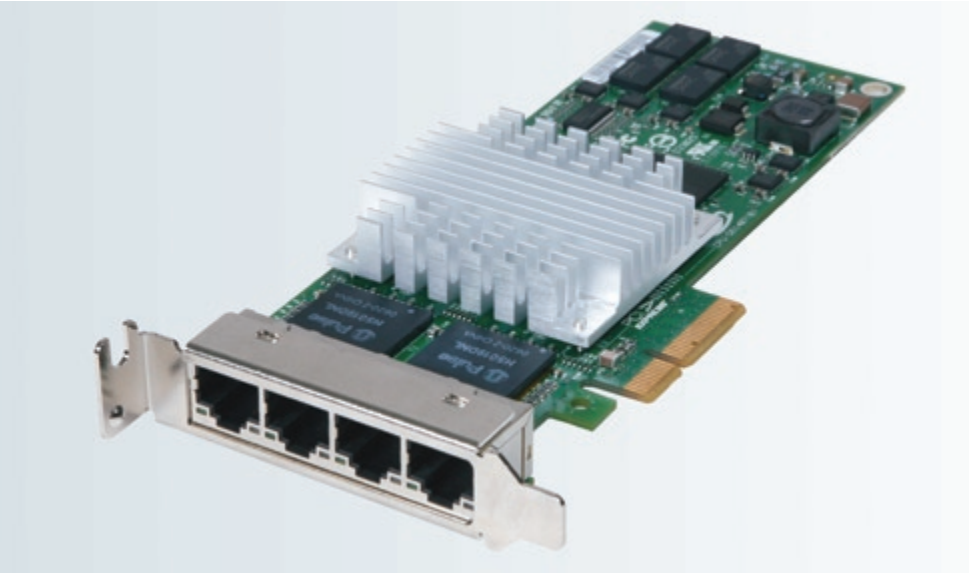
Sun™ x4 PCI-Express Quad Gigabit Ethernet Networking Cards

High-density gigabit networking in a single PCIe slot



Now Sun systems can take full advantage of the industry standards-compliant PCI-Express Gigabit Ethernet technology with network interface cards designed for high-throughput and high-performance network connectivity. The Sun x4 PCIe Quad Gigabit Ethernet Networking Cards host 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 per-port cost.

Highlights

- Quad Gigabit Ethernet connectivity using a single PCI-Express slot
- 10/100/1000 Mbps autosensing Ethernet ports
- Hardware assist for TCP/UDP checksum, packet parsing, and interrupt coalescing
- RAS features include Dynamic Reconfiguration (DR), redundancy, and failover support
- Support for jumbo frames
- Support for link aggregation
- Increased bandwidth provides efficient, high-speed backups of large data files
- Fully compliant with IEEE 802.3 standards

By reducing CPU processing loads with packet parsing, hardware checksum generation, and interrupt coalescing, server efficiency can be increased, network congestion mitigated, and computing performance leveraged. Compliant with IEEE 802.3 standards, the Sun x4 PCIe Quad Gigabit Ethernet Networking Cards enable customers to retain existing infrastructures, applications, and expertise when they upgrade portions of the network to Gigabit Ethernet technology. The interoperability can preserve customers' existing core wiring infrastructures, helping to enable cost-effective, seamless migration to higher network throughput.

Jumbo frame support can reduce the overhead associated with handling Ethernet packets. Through sending and receiving large packets (up to 8 KB) versus standard-size Ethernet packets of 1,581 bytes, the number of packets is reduced. This results in a virtual increase in throughput and a reduction in CPU utilization.

Sun x4 PCIe Quad Gigabit Ethernet Networking Cards, combined with a Solaris™ 10 Operating System link aggregation (IEEE 802.3 ad) support, deliver fat pipe performance that is transparent to the application. By aggregating traffic across multiple gigabit links, customers can dedicate the bandwidth they need for particular connection and application requiring high throughput. The aggregated links also provide robust link protection for each other.

