RestoreManager

CENTRAL FILE CATALOGUE AND SINGLE FILE RESTORE FOR NETAPP STORAGE

The challenge

Users often delete or overwrite a file by mistake. Folders and files also get moved by being dragged and dropped, and they get lost because they end up in the wrong sub-directory.

Then the users ask IT for help, but often later on and without many specific details, for instance: "2 days ago I deleted a file by mistake, it's got 'Sales Q1" in the name...."

No global search function

IT are faced with the problem of how to find the lost files. The file is actually there, but there is no way of searching for it efficiently because there is no central index: NetApp ONTAP does enable SnapShot to be used to generate regular backups and to replicate these on backup systems using the functions SnapMirror or SnapVault, but there is no central catalogue with search and filter functions where the lost files can be found using users' information.

Highlights

↻ **Files and folders get lost when users delete or overwrite them by mistake, or drag and drop them to the wrong place.**

↻ **Manually searching for such files is troublesome because there is no central index for NetApp SnapShots that you can search in.**

✓ **RestoreManager creates a central index from every SnapShot and enables users to search using many filter criteria such as name, date deleted, size and file type.**

✓ **Secondary storage systems (SnapVault/Snap-Mirror Destination) are also integrated into RestoreManager, so even older files can quickly be found in SnapShots.**

✓ **A single click will restore files and folders from SnapShot.**

The result: Within a SnapShot the user has to manually click through all the directories. When NetApp environments are large this is a laborious task which takes up time and resources unnecessarily.

Solution1 with NetApp SnapCenter - discontinued

NetApp's SnapCenter NAS plugin product used to fulfil this global search function, but the manufacturer discontinued it in 2017.

Solution 2 with Microsoft Previous Versions - only partially helps

In Windows Explorer users can click on a file or folder and use the right mouse button to view the previous versions. In this way they can restore files from SnapShots themselves. But this only works if the SnapShots are still in the primary storage system; as soon as they are moved to the cheaper secondary system, the SnapShot history ceases to be available.

In MS Previous Versions there is no search function in either the primary or secondary storage, so if the file or an entire folder has accidentally been moved somewhere, the only option, again, is to laboriously click through endless directory structures.

⇨ The solution! RestoreManager creates a central index of every NetApp SnapShot

RestoreManager creates a central index and, in the process, a catalogue for NetApp SnapShots in NAS environments. This means that all the SnapShot backups can be managed and searched through using many criteria, such as name, file type, date and size. Files and folders can also be restored directly from RestoreManager.

RestoreManager integrates both primary and secondary storage

This unique feature is a major benefit, because SnapShots are usually only kept in primary storage for a few days or weeks. SnapShots from the SnapMirror/SnapVault Destination systems are also integrated in RestoreManager, so files can be searched for in the central index itself and restored.

How it works

Immediately after a new SnapShot of a volume has been generated, RestoreManager uses SnapDiff API to "extract" the relevant metadata from the files and folders and loads this data to the central database. Searching is now easy with this central index. You can click once to restore the files you find to a specific folder or to their original location.

Many filters enable targeted searching

- By name, parts of the name or file path, with wildcards being permitted
- By data type or file ending: jpg, xls, doc, ppt, …
- By deletion period from – to
- By creation period from – to
- By file size from – to
- Etc.

Flexible choice of indexing strategy

The SnapShot indexing using SnapDiff API can either be implemented on the SnapMirror/SnapVault target system or destination system. The decision criteria:

Index of primary storage: In the database, all the SnapShots in the primary storage are indexed, and SnapShots in the secondary storage are linked straight to the database. As a result, the entire SnapShot history across the primary and secondary storage is available to search and restore.

Benefits

✓ Criteria-based searching for lost files or folders in NetApp SnapShots

✓ One-click restore from the SnapShot itself

✓ Secondary storage system directly integrated

✓ Substantial time savings as there is no manual searching through directories

✓ Easy to install on the target or destination system

✓ Simple licensing system, does not depend on data volumes

Index of secondary storage: In the database, the SnapShots that have been transferred to the secondary storage are indexed. While it is true that there is less granularity, the licensing costs are far cheaper as a result, because RestoreManager is licensed based on the number of NetApp storage controllers in the corresponding tier class.

With RestoreManager, clients are free to choose depending on their backup and restore objectives.

Licensing

Pricing does not depend on data volumes but is instead based on the storage controllers. The only systems that are licensed are those used to build the central index with the SnapDiff API. Those are either the SnapMirror or SnapVault target systems or destination systems. Other backend systems are always included in the licence.

Architecture

All versions of the ONTAP NetApp operating system are supported for primary storage. For the SnapMirror/SnapVault target system: ONTAP, AltaVault and ElementOS.

Elasticsearch is the database used. This open source database scores highly on scalability, performance, load balancing and availability.

The IT administrator uses RestoreManager in the current version. A self-service portal is planned for the next stage as a web-based GUI for end users so they can search for their data and restore it themselves.

Optional DataAnalyzer module for greater storage transparency and efficiency

RestoreManager can be supplemented by the DataAnalyzer module which offers a wide range of data analyses. Easy-to-interpret diagrams show data such as: the age of the data, how many and which data types have been saved, who the data belongs to, etc. This deep insight into the data structure enables you to clean up and optimize storage space and to transparently allocate in-house services to particular departments. This saves money and improves efficiency.

About ProLion

Austrian company ProLion has specialised in developing hardware and software for NetApp storage. Our certified NetApp experts develop high-quality hardware and software solutions so that large enterprises and SMEs can run their storage platform more efficiently and, above all, more securely. ProLion has extensive experience of storage technologies and we are happy to go the extra mile for customers with innovative ideas.

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