

Solution Brief

StorageGRID for Distributed Content

Create compelling new services that help drive better margins and win new customers

Key Customer Benefits

Reduce Complexity of Content Repositories

- Store data globally and access it locally with a true global namespace.
- Implement erasure coding and remote copy policies.
- Manage policies and monitor storage with a single pane of glass.

Optimize Workflows

- Confirm that content is in the right place at the right time.
- Enable applications to access content directly.

Minimize Cost of “Cradle-to-Grave” Data Management

- Improve disaster recovery economics with multisite dispersion.
- Automatically migrate aging data to tape and the cloud.
- Instantly detect and replace failing objects.

The Challenge

Enterprises across industries are finding that their content is growing at an unprecedented rate. Petabyte-sized content repositories are no longer a rarity as healthcare, media, financial, and other large institutions store digital objects that grow in size, quantity, and lifespan. More than ever, this data must be accessed by various constituencies in a variety of locations, and often in a fast-paced, collaborative manner. Enterprises depend on accessing a wide variety of data objects to run their mission-critical workflows. Managing this data intelligently across geographically dispersed locations cost effectively is a huge challenge.

The explosion of data comes from human as well as machine sources. While e-mail, home directories, and scanned documents are a huge area of data growth, there is also a vast quantity of machine-generated content from medical imaging systems, telecommunications and utility equipment, and financial transactions.

These enterprises need help. The technology is complex and finding the core competencies to manage it is increasingly expensive. Most enterprises are using multiple cloud services, and they are realizing that managing and controlling data is a key requirement. Smart service providers are moving quickly to fill that need, creating services that offer a blend of public and private clouds with integrated data lifecycle management and customized SLAs.

The Solution

The answer is offering new ways for customers to manage and control their own data with an always-on “mesh” storage solution. Based on NetApp® StorageGRID® you can offer an object-based Storage-as-a-Service to your customers at a cost-per-gigabyte, allowing you to compete with powerful hyperscale architectures such as AWS and Microsoft.

StorageGRID is ideal for customers who need rapid access to petabytes of data in an “active archive” from anywhere in the world. It is also popular with companies who need reliable distributed back up because StorageGRID gives customers immense control over their data. Customers can set rules that determine where and how their data is stored, as well as maintain control over storage locking and cloning. StorageGRID ensures a high volume of data is always accessible globally because multiple copies of that data are spread across geographic locations. Data integrity is also paramount.

StorageGRID ensures customer data is fully maintained as it moves between locations and ages over time, to prevent against corruption. Customers can also determine where and how their data is stored, depending on where it is in its usage lifecycle.

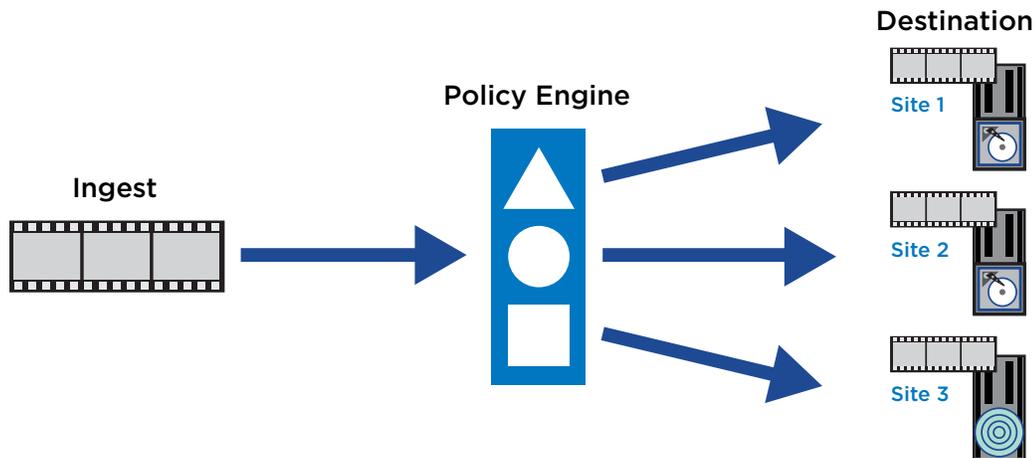


Figure 1) StorageGRID policy engine.
Content workflow and information lifecycle management (ILM) decisions drive content placement.

