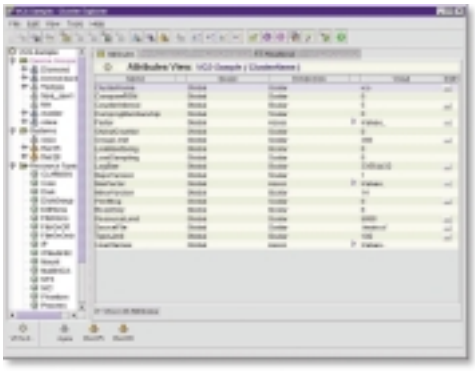
VERITAS

Cluster Server™

The Leading Enterprise High Availability Application Solution



VERITAS Cluster Server™ attribute table view

VERITAS Cluster Server™ (VCS) is a business enterprise software solution which provides comprehensive availability management to minimize both planned and unplanned down time. The product satisfies the evolving, but stringent, uptime requirements of today's e-business models world-wide. Web businesses are demanding increasing levels of uptime to ensure the viability of their services to their customers, and VERITAS Cluster Server can play an integral part in providing "Business Without Interruption," to any enterprise of any size. Cluster Server can complement a company's SAN strategy as well, providing client-access to storage, whether direct-connected to arrays through a fibre fabric, or through a fibre switch to "pools of storage."

Product Highlights:

- Support for Solaris, HP-UX and Windows NT platforms.
- Off-the-shelf agents for Oracle, Sybase and Informix databases, with new agents being developed all the time.
- An Agent Development Kit is provided to enable customers to develop custom agents to monitor, fault-detect, and recover virtually any application service.
- Extensive scalability, with support from 2- to 32-node clusters.
- Support for all major third-party storage providers with ongoing testing through its own iLab (Interoperability Lab) and Storage Certification Suite: a self-certifying test for third-party vendors to qualify their arrays. This enables VERITAS to support new storage solutions as they come to market.
- A multi-threaded high-availability engine leverages a multi-level fault detection scheme.
- Powerful resource-based definitions of application services can be constructed to facilitate flexible monitoring and failover.
- Configurable policies used to dynamically determine where recovery occurs for failover optimization.
- Provides cascading automatic recovery from consecutive failures.
- Employs a high performance global atomic broadcast (gab) mechanism to provide inter-server communication for robust fault management and heartbeating.
- Integrates seamlessly with other VERITAS storage management software, e.g., VERITAS Volume Manager™, VERITAS File System™, VERITAS NetBackup™, and VERITAS Storage Replicator™ for Volume Manager.
- Intuitive JAVA-based GUI facilitates easy cluster configurations: monitor up to 256 32-node clusters from the management GUI.
- SAN Ready today with multiple field-tested configurations.

VERITAS

The Leading Heterogeneous HA Solution

The product is architecture independent, supporting UNIX and Windows NT platforms, and is compatible with simple shared disk, shared nothing and Storage Area Network (SAN) configurations. Through VERITAS' ongoing compatibility testing, VERITAS Cluster Server works with virtually all major vendors' servers and storage devices. VCS features a scalable, Java-based, management graphical user interface for easy configuration and management of application services. The look and feel of the interface is the same for all supported platforms.

Scalable

VERITAS Cluster Server installs into clustered server configurations from 2- to 32-nodes. Using a global atomic broadcast (gab) mechanism, the product provides high performance inter-server communication for fault management and heartbeating. Automatic cluster seeding is provided to ensure quick and reliable cluster member additions. The most up-to-date cluster configuration file is propagated instantly to all other cluster members. As new servers are added to the cluster, they participate automatically in the cluster membership.

Customizable

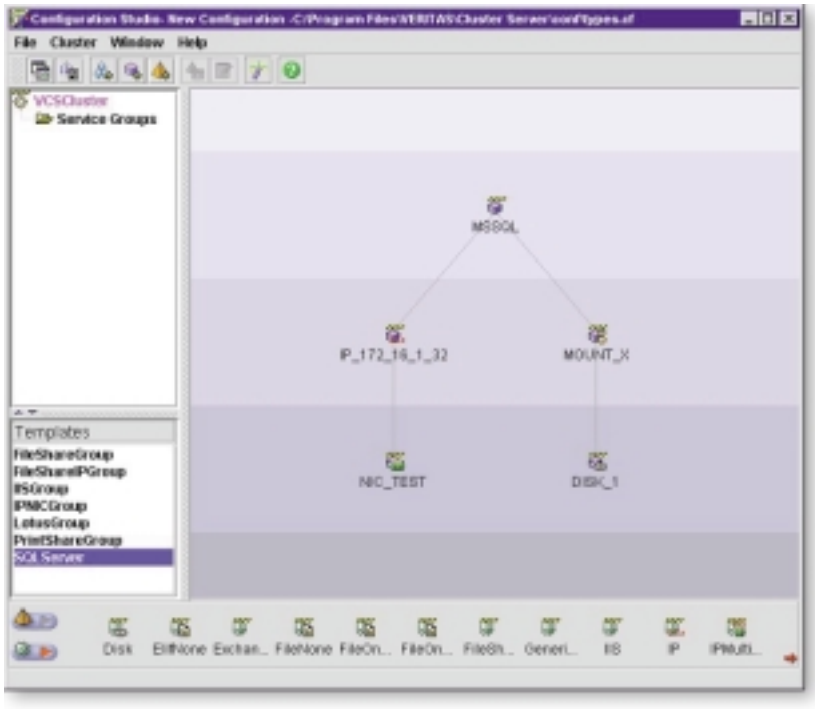
An API is included for developing custom agents for specific monitoring of applications. Several agents for monitoring low-level hardware and software processes are bundled with the base product, and off-the-shelf agents for popular enterprise applications are offered as well.

