DELL Technologies

Specification Sheet

Dell PowerScale Hybrid

The PowerScale hybrid nodes PowerScale hybrid nodes manage large-scale workloads efficiently and cost-effectively.

Dell PowerScale all-flash storage nodes are designed to accelerate demanding file and object workloads, delivering consistent high performance, simplified operations, and robust cyber resilience across edge, core, and cloud environments. Powered by the advanced OneFS operating system, its software-defined architecture scales linearly from terabytes to exabytes, providing the massive throughput and low-latency access essential for AI and HPC workloads. With the flexibility to integrate all-flash, hybrid, and archive nodes within a unified namespace, PowerScale optimizes both performance and cost, ensuring every workload is handled with precision and efficiency.

PowerScale Hybrid NAS platforms offer exceptional flexibility, balancing large capacity with high-performance storage to support a wide range of enterprise file workloads. These hybrid platforms integrate seamlessly into existing clusters alongside PowerScale or Isilon nodes, enabling efficient support for both traditional and modern applications.

The PowerScale Hybrid nodes include:

PowerScale H710 and H7100

PowerScale H710 is the direct refresh of the H700 hybrid node — now equipped with next-gen Intel CPUs, DDR5 memory, and improved thermal efficiency for consistently high performance. Supporting up to 1.4 PB per chassis with inline compression and deduplication, the H710 is engineered for performance-tiered environments and ready for future HAMR drives. Ideal for mixed workloads, it accelerates cold-to-hot data transitions, enabling faster recall, AI iteration, and high-throughput hybrid pipelines.

PowerScale H7100 succeeds the H7000 as Dell's most powerful and scalable hybrid platform — delivering up to 1.9 PB per chassis with a redesigned thermal and compute architecture. With support for future higher capacity HAMR drives, refreshed CPUs, DDR5, and NVMe vaulting, the H7100 enhances responsiveness for archive-heavy workloads that demand more than cold storage. It enables intelligent tiering, active archive, and high-capacity performance workflows — all within a unified, flexible infrastructure.

Both models are node pool compatible to their predecessors, allowing easy expansion of current Hybrid clusters.

PowerScale H700 and H7000

PowerScale H700 provides maximum performance and value to support a demanding file workload. The H700 provides capacity up to 1.4 PB per chassis. The H700 includes inline compression and deduplication capabilities

PowerScale H7000 is a versatile, high performance, high-capacity hybrid platform which supports up to 1.9 PB per chassis. The deep chassis based H7000 is an ideal to consolidate a range of file workloads on a single platform. The H7000 includes inline compression and deduplication capabilities

Embedded, integrated, or attached OEM versions are available for PowerScale hybrid nodes as either de-branded or re-branded solutions.

PowerScale H710 Hybrid Specifications

H710 ATTRIBUTES & OPTIONS	2 TB HDD	4 TB HDD	8 TB HDD	12 TB HDD	16 TB HDD	20 TB HDD	24 TB HDD
Chassis capacity	120 TB	240 TB	480 TB	720 TB	960 TB	1.2 PB	1.4 PB
Hard disc drives (HDD) (3.5") per chassis	60						
Selfencrypting drive (SED HDD) FIPS compliant option	FIPS 1402 for 2TB to 16TB drives FIPS 1403 (CMVP pending) for +20TB drives						
Operating system	OneFS 9.11 or later						
Number of nodes per chassis	4						
ECC memory (per node)	192 GB						
Cache (per Node) solid state drives (SSD) (800 GB, 1.6 TB, 3.2 TB or 7.68 TB)	1 or 2 Capacity and number of SSDs determined by HDD size and count						
Frontend networking (per node)	2 x 100GbE (QSFP28) or 2 x 25GbE (SFP28)						
Infrastructure (backend) networking (per node)	2 InfiniBand connections with EDR links or 2 x 100 GbE (QSFP28) or 2 X 25 GbE (SFP28)						
Max Power Consumption @ 200~240v (per chassis)[1]	2047 Watts						
TYPICAL POWER CONSUMPTION	1789 Watts						

