DELL Technologies

Specification Sheet

Dell PowerScale Archive

The PowerScale Archive nodes provide the lowest cost approach to support both active and cold archives.

The PowerScale family comprises of file storage platforms configured with the PowerScale OneFS operating system. PowerScale OneFS provides the intelligence behind the highly scalable, high–performance modular storage solution that can grow with your business. A OneFS powered cluster can be built with a flexible choice of storage platforms including all-flash, hybrid and archive nodes. These solutions provide the performance, choice, efficiency, flexibility, scalability, security, and protection for you to store massive amounts of unstructured data within a cluster.

PowerScale archive platforms use a modular architecture while dramatically reducing cost and complexity by utilizing a dense hardware design that provides four nodes within a single 4U chassis. The PowerScale all-flash and hybrid platforms can co-exist seamlessly in the same cluster with your existing PowerScale or Isilon nodes to drive your traditional and modern applications.

The PowerScale archive nodes include:

PowerScale A310 and A3100

PowerScale A310 is the next-generation successor to the A300 — delivering improved performance, thermal efficiency, and compute with Intel CPUs and DDR5 memory. With up to 1.4 PB per chassis and support for future high capacity HAMR HDDs, the A310 is built for modern archive needs. Inline compression and deduplication come standard, while enhanced responsiveness enables active archive use cases like faster data recall, audit access, and iterative analytics from cold storage.

PowerScale A3100 builds on the A3000 platform to deliver a dense archive solution — now with upgraded compute, DDR5 DRAM, and improved thermal design for better performance under scale. Storing up to 1.9 PB per chassis, and supporting future HAMR HDDs as well, the A3100 combines long-term retention efficiency with the agility needed for active archive scenarios. Ideal for high-volume datasets, it accelerates retrieval of cold data to support retraining, versioning, and compliance workflows.

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

PowerScale A300 and A3000

PowerScale A300 is an ideal active archive storage solution that combines high performance, near-primary accessibility, value, and ease of use. The A300 provides between 120 TB to 1.4 PB per chassis. The A300 includes inline compression and deduplication capabilities.

PowerScale A3000 delivers a solution for high performance, high density, deep archive storage that safeguards data efficiently for long-term retention. The A3000 stores up to 1.9 PB per chassis. The A3000 includes inline compression and deduplication capabilities.

PowerScale A310 Archive Specifications

A310 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
HDD drives (3.5") per chassis	60						
Self-encrypting drive (SED HDD) FIPS compliant option	FIPS 140-2 for 2TB to 16TB drives FIPS 140-3 (CMVP pending) for +20TB drives						
Operating system	OneFS 9.11 or later						
Number of nodes per chassis	4						
ECC memory (per node)	96 GB						
Cache (per node) solid state drives (800GB, 1.6TB, 3.2TB, 7.68 TB)	1 or 2 Capacity and number of SSDs determined by HDD size and count[2]						
Front-end networking (per node)	2 x 25GbE (SFP28) or 2 x 100 GbE (QSFP28)						
Infrastructure networking (per node)	2 X 25GbE (SFP28) or 2 X 100 GbE (QSFP28) or 2 InfiniBand connections with EDR links						
Max Power Consumption @ 200~240v (per chassis)[1]	1531 Watts						
TYPICAL POWER CONSUMPTION	1134 Watts						

[1]Values at <25° C are reflective of more steady state maximum values during normal operation
[2]Some versions of A310 default with just one 800GB and will only support L3 cache configuration

PowerScale A3100 Archive Specifications

A3100 ATTRIBUTES & OPTIONS	12 TB HDD	16 TB HDD	20 TB HDD	24 TB HDD
Chassis capacity	960	1.28 PB	1.6 PB	1.9 PB
HDD drives (3.5") per chassis	80			
Self-encrypting drive (SED HDD) FIPS compliant option	FIPS 140-2 for 2TB to 16TB drives FIPS 140-3 (CMVP pending) for +20TB drives			
Operating system	OneFS 9.11 or later			
Number of nodes per chassis	4			

A3100 ATTRIBUTES & OPTIONS	12 TB HDD	16 TB HDD	20 TB HDD	24 TB HDD
ECC memory (per node)	96 GB			
Cache (per node) solid state drives (800GB2, 3.2TB, 7.68 TB)	1 or 2 Capacity and number of SSDs determined by HDD size and count[3]			
Front-end networking (per node)	2 x 25GbE (SFP28) or 2 x 100 GbE (QSFP28)			
Infrastructure networking (per node)	2 X 25GbE (SFP28) or 2 X 100 GbE (QSFP28) or 2 InfiniBand connections with EDR links			
Max Power Consumption @ 200~240v (per chassis)[1]	1744 Watts			
TYPICAL POWER CONSUMPTION	1303 Watts			

