

# 8200 Series

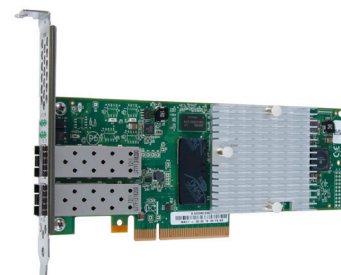
## 10Gbps Ethernet-to-PCIe Converged Network Adapters

### Overview

The 8200 Series adapters represent QLogic's third generation of Converged Network Adapters, supporting simultaneous LAN (TCP/IP) and SAN (Fibre Channel over Ethernet (FCoE), iSCSI) traffic at line-rate, 10Gbps Ethernet speed. This convergence of networking traffic lowers data center costs by eliminating the need for separate LAN and SAN infrastructure. Data centers now need fewer adapters, cables, and switches, which also means reduced power and cooling costs. In addition, these adapters are fully compatible with existing Fibre Channel and iSCSI storage, providing investment protection for existing infrastructure.

The 8200 Series adapters improve on previous generation products with the following features:

- PCIe<sup>®</sup> Gen2 x8 support for higher dual-port throughput
- Advanced virtualization with NIC partitioning (NPAR)
- Full hardware offload for FCoE and iSCSI



QLE8242

## Highlights

- Dual-port, line-rate 10Gbps throughput for moving large amounts of data and eliminating server I/O bottlenecks
- Full hardware offload for FCoE and iSCSI for faster application performance and denser server virtualization
- Stateless offloads for TCP/IP traffic for faster networking performance
- Support for current and upcoming I/O virtualization technologies, including QLogic's NIC partitioning (NPAR)
- Converged SAN and LAN traffic for reduced data center capital and operating expenses
- Compatible with existing Fibre Channel and iSCSI storage infrastructure
- Battle-hardened QLogic Fibre Channel and iSCSI driver stacks ensure the highest level of SAN reliability and uptime
- Unified management utility for LAN and SAN administration that is compatible with QLogic's Ethernet, Fibre Channel, and iSCSI adapters

## 8200 Series

The 8200 Series of Converged Network Adapters support simultaneous LAN (TCP/IP) and SAN (FCoE, iSCSI) traffic at line-rate, 10Gbps Ethernet speed. These adapters interface to the host server with a PCIe Gen2 x8 bus, ensuring no internal performance bottlenecks.

### FCoE and iSCSI Hardware Offload

The 8200 Series adapters support full hardware offload for FCoE and iSCSI protocol processing. QLogic's FlexOffload® features free up the server CPU to perform other tasks. Consequently, server applications can run faster and virtualized servers can support more virtual machines (VMs). Very few adapters in today's market truly support full hardware offload; most rely on the server CPU for FCoE and iSCSI protocol processing.

### Convergence

The 8200 Series adapters reduce data center costs by converging data and storage networking. This convergence results in buying fewer adapters, cables, and switches. In addition, convergence offers lower power consumption, reduced cooling, and easier LAN and SAN management.

### VMflex™

With QLogic's new NPAR technology, one Converged Network Adapter is viewed by the server OS as a flexible mix (up to four per physical port) of standalone NICs, FCoE adapters, and iSCSI adapters, with the ability to allocate guaranteed bandwidth to each virtual adapter. This unique feature is switch agnostic—it is not necessary to pair an 8200 Series adapter with any specific 10 gigabit Ethernet (GbE) switch model to enable partitioning.

### Common Drivers

The 8200 Series adapters are compatible with the same Fibre Channel and iSCSI software driver stacks that have been deployed and battle-hardened

in millions of previous installations. These drivers are common across QLogic's lineup of Fibre Channel and iSCSI adapters, simplifying revision management in heterogeneous environments.

### Management

Networking, FCoE, and iSCSI management is easy with QLogic's new, unified management application, QConvergeConsole® (QCC). QCC provides single pane-of-glass management for QLogic's broad product line of storage and networking adapters. The 8200 Series also has API support so that it can be managed by other popular third-party management tools, including native OS management tools for networking.

