



**DDN** | Solution Brief



Scalable Storage Solutions for Life Sciences

## **DDN File Storage**

High Performance, Highly Scalable Storage Solutions  
that Accelerate Time to Discovery and Simplify  
Your Workflow

[ddn.com](http://ddn.com)

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## At-a-Glance

- A value driven Life Sciences & Genomics storage platform that scales at a fraction of the cost of legacy solutions
- Supports clustered NFS or Parallel File Systems with a clear upgrade path
- Grow capacity, performance or both – without the need of expensive SAS/SSD accelerator boxes
- A dense, green design capable of supporting 3.6PB of raw storage in just two data-center floor tiles
- Supports a wide range of network interfaces, Gig/E, 10Gig/E, Fibre Channel and InfiniBand
- A solution optimized for Life Sciences uniquely workloads
- Built-in disaster recovery (DR)

## Introduction

For the past 15 years, DataDirect Networks (DDN) has accelerated time-to-discovery for a wide range of High Performance Computing (HPC) applications at the leading research institutions in the world. Today, DDN is applying that expertise to Life Sciences, delivering a suite of storage solutions for volume sequencing, proteomics and imaging. Our designers and researchers have been working with the leading Life Sciences Centers of Excellence to define three storage solutions which deliver unprecedented reliability, performance and value based on our Storage Fusion Architecture<sup>TM</sup> and our NAS Scaler<sup>TM</sup> and GRIDScaler<sup>TM</sup> file systems. These DDN solutions deliver from terabytes to petabytes storage platforms that grow and evolve to meet the price & performance needs of any Life Sciences data-center, without compromise.

## Solution Overview

To accelerate time to discovery and simplify the task of sourcing the optimal Life Sciences storage platform, DDN with its partners offer three unique storage solutions that will scale to meet your data-center needs for years to come. It is now possible to deploy a clustered NAS NFS/CIFS platform that can scale independently for capacity and/or performance. As your data center mission and requirements evolve, you have the option to scale performance by migrating to a parallel file-system – reducing your time to discovery while protecting your system investment. This single platform architecture enables you to evolve from clustered NAS to parallel file-system for the entire workflow (data ingest, pipe-line processing, alignment to archive) in a single monolithic platform that is both revolutionary and uniquely enabled by DDN.

## Two unique file-systems:

**NAS Scaler** – For Linux & Windows based environments where high performance parallel access to data-sets is not a concern – balancing budget with performance.

**GRIDScaler** – A parallel file-system for centers with large sequencing farms and parallel access for pipe-line processing. Provides the highest performance to accelerate time-to-discovery.




## One powerful scale-out storage controller:

**Storage Fusion Architecture** – **DDN | SFA10K-E™** embeds the GRIDScaler file-system right inside the storage appliance's storage controller, eliminating several protocol layers and the need for external servers and their associated licensing and networking hardware. This revolutionary appliance-like approach simplifies deployment, reduces TCO and substantially improves performance by reducing latency. The SFA10K-E is purpose-built to simplify and tame big data growth, enabling you to architect and scale your Life Sciences environment more intelligently, efficiently and cost effectively.

## DDN | Life Sciences Storage Solutions

An intelligent, scalable storage platform proven to meet your datacenter needs for full-production genome sequencing, drug discovery and/or clinical trials.

DDN has designed and tuned three platforms for Life Sciences workloads starting from 450TB. Each platform can scale to petabytes with the best-in-class performance, data continuance and density available. Also, it is possible to migrate from Research to Development to Production by translating legacy data to the next format.

Platform Designation	NAS Scaler Serial Storage Platform	GRIDScaler Parallel Storage Platform
<p><b>Research</b></p> <ul style="list-style-type: none"> <li>– Up to 25 network connected external nodes</li> <li>– Up to 5 NGS</li> <li>– Up to 500 giga-bases/wk</li> </ul>	<ul style="list-style-type: none"> <li>• Dual NAS Scaler servers</li> <li>– Scalable to sixteen (16)</li> <li>• Redundant SFA™ RAID controllers</li> <li>• Five SS7000 – 60 drive encl.</li> <li>• 180 TB+ of raw storage*</li> <li>– Scalable to 900 TB raw in 30U</li> </ul>	
<p><b>Development</b></p> <ul style="list-style-type: none"> <li>– Up to 250 Native GRIDScaler Clients</li> <li>– Up to 20 NGS</li> <li>– Up to 1,500 giga-bases/wk</li> </ul>	<ul style="list-style-type: none"> <li>• File-system Embedded in SFA</li> <li>• Redundant SFA RAID controllers</li> <li>• Five SS7000 – 60 drive encl.</li> <li>• 450 TB+ of raw storage*</li> <li>– Scalable to 900 TB raw in 28U</li> </ul>	
<p><b>Production</b></p> <ul style="list-style-type: none"> <li>– Up to 2,000 Native GRIDScaler Clients</li> <li>– Up to 500 NGS</li> <li>– Up to 5,000 giga-bases/wk</li> </ul>	<ul style="list-style-type: none"> <li>• Embedded SFA</li> <li>• Redundant SFA RAID controllers</li> <li>• Ten SS7000 – 60 drive encl.</li> <li>• 900 TB+ of raw storage*</li> <li>– Scalable to 3.6 PB raw in 2 – 50U</li> </ul>	

\*Comprised of 3TB SATA drives supplemented by SSD for metadata.

## **DDN** | About Us

DataDirect Networks (DDN) is the world's largest privately held information storage company.

We are the leading provider of data storage and processing solutions and services, that enable content-rich and high growth IT environments to achieve the highest levels of systems scalability, efficiency and simplicity. DDN enables enterprises to extract value and deliver results from their information. Our customers include the world's leading online content and social networking providers, high performance cloud and grid computing, life sciences, media production organizations and security & intelligence organizations. Deployed in thousands of mission critical environments worldwide, DDN's solutions have been designed, engineered and proven in the world's most scalable data centers, to ensure competitive business advantage for today's information powered enterprise.

For more information, go to [www.ddn.com](http://www.ddn.com) or call +1-800-TERABYTE.

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