

FEATURES

- CHOICE OF 6-PORT OR 12-PORT CONFIGURATION OPTIONS USING COPPER OR OPTICAL GBICS
- MODULAR DESIGN ENABLES INSTALLATION AND UPGRADE OF MANAGEMENT CAPABILITIES
- REFLEX™ AUTOMATIC PORT BYPASS ENSURES NETWORK INTEGRITY
- PERFECTPORT™ SIGNAL RETIMING AND REGENERATION ENABLES RELIABLE SCALABILITY
- UNPARALLELED NETWORK AND NODE LEVEL MANAGEMENT WITH VENTANA™ SAN MANAGER

OVERVIEW

Gadzoos® Networks' Gibraltar™ product line of Fibre Channel hubs, consisting of the Gibraltar GS and the Gibraltar GL, is an integral part of a fully managed Storage Area Network (SAN) infrastructure. Within the framework of a SAN, Gibraltar hubs provide gigabit-speed storage connectivity, network management, data reliability and modular network scalability. With this SAN foundation, the bandwidth, distance and scaling limitations of current bus-based storage architectures are eliminated.

Gadzoos Gibraltar hubs provide modular multi-tiered SAN management solutions resulting in the industry's most comprehensive and robust SAN management. This is achieved through a variety of management modules and downloadable agents. These distributed intelligent agents monitor the SAN, perform automated tasks and intervene when they detect events that can potentially compromise the network reliability, availability and security. These agents can interact with networking devices, storage devices or management applications using either proprietary or open specifications. By distributing

GIBRALTAR

the management intelligence among key areas of monitoring and control, our management architecture can provide a wide range of capabilities for virtually every application environment and level of system administration.

FLEXIBLE CONFIGURATION OPTIONS

The Gibraltar product line offers the IS professional a choice of configuration options for pay-as-you-grow flexibility in implementing a SAN. Gibraltar uses modular GBICs (Gigabit Interface Converters) for port-to-port selection of a variety of copper or optical media.

Gibraltar hubs are available in 6-port and 12-port manageable versions. The 6-port Gibraltar GL gives customers an economical starting point for satisfying the storage connectivity requirements typical of mid-range departmental servers. The 12-port Gibraltar GS is geared more toward fulfilling the storage capacity and connectivity requirements typical of the high-end enterprise server. In either case, the two versions offer identical enterprise functionality and are completely interoperable and cascable.

ENHANCED NETWORK INTEGRITY

Gibraltar's Reflex feature ensures data reliability and network continuity even if a port fails or is disconnected. Reflex detects a port failure or disconnection and automatically bypasses the failed port. Reflex then automatically reconfigures the loop to ensure uninterrupted network integrity between all operating devices. Newly connected devices are also automatically detected and registered onto the operating loop without causing disruption to established data paths (see Figure 1).

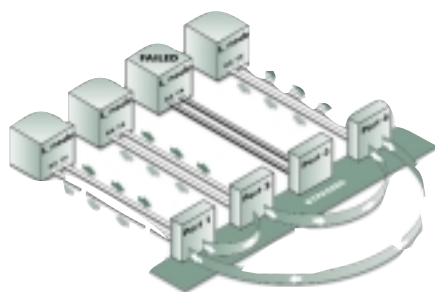


FIGURE 1

Reflex embedded manageability provides unmatched FC-AL resiliency by preventing invalid nodes from disrupting other devices on the SAN.

The validity of the Reflex automatic reconfiguration function is assured through a complete suite of intelligent data detection tests embedded within Gibraltar. The data tests detect various error conditions including signal strength and validity, conformance to physical layer standards, presence of oscillation, and existence of a damaged cable.

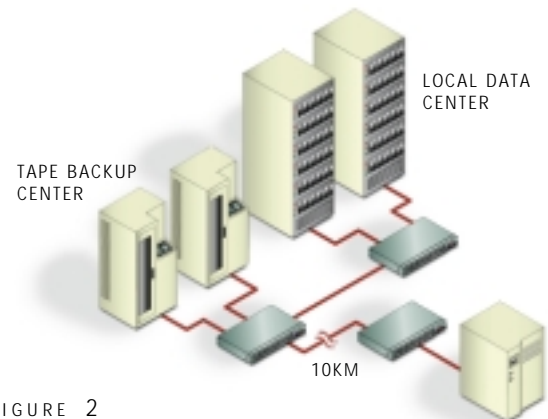


FIGURE 2

PerfectPort retimes the signal, allowing reliable cascability between hubs.

RELIABLE SCALABILITY

Gibraltar is a product line of fully managed hubs which use Fibre Channel as the transport technology for creating a SAN environment. The combination of Fibre Channel technology with Gibraltar manageability results in an infrastructure with far greater scalability than current storage configurations. Existing bus-oriented SCSI environments have significant limitations in terms of number of devices supported, bus distance restrictions, available bandwidth, and expandability of the wiring plant.

In contrast, Gibraltar hubs can be cascaded, using any of the hub ports, allowing modular growth of the network. The key to being able to reliably deploy multiple cascaded Gibraltar hubs lies in the PerfectPort feature. PerfectPort is a per-port signal regeneration and re-timing feature which ensures the data signal strength and integrity out of and into each Gibraltar port. In this way, even when Gibraltar hubs are cascaded using maximum Fibre Channel copper or optical cabling lengths, integrity characteristics are maintained (see Figure 2).

MODULAR SAN MANAGEMENT

The Gibraltar G-series hubs have two available management modules. The IntraCom™ Management Module (IMM) provides advanced management of the Gibraltar hub-based SAN infrastructure, and the Nomad™ Management Module (NMM) provides comprehensive end-to-end management, including all nodes attached to Gibraltar hubs. Both modules allow for easy installation and upgrade as management requirements grow.



