



NetworkAppliance®

The evolution of storage.™

ENTERPRISE STORAGE SOLUTIONS

## DELIVERING HIGH AVAILABILITY AND RELIABLE DATA ACCESS



### enterprise solutions

Network Appliance™ storage solutions let you leverage information as competitive advantage, making data available, whenever, wherever, driving productivity all the way out to your branch and remote offices from the central office.

# Delivering High Availability and Reliable Data Access



## Ensuring High Availability

Enterprise networks must make mission-critical data available to drive productivity—and at the same time protect it from disasters, viruses, hacker attacks, operator errors, and more. The solution is data storage that ensures disaster recovery and business continuance through a proven, reliable, easy-to-deploy, low-TCO, and simple-to-manage infrastructure.

## The Easiest Way to Protect and Preserve Your Mission-Critical Data

### The Challenge: Maximizing Data Access and Data Security

Today, your IT department faces a difficult challenge. On the one hand, it needs to protect data and enable immediate recovery from the unexpected: viruses, intrusions, equipment failures, application errors, human errors, and more. On the other hand, it must make mission-critical data available throughout the enterprise, including branch and remote offices, to drive operations and productivity.

Routine events such as system maintenance, upgrades, and operator training can also degrade system reliability and availability. In fact, according to studies by The Gartner Group, planned administrative downtime is the second leading cause of downtime.

### MAJOR CAUSES OF SYSTEM DOWNTIME (IN ORDER OF FREQUENCY):

- 1) Software Defects/Failures
- 2) Planned Administrative Downtime
- 3) Operator Error
- 4) Hardware Outage/Maintenance
- 5) Building/Site Disaster (Fire)
- 6) Metropolitan Disaster (Storm, Flood, etc.)

Source: The Gartner Group

The solution is a storage infrastructure based on hardware and software products that are so simple and reliable that deploying, configuring, and maintaining them require an absolute minimum of staff time.

### The Solution: Network Appliance Enterprise Storage

Network Appliance meets the storage challenge with simple, low-TCO, highly reliable solutions. A decade ago, we revolutionized information storage by pioneering the storage appliance: flexible, scalable systems focused on storing, protecting, and serving information. The simple design that enables us to perform that function so efficiently also enables us to deliver industry-leading reliability levels, offer superior data protection, and help ensure business continuance. By streamlining operating software and simplifying or eliminating typical storage system maintenance procedures, Network Appliance dramatically reduces planned and unplanned downtime—which means your data is always accessible when you need it.

## Hardware That Delivers the Industry's Best Uptime

The centerpiece of the Network Appliance storage infrastructure is the NetApp® filer, which allows enterprises to simplify, share, and scale their storage networking and information delivery infrastructures on-the-fly from 50GB to many terabytes.

Installation and administration are simple. A NetApp filer can be deployed and serving data in less than 15 minutes with industry-leading reliability delivering more than 99.998% data availability. That level of availability translates into mere minutes of unplanned and planned downtime per year—not hours or days.

## Innovative System Software, Optimized for Data Protection

Reliable hardware is just part of the Network Appliance solution. No matter how many safeguards you have in place, there will be times when data is corrupted or destroyed. Should that happen, NetApp software offers the tools you need for a rapid, complete recovery.

Our Data ONTAP™ microkernel ensures reliable operation through high-performance, highly optimized code. In continuous use in ten to thousands of NetApp appliances at thousands of customer sites, Data ONTAP has proven itself stable and reliable in over a decade of real-world operation.

Complementing Data ONTAP is a suite of highly targeted software solutions for saving, protecting, replicating, and restoring data at file, volume, and site levels. They include Snapshot™, SnapRestore®, SyncMirror™, and SnapMirror® data protection software that help recover lost data nearly instantaneously and provide multiple levels of data protection.

## Efficient Backups with Snapshot Technology

A core capability of NetApp technology, Snapshot software delivers near-instantaneous, transparent, online incremental images of your data. It requires minimal disk space and operates invisibly in the background. With Snapshot technology, nightly incremental backups and

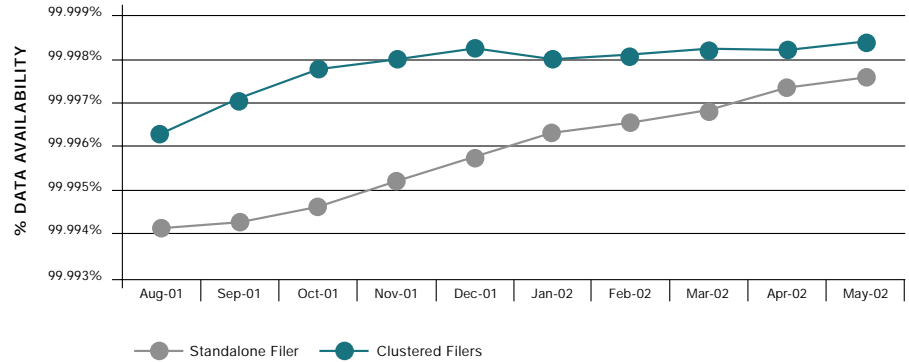


Figure 1) Average data availability for stand alone filers and clusters as measured across the entire Network Appliance installed base.

ever-expanding backup windows can be things of the past. Full backups can be accomplished using a Snapshot during normal business hours while the system is online serving data.

## Fast Data Recovery with SnapRestore Software

While Snapshot software is perfect for recovering single files, SnapRestore is made for recovering multiterabyte volumes. SnapRestore uses Snapshot technology to perform near-instantaneous data restoration at the volume level, recovering an entire file system back to a known good state in seconds without interrupting users and applications on other volumes.

