



Solution Brief

Simplifying NAS Backup and Recovery with Barracuda Backup

Storage costs and technological advances have helped to drive transition from conventional file servers to network-attached storage (NAS). Administrators are driven to these solutions for features like ease of management and consolidation, which lead to cost savings by reducing management, cooling, and power. For these reasons, adoption of NAS devices has increased significantly in the small and medium enterprise (SME) market. As organizations transition from traditional file servers to NAS devices, they look for a solution to provide the same fast backup and recovery that they had with conventional servers. This often leads to looking at antiquated or proprietary options that—on paper—may look attractive, but offer limited functionality.

The Limitations of NAS Backup

To solve the need to protect NAS environments, backup vendors have implemented a wide range of methods, from Network Data Management Protocol (NDMP) to mirroring data to another device—each with their own advantages and disadvantages. One of the most common methods used by backup vendors is open protocols, such as Common Internet File System (CIFS) and Network File System (NFS). While file level recovery is beneficial, the largest issue with CIFS/NFS is the backup vendor's inability to backup the Access Control List (ACL), large amounts of files, and open files. This is not a limitation of the protocol, but a limitation of the backup vendor. Most backup solutions that use CIFS tend to use a single backup process or thread to perform backups. This leads to long backup windows and resource collisions due to backups operating during business hours. These solutions can often provide a slower backup compared to an image-based backup, such as NDMP. Concerns of slower backups and file permissions (ACL) have driven organizations to implement NDMP backups to protect their NAS devices.

NDMP was developed as a way to provide organizations with fast backup and recovery, while protecting file permissions (ACL) and open files. NDMP has been used by numerous vendors as a solution to solve these concerns; however, it has created other issues. Implementation of NDMP backups can require additional hardware and costs to be incurred to implement technology like inline deduplication and replication. Due to the nature of NDMP being a large image-based file backup, important backup functionality can be limited, such as deduplication, replication, and file revision capability. Additionally, common functionality like full and incremental backups vary based on the NAS vendor, leading to potentially longer backup windows for devices with limited NDMP support. NDMP backups often need to have alternating full and incremental backups, which consume more storage and create longer backup windows.

The Barracuda Difference

Barracuda Backup is able to achieve fast and efficient backups, along with ACL protection, by combining the CIFS protocol with multi-threaded backups and inline deduplication, without the need for additional hardware or complex NDMP accelerators. Barracuda's multi-threaded backups significantly reduce backup windows, while providing file level protection and inline deduplication. Inline deduplication ensures that only new or modified data is written to disk, creating incremental backups that can be significantly faster than NDMP. This incremental-forever backup method also limits the amount of local network traffic and storage needed. Backups can be performed quickly, during non-business hours, leaving otherwise open files, available for backup.

