

Solution Brief

StorageGRID for Media and Entertainment

Manage your data across space and time

Key Benefits

Reduce Complexity of Media 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 Media Workflows

- Confirm that content is in the right place at the right time.
- Enable applications to access content directly with Amazon S3 cloud interface.

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.
- Deploy sites that are built on software-defined storage or appliances.

The Challenge

Media is ubiquitous, and complexity abounds. Social media sites alone store millions of video clips and billions of photos. Broadcast networks, movie studios, and media streaming services are now global enterprises. The challenge of managing, moving, and monetizing media assets is overwhelming. The cost of managing exponentially growing media repositories is outstripping the cost of data storage.

At the same time, media enterprises are battling the complexities of dispersed production and distribution operations across remote sites. Multiple sites with separate media asset management, production, and distribution applications are causing a proliferation of file copies with little to no coordination between workflows.

Media and entertainment companies are being forced to reevaluate how they can effectively manage and migrate large amounts of content that is spread over different locations. How do you confirm that content is stored on the right tier at the right time? How do you reduce duplication of content files? How do you identify and delete copies that are no longer needed? How do you improve workflows across your different media asset management domains?

The Solution

The answer is NetApp® StorageGRID® object storage. To support vast media repositories, enterprise cloud providers are already using StorageGRID. Unlike file systems, object stores group files and their metadata into objects that can be coherently accessed by different media asset management systems, file delivery systems, and other production and distribution applications.

Object stores are designed to support multiple storage nodes across Internet-connected sites. With the intelligent policy engine of StorageGRID, you can choose to either erasure-code your object across sites for geo-resiliency or copy your object to remote sites to minimize WAN latency and cost.

As content ages, policies can automatically move content to tape or the cloud. This capability eliminates the need to manually move or delete thousands or millions of files, and it improves the economics of your media repository.

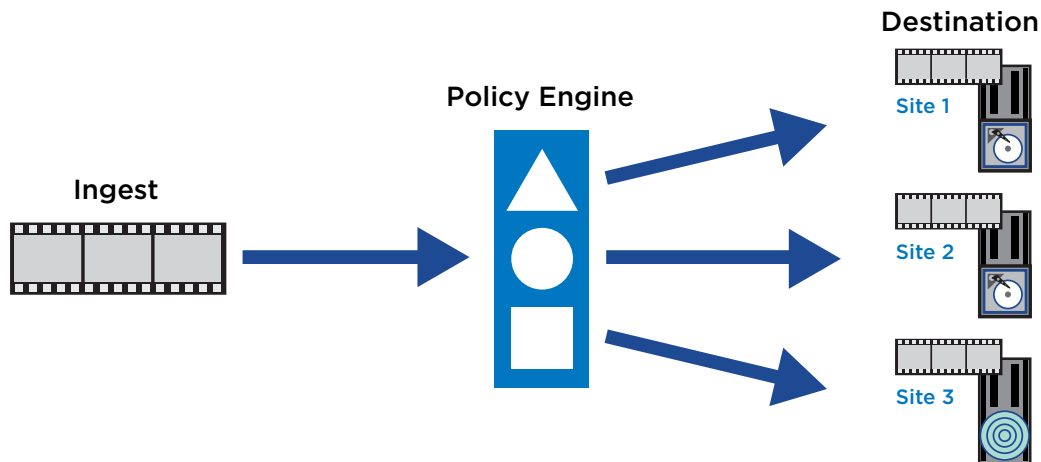


Figure 1) StorageGRID policy engine.
Media workflow and information lifecycle management (ILM) decisions drive content placement.

Reduce Complexity of Media 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 your media applications from the task of finding and moving files between storage volumes.

StorageGRID enables you 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 Media Workflows

StorageGRID is not a media asset management system. It is a data management system. It provides sophisticated policy-driven functionality to support your media asset 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 your media enterprise. While media asset management systems support specific production or delivery workflows within an enterprise, an object store confirms that the data that those 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 your media asset 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, media asset management systems can pass key metadata along to other systems and workgroups by storing it in the object along with the media 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.

