

VERITAS Storage Foundation™ *for Windows* Disaster Recovery**DISASTER RECOVERY ESSENTIALS FOR MICROSOFT WINDOWS ENVIRONMENTS****KEY BENEFITS**

- Data and application recovery for virtually any application, any network and over any distance
- Reduce disaster recovery costs through heterogeneous storage support and increased hardware utilization
- Increase reliability of successful disaster recovery using proven solutions and planning / testing tools

Disaster recovery technologies can be difficult to implement due to the complexity and costs associated with a complete IT recovery solution. Essential components span multiple technologies and multiple providers which creates implementation issues along with costs that often exceed the benefits. Making disaster recovery an achievable goal, VERITAS offers a complete solution on Microsoft Windows that provides organizations with the software essentials to help ensure that their data and applications are always available even in the event of a complete site outage.

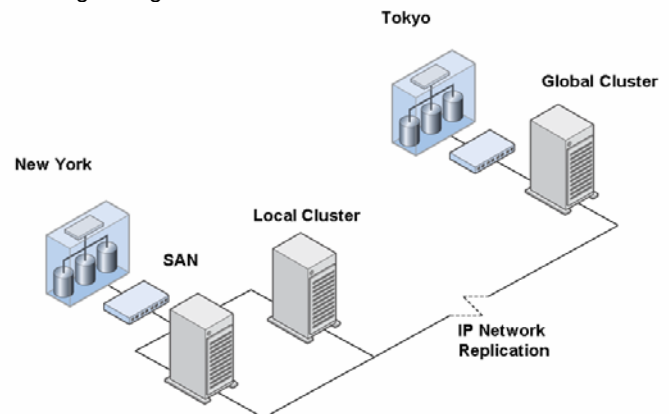
Available for Windows Server 2000 and Windows Server 2003, Storage Foundation *for Windows* Disaster Recovery (DR) is a bundled solution that combines clustering technologies with storage management technologies to provide an integrated and comprehensive disaster recovery solution to protect your environment. The single bundle is comprised of VERITAS Storage Foundation with the Dynamic MultiPathing and FlashSnap options, VERITAS Volume Replicator and VERITAS Cluster Server with the Global Cluster Option (GCO)

VERITAS Storage Foundation™ *for Windows* extends and enhances the capabilities of Microsoft's LDM and provides effective storage management by creating virtual storage devices from physical disks and disk arrays. This removes the physical limitations of disk storage which allows customers to configure, share and manage storage for optimal results. Additionally, options such as Dynamic MultiPathing and FlashSnap provide protection against single point of failure by enabling I/O path redundancy as well as ensuring that additional copies of data are accessible and available in the case of site outages

VERITAS Cluster Server™ is the industry's leading open systems clustering solution to protect your critical applications and databases against downtime, whether planned or unplanned. VERITAS Cluster Server provides high availability locally while the Global Cluster Option extends high availability across any distance to applications, databases and servers by monitoring the health and performance of the resource and

automatically restarting the resource on another available server in order to avoid a complete failure.

VERITAS Volume Replicator™ helps organizations reduce data loss and recovery time from days to minutes (or even seconds), in the event of site outages. With Storage Foundation *for Windows* managing storage within the SAN at a local level, Volume Replicator allows customers to replicate data across any distance by replicating data over IP between similar or dissimilar storage devices. This gives customers the flexibility to maintain remote copies of data using new or existing storage hardware.



Storage Foundation for Windows DR provides local and remote storage management and application availability

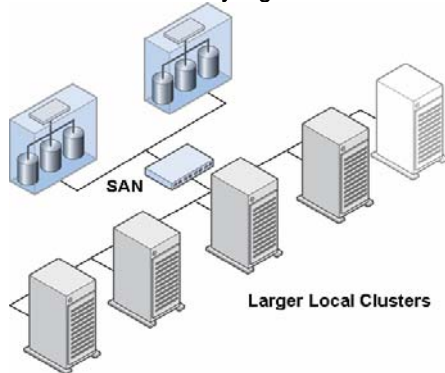
PRODUCT OVERVIEW**Reduce Hardware Costs:**

VERITAS Storage Foundation *for Windows* DR provides storage virtualization and replication tools for heterogeneous storage environments, which leads to cost savings by giving organizations the freedom to choose the appropriate storage hardware for disaster recovery needs. For example, organizations can choose high end storage arrays at primary locations where performance is critical and lower cost storage, from virtually any vendor, at the remote location for disaster recovery purposes.

Maximize Hardware Investment:

Not only do organizations have the choice of using heterogeneous storage hardware, but VERITAS Cluster Server technology enables organizations to choose server cluster configurations that provide high levels of application availability with lower levels of idle resources. For example, VERITAS

clustering technology included in Storage Foundation for Windows DR can significantly increase server utilization through larger server clusters and adaptive workload management. At the same time these server clusters help ensure that applications at primary and secondary locations stay online to achieve extremely high service levels.



High availability combined with increased hardware utilization leads to increased service levels and cost savings

Reduce Impact to Production Environment:

Another benefit of Storage Foundation for Windows DR is the ability to take storage independent snapshots for point-in-time copies of data at primary and secondary locations. These snapshots can be used for off-host processing such as backups and testing which means organizations can increase the frequency of backups and speed up the recovery process in the event of a site outage or logical failure. VERITAS enabled snapshots also provide the ability to use utilize non-production servers to carry out backups and testing which leads to an increased level of data protection that does not cost the organization performance on primary production systems.