## Synchronous Data Replication with SyncMirror

SyncMirror is an enterprise-class solution that delivers synchronous data replication capability to mission-critical environments. It is a strategic tool that provides data protection for mission critical environments. SyncMirror provides the highest level of data availability by simultaneously writing two copies of a file system on a filer. In the event that one copy becomes unavailable, all data access will be automatically directed to the second copy without human intervention. Additionally, the replicated data can be split off to serve other applications when needed.

**“We’ve moved all our critical data to the filers because that’s where we want to put everything that needs to be highly available and highly reliable for a large number of users.”**

**richard lamoreaux**  
Senior Staff Geophysicist  
IT Delivery Group  
Chevron, Inc.

## Disaster Recovery and Information Replication with SnapMirror Software

Beyond damage to individual files or volumes of data are disasters that severely impact a facility. NetApp SnapMirror software is designed to enable enterprises to recover from such catastrophes quickly. Exceptionally powerful, yet easy to use and administer, NetApp SnapMirror software replicates changed data at high speeds over a LAN or a WAN, keeping it current and ensuring the highest possible availability and fastest recovery for mission-critical applications.

If your enterprise is geographically dispersed, SnapMirror will automatically mirror and update the data to multiple locations, enhancing productivity and efficiency.

## Fast, Cost-Effective Storage for Online Backup: NearStore™

The NetApp NearStore solution provides advanced data protection and recovery by storing frequently used data in a nearline storage appliance. NearStore complements and dramatically improves existing tape backup processes by inserting economical and simple-to-use disk-based storage between application storage and tape libraries. Almost any type of primary storage can be backed up to NearStore servers (UNIX®, Windows®), storage (RAID, JBOD), computers (desktops, laptops), and NetApp filers.

NEARSTORE PROVIDES:

Accelerated Data Backup

Improved Backup Processes

Faster Data Recovery

Online Access to Archived Data

Ease of Use

## Clustered Failover: Data Availability for Mission-Critical Environments

For situations where full redundancy of all storage components is essential, Network Appliance provides Clustered Failover software. Installed on a pair of NetApp filers, NetApp Clustered Failover ensures data availability by transferring the data service of an unavailable filer to the other filer in the cluster. Data transfer is essentially transparent to end users and applications, and the data service is quickly restored with no visible interruption to business operations. NetApp clusters deliver proven availability as evidenced by our installed base of clusters with measured availability greater than 99.998% (approximately 11 minutes per year of downtime on average).

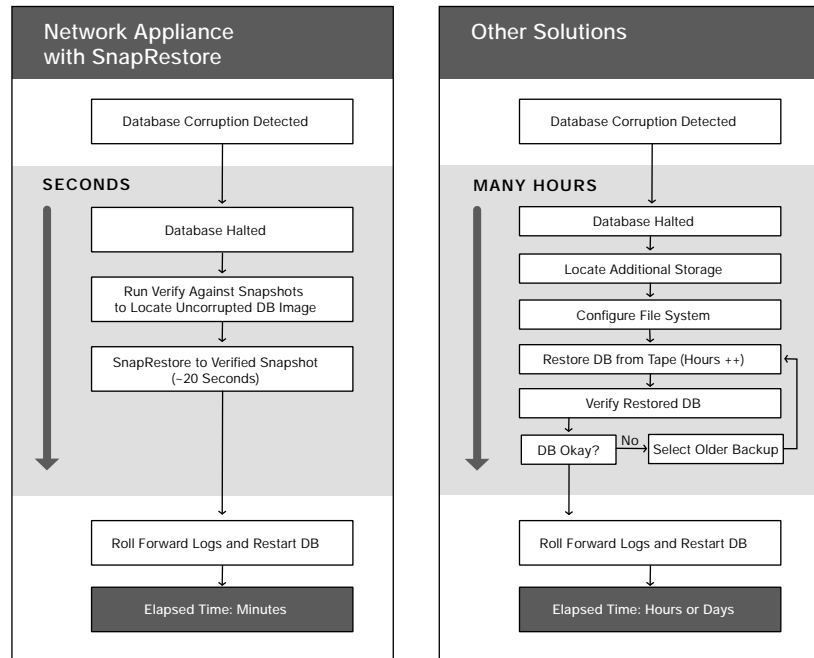


Figure 2) Rapid Recovery with SnapRestore

SnapRestore enables an enterprise to recover from an incident of database corruption in minutes, rather than the hours other solutions require. SnapRestore is only one of the disaster recovery and business continuance features of a NetApp solution, which delivers the industry's highest data availability based on real-time, real-world monitoring of customer installations.





## Custom-Tailored Support Programs

Network Appliance Global Support is an important part of our total reliability solution. You can design NetApp® Availability Assurance™ service program that meets your specific enterprise needs and includes everything from primarily online support options to System Availability Management programs with site inspection and regular availability reports.

## Unleash the Power of Information

To see how Network Appliance can help you increase the reliability and availability of your information and data storage resources, visit our Web site at [www.netapp.com](http://www.netapp.com) and let us show you what the evolution of storage means for your business.

## A COMPREHENSIVE STORAGE SOLUTION

Storage Consolidation	Business Continuance
 <p>Consolidate storage from hundreds or thousands of servers for maximum manageability and reliable access.</p>	 <p>Working with your existing infrastructure, implement remote site mirroring and disaster recovery plans for total peace of mind.</p>
Data Center Operations	Distributed Enterprise
 <p>Centrally manage and protect data, respond quickly to a crisis, and back up and restore terabytes of mission-critical data in minutes.</p>	 <p>Ensure that your remote offices have reliable data access and quickly replicate data, applications, and online training to one or many locations.</p>