>Client OS</b>	RHEL, Windows, VMware, Hyper-V, OpenStack, CloudStack						

	NSM-20	NSM-54	NSM-84	NSM-170	NSM-348	NSM-520	NSM-1440
<b>Controller</b>	1x SSG-6027R-NEX1	2x SSG-6027R-NEX1			2x SSG-6027R-NEX2		
<b>CPU</b>	E5-2609 2.4GHz, 4-core, 2-socket				E5-2643 3.3GHz, 4-core, 2-socket		
<b>DRAM</b>	96GB (12x 8GB)				256GB (16x 16GB)		
<b>Boot Drive</b>	2TB (2x 1TB SAS 7.2k 3.5")						
<b>SAS HBA</b>	N/A	1 x LSI 9207-8e		2x LSI 9207-8e	2x LSI 9206-16e	3x LSI 9206-16e	4x LSI 9206-16e
<b>NIC</b>	1x X520 10GbE DA/SFP+			2x X520 10GbE DA/SFP+			
<b>Data HDD</b>	10x 2TB SAS 7.2k	N/A					
<b>Storage Enclosure</b>	N/A	1x 847E26-RJBOD1 (45-bay)	1x 847E26-RJBOD1 (45-bay)	2x 847E26-RJBOD1 (45-bay)	4x 847E26-RJBOD1 (45-bay)	6x 847E26-RJBOD1 (45-bay)	8x 847E26-RJBOD1 (45-bay)
<b>Data HDD**</b>	N/A	2TB SAS 7.2k 3.5"		2TB SAS 7.2k 3.5"			4TB SAS 7.2k 3.5"
<b>Data Drive #</b>	N/A	27	42	85	174	260	360
<b>L2ARC</b>	N/A	400GB MLC			800GB MLC (2x 400GB)		N/A
<b>ZIL/SLOG</b>	N/A	2x 400GB MLC	2x ZeusRAM Z4RZF3D-8UC 3.5	4x ZeusRAM Z4RZF3D-8UC 3.5		8x ZeusRAM Z4RZF3D-8UC 3.5	N/A

\*\* 1, 2, 4TB SAS 3.5" HDD are supported in 847E26-RJBOD1. Please contact Nexenta Sales.



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