[1]Values at <25° C are reflective of more steady state maximum values during normal operation

PowerScale H7100 Hybrid Specifications

H7100 ATTRIBUTES & OPTIONS	12 TB HDD	16 TB HDD	20 TB HDD	24 TB HDD
Chassis capacity	960 TB	1.28 PB	1.6 PB	1.9 PB
Hard disc drives (HDD) (3.5") per chassis	80			
Selfencrypting drive (SED HDD) FIPS compliant option	FIPS 1402 for 2TB to 16TB drives FIPS 1403 (CMVP pending) for +20TB drives			
Operating system	OneFS 9.11 or later			
Number of nodes per chassis	4			
ECC memory (per node)	384 GB			
Cache (per node) solid state drives (SSD) (3.2TB or 7.68TB)	1 or 2 Capacity and number of SSDs determined by HDD size and count[2]			
Front-end networking (per node)	2 x 100GbE (QSFP28) or 2 X 25 GbE (SFP28)			

Infrastructure (back-end) networking (per node)	2 InfiniBand connections with EDR links or 2 x 100 GbE (QSFP28) or 2 X 25 GbE (SFP28)
Max Power Consumption @ 200~240v (per chassis)[1]	2252 Watts (@25°C)
TYPICAL POWER CONSUMPTION	1968 Watts

[1]Values at <25° C are reflective of more steady state maximum values during normal operation

PowerScale H700 Hybrid Specifications

H700 ATTRIBUTES & OPTIONS	2 TB HDD	4 TB HDD	8 TB HDD	12 TB HDD	16 TB HDD	20 TB HDD	24 TB HDD
Chassis capacity	120 TB	240 TB	480 TB	720 TB	960 TB	1.2 PB	1.4 PB
Hard disc drives (HDD) (3.5") per chassis	60						
Selfencrypting drive (SED HDD) FIPS1402 compliant option	Yes, except 20 TB & 24 TB drives						
Operating system	OneFS 9.10 or later						
Number of nodes per chassis	4						
ECC memory (per node)	192 GB						
Cache (per Node) solid state drives (SSD) (800 GB, 1.6 TB, 3.2 TB or 7.68 TB)	1 or 2 Capacity and number of SSDs determined by HDD size and count						
Frontend networking (per node)	2 x 100GbE (QSFP28) or 2 x 25GbE (SFP28)						
Infrastructure (backend) networking (per node)	2 InfiniBand connections with QDR links or 2 x 100 GbE (QSFP28) or 2 X 25 GbE (SFP28)						
Max Power Consumption @ 200~240v (per chassis)[1]	1688 Watts						

[1]Values at <25° C are reflective of more steady state maximum values during normal operation

PowerScale H7000 Hybrid Specifications

H7000 ATTRIBUTES & OPTIONS	12 TB HDD	16 TB HDD	20 TB HDD	24 TB HDD
Chassis capacity	960 TB	1.28 PB	1.6 PB	1.9 PB
Hard disc drives (HDD) (3.5") per chassis	80			
Self-encrypting drive (SED HDD) FIPS140-2 compliant option	Yes, except 20 TB & 24 TB drives			
Operating system	OneFS 9.10 or later			
Number of nodes per chassis	4			

ECC memory (per node)	384 GB
Cache (per node) solid state drives (SSD) (3.2TB or 7.68TB)	1 or 2 Capacity and number of SSDs determined by HDD size and count[2]
Frontend networking (per node)	2 x 100GbE (QSFP28) or 2 X 25 GbE (SFP28)
Infrastructure (backend) networking (per node)	2 InfiniBand connections with QDR links or 2 x 100 GbE (QSFP28) or 2 X 25 GbE (SFP28)
Max Power Consumption @ 200~240v (per chassis)[1]	1857 Watts (@25°C)

[1]Values at <25° C are reflective of more steady state maximum values during normal operation
[2]20TB drive version of H7000 default with one 7.68TB cache drive while 12 and 16TB drive versions default with two 3.2TB cache drives