Complementary Protection

Several of VERITAS' storage management products complement VCS and are "aware" of each other. Together, the solution provides much more than point-product solutions. By combining VERITAS Cluster Server with VERITAS products such as VERITAS File System™, VERITAS Volume Manager™ and VERITAS NetBackup™, VERITAS provides a High Availability (HA) solution with more integrated intelligence and automation than any other vendor - this means customers get recovery that is faster, more flexible and more reliable.

Part of a Disaster Recovery Solution

Development is underway to incorporate the product into VERITAS' Disaster Recovery / wide-area failover solution available the first half of 2000. VERITAS Cluster Server can be combined with a replication solution, like VERITAS' Storage Replicator™ for Volume Manager (SRVM), or any third-party replication solution, along with a management layer we call Global Cluster Manager, to create a truly robust disaster recovery solution.



VERITAS Cluster Server™ for Windows NT dependency tree

Features	Benefits
Comprehensive High Availability features - including powerful and flexible resource-dependency definitions, policy-based and cascading failoveras and an API to develop application agents.	Assures robust monitoring and failover of application services.
Broadest application support - Many off-the-shelf agents are available to support database, ERP and back-up software. Custom agents can be created by customers or consultants.	The most popular enterprise applications can be made HA with VERITAS Cluster Server right out of the box. Any application can be made HA through the writing of custom Cluster Server agents.
HA Editions - Pre-tested, VERITAS bundled solutions, e.g., VERITAS Database Edition™ f*or Oracle®/HA.*	Editions assure optimum performance, compatibility and reliability.
Heterogeneous platform and storage support - Solaris, HP-UX, and Windows NT (soon Windows 2000) are supported. Other platforms to follow.	With VERITAS' HA solutions, the customer has more choices on how to configure their HA infrastructure than with any other competing HA products.
Industry's most scalable solution - Up to 32-node clusters are supported.	Distributed, complex applications can be hosted and failed over as needed. SAN architectures can be more easily supported.
Heterogeneous Storage Support - VERITAS supports all major storage vendors through its ongoing test programs. The VERITAS iLab in Mountain View is helping to test popular configurations including server, Host Bus Adapters, switches, storage and SAN. Also, a VCS Storage Certification Suite has been created to let vendors, partners and resellers qualify their own configurations with VCS at their own sites.	Not only does VERITAS give the customer more platform choices, but choices for pre-tested storage, HBA's, switches and SANs. This gives customers the flexibility they need to configure their storage infrastructure.
Intuitive JAVA-based GUI for cluster administration - The GUI can view simultaneously heterogeneous VCS clusters, and note any faults in any cluster.	One of the greatest needs for managing complex clusters is an easy-to-use interface. VERITAS provides this, with the same look and feel for every platform that VCS runs on.
Global Atomic Broadcast (GAB) - A mechanism to provide high-performance, inter-server communication for fault management and heartbeating. GAB rides on top of LLT (Low Latency Transport) which operates under IP.	The protocol is much faster and reliable than IP. This helps ensure that cluster members stay in synch and communicate status "instantly" throughout the cluster.
Integrates seamlessly with other VERITAS Storage Management Software - for example, VxVM, VxFS, SRVM, NBU.	VERITAS has the strongest storage management software in the industry. Some of these are kernel components, which help speed up failover, and allow for flexible views of the storage. All in all, the complementary role of VERITAS' software strengthens the customer's HA environment.
Automatic Cluster Seeding - The most up-to-date cluster configuration file is propagated instantly to all other cluster members. As new servers are added to the cluster, they participate automatically in the cluster membership.	First generation HA solutions required that each new cluster node be manually configured and "seeded" into the cluster. VERITAS is constantly working to make installation, configuration and management of clusters easier.
Key component in the industries' only wide-area failover strategy - True disaster recovery capabilities, combining failover with replication, will become available in the first half of year 2000.	For true high availability for today's 24x7x forever e-businesses, uptime must be guaranteed globally. VERITAS' Global Cluster Manager will protect entire sites in the case of natural disaster - helping to bring customers peace of mind.

