

WHITE PAPER

NETWORK-ATTACHED STORAGE FOR THE GROWING SMALL BUSINESS

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Small businesses are grappling with explosive storage growth, thanks to digitized business documents, mushrooming email, Web-enabled applications, legal and regulatory requirements, and increasing use of video and other rich media. In fields such as health, law and finance, small businesses often have the same requirements for keeping information protected, available and accessible as large enterprises. However, unlike these large companies, most small businesses don't have the technical expertise or resources to manage their constant storage growth properly.

In fact, a surprising number of small businesses still store their critical data on scattered desktop and laptop PCs, using USB storage devices, CDs and "sneakernet" to share files and data throughout the office. Still others rely on multiple small servers and server attached storage to hold their Web sites, order entry files, business documents, spreadsheets and other information.

There are many reasons why such a storage strategy can't work, even for the smallest business.

It's inefficient & costly PC and server-based storage is inherently inflexible, with some overtaxed PCs or servers requiring frequent storage upgrades. Other PCs and servers sit grossly underutilized, with no easy way to share their unused storage with other applications.

It's difficult to protect Data that is spread across multiple PCs, laptops and servers is difficult to protect. File versions are challenging to manage and users rarely—or never—back up PCs and laptops. In fact, many small businesses, with their lack of IT resources and competing business priorities, simply ignore backup and data protection until disaster strikes. Unfortunately, this approach often comes at a high price, as statistics show that up to 90% of businesses fail following a data disaster.

It's difficult to manage Widely dispersed data is difficult to grow and manage. Organizations find themselves resorting to frequent and disruptive emergency storage upgrades, with little ability to plan and manage growth in a way that anticipates true storage needs. Dispersed storage also makes it difficult to take adequate advantage of useful functions such as remote access.

THE SOLUTION: NETWORKED STORAGE

For small businesses, like their larger counterparts, the solution for managing storage intelligently is consolidation. Rather than dispersing data across several PCs, laptops or small servers, consolidating storage into one or two locations makes it much easier to grow, manage and protect. When storage is freed from the constraints of individual PCs and file servers, it can be put on the network as a separate, single resource that can be allocated to applications as necessary.

There are two primary architectures for networked storage: storage area networks (SANs) and network-attached storage (NAS).



SANs put storage on its own independent, high-performance shared storage network using one of two possible specialized storage network technologies—Fibre Channel or iSCSI. On a SAN, storage becomes a single shared resource that can be allocated to applications at will. Rather than accessing data at the file level, SANs access data at the more granular block level, which yields high performance for accounting, inventory or other critical applications that store data in a database.

However, since SANs use a separate networking technology, they require a certain amount of specialized expertise and can be fairly complex for smaller organizations that lack an IT staff. The block-based nature of a SAN is also not the ideal technology for typical small business file sharing.

NAS also sits independently on the network, but runs over classic Ethernet, so there's no need for employees to learn another networking technology. NAS is built from the ground up for easy installation, configuration and file sharing using the standard file sharing protocols understood by common operating systems like Windows®, Apple®, and Linux.

NAS devices have several advantages over both SANs and direct attached storage.

They're easy to deploy NAS devices can be installed and configured in minutes. There's no need to configure a server or to install and configure a general purpose operating system and add applications. NAS devices are pre-loaded with all necessary protocols, software and drivers. Once deployed, they can act as single-purpose file servers or easily provide storage easily to other systems such as Web servers.

They're easy to manage and protect Since they use standard Ethernet and common file sharing protocols, NAS devices are easy to manage and protect. Many come with their own Web-based management interfaces, as well as built-in backup and disaster recovery tools that are easy to set up and automate. And most use RAID technologies and other measures to ensure constant availability, even if a hard disk fails.

They're expandable It's relatively easy to purchase a NAS that is expandable enough to support a growing business. Many small business NAS devices come with several terabytes of storage capacity, making it easy to start small and grow with the business. Many offer hot swap drive bays that make it possible to add storage even while applications are running. Once a single NAS device is filled to capacity, it's easy to add additional devices to the network for file sharing.

WHAT TO LOOK FOR

Simply put, a NAS device is a preconfigured file server appliance that sits on the LAN. Most come with many of the storage-centric features small businesses need to grow, manage and protect their vital information. Some of the features to consider when purchasing a NAS include:

Expandability Does the NAS come with sufficient storage for the SMB's current storage needs, and does it



provide an upgrade path that makes it easy to add storage over time? A safe bet is to estimate today's storage needs, then double it.

Can storage be added to the device when necessary, either internally or by attaching external USB drives or drive towers? Does it offer hot swap storage capability or does the system have to be shut down to add storage? What is the maximum drive space supported by the NAS device?

Performance Does the NAS include built-in features for high performance, including Gigabit Ethernet for fast retrieval over the network?

