

# Dell PowerScale

## At-a-Glance

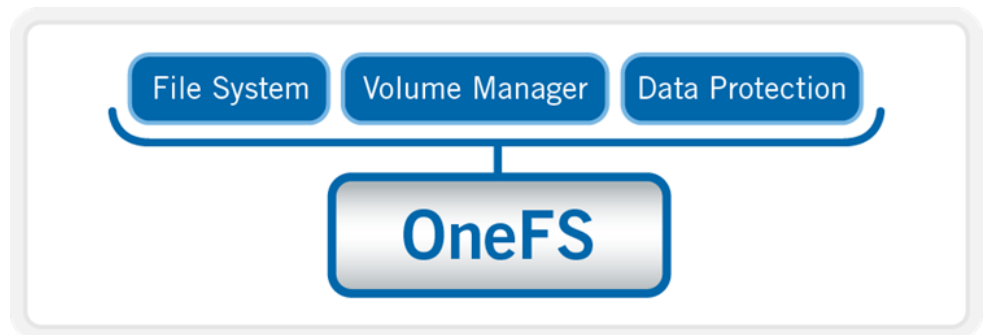
PowerScale brings the strength of Dell to the world’s leading scale-out NAS platform to provide a data-first foundation to enable you to innovate with data. PowerScale and Isilon nodes - powered by the PowerScale OneFS operating system - form the ideal platform to store, manage, secure, protect and analyze unstructured data efficiently while supporting a wide range of applications and workloads.

Key advantages include:

- **Simplicity at any scale:** Unlock the potential within your unstructured data using a solution that provides a single file system, single volume namespace that scales to PBs of capacity
- **More power:** Support your most demanding file workloads with all-NVMe solutions that deliver massive performance in a compact form factor per cluster. New QLC drives on PowerScale F600 and F900 deliver massive capacity without any loss of performance.
- **More choice:** Flexible deployment options including as an appliance, in the cloud or consumption as-a-service on-premises.
- **Any data, anywhere:** Support a wide range of data types and diverse workloads with built-in multi-protocol capabilities including NFS, SMB, HDFS, S3, HTTP and FTP protocols. Store data anywhere – at the edge, in the datacenter or in the cloud
- **Highly efficient:** OneFS delivers up to 80% storage utilization for maximum storage efficiency. Data deduplication and in-line data compression on all the PowerScale nodes and the Isilon F810 and H5600 hybrid platforms which can reduce the space consumed
- **Optimized data placement:** Optimize resources with policy-based, automated storage tiering to move data automatically to lower cost tiers, including public and private cloud storage with a choice of cloud providers
- **Enterprise data protection:** OneFS powered storage platforms are highly resilient with up to N+4 redundancy and offer proven enterprise-grade back-up and disaster recovery options
- **Robust security options:** RBAC, Access Zones, SEC 17a-4 WORM compliance, File System Auditing, File blocking, SMB3 encryption, Data At Rest Encryption (DARE) with SEDs, STIG hardening, Multi-factor authentication, HDFS transparent data encryption and FIPS 140-2 validation
- **Powerful big data analytics:** Maximize data capital with in-place analytics that seamlessly integrate with leading vendors like Pivotal, Cloudera, Hortonworks and Splunk to drive workloads in Artificial Intelligence, Machine Learning or Deep Learning
- **Public and multi-cloud options:** Flexible deployment options with all the leading public cloud providers delivers maximum flexibility and agility of deployment:

### OneFS operating system

OneFS provides the intelligence behind the scale-out storage systems. It combines the three layers of traditional storage architectures—file system, volume manager and data protection—into one unified software layer, creating a intelligent file system that spans all nodes within a cluster. OneFS is a single file system, single volume architecture, which makes it easy to manage at any scale. The storage systems powered by OneFS are simple to install, manage and scale.



