

Symantec Solves Storage Management and Availability for Windows Servers

Announces Veritas Storage Foundation High Availability for Windows v5.0

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Abstract: Symantec announced its latest version of Storage Foundation High Availability for Windows. This new release is even more tightly aligned with Microsoft and other Symantec products. It is also packed with new features. Storage Foundation HA for Windows is another milestone in helping organizations standardize on rich technology solutions to more efficiently manage data centers

Overview

Symantec announced Veritas Storage Foundation High Availability for Windows version 5.0 (which includes Veritas Storage Foundation and Veritas Cluster Server) on January 16, 2007. This follows their previous announcements from the summer of 2006 of Storage Foundation High Availability for Unix and Linux. Storage Foundation High Availability for Windows 5.0 (SFHA-W) is tightly aligned with Microsoft's next release (codenamed Longhorn) and is already certified for FC and iSCSI MPIO. This new version makes demonstrable improvements in usability, performance, heterogeneity, high availability and disaster recovery. The usability enhancements will appeal to not only the large enterprises but also to customers in the Mid-market and especially those converting to SAN environments (FC & iSCSI). In fact, recent ESG research¹ on the iSCSI market indicates that 70% of the servers running in production iSCSI SANs are Windows-based. Leveraging SFHA-W can make that transition easier, delivering better performance and providing higher availability and recovery capabilities.

Customers will be pleased to learn that the SFHA-W release will also be accompanied by Veritas Storage Foundation Basic for Windows, which will be available for free. This is a fully featured version designed for use in edge environments. This follows the very successful Storage Foundation Basic versions for Linux and Unix.

Analysis

This latest release is focused on delivering improvements in four main areas: Usability, Performance, High Availability/Disaster Recovery and Heterogeneity. Within each segment Symantec has done a lot of work to improve the product and to ensure that it is aligned with Microsoft's major initiatives.

Usability:

Products that are easier to use and help to reduce complicated time consuming tasks through automation are always welcomed. The following bullets outline the improvements to SFHA-W.

- **Configuration Wizards:** SFHA-W has new, drag-and-drop wizards that simplify the process of creating, moving and managing storage. Migrating data from internal storage to SAN based storage is reduced to a few simple mouse clicks. There are wizards for High Availability, Disaster Recovery, Fire Drill (DR testing) and Quick Recovery. Simplifying these procedures will not only save time, but will also help to reduce human error.
- **Centralized management:** SFHA-W will integrate with Storage Foundation Management Server (SFMS) This will allow an end-user to gain visibility into and manage all of the servers utilizing SFHA-W, regardless of geographic location, from a single pane of glass. This easily scales to support 1000s of servers.

¹ ESG Research Report: *iSCSI Enters the Mainstream*, Dec, 06.

Additionally, SFMS integrates with more than just Windows. It will also integrate with SFHA for Unix and Linux. To make this more attractive, Symantec will provide the SFMS at no charge, making the decision to implement it a very easy one. I believe they call these no-brainers! (Note: SFMS will be available at no charge, but its windows compatible release date is expected to be in Q2.) Additionally, if your server teams cover more than one discipline (Unix, Linux, Windows), the interfaces for each server type are standardized and training will be minimal. Even if your server teams don't have cross server responsibilities, customers can leverage this feature to cross train groups to enhance DR capabilities (eg., Unix server teams recovering windows environments).

- **Storage management for edge environments:** SF Basic for Windows is also now available - for again, no charge. For those Windows servers with 2 sockets or less and 4 volumes or less, Symantec will let you download a *free, fully functional* version that includes Dynamic Multi-pathing, from their website at www.symantec.com/sfbasic. This is really important for those customers already using SFHA-W 5.0 or a previous version (4.x) in the data center. The ability to extend that capability to servers in an edge tier where they normally might not invest in management software is very powerful. Additionally, SF Basic for Windows will integrate with SFMS, allowing centralized management of all the servers from core to edge (Note: there is a nominal maintenance fee associated with SF Basic for Windows that varies depending on the level of support required. Upgrading is accomplished by purchasing a license key. There is no need to uninstall or install additional software.)
- **Manage iSCSI environments:** The entire initiator and target environments including iSNS servers can now be managed with Storage Foundation for Windows (SFW). Customers looking to leverage SFW for iSCSI management will appreciate the ability to see iSCSI and iSNS servers in a single graphical tree structure. This feature will deliver more value as your iSCSI SAN grows larger and more complex.
- **Create, Grow, Shrink or Shred Volumes Dynamically:** Not only can volumes be dynamically grown, but they can also be dynamically shrunk or shredded. The shredded volumes will be zeroed out before being reallocated.
- **Integration with Symantec Live Update and Symantec License Inventory Manager (SLIM):** Live update enables customers to quickly and easily upgrade their Symantec software. SLIM provides customers an accurate view of all their existing Symantec licenses. This is a free tool, but don't worry, it is not used to send information back to Symantec, nor can it be used against you in an audit. So, you might as well take advantage of it.

