Learn about Global File Cache

Cloud Manager

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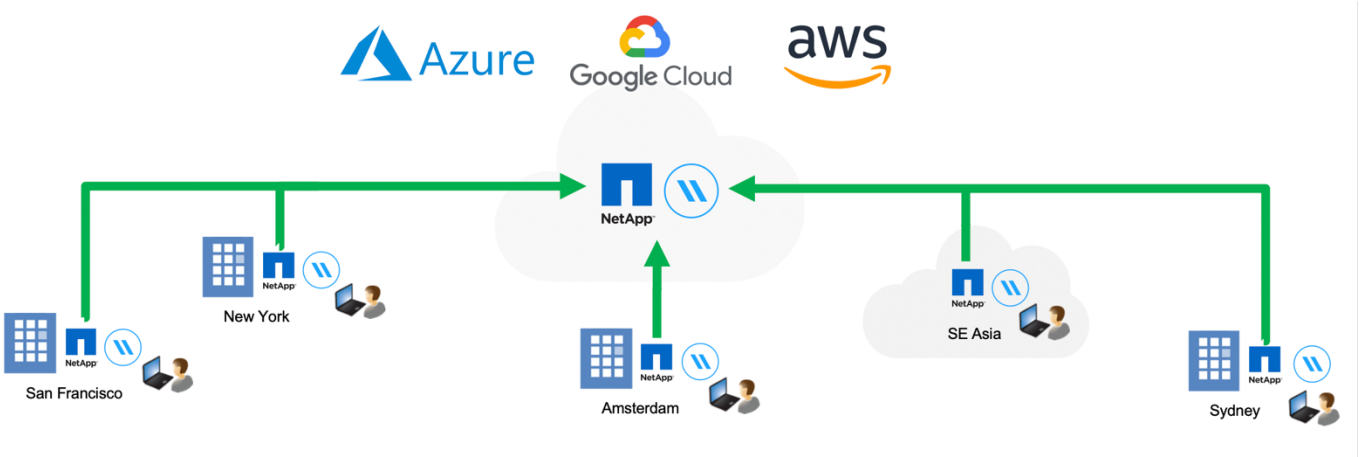
Learn about Global File Cache

NetApp Global File Cache enables you to consolidate silos of distributed file servers into one cohesive global storage footprint in the public cloud. This creates a globally accessible file system in the cloud that all remote locations can use as if they were local.

Overview

Implementing Global File Cache results in a single, centralized storage footprint, versus a distributed storage architecture that requires local data management, backup, security management, storage, and infrastructure footprint in each location.



Features

Global File Cache enables the following features:

- Consolidate and centralize your data into the public cloud and leverage the scalability and performance from enterprise-grade storage solutions
- Create a single set of data for users globally and leverage intelligent file caching to improve global data access, collaboration, and performance
- Rely on a self-sustaining, self-managing cache, and eliminate full data copies and backups. Utilize local file caching for active data and cut storage costs
- Transparent access from branch locations through a global namespace with real time central file locking

See more about Global File Cache features and use cases here.

