NSM Series Datasheet

LeftHand Networks SAN Specifications

KEY FEATURES AND BENEFITS

Designed for uptime, performance and simplicity, the NSM series provides hardware options that can easily be deployed across the enterprise. SAN/iQ® is pre-integrated onto an optimized configuration that includes a single support contract for both hardware and software.

- Superior Data Availability
- Scalable Performance
- Simplified Capacity Expansion and Management
- Enterprise Class Hardware
- Enterprise Class Support

NSM 4150
Enterprise class performance, features, and scalability without the cost, complexity, or downtime.

NSM 2120
High storage density and a small data center footprint for virtualization projects.

NSM 2060
Affordable performance, features, and scalability for small and regional data centers.

SUPERIOR DATA AVAILABILITY

Double fault data protection is hard. Not many SAN storage systems provide it. When it's not there, the SAN cannot sustain two faults to a RAID group or storage pool. When it is there, rebuilds typically cause the SAN performance to become unacceptable. NSM's inherently protect against double disk, system, and site failures with two levels of built-in RAID protection.

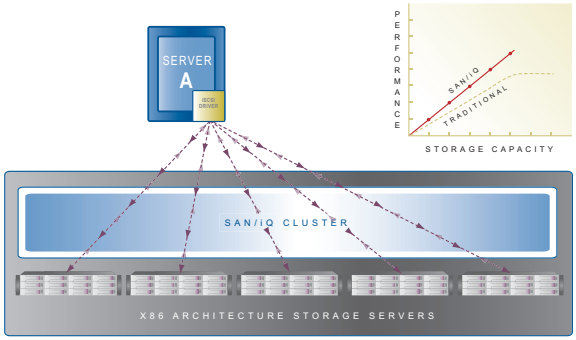
	NSM 4150 	NSM 2120 	NSM 2060 
Network RAID Synchronous Replication	Included		
Snapshot	Included		
Remote Copy Asynchronous Replication with Bandwidth Throttling	Included		
Multi-Site HA/DR Solution Pack Synchronous Replication	Included		
Online Volume Migration	Included		
Online Software Upgrades	Included		
Self-Healing Storage	Included		
Storage Controllers	1 per unit, a cluster of 3 NSM's provides triple redundancy		
Network RAID Levels (per volume)	0 2, 3, 4 protect against double disk, system, and site failures		
Hardware RAID Levels	10, 5	10, 5, 6	10, 5
Hardware Availability	Hot-plug hard drives Hot-plug redundant power Hot-plug redundant cooling ECC memory Integrated storage controller w/ battery-backed DDR2 cache Hyper-redundant clustered storage Tool-less chassis		

LeftHand NETWORKS®

SCALABLE PERFORMANCE

IT environments are constantly changing. As more applications are added to your SAN, more performance is needed. All hardware resources for each LeftHand NSM aggregate together to deliver unprecedented scalable performance without application downtime.

	NSM 4150 	NSM 2120 	NSM 2060 
Storage Clustering	Included		
Solution Pack for Microsoft Windows (10 Server Pack)	Included		
Self-Optimizing Performance	Included		
Adjustable Rebuild Rates	Included		
Maximum IOPS from cache (per NSM)	60,000		
Maximum Throughput (per NSM)	200 MB/sec		
Disk Drives (per NSM)	15	12	6
Processors (per NSM)	1		
Storage Controller (per NSM)	1		
Battery Backed Cache (per NSM)	256 MB	512 MB	256 MB
RAM (per NSM)	4 GB	2 GB	
Bandwidth (per NSM)	2 Gbps		
Network Connectivity (per NSM)	Dual embedded Gigabit Ethernet NIC with fail-over and load balancing		



SIMPLIFIED SCALABILITY AND MANAGEMENT

Adding SAN storage capacity, provisioning, and migrating volumes between different tiers of data is time consuming, complicated, and results in application downtime. A single, centralized management GUI provides these capabilities plus the ability to add NSM's (or any other LeftHand platform) to the SAN with zero downtime.

