

Veritas™ Volume Replicator by Symantec

Data replication for disaster recovery

Overview

Veritas™ Volume Replicator provides organizations with a world-class foundation for continuous data replication, enabling rapid and reliable recovery of critical applications at remote recovery sites. As an option to Veritas Storage Foundation™, Veritas Volume Replicator enables cost-effective replication of data over IP networks, giving organizations an extremely flexible, platform and storage hardware independent alternative to traditional array-based replication architectures. This flexibility lets organizations choose virtually any combination of storage devices on any major operating system, providing a consistent, easy-to-manage high availability/disaster recovery solution throughout the data center.

In addition to providing one of the most flexible replication architectures available, Veritas Volume Replicator is tightly integrated with the industry-leading application availability software, Veritas™ Cluster Server for an automated reliable disaster recovery solution that reduces recovery time for data and applications alike.

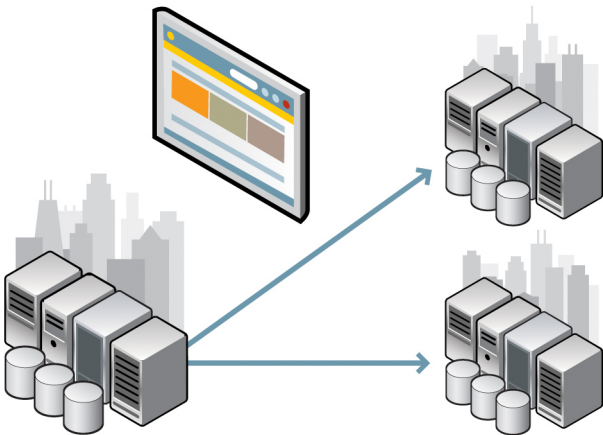


Figure 1. Veritas Volume Replicator enables high-performance data replication to remote data centers around the globe.

Highlights

- **Replication over any distance**—Replicate data over any distance without performance impact to applications.
- **Storage-independent replication**—Replicate between heterogeneous storage devices, enabling tiered storage strategies as a part of disaster recovery plans.
- **Cross-platform data migration**—Migrate data easily across platforms or data centers while dramatically minimizing application downtime.
- **Efficient use of bandwidth**—Minimize bandwidth utilization through efficient asynchronous replication and bandwidth throttling.
- **Thick to thin migration**—Automatically reclaim unused storage when migrating online from thick to thin storage.
- **Centralized management and reporting**—Centrally monitor and manage multiple replicated data sets across multiple sites.
- **Data and database consistency protection**—Protect data consistency at all times through the use of persistent disk-based replication logs.
- **Integration with Dynamic Storage Tiering**—Control storage price/performance without sacrificing local or remote application performance.
- **Automated disaster recovery**—Automate site-to-site failover for quick, reliable recovery of critical applications.

Replication over any distance

Veritas Volume Replicator enables synchronous and asynchronous data replication over IP networks to provide

disaster recovery capabilities over any distance without compromising performance or data consistency. With support for up to 32 secondary targets per application or server, Volume Replicator makes it possible to concurrently replicate the same data volumes in synchronous and asynchronous mode, giving organizations the ability to adapt replication strategies to match any number of data center locations. Volume Replicator also enables a unique Bunker Replication configuration that combines the zero data loss advantages of synchronous replication with the long-distance performance advantages of asynchronous replication. This gives organizations maximum protection for critical applications over any distance providing a cost-effective alternative to costly multi-hop or star configurations from array vendors.

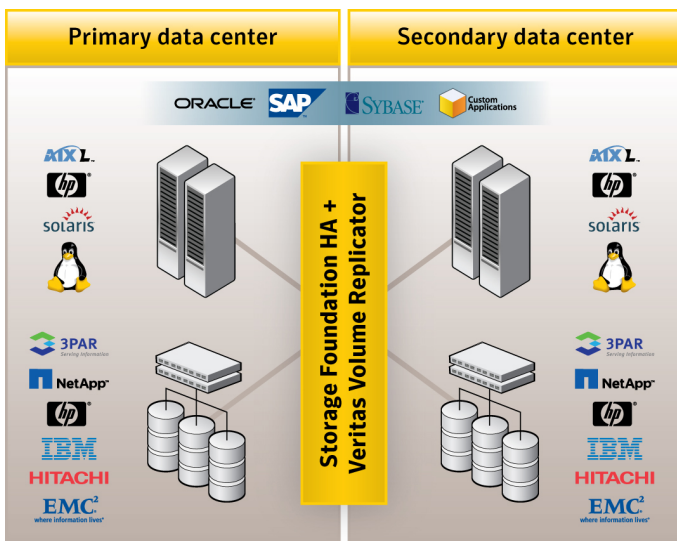


Figure 2. Veritas Volume Replicator is a proven replication solution for heterogeneous hardware environments allowing large enterprises to perform complex data center migrations or hardware refreshes while keeping applications online and optimizing overall costs.

