



Global High Availability Disaster Recovery Procedure

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Overview

A Panzura Filer acts as the performant access point to a CloudFS and plays an integral role in the distributed lock management of a filesystem. Each location plays a role in the distributed lock management for a global file system. With this in mind, it is important to have a flexible solution to offer high availability to not only the files, but also the locks for those files. A Global High Availability standby filer (Global HA) allows for a many to one protection schema where a generic standby node can be promoted in a time of need to cover for lock management of any one unavailable Filer.

Recommendations

Panzura recommends Customers to maintain a Global HA to avoid many of the risks mentioned below:

- Lack of access to the CloudFS for local users
- Loss of performance if directed to a non-cached or distant Filer
- Abandonment of locks currently housed by that Filer
- Inability to create new files to a share owned by the Filer

Procedure

Global HA Takeover

Below are the steps to perform a Global HA Takeover

- **Power Down Active Filer**

Failover cannot occur if the original Active Filer is still online. Powering down the Active Filer enables the HA standby Filer to activate.

Please note that there might be some delay between the time the Active Filer becomes unavailable and when the takeover becomes possible.

- **Check Filer Sync Status**

This step can be verified by navigating to the High Availability section to view the sync status amongst other CloudFS members.

- If this is a planned failover, do not proceed if the standby is not in sync with the takeover target (+/- 1 snapshots behind is OK, especially if the takeover target has no upload backlog, meaning Dirty Cache and "sysctl vfs.zfs.pz.snap.queue" are 0).
- If this is an unplanned failover, expect the completion to take longer time.

- **Perform Standby Filer Takeover**

In order to takeover, follow the below steps on the Standby Filer on the WebUI

- Go to Maintenance > High Availability
- Locate the Takeover link and click it.
- An assurance popup will appear, requesting confirmation of the takeover action, Click OK to continue.
- The Takeover Process Log will overlay the WebUI providing process information.

Note: Do not close the Takeover Process log window until the process is complete

- When the process completes, a popup will appear announcing the takeover outcome. Click OK to continue.
- The Takeover Process log REFRESH button changes to CLOSE.
- Select CLOSE in the Process Log window.

Note: The takeover process is not complete until the log reports "Takeover Complete". DO NOT change the DNS entry until the takeover complete message is displayed to avoid the wrong Filer source from being chosen

- **Manage DNS Server**

On the DNS Server, follow the below process

- Locate the records for the previous Active Filer and the Standby Filer.
- Swap the IPs so the Standby Filer is now the Active and vice versa.
- On the NEW Active Filer, using the WebUI navigate to:

- Configuration > Active Directory
- Check if the Filer is JOINED
- If required, rejoin the Filer to the Active Directory.

In the event of a Global HA takeover, the original Active filer and its Local HA partner will need to remain powered off, and will need to be rebuilt. Those steps are in the next section.

Once the Global HA takeover process has started, it will need to be followed through to completion. Failback is not possible without following the steps in the Global HA Failback section.

Global HA Failback

Global HA Standby Filers have the ability to takeover any Filer within the CloudFS, similar to the Local HA, the Global Filer takes over the personality and hostname of the Filer it replaces.

Most Global HA Standby Filers are not normally situated in the same location as the Filer they replace. Hence, the customer may experience an increased latency and a slower service when accessing files that a previously Local Filer of the same name might have been able to serve very quickly. Hence, a failback will help reduce latency once the original machine is repaired or replaced and is back online.

Steps to perform a Global HA Failback

1. Contact Panzura Support.
2. Remove the original HA Global filer and original HA Local filer from the CloudFS¹.
3. Deploy a new HA Local filer in the location of the original active filer and wait for it to sync metadata with the current active filer. The original location is the region, domain site, and/or subnet where the original active filer was located.
4. Power off the currently active filer.
5. Perform a takeover from the new HA Local filer. This will promote it to the active filer in the correct region.
6. Terminate the instance of the original HA Global filer.
7. Terminate the instance of the original active filer and it's HA Local filer.
8. Remove HA Local filer (added in step 3 above) from CloudFS¹.
9. Deploy a new HA Local filer and point it to the now active filer.
10. Deploy a new HA Global filer in the original region it was deployed in.

Caveats

¹ Removal of HA Global filer and HA Local filer will be performed by Panzura support by editing the configuration file on the current active filer.

1. After the HA Global has taken over for a filesystem in the CloudFS, the original active filer for that filesystem must not be powered on. If there is a possibility that the original filer has simply lost network connectivity, but has not been powered off, the HA Global cannot safely take over for the filesystem.
2. There is some parallelism available in the failback procedure. For instance, step 9 of deploying the HA Global can occur anytime after step 2. However, there are points in the procedure where redundancy of the CloudFS is degraded.
3. The HA Global failback procedure is manual and Panzura Support should be involved anytime a decision to use an HA Global filer is used. However, Panzura Support **must** be involved for the failback procedure.

Summary

With a Multi-Site scenario, the financial cost becomes the primary design consideration. With significant investment in the ability to serve users, maintaining operational uptime for each site is paramount. With Panzura Freedom filers, Global HA can be used to economically and flexibly provide filer redundancy to many sites. This enables customers to access their data and files quickly and consistently, no matter the site, and irrespective of individual machine availability.