	NSM 4150 	NSM 2120 	NSM 2060 
Thin Provisioning 2.0	Included		
Centralized Management	Included		
Auto-Grow Volume	Included		
Online Volume Migration	Included		
Volume Cloning	Included		
SAS Capacity Points	4.5 TB (300 GB 15K SAS)	1.8 TB (146 GB 15K SAS) 3.6 TB (300 GB 15K SAS) 5.4 TB (450 GB 15K SAS)	1.8 TB (300 GB 15K SAS) 2.7 TB (450 GB 15K SAS)
SATA Capacity Points	7.5 TB (500 GB SATA) 11.25 TB (750 GB SATA)	3.0 TB (250 GB SATA) 6.0 TB (500 GB SATA) 9.0 TB (750 GB SATA) 12.0 TB (1 TB SATA)	3.0TB (500 GB SATA) 4.5 TB (750 GB SATA) 6.0 TB (1 TB SATA)

ENTERPRISE CLASS HARDWARE

Proprietary storage architectures are expensive and inflexible. Leveraging the cost and stability of an x86 architecture, LeftHand NSM's provide enterprise class hardware features at an affordable price.

	NSM 4150 	NSM 2120 	NSM 2060 
Dimensions (HxWxD)	6.8 x 17.6 x 30.4 in 17.0 x 48.8 x 77.2 cm 4U	3.5 x 19.2 x 23.5 in 8.8 x 48.8 x 59.7 cm 2U	3.4 x 17.5 x 29.3 in 8.6 x 44.4 x 74.4 cm 2U
Weight	115 lbs	59 lbs	59 lbs
Power/Cooling	Redundant hot-plug power supplies Auto-switching universal 110/220 Volts 0.2 Tons Sensible Cooling 7.6 bels A-weighted sound 737 watts 2,515 BTU/hr 3.54 Amps @ 208 volts Flow Rate: 77 CFM	Redundant hot-plug power supplies Auto-switching universal 110/220 Volts 7.2 bels A-weighted sound 368 watts 1,256 BTU/hr 4.1 Amps @ 200 Volts	Redundant hot-plug power supplies Auto-switching universal 110/220 Volts 0.1 Tons Sensible Cooling 6.8 bels A-weighted sound 304 watts 1,037 BTU/hr 1.46 Amps @ 208 volts Flow Rate: 55 CFM
Environmental	Operating Temperature: 10º C to 35º C (50º F to 95º F) Storage Temperature: -40º C to 65º C (-40º F to 149º F) Operating Relative Humidity (non-condensing twmax=29C): 20% to 80% non-condensing Maximum humidity gradient: 10% per hour, operational and non-operational conditions Storage Relative Humidity: 5% to 95% non-condensing (twmax=38C) Operating Vibration: 0.26G at 5Hz to 350Hz for 2 minutes Storage Vibration: 1.54Grms Random Vibration at 10Hz to 250Hz for 15 minutes Operating Shock: 1 shock pulse of 41G for up to 2ms Storage Shock: 6 shock pulses of 71G for up to 2ms Operating Altitude: -16 to 3,048m (-50 ft to 10,000 ft) Storage Altitude: -16m to 10,600m (-50 ft to 35,000 ft)	Operating Temperature: 10º C to 35º C (50º F to 95º F) Storage Temperature: -30º C to 60º C (-22º F to 140º F) Operating Relative Humidity (non-condensing twmax=28C): 10% to 90% non-condensing Storage Relative Humidity: 5% to 95% non-condensing (twmax=39C) Operating Altitude: 3,050m (10,000 ft) Storage Altitude: 9,144m (30,000 ft)	Operating Temperature: 10º C to 35º C (50º F to 95º F) Storage Temperature: -40º C to 65º C (-40º F to 149º F) Operating Relative Humidity (non-condensing twmax=29C): 20% to 80% non-condensing Maximum humidity gradient: 10% per hour, operational and non-operational conditions Storage Relative Humidity: 5% to 95% non-condensing (twmax=38C) Operating Vibration: 0.26G at 5Hz to 350Hz for 2 minutes Storage Vibration: 1.54Grms Random Vibration at 10Hz to 250Hz for 15 minutes Operating Shock: 1 shock pulse of 41G for up to 2ms Storage Shock: 6 shock pulses of 71G for up to 2ms Operating Altitude: -16 to 3,048m (-50 ft to 10,000 ft) Storage Altitude: -16m to 10,600m (-50 ft to 35,000 ft)
Regulatory	FCC (U.S. only) Class A ICES (Canada) Class A CE Mark (EN 55022 Class A, EN55024, EN61000-3-2, EN61000-3-3) UL 60950 - 1 CAN/CSA C22.2 No. 60950 - 1 IEC 60950-1 EN 60950-1		

