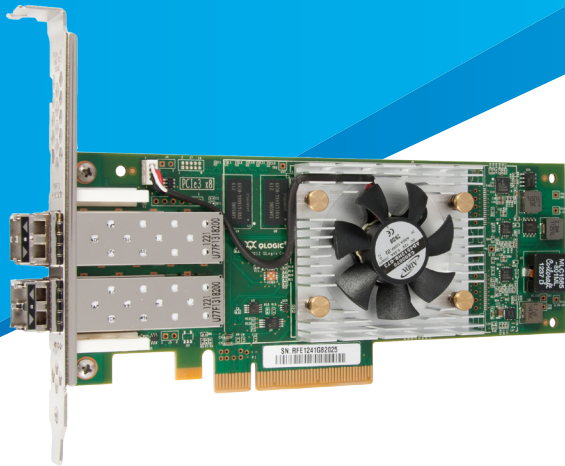


2600 Series

16Gbps Gen 5 Fibre Channel-to-PCIe Adapters



- 16Gbps per port maximum throughput for high bandwidth storage (SAN) traffic
- Up to 1.2 million IOPS reduce latency in high transaction intensive applications and virtualized environments
- Improved reliability and diagnostics with support for Brocade® ClearLink®
- Enhanced QoS prioritizes SAN traffic for high performance
- Simplified deployment with fabric pre-provisioning
- Future-proof design enables conversion to a 10-gigabit Ethernet (GbE) Converged Network Adapter

OVERVIEW

The 2600 Series 16Gb Gen 5 Fibre Channel Adapters boast industry-leading native Fibre Channel performance—achieving dual-port, line-rate, 16Gb Fibre Channel throughput—at extremely low CPU usage with full hardware offloads. Gen 5 Fibre Channel resolves data center complexities by enabling a storage network infrastructure that supports powerful virtualization features, application-aware services, and simplified management. This achievement provides a next-generation storage networking infrastructure capable of supporting the most demanding virtualized and cloud-enabled environments while fully leveraging the capabilities of high-performance 16Gb Fibre Channel and solid-state disk (SSD) storage. These features help reduce cost and complexity while the unmatched 16Gbps performance eliminates potential I/O bottlenecks in today’s powerful multiprocessor, multicore servers.

VIRTUALIZATION OPTIMIZED

The 2600 Series, powered by QLogic VMflex® technology, supports standards-based virtualization features. Support for N_Port ID virtualization (NPIV) enables a single Fibre Channel adapter port to provide multiple virtual ports, increasing network scalability. Virtual fabric technology allows a single Fibre Channel adapter port to participate in multiple virtual fabric domains for improved availability. In addition, line rate 16Gb throughput per physical port delivers unmatched storage performance to maximize the number of virtual machines per physical server.

SUPERIOR PERFORMANCE

Up to 1.2 million I/O transactions per second provides industry-leading application throughput for physical, virtual and cloud environments. Integrated QLogic StarPower™ technology delivers dynamic power management, which ensures that the PCIe® host bus link uses the minimum number of PCIe lanes to meet the required bandwidth. Overlapping protection domains (OPDs) ensure the highest level of reliability as data moves to and from the PCI bus and Fibre Channel network. As a result, 2600 Series Adapters consume less power and fewer CPU cycles while maintaining peak performance.

INTEGRATED BROCADE FABRIC FEATURES

QLogic 16Gb Gen 5 Fibre Channel adapters include advanced capabilities that are enabled when deployed with supported Brocade switches. By implementing these industry-leading solutions together, SAN administrators can take advantage of enhanced features that improve availability, streamline deployment, and increase network performance.

Support for Brocade ClearLink diagnostics, a key Brocade Fabric Vision technology, improves availability and support for high performance fabrics. Using the ClearLink diagnostic port (D_Port), administrators can quickly run a battery of automated diagnostic tests to assess the health of links and fabric components. As a result, fabric deployment time is reduced and tedious, manual troubleshooting methods are eliminated, saving thousands of man-hours in enterprise environments.

Fabric pre-provisioning enables servers to be quickly deployed, replaced, and moved across the SAN. By leveraging Brocade's fabric-assigned port world wide name (FA-WWN) and fabric-based boot LUN discovery (F-BLD) capabilities, the creation of zones, LUNs and other services can be completed before the servers arrive on site—eliminating time consuming, manual tasks that typically delay server deployment.

Network performance can be dramatically improved by implementing the industry standard class-specific control (CS_CTL) based frame prioritization quality of service (QoS), which helps to alleviate network congestion. When connected to Brocade Gen 5 Fibre Channel SAN fabrics and supported target arrays, traffic is classified as it arrives at the switch, and then processed on the basis of configured priorities. Traffic can be dropped, prioritized for delivery, or subjected to limited delivery options. As a result, mission critical workloads can be assigned a higher priority than less time-sensitive network traffic for optimized performance.

