AVERE

Avere & Google Cloud Platform

Avere Key Benefits

- Freedom to store data in Google Cloud Storage to take advantage of improved economics

- Virtual FXT for Google Compute Engine and physical FXT Edge Filers provide flexibility to store data and run applications on premises and on the Google Cloud Platform

- Leverage Virtual FXT for burst compute and permanent on-cloud infrastructures

- Performance leader with millions of ops/sec performance and hundreds of GB/sec throughput in a max cluster

- Dynamic tiering of active data to the edge helps eliminate latency

- NFS and SMB provide familiar access protocols for users and applications

- Clustering provides scalable performance, scalable capacity, and high availability

- Global namespace joins Google Cloud Storage, on-premises object, and legacy NAS into single pool of storage

- AES-256 encryption keeps data secure

- Savings of 70% or more over traditional NAS

The explosive growth of unstructured data and the need to both access and analyze data globally are driving companies to explore the economies of the cloud for both compute and storage infrastructure. In industries such as media & entertainment, life sciences, financial services, and more, file content has expanded beyond simple text-based documents to multi-media files with high-definition pictures, audio, and video created, edited, and managed around the world consuming massive amounts of storage. Data growth of 50% per year is not uncommon. A company storing 100TB today will need 1PB in just six years.

The cloud offers economical options for storing and processing this data. Outsourcing data storage and processing can allow companies to realize IT efficiency and economies of scale that only an expert, scalable, IT-infrastructure provider such as Google can deliver.

Challenge

Google Cloud Storage provides storage that is simple to manage and scale, with built-in resiliency that removes many of the backup and replication challenges of traditional storage. Compared to traditional storage, cloud storage offers lower capital equipment costs, lower operating expenses, simplified management, and reduced facility footprint. However, in order to fully embrace cloud storage, companies must overcome its two main drawbacks: high latency and an object-based interface.

Google Compute Engine offers enterprises a compelling solution for burst computing at peak times and moving entire IT infrastructures to the cloud. Applications running in Google Compute Engine are easy to scale up and scale down, require no hardware maintenance by the user, and are cost effective since there are no capital expenses or facility charges. However, only limited data can be stored in the compute cloud. This means the majority of the data is on a high-latency path back to the enterprise premises or to Google Cloud Storage, resulting in sub-optimal application performance.
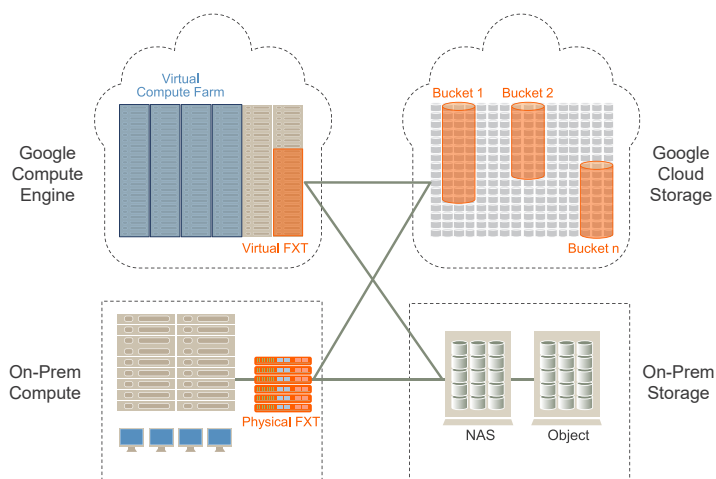

Figure 1: FXT Edge Filers provide flexibility to store data and run applications on premises or on the Google Cloud Platform

Google Cloud Storage

- Flexible storage that fits the nature of your data

- Integrated with Google Compute Engine and Avere for a complete, end-to-end NAS solution

- Protected through redundant storage at multiple physical locations

- Simple world-wide storage and retrieval of any amount of data at any time

- Competitive and flexible pricing

Google Compute Engine

- High-performance virtual machines are consistently performant, scalable, highly secure and reliable

