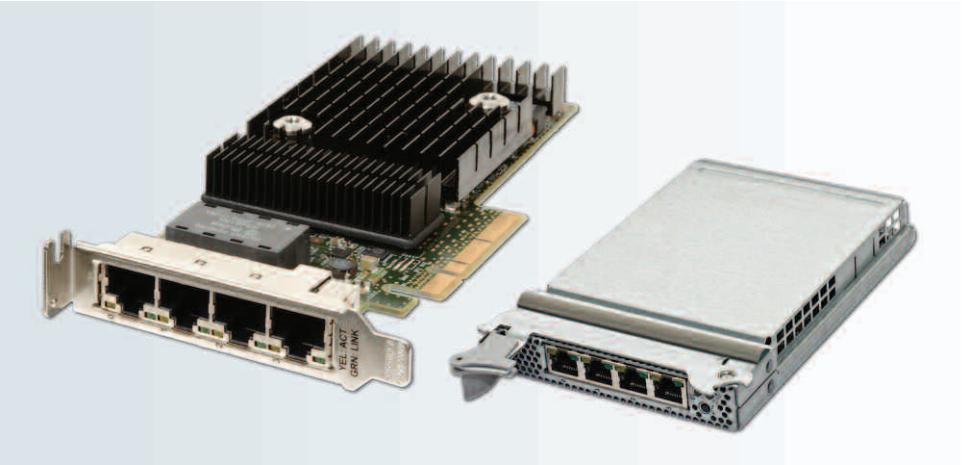
Sun Multithreaded Quad Gigabit Ethernet Networking Cards

Enterprise class networking



The Sun Multithreaded Quad Gigabit Ethernet Networking cards hosts four high-performance Gigabit interfaces in a single PCIe slot to provide high bandwidth server-to-server and server-to-switch connections while conserving valuable PCIe slots at a lower cost per port. It extends CPU and OS parallelism to networking with its support for Solaris™ Logical Domains (LDOMs), hardware-based flow classification and multiple Direct Memory Access (DMA) channels. By reducing CPU processing loads with packet parsing, hardware check sum generation and interrupt coalescing, the cards can also help increase server efficiency and mitigate network congestion.

Highlights

- Sun multithreaded networking technology
- Quad-port x8 PCIe low profile adapter and ExpressModule
- Cost-effective network connectivity with four high-performance gigabit interfaces in single PCIe slot
- Enhanced flexibility to provide extremely high bandwidth connectivity using multiple cards per server
- Efficient throughput for large packet sizes through low overhead jumbo frame support
- Increased network reliability with multipathing and link aggregation features that help enable failover and load balancing
- Reduced CPU load through hardware support for checksum generation, packet parsing and interrupt coalescing
- Hardware-based flow classification that extends OS parallelism and virtualization to networking
- RoHS-6 (lead-free) compliant

Protect existing investments

Compliant with IEEE 802.3 standards, the Sun Multithreaded Quad Gigabit Ethernet Networking cards can help protect investments in your existing infrastructure, applications and expertise while helping you to upgrade portions of your network to higher network throughput. The interoperability can preserve your existing core wiring infrastructure and help enable a cost–effective and seamless migration to gigabit Ethernet technology.

Deliver greater performance

The Sun Multithreaded Quad Gigabit Ethernet Networking cards can help improve network throughput as well as application performance through features that help you maximize the use of your network bandwidth and offload CPU resources. Using CPU thread affinity to bind a given flow to a specific CPU thread, it enables a one-to-one correlation of Rx and Tx packets across the same TCP connection. This can help avoid cross-calls and context switching to deliver greater performance while reducing the need for CPU resources to support I/O processing.

Jumbo frame support can also help reduce the overhead associated with handling Ethernet packets. Sending and receiving large packets (up to 9k bytes versus standard Ethernet packets of 1.5k bytes) reduces the total number of packets, resulting in a virtual increase in throughput and a reduction in CPU utilization. The networking cards also deliver fat pipe performance via link aggregation that is transparent to the application by helping you to aggregate network traffic across multiple gigabit links.

Sun Multithreaded Quad Gigabit Ethernet Networking Cards Specifications

Features

- PCI-Express bus architecture 1.0a
- RoHS-6 (lead-free) compliant
- Fully compliant with IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
- Compliant with IEEE 10BASE-TX, 100BASE-TX, 1000BASE-T network interfaces
- Supports IEEE 802.1Q VLAN for increased network security
- Supports IEEE 802.1P/802.1D priority tagging for increased reliability and Quality of Service (QoS)
- Hardware support for checksum generation, packet parsing and interrupt coalescing to offload CPU processing and increase server efficiency
- Support for IPv4 and IPv6
- Supports Cat 5 UTP media
- Networking I/O virtualization supporting Solaris
- Multiple Direct Memory Access (DMA) channels
- IP multipathing and redundancy/failover between two cards for improved reliability
- Hardware-based flow classification for extending parallelism and virtualization to networking
- Link aggregation (SO103U and above) for failover and load balancing
- Jumbo frame support (8 KB) for high throughput of large packet sizes
- Dynamic Reconfiguration (DR) support

Physical characteristics

Low Profile Adapter

Length
- 6.6 in. (167.65 mm)

Width
- 2.713 in. (68.90 mm)

Height
- Component side: 0.57 in. (14.48 mm)
- Solder side: 0.105 in. (2.67 mm)

ExpressModule

Length
- 6.69 in. (170 mm)

Width
- 4.41 in. (112 mm)

Height
- 0.85 in. (21.5 mm)

Power requirements

Maximum power consumption
- 15 watts

Typical power consumption
- 10 watts

Performance specifications

Maximum Ethernet transfer rate
- 1 Gb/sec each Ethernet port

Host interface
- x8 lane PCI-Express 1.1

Interface
- IEEE 802.ae, 2002 compliant

Optics
- IEEE 802.3ae 2002 compliant

Ethernet relevant standards supported

- IEEE 802.3ab gigabit Ethernet standards
- IEEE 802.ae, 2002
- IEEE 802.3u
- IEEE 802.3d
- IEEE 802.1P/802.1D Priority Tagging/QoS
- IEEE 802.1Q VLAN
- IEEE 802.3ad link aggregation
- TCP/UDP/IP h/w checksum offload

Hardware systems supported

- Refer to product Web pages for most current updates. Low Profile Adapter supports Sun rack servers. ExpressModule supports Sun Blade servers (SPARC®/CMT and x64) with PCI-Express I/O.

Learn More

For more details about the Sun Multithreaded Quad Gigabit Ethernet Networking card, visit **sun.com/networking**

Operating Systems

- Solaris OS, SPARC and X86 operating system
  - S10U3, S10U2 + KU
- Red Hat Linux
  - RH4 U3 and U4, 64b
- SuSE Linux
  - SuSE 10 64b
- Refer to product Web pages for most current status on future support of additional OS such as:
  - SuSE 9 64b
  - Microsoft Windows Server 2003
  - VMWare

Certifications

- FCC Class B (US Canada)
- CISPR 22 Class B (Australia, New Zealand)
- BSMI CNS 13438 Class A (Taiwan)
- VCCI Class B (Japan)
- EN55022
- EN55024
- EN60950
- UL 60950/CAN/CSA-22

Ordering Part Numbers

- X4447A-Z Sun Quad GbE x8 PCIe Low Profile Adapter, LP bracket on board, standard bracket included
- X7287A-Z Sun Quad GbE x8 PCIe ExpressModule

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