Cluster Server™

The Leading Enterprise High Availability Application Solution

VERITAS™

BUSINESS WITHOUT INTERRUPTION™

About VERITAS®: For enterprises that demand continuous availability of business-critical information, VERITAS is the leading enterprise-class application storage management software provider. Unlike other types of storage management vendors who offer proprietary hardware-centric solutions, or limited product offerings, VERITAS provides leading, comprehensive, enterprise-class application storage management solutions that ensure information availability, enabling customers to protect, access and manage their business-critical information.

System Requirements

Configuration

- A minimum of 2 nodes per cluster
- Dual heartbeats between nodes (2 Ethernet hubs or crossover cables)
- VCS supports a maximum of eight network channels and four communication disks.
- Shared disk (dual ported, multi-initiated) – shared nothing configurations supported but replication or synchronization of data between nodes required;

VERITAS Cluster Server systems

- Solaris: 2.5.1 or later
- NT: 4.0
- HP-UX: 11.0, 32 and 64 bit

Servers

- Solaris: two or more SPARC/Solaris servers;
- HP-UX: Two or more HP/9000 K,D,R,V class servers
- Windows NT: Dell 2300 PowerEdge,Compaq Proliant 1850K
- IBM Netfinity, HP Netserver

Networking

- Public Network: 10Mb/100Mb/Gigabit Ethernet
- Private Network: 10Mb/100Mb Ethernet

Ethernet Controllers

- Requires at least one Ethernet controller per node, in addition to the built-in public Ethernet controller

CD-ROM Drive

- One CD-ROM drive on each system

Disks

- Typical configurations require shared disks to support applications that migrate between nodes

SCSI Adapters

- Requires at least one built-in SCSI adapter per system for the operating system disks, and at least one addtional SCSI adapter per system for shared data disk.

Disk Space

- Each VCS system must have at least 35 megabytes of free disk space

Memory

- Each VCS system requires at least 128 MBRAM

Supported Server Hardware

Solaris

- SBUS:
- Sparc 5, 10, 20, 1000
- Ultra 1, 2
- E3x00, 4x00, 5x00, 6x00
- SC2000, E10000

PCI

- Ultra 5, 10, 30, 60, Netra T, E220/250, E420/450

HP-UX

- HP 9000: D, K, R, V Classes

Windows NT

- Dell 2300 PowerEdge
- Compaq Proliant 1850K
- IBM Netfinity
- HP Netserver

Supported Storage Hardware

Solaris

- Sun StorEdge models
- DG Clariion: SCSI, FC 5x00, FC 3x00 (no split bus)
- Compaq StorageWorks: RA7000, ESA 10000
- EMC: Symmetrix
- Hitachi Data Systems: 5800 SCSI/FC, FC 7700E
- HP: xp256
- Network Appliance Series 700 Filers

HP-UX

- HP AutoRaid
- HASS
- DG Clariion - SCSI 1000 3000
- HP-branded DG Clariion
- EMC Symmetrix - 37xx

Windows NT

- JBOD
- Storage Works
- HDS
- FC JBOD (Clariion FC5500)
- EMC Symmetrix

VERITAS Software
Corporate Headquarters
1600 Plymouth Street
Mountain View, CA 94043

North American Sales Headquarters
400 International Parkway
Heathrow, FL 32746
800-327-2232 or 407-531-7501
407-531-7730 Fax

Global Locations

United Kingdom
0800-614-961 or
44-(0)870-2431000
44-(0)870-2431001 Fax

France
33-1-41-91-96-37
33-1-41-91-96-38 Fax

Germany
49-(0)69-9509-6188
49-(0)69-9509-6264 Fax

South Africa
27-11-448-2080
27-11-448-1980 Fax

Australia
1-800-BACKUP
612-8904-9833 Fax

Hong Kong
852-2507-2233
852-2598-7788 Fax

Japan
81-3-5532-8221
81-3-5532-0887 Fax

Malaysia
603-715-9297
603-715-9291 Fax

Singapore
65-488-7596
65-488-7525 Fax

China
8610-62638358
8610-62638359 Fax

Electronic communication

E-Mail:
sales@veritas.com

World Wide Web:
http://www.veritas.com

© 2000 VERITAS Software Corporation. All rights reserved. VERITAS is a registered trademark of VERITAS Software Corporation in the US and other countries. The VERITAS logo, *Business Without Interruption*, VERITAS Cluster Server, VERITAS NetBackup, VERITAS File System, VERITAS Volume Manager and VERITAS Storage Replicator are trademarks of VERITAS Software Corporation in the US and other countries. Other product names mentioned herein may be trademarks and/or registered trademarks of their respective companies. Specifications and product offerings subject to change without notice. Printed in USA. April 2000.

90-01110-910