

## VERITAS Storage Foundation™

- Double Storage Utilization
- Triple Administrator Productivity
- Eliminate Downtime

VERITAS Storage Foundation™ combines the industry-leading VERITAS Volume Manager™ and VERITAS File System™ to provide a complete solution for online storage management.

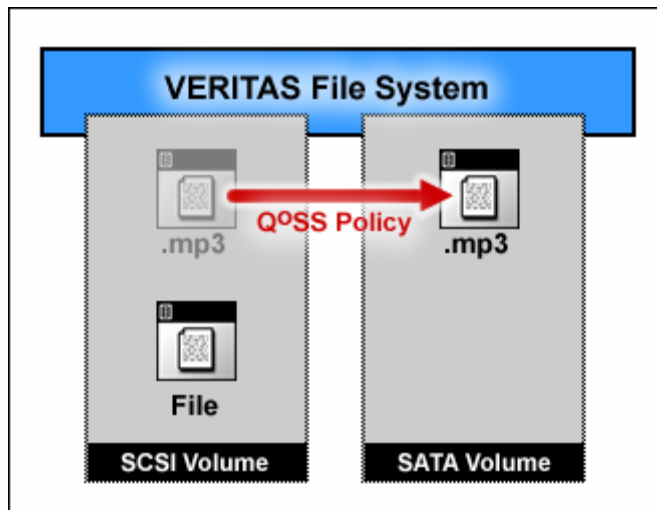
With VERITAS Storage Foundation, physical disks can be grouped into logical volumes to improve disk utilization and eliminate storage-related downtime.

In addition, VERITAS Storage Foundation can move data between different operating systems and storage arrays, spread I/O across multiple paths to improve performance, and move unimportant or out-of-date files to inexpensive storage.

### DOUBLE STORAGE UTILIZATION:

*Move unimportant files to inexpensive storage*

VERITAS Storage Foundation can move unimportant or out-of-date files to less-expensive storage devices without changing the way users or applications access those files.



**Double Storage Utilization:** Free space on expensive arrays by moving unimportant files to cheaper storage.

Simply set up a policy that moves files based on date created, last time accessed, owner, size or name. Then, specify where you want those files to go. Storage Foundation moves the files automatically without taking them offline. More importantly, the move is completely transparent to the users and applications that own the files – they don't need to know the files have moved.

In addition, VERITAS Storage Foundation™ groups physical disks into logical volumes that can be dynamically sized and resized to fit each application perfectly.

### TRIPLE ADMINISTRATOR PRODUCTIVITY:

*Automate manual storage management tasks*

Using the new provisioning templates in Storage Foundation, administrators can quickly and easily create new storage environments that are error free with very little effort.

These provisioning templates can be created and customized by the user to include information about the storage brand, location, layout and other variables for each template. Then, these templates can be exported to other servers to create company-wide consistency.

In addition, the intuitive Storage Foundation GUI includes everything an administrator needs to configure, change and report on the status of storage and I/O paths. And, since the Storage Foundation GUI is the same for all major operating systems, companies can cut the amount of time and money spent to maintain specially trained administrators for each operating system.

### ELIMINATE DOWNTIME:

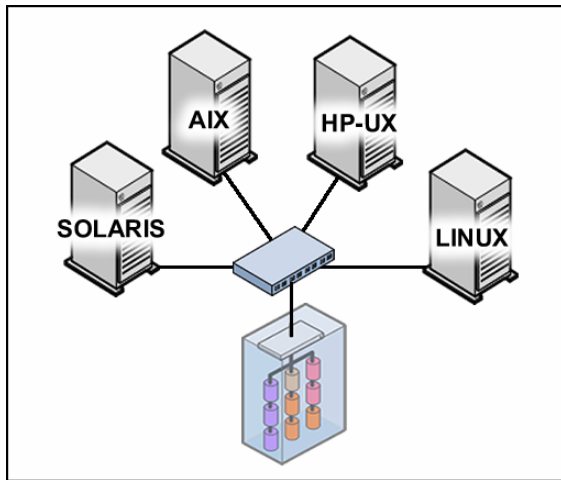
*Eliminate planned and unplanned downtime*

**Planned Downtime:** By performing nearly all storage-related tasks online (such as RAID reconfiguration, defragmentation, file system resizing and volume resizing), Storage Foundation limits the amount of time administrators need to take storage offline to perform regular maintenance functions.

**Unplanned Downtime:** VERITAS Storage Foundation mirrors data for redundancy and automatically migrates data from failing disks to healthy disks to cut downtime from unplanned events.

In addition, the High Availability version of Storage Foundation includes VERITAS Cluster Server to quickly move an application from a failed server to a healthy server.

Finally, with the dynamic multi-pathing feature of Storage Foundation, administrators can spread I/O across all available paths to eliminate downtime from I/O path, HBA or switch failures.



*Heterogeneous Support: Move data between heterogeneous operating systems*

**REDUCE VENDOR LOCK-IN**

*Simplify server migrations by moving data between different operating systems*

In addition to providing the same storage management tool for all operating systems, Storage Foundation can actually make the same set of data accessible to all major operating systems. Administrators no longer need to use NFS or tape to move data between operating systems.

With Storage Foundation, administrators simply deport data from one operating system and import it on another. Storage Foundation quickly and automatically converts the data for the new platform.

**BUILD THE FOUNDATION FOR UTILITY COMPUTING**

*Integrate with the leading hardware and software packages for a seamless datacenter*

Storage Foundation was designed with your entire datacenter in mind. Special features designed specifically to integrate with the leading backup, clustering, replication and storage resource management software makes your life easier.

