



Isilon H400



Isilon H500



Isilon H5600



Isilon H600

## ISILON HYBRID SCALE-OUT NAS

Dell EMC Isilon hybrid storage platforms, powered by the OneFS operating system, use a highly versatile yet simple scale-out storage architecture to speed access to massive amounts of data, while dramatically reducing cost and complexity. The hybrid storage platforms are highly flexible and strikes the balance between large capacity and high-performance storage to provide support for a broad range of enterprise file workloads. The hybrid storage platforms are available in 4 product lines:

- **Isilon H400:** Provides a balance of performance, capacity and value to support a wide range of file workloads. The H400 delivers up to 3 GB/s bandwidth per chassis and provides capacity options ranging from 120 TB to 720 TB per chassis<sup>1</sup>.
- **Isilon H500:** This versatile hybrid platform delivers up to 5 GB/s bandwidth per chassis with a capacity ranging from 120 TB to 720 TB per chassis<sup>1</sup>. The H500 is an ideal choice for organizations looking to consolidate and support a broad range of file workloads on a single platform.
- **Isilon H5600:** Combines massive scalability – 960 TB per chassis<sup>1</sup> – and up to 8 GB/s bandwidth – in an efficient, highly dense, deep 4U chassis. The H5600 is designed to support a wide range of demanding, large-scale file applications and workloads.
- **Isilon H600:** Designed to provide high performance at value, delivers up to 120,000 IOPS and up to 12 GB/s bandwidth per chassis. The H600 is ideal for high performance computing (HPC) workloads that don't require the extreme performance of all-flash.

All hybrid storage platforms are powered by the OneFS operating system and use a dense, modular architecture to provide a powerful, yet simple scale-out storage platform to speed access to unstructured data, while reducing cost and complexity.

**Efficiency:** OneFS powered scale-out storage delivers over 80 percent storage utilization versus about 50 percent for traditional platforms. SmartDedupe data deduplication software enhances storage efficiency to reduce your physical storage requirements. The policy-based, automated tiering options allow you to optimize storage resources and further lower costs.

**Flexibility:** OneFS powered storage solutions support all major protocols and data access methods including NFS, SMB, HDFS, HTTP, and FTP. This means that you can support a wide range of applications and workloads on a single platform.

**Data protection:** The storage is highly resilient and offers N+1 through N+4 redundancy. You may also choose from a variety of efficient and proven enterprise data backup and disaster recovery options.

**Security:** OneFS offers a broad range of security options including FIPS 140-2 level 2 self-encrypting drives, role-based access control (RBAC), secure access zones, SEC 17a-4 compliant WORM data immutability, SMB3 encryption, HDFS Transparent Data Encryption (TDE) and file system auditing.

<sup>1</sup> Usable capacity will be lower than the raw capacity reflected in this specification sheet.

## H400 SPECIFICATIONS

H400 ATTRIBUTES & OPTIONS	2 TB HDD	4 TB HDD	8 TB HDD	12 TB HDD
CHASSIS CAPACITY <sup>1</sup>	120 TB	240 TB	480 TB	720 TB
HDD DRIVES (3.5" 4KN SATA) PER CHASSIS	60			
SELF-ENCRYPTING DRIVE (SED HDD) OPTION	Yes	Yes	Yes	Yes
OPERATING SYSTEM	OneFS 8.1 or later except for self-encrypting drive options which require OneFS 8.1.0.1 or later.			
NUMBER OF NODES PER CHASSIS	4			
CPU TYPE (PER NODE)	Intel® Xeon® Processor D-1527			
ECC MEMORY (PER NODE)	64 GB			
CACHE (PER NODE) SOLID STATE DRIVES (SSD) (800 GB, 1.6 TB, OR 3.2 TB)	1 or 2	1 or 2	1 or 2	
SELF-ENCRYPTING DRIVE (SED SSD) OPTION	Yes	Yes	Yes	
FRONT-END NETWORKING (PER NODE)	2 x 10GE (SFP+)			
INFRASTRUCTURE (BACK-END) NETWORKING (PER NODE)	2 InfiniBand connections supporting QDR links or 2 x 10 GbE (SFP+)			
TYPICAL POWER CONSUMPTION @ 240V (PER CHASSIS)	1120 Watts (@25°C)			
MAXIMUM POWER CONSUMPTION @ 240V (PER CHASSIS)	1560 Watts			
TYPICAL THERMAL RATING	3800 BTU/hr			