Reduce Complexity of Content Repositories

Whether an object is stored on a local or a remote node, or is erasure-coded across several nodes within the object store, it is accessed from a single namespace. With massive scalability across this namespace, object stores free customer applications from the task of finding and moving files between storage volumes.

StorageGRID enables customers to establish highly granular, flexible data management policies that determine how data is stored and protected. When developing and enforcing policies, the object store examines a wide range of characteristics and needs, including performance, durability, availability, geographic location, longevity, and cost.

Optimize Workflows

StorageGRID is a data management system. It provides sophisticated policy-driven functionality to support your content management systems. Policies can be enforced at ingest, at rest, upon read, after metadata update, at object disposition request, or after ILM policy changes. Policies can initiate object replication, erasure coding, caching, tiering, and archiving to tape or the cloud.

This storage management, monitoring, and migration functionality delivers a better experience for all the workflows in the customer enterprise. An object store confirms that the data that customer systems need is in the right place at the right time.

“StorageGRID is allowing us to offer more advanced cloud media storage functionality at a lower cost.”

Andrew Sjoquist
Founder of ASE IT

By erasure-coding, moving, or copying objects to sites as production and distribution access demands, the object store relieves customer content management systems, users, and administrators from manually performing these tasks. When an object is stored, it is seen and accessed as one object by all clients, regardless of where it is or how many copies exist.

With object store support, content management systems can pass key metadata along to other systems and workgroups by storing it in the object along with the file data or “payload.”

Erasure Coding



Erasure coding is a method of data protection in which data is broken into fragments, is expanded and encoded with redundant data pieces, and is stored across different locations or storage media. Erasure coding is used in object stores instead of traditional RAID because it reduces the time and overhead that are required to reconstruct data. In an object store with geo-dispersed erasure coding, data can be retrieved from a subset of the sites where the original object was dispersed. This feature allows object access even during temporary or permanent failure of one or more sites.

- **Cloud integrated: mirroring, notification, search**
- **Software-defined Object Storage**
- **Geo-redundant and Multi-Site**
- **Policy-based to simplify management at scale**
- **S3, Swift, NFS and CIFS access**
- **Durable, low-cost cloud storage for Active Archive**

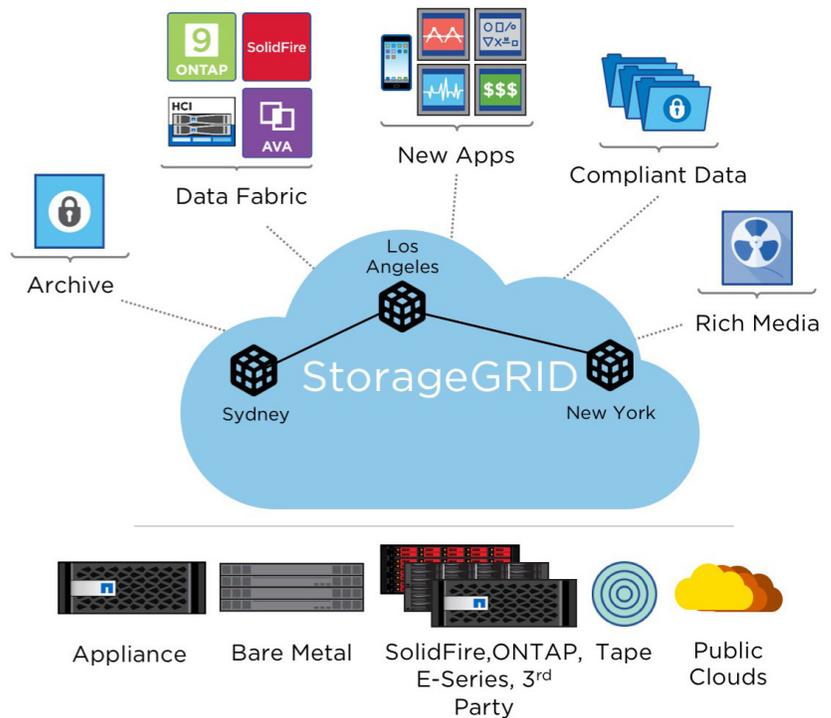


Figure 2) StorageGRID
Better services for customers and improved margins for Service Providers.