SIMPLIFIED MANAGEMENT

QLogic's unified management application, QConvergeConsole® (QCC), provides single-pane-of-glass management for QLogic storage and networking adapters (Fibre Channel, converged networking, NIC, and iSCSI). In addition, QLogic supports all major APIs for deployment flexibility and integration with third-party management tools, including the VMware® vCenter™.

QLOGIC'S HIGH AVAILABILITY ARCHITECTURE

QLogic 2600 Series 16Gb Gen 5 Fibre Channel architecture continues to provide complete port-level isolation across its dual-port ASIC. This architecture, unlike other vendor solutions, provides independent function, transmit/receive buffers, an on-chip CPU, DMA channels, and a firmware image for each port. These features enable complete port-level isolation, prevent errors and firmware crashes from propagating across both ports, and provide predictable and scalable performance across both ports. These benefits are essential for enterprise data centers—assuring five nines availability for mission-critical applications.

INVESTMENT PROTECTION

The 2600 Series Adapters are compatible with the same Fibre Channel software driver stack that has been tested and validated across all major hardware platforms, all major hypervisors and OSs, and has been battle-hardened across millions of enterprise installations. The adapters are backward compatible with existing 4Gb and 8Gb Fibre Channel infrastructure, leveraging existing SAN investments.

In addition, the 2600 Series Adapters support QLogic I/OFlex™ technology, which enables the administrator to modify the adapter's "personality" from Fibre Channel to Ethernet. This unique ability allows a 2600 Series adapter to transform from a 16Gb Gen 5 Fibre Channel host bus adapter to an 8300 Series 10GbE Converged Network Adapter that supports NIC, Fibre Channel over Ethernet (FCoE), and iSCSI traffic. This integrated, powerful flexibility simplifies deployment and reduces costs for organizations seeking to deploy a Fibre Channel SAN today and migrate to an Ethernet SAN in the future.

LEADERSHIP, CONFIDENCE, AND TRUST

QLogic is the undisputed leader in Fibre Channel adapters, with over 15 years of experience and multiple generations of Fibre Channel products that have been qualified by all major server OEMs in multiple form factors. QLogic owns the most established, proven Fibre Channel stack in the industry with more Fibre Channel ports shipped than any other vendor.

Host Bus Interface Specifications

Bus Interface

- PCI Express® Gen3 x4, Gen2 x8 (x8 physical connector)

Host Interrupts

- INTx and MSI-X

Compliance

- PCI Express Base Specification, Rev. 3.0
- PCI Express Card Electromechanical Specification, Rev. 2.0
- PCI Bus Power Management Interface Specification, Rev. 1.2

Fibre Channel Specifications

Throughput

- 16Gbps line rate per port (maximum)

Logins

- Support for 2,048 concurrent logins and 2,048 active exchanges
- Expandable to 16K concurrent logins and 32K active exchanges

Port Virtualization

- NPIV

Compliance

- SCSI-3 Fibre Channel Protocol (SCSI-FCP)
- Fibre Channel Tape (FC-TAPE) Profile
- SCSI Fibre Channel Protocol-2 (FCP-2)
- Second Generation Fibre Channel Generic Services (FC-GS-2)
- Third Generation Fibre Channel Generic Services (FC-GS-3)

Tools and Utilities

Management Tools and Device Utilities

- QConvergeConsole: a unified management tool (GUI and CLI) for Fibre Channel/FCoE, iSCSI, and networking

Boot Support

- BIOS, UEFI, FCode

APIs

- SNIA HBA API V2
- SMI-S

Operating Systems

- For the latest applicable operating system information, see <http://driverdownloads.qlogic.com>.

Brocade Fabric Features

The following features require a supported Brocade switch running Fabric OS version 7.3.0a or later.

Performance

- QoS CS_CTL

Diagnostics

- ClearLink D_Port

Deployment and Management

- FA-WWN
- F-BLD
- Fibre Channel Ping
- Fibre Channel Trace Route
- FDMI Enhancements

Physical Specifications

Ports

- QLE2670: single port 16Gbps Gen 5 Fibre Channel
- QLE2672: dual-port 16Gbps Gen 5 Fibre Channel

Form Factor

- Low-profile PCIe card: (6.6 inches × 2.54 inches)
- Custom form factors also available

Environment and Equipment Specifications

Temperature

- Operating: 0°C to 55°C (32°F to 131°F)
- Storage: -20°C to 70°C (-4°F to 158°F)

Humidity

- Relative (noncondensing): 10% to 90%
- Storage: 5% to 95%

Maximum Cable Distances

Rate	Multi-Mode Optic			
	Cable and Distance (m)			
	OM1	OM2	OM3	OM4
4Gbps	70	150	380	400
8Gbps	21	50	150	190
16Gbps	*	35	100	125

* Not supported

Agency Approvals

Safety

- US
- Canada
- Europe

EMI and EMC (Class A)

- US
- Canada
- Europe
- Australia/New Zealand
- Japan
- Korea

Ordering Information

QLE2670 (single port)

QLE2672 (dual port)

- Ships in an individually packed box with a standard-size bracket and a spare low-profile bracket
- Ships with SR optical transceivers installed

DISCLAIMER

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