

GRIDScaler[®] PRODUCT FAMILY

The New Scale-Out NAS for Data-Intensive Enterprises
SSD, HDD & Hybrid • High Performance Client Access • Automated Tiering to Archive, Cloud, Object



Cutting-edge enterprises demand high-performance infrastructures to harness data growth and provide insight from data analytics.

The modern data center requires next generation NAS solutions to keep pace and efficiently deliver high speed data ingest and processing, as well as long-term data retention and global collaboration.

DDN GRIDScaler appliances scale up or out, leveraging SSD-accelerated, hyper-converged, parallel architectures to deliver industry-leading performance for financial services, manufacturing, energy, life sciences and web/cloud hosting workloads.

GRIDSCALER DELIVERS GAME CHANGING DATA CENTER PERFORMANCE AND FLEXIBILITY – TODAY AND TOMORROW

THEN: Traditional NAS solutions were deeply customized for data sizes and patterns of 5+ years ago; they are fundamentally bottlenecked by network protocols and dependent on architectures that have no flexibility to avoid performance and capacity tradeoffs. Low density nodes with power hungry CPUs each house small numbers of drives, so that scaling equals sprawl and added complexity of managing many devices. Their fixed architectures inhibit modification; new technologies are incorporated very slowly—keeping them behind the innovation curve. Value added features are also licensed per node, astronomically increasing the cost of scaling.

NOW: DDN GRIDScaler parallel file system-based, Scale-Out NAS appliances integrate into mixed workloads, delivering bottom line results faster and more efficiently.

DATA-INTENSIVE ENTERPRISES CHOOSE GRIDSCALER FOR FASTER RESULTS, MORE CONTROL AND BETTER TCO

Fannie Mae uses GRIDScaler to drive Risk Analytics workflow 450% faster saving \$M in licensing costs

The Investment Banking Arm of a Large International Bank uses GRIDScaler to feed 100s of program trading clients and to reduce key analytics metrics completion time by over 80%

Suzuki Motors uses GRIDScaler to improve design and test workflow performance 5x while lowering costs

Zuse Institute Berlin (ZIB) uses GRIDScaler appliances to accelerate massive scientific simulations for over 300 researchers across Germany

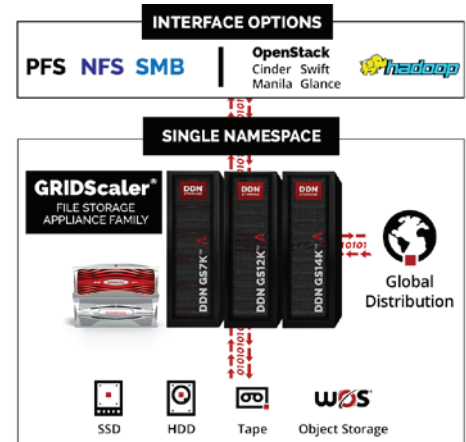
Biocomplexity Institute uses GRIDScaler to predict outbreaks and prevent spread of deadly diseases like Ebola

University College London (UCL) uses the single namespace capabilities of GRIDScaler to harness high performance and object storage for massive scale at a low cost



UNIQUE DATA FEDERATION CAPABILITIES OVER ALL TIERS OF STORAGE

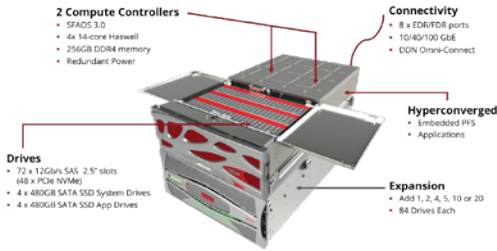
GRIDScaler appliances deliver end-to-end management with a single, unified view of data across high performance storage (SSD, HDD), active archive (Object), deep archive (Tape) and cloud, making them ideal for consolidating multiple data types for simple, fast access. Data is visible to end users, applications and administrators as though it is local, regardless of its location or what media type it is on. A powerful policy engine automatically migrates or replicates data for cost reduction with archive, distribution or collaboration with cloud, fast HDD access, or to SSD tiers for lowest latency applications.



HYBRID ARCHITECTURE IMPROVES TCO & TAKES ADVANTAGE OF NEW TECHNOLOGIES

Grow a GRIDScaler appliance with all-SSD, SSD-accelerated or all HDD options. Mix and match the right storage media for your workloads and independently scale out or up to create the right sized building blocks for your environment with complete cost control.