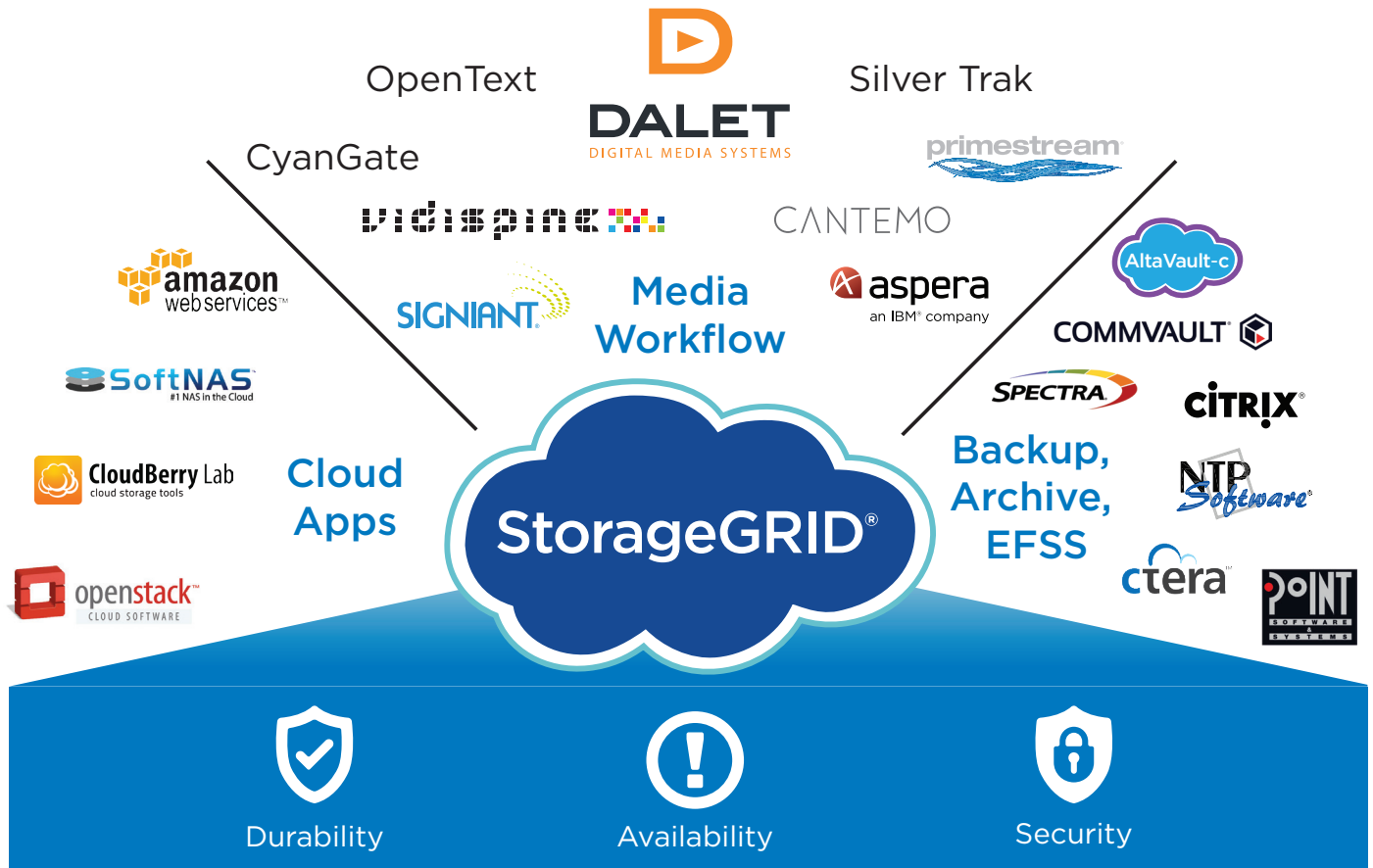


Figure 2) Growing StorageGRID media ecosystem.

Media asset management systems, production, distribution, backup and archival applications access StorageGRID natively using the S3 interface.

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, you can minimize the capacity needed while optimizing for data resiliency, production access, and distribution requirements through policy-driven automation.

The policies that you 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 repository will live longer than the media that it is stored on, and StorageGRID will greatly reduce 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 you can trust with your growing media repository.

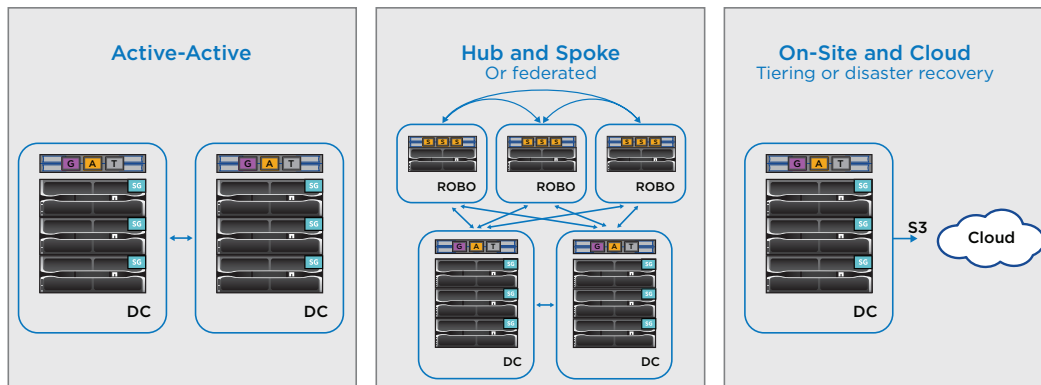


Figure 3) Flexible support for multisite resiliency strategies.

Multisite broadcasters, studios, and other content creators can 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