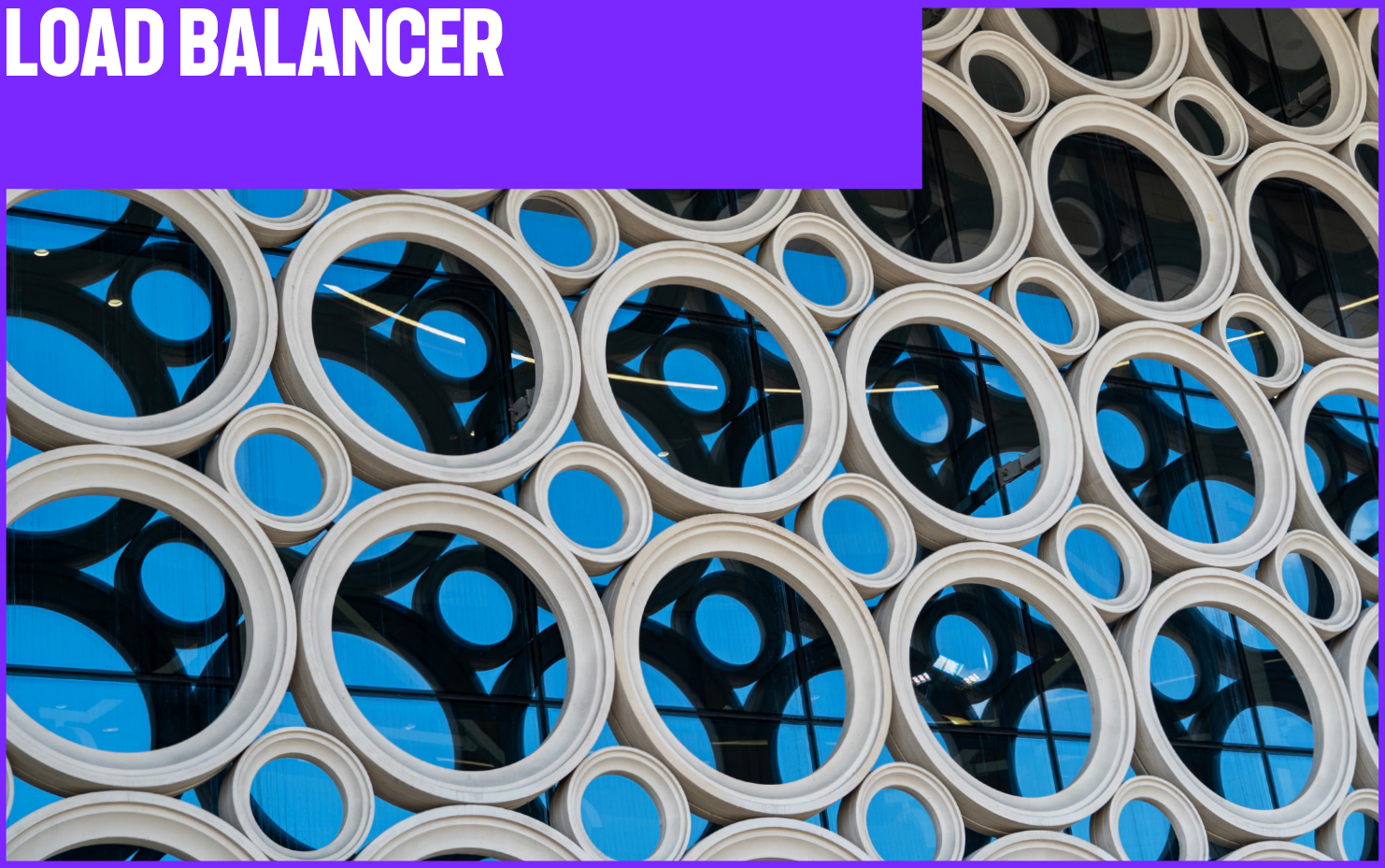
SOLUTION BRIEF

NETAPP STORAGEGRID LOAD BALANCER



Simplify and scale object storage for AI, analytics, and modern applications

Overview

Organizations are using object storage to support AI pipelines, analytics environments, modern applications, backup repositories, and growing volumes of unstructured data. As these environments expand, teams need a way to scale performance, maintain availability, and simplify operations without introducing unnecessary infrastructure complexity.

The NetApp® StorageGRID® Load Balancer helps organizations distribute traffic across object storage resources while maintaining a simple and consistent access point for applications.

By simplifying traffic management and supporting highly available object storage services, the StorageGRID Load Balancer helps teams scale environments, maintain performance, and reduce operational overhead.

Whether deployed as software, a virtual machine (VM), container, or dedicated appliance, the StorageGRID Load Balancer helps organizations deliver a cloud-like experience for object storage environments while keeping control of their data on-premises.

Why object storage environments need load balancing

Modern object storage environments must do more than store data. They need to support AI and analytics workloads, maintain application availability, and scale across growing infrastructure without disrupting users or applications.

As environments expand, organizations need to:

- Scale capacity and performance without redesigning applications
- Maintain availability during hardware, node, or site failures
- Support multiple tenants and workloads simultaneously
- Prevent resource contention between workloads
- Simplify management as environments grow

Load balancing helps address these challenges by distributing requests across available resources while presenting a single endpoint to applications. This simplifies operations while helping maintain performance and availability.

The same approach that helps cloud providers scale object storage services can help organizations deliver a cloud-like storage experience in their own environments.

