AVERE
A Microsoft® Company

FXT Series Edge Filers
Scale-out NAS for Public and Hybrid Clouds

Key Benefits

- Flexibility to deploy storage and compute on premises or in the cloud

- Complete NAS feature set including, NFS and SMB protocols, cloud snapshots, AES-256 encryption, and compression

- Clustering provides extreme performance and capacity scaling

- Active/active failover ensures data is highly available

- WAN caching hides the latency to remote data

- Global namespace integrates public cloud storage and NAS into a single logical pool

- Simplified management provided by powerful GUI and API

- Cost savings of 70% or more over traditional NAS

Avere FXT Series Edge filers are the first scale-out NAS solution purpose-built for the cloud. With the FXT Series, enterprises gain the flexibility to adopt the cloud at a pace that is right for the business and integrate public object and existing NAS systems into a single, easy-to-manage infrastructure. FXT Series Edge filers provide a complete NAS feature set, including NFS and SMB protocols, clustering to scale performance and capacity, and active/active failover to ensure highly available data access. FXT Edge filers enable a new generation of applications to move to the cloud and are conveniently offered as both virtual, software-only solutions and physical, hardware-included appliances.

Challenge

Enterprises understand the benefits the cloud can offer. Cloud storage is highly scalable, easy to manage, and has built-in resiliency, making it an attractive solution for storing many types of data. However, cloud storage uses an unfamiliar object-based interface for data access and is hampered by low performance and high latency. This is forcing enterprises to rewrite applications and use cloud storage only for applications like backup and archive that are suited for low-performance storage.

Compute clouds offer enterprises a compelling solution for burst computing at peak times and moving entire IT infrastructures to the cloud. Applications running in compute clouds 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 the storage cloud, resulting in poor application performance.

Solution

Avere FXT Edge filers provide enterprises with complete flexibility to store their data and run their applications on premises or in the cloud, wherever it 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 storage and existing NAS in a global namespace 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 in the compute cloud. Both physical and virtual FXT 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 to adopt cloud infrastructures.
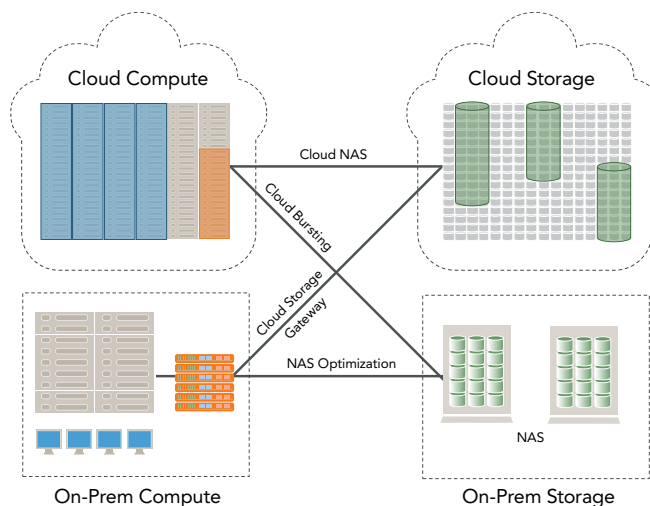

Figure 1: FXT Edge filers provide flexibility to store data and run applications on premises or in the cloud

Flexibility to Deploy Public and Hybrid Clouds

FXT Series Edge Filers enable enterprises to integrate existing NAS systems with cloud-based resources and adopt public and hybrid cloud infrastructures at a pace that is right for the business. The Avere Edge-Core architecture provides high-performance access to data whether the data is local or remote, NAS-based or object-based, on the enterprise premises or in a public cloud.

FXT Edge filers create a global namespace (GNS) across public object storage and NAS systems to enable managing all data as a single logical pool. Virtual, software-only FXT Edge filers can be quickly and easily configured in compute clouds to enable file-based applications to run in the cloud with the highest performance and lowest latency access to data.

