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Thoughts and ideas from The Systems Consulting Consortium

New Trends In Data Storage And Their Ramifications On Your Business Infrastructure

The explosive growth of data and digital content are driving the need for new storage architectures. Business demands storage management solutions that provide: 24 X 7 availability; high performance and speed; data security and protection; scalability; easy maintainability; and a reduced TCO.

Challenges Facing IT Units

Most IT groups today, particularly in medium-sized companies and departmental environments, utilize DAS (Direct Attached Storage) for their storage needs. Though DAS is relatively "easy" to implement and manage on a small scale, it is not inherently shareable (each storage device is typically dedicated to a single server) and is difficult to manage in a distributed environment with multiple servers.

Though many IT groups have smaller more restrictive budgets, storage demands are still increasing. DAS makes inefficient use of available resources. There is no central storage management tool - each server has it's own tool and subsequently requires specialized expertise. Additionally, many customers must support more systems and storage with no growth in staff (or fewer staff).

IP-Based Storage Solutions

In a world where Internet Protocol (IP) dominates local and wide area networks, and data storage requirements grow unabated, it seems inevitable that these two forces converge. The Internet Small Computer Systems Interface (iSCSI) protocol unites storage and IP networking. iSCSI enables the transport of block-level storage traffic over IP networks. It builds on two widely used technologies - SCSI commands for storage and IP protocols for networking.

iSCSI is an end-to-end protocol for transporting storage I/O block data over an IP network. iSCSI

uses standard Ethernet switches to move the data from server to storage. It also enables IP and Ethernet infrastructure to be used for expanding access to SAN (Storage Area Network) storage and extending SAN connectivity across any distance.

To date, SAN deployments have been driven by an insatiable demand for storage and the user benefits delivered by networked storage. These benefits include efficient storage utilization through storage consolidation, the ability to manage more storage capacity, rapid deployment of new storage, higher availability, and faster backup and restore operations.

With the recent development of the iSCSI protocol and silicon-based TCP/IP offload engines, SANs based on IP networks are now possible. The IP networking infrastructure includes multi-gigabit networks, sophisticated bandwidth allocation and network management tools, and the ubiquitous reach of IP and Ethernet. These factors together enable new IP Storage solutions, using the iSCSI protocol.

How The Changing Environment Benefits IT Managers

iSCSI will expand the market for networked storage by giving IT managers another alternative to direct attached storage that delivers the advantages of networked storage. IP storage networks take advantage of IP networking knowledge in IT departments and use existing network management and tools for LANs, MANs and WANs today. Riding the IP wave of technology development and enhancements like the introduction of 10 Gigabit Ethernet, iSCSI provides a logical unified infrastructure development path for corporations and service providers alike.

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