## H500 SPECIFICATIONS

H500 ATTRIBUTES & OPTIONS	2 TB HDD	4 TB HDD	8 TB HDD	12 TB HDD
CHASSIS CAPACITY <sup>1</sup>	120 TB	240 TB	480 TB	720 TB
HDD DRIVES (3.5" 4KN SATA) PER CHASSIS	60			
SELF-ENCRYPTING DRIVE (SED HDD) OPTION	Yes	Yes	Yes	Yes
OPERATING SYSTEM	OneFS 8.1 or later except for self-encrypting drive options which require OneFS 8.1.0.1 or later.			
NUMBER OF NODES PER CHASSIS	4			
CPU TYPE (PER NODE)	Intel® Xeon® Processor E5-2630 v4			
ECC MEMORY (PER NODE)	128 GB			

CACHE (PER NODE) SOLID STATE DRIVES (SSD) (1.6 TB, OR 3.2 TB)	1 or 2	1 or 2	1 or 2	1 or 2
SELF-ENCRYPTING DRIVE (SED SSD) OPTION	Yes	Yes	Yes	Yes
FRONT-END NETWORKING (PER NODE)	2 x 10GE (SFP+) or 2 x 40GbE (QSFP+)			
INFRASTRUCTURE (BACK-END) NETWORKING (PER NODE)	2 InfiniBand connections supporting QDR links or 2 x 40GbE (QSFP+)			
TYPICAL POWER CONSUMPTION @ 240V (PER CHASSIS)	1330 Watts (@25°C)			
MAXIMUM POWER CONSUMPTION @ 240V (PER CHASSIS)	1910 Watts			
TYPICAL THERMAL RATING	4,540 BTU/hr			

## H5600 SPECIFICATIONS

H5600 ATTRIBUTES & OPTIONS	10 TB HDD	12 TB HDD
CHASSIS CAPACITY <sup>1</sup>	800 TB	960 TB
HDD DRIVES (3.5" 4KN SATA) PER CHASSIS	80	
SELF-ENCRYPTING DRIVE (SED HDD) OPTION	Yes	No
OPERATING SYSTEM	OneFS 8.2 or later.	
NUMBER OF NODES PER CHASSIS	4	
CPU TYPE (PER NODE)	Intel® Xeon® Processor E5-2680 v4	
ECC MEMORY (PER NODE)	256 GB	
CACHE (PER NODE) SOLID STATE DRIVES (SSD) (3.2 TB ONLY)	1 or 2	2
SELF-ENCRYPTING DRIVE (SED SSD) OPTION	Yes	No
FRONT-END NETWORKING (PER NODE)	2 x 10GE (SFP+) or 2 x 40GbE (QSFP+)	
INFRASTRUCTURE (BACK-END) NETWORKING (PER NODE)	2 x 40GbE (QSFP+)	
TYPICAL POWER CONSUMPTION @ 240V (PER CHASSIS)	1668 Watts (@25°C)	
MAXIMUM POWER CONSUMPTION @ 240V (PER CHASSIS)	1948 Watts	
TYPICAL THERMAL RATING	5628 BTU/hr	

