LeWiz COMMUNICATIONS

10 Gbps, Copper/Optical HBA, 2M concurrent sessions

LeWiz's MAGIC2028-10G™ is a 10 Gbps ultra high performance CX-4 Copper/Optical PCI-X host bus adapter (HBA) with a powerful on-board TCP/IP Offload Engine (LE2028™) chip. This dual option board is designed for high performance high usage networked systems such as servers, storage and networked appliances over copper or optical. By off-loading TCP/IP processing to hardware, the MAGIC2028-10G™ takes the host processor(s) out of the TCP/IP loop, no longer performing the major TCP/IP tasks in software. This balanced approach allows the host processor(s) to utilize most of its processing capability to run applications resulting in reduced system bottlenecks and enhanced system performance. Furthermore, the MAGIC2028-10G™ accelerates the TCP/IP processing effectively reducing network latency and overhead in network attached systems. The MAGIC2028-10G™plugs directly into the systems PCI-X slot. It has the capability of handling a load of up to 2M concurrent connections.

TCP/IP is the protocol used to communicate server to server, server to PC, server to storage, server to network appliance, and the list of applications continues to expand. Unfortunately, TCP/IP places a very heavy burden on host CPUs. With the advent of 10 Gbps ethernet, server CPUs choke while processing the TCP/IP overhead associated with transferring data. This board offloads the TCP/IP processing from the host CPUs, freeing up valuable CPU cycles for application processing while maintaining the programmability, configurability, and flexibility via the host interface. It supports fail-over protection/alternate pathing capability required in high-performance server and storage systems. The result is faster servers, an accelerated network, and superior application performance, saving cost and improving reliability for the enterprise network. The MAGIC2028-10G™ is ideal for network intensive environments such as file serving, network attached storage (NAS), high performance technical computing, high-end backup and restore, IP storage, and video serving.

Using LeWiz's advanced layer-processing architecture, the MAGIC2028-10G™ with the LE2028™ chip offers the highest performance, lowest power and most cost effective way of addressing the performance bottlenecks found in many IP network-attached equipment.

Benefits

- Lowers overall network cost
  - Increases throughput and load handling for systems
  - Delay new purchase hardware and software
  - Better reliability, less downtime
- Enhances and balances system performance
  - 2M concurrent connections
  - Allows processor to run applications efficiently
- Enhances system security
- Reduces network maintenance and service cost
- Non-intrusive to system hardware and software
- Easy installation

Features

- Performs TCP/IP functions in hardware, not software, for lowest latency and overhead
- Handles MACs directly without CPU intervention
- Full TCP/IP offload
- Supports fail-over protection (alternate pathing)
- On chip DMA engine for high speed data throughput
- Full remote diagnostics capability
- Qualified across multiple host platforms from Dell™, HP™, IBM™, SUN™, and others
- Supports all CPU types: Opteron™, Pentium™, Xeon™, PowerPC™, SPARC™, MIPS™, and others
- Board size: Short Form PCI-X HBA (4.2" x 6.6")

Applications

- Servers (application servers, Web/DNS/e-mail/file servers, etc.)
- Storage (iSCSI, SAN/NAS, etc.)
- iSCSI NIC, initiator or target
- Security appliances (firewalls, load balancers, etc.)
- Network appliances
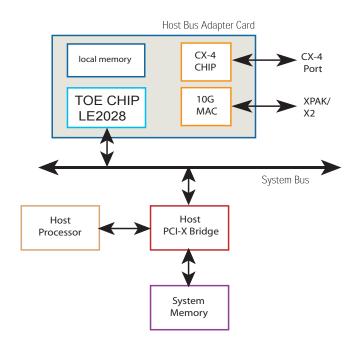- Compression systems
- Streaming Multimedia

RedHat AS 4.0
SUSE LES 9.0
RedHat 9.0
Variety of 32/64 bit,
2.6/2.4 kernels

MAGIC2028-10G™

Host Bus Adapter Card

local memory	CX-4 CHIP → CX-4 Port
TOE CHIP LE2028	10G MAC → XPAK/X2

System Bus

Host Processor ↔ Host PCI-X Bridge

System Memory

**Gigabit MAGIC2028-10G™
with LE2028™ TCP/IP Offload Engine**

Product Functionality

• Compatible with PCI-X 1.0b and PCI 2.2 Standards
• 64-bit/133/100/66MHz, 3.3V PCI-X bus interface
• Compatible with IPv6 and IPv4
• External SDRAMs extend up to 2M concurrent connections
• Concurrent transmit and receive operations
• Buffers optimized for fast packet & stream transfers
• Full software support with device drivers

Ordering Part #: Magic2028-10G

TCP/IP Features Supported

• Full TCP/IP offload
• Non-intrusive to existing TCP/IP stack
• Reassembly of incoming data
• Segmentation of outgoing data
• Sequence ordering - handling out of order segments
• Overlap elimination - handling duplicate segments
• Re-transmission, Flow control, etc.
• TCP timer handling
• Connection set up and tear down
• Hardware checksum processing
• Window scaling, updating, and sizing

LeWiz
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LeWiz Communications, Inc.
1376 N. 4th St. Suite 300
San Jose, CA 95112
408.452.9800 x110
408.452.9805 FAX
info@lewiz.com
www.lewiz.com