

SUN MULTITHREADED 10 GIGABIT ETHERNET NETWORKING CARDS

KEY FEATURES AND BENEFITS

ACCELERATE APPLICATION PERFORMANCE

FEATURES

- High-bandwidth, dual-port 10 GbE cards for application acceleration and I/O virtualization
- 10 Gb/sec wire speed performance and cost savings (aggregation of multiple GbE links/ports)
- Increased network reliability with dual ports and RAS features

BENEFITS

- Ideal for network-intensive applications and services
- Achieve fast database access and backup, and better large data warehousing
- Improve Web infrastructure, cluster computing, and HPC/grid
- Optimize video streaming and IPTV

With parallel processing and chip multithreading (CMT) technologies becoming more pervasive, high-performance applications are now more dependent on I/O throughput and memory latency for performance gains. Oracle's new dual-port 10 Gigabit Ethernet (GbE) technology is designed to help accelerate application performance by optimizing I/O throughput within environments that use parallel threads. Based on innovative multithreaded ASIC and throughput networking software, new Sun Dual 10 GbE Fiber XFP Networking Cards from Oracle can provide the critical bandwidth and granular resource allocation required for parallel applications and high-speed networks.

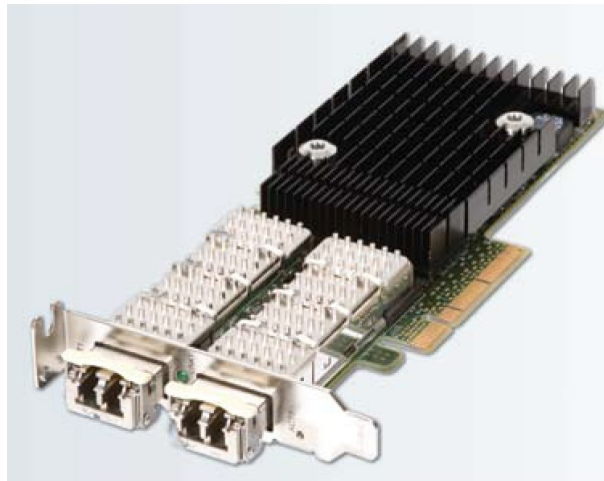


Figure 1. Sun Multithreaded 10 GbE Networking Cards accelerate application performance.

High-Performance Networking Cards

The dual-port Sun Multithreaded 10 GbE Networking Cards extend CPU and OS parallelism to networking with their support for hardware-based flow classification and multiple DMAs. Using CPU thread affinity to bind a given flow to a specific CPU thread, they help enable 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.

Optimization of Resources

The networking cards also make it easier to optimize and customize resources for applications, services, and users. Their load balancing and granular resource control features enable incoming packets to be assigned to specific CPU threads or balanced across L1, L2, L3, and L4. This offers a high level of flexibility and granularity for assigning resources and can help avoid I/O bottlenecks.



Figure 2. The Sun Dual 10 GbE XFP PCIe ExpressModule for blade servers without a transceiver (Sun X1028A-z)

Sun Multithreaded 10 Gigabit Ethernet Networking Cards Features

Sun Multithreaded 10 GbE Networking Cards include products that offer a variety of robust features:

- Dual 10 GbE port x8 PCI Express 1.1 compliant, Fiber XFP MSA compliant
- IEEE 802.3ae 2002 compliant
- Use of Oracle's own ASIC and software for innovative throughput networking design
- Networking I/O virtualization—already built into the adapter for supporting progression in the various upper-layer virtualization software
- Hardware-based flow classification for extending parallelism and virtualization to networking
- Large number of DMA channels, multiple receive and transmit descriptor rings, and dedicated networking hardware resources (DMA, interrupts, buffer, and more) for each thread/strand
- CPU/thread affinity and CPU load balancing at L2, L3, and L4
- Supports S10 U3, S10 U2 + KU for Oracle's SPARC, x86, and Linux in 32-/64-bit mode
- Dynamic reconfiguration
- Jumbo frames
- IPv4/IPv6 and IPMP support
- TCP/UDP/IP hardware checksum offload
- 802.1Q VLAN support

Sun Multithreaded 10 Gigabit Ethernet Networking Cards

Specifications

Physical Characteristics	
Sun Dual 10 GbE XFP PCIe Low-Profile Adapter	Sun Dual 10 GbE XFP PCIe ExpressModule for Blade Servers
Length: 167.65 mm (6.6 in.)	Length: 170 mm (6.69 in.)
Width: 68.90 mm (2.713 in.)	Width: 112 mm (4.41 in.)
<ul style="list-style-type: none"> Component-side height: 14.48 mm (0.57 in.); Solder-side height: 2.67 mm (0.105 in.) 	Height: 21.5 mm (0.85 in.)
Power Requirements	
Sun Dual 10 GbE XFP PCIe Low-Profile Adapter for Rack Servers	Sun Dual 10 GbE XFP PCIe ExpressModule for Blade Servers
Maximum power consumption: 24.33 W	Maximum power consumption: 22.96 W
Typical power consumption: 20.74 W	Typical power consumption: 19.87 W
Performance Specifications	
Maximum Ethernet Transfer Rate	Host Interface
<ul style="list-style-type: none"> 10 Gb/sec for each single port 16 Gb/sec total for both ports 	8-lane PCIe 1.1
Network Interface	Optics: XFP
<ul style="list-style-type: none"> Two instantiations of XAUI IEEE 802.3ae 2002 compliant 	<ul style="list-style-type: none"> 10 GBase-SR, 10 GBase-LR IEEE 802.3ae 2002 compliant
Ethernet-Relevant Standards Supported	
<ul style="list-style-type: none"> IEEE 802.3ae 2002 compliant IEEE 802.1Q VLAN IEEE 802.3ad link aggregation TCP/UDP/IP hardware checksum offload 	
Hardware Systems Supported	
<ul style="list-style-type: none"> Refer to product Web pages for most current updates 	
Operating Systems	
Oracle's Solaris, SPARC, and x86	
<ul style="list-style-type: none"> Solaris 10 OS 11/06 and onward Solaris 10 OS 6/06 with patch 118833-36 for SPARC and patch 118855-36 for x64 	
Red Hat Enterprise Linux 4 or Later	
Red Hat Enterprise Linux 4 U3 and U4, 64-b	
SUSE Enterprise Linux	
SUSE Enterprise Linux 10 64-b	
Microsoft Windows	
Windows 2003 Server Enterprise Edition	

Certifications	
<ul style="list-style-type: none"> • FCC Class A—Europe • CE—Europe • VCCI Class A—Japan • CSA—Canada • MIC—Korea UL 	
Ordering Part Numbers	
Sun Dual 10 GbE XFP PCIe Low Profile Adapter for rack servers without transceiver (need to order at least one of the following pluggable fiber transceivers)	Sun X1027A-z
Sun Dual 10 GbE XFP PCIe ExpressModule for blade servers without transceiver (need to order at least one of the following pluggable fiber transceivers)	Sun X1028A-z
10 GbE SR (Short Reach) XFP Transceiver for use with Multimode Fiber (MMF, 810 nm)	Sun X5558A
10 GbE LR (Long Reach) XFP Transceiver for use with single-mode fiber (SMF, 1310 nm)	Sun X5560A-z

Warranty

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Services

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Contact Us

For more information about Oracle's Sun Multithreaded 10 Gigabit Networking Cards, please visit oracle.com/sun or call +1.800.786.0404 to speak to an Oracle representative.



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