

Veritas™ Dynamic Multi-Pathing for VMware®



Storage path management for VMware environments

Overview

The virtualization of data centers places increasing demands on storage, particularly on storage performance and resilience. Unreliable I/O connectivity and poor performance are roadblocks to virtualizing mission-critical applications. When data paths fail, restoration is complicated and a lack of visibility into the storage area network (SAN) can prove costly. Veritas™ Dynamic Multi-Pathing for VMware® (a technology available within various Veritas InfoScale™ offerings) provides the availability and resiliency needed to confidently virtualize mission-critical applications. On the Linux® platform, it is also the centralized management tool for SmartPools, a shared cache area for guests running the Veritas™ SmartIO (caching) feature.

Storage I/O performance and availability for VMware ESX® attached storage improves through intelligent algorithms and load balancing. The technology enhances administrators' productivity, and bridges storage and server administrator communications.

Dynamic Multi-Pathing for VMware integrates into VMware vCenter™ to provide administrative and monitoring capability within the VMware environment, in addition to offering command line management and configuration. It provides multi-pathing within the ESX hypervisor through the VMware Pluggable Storage Architecture (PSA) framework.

Highlights

- **Data availability**—Provides storage path failure protection with fast failover
- **Optimizes I/O performance**—Spreads I/O across storage paths for maximum performance
- **Reduces complexity and increases efficiency**—Centralizes storage path management across storage hardware
- **Storage choice**—Works with most enterprise storage hardware to enable choice of the right storage at the right price for VMware projects
- **Global visibility**—Provides visibility for more informed storage decisions and reduces costly configuration errors
- **Granular I/O statistics**—I/O statistics for Host Bus Adapter (HBA), array port, array controller, and virtual machine disks (VMDKs)
- **vCenter Integration**—Configuration, management and visualization integrates directly within the vSphere Client, vSphere Web Client and command line interfaces for administrative flexibility
- **Complements Veritas SmartIO technology**—Provides the ability on Linux to pool server-side SSD/Flash into a cache pool (SmartPool) to enable vMotion of guests using SmartIO feature

Data Availability

If a path to a multi-path storage subsystem fails, Dynamic Multi-Pathing for VMware automatically re-routes I/O requests to an alternate path. When a failed path becomes healthy, the original path configuration is restored automatically, without administrator intervention. The technology also proactively determines if a storage path is failing before I/O is sent down the path, providing maximum availability and performance.

Optimized I/O performance

Dynamic Multi-Pathing for VMware enhances I/O performance by distributing requests across available paths according to pre-defined load balancing policies. Administrators can select between multiple policies depending on the characteristics of the I/O workload, SAN layout, and performance needs. They may also apply configuration and tuning templates to ensure consistency across multiple ESX servers.

Reduced complexity and increased efficiency

The lack of visibility and reporting on physical and virtual storage and storage performance can lead to confusion between application, server and storage teams. Dynamic Multi-Pathing for VMware allows deeper visibility and reporting for both the storage and server administrator. This enables administrators to make better decisions on storage placement of virtual machine guests, for example, ensuring the storage tier is appropriate for the virtual machine workload. It solves key challenges around device naming by using device specific identifiers in the device names, making them more meaningful and consistent, reducing errors, and enabling more efficient troubleshooting. Administrators may also employ their own naming standards to storage and LUNs for easy identification. Dynamic Multi-Pathing for VMware can be managed through vCenter for efficient operations and path monitoring. Administrators can continue to use the VMware Client or VMware Web Client interfaces to gain visibility into the performance of the storage subsystem.

Storage choice

By fully virtualizing connectivity from the host to storage, Dynamic Multi-Pathing for VMware increases data center agility and flexibility in choosing a storage vendor. A storage administrator benefits by being able to choose the right storage for their needs, knowing that the multi-pathing driver in the ESX hypervisor either already supports that storage hardware or can easily be enhanced to support it.

SmartIO (caching) support

The technology can be deployed to create SmartPools. A SmartPool enables the pooling of locally attached SSD/Flash devices into a pool from which SmartDisks are created to assign to a guest running Veritas SmartIO. The SmartPool functionality enables guests using SmartIO to vMotion to other ESX servers where a separate SmartPool is defined. The contents of the SmartIO cache are discarded upon a vMotion event, and are re-populated on the destination server's SmartPool without user intervention.

Supported systems

- VMware ESX® 5.5
- VMware ESX® 6.0

For a complete list of supported systems please check the Services and Operations Readiness Tool at <https://sort.veritas.com>

More Information

Visit our website
www.veritas.com/infoscale

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Veritas Technologies LLC enables organizations to harness the power of their information, with solutions designed to serve the world's largest and most complex heterogeneous environments. Veritas works with 86 percent of Fortune 500 companies today, improving data availability and revealing insights to drive competitive advantage.

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