## H600 SPECIFICATIONS

H600 ATTRIBUTES & OPTIONS	600 GB SAS	1.2 TB SAS
CHASSIS CAPACITY <sup>1</sup>	72 TB	144 TB
SAS DRIVES (2.5" 512N) PER CHASSIS	120	
SELF-ENCRYPTING DRIVE (SED (SAS) OPTION)	Yes	Yes
OPERATING SYSTEM	OneFS 8.1 or later except for self-encrypting drive options which require OneFS 8.1.0.1 or later	
NUMBER OF NODES PER CHASSIS	4	
CPU TYPE (PER NODE)	Intel® Xeon® Processor E5-2680 v4	
ECC MEMORY (PER NODE)	256 GB	
CACHE (PER NODE) SOLID STATE DRIVES (SSD) (1.6 TB, OR 3.2 TB)	1 or 2	1 or 2
SELF-ENCRYPTING DRIVE (SED SSD) OPTION	Yes	Yes
FRONT-END NETWORKING (PER NODE)	2 x 10GE (SFP+) or 2 x 40GbE (QSFP+)	
INFRASTRUCTURE (BACK-END) NETWORKING (PER NODE)	2 InfiniBand connections supporting QDR links or 2 x 40GbE (QSFP+)	
TYPICAL POWER CONSUMPTION @ 240V (PER CHASSIS)	1700 Watts (@25°C)	
MAXIMUM POWER CONSUMPTION @ 240V (PER CHASSIS)	1990 Watts	
TYPICAL THERMAL RATING	5840 BTU/hr	

CLUSTER ATTRIBUTES <sup>2</sup>	H400	H500	H5600	H600
NUMBER OF CHASSIS <sup>2</sup>	1 to 63	1 to 63	1 to 63	1 to 63
NUMBER OF NODES <sup>2</sup>	4 to 252	4 to 252	4 to 252	4 to 252
CLUSTER CAPACITY <sup>1,2</sup>	120 TB to 45.3 PB	120 TB to 45.3 PB	800 TB to 60.4 PB	72 TB to 9.0 PB
RACK UNITS <sup>2</sup>	4 to 252	4 to 252	4 to 252	4 to 252

<sup>1</sup> Usable capacity will be lower than the raw capacity reflected in this specification sheet.

<sup>2</sup> Cluster attributes in this table are based on use of OneFS 8.2 which supports up to 252 nodes in a single cluster.

## PRODUCT ATTRIBUTES

SCALE-OUT ARCHITECTURE	Distributed, fully symmetric clustered architecture that combines modular storage with OneFS operating system
MODULAR DESIGN	4 self-contained nodes include compute assembly and storage media in a 4U rack-mountable chassis. Integrates easily into existing clusters
OPERATING SYSTEM	OneFS distributed file system: creates a cluster with a single file system and single global namespace; fully journaled, fully distributed, globally coherent write/read cache
HIGH AVAILABILITY	No single point of failure; self-healing design protects against disk or node failure; includes back-end intra-cluster failover
SCALABILITY	A cluster scales from 4 to 252 nodes. Add an additional chassis to scale performance and capacity in about a minute.
DATA PROTECTION	FlexProtect™ file-level striping with support for N+1 through N+4 and mirroring data protection schemes
2-WAY NDMP	Supports two ports of Fibre Channel (8G) that allows for 2-way NDMP connections, and two ports of standard 10GbE connectivity
DATA REPLICATION	SynclQ® fast and flexible file-based asynchronous replication
DATA RETENTION	SmartLock® policy-based retention and protection against accidental deletion
SECURITY	File system audit capability to improve security and control of your storage infrastructure and address regulatory compliance requirements
EFFICIENCY	SmartDedupe data deduplication option, which can reduce storage requirements by up to 35 percent
AUTOMATED STORAGE TIERING	Policy-based automated tiering options, including SmartPools and CloudPools software, to optimize storage resources and lower costs
NETWORK PROTOCOL SUPPORT	NFSv3, NFSv4, NFS Kerberized sessions (UDP or TCP), SMB1 (CIFS), SMB2, SMB3, SMB3-CA, Multichannel, HTTP, FTP, NDMP, SNMP, LDAP, HDFS, ADS, NIS reads/writes

<sup>1</sup> Usable capacity will be lower than the raw capacity reflected in this specification sheet.