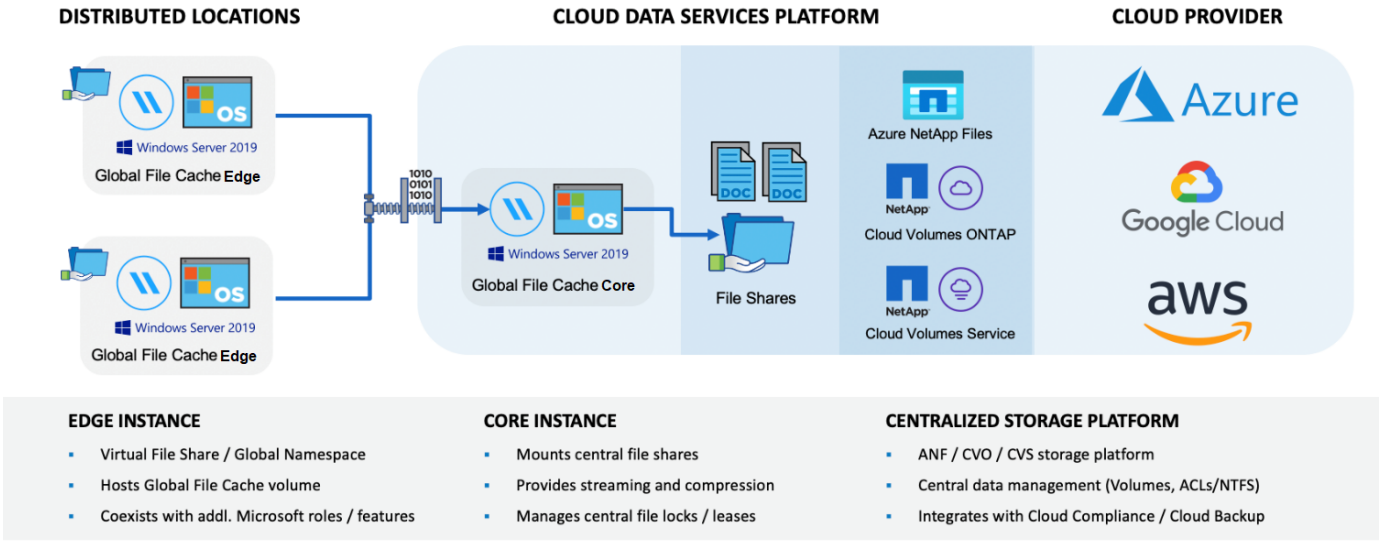
Global File Cache components

Global File Cache consists of the following components:

- Global File Cache Management Server
- Global File Cache Core
- Global File Cache Edge (deployed in your remote locations)

The Global File Cache Core instance mounts to your corporate file shares hosted on your backend storage

platform of choice (such as Cloud Volumes ONTAP, Cloud Volumes Service, and Azure NetApp Files) and creates the Global File Cache Fabric that provides the ability to centralize and consolidate unstructured data into a single set of data, whether it resides on one or multiple storage platforms in the public cloud.



Supported storage platforms

The supported storage platforms for Global File Cache differ depending on the deployment option you select.

Automated deployment options

Global File Cache is supported with the following types of working environments when deployed using Cloud Manager:

- Cloud Volumes ONTAP in Azure
- Cloud Volumes ONTAP in AWS

This configuration lets you deploy and manage the entire Global File Cache server-side deployment, including Global File Cache Management Server and Global File Cache Core, from within Cloud Manager.

