NetApp®

Network Appliance™ Snapshot™ Technology

A stable foundation for enterprise data protection

Key Features

- **STABILITY**

  A NetApp Snapshot is a read-only, completely static, and incorruptible copy. As such, it enables organizations to perform consistent backups from a NetApp storage system while applications are running.

- **PERFORMANCE**

  Storing a NetApp Snapshot on a NetApp system has no performance impact. In addition, creating and deleting a Snapshot has virtually no performance impact.

- **SCALABILITY**

  NetApp storage volumes support 255 Snapshot copies. The ability to store a large number of low-impact, frequently created Snapshot copies increases the likelihood that the desired version of data can be successfully recovered.

- **USER VISIBILITY AND FILE RECOVERABILITY**

  The high performance, scalability, and stability of Snapshot technology means it provides an ideal online backup for user-driven recovery.

- **STORAGE UTILIZATION**

  Two Snapshot copies taken in sequence differ one from the next by the blocks added or changed in the time interval between the two. This block-incremental behavior limits associated storage capacity consumption. Some alternative implementations can consume storage volumes rivaling that of the active file system, raising storage capacity requirements.

NetApp Snapshot Technology Offers Unique Benefits

Snapshot technology is available from a variety of data storage vendors, but not all snapshots are created equal. Network Appliance, the first company to ship high-volume, open systems and "point-in-time" Snapshot capability, offers unique and important advantages. NetApp Snapshot technology delivers more stability, scalability, recoverability, and performance than competing snapshots. NetApp has leveraged its superior Snapshot technology as a foundation for developing a family of data protection solutions; these products incorporate and extend the advantages of the NetApp Snapshot to deliver advanced enterprise data protection.

What Is a NetApp Snapshot Copy?

A Snapshot is a locally retained point-in-time image of data. NetApp Snapshot technology is a feature of the WAFL® (Write Anywhere File Layout) storage virtualization technology that is a part of Data ONTAP™, the microkernel that ships with every NetApp storage system. A NetApp Snapshot is a "frozen," read-only view of a WAFL volume that provides easy access to old versions of files, directory hierarchies, and/or LUNs (logical unit numbers).

The high performance of the NetApp Snapshot makes it highly scalable. A NetApp Snapshot takes only a few seconds to create—typically less than one second, regardless of the size of the volume or the level of activity on the NetApp storage system. After a Snapshot copy has been created, changes to data objects are reflected in updates to the current version of the objects, as if Snapshot copies did not exist. Meanwhile, the Snapshot version of the data remains completely stable. A NetApp Snapshot incurs no performance overhead; users can comfortably store up to 255 Snapshot copies per WAFL volume, all of which are accessible as read-only and online versions of the data.

What Users and Administrators Do with a NetApp Snapshot

System administrators use a NetApp Snapshot to facilitate frequent, low-impact, user-recoverable backups of files, directory hierarchies, LUNs, and/or application data. The NetApp Snapshot vastly improves the frequency and reliability of backups, since it incurs minimal performance overhead and can be safely created on a running system.

The NetApp Snapshot provides near-instantaneous, secure, user-managed restores. Users can directly access Snapshot copies to recover from accidental deletions, corruptions, or modifications of their data. Since the security of the file is retained in the Snapshot copy, the restoration is both secure and simple.

Snapshot Technology Unifies NetApp Data Protection Solutions

Snapshot functionality is at the core of NetApp data protection solutions, so each solution has inherited Snapshot technology's unique advantages. SnapMirror®, SnapRestore®, SnapManager®, and SnapVault™ offer enterprises stability, performance, storage efficiency, functionality, and interoperability that competing solutions—not based on NetApp Snapshot technology—simply cannot match.