*Easy to install
Management Module*

MANAGEMENT MODULE OPTIONS

GIBRALTAR INTRACOM MANAGEMENT MODULE (IMM)

Gadzoox provided the industry's first managed hubs with the introduction of the IntraCom Management Module (IMM). An IMM, once installed in a Gibraltar G-series hub, uses an intelligent agent to discover the SAN devices, display status, environmental information, events, and alerts at the port and hub level. The IntraCom proxy management system uses out-of-band communication that allows master devices to monitor and control cascaded devices without depending on general network availability. This capability helps enable monitoring, control and troubleshooting even when the network is down. Since it is not dependent on the Fibre Channel transport, IntraCom technology

provides the most robust and reliable management solution while eliminating the need for independent management connections to every SAN device.

GIBRALTAR NOMAD MANAGEMENT MODULE (NMM)

The NMM builds on the capabilities of the IMM, introducing the node agent, which provides an unprecedented level of discovery, monitoring and management of end nodes connected to Gibraltar hubs. The NMM uses in-band discovery (SCSI over Fibre Channel) to collect asset information, monitor the node status and provide an in-depth view of Fibre Channel devices for complete end-to-end SAN management. With the NMM installed, a SAN administrator can discover and manage host-bus adapters, disk drives, tape drives, RAID devices, SCSI targets and initiators, and SES enclosures. The NMM provides this unique capability while maintaining all of the advanced IMM features.

GRAPHICAL USER INTERFACE

Ventana SAN Manager is an intuitive, graphical user interface that allows SAN administrators to monitor and control a SAN.

Ventana provides a real-time view of the network and allows manual and policy-based control of the network devices and nodes. To assist with rapid trouble-shooting, Ventana provides comprehensive asset management of SAN devices, network diagnostics and traffic analysis, fault isolation, and SNMP alert notification and security.

Refer to the Ventana SAN Manager brochure for a complete description of the Ventana management and GUI capabilities.

Feature	Gibraltar Advantage
Reflex	<ul style="list-style-type: none"> Automatic port bypass, LIP detection and generation. Eliminates the blind propagation of disruptive events. Facilitates robust hot-plugging, dynamic reconfiguration and topology discovery, and the highest level of stability.
PerfectPort	<ul style="list-style-type: none"> Output signal amplification and retiming for superior signal integrity. Enables the addition of Fibre Channel ports through the cascading of multiple hubs. Does not require consumption of additional PCI slots in order to add ports.
IntraCom Proxy Management	<ul style="list-style-type: none"> Communicates and manages entire network from a single connection, no additional cabling required.
Modular Mgmt (IMM, NMM)	<ul style="list-style-type: none"> IMM provides upgrade to proactive policy-based SAN infrastructure management. Does not rely on general network availability or interfere with Fibre Channel traffic. NMM upgrade provides complete end-to-end management including monitoring of node devices and events.
Network Scalability	<ul style="list-style-type: none"> 6- or 12-port versions. Cost-effective options providing identical functionality and complete interoperability and cascading. Supports all available GBIC types - SW, LW, and copper, providing a broader range of cost and distance options.

TECHNICAL SPECIFICATIONS

FUNCTIONAL SPECIFICATIONS:

BIT RATE: 2.125 GIGABIT, FULL DUPLEX
DATA THROUGHPUT: 200 MBYTE/SEC, FULL DUPLEX
NUMBER OF PORTS: 6 OR 12
PROTOCOLS SUPPORTED: FC-AL, FC-AL-2, FC-PH, FC-PH-2, FC-PH-3, FC-PLDA, FCP, SNMP
MANAGEMENT ACCESS: RS232, 10BASE-T, TELNET
PROXY MANAGEMENT: GADZOOX INTRACOM
MANAGEMENT STANDARDS: IETF FIBRE CHANNEL MANAGEMENT MIB

PHYSICAL SPECIFICATIONS:

HEIGHT) 1.66IN/42.2MM WIDTH) 17.3IN/439.4MM DEPTH) 17.2IN/435.8MM
WEIGHT: NET-10.5LBS (4.725 KG)

ENVIRONMENTAL SPECIFICATIONS:

OPERATING TEMPERATURE: +10°C TO +40°C
STORAGE TEMPERATURE: -30°C TO +60°C
OPERATING HUMIDITY: 20% TO 80% NON-CONDENSING

ELECTRICAL SPECIFICATIONS:

AC VOLTAGE: 100-240 VAC.
POWER: 3A-1.5A, 50-60 HZ

CONNECTIVITY:

GIBRALTAR GS: 12-PORT MIXED COPPER OR OPTICAL GBIC
GIBRALTAR GL: 6-PORT MIXED COPPER OR OPTICAL GBIC

SAFETY COMPLIANCE:

UL UL 1950, 1995, 3RD EDITION
CSA CAN/CSA C22.2 NO. 950-95, 3RD EDITION
TUV EN 60950:1992 A1, A2:1993, A3:1995, A4:1997
CB SCHEME CB BULLETIN NO. 86A1

EMC COMPLIANCE:

CE EMISSIONS REQUIREMENTS EN55022:1994 (CISPR 22, CLASS A)
CE IMMUNITY REQUIREMENTS EN55082-1:1992 (IEC801-2:1984, IEC801-3:1984, IEC801-4:1988)
FCC EMISSIONS FCC PART 15, SUBPART B, CLASS A
CANADIAN REQUIREMENTS ICES-003, CLASS A
VCCI CERTIFICATION VCCI, CLASS A

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