

SOLUTION BRIEF

FalconStor Storage Virtualization: The Optimal VMware Infrastructure Environment

Highlights

Designed to minimize infrastructure costs while adding enterprise-class data services:

- > Create a flexible shared storage pool from any external or internal disk resources
- > Enable advanced VMware features such as VMotion, High Availability, and Distributed Resource Scheduler
- > Integration with VMware snapshot technology and hosted applications for 100% data integrity
- > Thin Replication reduces costs by minimizing WAN bandwidth usage
- > Qualified for VMware Site Recovery Manager (SRM)

VMware server virtualization technology has been extremely beneficial to small and large organizations across the globe, helping IT managers increase efficiency and reduce costs. By enabling individual physical servers to host multiple application instances through hardware abstraction, VMware solutions create consolidated server environments that optimize capacity utilization, reduce overhead, and streamline application development and testing. In addition, it facilitates cost-effective disaster recovery (DR) by reducing the number of physical machines that must be protected.

However, while VMware solutions offer these significant benefits, they cannot revolutionize your infrastructure on their own. Having a flexible, consolidated server infrastructure is a dramatic improvement – but one that is stifled by a rigid storage infrastructure. For example, VMware can help you distribute virtual servers dynamically across a pool of physical servers, but if your data is held captive behind silos of direct attached storage (DAS), you must still physically copy data to make it available at the new location. Furthermore, traditional backup methods constrain your server, network, and storage resources because of the increased application density on consolidated physical servers. This significantly impacts the performance of your VMware environment. In addition, without shared storage, advanced VMware features such as High Availability, VMotion, and Distributed Resource Scheduler are unavailable.

Using virtualization, you can consolidate servers to reduce power consumption, management complexity, and hardware acquisition costs – but only with consolidated, virtualized storage can you take full advantage of this agile environment. Why would you build a dynamic and flexible server infrastructure, where operating systems and applications can easily move across your environment, on top of a static, inflexible storage environment where data movement is restricted?

A storage area network (SAN) can help, and many organizations implement a SAN to support their VMware environments. But most SAN solutions that provide high-level data services are expensive. You end up saving money using virtual servers, but spending those savings on costly SANs to support them. Also, many SAN solutions are not application-aware, which reduces the effectiveness of data protection processes. For example, snapshots taken for disaster recovery (DR) are only crash-consistent, making recovery complicated and time-consuming.

FalconStor: Storage flexibility for VMware Infrastructure

FalconStor Software brings higher levels of data services to commodity storage hardware. Our solutions provide the elasticity on the storage side that VMware provides on the server side. Your storage functionality improves, and you can apply homogeneous data services across heterogeneous storage platforms.

FalconStor® Network Storage Server (NSS) is an enterprise-class data protection and virtual SAN appliance that eliminates all barriers in a VMware deployment. FalconStor NSS turns internal disk into a shareable storage pool without the usual external storage array, SAN switches, and expensive host bus adapters (HBAs). It is a cost-effective solution that provides highly available storage and data services for your VMware infrastructure.

In addition, a FalconStor storage infrastructure is aware of operating systems and applications on each virtual server. The FalconStor Application Snapshot Director (ASD) for VMware enhances VMware's own snapshot capabilities with the intelligence required to comprehend, communicate with, and capture application-specific data. Accurate, transaction-consistent snapshots are immediately usable in the event of an outage, without downtime or a lengthy repair process. The result is instant recovery and immediate return to productivity.

System- and application-specific agents also place applications in hot backup mode, minimizing backup time as well as network bandwidth and storage capacity. FalconStor provides the intelligence that enables you to optimize services according to the needs of each virtual machine or application – so that you can optimize your cost structure as well.

To ensure business continuity, you must have adequate DR plans in place. But bandwidth is costly; and the more data organizations retain, the more WAN capacity they require. Unfortunately, because of budget constraints, many applications are not replicated – they are simply left unprotected to avoid costly WAN transfers. FalconStor solutions include patented MicroScan™ technology for Thin Replication designed to minimize bandwidth needs during data transfer. With FalconStor technology, only truly unique data blocks are transferred, making WAN utilization rates up to 64 times more efficient than most array-based replication solutions.

Data can be replicated between any two disk systems and across Fibre Channel (FC) or iSCSI connections. You are not limited to particular storage types or network protocols. Similarly, FalconStor DR solutions are not only qualified for VMware Site Recovery Manager (SRM); they also include a storage replication adapter that allows any disk array to be covered by SRM, even if that array is not directly certified for use with SRM. This openness lets you leverage your current resources, extending their shelf life and value.

The bottom line: Virtual storage reduces VMware Infrastructure costs

Let's face it: reducing costs is one of IT's constant challenges. IT managers implement VMware solutions to consolidate operations and reduce footprint, distribute resources in a more balanced manner, and improve utilization rates. This infrastructure deployment can help you to save on management costs, power consumption, and downtime while delivering high availability, flexibility, and complete data protection. However, these benefits are restricted – as are the cost savings – if you retain an inflexible storage environment.

FalconStor solutions were built to fully enable the virtual storage environment that VMware deployments need to function at peak performance, and to dramatically lower your total cost of ownership. FalconStor technology:

- > Ensures that all types of disk are available and fully protected in your VMware environment
- > Raises the data services of commodity storage to the enterprise level
- > Minimizes replication bandwidth needs
- > Delivers transaction-consistent snapshots that reduce downtime and speed up recovery

These customer-focused features were designed to deliver key business benefits – fully protected, highly available data, fast return on investment (ROI), low cost, and ease of management. VMware deployments can deliver all the promises of server virtualization with a virtual storage solution from FalconStor.

About FalconStor

FalconStor Software, Inc. (NASDAQ: FALC), the premier provider of TOTALLY Open™ Data Protection solutions, delivers the most comprehensive suite of products for data protection and storage virtualization. Based on the award-winning IPStor® platform, products include the industry-leading Virtual Tape Library (VTL) with deduplication, Continuous Data Protector (CDP), and Network Storage Server (NSS), enabled with WAN-optimized replication for disaster recovery and remote office protection. Our solutions are available from major OEMs and solution providers and are deployed by thousands of customers worldwide, from small businesses to Fortune 1000 enterprises.

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