Sun x4 PCI-Express Quad Gigabit Ethernet Networking Cards Specifications

ExpressModule for blade servers (X7284A-z)

Key features

- 1000BASE-T/1000BASE-SX gigabit performance
- Fully compliant with IEEE 802.3 standards
- Support for IEEE 802.1Q VLAN
- Support for IEEE 802.1P and 802.1D priority
- Tagging and Quality of Service (QoS)
- Support for link aggregation:
  - Delivers aggregated bandwidth, allowing higher data rates than any single Gigabit Ethernet link
  - Enhanced availability, with load balancing and failover capabilities
- RAS functionality helps provides high availability and increases network uptime:
  - Support for redundancy and failover configurations
- Support for jumbo frames:
  - Help reduce overhead of large file transfers by enabling larger packet size instead of standard Ethernet packet size
- Supported on the Solaris 10 OS and later versions
- Server efficiency increased with hardware assist for:
  - TCP checksum generation and checking
  - Packet parsing and interrupt coalescing
- Full and half duplex modes

Benefits

- Increased productivity and cost savings via high network throughput
- Low cost of ownership and investment protection via open standards and interoperability
- Increased network security and cost savings via departmental network segmentation to relieve network congestion
- Increased network reliability and cost savings via support for QoS for mission-critical traffic service
- Sun quality and performance

Specifications

Low Profile Adapter supports x64 rack servers

ExpressModule supports blade servers

Network interfaced	Four gigabit Ethernet ports
PCIeBus	Compliant with PCIe 1.0a specs: • 3.3 V DC • Low-profile PCIe card • Master/slave modes

Dimensions

Low Profile Adapter for rack servers

- Length: 167.65mm (6.6 in.)
- Width: 68.90mm (2.713 in.)
- Component side: 14.48mm (0.57 in.)
- Solder side: 2.67mm (0.105 in.)

ExpressModule for blade servers

- Length: 170mm (6.69 in.)
- Width: 112mm (4.41 in.)
- Height: 21.5mm (0.85 in.)

Software supported

Operating systems*	The Solaris 10 OS: U3 Linux: RHEL4-U4 (64-bit/32-bit), RHEL3-U8 (64-bit), SUSE10 (64-bit/32-bit), SUSE9 (sp3/64-bit) Windows: Win2003 (64-bit/32-bit)
Other	Firmware supports remote boot for all supported operating systems Diagnostic SunVTS™ 4.4 and higher

Environment

Operating temperature	0° to 55° C
Storage temperature	-40° to 70° C
Relative humidity	0 to 95 percent, noncondensing

Shock and vibration

Operating shock	2.5 G, 11 msec., 1/2 sine
Nonoperating shock	18 G, 11 msec., 1/2 sine, 4/face
Operating vibration	0.25 G, 5 to 500 Hz
Nonoperating vibration	0.6 G, 5 to 500 Hz

Power consumption

Maximum	15 W

Learn More

For more information about the Sun x4 PCI-Express Quad Gigabit Ethernet Networking Cards, visit sun.com/products/networking/ethernet/.

Certifications

- FCC Class A
- VCCI Class A
- UL 60950
- Third Edition
- CSA 60950
- Third Edition
- CB Scheme
- IEC 60950-1
- 2001
- First Edition

Ethernet

- Quad 10/100/1000 copper
- Ethernet ports

Standards compliance	IEEE 802.1Q VLAN (the Solaris™ 8 OS or later) IEEE 802.1P and 802.1D Priority tagging and QoS IEEE 802.3-compliant

Connections

Ethernet connections	UTP: Four RJ45 UTP connectors for CAT 5 copper cabling Operating distance up to 100 meters

Ordering information

X4446A-z — Sun x4 PCIe Quad Gigabit Ethernet Low Profile Adapter for rack servers

X7284A-z — Sun x4 PCIe Quad Gigabit Ethernet ExpressModule for blade servers

[1] Updated OS support details can be found at: sun.com/products/networking.

Most up-to-date information for supported systems is available in the Platform Support Matrix at sun.com/products/networking.

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