



Increased efficiency. Reduced complexity.



**A highly effective and dependable means of sharing files and storage**

### ▶ Dependable Storage with Windows Storage Server 2003

Microsoft® Windows® Storage Server 2003 is a dedicated file and print server that brings reliable, highly available, and easy to manage storage to your organization. Whether your IT infrastructure is global or consists of just a few local workgroups, Windows Storage Server 2003 can help you keep mission-critical data highly available to those who need it, when they need it.

### ▶ High Reliability

The Windows Storage Server 2003 operating system is designed to ensure highly reliable file serving and file storage. Because only those components necessary for high performance file serving are active in the operating system, the number of potential points of failure is reduced. Hardware vendors can optimize Windows Storage Server 2003 for file serving and data protection, helping to provide a network attached storage solution that matches your organization's environment and the number of users in each.

### ▶ High Availability

Designing in support for hardware and software redundancy are key to ensuring that your data remains highly available. Microsoft Windows Storage Server 2003 helps to provide continuously available data through hardware redundancy, RAID, and clustering.

- **HARDWARE REDUNDANCY** Microsoft Windows Storage Server 2003 supports redundant hardware such as network cards, memory chips, and disks. Many solutions based on Windows Storage Server 2003 also include redundant hot-swappable power supplies and fans. Redundancy of these basic hardware components helps to ensure that a single point of failure does not cause data and applications to become inaccessible.

- **REDUNDANT ARRAY OF INDEPENDENT DISKS (RAID)** To help protect against data loss from disk failure, NAS devices built on Microsoft Windows Storage Server 2003 support all levels of RAID, including RAID-1 (mirroring), RAID 0+1 (mirroring plus striping), and RAID-5 (striping with parity). RAID-1, which mirrors the contents of one disk to a second disk, provides complete redundancy. These mirrored disks can be housed within the same NAS file server, or can be replicated across geographically distant areas (depending on the hardware vendor configuration) to help accomplish recovery in the event of a large-scale disaster.

- **CLUSTERING** Up to eight NAS devices running Windows Storage Server 2003 can be grouped on the network so that they provide failover capacity for one another in case one fails. Clustering NAS devices also allows high volume read/write requests to be distributed equally among file servers, thus balancing the work load and helping to improve overall network performance.

- **MULTIPATHING** In addition to the embedded hardware in servers, the path between the server and the storage device is also a potential point of failure. Providing more paths (up to 32) between the server and storage device provides failover capacity in the event that a path fails. Microsoft provides storage hardware vendors with the multipathing software necessary to build high performance, high availability solutions.

### ▶ Easy-to-Manage Storage

With Windows Storage Server 2003, it is easy to allocate storage to servers, applications, and users on an as-needed basis. Attaching storage to a network, rather than directly to servers, allows the administrator maximum flexibility in distributing storage where and when it is needed, before disk capacity is exceeded. Moreover, because Windows Storage Server 2003 integrates seamlessly into networks, expanding storage as your organization grows is a fast and efficient process.

## ► Fast, High-Fidelity Data Recovery

Using the new Microsoft Volume Shadow Copy Service (VSS), Windows Storage Server 2003 provides the infrastructure for creating high fidelity point-in-time shadow copies which help end users to quickly restore data that has been corrupted, accidentally deleted, or overwritten.

- **HIGH-FIDELITY SHADOW COPIES VSS** coordinates with user applications and backup applications to help ensure high-fidelity shadow copy creation. Because VSS is application aware, it is no longer necessary to skip or close in-use files or applications in order to prevent data inconsistencies.
- **COST-EFFECTIVE AND EASY RESTORES** Using the Shadow Copies for Shared Folders feature, administrators can activate automatic shadow copy creation and set the frequency at which shadow copies are made. The end user can recover most lost data in seconds by simply clicking on the Previous Versions dialog box and restoring a file or folder from an earlier point in time. Costly and time-intensive file recreation or individual file restores from tape are no longer necessary.
- **UP-TO-DATE RESTORES** Compared with copying data to tape, shadow copy creation is fast and non-disruptive—administrators can schedule shadow copy creation as often as every four hours. Because shadow copies can be made more frequently than tape backups, restored data is much more up-to-date, thereby minimizing the amount of lost information.

## ► Enhanced File Serving Performance

Windows Storage Server 2003 is designed for high performance file serving between servers and network attached storage. The improved file serving performance of Microsoft Windows Storage Server 2003 allows your organization to support an increased user load over what was possible using earlier versions of the operating system.

- **DEDICATED FILE AND PRINT SERVER** Microsoft Windows Storage Server 2003 serves only file read/write requests; all application read/write requests are handled by general purpose servers. This dedicated functionality allows users to access files quickly, without the bottlenecks commonly seen when accessing files from general-purpose servers overburdened with application I/O requests.
- **OPTIMIZED FILE SERVING** Microsoft Windows Storage Server 2003 has been designed to serve files faster than ever. The server messenger block (SMB) file sharing protocol has been improved so that it is much faster—35-135 percent faster, depending on the configuration—than in early versions of the operating system. These performance improvements can be enhanced even further. By using Windows code, hardware vendors can configure the Windows Storage Server 2003 operating system to optimize file serving in specific environments. Hardware vendors can also tune their hardware to improve file serving performance.

## ► For More Information

Dependable storage solutions based on Windows Storage Server 2003 are available from industry leading OEMs.

To learn more about Windows Storage Server 2003 and our leading OEM solutions, visit [www.microsoft.com/storage](http://www.microsoft.com/storage).

Join the Windows Storage Server 2003 community:

[www.microsoft.com/storagecommunity](http://www.microsoft.com/storagecommunity)

Windows Storage Server 2003 is part of Windows Server System<sup>™</sup>—server infrastructure that simplifies the development, deployment, and management of flexible business solutions.  
[www.microsoft.com/windowsserversystem](http://www.microsoft.com/windowsserversystem)