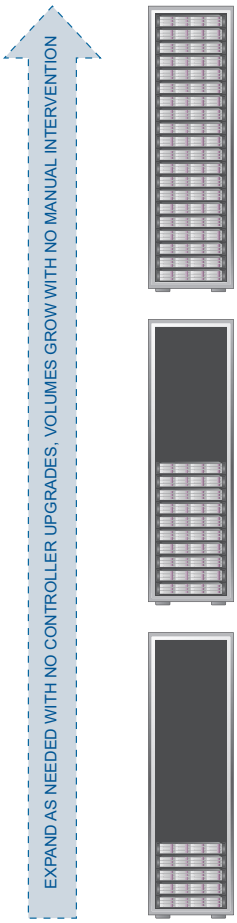
ENTERPRISE CLASS SUPPORT

Each NSM includes one year of Standard hardware and software support. Additional offerings are available to meet any need across the enterprise.

	NSM 4150 	NSM 2120 	NSM 2060 
Included Support	1 yr Basic Support (5x9 NBD parts, 7x24 phone support)		
Support options	1, 2, 3, 4, or 5 yrs Basic Support (5x9 NBD parts, 7x24 phone support) 1, 2, 3, 4, or 5 yrs Premium Support (7x24 4 hr parts, 7x24 phone support)		

LeftHand Networks SAN Specifications

20 NSMs = 20 times the performance, capacity, and redundancy of a single NSM



	System Resource	NSM 4150	NSM 2120	NSM 2060
20 NSM's	Disk Drives	300	240	120
	Storage Controllers	20		
	Processors			
	System RAM	80 GB	40 GB	
	Battery Backed System Cache	5,120 MB	10,240 MB	5,120 MB
	Network Bandwidth (Qty of Ports)	40 Gb/s (40 ports)		
	Rack Space	80U	40U	
10 NSM's	Disk Drives	150	120	60
	Storage Controllers	10		
	Processors			
	System RAM	40 GB	20 GB	
	Battery Backed System Cache	2,560 MB	5,120 MB	2,560 MB
	Network Bandwidth (Qty of Ports)	20 Gb/s (20 ports)		
	Rack Space	40U	20U	
5 NSM's	Disk Drives	75	60	30
	Storage Controllers	5		
	Processors			
	System RAM	20 GB	10 GB	
	Battery Backed System Cache	1,280 MB	2,560 MB	1,280 MB
	Network Bandwidth (Qty of Ports)	10 Gb/s (10 ports)		
	Rack Space	20U	10U	

LeftHand NETWORKS

ABOUT LEFTHAND NETWORKS

At LeftHand Networks, we deliver physical and virtual SANs that are easy-to-install, easy-to-manage and designed to perform optimally in today's global data centers. LeftHand Networks pioneered IP-based SANs in 2001, and its innovative SAN products are engineered to deliver the highest availability and scalable performance, with integrated enterprise-class features.

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