## ENVIRONMENTAL SPECIFICATIONS

POWER SUPPLY	Power factor is a measure of how effectively you are using electricity. The power factor of an AC electrical power system is defined as the ratio of the real power absorbed by the load to the apparent power flowing in the circuit, and is a dimensionless number in the closed interval of -1 to 1. A power factor of less than one indicates the voltage and current are not in phase, reducing the instantaneous product of the two.
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H400 and H500: Dual-redundant, hot-swappable 1050W (low line) 1100W (high line) power supplies with power factor correction (PFC); rated for input voltages 90 - 130 VAC (low line) and 180-264 VAC (high line)

Power factor and efficiency rate for H400 and H500

System Load	Efficiency	PF
10%	86.00%	0.918
20%	92.95%	0.967
30%	93.93%	0.970
40%	94.41%	0.972
50%	94.49%	0.981
60%	94.11%	0.986
70%	94.04%	0.990
80%	93.86%	0.992
90%	93.63%	0.995
100%	93.25	0.996

H5600 and H600: Dual-redundant, hot-swappable 1450W power supplies with power factor correction (PFC); rated for input voltage 180 – 265 VAC (optional rack mount step-up transformer for 90-130 VAC input regions)

Power factor and efficiency rate for H5600 and H600 PSU

System Load	Efficiency	PF
10%	89.74%	0.933
20%	94.28%	0.982
30%	95.02%	0.990
40%	95.19%	0.994
50%	95.11%	0.996
60%	94.77%	0.997
70%	94.50%	0.998
80%	94.13%	0.998
90%	93.66%	0.998
100%	92.93%	0.998

OPERATING ENVIRONMENT

Compliant with ASHRAE A3 data center environment guidelines

DIMENSIONS/WEIGHT

H400, H500, H600: Height: 7" (17.8 cm); Width: 17.6" (44.8 cm);  
 Depth (front NEMA rail to rear 2.5" SSD cover ejector): 35.8" (91.0 cm);  
 Depth (front of bezel to rear 2.5" SSD cover ejector): 37.6" (95.5 cm)

H5600: Height: 7" (17.8 cm); Width: 17.6" (44.8 cm);  
 Depth: (front NEMA rail to rear 2.5" SSD cover ejector): 40.4" (102.6 cm);  
 Depth: (front of bezel to rear 2.5" SSD cover ejector): 42.2" (107.1 cm);

H400: Weight: 245 lbs. (111.1 kg)  
 H500: Weight: 250 lbs. (113.4 kg)  
 H5600: Weight: 285 lbs. (129.3 kg)

H600: Weight: 215 lbs. (97.5 kg)

MINIMUM SERVICE CLEARANCES

Front: 40" (88.9 cm), rear: 42" (106.7 cm)

## SAFETY AND EMI COMPLIANCE

### Statement of Compliance

This Information Technology Equipment is compliant with the electromagnetic compatibility (EMC) and product safety regulations/standards required by the countries in which the product is sold. EMC compliance is based on FCC part 15, CISPR22/CISPR24 and EN55022/EN55024 standards, including applicable international variations. EMC compliant Class A products are marketed for use in business, industrial, and commercial environments. Product Safety compliance is based on IEC 60950-1 and EN 60951-1 standards, including applicable national deviations.

This Information Technology Equipment is in compliance with EU RoHS Directive 2011/65/EU.

The individual devices used in this product are approved under a unique regulatory model identifier that is affixed to each individual device rating label, which may differ from any marketing or product family name in this datasheet.

For additional information see <https://support.emc.com> under the Safety & EMI Compliance Information tab.

### TAKE THE NEXT STEP

Contact your Dell EMC sales representative or authorized reseller to learn more about how OneFS powered hybrid scale-out NAS solutions can benefit your organization.

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