

VMware Storage VMotion

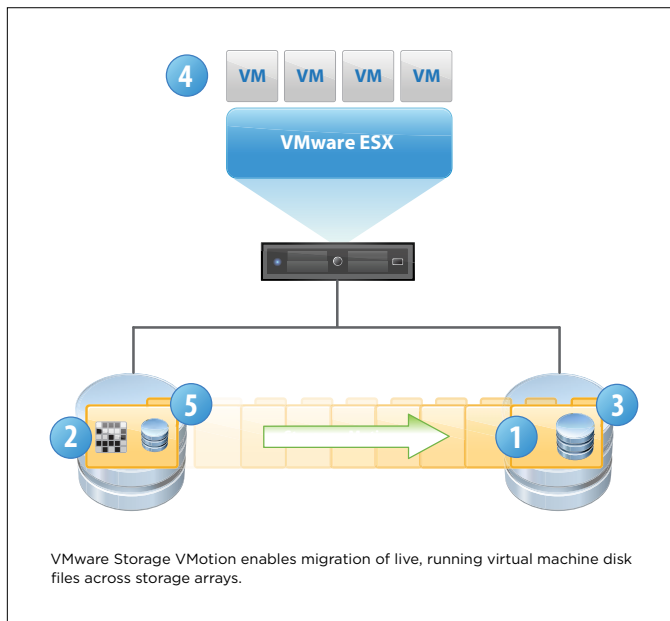
Non-Disruptive Live Migration for Virtual Machine Storage Disk Files

AT A GLANCE

VMware® Storage VMotion™ enables live migration for running virtual machine disk files from one storage location to another with no downtime or service disruption.

BENEFITS

- Simplify storage array migrations and storage upgrades.
- Dynamically optimize storage I/O performance.
- Efficiently utilize storage and manage capacity.



What is VMware Storage VMotion?

VMware Storage VMotion is a component of VMware vSphere™ that provides an intuitive interface for live migration of virtual machine disk files within and across storage arrays with no downtime or disruption in service. Storage VMotion relocates virtual machine disk files from one shared storage location to another shared storage location with zero downtime, continuous service availability and complete transaction integrity. Storage VMotion enables organizations to perform proactive storage migrations, simplify array migrations, improve virtual machine storage performance and free up valuable storage capacity. Storage VMotion is fully integrated with VMware vCenter Server to provide easy migration and monitoring.

How is VMware Storage VMotion Used in the Enterprise?

Customers use VMware Storage VMotion to:

• Simplify array migrations and storage upgrades.

The traditional process of moving data to new storage is cumbersome, time-consuming and disruptive. With Storage VMotion, IT organizations can accelerate migrations while minimizing or eliminating associated service disruptions, making it easier, faster and more cost-effective to embrace new storage platforms and file formats, take advantage of flexible leasing models, retire older, hard-to-manage storage arrays and to conduct storage upgrades and migrations based on usage and priority policies. Storage VMotion works with any operating system and storage hardware platform supported by VMware ESX™, enabling customers to use a heterogeneous mix of datastores and file formats.

• Dynamically optimize storage I/O performance.

Optimizing storage I/O performance often requires reconfiguration and reallocation of storage, which can be a highly disruptive process for both administrators and users and often requires scheduling downtime. With Storage VMotion, IT administrators can move virtual machine disk files to alternative LUNs that are properly configured to deliver optimal performance without the need for scheduled downtime, eliminating the time and cost associated with traditional methods.

• Efficiently manage storage capacity.

Increasing or decreasing storage allocation requires multiple manual steps, including coordination between groups, scheduling downtime and adding additional storage. This is then followed by a lengthy migration of virtual machine disk files to the new datastore, resulting in significant service

downtime. Storage VMotion improves this process by enabling administrators to take advantage of newly allocated storage in a non-disruptive manner. Storage VMotion can also be used as a storage tiering tool by moving data to different types of storage platforms based on the data value, performance requirements and storage costs.

How Does VMware Storage VMotion Work?

VMware Storage VMotion allows virtual machine storage disks to be relocated to different datastore locations with no downtime, while being completely transparent to the virtual machine or the end user.

Before moving a virtual machine's disk file, Storage VMotion moves the "home directory" of the virtual machine to the new location. The home directory contains meta data about the virtual machine (configuration, swap and log files). After relocating the home directory, Storage VMotion copies the contents of the entire virtual machine storage disk file to the destination storage host, leveraging "changed block tracking" to maintain data integrity during the migration process. Next, the software queries the changed block tracking module to determine what regions of the disk were written to during the first iteration, and then performs a second iteration of copy, where those regions that were changed during the first iteration copy (there can be several more iterations).

Once the process is complete, the virtual machine is quickly suspended and resumed so that it can begin using the virtual machine home directory and disk file on the destination datastore location. Before VMware ESX allows the virtual machine to start running again, the final changed regions of the source disk are copied over to the destination and the source home and disks are removed.

This approach guarantees complete transactional integrity and is fast enough to be unnoticeable to the end user.

Key Features of VMware Storage VMotion

Complete transaction integrity.

No interruption or downtime for users and applications during virtual machine storage disk migrations.

Interoperability.

Storage VMotion can migrate storage disk files for virtual machines running any operating system across any type of hardware and storage supported by VMware ESX.

Support for multiple storage types.

Implement live migration of virtual machine disk files between and among Fibre Channel, iSCSI, and NAS storage systems.

Migrate thick-provisioned virtual disks to thin-provisioned http://www.vmware.com/go/thin_provisioning.

Convert an existing thick format to a thin format with zero application downtime.

Find Out More

VMware Storage VMotion requires VMware ESX and VMware vCenter™ Server. For more information, visit the VMware vSphere Web page at <http://www.vmware.com/go/vsphere>. For detailed support, compatibility and interoperability please refer to the VMware vSphere™ compatibility guides and release notes.

For information or to purchase VMware products, call 1-877-4VMWARE (outside of North America dial +1-650-427-5000), visit www.vmware.com/products, or search online for an authorized reseller.

