

A photograph of a woman with dark hair, wearing a grey blazer over a white collared shirt, smiling warmly at the camera. In the background, another person is blurred, working at a computer desk. The scene is set in a bright, modern office environment.

Best Practices for Storage Consolidation

in Elementary and Secondary
Education Environments

In today's demanding environment,

information impacts every aspect of your organization. It affects your ability to meet your obligations under increasing legislative rules such as those found with "No Child Left Behind". It impacts your ability to manage student information. It helps with allocation of needed resources—teaching staff, materials, and state/federal aid. It controls the flow of materials to and from students and staff. In fact, in today's digital environment, information may actually be the basis of everything you do. Compared to its cost throughout history, it is unbelievably inexpensive. Manage it and your district can thrive; fail to do so and expect to fall behind.

David Meets Goliath

The good news is that, for small to medium-size schools, information can be a great equalizer. Large schools may have economies of scale when it comes to the resources they have, but with modern communications, inexpensive hardware, and increasingly sophisticated software, organizations (large or small) have virtually equal access to information. As information becomes almost as available as air, we face a new problem—not lack of information, but an overabundance of it.

Like the needle in the haystack, information is useless if you can't access it. It doesn't matter who has it if the holder isn't the one who needs it. Too often, it exists in isolated pockets, so that potential users don't even know it exists within the organization. In short, information is a powerful tool only if it is in the right place at the right time.

Ironically, for most of its life, information does nothing. Data spends most of its time in storage, not being used. Just as most library books sit on shelves waiting to be checked out, critical documents—reports, spreadsheets, emails, graphs, student records and innumerable other files—reside on disk or tape until they are needed. Some files may never see the light of day; others may be accessed on a regular basis.

Still others are kept to comply with the growing body of governmental regulations and to avoid potential penalties that can cost thousands, even millions of dollars.

Challenge: Putting Your Data to Work

The first step in putting data to work for your organization is protecting and keeping track of it, and the best way to do that is by pooling it with a networked storage set up. This also allows different departments to share information and makes data management easier and more effective by centralizing it. Properly managed, centralized storage eliminates a lot of redundancy, significantly reduces costs, and allows far better data protection.

However most networked storage solutions need to be run by skilled and costly IT professionals; These systems tend to be powerful and effective, but they are also complex to manage, requiring specialized training and a fair amount of day-to-day "hand-holding" that smaller organizations cannot afford. For these reasons, 'centralized' networked storage has been reserved for the "big guys," with large operations, large IT departments, and a lot of specialized training. For storage to be practical for small and midsize environments, it has to be more user friendly.

Challenge: Getting There from Here

One of the biggest obstacles to implementing networked storage is the transition: specialized hardware is expensive, system design can be complicated and the installation process can be time-consuming at best, and potentially extremely difficult. In addition, the process of migrating data from existing systems onto a new storage network can require either days-long interruption of operations, weeks of rolling shutdowns, or months of after-hours work to move data from one system to another. Any of these could be disastrous for a smaller school system with limited IT resources.

Smaller organizations however do have a number of choices when it comes to streamlining and enhancing their storage infrastructures: the simplest is direct attached storage or DAS, where the storage e.g. a RAID system, is directly connected to a server. This is, however, not networked and does not allow easy data sharing. Network-attached storage or NAS on the other hand is easy to set up, uses standard TCP/IP over Ethernet, and is ideal for providing file-based storage for desktop systems. And yet, NAS is not the ideal architecture for managing shared or virtual disk storage for servers. At the top of the list are Storage Area Networks or SANs, separate Fibre Channel networks dedicated to storing and protecting data.

Although SANs can offer larger school systems significant advantages, they have traditionally been too costly and complex for small and medium school systems that would not necessarily have benefited from their features. In the past couple of years however, the arrival of iSCSI has brought SANs within financial and technical reach of SMBs; being more affordable than Fibre Channel and requiring very little training (it relies on Ethernet connections, with which most system administrators are familiar) it still offers flexibility and shared storage capabilities alongside excellent levels of performance.

iSCSI has enabled SANs to be deployed within environments that would have previously disregarded this architecture on the grounds of cost and complexity.

Challenge: Keeping Your Sanity

One of the main reasons for networking storage is the increased levels of data protection it offers, especially in terms of backup quality vs. backup window. Unfortunately in the past, the benefits of these solutions have usually come at a high cost, namely that entailed by the need for highly skilled storage administrators. Hence, until now the levels of data protection tended to rise in direct proportion to the need and cost for specialized staff. Thanks to recent technology developments however it is now possible to protect data and maximize storage investment without hiring costly IT professionals; disk capacity allocation and optimization and backups are just examples of what can now be managed by the single individual often responsible for the IT infrastructure in a smaller organization.

Solution: Smart Storage Made Simple

StorMagic's shared application storage is specifically designed for small to medium school environments. This comprehensive iSCSI SAN solution combines high performance and ease of use at a price smaller organizations can afford.

- StorMagic is an affordable software solution that can be deployed on top of your existing hardware to work with Windows, Linux, or Macintosh operating systems
- Installation and setup takes just minutes.
- The StorMagic solution can be easily managed by your current IT staff without specialized training.
- Data migration from existing storage systems to StorMagic is simple and will not interfere with the ongoing operations of your organization.
- A single Windows interface lets you store, share, manage, and protect all your stored data.
- The system is highly automated to perform most day-to-day functions with little or no involvement of your IT staff.
- The system is "self-tuning," adjusting itself to changes in your operation's size and operations.
- The StorMagic solution is highly scalable, growing in capacity and capability with your operation.
- It makes data more widely and more readily available, eliminating isolated "silos" and data access bottlenecks.
- StorMagic eliminates most time-consuming backups and automates those that remain.
- The iSCSI SAN architecture can actually cost less than the separate systems you are currently using.
- StorMagic reduces or eliminates the risk of catastrophic data loss.

The Bottom Line

Information is a tool that can level the playing field for school systems in a world of increasing demands for data. In the past, large organizations have had the advantage of access to sophisticated systems for networked data storage. Now StorMagic makes shared application storage easy, affordable, and manageable for small IT departments with big responsibilities and more to do than baby-sit a SAN.

