nimblestorage

Nimble Storage CS-Series Arrays: Building Blocks of the Adaptive Flash Platform

Nimble Storage CS-Series arrays are the building blocks of Adaptive Flash, a storage platform that dynamically and intelligently allocates storage resources to satisfy the changing needs of business-critical applications.

Adaptive Flash is based on CASL™, Nimble's patented Cache-Accelerated Sequential Layout architecture, and InfoSight™, its data sciences-based approach to the storage lifecycle. CASL allows performance and capacity to be scaled seamlessly and independently. InfoSight leverages the power of deep-data analytics to deploy storage resources as needed by business-critical applications.

Nimble Storage CS-Series Arrays

Any Nimble Storage array can be scaled to enterprise-levels of performance and capacity.

The CS210 and CS215 provide value and performance for small to medium-sized IT organizations or remote offices, for workloads such as Microsoft Exchange and VDI.

The CS300 is ideal for midsize IT organizations or distributed sites of larger organizations. It offers the best capacity per $ for workloads like Microsoft applications, VDI, or virtual server consolidation. The CS300 delivers 1.6x more IOPS than the CS215.

The CS500 offers advanced performance for larger-scale deployments or IO-intensive workloads, like larger-scale VDI, and Oracle or SQL Server databases, and provides the best performance and IOPS per $. The CS500 achieves 5x the performance of the CS215.

The CS700 is designed for consolidating multiple large-scale critical applications with aggressive performance demands. It delivers approximately 7x the IOPS of the CS215.

Scale-to-Fit with Scale-Out Architecture

CASL's scale-to-fit capability allows performance and capacity to be scaled seamlessly and independently to meet the growing demands of today's enterprise applications. Capacity can be scaled to hundreds of terabytes by simply adding disk shelves while performance can be enhanced by adding CPU cores for greater overall throughput or additional solid state drives (SSDs) for enhanced read performance. Performance and capacity can even be seamlessly scaled beyond a single array to a cluster of up to any four Nimble Storage CS-Series arrays.

Integrated Data Protection

Data protection is built into every Nimble Storage array, eliminating the inefficiency associated with managing primary and backup storage tiers. Nimble arrays use advanced data protection features including frequent point-in-time snapshots and WAN-efficient replication.

InfoSight and Proactive Wellness

InfoSight is a key component of the Adaptive Flash Platform, offering expert guidance on scaling. InfoSight monitors all Nimble arrays, collectively and individually, from the cloud, using the data it collects to pinpoint problems — and offer remedies — before they can bring systems down.

In addition to InfoSight, Nimble offers these key support benefits: access to 24x7 technical support; 4-hour, or next business day, parts delivery; always-on monitoring and response; and frequent software updates.

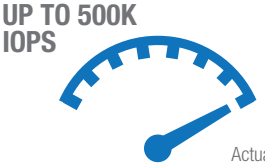
"Our customers see large data sets, small data sets and diverse workloads. Nimble's CS700 and all-flash expansion shelf combine to offer customers a means of covering lots of ground in terms of both performance and capacity, within an attractively small datacenter footprint."

Jeff Thomas
Director of IT operations
MarkLogic

Our Customers Require Up To **10x Less Rackspace**

Actual Results for Nimble Customers

Our Customers Get **Blazing Performance**



Actual Results for 4-Node CS700 Cluster

Our Customers Enjoy **Virtually Zero Downtime**

Measured Across Entire Nimble Installed Base (July 2012 - June 2014)

