

Veritas Storage Foundation™ HA for Windows® by Symantec

Simple-to-use solution for high availability and disaster recovery of mission-critical Windows applications

Veritas Storage Foundation 5.1 HA for Windows is a comprehensive solution that delivers data and application availability for Microsoft Windows Server environments, including Windows Server 2008. Veritas Storage Foundation HA combines two industry-leading availability technologies: Veritas Storage Foundation for Windows, and Veritas™ Cluster Server. Veritas Storage Foundation for Windows provides online storage management, enabling high availability of data and optimized I/O performance across multiple hardware platforms. Veritas Cluster Server monitors an application and all associated components, including database, network, and storage resources. If a failure is detected, Veritas Cluster Server gracefully shuts down the application along with relevant resources and restarts it on an available physical or virtual server.

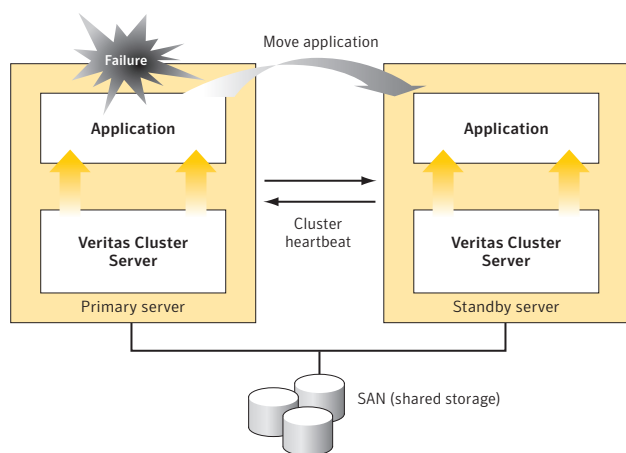


Figure 1. In the event of failure of a mission-critical application, Storage Foundation HA for Windows gracefully fails over the application stack, including associated directory, network, and disk group resources.

Highlights

- **Availability across any distance**—Builds local metropolitan and wide-area clusters for disaster recovery and local availability
- **No single point of failure**—The scalable Veritas Cluster Server architecture has no “master” node and therefore can gracefully move an application to an available server in the event of a failure and coordinate the movement with storage ownership
- **Multicluster management and reporting**—Manages and reports on multiple local and remote clusters from a single unified web-based console
- **Automated disaster recovery testing**—Fire Drill tests both failover and replication configurations without affecting the primary environment
- **Integration with Exchange, SQL, and SharePoint®**—Unique integration and optimization with SQL Server, Exchange, and SharePoint for increased application performance and availability
- **Simple to install, configure, and maintain**—Powerful wizards enable simple, quick, and error-free setup of advanced, high availability, disaster recovery, and Fire Drill configurations
- **Advanced application failover logic**—Ensures that application uptime is maximized and server resources are efficiently utilized

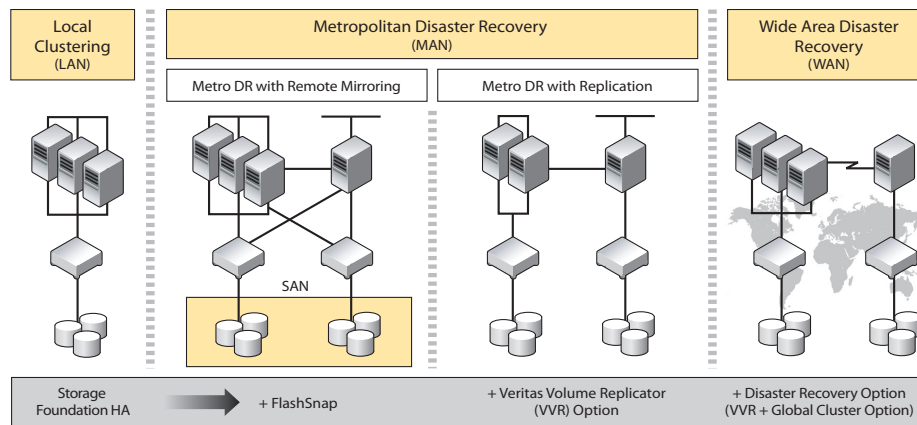


Figure 2. A scalable architecture enables growth from local to metropolitan to wide area geographic distances using a single solution.

