TAOS™

Revolutionary new Tape Appliance Operating System (TAOS) delivers complete networked storage flexibility for the entire enterprise.

FLEXIBLE ENTERPRISE-CLASS STORAGE NETWORKING

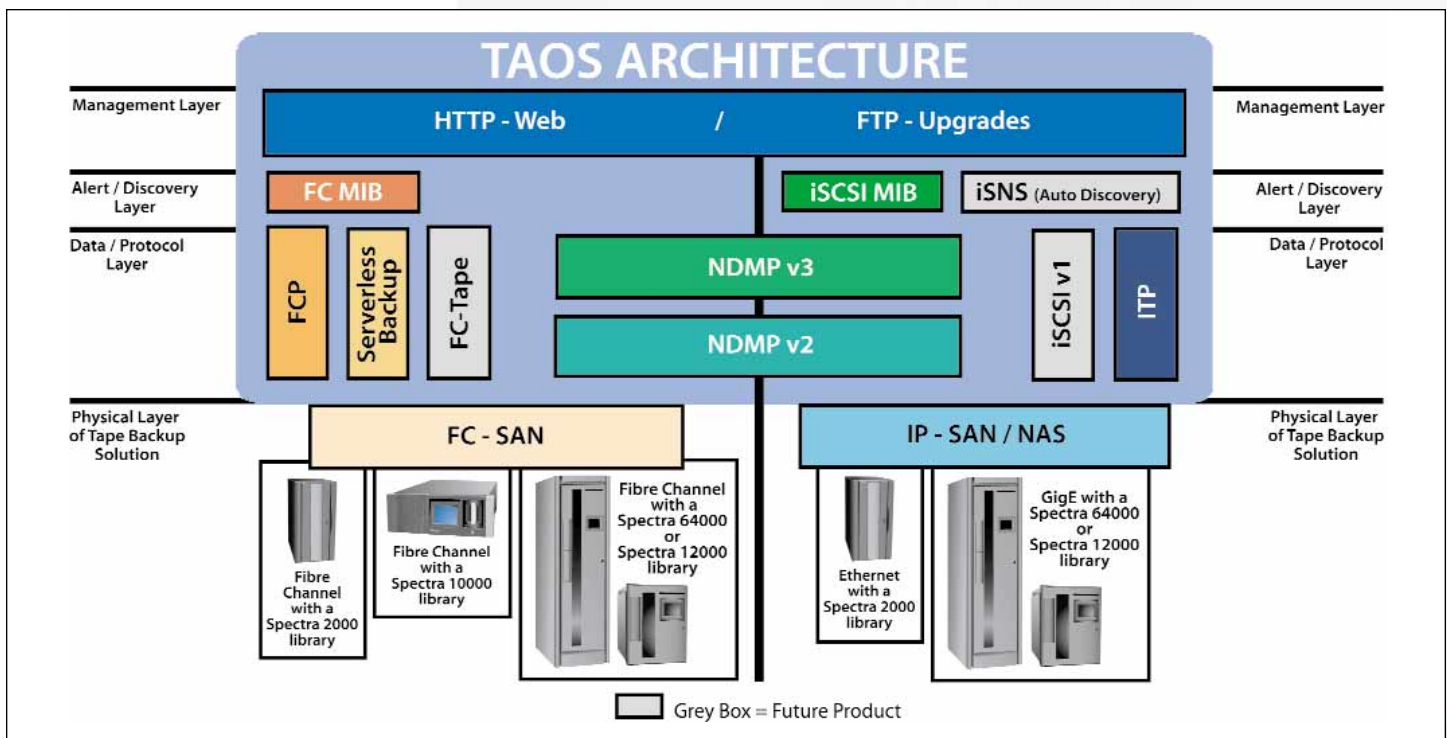**SUPPORTS ETHERNET (IP) AND FIBRE CHANNEL SANS**

COMPATIBLE WITH LEADING STORAGE MANAGEMENT SOFTWARE

At its core, storage networking is about enabling storage consolidation and sharing. The benefits of consolidation generally arise from improvements in management control and operating efficiency. The benefits of sharing are realized primarily from enhanced user collaboration. Storage networking then is not an end in itself, but a means to improving the efficiency and competitiveness of the enterprise, no matter its size.

