

FalconStor Enables Virtual SANs for VMware

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Abstract: FalconStor has packaged its storage virtualization software as a VMware virtual appliance. By transforming direct-attached storage into an iSCSI virtual SAN, FalconStor is not only enabling end-users' server virtualization environments to take advantage of VMware business continuity and high availability features, but is also creating a cost-effective server and storage virtualization environment likely to influence VMware sales.

Overview

At VMworld this week, FalconStor announced the availability of its Network Storage Server (NSS) solution, packaged as a virtual appliance for VMware ESX and ESXi. FalconStor NSS is a software storage solution that offers storage virtualization, provisioning, management, and data protection. The FalconStor NSS Virtual Appliance transforms existing direct-attached disk storage into an iSCSI virtual SAN appliance. The FalconStor NSS Virtual Appliance has been validated by the VMware Ready Virtual Appliance program, assuring end-users that it is fully compatible with and supported by VMware. By delivering FalconStor NSS as a virtual appliance, the company:

- Enables VMware environments that do not currently leverage networked storage to take advantage of VMware high availability and business continuity features, such as VMotion, VMwareHA, Site Recovery Manager, and VMware Consolidated Backup (VCB)—all of which are dependent on a shared storage infrastructure.
- Enhances data protection for the environment with its mirroring, replication, and snapshot capabilities.

Analysis

In taking advantage of the virtual appliance model, FalconStor is not only simplifying the deployment of its technology, but is creating an easier way for end-users to achieve affordable server AND storage consolidation.

Networked storage is desirable in server virtualization environments due to the net increase in storage capacity requirements brought about by server virtualization initiatives. Server virtualization has increased the amount of data and files that would normally be kept on a single physical server and often increases the total number of operational virtual machines. End-users also realize that many of the key benefits of server virtualization—such as the mobility of virtual machines between physical servers for load balancing, high availability, and maximum utilization of resources—require an underlying networked storage infrastructure.

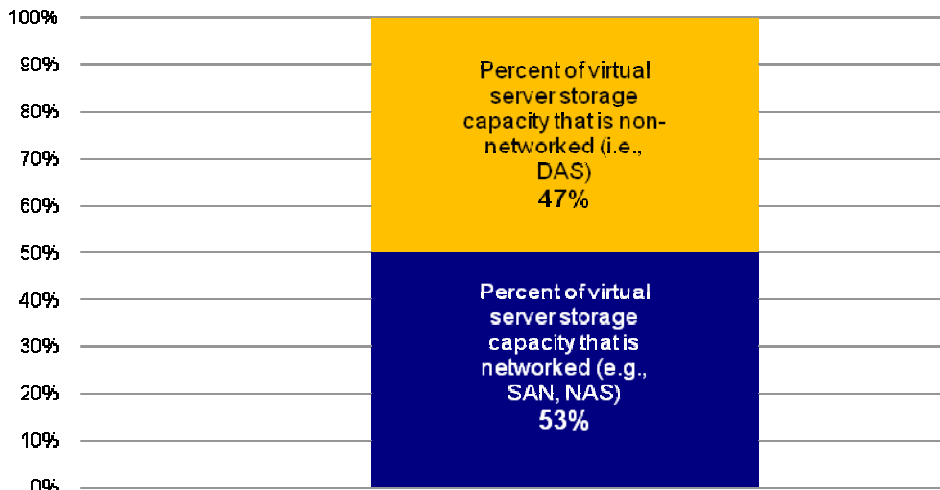
However, not all organizations have implemented networked storage. Oftentimes, SAN infrastructure costs prohibit adoption. Additionally, some sites may lack the IT expertise to implement and maintain a networked storage environment. According to ESG research, two such market segments where networked storage is underutilized are small and medium-sized business (SMB) and remote and branch offices (ROBOs).

As shown in Figure 1, SMB end-users estimate that roughly 53% of their storage capacity supporting virtual servers is currently networked and 47% is non-networked.¹ With over three-fourths of VMware's customer base classified as SMB, this is clearly a market that would benefit from shared storage.

¹ Source: ESG Research Report: *The Impact of Server Virtualization on Storage*, December 2007.

