

InfoStor Europe June 2006**Dave Simpson, Editor in Chief, InfoStor****David Clark, Director of Technical Marketing & Product Engineering, iStor Networks****iSCSI: Affordable, high-performance storage**

The storage world has evolved from proprietary storage to open SCSI, Fibre Channel, NAS, and SAN. Throughout the evolution there has been one common theme requested by end users: the need for affordable, high-performance storage.

However, end-user demand for higher-performance, lower-cost storage in the wake of rapidly escalating capacity growth strains the limits of current technologies, which in turn puts increasing pressure on IT budgets and staffing requirements. Regardless of company size and IT requirements, adding storage capacity addresses only part of the problem. Data must be instantly and continuously available from multiple locations around the world. As the amount of stored data explodes, performance, data availability, and cost issues can quickly threaten the viability of business operations.

There is a critical need to efficiently store, access, and manage data, whether it's in small to medium-sized businesses (SMBs) or large enterprises. Users need storage technologies that meet today's demand for high performance, interoperability, and ease of management—but at a much lower total cost of ownership (TCO).

The iSCSI solution

IP storage—including SCSI over TCP/IP, or iSCSI—has become a viable solution for companies trying to overcome current technology limitations. iSCSI can offer significant cost savings, easier management, better interoperability, and greater flexibility than conventional Fibre Channel SANs, NAS, and direct-attached storage (DAS).

The iSCSI protocol transfers data over intranets and over long distances via WANs, making it ideal for Web server, e-mail, database, and business continuity applications. In addition, iSCSI can run over 10Gbps Ethernet, and with the right hardware and software in place that combination can outperform 4Gbps Fibre Channel. IP storage takes advantage of the IP backbones and Ethernet networks already in place and delivers networked storage capabilities without adding layers of technology or requiring more IT staff or extensive training.

Unlike Fibre Channel, iSCSI usually does not require expensive host bus adapters (HBAs) or specialized switches, eliminating the cost and complexity that is often associated with a Fibre Channel SAN. The flexibility of iSCSI allows the use of embedded Ethernet ports on servers, existing Ethernet switches, and native iSCSI drivers provided with most operating systems. This reduces overall complexity because companies do not have to install and manage special drivers for Fibre Channel HBAs and switches.

iSCSI SAN deployments are picking up steam. Small businesses that could not afford SANs in the past are implementing IP SANs to solve their primary storage requirements. iSCSI SAN subsystems will soon be available for less than US\$10,000. In addition, iSCSI is being used in secondary storage applications at both SMBs and larger enterprises, often facilitating “tape-less” environments.

iSCSI provides ease of use and high performance at affordable cost (from both an initial acquisition and ongoing management perspective). And the flexibility of iSCSI provides primary and/or secondary storage capabilities on existing network infrastructure.