



Datasheet

NetApp StorageGRID

Object storage that enables management of your unstructured data across hybrid and multicloud environments

Key Benefits

Distribute Data Across Clouds

Take advantage of the public cloud to process, transform, and analyze objects and metadata while securing your data in an on-premises object store.

Enable Global Data Governance

Protect data and comply with regulations by using geo-distributed replication and layered erasure coding; write once read many (WORM) retention; access control policies; encryption; and audit trails.

Store Data Efficiently

Optimize data availability, performance, geo-distribution, retention, protection, and storage cost with metadata-driven policies, and adjust them dynamically as the business value of data evolves.

The Challenge

Today's unprecedented growth in unstructured data presents enterprises with opportunities to uncover new customer engagements and revenue streams. To keep pace, IT must overcome the challenges of keeping up not only with the volume of data, but also with changes in how data is stored and accessed. Users need IT to support a plethora of applications varying from traditional workloads to cloud-based applications, with access to the data across many locations: inside the data centers, remote offices, and the public cloud.

- Object storage through cloud-based data management is quickly becoming the norm, but it doesn't come without its fair share of concerns:
- Is my data safe? What happens if my requirements change?
- What is cost-effective today and tomorrow? Does choosing one solution create vendor lock-in?
- Can I meet performance needs with data that lives both on premises and in the public cloud?

The Solution

NetApp® StorageGRID® is a software-defined, object-based storage solution that supports industry-standard object APIs like the Amazon Simple Storage Service (S3) API. It allows you to build a single name space across 16 data centers worldwide, with multiple service levels for metadata-driven object lifecycle policies. The integrated lifecycle management policies optimize where your data lives throughout its lifecycle.

StorageGRID optimizes your data durability and availability across multiple geographies. It bridges hybrid cloud workflows—whether they live in a public cloud or in a private cloud on premises—to fit your business demands with access to Amazon Simple Notification Service (SNS), Amazon Glacier, Elasticsearch, and similar services.

Enable the Hybrid Cloud

Reduce costs without sacrificing durability with StorageGRID layered erasure coding (EC). Protect against failed disk drives and rapidly rebuild lost data segments with node-level EC and protect against site-level disasters with geo-distributed EC. You can combine replication and geo-distributed EC to balance performance needs and cost savings between different sets of data or during an object's lifecycle.

StorageGRID offers industry-leading hybrid cloud integration with user-controlled platform services. You can keep your data in a local private cloud while taking advantage of public cloud offerings. Storage tenants can configure mirroring of select objects at the bucket level to an S3-compatible public cloud. You can trigger hybrid cloud workflows by integrating S3 notification of events in your on-premises buckets with Amazon SNS. You can gain further value with metadata search and analytics by streaming object metadata to an external Elasticsearch service, on premises or in the public cloud.

StorageGRID lets you take advantage of industry-leading Amazon S3 APIs, such as object versioning, multi-part upload, Amazon Identity and Access Management-style access policies, cross-origin resource sharing, and object tags. With Active Directory and LDAP identity federation for Amazon S3, StorageGRID bridges the gap between enterprise IT and cloud semantics.

Cloud-to-cloud data management can also enable cost savings. StorageGRID can manage and store objects in its own globally distributed infrastructure, and also in Amazon S3 or S3-compatible object stores or public clouds. Depending on your locality or cost needs, you can add Amazon S3 storage, or even Amazon S3 Glacier as a storage tier.

Facilitate Compliance with Tamper-Proof Data Retention

StorageGRID offers many features to help you meet your regulatory obligations. Storage tenants can configure WORM retention and litigation holds for objects by buckets. You can configure StorageGRID so that compliance data is stored with duplicate copies or logical equivalents, such as erasure-coded objects. You can secure your data with software-based encryption and built-in audit trails.

Many unstructured data applications require NAS protocols. The StorageGRID NAS protocol bridge supports SMB and NFS access and enables object access to these files by using the Amazon S3 API. You can run your current workload while being proactive about next-generation applications that natively support object protocols.

Proven Software Designed for Nondisruptive Operations

StorageGRID is an 11th-generation object store with more than 15 years of production deployments in the most demanding industries. NetApp dependability has been demonstrated with more than 1 million systems shipped and more than 20 years of product hardening. With advanced features such as the NetApp Active IQ® intelligence platform for proactive, immediate response and with backing by NetApp's world-class support organization, StorageGRID is a solution that you can trust with your critical data assets.

Flexible Deployments

Because every deployment is unique, StorageGRID aligns with your environment, whether that includes nodes as virtual machines (VMs), as optimized hardware-based appliances, as bare-metal servers with Docker containers, or as a combination across virtual and physical environments. In all cases, designing, deploying, and managing StorageGRID is a centrally managed and streamlined process allowing you to rapidly deploy petabytes of storage.

Deploying NetApp StorageGRID appliances creates an enterprise-grade turnkey solution that is easy to implement. Each appliance was built to solve specific performance or capacity needs. You can also deploy software-only StorageGRID nodes as containers on physical or virtual servers, taking advantage of heterogeneous storage underneath.