- **Advanced virtual machine support**—Provides clustering support for virtual machine architectures
- **Replication integration with zero data loss**—Manages application failover and failback with Veritas Cluster Server, including support for the Veritas™ Volume Replicator Option and other array vendors' replication solutions

Availability across any distance

Whether it's a mission-critical Exchange email infrastructure, SharePoint Portal Server, or critical CRM and ERP applications using SQL Server databases, Veritas Storage Foundation HA for Windows enables local, metropolitan, and wide-area high availability and disaster recovery (DR) using a single solution.

Veritas Cluster Server can scale from a simple 2-node local cluster up to a 32-node cluster that spans thousands of kilometers across different IP subnets. Upon failover to a different IP network, Veritas Cluster Server updates the application's network identity so clients can quickly connect to the alternate site. Veritas Cluster Server also automates

the replication takeover so that replicated storage groups are imported and replication roles are reversed.

No single point of failure

Veritas Cluster Server is a highly resilient scalable architecture in which each node in the cluster synchronizes its configuration information and status with the other nodes. As a result, there is no single point of failure—a vital requirement for true high availability and disaster recovery.

In addition, Veritas Cluster Server does not require that a majority set of nodes be online for services to continue running. Other solutions need extra server hardware to ensure that a majority is maintained after multiple failures or a site outage. By eliminating this requirement, Veritas Cluster Server gives users the flexibility to run fewer servers at a DR site relative to a primary site cluster, resulting in more efficient use of hardware and administrative resources.

Multicluster management and reporting

The Web-based Cluster Management Console (CMC) simplifies the task of managing multiple clusters. CMC provides a



centralized GUI to monitor, manage, and configure Veritas Cluster Server clusters running in multiple data centers.

With CMC, administrators can manage configuration changes across multiple systems in a cluster with just a few clicks.

They can also run detailed historical trend reports by cluster, applications and servers, measuring service-level agreements in aggregate and tracking results over time. Notification policies across all clusters can be easily modified.

Administrator rights and roles can be set for different users in the IT organization. Most important, CMC provides a single place to instantly view the health of all clustered applications in the data center.

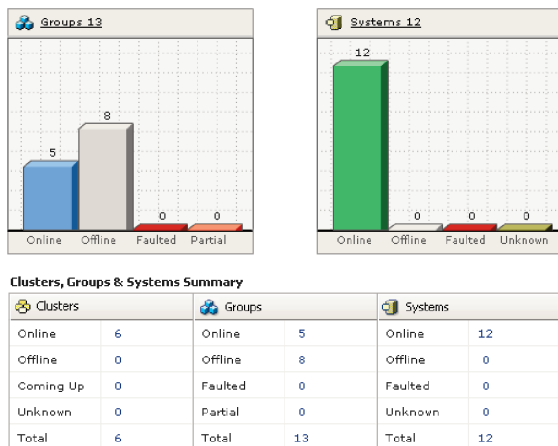


Figure 3. A simple Web-based GUI allows management of multiple clusters from a single centralized console with complete monitoring of all cluster conditions.

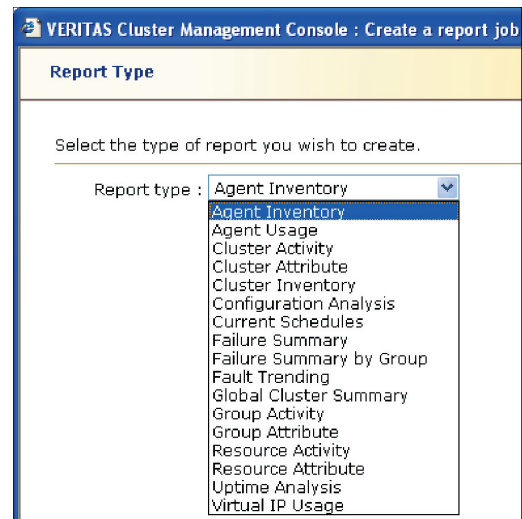


Figure 4. The Veritas Cluster Management Console provides easy-to-use reporting for business analysis.

