

Qsan QCopy (v2.2)

– Affordable replication solution

Key Business Benefits:

- ◆ Storage to storage data replication -- *no extra server is involved*
- ◆ Replication destination not limited to Qsan P series, it can be any iSCSI standard compliant target -- *easily fit into any existing storage infrastructure*
- ◆ Managed as part of Qsan standard web UI -- *easy to use*
- ◆ Replication not limited to LAN but capable to over WAN – *disaster recovery*
- ◆ Embedded in RAID stack - *comes with no additional cost*
- ◆ Auto retry when network failed – *peace-of-mind for IT Admin*

First-ever RAID-controller based replication solution finally available

Nowadays RAID subsystems are commonly used in SMBs and vertical markets with intensive storage needs for data repository and backup purposes. However, there has not been a chance for these end users to be able to setup a remote replication infrastructure for disaster recovery as an advanced level of data protection. The reason is fairly simple: it means a separate backup software purchase, it means a SAN environment needed to be in place so the replication can be enabled on top of it. The DR initiative stopped at the cost analysis phase to setup a FC SAN. TCO is the huge road blocker for these segments even though the urgent requirement is presented given the distributed deployment locations or branch offices.

Following the unique direction to offer storage solution in terms of software value-add, Qsan delivers QCopy as part of P120C (iSCSI-SATAII) latest RAID stack. It solves both of the road blockers, the feature comes within the RAID stack so no separate software purchase is necessary, P120C is a IP SAN solution, there is nearly no additional SAN infrastructure deployment cost as IP network is now available in any kinds of

deployment environment. QCopy basically enables the advanced data protection for cost-sensitive SMBs and vertical markets.

How QCopy works

There are three major phases using QCopy:

Take snapshot

QCopy is an implementation of asynchronous replication. Leveraging another segment-leading feature from Qsan, i.e. QSnap, an user needs to take a snapshot of a working data volume to freeze the data image, so the volume data can be transported from source storage to destination storage in a consistent state without new I/O happened after the replication starts. Currently at most two snapshot volumes can be started for replication simultaneously in one Qsan P120C as the source storage.

Identify destination

The destination can be any iSCSI standard-compliant target including Qsan P120C. A data volume needed to be created (larger than the source volume) at the destination storage and attached to a LUN just the same as the standard volume provisioning to hosts. Obviously a reachable IP address of destination storage is required for source storage to connect no matter it's LAN or WAN environment. The user is then able to see a list of LUN available as the

replication destination. Only one destination volume is allowed for one replication. The volume settings of source and destination can be different, i.e. users can replicate a RAID1 volume to RAID5 without problems.

Move data blocks

The user is able to see the percentage of completion on source storage web UI as soon as the replication is started. The actual data transfer rate is determined by the system load of source and destination storage and the status of network traffic in-between. Given WAN replication is possible, the bandwidth might be unstable or even the TCP connection might be broken for unexpected reasons. Source storage will auto retry after certain interval for a specified number of times before it claims failure in source storage log. The user can manually restart the replication if the condition for failure is cleared afterwards. There is no limitation on the number of replication process acceptable by one destination storage.

Roadmap at a glance

QCopy available in P120C firmware v2.2 is the very first implementation to enable the scenario of remote replication. Qsan will improve the feature along with future firmware releases in the following areas:

Scheduling

Qsan will add in scheduling capability for QCopy so users are able to setup regular replication tasks according to business needs. Along with current scheduling capability

in QSnap, a regular, fully-automated asynchronous replication can be configured as one-time efforts.

P200C porting

P200C is the latest iSCSI RAID controller with 4-port GbE built around Intel IOP342 with much higher performance capability. Much more CPU cycles and bandwidth can be allocated to QCopy on top of this more powerful platform, thus current spec limits can be relaxed such as number of simultaneous replication from one source storage, number of destination for one replication, and for sure, the data replication speed in general.

Usability

There are several minor UI enhancements which make QCopy even more user-friendly, a replication-in-progress status indicator associated with destination volume prevents 2-to-1 replication which corrupts data. A restore function at source storage would help get the replicated data back very easily as opposed to finding and configuring another replication from the destination storage back to the source. Qsan will also look into customization for specific requirements which may make QCopy a unique replication solution for certain vertical's needs.

RAID6+QSnap+QCopy

Qsan is now the only RAID controller provider in the segment delivering comprehensive software value-add one after another. After all storage is purposed to address business needs by fulfilling real world data

requirements. Qsan is poised to be the leading storage solution provider toward this goal.



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