



Today's Best Data Storage Solutions

There's a highly effective & efficient storage option for every organization.

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In order to safeguard your data, it's important that you have a robust storage solution that will grow with your business. To that end, you'll want to consider storage requirements in terms of both capacity and physical location.

While there is no one right storage solution for every business, key considerations include:

- How much data needs to be stored and shared?
- What are your performance requirements?
- How much storage will you need in 5 years?
- How critical is data availability and reliability?
- What are your backup and recovery requirements?
- What is your budget?
- In terms of staff, level of expertise, and availability, what IT resources do you have?

Fortunately, for every set of requirements, there's a good option or combination of options. These include:

- Storage Area Networks (SANs)
- Network Attached Storage (NAS)
- Backup to Disk (B2D)
- Content Addressable Storage (CAS)

While one type of storage is usually enough for small companies, larger companies will often have a mixed storage network with different types for different departments, responsibilities, and branches.

Storage Area Networks (SAN)

A SAN is essentially a high-speed system of shared storage devices that allows all servers on the same network to access all of the storage devices. In more technical terms, the SAN works either by using SCSI (small computer system interface) commands to latch onto the interface; or by using FCoE (Fibre Channel over Ethernet) deployment.

A SAN is usually part of an enterprise's overall network of computing resources. When additional storage devices are added to the SAN, they are also accessible from any server in the network. While a SAN is usually situated close to other computing resources, it can also extend to secondary locations for backup and archival storage – very handy in the event of disaster recovery.

A SAN's storage-sharing capabilities simplify storage administration and add flexibility since cables and storage devices do not have to be physically moved to reallocate storage from one server to another. And because stored data is not directly on any of a network's servers, it frees up server power and network capacity; files can be backed up without using servers.

SAN networks also handle problems more efficiently and effectively than other storage solutions. A hard drive failure will not cripple the system, since other

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storage units can maintain the network until the problem is remediated. SANs also expand easily to increase storage and/or capabilities.

SANs have a wide variety of failover and fault tolerance features that safeguard uptime. Also, SANs have fewer bandwidth jamming problems.

Even with all the benefits, there are issues of complexity, lack of standardization, and management. Since the right management software is the key to performance, working with an experienced provider is crucial.

SANs are more expensive and complex than other storage solutions, but they are ideal for organizations that have large storage needs. In short, SANs are the best way to ensure predictable performance and continuous data reliability and availability.

Network Attached Storage (NAS)

NAS is a very good option for growing businesses that need an economical, robust, scalable, and secure solution. Because NAS solutions are easy to deploy, centrally manage, and consolidate, they are well-suited to businesses that lack IT departments. It provides fast, simple, reliable access to data in an IP network that multiple users can share.

NAS is an array of hard drives directly attached to the network and is less expensive than most SAN solutions. A NAS solution may include 2 or more hard drives in a single network-connected device. Files written to the main drive are automatically written to the second drive as well, creating automated redundancy.

More sophisticated versions provide scalable, comprehensive USB and FireWire ports (that allow users to connect external hard drives) and print-server capabilities that allow multiple users to seamlessly share a single printer.

NAS makes sense for enterprises looking to consolidate their direct-attached storage resources for better utilization. Since resources with less sophisticated storage cannot be shared beyond a single server, an enterprise's current system may be using as little as half of its full capacity. When you consider that the main alternatives to NAS are adding expensive new servers, or creating a temporary fix by expanding the capacity of existing servers, NAS is a solid investment.

NAS and SAN are not mutually exclusive technologies – they are actually quite complimentary. Today NAS is often deployed in conjunction with SANs for optimal storage flexibility and performance.

Backup to Disk (B2D)

Traditional disk-based B2D storage keeps confidential business data out of the hands of third parties, giving organizations complete control over their digital assets. B2D solutions facilitate rapid, reliable, and cost-effective back-up and storage.

Using a hard drive, B2D writes the same data to a file on a disk volume as it might otherwise write to a tape drive. While this technology has existed for many years, a number of issues – including cost, and file and disk management kept it from being widely deployed.

Today's disk-based storage solutions are affordable and able to handle file and disk management with ease. In addition, B2D solutions support a fully array of rewritable and removable media, such as DVD-RW, CD-RW, and Zip.

Content Addressable Storage (CAS)

CAS stores information that's retrieved based on its content, not its storage location. It's best for organizations where data accuracy is paramount. With CAS, every time a piece of data changes, it receives a new unique identifier. This capability ensures that users will be able to retrieve the data exactly the way it was stored in the system.

CAS works well for long-term content retention for compliance and/or regulatory purposes (e-discovery documents), and archiving massive amounts of records, images or other information that is likely to remain static. It's also an excellent tool for retrieving fixed content. The main downside to CAS is that users trade off superior intelligence and information reliability for performance.

CAS is perfect for highly regulated industries, law offices, and government agencies.

Like all tech sectors, storage networking is in a constant state of change, so it's easy to fall into the trap of choosing the latest emerging or disruptive storage technology. A smarter strategy is to choose a solution that's cost-effective and able to grow with your organization.

Choosing a Vendor

Before investing in a data storage solution, consult with a trusted IT provider about which option or options will best meet your business's current and future demands. Then, work together to create a plan.

When deciding what type(s) of storage is best for you, think about what kind of information your business is generating. Also consider how fast your business has grown in the past year and what kind of growth you expect in the future. You'll want to invest in a storage system that can scale with your needs for the next 5 years.

B2B Computer Storage Products & Services

B2B Computer Products LLC represents the world's leading storage suppliers and has experienced pre and post-sale storage experts to design, implement, and provide continuing support for the best storage solutions. Leading suppliers and their products and services include:

EMC CORPORATION

- Storage Area Networks (SAN)
- Network Attached Storage (NAS)
- Backup to Disk (B2D)
- Content Addressable Storage (CAS)

EMC is the world storage leader. Known for highly reliable SAN (Storage Area Network), NAS (Network Attached Storage), Backup to Disk (B2D) and Content Addressable Storage (CAS) solutions. B2B Computer is uniquely qualified to architect, implement and support EMC storage. Our storage division is led by EMC veterans with many years of experience working with EMC products. In today's IT environment where storage related projects are often being driven by the need to virtualize servers, build-out disaster recovery infrastructure and improve backup processes all while controlling costs, EMC is a clear leader.

NETAPP, Inc.

- Storage Area Networks (SAN)
- Network Attached Storage (NAS)
- Backup to Disk (B2D)

NetApp is well known for their history in the Network Attached Storage (NAS) market and has also proven to be well qualified for Storage Area Network (SAN) and NAS combination products. Their unified storage approach has made them a well-respected storage provider.

LEFTHAND NETWORKS

SAN experts, LeftHand Networks, burst onto the IT scene with an innovative approach to iSCSI storage. Known for easy management and disaster recovery, LeftHand is a leader in the low to mid-market iSCSI product category. In 2008 Hewlett-Packard acquired LeftHand Networks to help fill-in their lower-end Storage Area Network (SAN) offering.