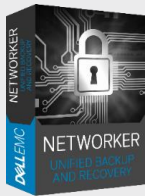**DELL**Technologies

# Dell EMC PowerScale: Data Protection with Dell EMC NetWorker using Snapshot Management for NAS Devices

## Key benefits

**Discovery of non-NetWorker snapshots:** NetWorker can discover snapshots on the NAS device that was not created by NetWorker.

**NetWorker clone support:** NetWorker uses cloning to copy snapshots to Dell EMC PowerProtect DD series appliances, DD Boost, Advanced File Type Device (AFTD), and Tape.

**Backup configuration method:** Configure snapshot backups by using the Client Backup Configuration wizard or the Client Properties window in the NetWorker Administration interface.

**Recovery interfaces:** NetWorker Recovery Wizard: The recommended interface to recover data from snapshots and conventional storage media nsrsnapadmin command and nsrnassnap_recover command. Interactive Command Line Interface (CLI): Session for snapshot recovery.

**Internationalization support:** NetWorker provides NAS snapshot operations with the standard NetWorker client support for non-ASCII international character sets.

**Multiple rollover sessions for NAS:** Copies of multiple NAS snapshots are created simultaneously.

**PowerScale device support:**
- Snapshots with SnapshotIQ™, requires Dell EMC Isilon™ OneFS™ 7.02 or later
- Replications with SyncIQ™, requires OneFS 7.1 or later
- Snapshots and replication at the directory level
- In-place and out-of-place recovery of snapshot directories
- Directed recovery

## Dell EMC NetWorker with snapshot management feature for PowerScale data protection

Dell EMC™ NetWorker 9.0 and later server software includes optional features to enable NetWorker Snapshot Management for Network Attached Storage (NAS), also called NSM for NAS. The amount of data that is stored on NAS devices can often be large and the backup times for tape and VTL devices can exceed the available backup window. By scheduling local point-in-time snapshot copies of the NAS data, NetWorker can use whatever time is required to clone the data to backup media independently of the normal backup windows. NetWorker can also discover snapshots on the NAS device that NetWorker did not create.

NetWorker works with NAS devices to perform the following snapshot and replication operations:

- Create local snapshot save sets of the specified data on the NAS device
- Replicate the specified snapshot data on a source NAS device to a different location on the same device or to a location on a different NAS device
- Perform an immediate or a delayed clone backup of specified snapshot save sets to secondary storage by using NDMP
- Apply retention policies to manage the life cycles of the snapshot, replication, and clone save sets
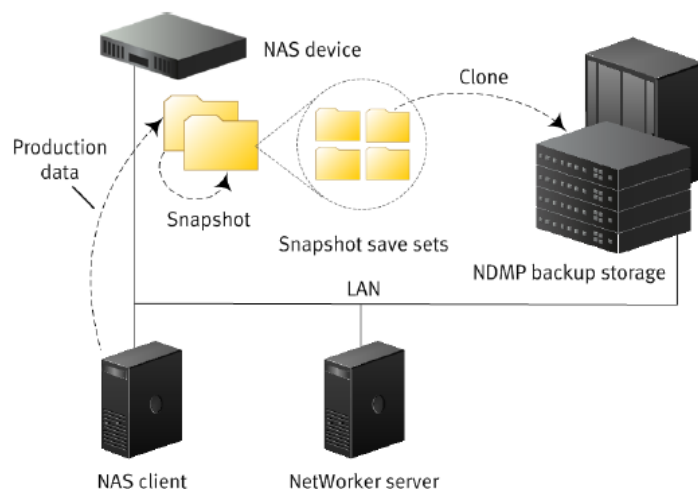- Recover the specified data from snapshots and clones



*Figure 1: NAS flow diagram*

### NAS snapshot-based backup

**Local snapshot backup**: The NetWorker server creates a snapshot of the data on the NAS device and retains the snapshot on the NAS device. The NetWorker server catalogs the snapshot as a backup in the media database and can perform a recovery from the snapshot.

### Replicated snapshot backup

**PowerScale SyncIQ:** The NetWorker server starts the data replication on the Dell EMC PowerScale™ device. The device replicates the data to a local or remote PowerScale device. NetWorker creates a snapshot of the replicated data and catalogs it as a backup. The NetWorker server can clone to conventional storage from that snapshot.
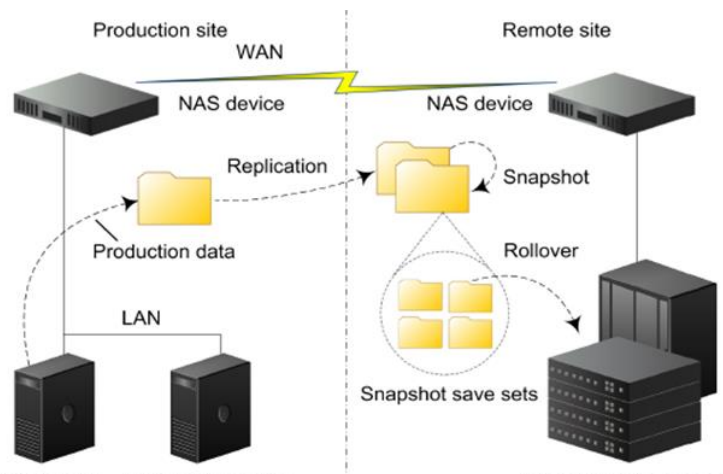


*Figure 2: Remote replication with snapshot and clone to storage*

### Types of NAS snapshot and clone recoveries

**Snapshot recovery:** NetWorker mounts the snapshot volume, where the save sets can be viewed, and the directories or the individual files can be selected to recover from the snapshot volume. One of the following types of recoveries can be performed from the snapshot:
- **In-place:** Recovers files and directories to the original locations on the NAS device
- **Out-of-place:** Recovers files and directories to a new location on the NAS device
- **Directed recovery:** Recovers files and directories to the NetWorker host that runs the recovery. The destination directory can be configured as an NFS or CIFS file share, which enables to recover the required data to a remote location. For example, another client or a NAS device.
  In NetWorker 19.3, supports snapshot recovery to different PowerScale OneFS cluster

**Recovery from a clone**: This is the same as recovery from a backup. Conventional NetWorker recovery from the backup storage media is performed.

### NetWorker clone support

NetWorker uses cloning to copy snapshots to the following types of media: Data Domain Boost, Advanced File Type Device (AFTD), Tape. Any type of snapshot can be cloned to these types of conventional media.

NetWorker cloning supports full and incremental cloning. Cloning can leverage traditional NetWorker restore methods. Cloning is also supported to Dell EMC CloudTier and Dell EMC CloudBoost.

NetWorker catalogs snapshots and clone copies in the media database as follows: File system backups. NetWorker records the contents of the snapshots in the client file index (CFI) only during a clone operation to conventional media.

### Monitoring and reporting NAS snapshot operations

NetWorker reporting features enable monitoring NAS snapshot operations for each NetWorker client or network-attached storage (NAS) device, including snapshots that were not created with NetWorker. NetWorker catalogs all snapshots as backup save sets. The progress of the snapshot creation, mounting, deletion, and clone operations can be monitored. For detailed information about configuring NetWorker Snapshot Management with PowerScale, see the configuration white paper Dell EMC NetWorker - Snapshot Management for NAS Devices Integration.

Learn more about Dell EMC NetWorker

Contact a Dell Technologies expert

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