FIGURE 1. NETWORKED VS. NON-NETWORKED STORAGE IN SERVER VIRTUALIZATION ENVIRONMENTS

Approximately what percentage of the storage capacity associated with your organization's virtual server environment is networked (e.g., SAN or NAS) as opposed to non-networked (i.e., DAS)? (SMB [less than 1000 employees], N = 114)

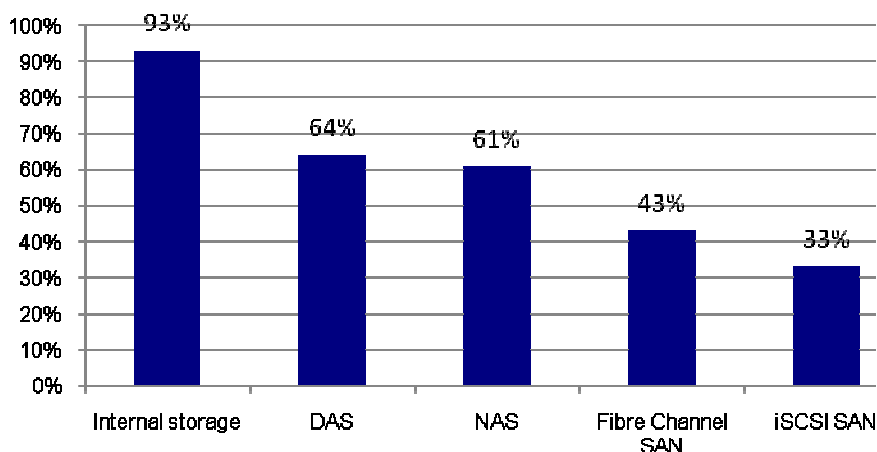


Source: Enterprise Strategy Group, 2007

ROBOs share characteristics of SMBs in that, depending on their size, they lack the budget and staffing resources to support networked storage. Figure 2 shows the types of disk storage currently in use in ROBOs, with non-networked internal and direct-attached storage (DAS) dominating.²

FIGURE 2. STORAGE TYPES AT REMOTE AND BRANCH OFFICE LOCATIONS

Type(s) of disk storage systems currently in use at remote and branch offices (N=89)



Source: Enterprise Strategy Group, 2007

FalconStor doesn't just virtualize storage and provision it to virtual machines; it provides advanced data protection features, including snapshots for no impact backup and replication software for disaster recovery or backup consolidation at a central site. FalconStor Application Snapshot Director (ASD) for VMware, running in the ESX

² Source: ESG Research Report: *Branch Office Optimization*, January 2007.

server Service Console, coordinates the snapshot process between VMware and the FalconStor application-specific snapshot agents installed in virtual machines to ensure transactional integrity of data.

For a high availability configuration, two NSS Virtual Appliance systems can be configured for a fully redundant environment. Cross mirroring of data in an active/passive configuration allows for virtual machines on a different physical server to take over should the primary physical server fail.

Taking NSS Virtual Appliance to Market

FalconStor is no stranger to the VMware virtual appliance marketplace, having launched the FalconStor Continuous Data Protector (CDP) Virtual Appliance over a year ago and subsequently introducing its Virtual Tape Library (VTL) Virtual Appliance which includes data de-duplication. The company has successfully leveraged VMware programs and channels to gain adoption of its virtual appliance solutions.

With a growing portfolio of VMware virtual appliance solutions and complementary add-on solutions, FalconStor created attractively-priced virtual appliance bundles to win new customers and engage channel partners in getting the word out. Additionally, the company is offering a free limited-feature version download and a free full-feature trial version download for end-users to test drive.

The Bottom Line

Organizations familiar with the benefits of the high availability and business continuity features of VMware, but stymied to take advantage of them due to the organization's lack of shared storage, will find FalconStor NSS Virtual Appliance a compelling solution to their problem. For a fraction of the acquisition cost of a SAN, SMBs and ROBOs can now implement an affordable storage virtualization solution that enables advanced features in their server virtualization environment.

Server virtualization and storage virtualization often go hand-in-hand. The primary benefits of server virtualization include lower costs, improved resource utilization, non-disruptive upgrades and increased availability. Storage virtualization takes those very same benefits and extends them to the underlying storage domain. Just as using networked storage for virtual machines instead of DAS means that there is no single point of failure at a disk system level that can bring down many virtual machines at once, storage virtualization adds yet another layer of protection against failures— extending full hardware independence from the server domain to the storage domain.

ESG research found that among current server virtualization users, 24% report they have deployed a storage virtualization solution in conjunction with their virtual server environment. An additional 18% of customers plan to implement these types of solutions in the next 12 months.³ FalconStor is not the first to offer storage virtualization; however, it has the advantages of its data protection portfolio, virtual appliance rollout experience, and network of worldwide partners to differentiate its offering.

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³ Source: ESG Research Report: *The Impact of Server Virtualization on Storage*, December 2007.