

NetApp StoreVault S500

A big push towards small companies

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Abstract: Network Appliance (NetApp) is moving fast and furiously this year, entering new markets and launching new products. With the creation of its StoreVault division, NetApp is setting its sights on small companies, a potentially huge market that has surprisingly few storage networks today.

Look around. Take a peek in the office of a company that has less than 500 employees. You will see PCs. You will see printers. These are connected via a Local Area Network. Take a look in the communication closet. They have an Internet connection. What you are unlikely to find is a storage network. The value of networking is well known, enabling the sharing of resources and efficient communication. However, storage is still for the most part found within servers and not part of a network. The reasons for this are cost and complexity - and complexity leads to greater cost.

Network Appliance (NetApp), one of the leaders in storage, has been building fast, simple and reliable solutions since 1992. NetApp storage systems are easy to manage, utilize standard and widely adopted network protocols, support multiple operating systems and are built on a highly reliable and proven platform. The creation of the StoreVault division and the release of the StoreVault S500 storage system leverage NetApp's core assets for small businesses.

Let me make it clear that StoreVault is really targeted to the "S" in the so-called small to medium-size business (SMB) market. I personally don't like to put SMB together. Small businesses are very different from medium-sized ones and there is also a big disparity within smaller medium-sized businesses and larger medium-sized companies. Over 600,000 companies in the US alone have between 20 and 500 employees¹. Would a 20 person company implement a storage network? Right now, the answer is probably not but this is changing. Would a 20 person company implement a LAN? The answer is a no-brainer; of course they would. Over time, this will also be true of storage networks, whether they are SAN, NAS or both.

Lowering Cost and Reducing Complexity Variously

One of the first things that you will notice with StoreVault is that pricing starts at \$5,000, which includes 1 TB of raw capacity. And yes, that is inexpensive. If you account for RAID DP, the usable capacity will be less, but who cares? We have to stop calculating the cost of storage by capacity alone and instead also factor in the value of the solution. Additionally, there are efficiencies within the StoreVault S500 that may not be obvious at first glance but do make it even more cost effective and easy to manage. One of the most important capabilities provided by StoreVault is thin provisioning, which is part of its FlexVol feature. For those of you who have never set up a storage system, this is important. When you provision a storage system using traditional methods, you more often than not wind up with unused capacity. ESG research has found that companies often waste up to 50 percent or more of their capacity that is provisioned but never used². That sounds pretty stupid and inefficient, but is often the case. This process creates such inefficiencies that the IT department typically buys more capacity up front because they can't use the empty capacity they already have. In some cases, they even buy whole new storage systems. No wonder most companies feel better off with internal storage. How does such inefficiency occur? To answer this, let me walk you through an all too common scenario³:

1. When you get a new storage system, you typically buy more storage than you need. Let's say you have 500 GB of data but to plan for the future, you decided to buy 2 TB of capacity.
2. You provision the storage system volume for 2 TB and store your 500 GB of data. Simple, right?

¹ Source: US Census Bureau 2002

² ESG Research October 2005

³ This example does not account for RAID configurations.

3. Your boss asks if you can store data for your e-mail servers on the new storage system. You smile nervously and tell him, "no." It's all used up.
4. He scratches his head and says he doesn't understand. You bought 2 TB but only have 500 GB of data. Shouldn't you still have another 1.5 TB to use for other applications?
5. You tell him that when you provisioned the volume, you allocated 2 TB of capacity. While only 500 GB of actual data is being stored on it, the other 1.5 TB is dedicated to that volume. It's allocated, but unusable by any other application.
6. The company needs to put e-mail data onto the storage network, so you go out and buy and install another TB of capacity. The storage vendor wins and you lose.

Traditional provisioning methods are wasteful and inflexible in this regard. Thin provisioning, as provided by the StoreVault S500, solves this problem. The following scenario would apply to thin provisioning:

1. You provision the storage system volume for 2 TB and store your 500 GB of data. Simple.
2. Your boss asks if you can store data for your e-mail servers on the new storage system. You smile enthusiastically and tell him, "yes."
3. He is happy that the investment made was well worth it. But he is confused, because the last guy that had your job (whom he fired) couldn't do this with that other storage system.
4. You tell him that this storage system supports thin provisioning and it enables efficient capacity utilization. When you provision a volume with thin provisioning, it only allocates the amount of data that is being stored within that particular volume. The application sees a virtual volume of 2 TB, but the physical capacity required at that point in time is 500 GB. Therefore, the remaining 1.5 TB is available for other applications.
5. He asks, "But what happens when you begin to run out of capacity?"
6. The storage system will alert you based on a threshold that you set. At that point, you can get more capacity to add to the system. Based on your projections, more capacity will not be required for another 18 months, at which point the cost per GB will be 20 to 25 percent lower. The customer wins.

Thin provisioning is just-in-time capacity that eliminates allocated but unused storage. This enables a reduction in capital costs and also simplifies capacity management and planning.

StoreVault also lowers cost by supporting efficient snapshot technology. Companies can create protection copies of data for recovery. The most common disaster that companies face is deleted or corrupted files. When this happens, they typically call the help desk to fix the problem. This takes hours or, in some cases, days if the files need to be recovered from a tape that has been vaulted off-site. StoreVault snapshots, based on NetApp's enterprise technologies, make logical copies of data and keep track of changes. If a file is deleted or corrupted, you can go back to an earlier version and recover it. Presto, you instantly have a recovered file. You didn't need to call IT or recover from tape. NetApp snapshots are logical copies that are taken instantly; without slowing down the storage system and taking very little capacity.

