

BROCADE STORAGEX AND MICROSOFT DFS



FILE AREA NETWORK

Simplifying Microsoft DFS Deployment and Management

HIGHLIGHTS

- Extends the DFS namespace with a Global Namespace that aggregates files and centralizes the management of unstructured data across the enterprise
- Enables Windows-based management for multiple heterogeneous file servers, enabling seamless data migration and consolidation
- Simplifies Windows Server 2003 and Storage Server 2003 adoption and migration from legacy operating systems, Linux, and Novell
- Provides cost-effective, seamless failover across geographically distributed sites by centralizing management of the global failover process
- Leverages policies to automate data migration from primary storage to secondary devices based on specified criteria
- Improves user productivity by simplifying access to distributed data across the enterprise

Microsoft provides the Distributed File System (DFS) protocol as a core component of its Windows operating systems to address large-scale storage infrastructure management requirements. DFS is analogous to DNS in that it provides the ability to map a logical name to a physical device. However, in order to effectively manage all aspects of data movement in their storage environments, today's IT organizations need a powerful solution that integrates with and extends the DFS functionality.

The Brocade® StorageX® Global Namespace, built on the DFS protocol, leverages DFS to improve namespace manageability and simplify file data management in distributed, heterogeneous storage environments. The most widely adopted enterprise solution for simplifying the implementation and maintenance of DFS namespaces, Brocade StorageX complements previous versions of DFS as well as DFS in Windows Server 2003-R2.

Table 1. Brocade StorageX extends the capabilities of Microsoft DFS.

Capability	Brocade StorageX Value
Management	<ul style="list-style-type: none"> • Centralized management of multiple namespaces across locations • Namespace organization options • Failure detection as well as sophisticated reporting and auditing features
Flexibility	<ul style="list-style-type: none"> • Heterogeneous storage (DAS, SAN, or NAS) • Multiple vendors (EMC, Microsoft, NetApp, and others) • Multiple protocols (CIFS- and NFS-based file systems) • A wide range of Windows environments
Availability	<ul style="list-style-type: none"> • Snapshots of namespaces • Integrated backup/restore of namespaces • Distributed architecture and continuous status monitoring
Scalability	<ul style="list-style-type: none"> • Single view of multiple namespaces • Unlimited scalability of namespace elements and physical infrastructure (servers and storage) • Support for cascaded namespaces across locations
Creation	<ul style="list-style-type: none"> • Policy-based namespace creation • Drag-and-drop operations for customized namespaces • Automatic and continuous synchronization with file shares • Population of a namespace from Active Directory

DFS FOR THE ENTERPRISE

The Brocade StorageX Global Namespace logically aggregates distributed file storage across different types of storage (DAS, SAN, or NAS), different vendors, and both CIFS- and NFS-based file systems (including Windows NT, 2000, 2003, and Windows Storage Server). It extends the power of DFS to support personalized namespaces based on Active Directory security permissions, providing users with customized views of their accessible file resources (see Table 1).

SIMPLIFIED DFS NAMESPACE MANAGEMENT

Brocade StorageX automates DFS management tasks, helping organizations create and manage both simple and complex enterprise-class namespaces. For example, it enables:

- **Policy-based namespace creation:** Administrators can use policies to automate creation of the namespace, as well as hundreds of links. These policies can identify available resources based on properties such as Active Directory security groups, user home folders, and share names.

- **Simple creation of DFS links:** Administrators can create large namespaces in seconds by dragging shares from a Windows Explorer window into the Brocade StorageX interface to instantaneously create DFS links.
- **Namespace backup and restore:** Administrators can perform schedule-based or manual backups for both standalone and domain-based roots. They can also restore or merge namespaces.
- **Simplified reporting:** Administrators can generate HTML-based reports on elements such as namespace status, lists dependencies, root properties, and share properties.
- **Easy identification of dependencies:** Administrators can see both physical and logical views of namespace resources and interdependencies.
- **Efficient monitoring:** Administrators can schedule status monitoring and see in one screen whether a root, link, or target has gone offline.
- **Auditing of activities:** Administrators can audit which individuals made what changes to the namespace (such as adding or removing a link).
- **Distributing a share across multiple machines:** Administrators can divide a single DFS link pointing to a share (such as splitting it across multiple machines).
- **Synchronization with UNIX NIS:** Administrators can synchronize the Brocade StorageX Global Namespace with UNIX NIS for multiprotocol environments using either NIS or DFS as a master.