Storage-independent replication

Unlike proprietary inflexible storage hardware replication

approaches, the Volume Replicator option offers customers greater flexibility to choose any mix of SAN based storage architectures, including thin storage and replicate data over existing IP networks allowing customers to lower the cost of storage at the DR location, which can result in significant savings. Volume Replicator enables replication between any major storage hardware platforms, eliminating vendor-specific storage limitations and allowing organizations to choose appropriate storage investments based on application priority, not storage compatibility. Storage tiering is a good example of this.

Cross-platform data migration

Volume Replicator offers simplified cross-platform data migration, enabling automated, transparent, online migration of data between heterogeneous server architectures (for example, Solaris to AIX). Whether for permanent migration to a new environment, or for the operational convenience of “off-host” processing, the ability to move data between computing platforms of different types increases the flexibility of enterprise IT operations significantly. Volume Replicator coupled with Storage Foundation Portable Data Container technology reduces the time and resources required to migrate data between unlike platforms.

Volume Replicator is also an extremely cost-effective solution to manage the risks and complexity of a data center migration and dramatically minimize application downtime. The prospect of data center migration can be overwhelming, considering the incompatibilities between storage systems and server technologies and the demand for around-the-clock availability. Using Volume Replicator, customers can keep applications online while data is

automatically migrated to a brand new site. Volume Replicator is a proven replication solution for heterogeneous hardware environments allowing large enterprises to perform complex data center migrations or hardware refreshes while keeping applications online and optimizing overall costs.

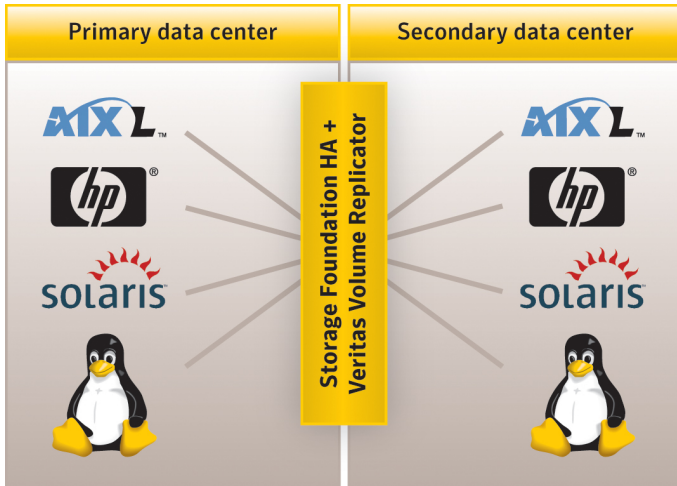


Figure 3. Veritas Volume Replicator offers simplified cross-platform data migration solution, enabling automated, transparent, online migration of data between heterogeneous server architectures (for example, Solaris to AIX).

Efficient use of bandwidth

Volume Replicator includes controls to reduce the impact that replication can have on scarce network resources. Through efficient volume-level replication based on actual application writes, Volume Replicator keeps WAN traffic to a minimum by replicating only the data that actually changes. Volume Replicator increases existing bandwidth efficiencies through asynchronous replication with robust logging capabilities, allowing organizations to model bandwidth requirements based on average application activity rather than peak activity. Bandwidth efficiencies include differential-based resynchronization to reduce the

time and bandwidth required to migrate back to a primary site following a disaster. For the most critical environments, Volume Replicator also includes bandwidth throttling capabilities on a per-application basis to reduce application contention for limited network resources. This ensures that critical applications have necessary network resources event in a bandwidth-constrained environment.

Thick to thin migration

Volume Replicator automatically reclaims all unused storage when using replication to migrate online from thick to thin storage. SmartMove for Volume Replicator leverages the host file system knowledge of used and unused blocks to streamline the amount of resources spent during volume replication and copy only used blocks to thin storage. By replicating only the used blocks, SmartMove for Volume Replicator also significantly reduces CPU, bandwidth and storage needs for the initial synchronization operation.

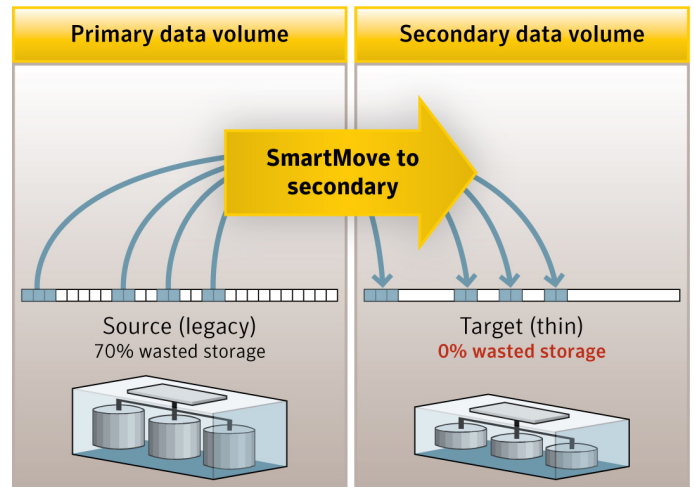


Figure 4. Using host file system knowledge, SmartMove for Volume Replicator reclaims storage during migration from thick to thin, all online and completely transparent to the user.