The S500 supports up to 255 snapshots, giving customers more granular recovery points. You can create more snapshots and retain them for longer periods of time. This reduces the risk of losing valuable data. Competitive storage systems support fewer snapshots, ranging from eight to 64. But even if the competition did support more snapshots, customers need to be cognizant of the fact that not all snapshot technologies are created equal. The StoreVault S500 inherited the extremely efficient NetApp snapshot technology that has virtually no impact on performance bound resources and, as mentioned above, is capacity efficient.

The NetApp StoreVault provides a single pool of storage and can place data equally across all drives. This provides optimal performance and essentially eliminates the need to tune and fine-tune application performance. The ability to load balance data across every drive in the storage system makes each hard disk work in concert.

StoreVault Manager is also highly integrated with Windows, making the S500 easy to install and support. Additionally, it has a wizard-driven GUI to perform common tasks, such as provisioning.

StoreVault Partners

StoreVault focused on developing a channel for the StoreVault S500. The challenge in getting to the millions of small businesses in the market is that it's just not economical to hire enough people for the task. That is why you need to develop a channel of resellers - to extend your reach. NetApp is rapidly growing its channel to sell the StoreVault S500, including dedicated channel sales and technical support resources, a focused channel program and VAR portal. NetApp is working with Tech Data, a major distributor, to make it easy for resellers to acquire their products.

StoreVault has also partnered with a number of software vendors. For example, it is working with CommVault to provide easy to use, highly integrated backup for the StoreVault through NDMP and tape automation features. Companies get a risk free, fully featured trial copy of CommVault Galaxy Express with the S500 to see how these two solutions work together. If they like it, they just need to get the appropriate license keys. StoreVault and CommVault took great pains to make backing up the S500 extremely easy using Galaxy Express. This is important to point out, since one of the main reasons that companies implement a storage network is to consolidate backup. NetApp is aware of this and that is why the partnership with CommVault, as well as the appropriate license features now available with Galaxy Express, is important.

NetApp has also partnered with a number of other vendors including Symantec for their Backup Exec and anti-virus software, IBM for its Tivoli CDP for files software and McAfee for virus protection.

NAS and SAN

NetApp is the leader in network attached storage (NAS) and is rapidly becoming a force to be reckoned with in the SAN world. The NetApp StoreVault supports NAS, iSCSI and FC. ESG has found that companies with no storage expertise love iSCSI because it leverages their experience with IP networks. However, Fibre Channel (FC) guys find iSCSI to be more complex than FC and they want to stick with what they know. StoreVault lets them choose what they want from the same storage system. Additionally, they can complement FC or iSCSI with NAS for easy and intelligent file storage.

Quick Overview

The StoreVault S500 is a 2U rack mount storage system that can scale up to 6TB with up to twelve 500GB SATA drives. Redundant, modular power and cooling components are hot swappable. StoreVault Manager ships with the S500 and provides a simple single pane Windows application to manage tasks, monitor system status and provision storage. The StoreVault S500 supports RAID 4, allowing instant expansion through the simple addition of hard drives as well as RAID DP, a robust feature that can handle a dual drive failure.

The S500 includes underlying technologies dedicated to data protection and availability. Block Checksums systematically analyze disk sectors to ensure reliability and flag potential problems. Rapid RAID Recovery automatically senses disks that may be prone to failure and begins to migrate data before any trouble happens, significantly reducing or even potentially eliminating rebuild times as well as allowing maintenance to be scheduled instead of performed in a reactionary fashion. This type of proactive analysis is advanced functionality, which is certainly not typical of a storage system in this class or price point, helping to ensure data integrity and minimizing the impact on users' and IT managers' experiences with the S500.

The StoreVault S500 supports a single node controller configuration. That means it doesn't have what the industry refers to as high availability. Part of the rationalization for this is cost. Let's face it, the chance of a controller node failing is much less likely than two drives failing in a RAID group. So why pay extra for the "insurance?" RAID DP makes more sense from an availability and cost perspective than a dual node controller configuration. Hard disk drives do three things - read, write and break. If it's important that customers have a dual-node controller, then they can look at the NetApp FAS200 or among other vendors' products as well.

ESG's View

NetApp is entering a new world. They are going after a part of the market that doesn't currently buy from them. NetApp doesn't have the advantage of brand awareness within small companies like it does with larger ones. ESG does like their channel strategy and resellers can rest assured that they are selling a quality product. Another thing to consider is that NetApp has a lot on its plate. In addition to going after small companies with StoreVault, they are moving up the food chain, going after the data center market with the FAS6000, stretching into the high performance computing arena

with the GX, data security with Decru and disk-to-disk backup solutions with VTL. NetApp has an excellent history of execution, but they are now spinning more plates in the air than they ever have before. NetApp should be mindful that fighting too many fronts at once often loses wars. On the other hand, NetApp's strategy makes a ton of sense, leveraging the momentum they've built in order to reach new heights.

The majority of storage in the world is still internal within servers, especially in smaller environments. The reason is that the pain small companies experience today does not justify the cost and complexity of implementing external storage networks. However, these market dynamics are changing - the pain is becoming greater and the storage is becoming easier and lower cost.

NetApp didn't just whip together the StoreVault solution from spare parts, giving it a new paint job and a different label on the front. The S500 is a purpose-built solution that leverages the core intellectual property that has made NetApp a success. Beyond that, NetApp realized that you can't just build a product and expect it to fly off the shelves. They spent time developing a StoreVault channel to reach the large constituency of companies in need of low cost, intelligent and easy to use external storage. Additionally, StoreVault is building an ecosystem of software partners to provide even higher levels of protection and security. Will NetApp, with its StoreVault division, be the storage vendor that breaks down the barrier and creates a runaway market of the millions of small companies without a storage network? The reality is that it won't happen overnight, but there is a big void to fill. Based on their track record, I wouldn't bet against NetApp, but they do face some challenges. The next twelve months will be interesting to watch as their strategies and execution are put to the test.