



Catalogic DPX: NDMP Backup and Recovery

Easy. Customizable. Powerful.

NDMP Backup and Recovery Highlights

- Supports NDMP backups for NetApp FAS, DellEMC Isilon, and other NDMP compliant NAS systems.
- Backup to tape, disk or cloud for data recovery and/or long-term data archiving.
- File catalog with search and restore for individual files.
- Cost-effective licensing options.
- Supports NetApp SMTape backup.
- Standalone NDMP support, or integrated with a full backup solution
- Supports NetApp CAB (Cluster Aware Backup), an NDMP v4 protocol extension

NDMP (Network Data Management Protocol) provides an open standard for network-based backup of network-attached storage (NAS) devices. NDMP is a valuable tool for protecting NAS data, as well as offloading it for long-term storage to disk, tape or cloud.

Catalogic helped pioneer NDMP backups and remains a leader in supporting NDMP for multiple vendor NAS systems. With Catalogic DPX, you can have an easy to use and extremely cost-effective standalone NDMP solution, or you can deploy DPX as a complete backup solution, with NDMP as a component.

Backup Target Flexibility

With DPX, you get the NDMP target flexibility to best meet your data protection and compliance needs. DPX supports backups to disk, tape and/or cloud, providing solutions from short-term file recovery to long-term data archive.

Backup to disk provides a near-line copy of data that can be accessed quickly for day-to-day data recovery needs (beyond what you might have available via primary NAS snapshots). With a storage efficient target device, such as Catalogic vStor, data savings can extend on-disk retention time.

Backup to tape offers the most cost-effective solution for truly long-term storage that is measured in years. With DPX, file-level restore granularity is possible, allowing for targeted restores. Tape also allows for off-site storage in secure, audited bunker facilities, which can be critical for meeting compliance goals.

Backup to cloud provides an economic tape alternative also suitable for long-term storage when tape is not desirable. Cloud backup is similar to tape functionally, but data storage is outsourced to a third-party cloud vendor. While effective, a careful review of cloud provider data access costs is warranted, especially if many restores are expected.

Third-Party Backup Licensing Cost Reduction

DPX offers highly affordable licensing for NDMP backups. Many organizations include NDMP backups as part of their overall capacity licensing for third-party backup products. However, because NDMP data volumes tend to be large and constantly growing, NDMP may comprise a large portion of your backup licensing costs. By switching to Catalogic for NDMP backups, you can keep the remainder of your backup environment intact while gaining significant cost savings.

World Class NDMP Support

Catalogic engineering and support organizations have been working with NDMP from its inception. We have many experts on staff with a long history of supporting NDMP. With Catalogic, you can rest assured that your critical NDMP deployment is in the best possible hands.

NDMP Backup Architectures

There are three basic NDMP backup architectures, all of which are supported by DPX.

Local NDMP Backup

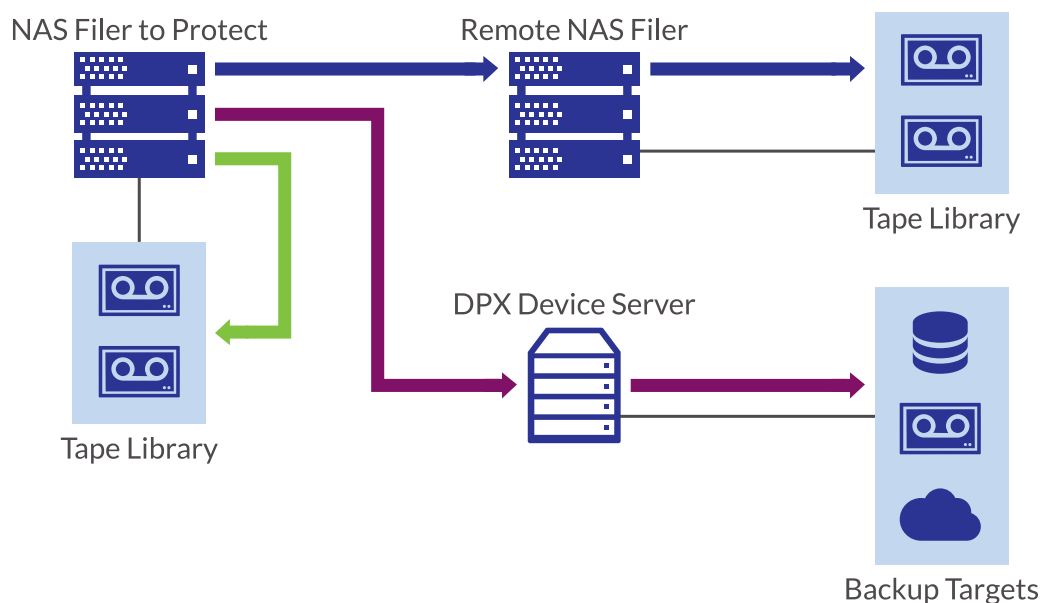
In this model, a tape library is attached directly to the NAS device. Data moves from the NAS to the tape library without any other network hops. This allows for faster data transfers, but it can limit the flexibility of the backup environment. In this case, the tape library is most often SCSI or Fibre Channel attached.

Filer-to-Filer NDMP Backup

Filer-to-filer backup occurs when one filer sends data to tape by passing it to another filer that is attached to a tape library. This lets multiple filers share the tape resources that are connected to a given filer. This model can allow you to make better use of tape resources.

Remote NDMP Backup

In remote backup, a DPX device server sits in the data path between the NAS system and the target storage (disk, tape or cloud). This method expands the available range of backup targets because the device server can be connected to different targets using different connectivity protocols. In addition, multiple filers can share the resources of a single device server.

**LOCAL NDMP BACKUP**

Filer to directly attached tape library

FILE-TO-FILE NDMP BACKUP

Filer to filer to tape library

REMOTE NDMP BACKUP

Filer to backup server to disk, tape or cloud

NDMP Backup Architectures: This diagram shows the three standard NDMP backup architectures. DPX supports all of these backup models.



SMTape vs. NDMP Dump Method

In addition to supporting several backup architectures, NDMP offers two backup types (NetApp filers only). Each method has advantages and disadvantages, depending on your backup needs. NDMP Dump is a file-based backup that allows for file-level restores. SMTape is a volume-based backup that can be faster, but it doesn't allow for granular restores. The characteristics of each method are shown in the following table:

NDMP Dump	SMTape
A file-level backup with file/folder granularity	A full volume backup with no granularity
Restore individual files, folders, volumes	Restore full volume only
Provides file-history catalog	No awareness of file content
Backup from a snapshot	Backup from a snapshot

Table continued on next page.

NDMP Dump	SMTape
Backs up only the current files, not previous versions in the snapshot	Backs up all file versions in the NetApp snapshot (matches snapshot retention)
Allows for distributed backup schedule, e.g. backup different folders with different schedules	Single backup schedule for the entire volume
Backs up less data, but may be slower movement of data due to file overhead	Backs up more data but faster because of no file overhead
	Useful for SnapMirror seeding and backup of SnapMirror destinations for long-term storage

Given the differences between the two methods, some organizations may choose to use both methods together, each supporting different data sets.

Tape Encryption

DPX supports NDMP hardware encryption for tape drives attached to a NetApp device. With hardware encryption, the tape device encrypts data as it is written to the tape. Encryption keys are generated through the DPX keyring function. Restoring from encrypted tapes is transparent.

Conclusion

NDMP remains an important tool for protecting and recovering data on NAS devices. As one of the first vendors to support NDMP, Catalogic remains committed to maintaining an efficient and cost-effective NDMP solution.

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