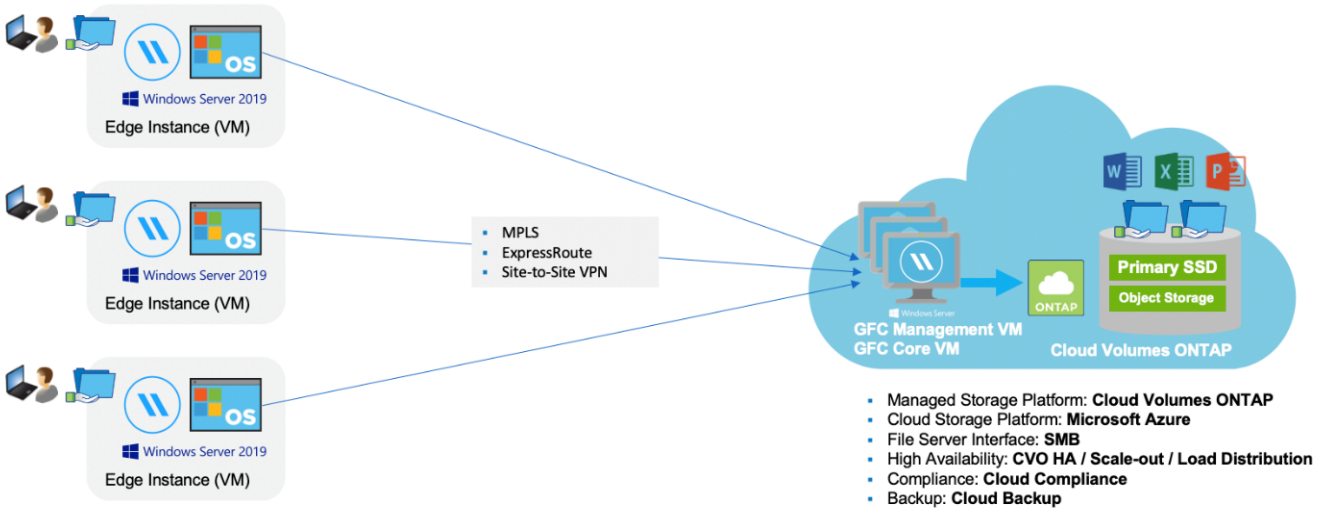
Manual deployment options

Global File Cache configurations are also supported with Cloud Volumes ONTAP, Cloud Volumes Service, Azure NetApp Files, and Amazon FSx for ONTAP systems installed on public cloud storage infrastructure. On-premises solutions are also available on NetApp AFF and FAS platforms. In these installations the Global File Cache server-side components must be configured and deployed manually, not using Cloud Manager.

See the NetApp Global File Cache User Guide for details.

How Global File Cache works

Global File Cache creates a software fabric that caches active data sets in remote offices globally. As a result, business users are guaranteed transparent data access and optimal performance on a global scale.



The topology referenced in this example is a hub and spoke model, whereby the network of remote offices/locations is accessing one common set of data in the cloud. The key points of this example are:

- Centralized data store:
  - Enterprise public cloud storage platform, such as Cloud Volumes ONTAP
- Global File Cache Fabric:
  - Extension of the central data store to the remote locations
  - Global File Cache Core instance, mounting to corporate file shares (SMB).
  - Global File Cache Edge instances running in each remote location.
  - Presents a virtual file share in each remote location that provides access to central data.
  - Hosts the Intelligent File Cache on a custom-sized NTFS volume (`D:\`).
- Network configuration:
  - Multiprotocol Label Switching (MPLS), ExpressRoute, or VPN connectivity
- Integration with customer's Active Directory domain services.
- DFS namespace for the use of a global namespace (recommended).

Cost

The cost to use Global File Cache depends on the type of installation you have chosen.

- All installations require that you deploy one or more volumes in the cloud (Cloud Volumes ONTAP, Cloud Volumes Service, or Azure NetApp Files). This results in charges from the selected cloud provider.
- All installations also require that you deploy two or more virtual machines (VMs) in the cloud. This results in charges from the selected cloud provider.
  - Global File Cache Management Server:

    In Azure, this runs on a D2s_V3 or equivalent (2 vCPU/8 GB RAM) VM with 127 GB premium SSD

    In AWS, this runs on a m4.large or equivalent (2 vCPU/8 GB RAM) instance with 127 GB general purpose SSD

- Global File Cache Core:

  In Azure, this runs on a D4s_V3 or equivalent (4 vCPU/16 GB RAM) VM with 127 GB premium SSD

  In AWS, this runs on a m4.xlarge or equivalent (4 vCPU/16 GB RAM) instance with 127 GB general purpose SSD

- When installed with Cloud Volumes ONTAP in Azure or AWS (the supported configurations deployed completely through Cloud Manager), there is a charge of $3,000 per site (for each Global File Cache Edge instance), per year.
- When installed using the manual deployment options the pricing is different. To see a high-level estimate of costs, see Calculate Your Savings Potential or consult your Global File Cache Solutions Engineer to discuss the best options for your enterprise deployment.

Licensing

Global File Cache includes a software-based License Management Server (LMS), which allows you to consolidate your license management and deploy licenses to all Core and Edge instances using an automated mechanism.