Performance:

Symantec has a long history of making things perform better, and this release is no exception. Here are the highlights of the SFW performance enhancements.

- **Storage I/O performance can be dramatically increased:** Utilizing a technique Symantec calls Automated Track Aligned Volumes, SFW is able to improve storage I/O performance by as much as 40%. Basically, this technique automatically aligns the storage volume layout across the physical disks so the tracks are the same, eliminating I/O bottlenecks and optimizing access to the data. Better performance on an Exchange server or SQL data base is always a good thing.
- **Fully certified with Microsoft's Multi Path I/O (MPIO) Framework:** Shortly after Microsoft announced its MPIO framework two years ago, Symantec began working on integrating Dynamic Multi Pathing (DMP) with MPIO. Their hard work has paid off as they are the only vendor to be fully certified for both iSCSI and Fibre Channel for MPIO. The fact that they are already certified provides important investment protection for customers buying today, knowing in the future that Microsoft Windows Server releases will require MPIO certification.
- **Application specific algorithms:** A unique side benefit that came from integrating DMP to MPIO and testing with Exchange and SQL is that Symantec has gained an in-depth understanding of these applications and their individual characteristics. The result is a set of application specific algorithms for I/O load balancing and failover. Symantec goes one step further and provides tuning guides and best practice

recommendations for customers to make sure customers can get the maximum performance from their windows applications.

- **Accelerate the read and write times:** VxCache is a feature SFW uses to access memory in the server to provide a cache to increase disk I/O performance. This feature can greatly accelerate read times in both 32 and 64 bit environments.

High Availability and Disaster Recovery:

When your Exchange server goes down, your business grinds to a halt. Providing high availability solutions and the fastest possible recovery time is imperative for any mission critical application. SFHA-W has new features and has been tightly integrated with other Symantec products to ensure high availability and rapid disaster recovery solutions. Below are some of the highlights.

- **Single tool for any disaster recovery environment:** Storage Foundation High Availability for Windows 5.0 will work in any business continuity or disaster recovery scenario, local, metro or long distance. It also integrates with the newly added capabilities of Cluster Management Console, which is free and part of Veritas Cluster Server (VCS) and Veritas Volume Replicator (VVR). VVR handles synchronous and/or asynchronous data replication over any distance. This flexibility will be appreciated by those customers just building out or changing their DR strategy. It should also be noted that this integration includes support for VVR's bunker replication that utilizes a three site DR strategy targeted to recover out of region with zero data loss and that also minimizes storage requirements in the bunker site.
- **Protects physical and virtual servers:** Because SFHA-W is tightly integrated with VCS, it will be able to coordinate between data and applications running on virtual servers from VMware or Microsoft virtual server. This feature is critical for high availability and disaster recovery environments.
- **Prioritized data selection:** SFHA-W, when used in a local or metro cluster environment, provides the ability to associate storage to specific sites, leveraging a technique they refer to as preferred read plexes. For example, if a server in site A fails and the cluster transitions to a server in site B, the software is intelligent enough to realize performance will be better if it is accessing data in Site B rather than the data in site A. This assumes that the data is synchronously mirrored. Site A then becomes the backup site.
- **Coordinated, simultaneous, multi-site FlashSnap (an option to SFW):** Already integrated with Microsoft VSS and VDI, Symantec ups the ante by providing coordinated full volume snapshots at clustered primary and DR sites - at the same time. We are not aware of anyone else that has this capability and believe this feature would prove to be very useful in maintaining data consistency in the snapshot volumes at multiple sites for any-to-any failover.
- **Conduct failover tests without bringing the production environment down:** Symantec offers a Fire Drill option (free of charge also) that enables you to test your failover capability without having to bring your production environment down. Symantec claims it will not have an impact on production and, while we believe Symantec, ESG recommends that you start by testing this feature during a maintenance window and not on a Monday morning at 9am. After that, we recommend that you test it as often as you can. Too many companies have DR plans that are either never tested or not tested enough and only find out that they don't work in emergency situations.
- **Full coordination with applications and data:** Not only is data mirrored and protected for fast failover but it is also coordinated with application failover. By integrating with VCS, Storage Foundation is aware of the applications and, when recovering, the applications are automatically associated with the volumes and remounted. If you have existing controller-based replication in use, Veritas Cluster Server has agents that can be deployed to provide the same automated recovery.

