



Product Analysis:

Avere FXT 5000 Series Edge Filer

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For quite some time now, organizations have been struggling with increasingly expensive and complex infrastructures as they fight to control and protect the ever-increasing avalanche of unstructured data. At the same time, they need to meet the demands from users and applications for higher performance. The old strategy of over-provisioning disks in order to improve I/O was becoming increasingly expensive and negatively affecting IT budgets that were already stretched too thin.

In order to control or reduce their increasing storage and management costs, many organizations are turning to the cloud, which offers unlimited storage and high performance computing resources at attractive prices on a pay-for-what-you-use basis. This lets the organization avoid the expense of more hardware, cooling, power, and floor space as well as stretching their thin IT staff even further. However, it does bring its own set of challenges in terms of bandwidth limits, object storage performance, and latency issues.

Avere Systems, a leading provider of enterprise storage for the hybrid cloud, has developed a comprehensive family of modular products that address the various challenges of storage and performance in both the data center and the cloud. Their technology scales capacity and performance at the edge of the network while hiding latency to remote NAS (Network Attached Storage) or object storage.

The key to this performance and flexibility is Avere's "Edge-Core architecture" which uses their Tiered File System (TFS), which is a complete file system that separates performance from capacity in both the cloud and on-premises.

How Avere Edge Filers Accelerate Data Access

The Avere Edge Filers are placed in front of on-premises traditional disk based storage, like NAS and object storage, providing an SSD tier to accelerate performance. They can also function as a cloud storage gateway for services like Amazon and Google. The FXT Edge filer manages all data read/write operations and is able to determine intelligently what data to cache. This provides extremely fast access to the data.

Additionally, these devices also address the challenges presented by object storage. Object storage has a different interface that uses an object based API, which is often not very compatible with applications written for traditional file systems. Object storage also tends to have slow access speeds.

Avere provides a file system layer on top of the object storage. With the physical FXT device translating between the object storage API and the various NAS and file system protocols, it

eliminates the need for users to re-write their applications. It also speeds up access to object storage data. The FXT Edge Filers are a scale-out NAS solution built for the hybrid cloud. They give an organization the ability to integrate the public cloud, private object storage solutions and existing NAS systems into a single, easy-to-manage infrastructure.

Avere's New FXT 5000 Series Edge Filers

Avere recently announced the release of two new all-flash models of the FXT Edge Filer series. These new models are not simple point solutions but rather integral parts of a comprehensive, scale-out solution to the various storage challenges found in a hybrid cloud infrastructure.

The latest addition to the Avere family of products is their new all-flash FXT 5000 series Edge Filers that consists of two new models, the FXT 5400 and 5600. According to Avere, this series is the most powerful hybrid cloud storage product on the market to date. These new units will replace the older FXT 3850 and 4850 models respectively. These new units feature several major enhancements over the older series.

The FXT 5600 delivers 75% more data throughput than previous models. It also provides 100% more capacity than older models. Both the FXT 5400 and 5600 also require 50% less space than previous models. Both units also cost 30% less per GB than the older models.

FXT 5000 Series Hardware Details

The FXT 5600 features 384GB of DRAM and six 1.6TB HGST SSDs for a total of 9.6TB per node, scalable to 480TB per 50 node cluster.

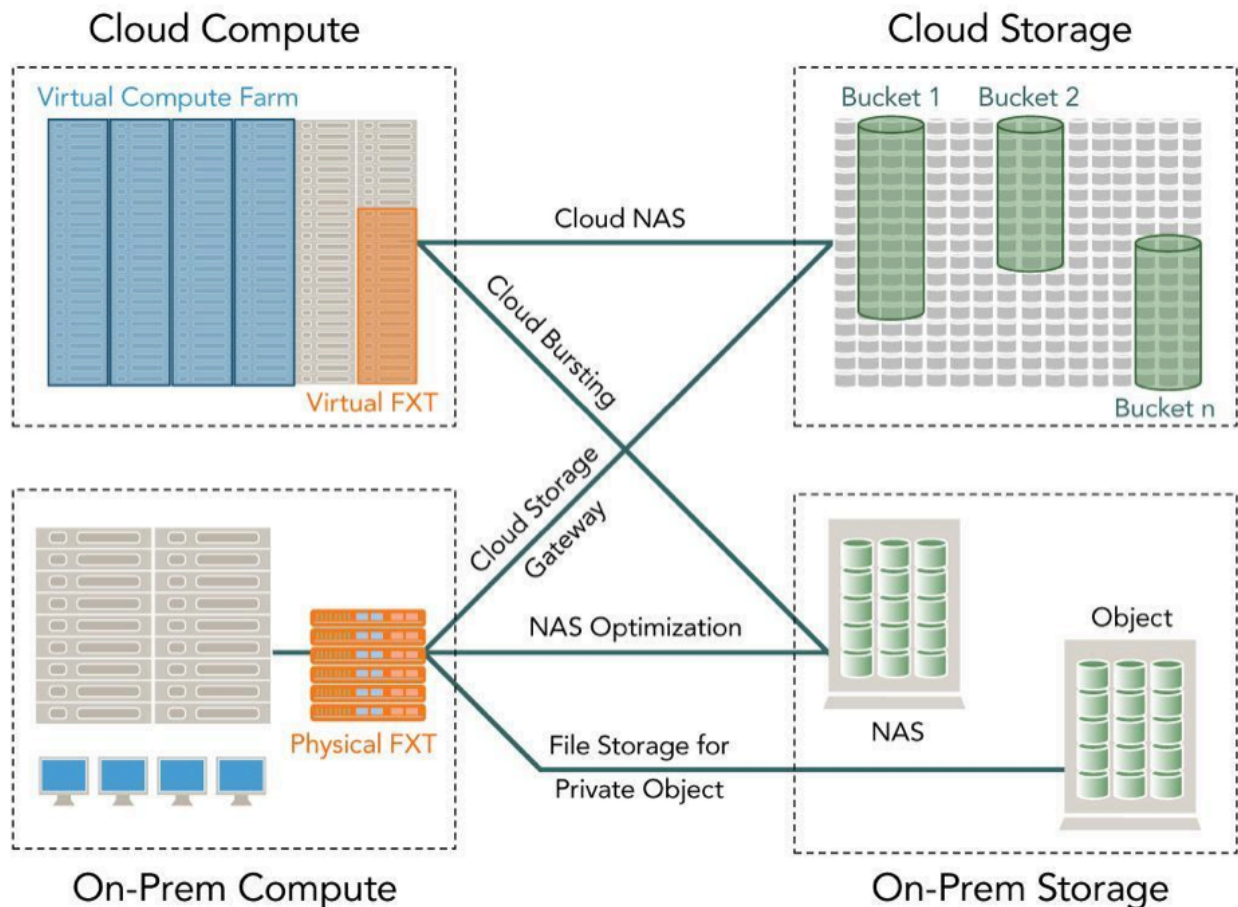
The FXT 5400 features 256GB of DRAM and six 800GB HGST SSDs for a total of 4.8TB per node, scalable to 240TB per 50 node cluster.