Automated disaster recovery testing

With the Fire Drill feature of Veritas Cluster Server, organizations can test DR scenarios regularly without exposure to risk or downtime of applications—or business. Veritas Cluster Server is the only solution that integrates automated testing with a market-leading disaster recovery solution. Now administrators can make frequent changes to the IT infrastructure and simultaneously reflect those changes at a remote site. And because Fire Drill does not disrupt production applications, it can be run as often as necessary to ensure that critical applications are going to be recovered in the event of an actual disaster.

Integration with Exchange, SQL, and SharePoint

Veritas Cluster Server is uniquely integrated with many applications and databases including Exchange, SQL Server, SharePoint, Oracle®, BlackBerry, and many more. It also supports custom applications with an intuitive utility to provide detailed monitoring of all application resources, helping to ensure the highest levels of availability. Whether

providing availability for packaged or custom applications, Veritas Cluster Server manages more than just the application instance; it handles all associated components including runtime processes, network, and associated storage, ensuring a robust and graceful failover (over any distance) of all relevant resources.

Simple to install, configure, and maintain

To simplify the task of configuring Fire Drill, data replication, and HA/DR solutions, new wizards with a common GUI provide easy step-by-step, wizard-driven workflow. This minimizes configuration errors and decreases implementation times of high availability and disaster recovery infrastructure. Configuration wizards are designed not only for SQL and Exchange but also for other supported applications such as Symantec Enterprise Vault. In addition to helping with the initial setup of the HA/DR infrastructure, Veritas Cluster Server helps to ensure the configuration is consistent over time. It's able to detect cluster configuration drift, and reports back on configuration deviance. Configuration wizards for each instance can be saved as templates when cloning of host service groups and storage configurations are required for repetitive standardized implementations.

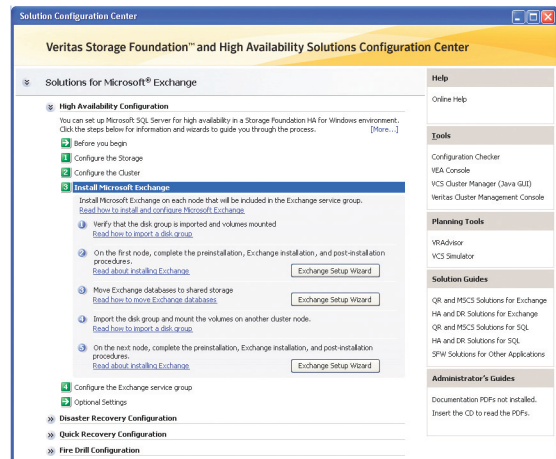


Figure 5. The easy to use Configuration Checker and Configuration Wizards simplify administration and reduce risk when configuring storage, clusters, HA/DR, and FlashSnap.

Advanced application failover logic

With Storage Foundation HA for Windows, IT administrators can set failover policies based on server capacity. Veritas Cluster Server then chooses the best server for a specific application at the time of failure based on application needs and the current state of resources in the cluster. It allows true “roaming spare” capability for maximum availability without the cost of a dedicated spare per application. When a failure occurs, Veritas Cluster Server automatically chooses the least utilized server and automatically adds repaired servers back into the selection pool when they rejoin the cluster. Advanced failover logic in Veritas Cluster Server ensures that application uptime is maximized and server resources are utilized as efficiently as possible.

Advanced virtual machine support

With server virtualization technologies, multiple virtual machines are commonly hosted on a single physical server. A failure of that physical server can lead to a loss of availability for several applications. As a result, the need to provide for highly available services increases with the use

of virtualization technologies. Veritas Cluster Server provides a single solution for clustering both physical and virtual systems. With Veritas Cluster Server, administrators can monitor an application running within a virtual machine (e.g., VMware ESX) and recover it in the event of a failure. Additionally, Storage Foundation HA for Windows provides unparalleled support for physical-virtual (P2V) and virtual-virtual (V2V) configurations, so organizations can protect any application/database over local or wide area distances.

Replication integration and zero data loss DR

Veritas Cluster Server combines with the Veritas Volume Replicator Option to provide a fully integrated and coordinated solution for application availability and data replication. This coordination ensures that if a failure occurs, both the application and data can be failed over and recovered in an alternate location. As important, the application and data can be failed back to the original location at the appropriate time. Additionally, with the new bunker replication feature of Veritas Volume Replicator, organizations can select the ultimate data replication strategy by replicating data over any distance without losing a single transaction—a recovery point objective (RPO) of zero over any distance.

