

Concepts & Summary for Asynchronized Real Time Volume Replication for Network Share.

Table of ACM vs. Async vs. Folder-Replication Brief Comparison

ACM	Async Replication	Folder-Replication
<ul style="list-style-type: none"> Real Time without delay on replication Performance Penalty for online data accessing Continuously 	<ul style="list-style-type: none"> Real Time with delay on replication No Performance Penalty for online data accessing Continuously 	<ul style="list-style-type: none"> Non-Real Time Scheduled Batch Processing Non-Continuously, on Scheduled Time only or On-Demand only
<ul style="list-style-type: none"> Volume Base 	<ul style="list-style-type: none"> Volume Base 	<ul style="list-style-type: none"> Folder Base
<ul style="list-style-type: none"> Over LAN only 	<ul style="list-style-type: none"> Over LAN or WAN 	<ul style="list-style-type: none"> Over LAN or WAN
<ul style="list-style-type: none"> Clustering Services required Automatic Failover Need extra License 	<ul style="list-style-type: none"> Clustering Services required No Automatic Failover Need extra License 	<ul style="list-style-type: none"> No need for Clustering No Automatic Failover No need for extra License

#1: Async needs a pair of Async Licenses: one for the source node, and one for the target node.

#2: Async supports Network Share / Volume only – SMB and NFS. It does not support iSCSI or FC target volumes. (Note: It will work but the recovery process requires special attentions. Please contact us for details.)

#3: Async Replication utilizes the gluster’s clustering services, each of the NAS node is a Cluster with a single node of its own – by entering one of its NIC IPs to create the **Single Node Cluster**.

#4: The volumes for Async Replication must be under the Clustering Services control to replicate out or receive.

Two ways to put the volume under Clustering Services control

Method-1: Create the volume from “**Clustering → Storage**” page as a clustered volume

Method-2: with existing normal volume,

- Modify existing volume as a “**Brick**”
- “**Clustering → Storage**” page to create clustered volume from existing “**Brick**”.

#5: An Async Node can have both regular volumes and clustered volumes. But only those clustered volumes can Async-Replicate out or receive.

#6: How to enter the Async Path.

On **Clustering** → **Storage** page, there is a **Async Replication** field for **Async path**, which is the patch for remote/target NAS node. This is the syntax:

Remote_NAS_IP://exports/share_name

Example: [192.168.2.50://exports/mybackupshare](#)

The screenshot shows the 'NAS Clustering Storage' interface. Under the 'Cluster Volumes' section, there is a table with columns: Volume Name, Type, Status, Bricks, and Select/Control. The first row shows 'newshare2' with Type 'Distribute', Status 'Started', and 1 brick. Below the table, there are 'Volume Options' (Delete Bricks checkbox, Set home button) and 'NFS Export Options' (Allow/Deny radio buttons, Apply button). The 'Async Replication' field is highlighted with a red box, and it contains an empty text input field with an 'Add' button next to it.

The IP enter here for the Remote/Target NAS node will dictate which local NIC port to use on the Source NAS node.

Example:

Source NAS: eth0 = 192.168.2.100
eth1 = 10.10.10.100

Remote/Target NAS: eth0=192.168.2.120
eth1 = 10.10.10.110

If the **Async Path** = [192.168.2.120://exports/mybackupshare](#), the replication traffic will go through **eth0** only on Source NAS.

If the **Async Path** = [10.10.10.110://exports/mybackupshare](#), the replication traffic will go through **eth1** only on Source NAS.

#7: Loading will be on the Remote/Target NAS node. When the Async Replication is ongoing, the System Resources (such as CPU and Memory) utilization will be high on the Remote/Target NAS.

#8: Do not create infinite loop of Async Replication, below **WILL NOT WORK**

Example: *from NAS_1/mydata replicate to NAS_2/mybackup*
from NAS_2/mybackup replicate to NAS_1/mydata

#9: How It decide what to sync and when to sync?

The units will syncs files when it detected difference between them.
So it has to scan files first and get check sums and other information, before sync.
Therefore, there's no definite schedule etc.

#10: What happens if during transferring a file, the intern-connection/link is broken?
The files that changed will get listed, and the source will continuously try to sync until it finished.

#11: The IP that is used to create Cluster CANNOT be changed later on. If change the IP later after creating the Cluster, it will result in the Cluster not to function. In such case, the Cluster needs to be removed and re-create with existing Bricks.

Think carefully for which IP to use to create the Cluster.
However, this IP creating the Cluster is not necessary the NIC Port to be used for Async Replication, because what NIC port to use for Async Replication is decided in the Async Path by Remote/Target NAS node's IP entered here.