For object storage workloads, effective load balancing is an essential part of delivering a scalable and resilient infrastructure.

Built for modern object storage workloads

Object storage environments increasingly support a diverse set of workloads. AI pipelines, analytics platforms, cloud-native applications, backup repositories, and multitenant services can all place different demands on infrastructure.

The StorageGRID Load Balancer is designed specifically for these object storage workloads.

StorageGRID helps manage endpoint availability, health monitoring, and traffic distribution across available resources. Organizations can scale environments, maintain availability, and reduce operational complexity without introducing additional load-balancing infrastructure.

Applications connect through a virtual endpoint while the StorageGRID Load Balancer handles traffic distribution behind the scenes. When storage resources are added or removed, applications continue operating without requiring endpoint changes.

The result is a simpler way to scale object storage infrastructure while maintaining consistent application access.

KEY BENEFITS

- **Simplify deployment and management.** Deploy the StorageGRID Load Balancer as software, a virtual machine, container, or purpose-built appliance. StorageGRID automatically manages many common operational tasks, helping reduce administrative effort, and simplify ongoing maintenance.
- **Scale performance without added complexity.** Add storage capacity and performance without disrupting applications. The StorageGRID Load Balancer enables organizations to expand environments while maintaining a consistent endpoint for applications and users.
- **Prioritize critical workloads.** Use StorageGRID traffic classification policies to monitor workloads, gain visibility into resource consumption, and apply quality-of-service (QoS) controls that help maintain predictable performance.
- **Reduce infrastructure overhead.** Avoid deploying and maintaining separate third-party load balancing platforms for object storage environments. The StorageGRID Load Balancer is integrated into the platform, and software-based deployment options are available without requiring separate load balancer software for object storage access. This helps simplify operations while reducing infrastructure overhead.
- **Improve availability.** Help maintain application access even when individual nodes become unavailable. Requests are automatically distributed across available resources to support resilient object storage operations.
- **Accelerate repeat-read workloads.** StorageGRID endpoint caching can help improve access to frequently accessed object data for AI, analytics, and iterative processing workflows. By reducing repeated retrievals of the same data, organizations can improve responsiveness, reduce back-end storage requests, and support more efficient access patterns across distributed environments.

For workloads that repeatedly access the same datasets, StorageGRID caching capabilities can help improve performance by keeping frequently accessed data closer to applications and users. This can help reduce unnecessary data movement, improve latency, and support more efficient access to active datasets.

Gain visibility and control with traffic classification

Not all workloads have the same performance requirements.

Some workloads may require high throughput and low latency, while others prioritize capacity and efficiency. In multitenant environments, one workload can consume resources needed by others.

StorageGRID traffic classification capabilities help organizations identify, monitor, prioritize, and control workloads across shared object storage environments. This helps prevent one tenant or application from consuming resources needed by others while maintaining predictable performance across critical workloads.

Administrators can identify workloads using characteristics such as:

- Tenant ID
- Bucket name
- Endpoint
- Subnet
- Network characteristics

Organizations can monitor workload activity, understand traffic patterns, and apply QoS rules that help ensure resources are allocated appropriately.

This visibility helps teams maintain predictable performance while supporting diverse object storage workloads.

Flexible deployment options

Organizations can deploy the StorageGRID Load Balancer in the way that best matches their operational requirements.

Options include:

- Software-based deployment
- Virtual machine deployment
- Containerized deployment
- Dedicated appliance deployment using NetApp SG120 or SG1200 systems

For organizations seeking a turnkey approach, StorageGRID appliances provide an integrated solution designed for object storage traffic management and high-performance connectivity.

This flexibility allows organizations to choose the deployment model that aligns with their infrastructure strategy while maintaining a consistent object storage experience.

Why it matters

Object storage should help organizations focus on data—not on managing supporting infrastructure.

The StorageGRID Load Balancer helps organizations simplify operations, maintain availability, prioritize workloads, and scale object storage environments with confidence.

Whether supporting AI pipelines, analytics environments, cloud-native applications, or large-scale data repositories, organizations can deliver a cloud-like object storage experience while maintaining control of their infrastructure and data.

By simplifying how applications connect to object storage, the StorageGRID Load Balancer helps organizations spend less time managing infrastructure and more time putting their data to work.

Learn more

Learn how NetApp StorageGRID helps organizations scale object storage environments, support modern workloads, and simplify data management at scale.

Contact Us

NetApp

About NetApp

For more than three decades, NetApp has helped the world's leading organizations navigate change – from the rise of enterprise storage to the intelligent era defined by data and AI. Today, NetApp is the Intelligent Data Infrastructure company, helping customers turn data into a catalyst for innovation, resilience, and growth. At the heart of that infrastructure is the NetApp data platform – the unified, enterprise-grade, intelligent foundation that connects, protects, and activates data across every cloud, workload, and environment. Built on the proven power of NetApp ONTAP, our leading data management software and OS, and enhanced by automation through the AI Data Engine and AFX, it delivers observability, resilience, and intelligence at scale. Disaggregated by design, the NetApp data platform separates storage, services, and control so enterprises can modernize faster, scale efficiently, and innovate without lock-in. As the only enterprise storage platform natively embedded in the world's largest clouds, it gives organizations the freedom to run any workload anywhere with consistent performance, governance, and protection. With NetApp, data is always ready – ready to defend against threats, ready to power AI, and ready to drive the next breakthrough. That's why the world's most forward-thinking enterprises trust NetApp to turn intelligence into advantage. www.netapp.com

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