SUN NETWORKING

SUN STORAGETEK DUAL 8 GB FIBRE CHANNEL DUAL GBE EXPRESSMODULE HOST BUS ADAPTER

MULTIPROTOCOL NETWORK HOST BUS ADAPTER FOR SUN BLADE SERVERS

KEY FEATURES

- Comprehensive virtualization capabilities with support for N-Port ID Virtualization and Virtual Fabric
- Enterprise-class, high-density I/O connectivity ideal for mixed SAN and LAN environments
- Dual-port 8 Gb/sec FC link speeds and dual-port GbE connectivity
- Heterogeneous OS support—Oracle Solaris, Windows, Linux, and VMware

KEY BENEFITS

- Hot pluggable to eliminate disruption to ongoing blade activities during insertion/removal
- Centralized management providing efficient, scalable administration of enterprise- class SAN connectivity

Oracle's Sun StorageTek Dual 8 Gigabit (Gb) Fibre Channel (FC) Dual Gigabit Ethernet (GbE) ExpressModule Host Bus Adapter (HBA) is ideal for Sun Blade 6000 customers who require enterprise-level 8 Gb FC connectivity and high-bandwidth GbE performance in a compact, cost-effective design. With the addition of comprehensive virtualization capabilities (N-Port ID Virtualization), the Sun StorageTek Dual 8 Gb FC Dual GbE ExpressModule HBA addresses server virtualization and provides the flexible functionality and high performance required for today's SANs and traditional networking (LANs) implementations.

The Sun StorageTek Dual 8 Gb FC Dual GbE ExpressModule HBA provides the flexibility needed for complex, scalable, heterogeneous SANs and LANs.

Unsurpassed Performance

The Sun StorageTek Dual 8 Gb FC Dual GbE ExpressModule HBA provides a converged network connectivity solution for enterprise-class SANs and LANs, delivering unsurpassed performance and flexibility for your most demanding storage networking applications.

Innovative Form Factor

The Sun StorageTek Dual 8 Gb FC Dual GbE ExpressModule HBA form factor provides a method of deploying remote I/O that allows tool-less installation or removal of the FC ExpressModule, and it packs more performance and functionality in a smaller space while delivering higher I/O throughput. This solution provides efficient use of datacenter real estate.

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Modular Architecture Provides Scalability and Investment Protection

Most traditional rack mount servers require a box swap to take advantage of each new release of CPU and I/O technology. This problem is solved with the Sun Blade family's modular architecture design. Everything, including the I/O, is modular and hot pluggable.

Advanced Reliability, Availability, and Serviceability Features for the ExpressModule

The Sun StorageTek Dual 8 Gb FC Dual GbE ExpressModule HBA provides the customer with key advantages, including high reliability, availability, and serviceability and lower TCO in an industry-standard form factor.

- High levels of availability and serviceability. The enclosed chassis provides the highest availability and serviceability through hot plug and hot insertion— requiring no Sun Blade server downtime.
- Increased reliability and lower TCO. The ports are available for use without any additional hardware, providing higher reliability and lower TCO. By eliminating the need for additional pass-thru modules or switches, the Sun StorageTek Dual 8 Gb FC Dual GbE ExpressModule HBA provides the customer with reduced cost and reduced complexity.
- Industry-standard form factor. The Sun StorageTek Dual 8 Gb FC Dual GbE ExpressModule HBA is an industry-standard form factor and, therefore, nonproprietary. Customers can use the solution wherever an ExpressModule slot is available on the Sun Blade server.

Proven Design, Architecture, and Interface

Oracle's FC architecture raises the bar in performance I/O computing. This design minimizes onboard components, while advanced error-checking methods ensure robust data integrity.

Jumbo Frame support, a function of GbE technology from Intel, reduces the overhead associated with handling Ethernet packets. Sending and receiving large packets versus standard Ethernet packets reduces the number of packets, resulting in a throughput increase and a reduction in CPU use.

Flexibility

A robust feature set, combined with comprehensive testing and support, helps ensure that the Sun StorageTek Dual 8 Gb FC Dual GbE ExpressModule HBA provides the flexibility and interoperability needed for complex, highly scalable heterogeneous SANs and LANs.