1 Values at <25° C are reflective of more steady state maximum values during normal operation
2 Some versions of A3100 default with just one 800GB and will only support L3 cache configuration

PowerScale A300 Archive Specifications

A300 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
HDD drives (3.5") per chassis	60						
Self-encrypting drive (SED HDD) FIPS 140-2 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)	96 GB						
Cache (per node) solid state drives (800GB, 1.6TB, 3.2TB, 7.68 TB)	1 or 2 Capacity and number of SSDs determined by HDD size and count[2]						
Front-end networking (per node)	2 x 100 GbE (QSFP28) or 2 x 25GbE (SFP28)						
Infrastructure networking (per node)	2 InfiniBand connections with QDR links or 2 X 100 GbE (QSFP28) or 2 X 25GbE (SFP28)						
Max Power Consumption @ 200~240v (per chassis)[1]	1070 Watts (@25°C)						

[1]Values at <25° C are reflective of more steady state maximum values during normal operation
[2]Some versions of A300 default with just one 800GB and will only support L3 cache configuration

PowerScale A3000 Archive Specifications

A3000 ATTRIBUTES & OPTIONS	12 TB HDD	16 TB HDD	20 TB HDD	24 TB HDD
Chassis capacity	960	1.28 PB	1.6 PB	1.9 PB
HDD drives (3.5") per chassis	80			
Self-encrypting drive (SED HDD) FIPS 140-2 compliant option	Yes, except 20 & 24 TB drives			
Operating system	OneFS 9.10 or later			
Number of nodes per chassis	4			
ECC memory (per node)	96 GB			
Cache (per node) solid state drives (800GB2, 3.2TB, 7.68 TB)	1 or 2 Capacity and number of SSDs determined by HDD size and count[3]			
Front-end networking (per node)	2 x 100 GbE (QSFP28) or 2 x 25GbE (SFP28)			
Infrastructure networking (per node)	2 InfiniBand connections with QDR links or 2 X 100 GbE (QSFP28) or 2 X 25GbE (SFP28)			
Max Power Consumption @ 200~240v (per chassis)[1]	1230 Watts (@25°C)			

1 Values at <25° C are reflective of more steady state maximum values during normal operation
2 Some versions of A3000 default with just one 800GB and will only support L3 cache configuration
3 20TB drive version of A3000 default with one 7.68TB cache drive while 12 and 16TB drive versions default with two 3.2TB Cache drives

CLUSTER ATTRIBUTES	A300	A310	A3000	A3100
Number of chassis	1 to 63			
Number of nodes	4 to 252			
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	
Scale-out 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 self-contained Isilon or PowerScale nodes include server, software, HDDs and SSDs in a 4U rack-mountable chassis. All nodes can be integrated into existing PowerScale and Isilon clusters with backend Ethernet or InfiniBand connectivity
High availability	No-single-point-of-failure. Self-healing design protects against disk or node failure; includes back-end intra-cluster 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 policy-based 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
Efficiency	SmartDedupe data deduplication option, which can reduce storage requirements. Inline data reduction and compression available
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, S3, ADS, NIS reads/writes
Data replication	SyncIQ fast and flexible one-to-many file-based asynchronous replication between clusters. SmartSync provides efficient file to file and file to object data movement

ENVIRONMENTAL SPECIFICATIONS – POWER

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.

For max power consumption information during unexpected environmental conditions, please refer to the "Site Preparation and Planning Guide".

A310 and A3100: 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**, A310 and A3100 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
- A3100: each Node 59.3 CFM, total chassis 237.2CFM (max.)
- A310: each Node 69 CFM, total chassis 276CFM (max.)

A300 and A3000: 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**, A300 and A3000**

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

CFM – Volume of airflow; cubic feet/minute
A3000: each Node 60CFM, total chassis 240CFM (max.)
A300: each Node 70CFM, total chassis 280CFM (max)

OPERATING ENVIRONMENT	Compliant with ASHRAE A3 data center environment guidelines

DIMENSIONS / WEIGHT:

A300 and A310:

- 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);

A3000 and A3100:

- 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:

- A310: 254.2 lbs (115..3 kg)
- A3100: 305 lbs. (138.3 kg)

A300: 252.2 lbs (114.4 kg)

A3000: 303 lbs. (137.4 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 A300 and A3000 nodes are Energy Star compliant. The newer generation A310 and A3100 Energy Star Certification coming soon.

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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.

Learn more about Dell Storage

Contact a Dell Expert

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