

# IBM Cloud Object Storage File Access (FA)

## Highlights

- Reduce Cost of storing inactive or archival file data
- Improve agility, durability, scalability and reliability of data
- Minimize edge filer infrastructure approaching end of life
- Increase utilization of file servers
- Consolidate file data from remote office locations
- Migrate file data to object storage

## Low-cost software-defined enterprise file access for IBM COS

**Modernizing data on the edge with IBM COS FA**

- Virtual appliance for low cost deployment
- SMB/NFS interface for easy access
- Smart caching for performance
- Source-based data reduction to lower costs
- Strong security and compliance to keep remote data safe

**A software virtual appliance for simple and safe data archiving**

EDGE Servers or Desktops

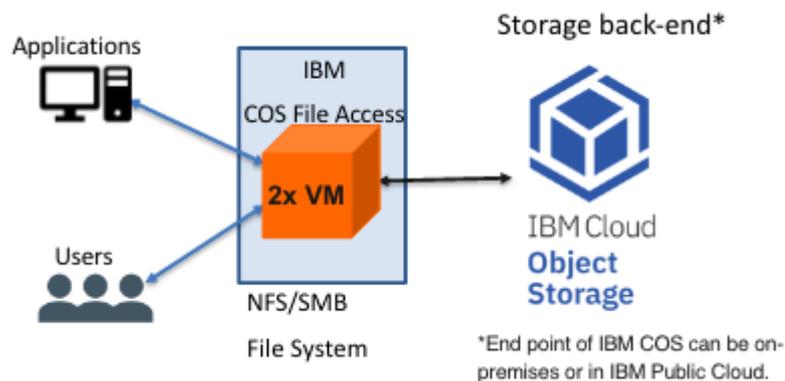
IBM COS FA NFS/SMB

IBM Cloud Object Storage

### *IBM Cloud Object Storage File Access (FA)*

Faced with a dramatic rise in file data volume, enterprises are searching for ways to effectively migrate, store and manage infrequently used file data while containing file-server sprawl and spiraling costs. IBM Cloud Object Storage File Access provides a low-cost enterprise software-defined storage solution for consolidating infrequently used (write once/modify never/read rarely) NFS and SMB files from one or more applications or filers (NAS, Windows or LinuxFile Servers) in IBM Cloud Object Storage located on-premises or in the IBM Cloud. Clients can use IBM COS File Access to discover and migrate existing cold files from multiple geo-dispersed file shares to COS to free up storage space on their filers or completely eliminate their filer infrastructure that is used solely for infrequently used file data, for example video

surveillance or log files, photo or video media recording files for training, and backup or archiving file repositories. IBM COS FA is a multi-tenant solution that delivers active archiving file services by adding virtual file systems as well as SMB and NFS protocol interfaces to IBM COS. Multiple enterprise applications can now seamlessly access, without any re-write, one or more unified file systems on COS through SMB and NFS protocol interfaces.



## IBM COS FA

IBM COS File Access runs as a Virtual Machine. IT Administrators can centrally monitor and manage all File Access VMs in an organization using a browser through a File Access Portal that also runs in another Virtual Machine. All COS FA file system meta data that is stored in the File Access Portal is backed up in COS for disaster recovery.

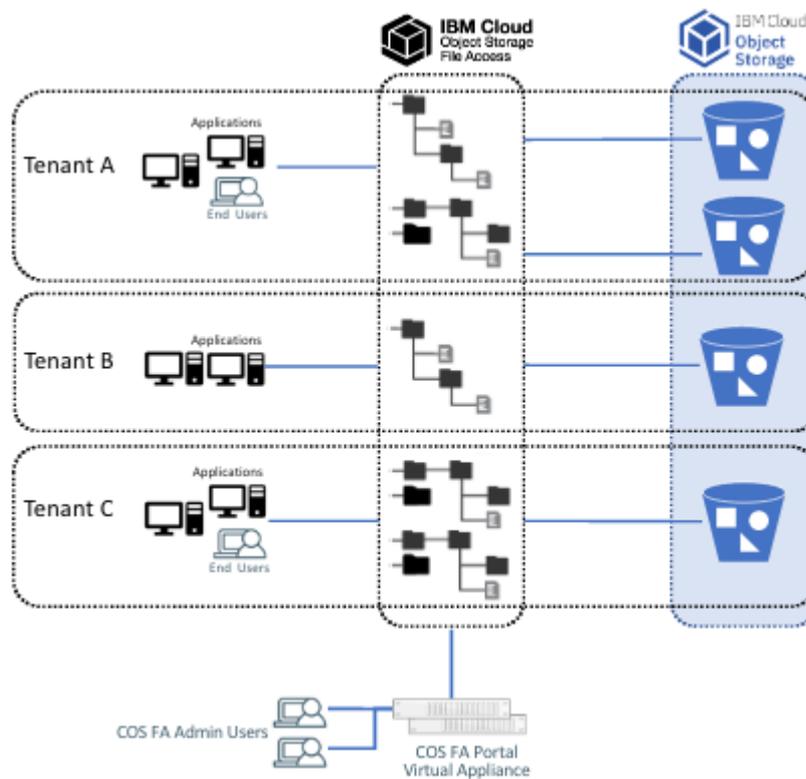
### Features and Benefits

IBM COS File Access software is easy to install and manage. Everything is embedded in the File Access and Portal VM images, simplifying the installation and securing reliability and integration between protocols, file systems and IBM COS.