Minimize Cost of Cradle-to-Grave Data Management

Providing ubiquitous content access often requires storing copies of the same asset in multiple places. This approach not only increases complexity, it also requires additional storage capacity. With StorageGRID, customers can minimize the capacity needed while optimizing for data resiliency, production access, and distribution requirements through policy-driven automation.

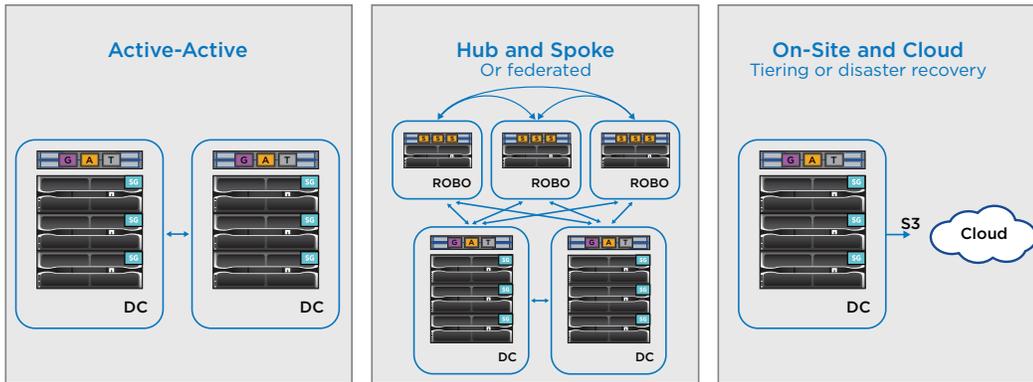
The policies that customers set to move and copy objects can also include deletion criteria. For example, copies of objects can be automatically deleted after set periods of inactivity or after their distribution rights have expired, reducing capacity requirements.

The value of content changes over time, as does the cost of storing it. High-value content requires high-performance storage to keep it readily available. As content ages and is accessed less often, policies can automatically reduce replication and move

that content to less expensive disk arrays, tape, or public cloud infrastructures. Management and maintenance of file copies, migrations, and deletions are driven by the StorageGRID policy engine.

The content in your customers' repositories will live longer than the media that it is stored on, and StorageGRID will greatly reduce their migration challenges and costs in the years to come. The policy engine will drive the process of moving millions of objects from aging media to newer, lower-cost, higher-capacity media in the future.

As an 11th-generation object store with over 20 years of production deployment in the most demanding industries, StorageGRID is the platform that your customers can trust with their growing content repositories.



3) Flexible support for multisite resiliency strategies.
 Customers enable their chosen resiliency topology at the object storage level

FEATURE	DESCRIPTION
Cloud Integration	<ul style="list-style-type: none"> Cloud integrated object storage solution, with metadata search integration S3 compatible platform, with support for self-service, allowing developers and end users to use object storage efficiently
Interfaces	<ul style="list-style-type: none"> RESTful HTTP APIs include Amazon Simple Storage Service (S3) and OpenStack Swift Standard network protocols through a NAS bridge include NFS and CIFS
Scalability	<ul style="list-style-type: none"> Billions of objects 100's of petabytes
Data integrity	<ul style="list-style-type: none"> Creates a digital fingerprint as data is ingested Offers multiple interlocking layers of integrity protection, including hashes, checksums, and authentications Provides data object integrity verification on ingest, retrieval, replication, and migration, and at rest; suspect objects are automatically regenerated Provides geo-distributed erasure coding for cost-effective data integrity protection across sites
Data availability	<ul style="list-style-type: none"> Fault-tolerant architecture supports nondisruptive operations, upgrades, and infrastructure refreshes Load balancing automatically distributes workloads during normal operations and failures NetApp AutoSupport® technology automatically alerts NetApp Support engineers for proactive issue resolution Node-level erasure coding further improves single-node availability (with NetApp E-Series Dynamic Disk Pools)
Deployment options	<ul style="list-style-type: none"> Software-defined storage running on VMware and Docker deployments and managing either NetApp or third-party storage arrays Three NetApp appliances with node-level erasure coding, Dynamic Disk Pools, and AutoSupport, providing 5 nines of availability at the storage-array level For more on deployment options, visit www.netapp.com/storagegrid

Table 1) StorageGRID key technical features.

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