

Cluster File System in Veritas InfoScale™



High-performance file system for business-critical applications in physical, virtual or cloud deployments

Overview

Cluster File System technology (included within various Veritas InfoScale™ offerings) reduces complexity and costs in a highly available environment, delivering faster recovery for business-critical applications.

Compared to traditional single-instance file system implementations, Cluster File System significantly reduces application downtime and improves data access. Because multiple servers share the same storage resources, the length of time it takes to bring storage online is drastically reduced when an application fails. Its high-performance file system spans heterogeneous servers to provide concurrent access to data, and enables faster failover of applications and databases, such as Oracle®, SAP® or Tibco.

Key features

- **Flexible Storage Sharing (FSS)**—Combine shared and direct-attached storage (DAS) on Linux, AIX and Oracle Solaris SPARC platforms. Experience near-local read and write performance to and from remote disks.
- **SmartIO**—Granular and intelligent application-level caching. Enable storage quality of service (QoS) for mission-critical applications on Linux, AIX, Oracle Solaris SPARC and VMware.
- **Improves application performance and scalability**—Get parallel processing and add servers dynamically to improve service levels and performance. Cluster File System scales performance linearly by up to 64 servers.
- **Reduces application downtime**—Since data is available to all servers at all times, failover is simply limited to the time it takes the application to restart. For Oracle RAC, get sub-minute recovery at a fraction of the cost and complexity. Get higher availability for Linux and Unix® environments.
- **Reduces costs with storage consolidation**—Mix and match heterogeneous storage resources, enabling storage consolidation.

- **Perform online storage migrations**—Move application data nondisruptively to support changing business and operational requirements, regardless of storage or platform.

Flexible Storage Sharing (FSS)

Simplify SSD/Flash adoption and realize the performance benefits without compromising on high availability and flexibility. With FSS, users can scale out servers using DAS, and can experience near-local read and write performance to and from remote disks. Logical volumes can be created using both types of storage, creating a common storage namespace. Logical volumes using network-shared storage provide data redundancy, high availability, and disaster recovery capabilities transparently to file systems and applications, without requiring physically shared storage. FSS use cases include support for current Cluster File System use cases, off-host processing, DAS SSD benefits leveraged with existing Cluster File System features, FSS with file system-level caching, and campus cluster configuration.

SmartIO

SmartIO enables granular and intelligent caching at the application level. With SmartIO, application architects, server administrators, and database administrators can move reads and writes inside the server and enable storage QoS for mission-critical applications. In lab tests replicating real-world use cases on Linux, SmartIO delivers up to 400 percent performance improvement, while reducing storage costs by 80 percent.

Improve application and database performance and scalability

An increasing number of applications are achieving scale by running in parallel instances on multiple servers. Some applications of this type operate on data partitions, but more frequently, all instances must operate on a common data set.

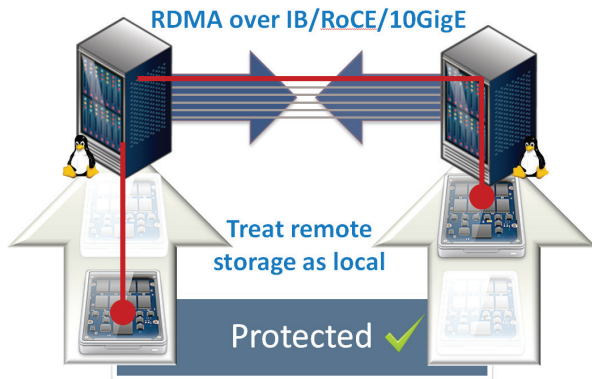


Figure 1. Flexible Storage Sharing (FSS) delivers performance without compromising on flexibility

Because Cluster File System can be mounted on up to 64 cluster nodes simultaneously, it is an ideal solution for application “scale out.” Cluster File System provides a scale-out approach to application availability and delivers optimum performance and data integrity. A critical enabling technology is its load-balancing architecture that distributes file ownership across all nodes in the cluster for near-linear performance scalability. Cluster File System is designed for reliable and high-performance file data access across a broad spectrum of enterprise applications, including media applications and unstructured data.

Reduces application downtime

Cluster File System provides a comprehensive failover solution that minimizes both planned and unplanned downtime across all nodes in the cluster. In the event of an application or node failure, the application is dynamically migrated to an available node within the cluster, without interruption. As all nodes in the cluster have visibility to a shared storage pool, there is no need to manually mount storage to unique nodes in the event of application or node failures.

With Cluster File System, the process is quite simple: detect the failure, start the application on the new server, and reconnect the clients. Failover time is dramatically reduced.

Reduces cost with storage consolidation

Consolidating storage into a single accessible pool helps reduce storage costs and also enables standardization of systems and

configurations. Configurations can be cloned easily to increase reliability and repeatability. This standardization reduces administrative complexity and streamlines the provisioning of new systems. With the dynamic storage tiering capabilities of Veritas InfoScale, older data can be moved to less expensive storage devices transparently, without downtime. Policies can be created that will dynamically move files based on date created, last time accessed, owner, size, or name.

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Veritas World Headquarters

500 East Middlefield Road
Mountain View, CA 94043
+1 (650) 933 1000
www.veritas.com