i8100A

KEY FEATURES

Inter-Fabric-Routing Gateway

Interoperability Within a Heterogeneous SAN

The i-8100A appears as an E_port within a local FC fabric. The i-8100A's E_port is fully compliant with FC standards, and provides basic services for native modes of FC switches of major vendors. All FC services (Zoning, Name and Configuration servers, PSS, FSPF, etc.) are terminated on the WAN-to-local-fabric boundary, allowing seamless interconnection between FC switches that would not normally be interoperable.

SAN Isolation

The ever-expanding SAN environment requires corresponding growth in management and system testing capabilities. Extending the SAN over distance not only increases demands on joint fabric support, but also creates configuration conflicts among systems that are managed independently.

The i-8100A provides the safety of SAN isolation through a combination of address translation and termination of services on the WAN-to-local-fabric boundary. As a result, storage can be shared without merging fabrics and any disruptions are fully contained in the local FC fabric.

Additional Security for SAN Fabrics

SAN isolation provides security by limiting visibility. The i-8100A provides additional SAN security by pairing LightSand's unique export/import firewall-like mechanism with conventional zoning. Access must be granted explicitly by the owner before a device is reachable from a remote site.

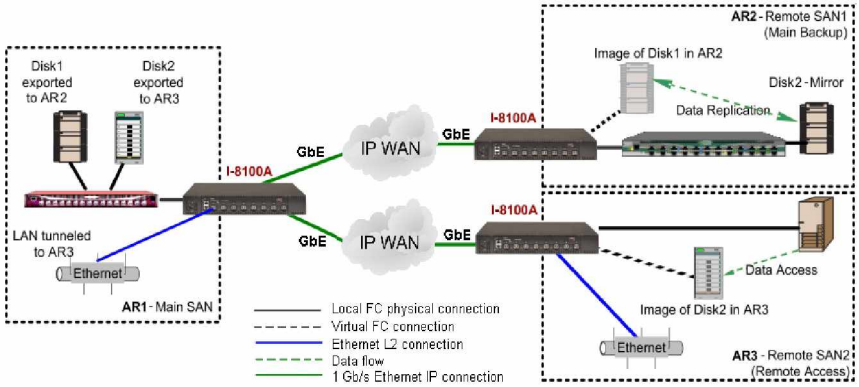
Engineered for Long Distance

The i-8100A is connected to the WAN over industry standard Gigabit Ethernet IP interfaces with software-configurable speed ranging from T1 to Gigabit Ethernet wire speed. The Congestion Avoidance mechanism on IP extension interfaces maintains maximal performance in shared or low bandwidth IP WAN environments. On the FCIP side, the i-8100A implements a connection oriented, frame-based protocol that moves FC and L2 Ethernet over IP for distances of thousands of kilometers without performance degradation, and with data and order delivery guaranteed. Any frame loss or corruption is completely recovered by the i-8100A rather than by FC end devices.

OVERVIEW

With the ever-increasing need to safeguard data, many companies are looking for methods of connecting their disparate and geographically distributed SANs (storage area networks) across the WAN. LightSand's i-8100A, a SAN extension gateway over routed IP networks, is targeted for applications that are well suited to the use of routed IP connections. This sophisticated 8-port gateway, which can connect directly to FC end devices, provides local switching, SAN-to-SAN isolation (routing between FC fabrics) and up to four Gigabit Ethernet extension tunnels for connecting between remote sites. The i-8100A brings superior scalability, isolation, security and wide area connectivity to FC storage networks.

When remote SANs are merged using a traditional connection over the WAN, the separate FC fabrics form a single large fabric operating over the distance. This approach, which may be adequate in small local environments, can lead to scalability and management problems when multiple sites and a greater number of FC switches participate in the fabric. LightSand's i-8100A adds a level of virtualization to the SAN, allowing multiple SAN islands to be interconnected without merging fabrics. Storage devices can be shared between sites, while the FC fabrics operate independently. Most importantly, the i-8100A enables this storage sharing for switches of different vendors, making them interoperable when they normally could not be part of the same fabric. The i-8100A's ability to interconnect multiple disparate SANs makes this gateway indispensable for creating powerful data center solutions.



