



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:

- **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 chassis¹.
- **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 chassis¹. The H500 is an ideal choice for organizations looking to consolidate and support a broad range of file workloads on a single platform.
- **H5600:** Combines massive scalability – 960 TB (raw) per chassis¹ – and up to 8 GB/s bandwidth – in an efficient, highly dense, deep 4U chassis. The H5600 also includes inline compression and deduplication capabilities. With up to 3:1 data compression, the effective capacity for the H5600 cluster is 145 PB depending on the dataset. The H5600 is designed to support a wide range of demanding, large-scale file applications and workloads.
- **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. The H5600 includes inline deduplication and compression.

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.

¹ 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 ¹ | 120 TB | 240 TB | 480 TB | 720 TB |
| HDD DRIVES (3.5" 4KN SATA) PER CHASSIS | 60 | | | |
| SELF-ENCRYPTING DRIVE (SED HDD) FIPS140-2 COMPLIANT 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+) or 2 x 25GbE (SFP28) | | | |
| 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 ¹ | 120 TB | 240 TB | 480 TB | 720 TB |
| HDD DRIVES (3.5" 4KN SATA) PER CHASSIS | 60 | | | |
| SELF-ENCRYPTING DRIVE (SED HDD) FIPS 140-2 COMPLIANT 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 25GbE (SFP28) 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 |
|-------------------------------------------------------------|--------------------------------------------------------------------|-----------|
| RAW CHASSIS CAPACITY ¹ | 800 TB | 960 TB |
| HDD DRIVES (3.5" 4KN SATA) PER CHASSIS | 80 | |
| SELF-ENCRYPTING DRIVE (SED HDD) FIPS 140-2 COMPLIANT OPTION | Yes | Yes |
| 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 25GbE (SFP28) 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) | 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 ¹ | 72 TB | 144 TB |
| SAS DRIVES (2.5" 512N) PER CHASSIS | 120 | |
| SELF-ENCRYPTING DRIVE (SED (SAS) FIPS 140-2 COMPLIANT 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 25GbE (SFP28) 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 ² | H400 | H500 | H5600 | H600 |
|-------------------------------------|-------------------|-------------------|-------------------|-----------------|
| NUMBER OF CHASSIS ² | 1 to 63 | 1 to 63 | 1 to 63 | 1 to 63 |
| NUMBER OF NODES ² | 4 to 252 | 4 to 252 | 4 to 252 | 4 to 252 |
| RAW CLUSTER CAPACITY ^{1,2} | 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 ² | 4 to 252 | 4 to 252 | 4 to 252 | 4 to 252 |

¹ Usable capacity will be lower than the raw capacity reflected in this specification sheet.

² 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 | SyncIQ® 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; H5600 includes inline compression and deduplication |
| 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 |

¹ 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. |

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 |

CFM – Volume of airflow; cubic feet/minute

H5600, each Node 60CFM, total chassis 240CFM (max.)

H400, H500, H600, each Node 70CFM, total chassis 280CFM (max)

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

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