Sun StorageTek Dual 8 Gb Fibre Channel Dual GbE ExpressModule Host Bus Adapter Specifications

Supported Operating Systems

- Oracle Solaris 10 SPARC (boot from SAN)
- Oracle Solaris 10 x86/x64 (boot from SAN)
- Oracle Enterprise Linux
- Oracle VM
- VMware ESX Server 3.5/4.0/3i
- Red Hat Enterprise Linux 4.0/5.0/6.0 (64-bit)
- SUSE Linux Enterprise Server 9/10/11 (64-bit)
- Microsoft Windows Server 2003 (32-bit and 64-bit)
- Windows Server 2008 (32-bit and 64-bit)

Supported Storage Platforms

- Sun StorageTek 2540
- Sun StorageTek 6140
- Sun StorageTek 6540
- Sun Storage 6180
- Sun Storage 6580
- Sun Storage 6780
- Sun ZFS Storage Appliance
- Sun StorageTek 9990V, Sun StorageTek 9990, Sun StorageTek 9985, Sun StorageTek 9985V, Sun StorageTek 9980, Sun StorageTek 9970
- Sun StorageTek SL24 tape autoloader
- Sun StorageTek SL48 tape library
- Sun StorageTek L1400 tape library
- Sun StorageTek SL500 modular library
- Sun StorageTek SL3000 modular library
- Sun StorageTek SL8500 modular library
- Sun StorageTek Virtual Tape Library (VTL): Sun StorageTek VTL Value and Sun StorageTek VTL Plus
- LTO3 tape drives
- 4 Gb/sec LTO4 tape drives
- 4 Gb/sec Sun StorageTek T10000A, Sun StorageTek T10000B
- 4 Gb/sec Sun StorageTek T9840C tape drive
- Sun StorageTek T9840D tape drive

Supported Server Platforms

- Sun Blade 6000 modular system. Please refer to server website for details.

Key Applications

- Virtualization and consolidation
- High-performance computing
- Demanding data management
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Fibre Channel Specifications

- 8/4/2 Gb/sec auto negotiation
- Point-to-point (N-Port), arbitrated loop (NL-Port), and switched fabric (N-Port)
- Connector: SFP+ shortwave optics for attachment to multimode fiber with LC-style connectors
- ANSI Fibre Channel: SCSI-FCP, FCPH, FC-PH-2, FC-PH-3, FC-AL-2, FC-TAPE, FCP-2, FCGS-3, FC-FS, FC-PI, FC-FCP

Ethernet Specifications

- Intel 82571EB Gigabit Ethernet Controller
- 10/100/1000 Mb/sec autosensing Ethernet ports
- Connector: External RJ-45 connect or for CAT 5 and higher
- IEEE 802.1Q VLAN/802.1P and 802.1D priority tagging and Quality of Service

Environment	
Volts	• +12 VDC
Power consumption (typical/max)	• Typical 14.4 W / max 17.3 W
Operating temperature	• 0°C to 40°C
Airflow required	• 5.0 CFM
Storage temperature	• Operating: 0°C to +40°C, non condensing • Non operating: – 40° to +70°C, non condensing
Relative humidity	• 10% to 93% non condensing
Agency Approvals	
• Class 1 Laser Product per DHHS 21 CFR (J) and EN60825-1 • UL recognized to UL 60950-1:2007 (2nd Edition) • CUR recognized to CSA22.2, No. 60950-1-07 • TUV certified to EN60950-1 • FCC rules, Part 15, Class A • ICES-003, Class A	• EMC Directive 2004/108/EEC (CE) – EN55022, Class A and EN55024 • Australian EMC Framework (C-Tick) – AS/NZS CISPR22:2006; Class A • VCCI, Class A (Japan) • RoHS compliant (Directive 2002/95/EC) • China RoHS compliant •
Part Numbers	
• SG-XPCIEFCGBE-E8-Z Emulex, Xoption • SG-PCIEFCGBE-E8-Z Emulex, Factory configured • SG-XPCIEFCGBE-Q8-Z Qlogic, Xoption • SG-PCIEFCGBE-Q8-Z Qlogic, Factory configured	
Other Specifications	
• IEEE 802.3 compliant • Jumbo Frame support for enhanced throughput • Hardware assist for TCP/UDP checksums, packet parsing, and interrupt coalescing	

Warranty

Visit oracle.com/sun/warranty for Oracle's global warranty support information on Sun products.

Services

Visit oracle.com/sun/services for information on Oracle's service program offerings for Sun products.

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