## PowerScale and Isilon nodes

Attribute	F200, F600	F900	Isilon F800, F810	H700, H7000	Isilon H600	Isilon H5600	Isilon H500, H400	A300, A3000	Isilon A200, A2000
Rack Units	1U	2U	4 nodes in 4U	4 nodes in 4U	4 nodes in 4U	4 nodes in 4U	4 nodes in 4U	4 nodes in 4U	4 nodes in 4U
Nodes per Chassis	N/A	N/A	4	4	4	4	4	4	4
Per Node Capacity	F200: 3.84 – 30.72 TB F600: 15.36 – 245 TB	46 – 736 TB	F800: 24 - 231 TB F810: 57.5 - 231 TB	H700: 30 - 320 TB H7000: 240 – 400 TB	18 - 36 TB	200 - 320 TB	30 - 180 TB	A300: 30 - 320 TB A3000: 200 – 400 TB	A200: 30 - 240 TB A2000: 200 – 320 TB
Storage Media per node	F200: 4 SSDs F600: 8 NVMe SSDs (TLC and QLC)	24 NVMe SSDs (TLC and QLC)	15 SSDs	H700: 15 SATA drives H7000: 20 SATA drives	30 SAS drives	20 SATA drives	15 SATA drives	A300: 15 SATA drives A3000: 20 SATA drives	A200: 15 SATA drives A2000: 20 SATA drives
Storage Media Capacity Options	F200: 960 GB, 1.92, 3.84, 7.68 TB SSDs F600: 1.92, 3.84, 7.68, 15.36, 30.7 TB NVMe SSDs	1.92, 3.84, 7.68 or 15.36, 30.7 TB NVMe SSDs	3.84, 7.68 or 15.36 TB SSDs	H700: 2, 4, 8, 12, 16, 20 TB SATA drives H7000: 12, 16, 20 TB SATA drives	600 GB or 1.2 TB SAS drives	10, 12, 16 TB SATA drives	2, 4, 8, 12 TB SATA drive	A300: 2, 4, 8, 12, 16, 20 TB SATA drives A3000: 10, 12, 16, 20 TB SATA drives	A200: 2, 4, 8, 12, 16 TB SATA drives A2000: 10, 12, 16 TB SATA drives
ECC Memory per Node	F200: 48 or 96 GB F600: 128 GB, 192 GB or 384 GB	736 GB	256 GB	H700: 192 GB H7000: 384 GB	256 GB	256 GB	H400: 64 GB H500: 128 GB	96 GB	16 GB
OneFS version	OneFS 9 and above; OneFS 9.4 or later for QLC drives	OneFS 9.2 or above; OneFS 9.4 or later for QLC drives	OneFS 9 and above	OneFS 9.2.1	OneFS 9 and above	OneFS 9 and above	OneFS 9 and above	OneFS 9.2.1 and above	OneFS 9 and above

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

## PowerScale OneFS software features

InsightIQ	No charge software that maximizes the performance of your scale-out storage system with performance management, monitoring and reporting capabilities
DataIQ	Locate, access and manage data in seconds, no matter where it resides – across file and object storage, on-prem or in the cloud. Gain a holistic view across heterogeneous storage systems with a single pane of glass, effectively breaking down data trapped in siloes
SmartConnect	Enable client connection load balancing and the dynamic NFS failover and failback of client connections across storage nodes to optimize the use of cluster resources
SmartQuotas	Assign and manage quotas that seamlessly partition and thin provision storage into easily managed segments at the cluster, directory, subdirectory, user and group levels
SnapshotIQ	Protect data efficiently and reliably with secure, near-instantaneous snapshots, while incurring little to no performance overhead and speed the recovery of critical data with near-immediate on-demand snapshot restores
SyncIQ	Securely replicate and distribute large mission-critical data sets to multiple shared storage systems in multiple sites for reliable disaster recovery capability and use push-button failover and failback simplicity to increase the availability of mission-critical data
SmartSync	Optimize data movement between file to file and file to object repositories with replication and data copying capabilities
SmartLock	Protect your critical data against accidental, premature, or malicious alteration or deletion with our software-based approach to WORM and meet stringent compliance and governance needs, such as SEC 17a-4 requirements
SmartDedupe	Increase efficiency and reduce storage capacity requirements by up to 35 percent with deduplication of redundant data across multiple sources
CloudIQ	Simplify the storage management tasks of Isilon and other Dell hardware with predictive analytics capabilities from a single console
SmartPools	Implement a highly efficient, automated tiered storage strategy to optimize storage performance and efficiency
SmartSync	Replicates data between PowerScale system and also between PowerScale and ECS and also public clouds like Microsoft Azure and AWS
CloudPools	Seamless tiering of infrequently accessed data to public or private cloud options including Microsoft Azure, Amazon AWS, Google Cloud, Alibaba Aliyun, ECS, and OneFS



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