Best-in-class NAS

The Avere FXT Series provides a rich NAS feature set and extreme scalability making it a best-in-class solution for file-based applications. FXT Edge filers provide complete NFS and SMB interfaces for Unix, Linux, Windows, Mac, and mixed environments. Dynamic tiering ensures that active data is stored on the high performance storage media (DRAM, SSD, and SAS) contained within the FXT Edge filer and read, write, and metadata operations are handled with the lowest latency possible.

Clustering of up to 24 FXT nodes per system scales performance to hundreds of gigabytes/second throughput and over ten million operations/second. In addition, clustering scales the capacity of high-performance media contained within the FXT cluster to 230 terabytes and the capacity of total addressable storage (on the object and NAS-based core filers) beyond an exabyte. Active/active node failover operating within the FXT cluster ensures that data is always available even in the presence of network, hardware, and other failures.

Lowest Cost

FXT Edge filers enable implementing storage and compute infrastructures with the lowest total cost. Using SPECsfs2008, the most popular performance benchmark for NAS (for more details, see http://spec.org/sfs2008/results/sfs2008.html), Avere demonstrated higher performance and lower latency than the best results from EMC and NetApp in a footprint that is 85% smaller than NetApp and 75% smaller than EMC and a cost that is 80% less than EMC and 55% less than NetApp.

FXT Edge filers enable enterprises to move storage and compute resources to the cloud and save money. When using the cloud, enterprises save on capex since they are buying less equipment, opex since there is less equipment to power and cool, facilities since there are fewer data centers to build, and administration since there is less on-prem equipment to manage, scale, and maintain. When comparing an Avere plus public cloud solution to traditional NAS, total cost of ownership savings of 70% or more are achievable. In addition, Virtual FXT Edge filers can be used for burst computing in the cloud at peak times without a long-term commitment to hardware resources or software licenses.

Purpose-Built for the Cloud

- Flexibility to deploy public cloud storage and NAS
- Scale application performance on premises and in the cloud
- AES-256 encryption, FIPS 140-2 Level 1 compliance keeps data secure
- Compression for storage efficiency
- Cloud snapshots for data protection

Best-In-Class NAS Features

- NFS and SMB protocol support
- Clustering scales performance to hundreds of GB/s throughput and over ten million IOPS
- Active/active failover ensures HA
- Dynamic tiering hides WAN latency

Simplified Management

- Global namespace integrates public cloud storage and NAS
- GUI provides rich, historical statistics & graphical monitoring
- SNMP & KMIP support, XML-RPC interface, email alerts

Cloud Support

- Microsoft Azure Cloud Compute and Storage
- Amazon Elastic Compute Cloud and Amazon Simple Storage Service
- Google Compute Engine and Cloud Storage (Multi-Regional, Regional, and Nearline)

Hardware Specs	Physical FXT			Virtual FXT					
Model / Instance	FXT 5850	FXT 5600	FXT 5400	Microsoft Azure E32s_v3*	Microsoft Azure D16s_v3*	AWS r4/ r3.8xlarge	AWS r4/ r3.2xlarge	Google n1-highmem-32	Google n1-highmem-8
CPU Cores	16 (physical)	16 (physical)	16 (physical)	32 (virtual)	16 (virtual)	32 (virtual)	8 (virtual)	32 (virtual)	8 (virtual)
DRAM	768GB	384GB	256GB	256GB	64GB	244GB	61GB	208GB	52GB
NVRAM	4GB	4GB	4GB	-	-	-	-	-	-
Flash SSD Capacity	19.2TB	9.6TB	4.8TB	4TB	1TB	12TB	1TB	3TB	1.5TB
Network	4x25/10Gb + 4x1Gb	4x10Gb + 4x1Gb Ethernet		16Gb	8Gb	10Gb	High	16Gb	16Gb
Max. Nodes per Cluster	24								
Max. DRAM per Cluster	18.4TB	9.2TB	6.1TB	6.1TB	1.5TB	5.9TB	1.5TB	5.0TB	1.2TB
Max. SSD per Cluster	461TB	230TB	115TB	96TB	24TB	288TB	24TB	72TB	36TB

* Coming soon