**Availability:** Storage Foundation integrates with VERITAS NetBackup™ to take disk-based backups of critical data. In addition, the HA version of Storage Foundation includes VERITAS Cluster Server™ and integrates with VERITAS Volume Replicator™ for local and wide-area application availability.

**Performance:** VERITAS i<sup>3</sup>™ application performance management products work with Storage Foundation to optimize application performance.

**Automation:** VERITAS storage resource management products such as SANPoint Control™ tie in to VERITAS Storage Foundation to provide a complete view of your SAN environment, including all devices, file systems and volumes. In addition, VERITAS OpForce™, the leading server provisioning solution, works with Storage Foundation to provision servers complete with volumes and file systems that are compatible with VERITAS Storage Foundation.

Application	VERITAS Global Cluster Manager™ VERITAS Cluster Server™	VERITAS i <sup>3</sup> ™	VERITAS OpForce™
Server	VERITAS Volume Replicator™ VERITAS NetBackup™		VERITAS SANPoint Control™
Storage	VERITAS Storage Foundation		
	Availability	Performance	Automation

**Build the Foundation for Utility Computing:** Storage Foundation integrates with the leading availability, performance and automation products to offer true utility computing

## VERITAS STORAGE FOUNDATION FEATURES AND BENEFITS

Double Storage Utilization	
Feature	Benefit
Quality of Storage Service (QoSS)	Allows the administrator to identify and move unimportant or old files to less expensive storage without changing the way users or applications access the files.
Multiple Disk Spanning	Groups physical disks together into logical disks that can be dynamically resized. Creates disk sizes that are most appropriate each application.

Triple Administrator Productivity	
Feature	Benefit
Intelligent Storage Provisioning Templates (ISP)	Automatically provisions and grows storage based on user-defined templates. The templates stipulate the type of storage to be used, how it should be configured, where it should be located and a number of other parameters. This creates company-wide consistency and eliminates storage configuration errors.
Dynamic Multipathing (DMP)	spreads I/O between all available paths between the server and the array for performance and availability.
Automated Performance Tuning	Automatically tunes each write for optimal performance. Administrators no longer need to manually tune writes for performance.
Automatic Discovery of SAN Devices	Uses VERITAS SANPoint Control QuickStart (included with Storage Foundation) to automatically track all devices in the SAN.

Eliminate Downtime	
Feature	Benefit
Online Administration	Limits the amount of time disks need to be offline for maintenance by performing volume and file system resizing (including shrinking), domain reconfiguration, defragmentation, backup and off-host processing while the data remains online.
Hot Relocation	Automatically migrates data from failing disks to healthy disks.
Quota Capabilities	Manages space requirements for a large number of user accounts.
Panic Prevention	Keeps disk and file system errors from panicking the system
RAID Support	Maintain access to data even when multiple disks fail.
FlashSnap	Takes instant, space optimized snapshots of data for off-host processing and backup. Only synchronizes changed blocks for fast resynchronization.
VERITAS Cluster Server	The HA (High Availability) version of Storage Foundation includes VERITAS Cluster Server for local and wide-area application availability.
Storage CheckPoints	Instantly creates disk backups of files or file systems that require no additional disk space. The backup can be easily restored by the user. Useful for maintaining an original copy of a file system while doing development work.

Reduce Vendor Lock-in	
Feature	Benefit
Portable Data Containers	Easily and quickly moves data between different operating systems. Improves your negotiating position with server vendors by making migrations to new operating systems much easier.
Support for All Major Storage Arrays	Lets companies choose the storage hardware that best fits their needs.
Common GUI	Reduces training costs by maintaining the same interface on all platforms.

## OPTIMIZED FOR YOUR ENVIRONMENT

*Choose the version that is right for your operating environment.*

**VERITAS Storage Foundation™ HA:** All the features of Storage Foundation plus VERITAS Cluster Server. This version combines the storage availability in Storage Foundation with the server and application availability in VERITAS Cluster Server.

**VERITAS Storage Foundation™ for Databases:** All the features of Storage Foundation plus special database accelerators that provide raw performance with the manageability of a file system. Available as both standard and enterprise versions.

**Storage Foundation™ Cluster File System:** All the features of Storage Foundation plus a cluster file system and cluster volume manager for concurrent data access from multiple servers. Available as enterprise version only.

**VERITAS Storage Foundation™ for Oracle RAC:** All the features of Storage Foundation Cluster File System with additional special features to support Oracle RAC environments. Available as enterprise version only.

### Supported OS Platforms:

- Sun Solaris
- HP HP-UX
- IBM AIX
- Red Hat Linux
- SuSE Linux
- Microsoft Windows<sup>b</sup>

<sup>b</sup> Not all features are available on all operating systems. Consult <http://support.veritas.com> for detailed operating system and storage array support information

## SIZED FOR YOUR NEEDS

*Choose the feature set that is appropriate for your application.*

**Storage Foundation QuickStart:** Intended for smaller systems that are not connected to a SAN. Provides basic storage management for the boot drive.

**Storage Foundation Standard:** Intended for medium-size systems that are connected to the SAN. Storage Foundation Standard includes all features except FlashSnap snapshots and Quality of Storage Service.

**Storage Foundation Enterprise:** Intended for enterprise environments. Offers full functionality not included in other versions including Quality of Storage Service and FlashSnap.

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