### Diskless Boot

The 8200 Series adapters support booting the server from remote storage over both the LAN and SAN. Consequently, data centers can deploy thinner servers, centralize OS image management, increase system availability, and simplify image redeployment.

### Enhanced Ethernet

Numerous additions to the Ethernet standard enable it to transport lossless, converged LAN and SAN traffic. The 8200 Series adapters support all of the new Ethernet standards, including 802.1Qbb (Priority-based Flow Control) and 802.1Qaz (Enhanced Transmission).

### Unmatched Expertise

QLogic has an unparalleled advantage in delivering this new Converged Network Adapter technology. QLogic is the undisputed leader in both Fibre Channel and iSCSI adapters, with years of experience providing Fibre Channel and Ethernet-based products.

## Host Bus Interface Specifications

### Bus Interface

- PCI Express® Gen2 x8

### Host Interrupts

- INTx, MSI, and MSI-X

### I/O Virtualization (VMflex)

- NPAR

### Compliance

- *PCI Express Base Specification, rev. 2.0; PCI Express Card Electromechanical Specification, rev. 2.0; PCI Bus Power Management Interface Specification, rev. 1.2*

## Ethernet Specifications

### Throughput

- 10Gbps full-duplex line rate per port

### Ethernet Frame

- 1500 byte or 9600 byte (jumbo frame)

### Stateless Offload

- IP, TCP, and user datagram protocol (UDP) checksum offloads
- Large and giant send offload (LSO, GSO)
- Large receive offload (LRO)
- Receive side scaling (RSS)
- Interrupt coalescing
- VMware® NetQueue
- Microsoft® VMQ

### Compliance

- *IEEE: 802.3ae (10Gb Ethernet), 802.1q (VLAN), 802.3ad' (Link Aggregation), 802.1p (Priority Encoding), 802.3x (Flow Control), IPv4 (RFQ 791), IPv6 (RFC 2460), 802.1Qbb (Priority-Based Flow Control), 802.1Qaz (Enhanced Transmission Selection)*

## FCoE Specifications

### Logins

- Support for 2,048 concurrent logins and 2,048 active exchanges

### Port Virtualization

- N\_Port ID 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 FC Generic Services (FC-GS-2), Third Generation FC Generic Services (FC-GS-3), FCoE & FIP (FC-BB-5)*

## iSCSI Specifications

### Compliance

- RFC 3720 (iSCSI), RFC 3347 (*iSCSI Requirements and Design Considerations*), CHAP, iSNS, SLP

## Tools and Utilities

### Management Tools and Device Utilities

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

### Boot Support

- Pre-execution environment (PXE), FCoE, and iSCSI boot

### APIs

- SNIA HBA API V2, SMI-S

### Operating Systems

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

## Physical Specifications

### Ports

- QLE8240: single 10Gbps Ethernet
- QLE8242: dual 10Gbps Ethernet

### Form Factor

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

## Environment and Equipment Specifications

### Temperature

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

### Humidity

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

### Maximum Cable Distances (Optical)

- QLE824x-SR: 300m, OM3 multimode fibre

## Agency Approvals

### Safety

- US, Canada, Europe

### EMI and EMC (Class A)

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

## Ordering Information

### QLE8240-CU (single port)

### QLE8242-CU (dual port)

- Ships without transceivers. Intended for use with copper cables (not included). A list of approved copper cables is posted at [http://www.qlogic.com/Resources/Documents/LineCards/Copper\\_Cables\\_Support\\_Matrix\\_Line\\_Card.pdf](http://www.qlogic.com/Resources/Documents/LineCards/Copper_Cables_Support_Matrix_Line_Card.pdf)

### QLE8240-SR (single port)

### QLE8242-SR (dual port)

- Ships with SR optical transceivers installed

<sup>1</sup> Contact your QLogic sales representative regarding supported configurations.

### QLogic Adapters at Work—Related Video

Click on the video link to see why QLogic adapters are the ultimate in FCoE.



The Ultimate in FCoE



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