Centralized management and reporting

For organizations that require the replication of a large number of critical applications, Symantec provides centralized management of all replication instances to ensure that replication manageability scales with data center environments. Leveraging Veritas Storage Foundation Manager, Volume Replicator can be configured, monitored, and managed across multiple data sets and multiple operating systems through a single interface. This capability reduces the time required for initial replication configuration and deployment and improves efficiencies of ongoing management of a large number of replicated applications.

Data and database consistency protection

Through the use of persistent disk-based replication logs, Volume Replicator maintains data consistency between primary and secondary data sets in synchronous and asynchronous modes of replication. By maintaining write-order fidelity, Volume Replicator ensures consistent restarts of critical applications and databases in virtually any operating environment. Tightly integrated with the database functionality of Veritas Storage Foundation, Volume Replicator maintains consistency of Oracle®, Oracle® RAC, IBM DB2®, Sybase®, Microsoft SQL Server®, Microsoft® Exchange, and other enterprise database management systems throughout replication. Volume Replicator even protects data consistency during temporary or extended network outages, which is an absolute requirement for long-distance replication over wide area networks. With uninterrupted consistency protection, organizations can have confidence that

replicated data sets will provide the high levels of business continuity required for critical operating environments.

Integration with Dynamic Storage Tiering

Organizations can employ tiered storage strategies replicating data from a high-end production storage device to a mid-range storage device at a recovery location where performance is less critical. Extending tiered storage capabilities, Volume Replicator even allows organizations to leverage the Dynamic Storage Tiering feature of Storage Foundation, enabling replicated data sets for the same application to be housed on multiple storage tiers.

Automated disaster recovery

The full integration of Volume Replicator and Veritas Cluster Server provides the most powerful disaster recovery automation available for data center applications. This solution enables organizations to monitor all applications and associated replication jobs in a multisite framework as well as automate the process of failover/failback between sites. In the event of a failure at any of the monitored sites, disaster recovery software will automatically alert administrators, control the shift of replication roles to the secondary site, mount data volumes, restart critical applications, and redirect client traffic, drastically reducing total recovery time for maximum business continuity. In addition to automated recovery, Cluster Server and Volume Replicator offer the non-invasive disaster recovery Fire Drill feature that enables disaster recovery testing without ever bringing primary production systems offline, allowing organizations to test disaster recovery more frequently and completely than ever before.

Additional Product Highlights

- **Replicate over IPv6 links**—Offers flexibility to run replication in mixed environments. A single Volume Replicator host can have IPv4 links as well as IPv6 links.
- **Integrated snapshots**—Using in-band-control messaging, initiates remote snapshots based on local replication controls.
- **Replication of database systems**—Supports database management systems such as Oracle, DB2, Sybase, Microsoft SQL Server, and Microsoft Exchange.
- **Replication of Oracle RAC**—Supports replication of shared storage resources in conjunction with Oracle RAC and Cluster File System implementations.
- **Simple configuration**—Enables easy setup of synchronous and asynchronous replication, including synchronous-override mode for online mode changes.

Related products

Veritas Storage Foundation—Based on the industry-leading Veritas Volume Manager and Veritas File System, it provides a standard set of integrated tools to centrally manage explosive data growth, maximize storage hardware investments, provide data protection, and adapt to changing business requirements.

Veritas Cluster Server—Monitors the status of applications and automatically moves them to another server in the event of planned or unplanned outages. Veritas Cluster Server includes a Centralized Management Console for site-to-site application monitoring and management, Global Cluster Option for automated remote application failover, and Fire Drill for non-invasive disaster recovery testing.

Supported operating systems

- IBM AIX®
- HP-UX®
- Sun Solaris®
- Red Hat Linux®
- Oracle Enterprise Linux®
- SUSE Linux®
- Microsoft Windows®

More information

Visit our website

<http://enterprise.symantec.com>

To speak with a Product Specialist

Call toll-free 1 (800) 745 6054

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

About Symantec

Symantec is a global leader in providing security, storage and systems management solutions to help consumers and organizations secure and manage their information-driven world. Our software and services protect against more risks at more points, more completely and efficiently, enabling confidence wherever information is used or stored.

Symantec World Headquarters

350 Ellis St.

Mountain View, CA 94043 USA

+1 (650) 527 8000

1 (800) 721 3934

www.symantec.com

Confidence in a connected world.