Broad Application Support:

VERITAS Storage Foundation for Windows DR provides off-the-shelf support for a wide range of applications, including but not limited to Microsoft Exchange and Microsoft SQL Server with new agents being developed continuously. Custom agents for application availability can be created to ensure virtually any application is highly available on Windows Server 2003 Standard, Enterprise Server and Datacenter Server as well as Windows 2000 Server, Advanced Server and Data Center Server.

Reduce Data Loss and Downtime:

Outages are generally caused by application, server, network, or storage failures. Storage Foundation for Windows DR includes solutions for all levels. If an application, database, or complete server goes down locally, Storage Foundation for Windows DR immediately detects the failure and automatically brings up services on an available server then redirects traffic. In the event of local disk failures, or I/O path failures due to network failures, the storage management capabilities of Storage Foundation for Windows DR continue on redundant

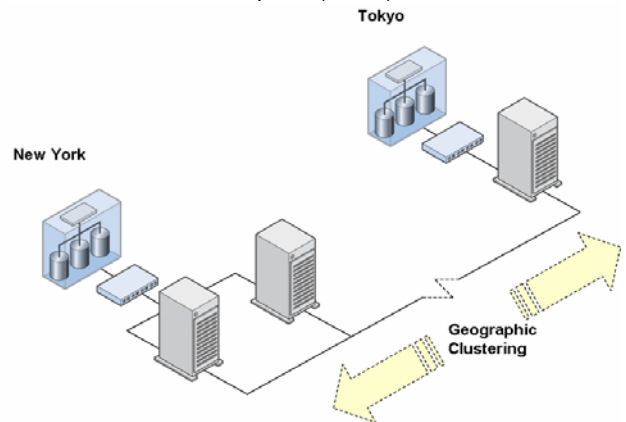
systems without having to off-line storage or experience down-time.

Leverage Existing Network:

Recognizing that organizations have unique IT environments VERITAS provides disaster recovery capabilities within a SAN as well as over IP networks. Storage Foundation for Windows DR enables synchronous mirroring of data volumes within both fibre channel or iSCSI networks for local and metropolitan area storage protection. Synchronously mirroring data ensures that data is protected in real-time with absolutely no data loss. In addition to SAN based mirroring technology, Storage Foundation for Windows DR enables synchronous or asynchronous replication natively over IP networks. This extends the reach of disaster recovery capability over any distance and allows organizations to leverage existing network infrastructure. By giving organizations a choice of SAN or IP networks VERITAS allows organizations to choose cost effective solutions for disaster recovery that will work at any distance and in virtually any environment.

Eliminate Single Point of Failure:

In addition to enabling data redundancy through replication and local mirroring, Storage Foundation for Windows DR also helps protect against single point of failure in data paths through Dynamic MultiPathing (DMP). VERITAS DMP enhances Disaster Recovery by making local systems more robust, eliminating I/O path single point of failure problems within a SAN by managing all routes between the server and storage subsystem. An unlimited number of paths from the server into the storage subsystem are supported, and VERITAS DMP manages the interface between the host server file system and two or more Host Bus Adapters (HBAs).



Geographic clustering provides complete site migration capabilities

Disaster Recovery over Any Distance:

Storage Foundation for Windows DR lets organizations replicate critical data natively over IP, which means real-time, consistent copies of data can be distributed anywhere around the globe for disaster recovery needs. Maintaining up-to-date copies of critical data at remote locations provides the foundation for quick recovery of critical applications. For example, an organization may choose to replicate the same

critical data volumes from New York to New Jersey and from New York to Tokyo. This data can be mounted and recovered at either location at any moment. Once the data is mounted, it can then be used to bring applications online.

Complete Site Protection:

In addition to real-time data replication and local clustering, Storage Foundation *for Windows* DR also includes remote clustering technology to provide complete site migration capabilities over any distance during planned or unplanned downtime. In the event of a local site outage (or local planned maintenance) replication roles are shifted to the secondary site, critical applications are brought online and client traffic is redirected. All of this can happen with a single command or mouse click. This capability is most useful when organizations want to reduce downtime by automating the manual process of bringing up applications and replication at a remote location once the initial site has gone down.

Test Before Disaster Strikes:

VERITAS Storage Foundation *for Windows* DR provides the ability to configure, implement and test your high availability and disaster recovery environment without disrupting users. VERITAS offers free simulation tools in conjunction with Storage Foundation *for Windows* DR that allow users to test the potential network impact of replication and to test cluster configurations without requiring a separate cluster testing environment or impacting the production environment. Clustering tools even allow organizations to clone their production environment and allow the disaster recovery solution to be fully tested. These new features reduce the need to invest in additional hardware for testing and configuration purposes while ensuring resources will remain available in the production environment.

Put It All Together

VERITAS Storage Foundation for Windows Disaster Recovery combines a number of proven VERITAS technologies to provide Microsoft Windows customers with a complete, fully tested and reliable Disaster Recovery package that can easily be implemented. Storage management, local clustering, IP replication, snapshots, Dynamic MultiPathing and remote clustering technologies are available in one VERITAS package thereby reducing the risks and costs associated with implementing a Disaster Recovery solution.

PRODUCT SPECIFICATIONS

Microsoft Windows: 2000, Server 2003

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