

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[®] Gen2 x8 support for higher dual-port throughput
- Advanced virtualization features, such as single root I/O virtualization (SR-IOV) and NIC partitioning (NPAR)
- Full hardware offload for iSCSI



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 SR-IOV and QLogic's NIC partitioning
- 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 NIC partitioning (NPAR) technology, one Converged Network Adapter is viewed by the server operating system (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 10GbE switch model to enable partitioning. The 8200 Series adapters also include support for SR-IOV and several upcoming industry standard I/O virtualization features that will be enabled with future firmware updates.

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), 802.1Qaz (Enhanced Transmission Selection/DCBX), and Congestion Notification (802.1Qau).

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)

- SR-IOV¹
- NIC partitioning (NPAR)¹

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 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), 802.3ad² (Link Aggregation), 802.1p (Priority Encoding), 802.3x (Flow Control), IPv4 (RFQ 791), IPv6 (RFC 2460), 802.1Qbb (Priority-Based Flow Control), 802.1Qaz (DCBX/Enhanced Transmission Selection), 802.1Qau¹ (Congestion Notification)

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

- PXE, FCoE, and iSCSI boot

APIs

- SNIA HBA API V2, SMI-S

Operating Systems

- Microsoft Windows Server®, Red Hat® Linux®, Novell® SLES, VMware ESX™/ESXi, Citrix® XenServer™

Physical Specifications

Ports

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

Form Factor

- Low-profile PCIe card: (6.6 in. × 2.54 in.)
- 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 (non-condensing): 10% to 90%
- Storage: 5% to 95%

Maximum Cable Distances (Optical)

- QLE824x-SR: 300m, OM3 multi-mode fibre

Agency Approvals

Safety

- US, Canada, Europe

EMI and EMC (Class A)

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

Ordering Information

QLE8240-CU-CK (single port)

QLE8242-CU-CK (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/Products/CU_Cables.aspx

QLE8240-SR-CK (single port)

QLE8242-SR-CK (dual port)

- Ships with SR optical transceivers installed

¹ Available with future firmware update

² Contact your QLogic sales representative regarding supported configurations.



Corporate Headquarters QLogic Corporation 26650 Aliso Viejo Parkway Aliso Viejo, CA 92656 949-389-6000

www.qlogic.com

International Offices UK | Ireland | Germany | France | India | Japan | China | Hong Kong | Singapore | Taiwan

© 2010, 2011 QLogic Corporation. Specifications are subject to change without notice. All rights reserved worldwide. QLogic, the QLogic logo, VMflex, FlexOffload, and QConvergeConsole are trademarks or are registered trademarks of QLogic Corporation. Citrix and XenServer are trademarks or registered trademarks of Citrix Systems, Inc. PCIe and PCI Express are registered trademarks of PCI-SIG. Linux is a registered trademark of Linus Torvalds. Microsoft and Windows Server are registered trademarks of Microsoft Corporation. PCIe is a registered trademark of PCI-SIG Corporation. Red Hat is a registered trademark of Red Hat, Inc. VMware and ESX are trademarks or registered trademarks of VMware, Inc. Novell is a registered trademark of Novell, Inc. All other brand and product names are trademarks or registered trademarks of their respective owners. Information supplied by QLogic Corporation is believed to be accurate and reliable. QLogic Corporation assumes no responsibility for any errors in this brochure. QLogic Corporation reserves the right, without notice, to make changes in product design or specifications.