

ExaScaler File Storage System

Scalable HPC Storage Platform



Teraflop – Exaflop Storage

- Up to 20,000 client computers, Petabytes of high-speed capacity and over 200 GB/s of single throughput
- Striped File Throughput over 200GB/s
- Single client throughput over 2GB/s using high-speed InfiniBand networking

Application Readiness

- Fully POSIX file system for the next generation of HPC
- Native Linux clients for accelerated NAS access
- Fully Fault-Tolerant, HA system with zero single points of failure
- Parallel architecture enables simple, online storage cluster growth

Across the cluster and grid computing marketplace, efforts to accelerate clustered applications are challenging traditional SAN and NAS storage technologies. Systems designed to serve the file storage needs of the last 10 years are no longer able to deliver the scalable bandwidth and file system locking of today's HPC environments. These challenges have given way to new, scalable storage technologies designed for the scale-out applications of today and the unpredictable growth that will be faced tomorrow.

The Exascaler file storage system from DataDirect Networks is a next-generation parallel file storage system, built from the ground up to deliver scalable clustered storage performance while enabling operational simplicity and predictable performance by eliminating storage performance degradation.

The Exascaler is a combination of DDN award-winning HPC storage technology with the open-source Lustre[®] File System. These best of breed HPC storage technologies are combined together in the Exascaler platform to deliver scalable bandwidth and capacity with low performance and cost overhead. The Exascaler blueprint is known worldwide as the gold standard in HPC storage clustering.

Around the world, Lustre users depend on DDN storage to simplify storage scale-out, reduce data center footprint, and accelerate file system I/Os with unique RAID algorithms designed specifically to accelerate Lustre performance. The DDN – Lustre community includes some of the world's largest HPC centers who are breaking through performance bottlenecks, such as:

- US Department of Energy Laboratories
- Texas Advanced Computing Center
- Total S.A.
- University of Tskuba
- Synopsys
- Translational Genomics
- And many more...



“Before we received the DDN ExaScaler S2A9900 system, TGEN was not able to support this level of next-generation sequence alignment – our existing systems could simply not deliver enough performance.”

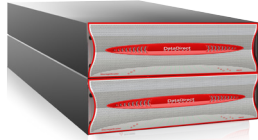
- James Lowey, TGen Director of HPC

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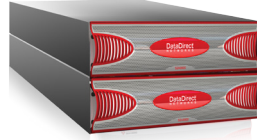
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The Exascaler File Storage System leverages the complete DDN storage product line-up for optimal performance, capacity, density and cost – all within a single namespace for maximum ease-of-use and managability



Modular scalable storage with highest density
120 Drives, up to 240TB, up to 2GB/s



Scalable capacity for large archives
1200 Drives, up to 2.4PB, up to 6GB/s



The ultimate in Transactional Performance
1200 Drives, up to 2.4PB, up to 10GB/s & 1M IOPS

Features

Client Connectivity	Lustre Client
Client Operating Systems	RHEL 4, RHEL 5 SLES 10
Client Operating Systems	x86/x64 PowerPC
Client Networking	Gigabit Ethernet, 10 Gigabit Ethernet OFED InfiniBand (RDMA-capable) Myricom MX
Client Scalability	Over 20,000 Clients
Server Scalability	Up to 250 OSS gateway nodes
Client-Side Load Balancing	Yes
Client-Side Failover	Yes
Concurrent Access	Fine-Grained Object-Based File Locking



**The World's Fastest & Largest
HPC Storage**

**240GB/s S2A9900 Lustre File System
Oak Ridge National Laboratory**