Start with a small system and grow performance and/or capacity for a data storage infrastructure that has fewer systems to manage, lower power, heating and cooling requirements and much a smaller data center footprint.



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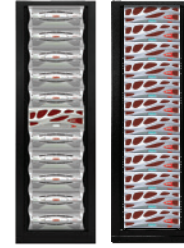
DDN GRIDScaler parallel file system appliances combine the accessibility of network data protocols with the industry's fastest and densest embedded storage solutions for 10-30x higher performance and 2-6x higher capacity per datacenter rack U.



DDN UNIQUE SOFTWARE DEFINED FLASH CAPABILITIES DELIVER OPTIMAL SSD UTILIZATION



- Up to 42GB/s
- >7PB HDD



- Up to 660GB/s
- >3PB SSD

DDN-unique, software-defined flash capabilities deliver the best of SSD in any workload. Controller-level advance caching (DDN ReACT) is built to deliver sustained, high performance—even in mixed IO workloads. For highly cache-sensitive applications, DDN SFX® read-cache acceleration software works with GRIDScaler to enhance read-intensive application performance, read after write performance, and even takes “hints” from applications or file systems to optimize data delivery to a caching tier on SSD.

TECHNICAL SPECIFICATIONS

	GS7K®	GS12K®	GS14K™
PROTOCOLS	NFS v3, CIFS SMB 1.0, 2.0 and 2.1, Linux and Windows Parallel FS Clients		
PERFORMANCE	12GB/s per Base Enclosure	20GB/s per Base Enclosure	42GB/s per Base Enclosure
METADATA	All GRIDScaler appliances feature distributed metadata		
STORAGE HOST PORTS	4 x 56Gb/s FDR InfiniBand Ports or 4 x 40GbE	16 x 10/40GbE Host Port or 16 x 56Gb InfiniBand Host Port Support for InfiniBand RDMA I/O	8x InfiniBand EDR/FDR or Ethernet 8x DDN Omni Connect Ports*
DRIVE SUPPORT	SSD, Performance SAS and Capacity SAS/ SATA drives, 3.5" 60 in base unit, 396 with expansion enclosures	Supported Drive Types: NL SAS or SSD Supported Drive Sizes: LFF 3.5" and SFF 2.5": 0 in base unit, 1680 with expansion	Supported Drive Types: NL SAS or SSD Supported Drive Sizes: LFF 3.5" and SFF 2.5": 72 in base unit, 1752 with expansion enclosures
FILE SERVERS PER BASE ENCLOSURE	All GRIDScaler appliances feature 4 NSDs		
SUPPORTED RAID LEVELS	RAID 1/5/6		
DATA PROTECTION	Up to 256 Snapshots per Volume – policy driven, Snapshot Rollback, DirectProtect & DirectProtect+, Online & Automatic Storage Rebalancing, High Speed Defragmentation		
REPLICATION	Synchronous Data and Metadata, Asynchronous using WOS		
DATA AND SYSTEM MANAGEMENT	Quotas (users, groups, file sets) DirectMon Centralized configuration and monitoring solution Optional GRIDScaler Bridge Migrates data across GRIDScaler and WOS Object storage for active archive & cloud collaboration Optional DDN® DataMigrator for automatic data migration form any file system to any storage device Optional DDN ArchiveDirector™ for Policy-based tiered storage and data migration with mirroring, replication, encryption Optimized Backup		

FOR MORE INFORMATION VISIT: www.ddn.com/products/parallel-file-system-gridscaler/

*Available in 2016

ABOUT DDN®

DataDirect Networks (DDN) is the world's leading big data storage supplier to data-intensive, global organizations. For more than 15 years, DDN has designed, developed, deployed and optimized systems, software and solutions that enable enterprises, service providers, universities and government agencies to generate more value and to accelerate time to insight from their data and information, on premise and in the cloud. Organizations leverage the power of DDN technology and the deep technical expertise of its team to capture, store, process, analyze, collaborate and distribute data, information and content at largest scale in the most efficient, reliable and cost effective manner. DDN customers include many of the world's leading financial services firms and banks, healthcare and life science organizations, manufacturing and energy companies, government and research facilities, and web and cloud service providers. For more information, visit our website www.ddn.com or call 1-800-837-2298.