

StoreVault S500 Solution Brief

DEPLOY AN IP SAN WITH STOREVAULT S500

Get the utilization, performance, and management advantages of storage area networking without abandoning your SCSI environment.

challenges

- Undesirable downtime is required when scaling storage capacity to keep pace with email or database growth
- No SAN is in place and there is no desire to continue using direct-attached storage
- Servers for certain applications are severely over-utilized while other servers are under-utilized
- There are concerns about the cost and complexity of deploying a Fibre Channel SAN

solution

- Deploy an IP SAN on the StoreVault S500

primary benefits

- Maximizes storage utilization and simplifies storage management
- Works with familiar SCSI protocols
- Allows a business to explore the benefits of storage area networking without having to make a large investment in new Fibre Channel technology and training

detail

The StoreVault S500 has built-in support for iSCSI storage area networking, making it ideal for first-time SAN users or organizations with lower-demand applications that can benefit from storage area networking, but don't require the higher performance of Fibre Channel SANs.

Low-cost and low-risk.

The S500 makes it possible for small-to-medium businesses to get into storage area networking with no additional investment; the necessary iSCSI SAN is already included. If you try it out and decide that storage area networking is not for you, it's no big deal. The StoreVault S500 solution can be quickly reconfigured for network-attached storage or direct-attached storage, so you won't lose your investment.

Flexible.

StoreVault is flexible enough to evolve and adapt as you do. You can start with free software iSCSI initiators, then migrate or upgrade at a future point to SANs using iSCSI host bus adapter hardware, TCP/IP offloads for higher performance, or maximum performance with Fibre Channel networks. The StoreVault S500 can support all these protocols, simultaneously!

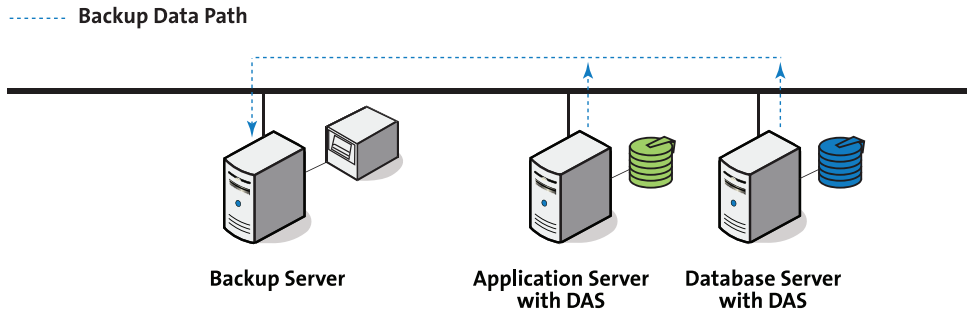
Higher availability.

Consolidating data on a StoreVault iSCSI SAN ensures higher availability, thanks to dual redundant, hot-swappable power, cooling and drives. In addition, the S500 offers multiple levels of RAID protection, including RAID DP™ which delivers 10,000 times more protection than traditional RAID 5.

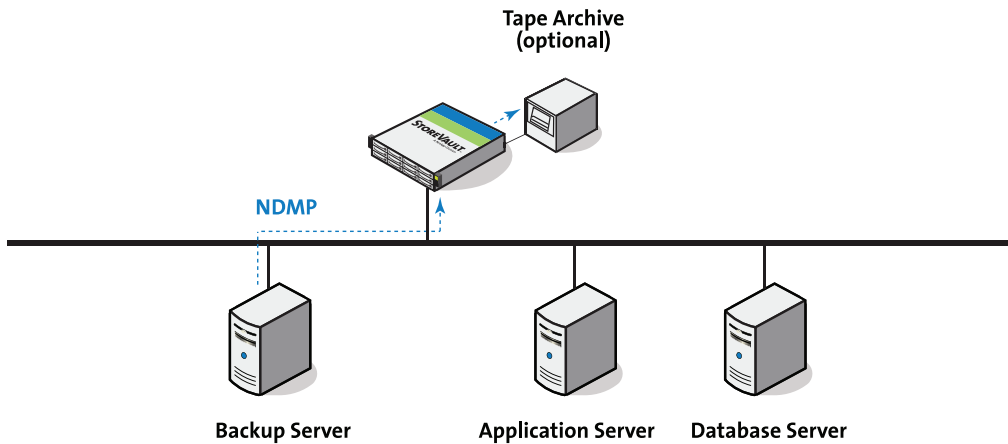
Instant restores.

Snapshot™, an advanced NetApp technology in the S500 solution, captures point-in-time images of the file system, allowing you to restore lost data almost instantly, without digging through tape archives. The S500 is capable of storing up to 250 Snapshot copies—more than any other competing system.

Maximum utilization. Some organizations find they can improve storage utilization by up to 40 percent by consolidating data on an iSCSI SAN.



