

GN9000/SI

1 Gb/s iSCSI Host Bus Adapter



Major Features

Multiple OS/platform support: Solaris, Windows 2000, Linux

32/64bit—33/66Mhz PCI Host Bus Adapter

1.0 Gb/s Ethernet link speed—Full duplex

SCSI Architectural Model (SAM-2) and SCSI-3 Command Sets

SCSI Block Level data encapsulated in IP (iSCSI)

Supports Initiator and Target Mode

Support for standard TCP/IP—Reliable data delivery (TCP), IP routing

Remote data access from Fibre Channel SANs over Ethernet/IP networks

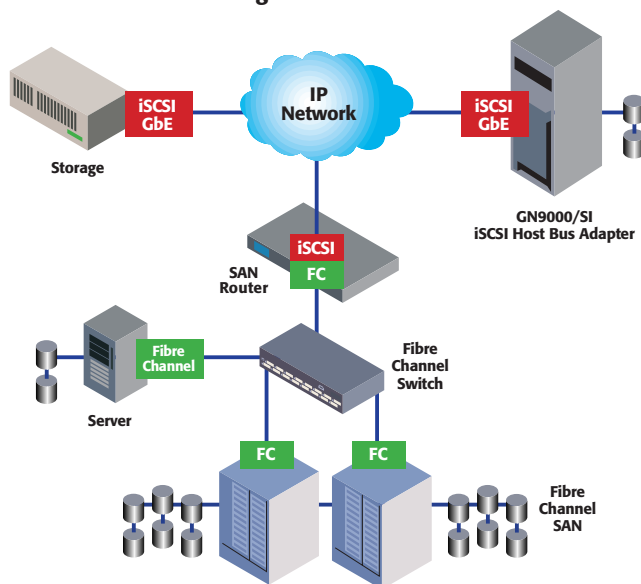
Description

The majority of the storage systems installed today support SCSI-based block level data access in local environments. SCSI-based storage access solutions have evolved to meet expanding requirements for high performance and reliability, but they have yet to overcome distance limitations. To overcome these limitations, yet still deliver throughput performance that is competitive with direct attached storage devices, the industry has introduced the new iSCSI protocol, which implements SCSI protocols over Ethernet/IP networks.

The GN9000/SI Host Bus Adapter (HBA) is one of the new Giganet® family of IP Networking products from Emulex. The GN9000/SI implements the iSCSI and TCP/IP protocols in firmware to achieve the maximum storage access performance over standard Gigabit Ethernet/IP networks. The result is full Gigabit Ethernet wire rate throughput, with less than 10% CPU overhead.

By encapsulating SCSI protocols in standard TCP/IP packets, the GN9000/SI HBA reliably transports block level data over existing Gigabit Ethernet/IP-based network infrastructures. Supporting both initiator (host) and target (storage device) modes, the GN9000/SI enables host systems to deliver and access block level data to and from remote SANs anywhere within a Gigabit Ethernet/IP network, delivering data where it is needed.

Universal Storage Access Over IP Network



SPECIFICATIONS

The GN9000/SI supports standard Gigabit Ethernet 1000 Base SX, SCSI SAM-2 architecture and SCSI-3 command sets. SCSI protocols are encapsulated within the networking protocols, TCP for reliable data delivery and IP for routing, to ensure compatibility with standard IP-based networks. The GN9000/SI also supports the widely deployed Simple Network Management Protocol (SNMP) for interoperability with commonly deployed management systems. Initial operating system support includes Solaris with later support for Windows 2000 and Linux. The GN9000/SI supports Emulex's service level interface (SLI) API, extending its support to servers and storage solutions from companies such as IBM, Compaq, HP, and EMC.

Standards Compliance

TCP/IP
IEEE 802.3z Gigabit Ethernet
1000 BASE SX
IEEE 802.3x Flow Control
iSCSI specification (standards pending)
iSCSI Architectural Model (SAM-2)
and SCSI-3 Command Sets
Multi-Mode Optical Fiber MT-RJ
Connectors
PCI V2.2
SNMP MIB-II

Architecture

32/64-bit 33/66Mhz PCI 2.1-2.2 compliant, short PCI card
32MB SDRAM
1 MB Flash Memory
1 Gb/s full duplex link
iSCSI Architectural Model (SAM-2) and SCSI-3 Command Sets
Block level SCSI data over IP networks (iSCSI)
RDMA read and write functionality
Single initiator, multiple target support—support for multiple initiations

Software Environments

Solaris 8 Operating System Environment for supported Sun Platforms at initial release
Windows 2000 (Q4 CY01)
Linux: Redhat and Turbo Linx (Intel-compatible) (Q1 CY02)
TCP/IP V4 & V6
SNMP MIB II agent enabled
Emulex service level interface (SLI) support

Hardware Environments

Sun (select platforms)
Intel x.86-based PC systems
PCI hardware 2.2 platforms
Fully interoperable with all L2/L3/L4 Gigabit Ethernet switches
Fully Ethernet and IP-compatible LAN and WAN support

Gigabit Ethernet—Optical Fiber

Data rates: 1 Gb/s full duplex link /2.0 Gb/s bi-directional throughput
Cable type: 1000Base-SX Multi-mode optical fiber
Connector type: Single MT-RJ connector
Distance: 62.5 micron optical fiber supports up to 275 meters
50 micron optical fiber supports up to 550 meters

Physical Dimensions

Short PCI Card
Height: 4.1 inches
Width: 6.5 inches

Power Requirements

Universal 5v/3.3v PCI (auto-sensing)

Environmental Conditions

Operating Temperature: 0 to 55° C
Storage Temperature: -20 to 70° C
Operating Humidity: 0 to 95% (non-condensing)
Storage Humidity: 0 to 95% (non-condensing)

Agency Approvals (Pending)

UL1950
ICE 950
EN60950
cUL 22.2 No. 950
CE Mark
CB scheme
FCC Part 15 Class B
EN55002 Class B
EN50082-1
VCCI
AS/NZ S3548
CISPR 22

Management Features

Management of the GN9000/SI product is supported by two user level agents—the SNMP agent and the Node agent—and a management application. The SNMP agent exports two MIBs to the SNMP name space: The Node agent supports the launch of hardware diagnostics, stress and performance tests, firmware upgrades, and TCP/IP stack synchronization.

Driver Support

The GN9000/SI iSCSI HBA supports TCP reliable data delivery, IP routing support, and the pending iSCSI encapsulation standard. Operating support includes Solaris 8 for select SPARC systems and support for Windows 2000, and Linux Redhat and Turbo Linux Intel-based operating system environments. The Emulex service level interface (SLI) API is also supported.



Emulex Corporation

3535 Habor Boulevard
Costa Mesa, California 92626
(800) 854-7112 (714) 662-5600

(44) 118 977 2929 Wokingham, U.K.
(33) 1 41 91 19 90 Paris, France
(61) 2 9976 2997 Manly, Australia (agent)

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