The proliferation of system, device and infrastructure Fibre Channel products and their application in Storage Area Networks (SANs) is only now becoming widespread. Early compatibility and reliability issues have largely been resolved, but implementation and management costs remain considerably higher than those for the ubiquitous Ethernet networks. Network Attached Storage (NAS) implementations have pioneered leveraging the IP networking infrastructure for storage networks, but have seen limited application beyond the replacement of more traditional file-server system architectures.

A full fabric, switched Fibre Channel SAN is a very effective foundation for building a

TAOS ARCHITECTURE

Management Layer	HTTP - Web / FTP - Upgrades	Management Layer
Alert / Discovery Layer	FC MIB	iSCSI MIB	iSNS (Auto Discovery)	Alert / Discovery Layer
Data / Protocol Layer	FCP	Serverless Backup	FC-Tape	NDMP v3 / NDMP v2	iSCSI v1	ITP	Data / Protocol Layer
Physical Layer of Tape Backup Solution	FC - SAN	IP - SAN / NAS	Physical Layer of Tape Backup Solution

Fibre Channel with a Spectra 2000 library

Fibre Channel with a Spectra 10000 library

Fibre Channel with a Spectra 64000 or Spectra 12000 library

Ethernet with a Spectra 2000 library

GigE with a Spectra 64000 or Spectra 12000 library

Grey Box = Future Product

high-performance storage network for the data center. Spectra Logic continues in the forefront of tape library manufacturers with its SAN connectivity capabilities. With the introduction of its revolutionary TAOS architecture, Spectra Logic extends its storage networking leadership by introducing the industry's first complete Fibre Channel (SAN) and Ethernet (IP-SAN, NAS) storage networking platform.

TAOS is the software platform that enables customers to consolidate and share data across either a Fibre Channel or an Ethernet storage network — or both. TAOS delivers the open, standards-based storage networking protocols required to move data efficiently and reliably across either network. With IP storage networking support, TAOS enables customers to leverage their existing LAN resources for purposes of supporting both NAS-based (file-level) and block-level data transfers across their IP network.

In TAOS architecture, each transport protocol is implemented as a loadable module that can be purchased and updated independently of the hardware and system management layers of the code. In this way, customers can selectively adopt only those storage networking features needed immediately and easily change or add features over time. New protocol options or revisions may be added onto the TAOS platform by simply downloading new modules via the Internet.

TAOS runs directly on Spectra Logic's family of library interface processors, which provide physical layer connectivity between a storage network and the internal resources of the tape library. This tight integration of hardware and flexible protocol management software eliminates the requirement for additional bridging hardware and software that is characteristic of more loosely integrated approaches to library interface management. The advantages for the customer are obvious and significant — greater system reliability and reduced management costs. This tight integration also enables TAOS to scale along with the interface modules, eliminating the risk that software overhead bottlenecks might occur.

TAOS incorporates protocol modules supporting block-level SCSI transfers over either Fibre Channel or Ethernet (IP-SAN) networks. To facilitate SCSI over IP transfers, Spectra Logic is currently shipping its Internet Tape Protocol (ITP) module. ITP provides a complete and fully functional infrastructure that enables attachment of SCSI peripherals to an IP network. Spectra Logic expects to provide an iSCSI protocol module when the standard is solidified and adopted. Support for NAS-based (file-level) data storage is accomplished via a Network Data Management Protocol (NDMP) module.

For Fibre Channel environments, the Fibre Channel Protocol (FCP) standard with point-to-point, arbitrated loop and full fabric support is provided. Also available, is a Serverless Backup module that allows customers to utilize the FC network without imposing high CPU overloads on the application servers. Monitoring and management tools consistent with prevailing standards support both environments.

Flexibility. Scalability. Reliability. These are the essential prerequisites for consolidation of storage resources on a network. TAOS, running on Spectra Logic libraries, delivers these features today with technology designed to keep delivering into the future.

SPECTRA LOGIC

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