BEFORE IP SAN: Data is isolated on individual “islands,” which introduces multiple points of management and multiple points of failure. Storage and the ability to scale is limited by the capacity of individual servers. Scaling storage requires shutting down servers and interrupting operations. Backup data must move over the LAN, causing congestion and slowdowns which could prevent completion of backup jobs within a shrinking backup window.



AFTER IP SAN: With an IP SAN, application data can be consolidated on the StoreVault S500, thanks to its built-in iSCSI SAN capability. You get the advantages of storage area networking without the investment or complexity of Fibre Channel. Data is more secure and more available thanks to the S500's Advanced Protection Architecture (RAID, Snapshots, redundant drives, power and cooling, etc.). New capacity can be added to the S500 on the fly, without shutting down application servers. Even backup is improved. The backup server can directly backup Snapshots of application data stored on the S500 to tape archive (optional) via NDMP. Traffic travels over local SCSI connection, not the LAN.

frequently asked questions

Q. How do I set this up?

A. Create a Logical Unit Number (LUN) on the StoreVault S500 using the simple three-step wizard. Then download and install the initiator on the server that is hosting the application to which you want to give more storage capacity. The initiator will be able to securely connect over Ethernet to the LUN that you have created on the S500, and the storage in that LUN will be dedicated to your application server. The LUN will even be formatted in your server's native file system!

Q. Can I use my normal application server tools on this LUN?

A. Yes! The LUN is completely dedicated to that application server, and securely mapped so that no other server can use it. Your application server sees it as local storage—for example, as a new internal drive in Windows. This drive can be formatted, partitioned, scanned, and backed up just as if it were physically inside the server.

Q. What about making StoreVault Snapshot copies?

A. That's part of the benefit. StoreVault Snapshot copies are available for LUNs so that your database data is protected where it resides. Manual scripting of the application is required to quiesce it, but once that is accomplished, Snapshot copies can be made by the S500. This entire process takes only a few minutes, providing you with you multiple point-in-time images from which to recover your database in a fraction of the time required to create a tape backup or even a disk-to-disk backup.

Q. Can I replicate this data?

A. Yes! StoreVault Replication can copy a LUN from one StoreVault S500 to another. If the source S500 is ever unavailable due to a disaster, just point the application server to the LUN on the target S500 (the one with the replicated data) to continue working normally. The target S500 can also be replicated back to a source in a different location, or to a replacement S500. Imagine the downtime savings compared to rebuilding an Exchange store from scratch!

Q. what if I need more space in my LUN than I planned for?

A. The simplicity of growing LUNs is another benefit of networked storage using a StoreVault S500. If growth spikes occur or your business changes, an existing LUN can be expanded into available (unused) capacity on a StoreVault. You can even add a disk drive to the S500 to provide additional LUN capacity—all while keeping the system and your application up and running.

Q. Is there RAID protection on a LUN?

A. Of course. In fact, we recommend using RAID-DPTM, StoreVault's double-protection implementation of RAID-6, which has no performance impact and protects against data loss even if two drives fail simultaneously. That's a much stronger deployment than an application server running RAID-5, and far more economical than other high-availability options.

system requirements

The StoreVault S500 lets you start your SAN without having to buy any new equipment or software. The iSCSI protocol is included, free, with the StoreVault S500, and software initiators, which allow application servers to use the protocol, can be freely downloaded for most major operating systems. Thinking about a SAN? Want to relieve that bursting Exchange server and start using Snapshot copies, tape backups and even replication from that data? An IP SAN is the way to go. In addition, the S500 is so adaptable you can upgrade to iSCSI Host Bus Adapters, TCP/IP Offload Engines, and Fibre Channel SANs without having to leave the StoreVault platform.

hardware

- StoreVault S500 with support for iSCSI (standard on all models)
- Application servers such as Exchange or SQL servers
- OPTION: For enhanced performance, you can add third-party iSCSI Host Bus Adapters (HBAs) to your Exchange/SQL servers (NOTE: HBAs are not required in order to implement an iSCSI SAN but may help boost application server performance and will add boot-from-SAN capability.)

- OPTION: For maximum performance, you can upgrade to the Fibre Channel SAN using the StoreVault SAN Starter Kit. StoreVault can even support both iSCSI and Fibre Channel at the same time!

software

- Free iSCSI initiator software
 - Included with VMware Server and VMware ESX
 - Available on the Microsoft web site for Windows
 - Downloadable from the Internet for Linux distributions like Red Hat and SuSE
 - Downloadable from the Internet for NetWare
 - Downloadable from the Internet for Solaris
- OPTION: if you choose to install iSCSI or Fibre Channel HBAs, they will include device management software for installing and configuring your SAN

network

- Gigabit Ethernet network
- Gigabit Ethernet switches
- OPTION: if you choose to deploy a Fibre Channel SAN, additional cabling, adapters, and one Fibre Channel switch will be required



Network Appliance, Inc.
495 East Java Drive
Sunnyvale, CA 94089

For sales support, contact us at 877-2STRVLT
or storevault@netapp.com.

For more information on StoreVault, a NetApp division,
go to www.storevault.com.

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