

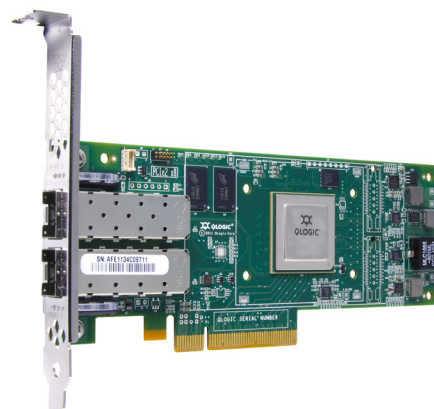
8300 Series

10Gbps Ethernet-to-PCIe Converged Network Adapters

Overview

The 8300 Series adapters are QLogic's fourth generation of Converged Network Adapters, supporting simultaneous LAN (TCP/IP) and SAN (Fibre Channel over Ethernet (FCoE) and iSCSI) traffic at line rate, 10Gbps Ethernet (GbE) speeds—at extremely low CPU utilization with full hardware offloads. This extreme performance eliminates potential I/O bottlenecks in today's powerful multiprocessor, multicore servers.

In addition, support for powerful virtualization features make this adapter ideal for virtualized environments that need excellent I/O performance to service growing numbers of virtual machines (VMs). The ability to support multiple protocols simultaneously on the same hardware offers multi-tenancy flexibility, which is ideal for private and public cloud environments.



Highlights

- 10GbE per-port maximum throughput for high bandwidth storage and networking traffic.
- Up to 1 million FCoE IOPS reduce latency in high transaction intensive applications and virtualized environments.
- Storage and networking single root I/O virtualization (SR-IOV) support for faster performance in virtualized environments.
- Reduced hardware, cabling, and management costs by enabling more applications (virtual machines) to run on a single server with converged traffic to top-of-the-rack switch.
- Decreased power and cooling costs by using the fewest PCI Express® lanes in PCIe® Gen3 environments.
- Overlapping protection domains (OPD) to ensure a high level of reliability as data moves to and from the PCI bus.
- Complete investment protection for legacy 8Gb and 4Gb Fibre Channel infrastructure.

Unmatched Expertise

QLogic is the undisputed leader in Fibre Channel and Converged Network Adapters, with over 15 years of experience, more than 11 million Fibre Channel and FCoE ports deployed, and six generations of Fibre Channel products that have been qualified by all major server OEMs in multiple form factors. QLogic's 10GbE Intelligent Ethernet Adapters and 1GbE iSCSI Adapters have been shipping to tier-1 OEMs and end users for several years. QLogic is the only vendor with proven Ethernet, Fibre Channel, FCoE, and iSCSI stacks.

Virtualization Optimized

The 8300 Series adapters, powered by QLogic VMflex™ technology, support OEM proprietary, switch dependent, I/O virtualization technologies; QLogic's switch agnostic NIC partitioning (NPAR) technology; and industry standard I/O virtualization technologies for both storage and networking. SR-IOV may be enabled to allow enhanced I/O performance in virtualized environments and improved VM scalability for increasing storage and networking workloads.

Superior Application Performance

The QLogic 8300 Series of Converged Network Adapters, powered by QLogic FlexOffload™ technology, consume the lowest CPU to drive FCoE and iSCSI storage traffic at line rate across all ports. With support for over 1 million I/O transactions per second, QLogic adapters deliver the best storage application performance in virtualized and non-virtualized environments.

Support for Multiple Protocols Simultaneously

The QLogic 8300 Series adapters reduce data center costs by converging

FCoE, TCP/IP, and iSCSI traffic simultaneously on the same hardware. 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.

Investment Protection

The 8300 Series adapters are also compatible with the same 10GbE networking, 1/10GbE iSCSI, and Fibre Channel/FCoE software driver stack that is shipping today on QLogic's 8100 and 8200 Series Converged Network Adapters. This driver stack has been tested and validated across all major hardware platforms, all major Hypervisors and operating systems (OSs), and has been battle-hardened in millions of previous installations.

Simplified Management

QLogic's new, unified management application, QConvergeConsole™ (QCC), provides single-pane-of-glass management for the company's broad product line of storage and networking adapters (Fibre Channel, converged networking, NIC, and iSCSI).

In addition, QLogic supports all major APIs, giving the end user the flexibility to manage their QLogic Fibre Channel adapter portfolio using third-party management tools.

Diskless Boot

The 8300 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.

Host Bus Interface Specifications

Bus Interface

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

Host Interrupts

- INTx and MSI-X

I/O Virtualization

- SR-IOV¹
- NIC partitioning (NPAR)¹

Compliance

- *PCI Express Base Specification, rev. 3 (v1.0), 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 and Microsoft[®] VMQ

Compliance

- *IEEE: 802.3ae (10Gb Ethernet), 802.1q (VLAN), 802.3ad (Link Aggregation)², 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), 802.1Qau (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, iSCSI boot

APIs

- SNIA HBA API V2, SMI-S

Operating Systems

- Microsoft Windows Server[®], Red Hat[®] Linux[®], Novell[®] SLES; VMware ESXi; Oracle[®] Linux, Oracle VM, Oracle Solaris[®]; Citrix[®] XenServer[®]

Physical Specifications

Ports

- QLE8340: single 10Gbps Ethernet
- QLE8342: dual 10Gbps Ethernet

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/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)

Rate	Multi-Mode Optic			
	Cable and Distance (m)			
	OM1	OM2	OM3	OM4
10Gbps	33	82	300	550

Agency Approvals

Safety

- US, Canada, Europe

EMI and EMC (Class A)

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

Ordering Information

QLE8340-CU-CK (single port)

QLE8342-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

QLE8340-SR-CK (single port)

QLE8342-SR-CK (dual port)

- Ships with SR optical transceivers installed

QLE8340-LR-CK (single port)

QLE8342-LR-CK (dual port)

- Ships with LR optical transceivers installed

¹ Available with future firmware updates.

² Contact your QLogic sales representative regarding supported configurations.



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