

# GRIDScaler File Storage System

## Scalable, Intelligent File Storage

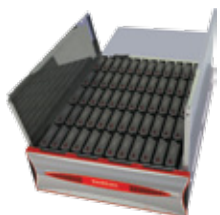
DataDirect Networks (DDN) GRIDScaler File Storage System combines simple, scalable data management tools with DDN's innovative Extreme Storage platforms to eliminate performance bottlenecks, enhance data integrity and availability, and simplify your environment. The GRIDScaler system enables DDN Extreme Storage to scale bandwidth from 2GB/s to 200GB/s, always perform at full speed, deliver the highest quality of service with intelligent failure avoidance, all while easily growing in capacity from terabytes to multiple petabytes in one volume. Simply and easily scale your environment with optimized GRIDScaler configurations sized for the S2A9900, SFA10000 and S2A6620 performance and capacity optimized intelligent storage systems.

The GRIDScaler system supports a wide variety of network protocols to serve LAN, SAN and NAS clients, including native Linux and Windows native clients for maximum performance and NFS for standards-based access. The system very easily scales to connect thousands of clients to one scalable file system. Advanced data protection and replication features are built in, with DDN SATAssure data integrity protection and DirectRAID 6 to ensure data integrity and high availability. With GRIDScaler – both high performance and high capacity applications share a common set of files and storage, enabling you to deploy fewer systems and reduce costs. You can achieve further cost reductions and greater ROI with GRIDScaler by saving valuable floor space with industry-leading S2A storage density, lowering power consumption with D-MAID energy savings technology, and by optimizing storage budgets using GRIDScaler intelligent multi-tier storage.

GRIDScaler File Storage System is well suited for many applications ranging from Supercomputing to Animation, Web Services and market data analysis. With scalable data and metadata technology, the GRIDScaler platform is optimized to meet a variety of application workloads and serves as a storage foundation for data center workflows and data flows.



The GRIDScaler 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 manageability.



### S2A6620

Modular scalable storage with highest density

120 Drives  
up to 240TB  
up to 2GB/s



### S2A9900

Real-time Performance and Capacity

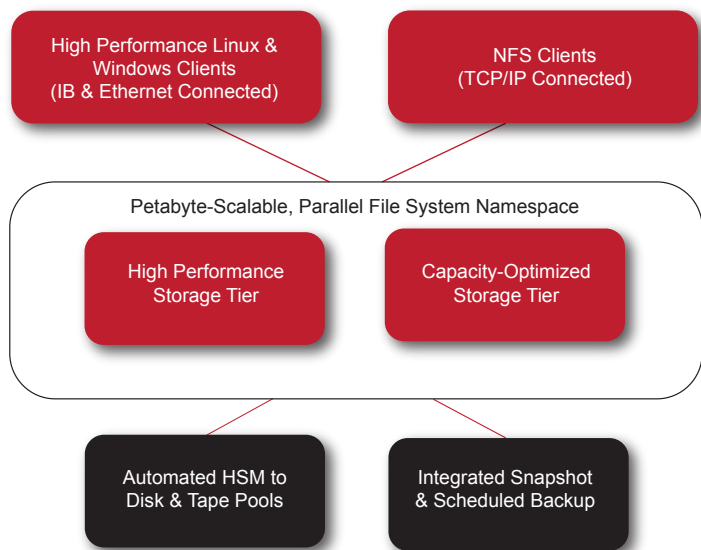
1200 Drives  
up to 2.4PB  
featuring D-MAID



### SFA10000

The ultimate in Bandwidth and IOPS

1200 Drives  
up to 10GB/s



The GRIDScaler File Storage System is a turn-key solution combining the benefits of the award-winning S2A storage products—S2A6620, S2A9900 and SFA10000—with a scalable shared file system and optional HSM module.

## Features

|                            |  |
|----------------------------|--|
| Client Connectivity        | GridScaler Linux, GridScaler for Windows 2008, NFS v3  |
| Network Protocols          | 1/10Gb Ethernet<br>Infiniband<br>Fibre Channel   |
| RDMA I/O                   | Yes (GRIDScaler Linux only)  |
| Gateway load-balancing     | Yes I/O requested granularity  |
| Client-Side Load Balancing | Yes  |
| Client Side Failover       | Yes  |
| Concurrent Access          | Yes, Fine-Grained File Locking   |
| File & Metadata Mirroring  | Yes, Synchronous   |
| Block Size                 | 16K – 4MB  |
| Sub-Block Size             | Optional, 1/32 <sup>nd</sup> of Block Size   |
| Additional Features        | Up 256 Snapshots per Volume<br>Storage Tiering<br>Automatic Storage Rebalancing<br>Data & Metadata Replication<br>High Speed Defragmentation |
| Data Management            | Optional HSM Interface (IBM HPSS)<br>Optimized Backup (IBM TSM)  |

## Scalability

|                               |   |
|-------------------------------|---|
| GRIDScaler Client Scalability | Over 2,000 Linux Clients                |
| NAS Client Scalability        | Over 10,000 Clients                     |
| File Servers                  | 2–200 Servers/Cluster                   |
| SAN Mode Scalability          | 2000 SAN Clients                        |
| Volume Capacity               | Over 2 Petabytes                        |
| File Capacity                 | 2 Billion Files/Volume                  |
| Clustering                    | 256 Volumes/Cluster                     |
| Aggregate Throughput          | Over 200GB/s                            |
| Linux Client Throughput       | 1.2GB/s (InfiniBand)<br>700MB/s (10GbE) |
| NFS Client Throughput         | 600MB/s (10GbE)                         |
| File Operations per Second    | Over 50,000 per Volume                  |

## Application Readiness

- Supports high-speed Linux clients and multiple NAS protocols
- Shared namespace across all clients optimizes workflows
- Designed for a mix of workloads and applications to right-size performance
- Simple online capacity growth and data management

## True Scalability & Performance

- Independently scale capacity and performance
- Supports over 1000 clients, PBs of capacity and over 200 GB/s throughput
- Deliver single-stream I/O over 1GB/s

## Data Protection and Archive

- Replication for DR and Performance
- Policy-based data movement into archival storage
- Supports D-MAID Disk and Tape archives
- SATAAssure Data Integrity
- Optimized Backup Support

Learn more at [ddn.com/gridscaler](http://ddn.com/gridscaler).