CLUSTER ATTRIBUTES	H700	H710	H7000	H7100
Number of chassis	1 to 63			
Number of nodes	4 to 252			
Raw cluster capacity	120 TB to 75.6 PB		960 TB to 100.8 PB	
Rack units	4 to 252			

Cluster scalability limitations may apply

PowerScale Attributes

PRODUCT ATTRIBUTES	
Scaleout architecture	Distributed fully symmetric clustered architecture that combines modular storage with OneFS operating system in a single volume, single namespace, and single filesystem
Modular design	Four selfcontained PowerScale nodes include server, software, HDDs and SSDs in a 4U rackmountable chassis. All nodes can be integrated into existing PowerScale and Isilon clusters with backend Ethernet or InfiniBand connectivity
High availability	Nosinglepointoffailure. Selfhealing design protects against disk or node failure; includes backend intracluster failover
Operating system	PowerScale OneFS distributed file system creates a cluster with a single file system and single global namespace. It is fully journaled, fully distributed, and has a globally coherent write/read cache
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 two-way NDMP connections and two ports of standard 10GbE connectivity
Data retention	SmartLock policybased retention and protection against accidental deletion
Security	File system audit capability and STIG hardening to improve security and control of your storage infrastructure and address regulatory compliance requirements. PowerScale Cyber Protection powered by Superna Ransomware Defender can be included
Efficiency	SmartDedupe data deduplication option, which can reduce storage requirements. Inline data reduction and compression available
Automated storage tiering	Policybased 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, SMB3CA, Multichannel, HTTP, FTP, NDMP, SNMP, LDAP, HDFS, S3, ADS, NIS reads/writes
Data replication	SyncIQ fast and flexible onetomany filebased asynchronous replication between clusters. SmartSync provides flexible file to file and file to object data movement

ENVIRONMENTAL SPECIFICATIONS – POWER

H710 and H7100: Dual-redundant, hot-swappable 1800W 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, **H710 and H7100 at 230Vac**

System Load	Efficiency	PF
10%	93.09%	0.8944
20%	95.55%	0.9645
30%	96.12%	0.9757
40%	96.26%	0.9862
50%	96.25%	0.9865
60%	96.12%	0.9913
70%	95.80%	0.9945
80%	95.55%	0.9962
90%	95.14%	0.9974
100%	94.89%	0.9982

CFM – Volume of airflow; cubic feet/minute

- H7100: each Node 59.3 CFM, total chassis 237.2CFM (max.)
- wwH710: each Node 69 CFM, total chassis 276CFM (max.)

H700 and H7000: 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 **H700**

System Load	Efficiency	PF
10%	93.13%	0.8573
20%	95.29%	0.9538
50%	96.00%	0.9865
100%	94.47%	0.9953

Power factor and efficiency rate for **H7000**

System Load	Efficiency	PF
10%	89.74%	0.933
20%	94.28%	0.982
50%	95.11%	0.996
100%	92.93%	0.998

CFM – Volume of airflow; cubic feet/minute

H7000: each Node 60CFM, total chassis 240CFM (max.)
H700: each Node 70CFM, total chassis 280CFM (max)

OPERATING ENVIRONMENT	Compliant with ASHRAE A3 data center environment guidelines

DIMENSIONS/ WEIGHT:

H700 and H710:

- 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)

DIMENSIONS/ WEIGHT:

- 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);

The following max weights per Chassis/node:

- H710: 263 lbs. (119.3 kg)
- H7100: 313 lbs. (142 kg)

H700: 261 lbs. (118.4 kg)
H7000: 311.7 lbs. (141.4 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 and product safety regulations/ standards required by the countries in which the product is sold. Compliance is based on FCC part 15, CISPR22/CISPR24 and EN55022/EN55024 standards, including applicable international variations. 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.

PowerScale H700 and H7000 nodes are Energy Star compliant. The newer generation H710 and H7100 Energy Star Certification coming soon.

For additional information see http://support.dell.com under the Safety & EMI Compliance Information tab.

Take the next step

Contact your Dell sales representative or authorized reseller to learn more about how PowerScale scale-out NAS storage can benefit your organization.

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