Both new units also feature:

- Two 8-core 2.6GHz Haswell-EP processors
- 4 GB of NVRAM to provide low-latency write operations
- 4 10GbE ports
- 4 1GbE ports
- 2 300GB 10K SAS OS drives
- 1U chassis
- Clustering from 3 to 50 FXT nodes for performance and capacity scaling
- HA failover, mirrored writes, redundant network ports and power supplies
- All drives meet FIPS Level-2 security requirements
- Supported client protocols are standard NAS protocols: NFS, SMB/CIFS
- Supported object storage: Amazon S3, Google (Standard, DRA, and Nearline), IBM/Cleversafe, HGST/Amplidata, and SwiftStack, which Avere calls private object. Private object refers to any object storage you purchase and install on your own on-premises storage
- Supported compute clouds: Amazon Elastic Compute Cloud (EC2), Google Compute Engine (GCE), and Microsoft Azure Compute
- Management GUI, analytics, email alerts, SNMP, XML-RPC interface, KMIP

Connecting Hybrid Cloud Components

As mentioned earlier in this piece, the FXT 5000 series Edge Filers are part of a comprehensive family of products designed to meet the various challenges of a hybrid cloud environment and provide high performance data access regardless of where the data is stored. These products all work together to seamlessly make each of the four main components of the hybrid cloud available to each other. Avere identifies these four components as on-premises compute, on-premises storage, cloud storage, and cloud compute. The following graphic shows how Avere's products connect these different components together seamlessly.



The other products in the Avere family are:

- **vFXT** – The Virtual FXT Edge filer is software, which acts as a NAS in the compute cloud, allowing your data to be stored anywhere while providing full NAS functionality. It connects your on-premises storage to cloud compute resources (Cloud Bursting) or provides a NAS for the cloud, optimizing usage of public cloud storage with its counterpart (CloudNAS). It can also combine both of these functions into a flexible enterprise hybrid cloud infrastructure.

The vFXT allows an organization to leave data on-premises while leveraging cloud compute resources to augment or replace on-premises compute with additional compute capacity for peak periods in workflows while avoiding the necessity to add additional

servers to meet increased demand.

Where data is stored in the cloud, the NAS functionality provides the same features as the physical FXT filers, including clustering, AES 256 bit encryption, and powerful cloud cache tiers that eliminate cloud latency.

- **FlashMirror** – Provides flexible, high performance, comprehensive NAS data protection. Integrated with the native tiering on the FXT Edge cluster, FlashMirror quickly replicates data to multiple NAS filers or the cloud. Simple to deploy and manage, it offloads replication processing from the Core filers while scaling replication performance to any level required. Should the primary storage go offline, Avere global namespace can be repointed to the secondary source without any slowdown to the users.
- **FlashCloud** – Powers object storage use cases, eliminating the latency associated with the cloud by leveraging the Avere Edge-Core architecture to get active data to where users need it. Running on FXT Edge filers (both physical and virtual) it uses object APIs to connect to public and private clouds, while translating standard NAS protocols to protect your application investments.

Clustering enables Avere to scale on-premises, tiered storage to millions of IOPS of performance and 480TB of capacity while insuring high availability access to unlimited data in the cloud. Cloud Snapshots, which are part of the Avere OS, are closely integrated with FlashCloud to provide point-in-time copies in the cloud for data protection.

- **FlashMove** – Software that manages live data moves and migrations transparently and non-disruptively between multiple NAS filers, and private or public clouds.

StorageSwiss Take

The [Avere FXT Edge Filers](#) have already established a solid track record of very high performance and the ability to handle extremely heavy data loads in some of the most demanding industries like the visual effect studios that provided the special effects for twenty of the most recent blockbuster movies, and the next generation genomic analysis environment for the CDC, to name a couple.

Their new FXT 5000 series raises the performance bar even higher. Avere's technology provides the throughput and performance needed by large-scale computing tasks but which traditional NAS filers can't provide.

Avere's hybrid cloud solutions also give organizations the ability to store and access their data anywhere on-premises or in the cloud with minimal latency and without compromising availability, performance or security of enterprise data. It also enables organizations to integrate public cloud, object storage solutions and existing NAS systems into a single easy to manage infrastructure.

Organizations with large amounts of data and the need to maintain a hybrid cloud infrastructure should give the Avere FXT 5000 series Edge filers, as well as the rest of the product family, serious consideration.