Heterogeneity:

It seems odd to use the word standardization when talking about heterogeneity, but that is what Symantec has done. They provide a single view over multiple different operating systems and multiple different storage vendors, but all with the same centralized management, view and control

- **Storage Foundation High Availability:** With this release, Symantec provides a consistent interface for storage management on servers running Windows, Unix or Linux. This is important for organizations in that it allows cross functional support in siloed organizations and creates efficiencies in smaller organizations where one person may be managing multiple operating systems.
- **Storage Foundation Management Server:** This provides a single, secure method for managing all the Storage Foundation instances regardless of operating system as well as a holistic view of the disaster recovery environment (in conjunction with VVR). Additionally, Symantec will be releasing operational modules to enable array migration, server migration and path management for all the disparate servers covered under Storage Foundation Management Server. This will allow vast time-consuming corporate-wide changes to require just a few minutes to execute a change that otherwise might have taken hours or days. Just like Storage Foundation Management Server, these operations modules are also free.
- **Broadest storage array support in the industry:** Symantec continues to support all major storage array vendors with this latest release.

Symantec has added a number of new features to SFHA-W 5.0 to make the product easier to use, enable better performance for your critical Windows applications and provide HA/DR solutions over the widest possible range of storage products on the market. These features combined with the advantages gained by integrating very closely with other Symantec products deliver a powerful solution for Windows environments.

Symantec is changing the way you will manage your data center, and at the same time, they are also changing the way their customers pay for software, or rather, don't pay. As mentioned, key pieces of the overall data center solution like Storage Foundation Management Server, its operational modules, Fire Drill and SFW Basic edition are provided at no cost. Only SFW Basic has a nominal yearly maintenance fee. Usually when software is given for free, it provides limited value or has an expiration date. This is not the case here, as these products are feature rich and will provide a great deal of value to Symantec customers. This will be especially true for customers with multiple data centers or many remote branch offices.

The Bottom Line

This edition provides industry leading integration with Microsoft's next Windows server package, codenamed "Longhorn." Symantec's SFHA-W 5.0 is the only product to be fully certified for Microsoft's MPIO for both Fibre Channel and iSCSI. The iSCSI certification and management capabilities may prove to be very attractive to the SMB market, especially those who have just deployed a SAN or are considering deploying a SAN. Also, the tight integration with VSS and other Symantec products provide new high availability and disaster recovery features that are quite impressive. In order for Symantec to fully capitalize on these advantages, it would be helpful if Longhorn actually gets released sometime in 2007. At the very least, customers can buy today with investment protection for the future.

Storage Foundation High Availability for Windows 5.0 is an important part of the vision that Symantec has for delivering a next generation data center software infrastructure. Symantec divides the next generation data center software infrastructure into four distinct categories, data protection, storage management, server management and application performance. Their goal is to tie all these areas together with tightly integrated software that will provide a holistic view and management capabilities over complex and geographically dispersed data centers. Their focus is on improving performance, creating higher availability and driving standardization in heterogeneous environments that are easier to use, will create greater efficiencies and, *eventually*, will break down the barriers between various operational groups within the data center in order to manage the complex data centers centrally. Storage Foundation High Availability for Windows 5.0 rounds out the offerings in the storage management section and gets them another step closer to their goal.