Technical Insight

Peer Software Takes a Different Approach to Global File Access

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Overview

The exponential growth of file data and the remote workers who create and access that data creates challenges for today's IT teams. They increasingly need to provide remote access, local performance, file sharing, high availability, and backup to a workforce that spans sites.

As a result, organizations today commonly find themselves with infrastructure requirements for multiple on-premises sites and public clouds. Hundreds and even thousands of workers could be operating from their homes on multiple continents.

IT organizations have several ways of dealing with this trend. On-premises **enterprise NAS** products are the traditional method for enterprise file storage, and these products now commonly extend to public cloud storage. **Global file systems** – sometimes referred to as Cloud NAS – were developed specifically for hosting a primary set of data in the public cloud and then focuses on file caching to edge appliances for remote collaboration.

Peer Software takes a different approach to making files accessible to anyone in an organization wherever the files and people are located. The Peer Global File Service (PeerGFS) is not a file system but can help customers of popular NAS systems manage data across on-premises sites, the public cloud and edge locations. The key piece of PeerGFS is real-time active-active replication that provides fast, local access to mirrored data across sites to improve productivity for distributed teams.

Like global file systems, PeerGFS can reduce on-premises infrastructure footprint. Also like Global File Systems, PeerGFS can take advantage of the public cloud to make files appear local even if they are in the cloud or at the edge. Its active-active data services fabric also enables continuous data protection for backup and high availability.

Unlike global file systems that were designed as NAS replacements, PeerGFS complements leading NAS products customers are already using. That provides the value of global file systems while allowing customers to keep their existing NAS investments. PeerGFS works with Windows file servers, Dell PowerScale (Isilon), Dell PowerStore, Dell Unity, Dell PowerEdge, NetApp ONTAP, NetApp Cloud Volumes ONTAP, AWS FSx for NetApp, and Nutanix File storage, and support is planned for other NAS products. Customers can also use PeerGFS to replicate data across NAS systems from different vendors if they have more than one file storage platform.

Peer, which also refers to its technology as a distributed file system, launched in 1993 with a focus on real-time Windows-based file replication. It added active-active replication across sites in 2004 to solve versioning issues with Microsoft Distributed File System Replication (*DFSR*). Over time it added file locking, support for file systems outside of Windows, and edge caching.

Peer Software has grown to more than 1,200 customers, some with more than 100 offices using PeerGFS.

PeerGFS Use Cases

Peer addresses common IT challenges, including:

- Global file sharing: PeerGFS delivers fast local access to shared project files for distributed teams while ensuring version integrity and high availability.
- Data center synchronization: It enables high availability and load balancing of end user and department data.
- Cloud replication and backup: It enables cloud backups and analytics and protects file data by replicating in non-proprietary native format to Azure Blob and any Amazon S3 compatible storage.
- Always-on VDI availability – PeerGFS's active-active data fabric across branch offices and data center can reduce RTO and RPO, and facilitate failover and load balancing of user profile and application data.

How it Works

PeerGFS consists of the Peer Management Center and Peer Agents.

The Peer Management Center (PMC) provides the intelligence for PeerGFS. It installs on a Windows or Linux physical or virtual machine anywhere and can be clustered to set up additional PMCs at other sites.

Peer Agents install on Windows servers or on VMs on the same subnet as other NAS filers. It connects to APIs of the NAS systems to notify the PMC when files open, close, are added, deleted, or modified. The PMC then uses that information to know when and where to replication files.

Key features of PeerGFS include:

- Real-time delta replication provides fast, local access to mirrored data across sites to improve productivity for distributed teams. Delta replication means only the part of a file that changed gets replicated.
- Integrated streaming global file locking prevents version conflicts. A user who tries to open a file that is already in use is given an option to open a read-only copy as file opens.
- Integration with Microsoft DFS namespace. Instead of using a proprietary namespace as other global file systems use, PeerGFS uses the DFS namespace that works across any SMB storage.
- Active-active file services for application data, enables high availability and load balancing of end user and department data.
- Automatic failover/failback with minimal RPO/RTO across edge, data center, and cloud systems.

- Automated centralized backups across the enterprise simplifies processes and improves recovery performance.
- Local file caches at edge locations limit unstructured data growth across locations while maintaining end-user productivity.
- File caching and edge storage management lets customers assign an amount or percentage of available storage that can be used on an edge device, dynamically adjust time periods for determining whether to stub or rehydrate a file, pin files or folders to always be local or stubbed at the edge, and sends alerts to warn when reaching storage capacity limits.
- Subscription pricing – licenses are based on the number of agents and amount of unique terabytes under management.

Security

- PeerGFS incorporates Malicious Event Detection (MED) technology that guards against ransomware and malware attacks in three ways:
- It detects file activity patterns that a ransomware program would typically cause. If detected, PeerGFS can immediately and automatically halt any file synchronization between locations to prevent ransomware or malware spreading. It also sends alerts to the impacted user and admins.
- PeerGFS writes bait files that function as a honeypot for malware. These are hidden files that the users wouldn't see and shouldn't be touched by anything else. If they are, an alert can be triggered, and synchronization can optionally be halted.
- On Windows Servers, PeerGFS can establish directory traps. Like bait files, these traps are hidden folders that the users wouldn't see. These folders point back to themselves, so a ransomware process will get stuck in the directory trap while trawling through the files and folders looking for the types of files that it wants to encrypt.

Futurum Group Opinion

Peer Software helps companies simplify file management and orchestration in multi-site, multi-vendor, and multi-cloud environments. We see PeerGFS as a viable alternative to global file system and public cloud storage for organizations already investing in Windows file servers or major enterprise NAS systems.

PeerGFS can enable global file sharing by delivering fast local access to shared project files for distributed teams while maintaining version integrity and enabling high availability. It also lets customers take advantage of the public cloud by replicating data in non-proprietary native format to any Amazon S3 and Azure Blob compatible storage.

Data must be available wherever workers are, and today that might be anywhere. That means IT teams must support data access and collaboration for any location. PeerGFS is a tool that helps them do that by taking advantage of leading NAS products and public clouds.