While Veritas Cluster Server is tightly integrated with Veritas Volume Replicator, it also manages array-based replication technologies, including EMC SRDF/Star (synchronous and asynchronous), EMC MirrorView and MirrorView/A, Hitachi TrueCopy, IBM PPRC, IBM MetroMirror, and Network Appliance SnapMirror.

Veritas Cluster Server supported platforms

- Microsoft Windows
- IBM AIX®

- HP-UX
- Sun® Solaris™
- SUSE Linux and Red Hat Linux
- VMware

Please also consult the latest hardware and software compatibility list at http://entsupport.symantec.com/carveout_PID_15227_view_CL.htm

Related information

- Veritas Storage Foundation for Windows
- Veritas Supported Clustering Architectures

Packaging

- **Veritas Storage Foundation HA for Windows**—Includes Veritas Storage Foundation for Windows, Veritas Cluster Server for Windows, application agents, database agents
- **Veritas Storage Foundation Enterprise HA for Windows**—Includes Veritas Storage Foundation HA for Windows, plus FlashSnap™ and DMP options
- **Veritas Storage Foundation HA/DR for Windows**—Includes Veritas Storage Foundation HA for Windows, Hardware Replication agents, GCO option
- **Veritas Storage Foundation Enterprise HA/DR for Windows**—Includes Veritas Storage Foundation HA for Windows, Hardware Replication agents, plus FlashSnap, DMP, and GCO options
- **Veritas Volume Replicator Option**
- **Veritas Cluster Server for NetApp**—Unique integration for clustering support in Network Appliance storage environments
- **Veritas Cluster Server for NetApp HA/DR**—Includes Veritas Cluster Server for NetApp plus GCO option



Data Sheet: Storage Management

Veritas Storage Foundation HA for Windows by Symantec

Feature	Benefit
Management Server	Centralizes monitoring and reporting across thousands of server platforms to provide complete visibility to application, server, and storage resources.
Dynamic Multi-pathing	Balances I/O across all available paths between the server and the storage array to improve performance and availability. Common failures from I/O path, HBA, or switch failures can be avoided because administrators can spread I/O across all available paths.
Online administration	Limits the amount of time that disks need to be offline for maintenance by performing volume resizing (including shrinking), domain reconfiguration, backup, and off-host processing while the data remains online and available.
FlashSnap	Takes instant, full-volume, snapshots of data for off-host processing, disk-based recovery, and backup. Only resynchronizes changed blocks for fast resynchronization.
Automated performance tuning	Automatically tunes each write for optimal performance. Administrators no longer need to manually tune writes for performance.
Hot relocation	Automatically migrates data from failing disks to healthy disks.
VxCache	The VxCache functionality allocates dedicated cache to volumes and improves performance for read oriented applications, like Exchange, by up to 40 percent.
RAID support	Supports all levels of RAID for maximum availability and performance.
Volume Replicator Option	Provides continuous data replication, enabling rapid and reliable recovery of critical applications at remote recovery sites.
Bunker replication feature of Veritas Volume Replicator	Enables the ultimate application protection by replicating data over any distance without losing a single transaction—an RPO of zero over any distance.
Veritas Cluster Server	Monitors the status of applications and all its dependent components for both physical and virtual server environments, automatically moving them to another server in the event of planned or unplanned outages over any distance.
Centralized management	Lets administrators monitor, manage, and report on Veritas Cluster Server implementations on different platforms from a single, Web-based Cluster Management Console.
Automated disaster recovery testing	Tests both failover and replication configurations without affecting the primary environment.
Support for all major storage arrays	Lets organizations choose the storage hardware that best fits their needs.

Please consult the hardware and software compatibility lists for the most current and detailed operating system and storage array support information.



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More information

Visit our Web site

<http://www.symantec.com/datacenter>

To speak with a Product Specialist in the U.S.

Call toll-free 1 (800) 745 6054

To speak with a Product Specialist outside the U.S.

For specific country offices and contact numbers, please visit our Web site.

About Symantec

Symantec is a global leader in infrastructure software, enabling businesses and consumers to have confidence in a connected world. The company helps customers protect their infrastructure, information, and interactions by delivering software and services that address risks to security, availability, compliance, and performance. Headquartered in Cupertino, Calif., Symantec has operations in 40 countries. More information is available at www.symantec.com.

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