APPLICATIONS

i-8100A SAN extension over MAN and WAN is designed for a wide variety of applications, with emphasis on storage consolidation, business continuity and disaster recovery.

Data Protection:
- Synchronous and asynchronous mirroring
- Remote tape vaulting and backup

Heterogeneous SAN Integration:
- Interconnection or consolidation
- Integration of multi-vendor remote fabrics

*WHAT IS AR/DAT?

AR/DAT stands for Autonomous Region / Domain Address Translation. Autonomous Regions were originally described in the ANSI T11 standards FC-BB and FC-SW-2. With AR, individual SAN fabrics can be connected to each other, yet remain autonomous.

Domain Address Translation segments the flat address space of entire FC SANs, allowing overlapped FC addresses in attached ARs. This feature facilitates handling of all configuration conflicts, allowing identical Domain IDs inside different ARs, and enabling zoning to be configured independently for each SAN Island. Using DAT, a storage device from one SAN can be represented as logically present in another, even though the fabrics have not been merged.

SPECIFICATIONS

SYSTEM ARCHITECTURE

Gateway Architecture .....8 ports, wire-speed, unblocked, aggregate bandwidth - 16 Gbit/sec

SAN Ports .....4 to 7 ports
SAN Port Media .....Fibre Channel, 1.0625 Gb/s, SFP, multi-mode (850 nm) as a standard
FC Standards .....FC-PH-2, FC-SW-2, FC-GS-3, FC-MI, FC-PH, FC-GS2, FC-FS, FC, PH-2
FC Port types.....E_port, F_port
FC CoS.....Class 2, Class 3, Class F
B2B Credits.....Up to 16
L2 Tunneling Ports .....1 to 3 ports (pre-configured)
L2 Port Media .....Gigabit Ethernet, 1.25 Gb/s, SFP, multi-mode (850nm), as a standard

WAN Ports.....1 of 4 ports (pre-configured)
WAN Port Media.....Gigabit Ethernet, 1.025 Gb/s, SFP, multi-mode (850 nm) as standard
Gigabit Ethernet Standards 802.3z
Encapsulation .....FC over IP (FCIP)
Extension Distance .....6000 km at Full Wire-Speed

SPECIAL FEATURES SET

Redundancy.....Box level redundancy
Compression.....Over IP, maximum ratio 1:21
Bandwidth Management .....Manual rate limitation; rate auto-adjustment (congestion avoidance)
FC Inter-Fabric Services .....AR/DAT, FC Firewall, Static address assignment

MANAGEMENT

Supported Software .....SANman™ (GUI); Telnet, SNMP; MIB-II, Fiber Alliance MIB, RMON MIB, RFC 2837, configurable traps
Management Access.....10/100BaseT Ethernet (RJ-45); Serial port;
Diagnostics.....BIST (built-in self test); Local Spin Test; Remote Spin Test; Bandwidth Probing

MECHANICAL SPECIFICATIONS

Dimensions .....Width: 17.4” x Depth: 17.9” x Height: 2.6” - 1.5u
Weight .....22.9 pounds (10.4 kg)
Rack Mounting.....19”rack
Cooling .....Front to back (fans FRU, hot swap)

POWER SPECIFICATIONS

Dual Power Supply (optional) .....FRU (hot swap)
Supported Power .....Nominal: 320mA at 220-240V; Nominal: 640mA at 110-115V (auto-select)
Frequency.....50/60 Hz
Power Consumption .....75 Watts (maximum)

ENVIRONMENT AND REGULATIONS

Temperature .....0ºC to 40ºC (32ºF to 104ºF)
Humidity.....5% to 85% non-condensing
Regulatory.....UL Listed, FCC Class A product, complies with Canadian ICES-0

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