When you deploy your first Core instance in the datacenter or cloud, you can choose to designate that instance as the LMS for your organization. This LMS instance is configured once, connects to the subscription service (over HTTPS) and validates your subscription using the customer ID provided by our support/operations department upon enablement of the subscription. After you have made this designation, you associate your Edge instances with the LMS by providing your customer ID and the IP address of the LMS instance.

When you purchase additional Edge licenses or renew your subscription, our support/operations department updates the license details, for example, the number of sites or subscription end date. After the LMS queries the subscription service, the license details are automatically updated on the LMS instance and will apply to your GFC Core and Edge instances.

See the NetApp Global File Cache User Guide for additional details about licensing.

Limitations

- The version of Global File Cache supported within Cloud Manager requires that the backend storage platform used as your central storage must be a working environment where you have deployed a Cloud Volumes ONTAP single node or HA pair in Azure or AWS.

  Other storage platforms and other cloud providers are not supported at this time using Cloud Manager, but can be deployed using legacy deployment procedures.

  These other configurations, for example, Global File Cache using Cloud Volumes ONTAP or Cloud Volumes Service on Microsoft Azure, Google Cloud, or AWS continue to be supported using the legacy procedures. See Global File Cache overview and onboarding for details.

Release Notes

What's new in version 1.1.0

Released: 9 June 2021

- The "Edge Synchronization" feature has been added. This feature keeps multiple Edges at a remote office in sync and the data is always cached/warm. When a file is flushed/fetched at one Edge, then the same file on all Edges participating in Edge Sync is updated and cached. The Optimus UI is enhanced for Edge Sync configuration. See section 8.4 in the NetApp Global File Cache User Guide for details.
- The OpenSSL module is used for secure communication between GFC Edge and GFC Core. This module has been upgraded to latest and more secure version (ver 1.1.1k).
- The GFC License Registration Page displays the number of licenses when activated through a NetApp subscription.

Fixed issues in version 1.1.0

- The Configuration UI (Optimus) now displays the Edge hostname correctly in the Edit Pre-population page.
- An issue in parsing the json response from the NetApp License subscription server during license registration is fixed.
- Pre-population (TappN) logs are enhanced to log the file transfer status of all the files.

Fixed issues in version 1.0.4

Released: 7 April 2021

- A QoS issue has been fixed where QoS parameters were applied to *all* users instead of just the user who surpassed the limits.
- NSS credentials are now validated before being applied to the licensing system.
- Race conditions between the GFC software and certain antivirus software have been fixed.
- A crash no longer occurs when a locking hierarchy is violated during drop lease operations.

What's new in version 1.0.3

Released: 21 March 2021

- The Global File Cache software installer now adds process information to exclude all GFC processes from Windows Defender software on-demand scanning.
- A new Policy Configuration tab has been added to the Configuration Console to add pre-population jobs from the GFC Core.
- Many enhancements have been made so that the software uses less memory while increasing performance and stability.

Fixed issues in version 1.0.3

- The NetApp license registration and GFC subscription-based registration is only allowed by the cloud-based License Management Server (LMS). The on-premises LMS should use legacy licensing.
- The Configuration UI now adds jobs in pre-population when the License Manager Client Service (LMC) uses hostnames instead of IP address for the LMS during configuration.

What's new in version 1.0.2

Released: 6 Jan 2021

- Global File Cache now supports subscription ID based licensing. The Subscription Number is emailed to

you after you register your system. See Licensing Global File Cache for details.

- The requirement for the GFC Core joining the domain has been relaxed. Now a username (part of Backup Operators group on the Cloud Volumes ONTAP system) is used to configure GFC services.
- The License Manager Server now has an additional HTTPS endpoint to de-register any registration.

Fixed issues in version 1.0.2

- Duplicate GFC icons are no longer displayed on the desktop during upgrade.
- The License Manager Client Service now retains the correct licensing information when the service is restarted.

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