- Powered by Google's global network for creating large compute clusters with consistent cross-machine bandwidth

- (Really) Pay for what you use with minute-level billing

- Global load balancing distributes incoming requests across pools of instances

- Fast and easy provisioning of large clusters of virtual machines

- Compliance and security with in-flight and on-disk encryption

Avere FlashCloud™ on FXT Edge Series Filers effectively addresses these challenges, delivering scalable networked attached storage (NAS) performance up to millions of ops/sec and throughput up to hundreds of GB/sec in a clustered configuration of 3 to 50 Edge Filers to keep pace with the increasing demand of users and applications and providing access to the Google Cloud Storage via NAS protocols, removing the need for changes to existing applications or user-access methods.

Reinventing Enterprise Storage

Avere FXT Edge Filers provide enterprises with complete flexibility to store data and run applications on premises or on the cloud, wherever is makes the most sense. Physical FXT Edge Filers deployed on premises provide extreme performance scaling and complete NAS functionality for file-based applications and manage public and on-premises object storage and existing NAS in a global namespace (GNS) with transparent data mobility. Virtual FXT Edge Filers provide the same great value with the added convenience of a software-only solution that can be run on Google Compute Engine for burst compute and permanent on-cloud IT infrastructures. Both physical and virtual FXT Edge Filers are designed to deliver high performance for big data applications, hide the latency to remote NAS or object-based storage, and provide complete flexibility for enterprises the adopt cloud infrastructures.

Whether physical or virtual, FXT Edge Filers provide enterprise-class NAS functionality including NFS and SMB protocols, scalable performance and redundancy to support any applications accessing shared storage resources. Take advantage of integrated on-premises or on-cloud big data processing such as rendering, genomic sequencing, or financial analytics. Place file-based apps on the cloud like document management and file serving or set up an active archive leveraging Avere's physical and virtual Edge-Core architecture to migrate data to the cloud. Avere FlashCloud integrates Google Cloud Storage with legacy NAS filers into a global namespace. GNS provides enterprises the flexibility to store their data wherever it makes most sense and adopt Google Cloud Storage at a comfortable pace. Together, FXT Edge Filers and flexible, scalable, pay-as-you-go Google Cloud Platform provide optimized performance and capacity scaling while enabling 70% or more savings in total cost of ownership (TCO) compared to traditional NAS implementations.

To minimize latency and improve performance, Avere dynamically moves active data to the FXT Edge Filers nearest to the users and application servers, whether located on premises or on the Google Compute Engine, and less active data is efficiently kept in Google Cloud Storage, providing low latency shared storage access to users and applications. Avere offers organizations an unprecedented opportunity to affordably leverage NAS for big data and other demanding applications. Google Cloud Platform offers an ideal solution for scaling compute for demanding applications and storing large amounts of unstructured data, and Avere provides technology to integrate that compute and storage with existing on-premises resources to provide an easy transition to the Google Cloud Platform.

Hardware Specs	Physical FXT				Virtual FXT
Model / Instance	FXT 5850	FXT 5600	FXT 5400	FXT 5200	Google n1-highmem-32
CPU Cores	16 (physical)	16 (physical)	16 (physical)	16 (physical)	32 (virtual)
DRAM	768GB	384GB	256GB	128GB	208GB
NVRAM	4GB	4GB	4GB	4GB	-
Flash SSD Capacity	19.2TB	9.6TB	4.8TB	-	1.5TB or 3TB Local SSD
SAS HDD Capacity	-	-	-	7.2TB	-
Network	4x25/10Gb + 4x1Gb	4x10Gb + 4x1Gb Ethernet			16Gb
Max. Nodes per Cluster	24				
Max. DRAM per Cluster	18.4TB	9.2TB	6.1TB	3.1TB	5.0TB
Max. SSD per Cluster	461TB	230TB	115TB	-	72TB
Max. SAS per Cluster	-	-	-	173TB	-

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