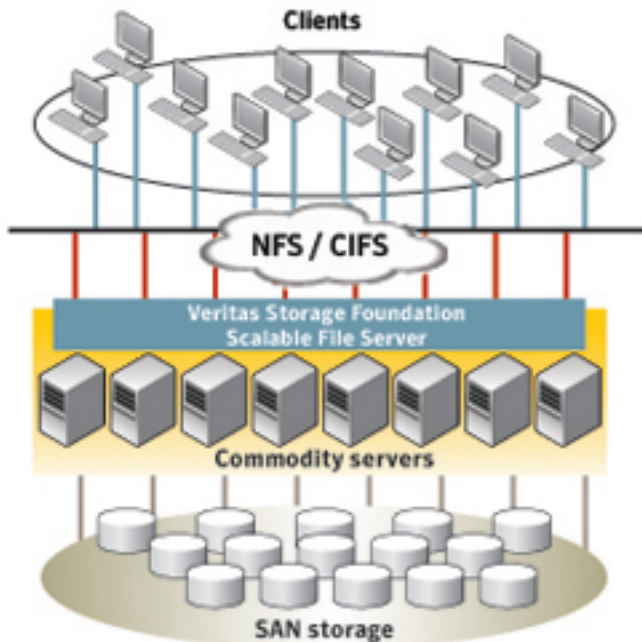


# Veritas Storage Foundation™ Scalable File Server

Highly scalable and available file services

## Overview

Veritas Storage Foundation Scalable File Server from Symantec™ provides a flexible, high-performance, and highly available platform for clustered NAS storage; concurrent file access from multiple servers delivers dependable NFS and CIFS file services. Veritas Storage Foundation Scalable File Server is built upon the mature and industry-leading Veritas Storage Foundation Cluster File System platform, which is cache-coherent as well as POSIX-compliant. A cluster-wide volume and file system configuration allows for simplified management. Organizations can also benefit from an integrated cluster volume manager that presents every node in the cluster with the same logical view of shared-device configurations.



## Features and Benefits

- **Benefit from storage consolidation**—Enable storage consolidation by giving multiple NFS and CIFS-based applications access to a single storage pool.
- **Reduce storage costs**—Assign data to multiple tiers of storage based on predefined policies. The gateway architecture allows multiple hardware vendors to be used at the storage tier.
- **Improve application performance and scalability**—Add servers dynamically to meet scalability requirements without compromising performance.
- **Minimize application downtime**—Get uninterrupted NAS services, even during node loss, with cluster file system-based architecture.
- **Enhance data consistency**—Maintain cache and storage coherency with atomic writes throughout the cluster. In addition, local file-system locking is coordinated with the NFS Lock Management (NLM) protocol.
- **Simplify storage administration**—Manage multiple nodes as one with appliance-like centralized management and advanced snapshot capabilities.

## Benefits in detail

### Benefit from storage consolidation

Businesses that need high performance as well as scalable NAS-serving can minimize the need to create multiple islands of NAS storage by implementing Veritas

Storage Foundation Scalable File Server. With the integration of a cluster file system, a cluster volume manager, and a simple appliance-like management interface, IT organizations can architect storage platforms that allow concurrent access to the same information through shared SAN-attached storage. This minimizes the need to replicate, copy, or move information. Veritas Storage Foundation Scalable File Server delivers near-linear scalability in NAS file serving. Up to eight nodes can be clustered, all with concurrent access to a single storage pool, which greatly increases the benefits of physical storage consolidation.

#### **Reduce storage costs**

With the Dynamic Storage Tiering capabilities of Veritas Storage Foundation running on the Scalable File Server, less important or out-of-date files can be moved to less expensive storage devices without changing the way users or applications access those files. These files will be dynamically moved without having to be taken offline. Because SFS uses the Cluster File System, data can span multiple volumes, and can be stored on multiple tiers of storage hardware. This move is completely transparent to the users that are accessing the files. Dynamic Storage Tiering supports a heterogeneous storage infrastructure that requires no application, or backup/recovery policy modifications.

#### **Improve application performance and scalability**

When an organization examines its application scalability requirements, there are essentially two options to choose from—the scale-up approach (i.e.,

larger SMP servers) and the scale-out approach (i.e., multiple smaller SMP servers). Taking a scale-out approach typically leads to more flexibility; however, having a single cluster file system across all nodes is essential, both to coordinate read/write access to the storage pool and to promote data integrity. Veritas Cluster File System not only does this, but also keeps performance from being compromised with an advanced file-locking capability that provides parallel access to the same file from multiple nodes. Its advanced file-locking architecture, Multiple Transaction Server, is a critical enabling technology that distributes file ownership across all nodes in the cluster, providing near-linear scalability without requiring unnecessary metadata communication throughout the cluster.

#### **Minimize application downtime**

Veritas Storage Foundation Scalable File Server provides a comprehensive NFS and CIFS file services failover solution that minimizes both planned and unplanned downtime across all nodes in the cluster. In the event of a node failure, file services are dynamically migrated to another available node in the cluster without disruption to the client-side application or to the business.

#### **Enhance data consistency**

In an application architecture where multiple server nodes have access to the same storage pool, cache coherency is of the utmost importance to maintaining data consistency and integrity. Every file in the cluster must exist in a single version that is visible to all nodes in the cluster: If each node has its own version of the file instead—especially during writes—then corrupt

## Data Sheet: Storage Management

### Veritas Storage Foundation™ Scalable File Server

information may result. In addition, the use of NFS advisory locking must be coordinated with the cluster file system locking. Veritas Storage Foundation Scalable File Server uses the Veritas Storage Foundation Cluster File Server Global Lock Manager (GLM) and coordinates this with the NFS lock management to make writes atomic throughout the cluster. In doing so, GLM helps ensure that there is only a single version of that file during any application write—which prevents data corruption.

#### **Simplify storage administration**

Veritas Storage Foundation Scalable File Server minimizes the burden of storage administration in many ways. Because all nodes in the cluster have visibility to the same storage pool, the cluster can share a single set of configuration and data files. Thus, only one node in the cluster must be "managed" by an administrator; the management burden need not scale with the number of nodes in the cluster. Additionally, because all nodes have access to all files, the necessary processing overhead associated with backup and recovery operations can also be isolated to a single node. A dedicated node can perform all backup/recovery tasks (isolating CPU and I/O resources) for the entire cluster, leaving the NAS serving to be shared among other nodes in the cluster.

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#### **Supported operating systems**

- Soft appliance based on SUSE Linux® for the server tier
- Clients can run standard NFS (v2, v3) and CIFS based protocols

#### **More information**

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