Introduction to Unified Storage

What is unified storage and what does it do for you?

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Unified storage, also sometimes referred to as *multi-protocol storage*, *federate storage*, or *network unified storage (NUS)* is a storage architecture that allows the user to run and manage both file-based network-attached storage (NAS) and block-based storage-area network (SAN) storage from a single device. In many implementations of Unified Messaging you will see the allowance for protocols such as fiber channel, iSCSI, CIFS, and NFS, therefore making the system a multi-protocol array.

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Advantages of Unified Storage

Reduced hardware requirements

Rather than using separate storage platforms, unified storage combines both file-based storage and block-bases storage into one system. This allows you to deploy either file or block storage with one single device.

Increased utilization and minimize overhead capacity

When planning for file and block storage capacity separately, you could run the risk of overbuying to support one protocol and under-buying to support another. With unified storage there is no need to worry about capacity utilization as you can allocate what you need-when you need it, for either protocol in one system.

Easy to manage

A centralized management system allows for easy setup and management. In one single pane you can manage all of your storage making it more efficient. Unified storage systems can also be used by professionals with varied skills due to its ease of use. This flexibility allows for the storage to be expanded and/or reprovisioned to accommodate different application requirements.

Flexibility

Unified storage systems have given administrators more freedom with the usage of a system by empowering them to decide which level of service an application should have to meet their internal SLAs.

For example, prior to unified storage systems, administrators may have found themselves facing situations where they needed to launch an application using CIFS or NFS but their system only allowed for fiber channel or iSCSI. Even though their existing system had plenty of unused storage to run this application, the system was not sophisticated enough to support both protocols, leaving the administrator with only one option-to purchase additional hardware.

The MSDI Difference

MSDI is a solutions consulting firm that helps organizations reduce IT costs. We fully immerse ourselves in your business, lending expertise in SAN and network consulting with specialties in data storage, virtualization, business continuity, disaster recovery and performance tuning. We'll help uncover untold savings by architecting for cost minimization and extending the life of legacy infrastructure. Most important, MSDI provides a single point of contact for support and accountability — everything you need from a single source.

This additional hardware would either be a completely new system, or a front-end system for their existing array that would increase the administrative overhead of the environment. As mentioned earlier about the introduction of unified storage systems, administrators now have the flexibility to add disk space to the production SAN and then determine which protocol it will utilize based on the business needs rather than where it was installed. This allows the administrator to operate more cost effectively and efficiently while still meeting their internal SLAs.

Cost Savings

As a result of having a centralized storage system, all of your applications are running on a single device which allows for a smaller footprint, while lowering operation and maintenance costs.

Reliable and highly available

Unified storage platforms in the market today provide dual RAID controllers, redundant power, and mirrored cache or NVRAM (Non-volatile RAM) cache for data protection.

Can You Virtualize with Unified Storage

The easy answer is yes. The flexibility of the SAN has made architecture and deployments much easier for both desktop and server virtualization. By allowing for virtual systems to run on block based protocols, such as iSCSI or Fiber Channel, and allowing for the file based structures to run under NAS protocols, unified storage has provided the user a much easier way to virtualize their systems.

A great example and usage of this is in a virtual desktop environment. The administrator would configure the block based protocols to run the virtual desktop operating systems, allowing for smaller LUNs with a focus on performance of the base OS by utilizing technologies such as solid state drives, and caching on the data storage array to handle the broadcast storms that a virtual desktop environment can generate while taking the documents folder and mapped drives and redirecting them to the NAS interfaces on the SAN. This allows for the efficient use of storage by not having every desktop be larger than needed and also provides for efficiency in the sharing of data amongst the user community.

Things to consider when considering unified storage

- What management and storage software tools are included
- What protocols are included and are there any hidden fees for activating and using the different protocols
- Ensure that the system is scalable. Many smaller systems have limited scalability.