STORAGE SWITZERLAND REPORT

YOUR FIRST SAN - CAN A QUALITY SAN PRODUCT BE AFFORDABLE TOO?

Data storage is growing rapidly every day and SMBs need shared storage (aka SAN). For example, once you have shared storage then you can use VMware's advanced features like VMotion, Storage VMotion, VMware High Availability, DRS, and VCB. For SQL Server, MS Exchange or other server applications you can now do clustering once you have a shared storage on your network. But the challenge is that for most organizations the cost and complexity associated with the first SAN can be overwhelming. When selecting your first SAN, can a quality SAN product be affordable too?

The Resistance to Shared Storage

Until recently, shared storage options has been too expensive, too complex, or too limited for SMBs. For many SMBs, direct attached storage (DAS) or the storage capacity of internal hard drives in servers is typically more than adequate. This is because the capacity per drive has increased to 300+ GB for high performance drives while the physical size of the drives has decreased to a 2.5" form factor. Smaller drives with a higher capacity mean more internal capacity per server. In addition to capacity, with the availability of 6/Gbs SAS drives, the storage I/O performance of these servers has continued to increase and even without specialized configurations internal performance is excellent.

These are motivating factors for SMBs to stay away from shared storage but the biggest, without question, is the entry price point. Most shared storage systems garner a premium over the raw storage costs and for a larger business it is justifiable since they will want to leverage some of the advanced features of these systems but now SMBs want and need those capabilities but without the price premium.

There can be additional impacts in implementing a shared storage solution. There is -the cost of the supporting infrastructure, the storage network. There is also the investment in time to learn how to implement, utilize and support these storage networks that increases the costs significantly to the SMB.

The Drive to Shared Storage for the SMB

Given this history, why should SMBs be moving to shared storage? Shared storage provides a number of features that protect a business and with new technology the price point should no longer be an issue. SMBs need the ability to share storage at an increasing pace and earlier in their data growth cycle.

Examples causes for the earlier adoption of shared storage are clustering and server virtualization.

Clustering is important to the SMB because downtime is no more an option for the SMB than it is for the large enterprise, and in fact a case can be made that it is even more lethal for the SMB. When an application outage occurs in a large data center there is a team of people available to move into action to recover the server. In the SMB there is often just one person with all that responsibility. As a result SMBs look to high availability solutions like clustering fairly early in their life span. Most of these solutions work best when there is shared storage.

Like large data centers, the server virtualization bug has bitten SMBs. The value to the SMB is the same as the value to the large data center. In fact as with availability it may be even more critical. Again SMBs often have one person IT teams. They don't have a group of individuals available to deploy new servers and applications as needed but like the larger data centers they want to take advantage of capabilities such as virtual server migration.

Both Clustering and Server Virtualization require shared storage

Often however the SMBs will select something other than the current de facto standard, VMware, opting instead for a less expensive alternative. These alternatives often have less shared storage choices available to them. As a result selection of an industry standard shared storage protocol is important.

Making Shared Storage Affordable

The very reasons that make locally attached storage so attractive are also the very reasons that a viable alternative for the SMB data center is a storage application. Rather than looking at a SAN as a system that must be purchased in total, consider storage as an application and that you can build a shared storage solution with readily available, standard, off-the-shelf components rather than purchasing a proprietary system.

As stated previously, today's server can be configured with TBs of storage, GBs of memory and plenty of processing power. The reality is that most organizations grow their server attached storage investment to the brim before going to shared storage. Selecting a traditional SAN wastes all of that server side investment.

By leveraging a software application like StarWind Software's storage software you can take full advantage of the advances in server capacity and performance to drive down the cost for your initial foray into shared storage. Additionally most if not all of the current investment in direct attached storage is utilized.

Applications like StarWind essentially virtualize physical storage in the same way that VMware virtualizes servers. Software like this converts any industry standard x86 server that runs Windows into a fully functional iSCSI SAN or a SAN that works in your existing Ethernet environment, transferring your storage data right over your CAT5 cables.

The former server now becomes an iSCSI target or a SAN that can be used in a shared storage environment like those required by server virtualization solutions for virtual server migration or by clustered environments such as a quorum drive.

iSCSI is ideal for the SMB marketplace as they will always have an IP infrastructure long before they have a storage infrastructure. With 1 gigabit Ethernet, and multiple 1GB card trunked,, the transfer rate is fast enough for almost any SMB server application. The ability to use existing and familiar infrastructure rather than having to purchase new proprietary equipment further helps keep costs down.

Ease of Use

While cost is important so is being able to easily implement and support the system. Ease of use has to be a key criterion for the IT staff. Again this is because in the SMB sized data center, the team is small and they can't be burdened with managing a storage system. In addition, there is seldom a specialist in this market and as a result multiple personnel should be able to administer and configure the system without the need to be IT specialists.

Ease of Implementation

Cost and ease of use are critical, but it is also important for an SMB looking toward their first shared storage investment to be able to experiment with their first SAN in order to see how well it works for their particular environment. This is an area where storage-as-an application excels. It can simply be downloaded and installed on an existing server leveraging the existing infrastructure. Testing can begin with literally zero cost and minimal disruption to the production data center.
While these systems are not designed to compete with a high-end storage array, they clearly cover the basic requirements of an SMB- providing snapshots, thin provisioning, CDP, mirroring and replication. What the SMB needs is to not only fulfill the requirements of their first SAN but to also have a solution that is robust enough that the organization will not need to seek a second SAN shortly after they initially foray into shared storage.

The Original Question

To answer the original question, can shared storage be affordable and useful for the SMB data center? The answer in many cases is yes. The availability of high quality iSCSI SAN software provides a full set of enterprise class features at a price that SMBs can afford. Using existing infrastructure and downloadable software allows for testing and fine-tuning without burdensome cost or learning curves. The technology is proven and the software options available are robust and flexible so that as needs change, the system that you implement can change as well.