

QLogic BR-1020

Converged Network Adapter



- Provides high-performance line-rate 10Gbps Ethernet for enterprise-class, reliable LAN connectivity
- Supports DCB for low-latency, lossless, and deterministic 10Gbps Ethernet connectivity and storage over Ethernet applications (FCoE and iSCSI)
- Delivers advanced Ethernet performance, including IPv4 and IPv6 checksum offload, RSS, HDS, jumbo frame support, and TSO
- Provides scalable connectivity features across a secure, multiprotocol, lossless environment
- Enables a single storage driver for both QLogic BR-Series Converged Network Adapters and Fibre Channel Host Bus Adapters

OVERVIEW

Today's IT professionals face the difficult challenge of reducing data center cost and complexity while satisfying numerous service level agreements (SLAs) and performance requirements. As a result, organizations are seeking ways to improve server and storage utilization, reduce ongoing operational costs, and increase their flexibility and responsiveness.

The QLogic BR-1020 (dual port) Converged Network Adapter provides enterprise-class connectivity for next-generation data centers. This adapter integrates 10Gbps Ethernet NIC functionality with Fibre Channel technology—enabling transport over a 10-gigabit Ethernet (GbE) connection through the data center bridging (DCB) and Fibre Channel over Ethernet (FCoE) protocols. This approach provides best-in-class LAN connectivity and server I/O consolidation, helping to reduce cost and complexity in next-generation data center environments.

IMPROVED TCO THROUGH I/O CONSOLIDATION

DCB is a set of industry standards that enhances Ethernet protocol to enable low-latency, lossless, and deterministic network infrastructure for storage and other highly demanding traffic types. QLogic Converged Network Adapters support all of these standards, including priority-based flow control (PFC), enhanced transmission selection (ETS), congestion notification (CN), and data center bridging exchange (DCBX).

FCoE encapsulates and transmits Fibre Channel frames over this enhanced Ethernet infrastructure while preserving the Fibre Channel constructs and management paradigm for backward compatibility and investment protection.

By leveraging these technologies, QLogic Converged Network Adapters enable organizations to consolidate multiple 1GbE NICs and Fibre Channel Host Bus Adapters into a single adapter.

CENTRALIZED ADAPTER MANAGEMENT

QLogic's Host Connectivity Manager (HCM) is an easy-to-use adapter management tool for configuring, monitoring, and troubleshooting the QLogic BR-Series Adapters. HCM enables server administrators to quickly configure BR-Series Adapters locally or remotely.

HCM scans the SAN environment to discover visible storage resources and display target LUNs. A simple to use graphical tree view provides fast access to the managed Host Bus Adapters, Converged Network Adapters, ports, and target storage resources. HCM also provides notifications of various conditions and problems through a user-defined event filter.

In addition to providing a graphical interface, QLogic also provides a powerful command line interface, BCU CLI, for scripting and task automation.

For holistic data center-wide management, QLogic HCM is tightly integrated with Brocade® Network Advisor (BNA) to provide end-to-end configuration and management of the entire SAN infrastructure. Administrators can launch QLogic HCM from within BNA to provide single-pane-of-glass management of QLogic BR-Series Adapters and Brocade Fibre Channel switches.

QLogic also provides open APIs and standards-based interfaces for integration with popular third-party applications.

UNMATCHED PERFORMANCE

The explosive growth of server virtualization and high-bandwidth applications, such as video-on-demand and high performance computing (HPC), is leading to increased performance demands, making 10Gbps connectivity a key requirement. Recent advances in server technology, including Intel® Nehalem processors, now enable servers to run more workloads, increasing consolidation and virtualization ratios. With more VMs deployed per server, network bandwidth and storage I/O requirements are higher than ever before.

QLogic Converged Network Adapters are full-featured 10GbE NICs that deliver 10Gbps line-rate performance per port. They provide stateless networking offloads such as TCP checksum and segmentation offloads for improved performance and more efficient CPU usage. Additional CPU cycles can then be dedicated to additional application processing.

QLogic Converged Network Adapters deliver full hardware-based FCoE offload to provide superior performance for storage applications, with up to twice the performance of competitive offerings in real-world application scenarios.

Ultimately, this means that businesses of all sizes can scale their virtual server deployments and virtualize highly demanding applications with greater confidence, resulting in better server resource utilization and lower capital and operational costs.

OPTIMIZED FOR VIRTUAL ENVIRONMENTS

In non-virtualized environments, applications are tied to physical servers, which in turn connect to physical switch ports in a “static” manner. Applying network policies or monitoring application performance is simple because the applications are permanently associated with the physical ports.

With server virtualization, multiple applications share a physical switch port. Furthermore, applications can move across the virtualized server infrastructure based on a number of user-defined policies and in response to dynamic business requirements. Virtualization hypervisors implement virtual switching technologies to connect the VMs to the network, and to move data between VMs.

Virtual machine optimized ports (VMOPs) offload the hypervisor of essential virtual switching tasks, such as incoming packet classification and sorting tasks, helping to reduce latency and improve throughput while freeing CPU cycles that can be used to further scale an organization’s virtualization environment.

