NAS (NFS) Failover

Tags: backup data recovery disaster recovery failover high availability nfs protocols

High availability data storage and failovers

High availability is crucial to many applications. Despite using high-quality hardware and superior connection, any node (network, server, storage equipment, etc.) is still subject to crashes due to power shortages, communication and equipment faults, fire incidents, maintenance problems or a human factor. These crashes result in a loss of all active connections and data transactions, as well as service termination. In case the provided services are structured, so that they are not dependent on the availability of a single node, a redundant node (or nodes) should be present. When aware of the original node failure, these redundant nodes continue serving clients, effectively replacing the missing node.

This process is commonly known as a **failover**. The failover can be either automatic or manual, though the latter one requires the tech team deployment or administrator's approval.

Open-E delivers automatic NAS (NFS) failover, based on two nodes of active-passive configuration. You can buy it as Open-E Data Storage Software V6 extension.

Failover using NFS (file access) protocol

The block access used in iSCSI is usually faster, more general, and more universal than file access. Block access supports virtually any application, including:

- exchange servers,
- databases,
- backups, etc.

File access is more structured than block access. It supports ownerships, access restrictions, etc., and it is especially convenient if files need to be shared between multiple users or user groups with different access policies.

The main difference between block-based iSCSI and file-based NFS protocols is a fact that file-based NFS protocols include file locks. So even if a messaging layer detects the failure and a replicating layer has successfully synchronized both servers at the block-level, there is still a problem of locks opened by the clients.

If the exported folder fails over from node one to node two, the files locks will remain on the server originally used to manage them. This causes an NFS problem, because clients start to transmit error messages but can no longer access needed files. To avoid this, the files locks also have to migrate to the new server.

If you own a full version of Open-E Data Storage Software V6, you can extend your system's functionality by investing in NAS (NFS) Failover extension.