About NetApp

NetApp is the data authority for hybrid cloud. We provide a full range of hybrid cloud data services that simplify management of applications and data across cloud and on-premises environments to accelerate digital transformation. Together with our partners, we empower global organizations to unleash the full potential of their data to expand customer touchpoints, foster greater innovation, and optimize their operations. For more information, visit www.netapp.com. #DataDriven

KEY FEATURES FOR OBJECT STORAGE

NETAPP STORAGEGRID PROVIDES

Massive scalability and flexible infrastructure

- Massive elastic content store
 - Multiple geo-distributed sites
 - Support for multiple storage tiers:
 - SSD, SAS, SATA, tape
 - Amazon S3
 - Geo-erasure coding and geo-replication
 - Deployment on VMs, hardware appliances, or bare-metal servers with Docker containers
-

Application interfaces

- Massively parallel transaction engine with:
- Integrated load balancing
 - Transaction multithread pipelining
- Object access APIs:
- Amazon S3 and OpenStack Swift
- NAS access:
- CIFS and NFS
 - File object duality
- System and account management:
- Management API: system installation, system administration, tenant management, maintenance tasks, and system monitoring including Prometheus
 - Tenant API: management of users, credentials, usage, and quotas
-

Data services

- Platform services – tenant configurable hybrid cloud integration:
- S3 event notification with Amazon SNS
 - Cloud Mirror bucket replication with Amazon S3 or S3-compatible target
 - Metadata search and analysis with streaming metadata to external Elasticsearch
- WORM retention:
- Reinforced data integrity with compliance-grade WORM
 - Litigation hold
- Advanced security and encryption capabilities:
- Store objects with lossless compression
 - Transport Layer Security (TLS) 1.2 and AES 256-bit encryption
 - Secure Hash Algorithm 2 (SHA-2) and CPU-efficient integrity protection
-

Metadata and content awareness

- Metadata-based data management:
- Content-aware self-healing maintains data protection even during network disruptions
 - Policies can be modified and applied retroactively to existing objects
-

Deployment options

- Physical or virtual servers via Docker containers
 - Virtual appliance:
 - VMware ESXi and vCenter
 - Hardware appliances:
 - NetApp StorageGRID SG6060 for high-performance object storage workloads
 - NetApp StorageGRID SG5712 and SG5760 for capacity object storage workloads
-

Service-level objective and performance monitoring

- Get comprehensive performance feeds:
 - Access throughout
 - Replication throughout
 - Time to policies achieved
 - Get support for transactions
 - Demonstrate SLAs
 - Measure transaction round-trip time
 - Isolate application, replication, and admin network traffic
 - Advanced system monitoring via Prometheus
-

Management and monitoring

- Centralized and automatable installation and expansions
 - Automated monitoring and tenant management through an API
 - Rolling upgrades without downtime
 - Comprehensive ad-hoc real-time, rolling-period, and historical-usage query capability
 - 200+ predefined monitoring, usage, and performance reports
 - Event-based audit messages for performance tracing, usage monitoring, and enabling billing or chargeback
-

MODELS AND SPECIFICATIONS

	SG6060	SG5760	SG5712
CPU cores	40 @ 2.4GHz	8 @ 2.0GHz	8 @ 2.0GHz
	192GB	64GB	64GB
Raw capacity	4TB drives = 232TB 8TB drives = 464TB 10TB drives (FIPS) = 580TB 12TB drives = 696TB	4TB drives = 240TB 8TB drives = 480TB 10TB drives (FIPS) = 600TB 12TB drives = 720TB	4TB drives = 48TB 8TB drives = 96TB 10TB drives (FIPS) = 120TB 12TB drives = 144TB
Form factor	5U, 58 drives*	4U, 60 drives	2U, 12 drives
Connectivity	4 x 10GbE/4 x 25GbE	4 x 10GbE/4 x 25GbE	4 x 10GbE/4 x 25GbE
Width	17.66" (44.86cm)	17.66" (44.86cm)	17.6" (44.7cm)
Depth	36.3" (92.2cm)	36.3" (92.2cm)	21.1" (53.6cm)
Weight	289lb (131kg)	250lb (113kg)	63.9lb (29kg)

Environmental specifications		Typical	Maximum	Typical	Maximum	Typical	Maximum
4TB drives	Amps	6.29	9.68	6.25	8.06	2.02	2.54
	Watts	1374	2114	1361	1755	440	552
	BTU	4690	7212	4642	5989	1501	1884
8TB drives	Amps	6	9.38	5.95	7.77	1.97	2.49
	Watts	1310	2050	1297	1692	429	541
	BTU	4472	6994	4425	5772	1462	1846
10TB drives (FIPS)	Amps	6.29	9.68	6.25	8.06	1.97	2.49
	Watts	1374	2114	1360	1755	441	554
	BTU	4689	7211	4642	5989	1506	1889
12TB drives	Amps	6.33	9.71	6.28	8.1	2.23	2.75
	Watts	1382	2122	1369	1764	498	611
	BTU	4718	7240	4671	6018	1700	2083

The SG5760 and SG6060 require 208V–240V power. They will not function with 120V power.

*1U compute server and 4U storage array—environmental specifications using 220V for compute server.