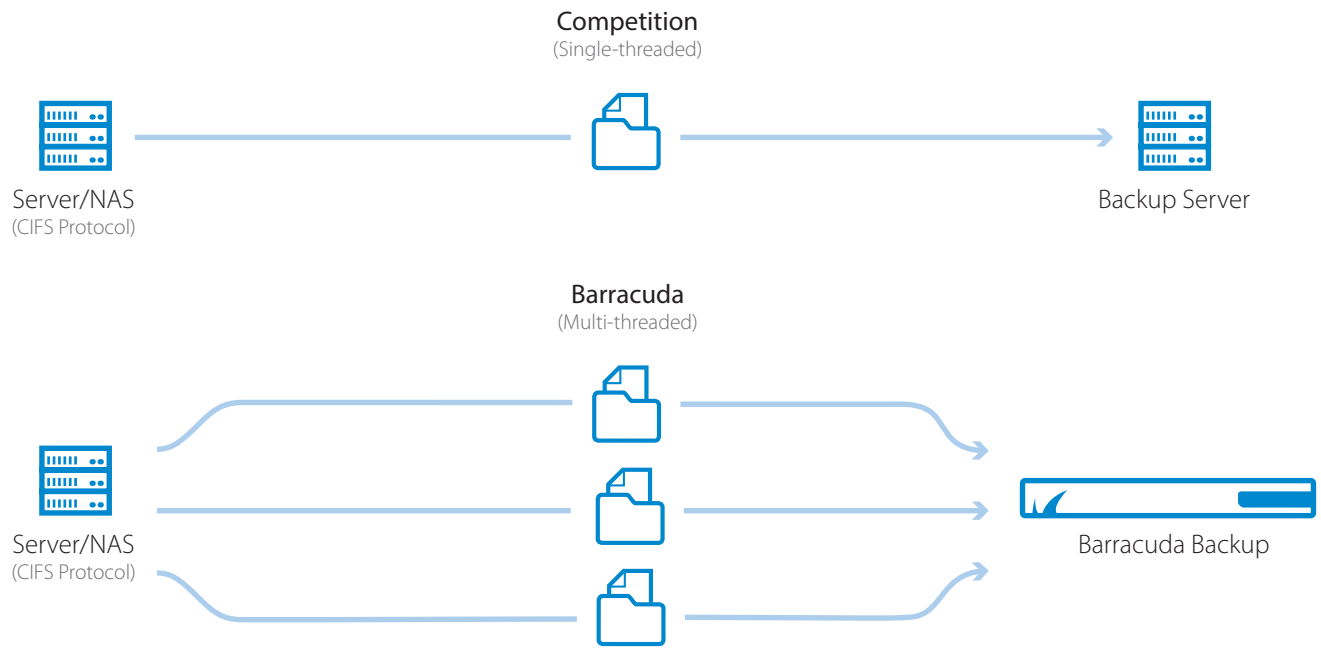


Figure 1

For organizations using NFS as an alternative to CIFS, Barracuda provides a fast and efficient way to protect these devices. Administrators can easily implement a Linux system that can run Barracuda’s Linux backup agent. With the NFS mounted on the Linux system, the Linux agent is able to protect open files and permissions (ACL) while offering source-based deduplication for efficient backups. Only unique data is sent to Barracuda Backup in a compressed and deduplicated state. This reduces network bandwidth and backup times.

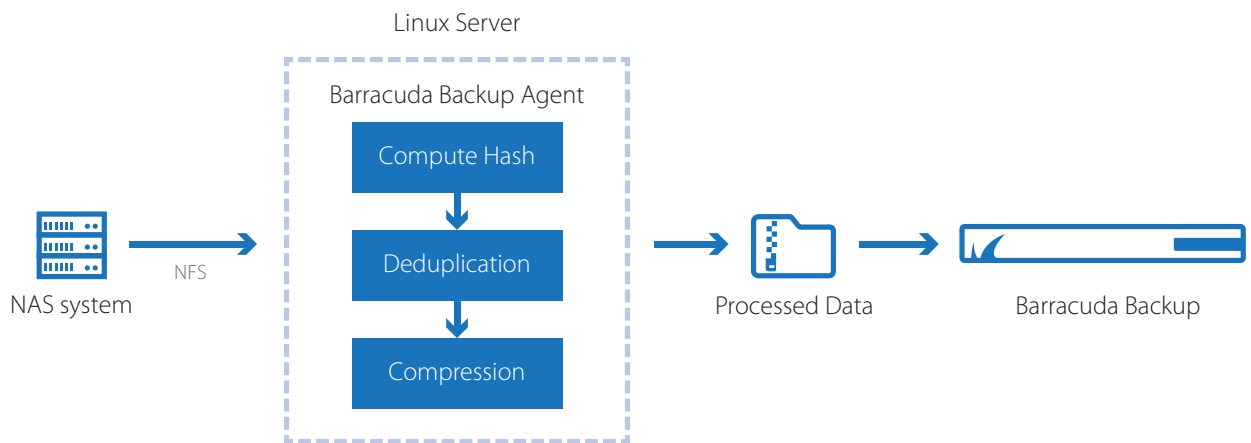


Figure 2

NAS Recovery

Recovery on NAS devices can be cumbersome when using other backup vendors. Backup vendors using CIFS or NFS often have limited recovery options, while lacking the ability to restore file permissions. The availability of critical files in the event of a disaster is often limited to whether or not the onsite hardware is still functional. Even with replication to another site or cloud, recovery can be lengthy

while waiting for replacement hardware or replacement backup equipment. With NDMP, one of the primary benefits is fast recovery via the backup image, but NDMP images can only be restored to the same hardware. If your primary storage is non-functional, redundant hardware must be present, creating additional costs. For basic file recovery with NDMP, customers must be able to mount the NDMP image from tape or other media and browse the image for files to restore. This can be a very timely process as well and requires additional disk space to be present.

Barracuda Backup focuses on availability, providing you with numerous recovery options in the event of a disaster. Performing restores at the file-level using Barracuda Backup can be much faster than NDMP and requires no additional storage, while restoring full file permissions. Barracuda creates synthetic full backups, meaning that only a single restore needs to be performed as opposed to restoring the last full backup plus any incremental or differential backups needed to achieve the desired revision. Unlike other vendors using CIFS/NFS or NDMP, Barracuda Backup allows you to recover files and directories by downloading them from Barracuda Cloud Control, a cloud-based user interface. These files and directories can be retrieved from anywhere with an Internet connection and at any time, with no additional or redundant hardware necessary in the event of a complete site disaster. With replication to Barracuda Cloud Storage, along with Instant Replacement, Barracuda will ship you a replacement appliance, pre-loaded with your organizations data in the case of disaster.

Conclusion

Barracuda Backup's multi-threaded backups and inline deduplication provide fast backup and recovery while protecting your NAS devices. Along with ACL protection and cloud-based data availability, Barracuda Backup is the perfect all-in-one solution for your backup needs. With Barracuda Backup, you can reduce the amount of storage and resources spent on NAS backup and recovery, while reducing the total cost of ownership. Access your data from anywhere and at any time with Barracuda Backup.