NEXSAN

SNAPSHOT AND REPLICATION NEXSAN E-SERIES™

Snapshot and Replication for the Nexsan E-Series disk arrays allows application-consistent snapshots and asynchronous replication to support the most demanding data protection requirements. Snapshot and replication are embedded into the E-Series storage system, eliminating the cost of an external server or 3rd party software to support these functions.

Nexsan provides a VSS Hardware Provider, which is installed on Windows servers to enable application-consistent snapshots to be triggered by any VSS requestor, such as popular backup and restore applications. For UNIX/Linux environments, snapshots can be created manually or via the snapshot scheduler built into the E-Series GUI.

Because the snapshots reside on the Nexsan E-Series disk array, they can be accessed directly by the backup server to perform SAN-based backups. SAN-based backups streamline data protection operations by eliminating the backup window. Because backups do not burden the application server or LAN infrastructure, they can be performed any time, including during business hours.

Asynchronous replication allows data stored on a Nexsan E-Series disk array to be mirrored to a second E-Series disk array at any distance. All snapshots that exist on the primary E-Series are transmitted to the remote E-Series. One common use of the replication software is to permit multiple branch offices to replicate their data to a central E-Series located at headquarters. IT personnel at headquarters can then mount the snapshots to perform testing or backups.

SNAPSHOTS

- Snapshots are created/deleted on a per-volume basis.
- A maximum of 4096 snapshots will be available per volume. If multiple volumes are present on the same RAID set, the maximum total number of snapshots for all volumes on the RAID set is 4096.
- The original volume and all snapshot data for that volume will be contained within a single RAID set. Space must be reserved to hold snapshot data. This snapshot-reserve is specified per volume, and can be adjusted by the user after volume creation (subject to available free space on the RAID set).
- A VSS Hardware Provider is shipped as part of Nexsan Storage Tools software. The administrator installs it onto the Windows servers to enable application-consistent snapshots, created by any VSS requestor such as backup and restore applications.
- Nexsan Storage Tools includes a utility that runs on a Windows server to perform VSS snapshot creation, mounting and volume-restore.
- For UNIX and Linux environments, snapshots may be created on-demand or as a scheduled task via the E-Series GUI. Snapshots can be created as often as every 15 minutes using the scheduler built in to the E-Series GUI.
- Up to 254 snapshots per system can be exposed to the host for read/write operations.

SNAPSHOT & REPLICATION FOR E-SERIES STORAGE (E18, E60)	PART NUMBER
One-to-One Replicated Licensing; includes Target and Initiator on both ends	
Snap / Rep license (1 required per system); Maintenance is Required	ESeries-SR-L1
Basic Support; Nexsan Business hour Phone support; no software upgrades; Annual fee	OSB-SR-L1
Enterprise Support Annual 7x24 Phone support for Sev1; includes software upgrades	OSE-SR-L1

- A writeable snapshot can be returned to its original state.
- Snapshots may be deleted in any order.
- Volume-restore provides the ability to roll back a volume to any existing snapshot. Restore operations are reversible and all existing snapshots are preserved (subject to available snapshot space). Modifications made to writeable snapshots will not be applied during restores.
- Policy based deletion (by snapshot lifetime or maximum snapshot count).

ASYNCHRONOUS REPLICATION
- Replication is supported over TCP/IP using Net0 & Net1 (1Gb) ports.
- Up to 128 replications may be configured per system.
- Up to 16 concurrent replications can be active.
- A single source volume may only be replicated to a single replica volume.
- Many-to-one replication is supported at system level. This is especially useful in branch office scenarios where each branch replicates its volumes to replica volumes on a central E-Series at headquarters.
- Auto-discovery of target systems are supported through the E-Series GUI.
- Delta-based replication saves bandwidth as only the changes since the last snapshot need to be transmitted to the replica site.
- Replication can be initiated manually or via user defined schedule/policy criteria using the E-Series GUI.
- To replicate a snapshot of the source volume is taken. The deltas are stored in the snapshot reservation pool while replication is being performed.
- Replicas cannot be mounted or accessed for data integrity purposes while replication is enabled on the volume.
- Replication requires sufficient network bandwidth to maintain a time consistent replica. Bandwidth throttling is performed by the network switch, not the E-Series disk array.

ABOUT NEXSAN

Nexsan® is a leading provider of innovative data storage systems with over 10,000 customers worldwide. Nexsan's pioneering hybrid storage systems combine solid-state technologies, disk storage and advanced software to deliver radically new levels of performance and capacity at lower cost, enabling organizations to optimize traditional, virtual and cloud environments.

For more information, visit the company's website at **www.nexsan.com.**

TECHNICAL BRIEF