Product Specifications

Product Family	Ultimate Performance Scale-Out Cluster	Extreme Performance Family			High Performance Family			Base Performance Family			Value Array Family	
Nimble CS-Series Array	**4x CS700[1]**	**CS700**			**CS500**			**CS300**			**CS210**	**CS215**
Raw Disk Capacity, Base (TB)[2]	684	12	24	36	12	24	36	12	24	36	8	12
Min. Usable Capacity (TB)[4]	500	8	16	25	8	16	25	8	16	25	4	8
Effective Capacity, Base (TB)[2]	508 - 1,016	8 - 16	16 - 32	25 - 50	8 - 16	16 - 32	25 - 50	8 - 16	16 - 32	25 - 50	4-8	8-16
Effective Capacity, Maximum (TB)[2,3]	1,016	220	236	254	220	236	254	220	236	254	76	84
Max Number of Disk Expansion Shelves	12	up to 3			up to 3			up to 3			1	1
Base/Max Flash Capacity per Array (GB)	12,800	3,200 / 3,200			1,200 / 3,200			640 / 3,200			160 / 640	320 / 1,200
Max Flash Capacity with All-Flash Shelf (GB)	64,000	16,000			16,000			16,000			NA	NA
Network Connections Per Controller	2 x 1GbE (default) AND up to 2 x Dual 10GbaseT (optional) or 2 x Dual 10GbE SFP+ (optional)	2 x 1GbE (default) AND up to 2 x Dual 10GbaseT (optional) or 2 x Dual 10GbE SFP+ (optional)			2 x 1GbE (on board) AND up to 2 x Dual-port 1GbE (optional) or 2 x Dual-port 10GbaseT (optional) or 2 x Dual-port 10GbE SFP+ (optional)			2 x 1GbE (on board) AND up to 2 x Dual-port 1GbE (optional) or 2 x Dual-port 10GbaseT (optional) or 2 x Dual-port 10GbE SFP+ (optional)			4 x 1GbE	2 x 1GbE (on board) and 2 x Dual 1GbE or 1 x Dual 10GbE SFP+ Optical or 1 x Dual 10GbaseT
Protocols Supported	iSCSI	iSCSI			iSCSI			iSCSI			iSCSI	iSCSI
External SAS Connectivity Per Controller	2 x 6Gb SAS	2 x 6Gb SAS			2 x 6Gb SAS			2 x 6Gb SAS			1 x 6Gb SAS	1 x 6Gb SAS
Power Requirement (Watts)	8,200	650			600			500			450	500

Expansion Shelves

	HDD Expansion Shelves			SSD Expansion Shelf
	ES1-H25	**ES1-H45**	**ES1-H65**	**ES1-AFS**
Raw Disk Capacity (TB)[2]	15	30	45	NA
Min. Usable Capacity (TB)[4]	11	23	34	NA
Effective Capacity (TB)[2]	11 - 22	23 - 46	34 - 68	NA
Flash Capacity (GB)	160	300	600	up to 12,800
SAS Connectivity Per Controller	2x 6Gb SAS (2 modules/shelf)			2x 6Gb SAS (2 modules/shelf)
Power Requirement (Watts)	400			200

Notes
1. Maximum performance configuration consists of 4x CS700 arrays, each with ES1-AFS All-Flash expansion shelf and 3x ES1-H65 capacity expansion shelves.
2. Raw and effective capacities are calculated using Base 10 (i.e., 1 TB = 1,000,000,000,000 bytes) after excluding space for parity, spares, and system overhead; the range represents 0 to 2x compression.
3. Maximum capacity is the capacity of the base array and maximum number of expansion shelves
4. Minimum usable capacity denotes the base capacity available to users once parity, spares and system overhead are deducted from overall raw capacity. Compression increases overall effective capacity.
5. Compression rates vary across applications. 2x compression factor reflected in upper range of effective capacity (based on actual compression rates seen by customers.)

Physical and Environmental Specifications

Dimensions	5.2"H x 17.2"W x 26.5"D 13.2 cm x 43.7 cm x 67.3 cm 3 Rack Units
Weight	76 lbs. / 34.5 kg
Weight (All-Flash Shelf)	55 lbs. / 25 kg
Operating Temperature	10 - 35° C (50 - 95° F)
Non-Operating Temperature	0° C - 40° C (32° F - 104° F)
Operating Humidity	8 - 90%
Non-Operating Humidity	5 - 95%

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