IBM COS FA provides smart caching for easy archived file browsing and retrieval as well as source-based, encryption, compression and deduplication for security and optimal bandwidth and storage capacity utilization.

IBM COS FA can be integrated with existing anti-virus and Active Directory solutions to provide safety and access control to file data stored on IBM COS.

IBM COS FA can be deployed in high-availability mode with automatic failover. It can be scaled out on-demand. A single COS FA Portal can manage 10's to 100's of COS FA virtual appliances. Multiple file systems, each with its unique domain, shares, and users can be provisioned in a virtual appliance and each virtual appliance can store its data in a separate COS bucket, allowing for multi-tenancy support. Each virtual appliance has its own namespace.



### IBM COS FA architecture

IBM COS FA is compatible with SMB 1, 2.0, 2.1 and 3.0 as well as NFS 3.0 protocol standards allowing seamless integration with all your SMB and NFS applications and files. It supports a fully managed SSD or NVMe cache for quick access to archived files, even over a slow WAN link.

IBM COS FA is designed with the utmost security and data protection in mind. It provides support for unlimited snapshots and source based AES256 encryption for data at rest and TLS 1.2 encryption and fingerprinting for data in motion. It can be completely deployed with all

controls and data within a client’s firewall and integrated with existing Active Directory for ACLs and auditing. It supports two-factor authentication and remote data shredding, and it can be integrated with an existing ICAP Anti-Virus solution for data safety and unauthorized access.

IBM COS FA also provides direct writes of file data to COS allowing for fast sync of large files to COS.

### Recommended host hardware for File Access Virtual Appliance

**CPU:** 64-bit (x64) is required for an IBM Cloud Object Storage File Access VM. The recommendation is 4 cores or more. Choosing between CPU clock speed and number of cores, more cores are favored.

**RAM:** The recommended amount of RAM available to the VM depends on the number of files in the file system, with a goal to maximize the RAM available for metadata. Minimum recommended RAM for active archiving is 4GB. Large file systems holding millions of files may benefit from up to 8 GB of RAM.

**Cache:** In the virtualized environment, the node is configured to have direct access to one or more cache devices to keep latency to a minimum. Cache is shared for reads and writes, and the amount used for each is adjusted automatically. A minimum of 400GB of NVMe or SAS SSD cache is recommended. For durability, high endurance, 7 DDP or better NVMe cache disks must be used. Maximum cache supported is 8TB.

**Network:** Two or more 10 Gigabit network interfaces for the node. Bonding can be set up to add redundancy and failover. VLAN can be used to increase the number of logical interfaces in order to achieve separate networks for public, private, management and antivirus. Switches should be configurable with IGMP.

	<b>Gateway Host 2 hosts for HA/DR (Active/Passive)</b>	<b>Portal Host 2 hosts for HA/DR (Active/Active)</b>
<b>CPU</b>	x64 (4+ cores)	x64 (12+ cores)
<b>RAM</b>	Up to 8 GB	40+GB
<b>Cache disk</b>	Up to 8TB NVMe/SAS SSD	3+TB NVMe/SAS SSD
<b>Network</b>	10 Gigabit (minimum 2 interfaces)	
<b>Network switch</b>	At least 2 for redundancy	
<b>Hypervisor</b>	VMware ESXi or Microsoft Hyper-V or KVM	
<b>Browser</b>	Google Chrome, Mozilla Firefox, Apple Safari and Microsoft Edge	

Table 1 Recommended host software and hardware for File Access Virtual Appliances

Specifications

### IBM Cloud Object Storage

- Maintain SLAs with always on availability: Geo-dispersed and local dispersed data protection
- 40% less cost than traditional storage: No snapshots or costly replication required
- Less admin resources needed to manage data: Auto balance data and simplify protection
- Higher performance with less resources: Only 12 nodes to deliver up to 55MB/s
- Modernize application with hybrid cloud access: Access data from edge, data center or cloud

Comprehensive enterprise storage for the hybrid cloud data center



IBM Cloud Object Storage

### IBM Cloud Object Storage

Local or geo-dispersed object storage efficiency with 55GB/s throughput in a 12-node scalable cluster

- Up to 300% improved performance with enhanced optimized software
- 55GB/s per 12 node expandable cluster
- Lower cost with 18TB SMR drives
- Geo-dispersed or local dispersed cost saving data protection

Optimized for Collect

Continuous updates to data catalog

- AI acceleration where object storage meets NVMe access
- Storage integration to IBM Watson solutions
- One solution that scales to market-leading capacity, eliminating silos and reducing cost
- Simplify archive or access data on the edge with a simple file access virtual machine

IBM Cloud Object Storage

## Why IBM?

IBM Cloud Object Storage (IBM COS) is designed to help customers future-proof primary and secondary storage for data and AI workloads. With multi-level parallel access, optimize capacity and performance and integrated real-time analysis with Spectrum Discover, IBM has a very differentiated offering, but it does not stop there. IBM COS also is very cost effective with efficiency that is easy to start, stays online and is easy to manage with built-in security.

## Next steps

- [IBM Cloud Object Storage Web Page](#)
- [IBM Cloud Object Storage Concepts and Architecture](#)

## For more information

IBM Cloud Object Storage System Product Guide

<http://www.redbooks.ibm.com/abstracts/sg248439.html?Open>

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