Easy Configuration and Management What configuration and management tools does the NAS offer and how simple are they to use? How many steps does it take to configure the NAS for sharing among desktop and server systems? Does the NAS offer easy Web-based monitoring and management?

Support for Multiple Operating Systems A single NAS should be able to provide network storage for all operating systems. For example, if the business has PCs and Mac computers on the network, the NAS should support both, as well as Linux if applicable.

RAID Support RAID (Redundant Array of Inexpensive Disks) is a storage technology geared towards performance and data loss prevention. The NAS device should support various levels of RAID, including RAID 0 for high performance, and either RAID 1 or RAID 5, which can prevent data loss even if an entire hard disk is corrupted. RAID 10 combines performance with redundancy and may also be appropriate for some business environments.

Built-in Data Protection One of the advantages of NAS for data protection is that it consolidates data so that it can be backed up easily. The ideal NAS for SMBs should come with built-in automated backup capability so data can be protected without a lot of effort. In addition, it should be easy for users to retrieve their own backed up files in the event of error, loss or file corruption, without help from a network administrator.

Virtualization Support Server virtualization technologies from VMWare, Microsoft, Citrix, and other vendors make it possible to pack multiple virtual servers, each with its own independent server OS and applications, on a single physical server without the danger of one interfering with the others. Even for small businesses, virtualization is a great way to save on hardware, power, and management costs. As such, the NAS device should come with support for common server virtualization platforms.

Active Directory Integration If the NAS sits on a Windows Server-based network, it should come with built-in Active Directory support so it can be used with existing Active Directory domain users and groups.

Software Support The NAS should interoperate with existing software titles, Web browsers, and media devices.



IOMEGA® NAS SOLUTIONS

Iomega has a long history of offering market-leading storage solutions known for quality, affordability and ease of use. Iomega's current line of small business NAS solutions, called StorCenter™, combines the best of EMC® enterprise-class storage reliability and performance with ease of use. Models are available in both desktop or floor-standing and rack mount configurations to support just about any small business or branch office environment, with easy expandability up to 4TB or even more with USB attached storage.

With the exception of the rackmount Iomega StorCenter Pro NAS 200rL Server, Iomega NAS solutions are based on EMC LifeLine™ software, which offers small businesses EMC's industrial-strength, enterprise-level performance, protection and management together with Iomega's trademark ease of use.

Other small business features include:

- ▶ **Support for Windows, Macintosh OS X, and Linux** desktops, notebooks, and servers for easily shared storage in mixed-system environments.
- ▶ **Hot swap serial ATA (SATA) drives** for easy upgrades, maintenance and expandability without the need to take down the system.
- ▶ **Easy, wizard-based, four-step installation** to get shared storage up and running in minutes.
- ▶ **Windows Active Directory Support** for seamless integration into Windows domain users and groups.
- ▶ **RAID 0, 1, 5, 10, and JBOD support**, depending on the product, so that the NAS can be set up either with RAID for maximum data protection, or without RAID for maximum storage.
- ▶ **Award-Winning EMC Retrospect® Backup Software** for seamless, set-it-and-forget-it client-to-NAS backup and data protection that lets users retrieve lost or corrupted files without help from an administrator.
- ▶ **Full UPS Support** is included for additional protection—enabling unattended shutdown during a power incident without any data loss.
- ▶ **Easy Web-based Management** that can be accessed from any system with a Web browser.
- ▶ **A Full Suite of Small Business Productivity Applications** including a built-in print server to share up to four USB connected printers and an iTunes media server for storing rich media files used for training or messages to a distributed sales force. There's also support for a network surveillance camera without the need for a dedicated PC.
- ▶ **VMWare ESX Server Certification** for virtualized server environments.
- ▶ **Bluetooth® Support** for easy direct uploads of photos from cell phones or smart phones.
- ▶ **RSA® BSAFE® Encryption** to protect all installs and upgrades.
- ▶ **Software Compatibility** with today's most common backup software titles, Web browsers, media devices, and desktop and notebook computers.



There's an Iomega solution for just about every small business need and environment. Models include:

- Iomega StorCenter ix2, a compact desktop network storage device available in 1TB and 2TB versions.
- Iomega StorCenter Pro ix4-100, a compact desktop NAS server available in 2TB and 4TB versions.
- Iomega StorCenter Pro NAS 200rL, a 1U rackmount NAS that is available in 1TB, 2TB, 3TB, and 4TB versions.

CONCLUSION

As data continues to proliferate, it's easy for SMBs to become overwhelmed by the relentless demands of storage growth and protection. That's why NAS, with its easy installation, expandability, and management, is the ideal SMB storage solution.

Iomega NAS solutions provide an unmatched combination of enterprise-class performance, reliability and expandability; easy installation, protection, and management; lots of useful features and capabilities geared for the small business; and Iomega's trademark ease of use. For more information on Iomega's NAS solutions, visit www.iomega.com/NAS.