BROCADE STORAGEX APPLICATIONS

In addition, Brocade StorageX extends DFS capabilities through an integrated suite of applications that help automate file data services in heterogeneous environments (such as DAS, SAN, or NAS environments running Windows, UNIX, or Linux operating systems). As a result, it supports key tasks such as:

- Consolidated network data management
- Data migration and consolidation
- Disaster recovery/business continuity
- Information Lifecycle Management (ILM)
- Storage optimization
- Data classification and reporting

Consolidated Network Data Management

Brocade StorageX provides comprehensive device-independent enterprise data management services. The Global Namespace aggregates files and provides a central location to view and manage all unstructured or file data. This enables administrators to move and manage data across CIFS- and NFS-based storage from different vendors.

Data Migration and Consolidation

Brocade StorageX enables administrators to seamlessly migrate and consolidate data from multiple heterogeneous file servers. The Global Namespace and migration policies shield users from physical changes during migrations, maximizing data access. In addition, Brocade StorageX:

- Enables automatic share creation
- Copies security attributes
- Integrates with NTFS Change Journal and with VSS snapshots (to enable open and locked file copying)

Disaster Recovery/Business Continuity

In addition to ensuring fast, seamless user failover following an outage, today's organizations must find a way to centralize business continuity management in heterogeneous, distributed environments while keeping IT costs at a minimum. The Brocade StorageX Global Namespace and disaster recovery policies support this type of centralized, cost-effective, and seamless failover. For instance, administrators can monitor shares, folders, and volumes for availability, transparently failing over users to alternate storage devices based on defined policies.

Information Lifecycle Management (ILM)

The Brocade StorageX Global Namespace and data lifecycle management policies enable tiered storage architectures, which provide an efficient approach to meeting ILM requirements. Brocade StorageX facilitates the transparent movement of reference data from expensive primary storage onto less-expensive secondary storage based on administrator-defined criteria. This approach helps reduce hardware acquisition costs while enabling administrators to align backup policies with the business value of data.

KEY REPLICATION FEATURES

Brocade StorageX replication policies enable file replications of any size and any distance in distributed, heterogeneous environments for CIFS- or NFS-compatible storage. These policies enable monitoring of replication jobs across the enterprise—utilizing a graphical drag-and-drop configuration topology for auditing operations as well as for updating DFS links during data migration. Key replication capabilities include:

- One-to-many or many-to-one replication
- File- or byte-level replication and a large replication set size
- Flexible scheduling and source/destination settings
- Ability to replicate cluster shares or invoke custom scripts
- A wide range of configurable processing options
- Easy comparisons of source and destination contents
- Bandwidth throttling

Storage Optimization

Brocade StorageX can also optimize capacity utilization across the enterprise. Using the Brocade StorageX Global Namespace and load balancing policies, administrators can create logical pools of storage that align with business operations, then optimize storage resources assigned to the namespace. Administrators can also centrally view and manage enterprise-wide capacity utilization—transparently balancing capacity across multiple devices.

Data Classification and Reporting

Brocade StorageX provides robust reporting capabilities to support key IT projects. It uniquely enables administrators to classify data based on a variety of business-relevant categories, including department, location, project, user group, file age, file size, and last access time. After the classification criteria are specified, administrators can run customizable reports to determine data migration requirements and facilitate departmental charge-backs based on usage.

SEAMLESS INFRASTRUCTURE INTEGRATION

As a non-proprietary software solution, Brocade StorageX fits seamlessly into existing data environments. It resides on existing file systems, uses standard CIFS and NFS protocols, and requires no client software or agents. Because Brocade StorageX is an out-of-band solution that does not reside in the data path, it does not cause latency or performance issues.

MAXIMIZING INVESTMENTS

In addition to Brocade StorageX, the Brocade File Services family includes Brocade Wide Area File Services (WAFS) for branch office connectivity, Brocade UNCUupdate for repairing broken UNC links that occur during migration, and Brocade MyView for policy-based file access/reporting, along with other specialty services.

Brocade and its partners offer complete solutions to meet a wide range of technology and business requirements. These solutions include education and training, support, service, and professional services to help optimize technology investments. For more information, contact an authorized Brocade sales partner or visit www.brocade.com.

SYSTEM REQUIREMENTS

Microsoft Windows 2000 Server with SP2 or later, Windows XP Professional, Windows 2003 Server

At least 300 MB of free disk space

.NET Framework 1.1

Internet Explorer 5.5 or later

Windows Scripting Host 5.6 or later

Minimum video display of 1024 by 768 and 256 colors (greater than 256 recommended)

UNIX Replication Agent can be installed on Solaris 8 or Red Hat Enterprise 3

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