QLogic Converged Network Adapters support N_Port ID virtualization (NPIV) with up to 255 virtual ports, and are qualified with all major hypervisor solutions in the industry.

Optimal Support for Windows Server 2012

QLogic Converged Network Adapters’ support of Windows Server® 2012 policy-based quality of service (QoS) enables administrators to specify network bandwidth controls based on application type, users, and servers for the physical network. In addition, support of Hyper-V® QoS enables cloud hosting providers and enterprises to deliver predictable network performance for multiple types of traffic for VMs on Windows Server 2012 servers equipped with QLogic BR-1020 adapters running in DCB mode.

MAXIMIZING INVESTMENTS

To help optimize technology investments, QLogic and its partners offer complete solutions that include professional services, technical support, and education. For more information, contact a QLogic sales partner or visit www.qlogic.com.

Host Specifications**Server Platform**

- Intel (IA32, IEM64T); AMD® (x86, 64); Oracle®/Sun® (x86, SPARC®)

Bus Interface

- PCI Express® Gen 2.0
- Compatible (x8) with MSI-X and INTx

FCoE Specifications**Protocols**

- FC-SP, FC-LS, FC-GS, FC-FS2, FC-FDMI, FC-CT, FCP, FCP-2, FCP-3, FC-BB-5¹

Performance

- Up to 500K IOPS per port (1M IOPS per dual-port adapter)

Logins

- Support for 2,048 logins and 4,096 exchanges

Class of Service

- Class 3, Class 2 control frames supported

Ethernet Specifications**DCB Support**

- Priority-based flow control (PFC: 802.1Qbb)
- Enhanced transmission selection (ETS: 802.1Qaz)
- Congestion notification (802.1Qau)
- DCBX

Performance

- 10Gbps line rate per port

Frame Sizes

- All standard Ethernet frame sizes supported, including: 9,600-byte jumbo frames; mini-jumbo frames

Ethernet Acceleration

- IPv4/IPv6, TCP, and user datagram protocol (UDP) checksum offload; IPv4 header checksum offload; TCP segmentation offload (TSO); receive side scaling (RSS); header data split (HDS); VLAN insertion/ stripping and filtering

Software**Management**

- QLogic Host Connectivity Manager (HCM)
- QLogic BCU CLI

Operating Systems

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

Management APIs

- SNIA HBA API v2.0, SMI-S, and FDMI-1

Physical Specifications**Transceivers**

- 10Gbps Ethernet LC-style pluggable (SFP+), SR (850nm) and LR 10km (1310nm), hot-swappable
- 10Gbps Ethernet direct-attached active Twinax SFP+ copper cable (1m, 3m, 5m), hot-swappable

Form Factor

- Low-profile MD2 form factor PCI Express card: 16.77cm × 6.89cm (6.60in. × 2.71in.)

Distance Support

- 26 meters at 10Gbps on 62.5µm multimode fiber
- 82 meters at 10Gbps on 50µm (OM2) multimode fiber
- 300 meters at 10Gbps on 50µm (OM3) multimode fiber
- 10 kilometers at 10Gbps on 9µm single-mode fiber
- 5 meters at 10Gbps over active Twinax cable

Environment and Power Requirements**Airflow**

- 45 linear feet per minute (LFM)

Operating Temperature

- 0°C/32°F to 50°C/122°F (dry bulb)

Non-operating Temperature

- -43°C/-40°F to 73°C/163°F (dry bulb)

Operating Humidity

- 5% to 93% (relative, non-condensing)

Non-operating Humidity

- 5% to 95% (relative, non-condensing)

Power Dissipation

- 8.5W

Operating Voltage

- 3.3V

Agency Approvals**United States**

- CSA 60950-1-03 First Ed; ANSI C63.4; cCSAus; FCC Class B

Canada

- UL60950-1, First Ed; ICES-003 Class B; cCSAus

Japan

- CISPR22 Class B and JEIDA (Harmonics); VCCI-B

European Union

- EN60950-1; EN55022 Class B and EN55024; TÜV Bauart, CE Mark

Australia, New Zealand

- EN55022 and CISPR22 Class B or AS/NZS; ISPR22; C-Tick

Russia

- IEC60950-1; 51318.22-99 and .24-99; GOST Mark

Korea

- KN22 and KN24; KCC Mark Class B

Taiwan

- CNS 14336(94); CNS 13438(95) Class A; BSMI Mark

Ordering Information**BR-1020-0010 (dual port)**

- Ships in a single pack with low-profile and standard brackets, and SR/SW SFP+ transceivers

BR-1020-1010 (dual port)

- Ships in a single pack with low-profile and standard brackets, Twinax version, optics and cables not included

¹ See documentation for full list of supported protocols.

NOTICES

Brocade Network Advisor (BNA) is a management solution from Brocade that enables unified management across SAN and IP networks. Brocade Server Application Optimization (SAO) is an optional feature available on Brocade switches. SAO works with QLogic BR-Series Adapters to enhance application performance and VM scalability. Licenses for Brocade’s BNA and SAO products can be purchased separately through Brocade Corporation.

DISCLAIMER

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