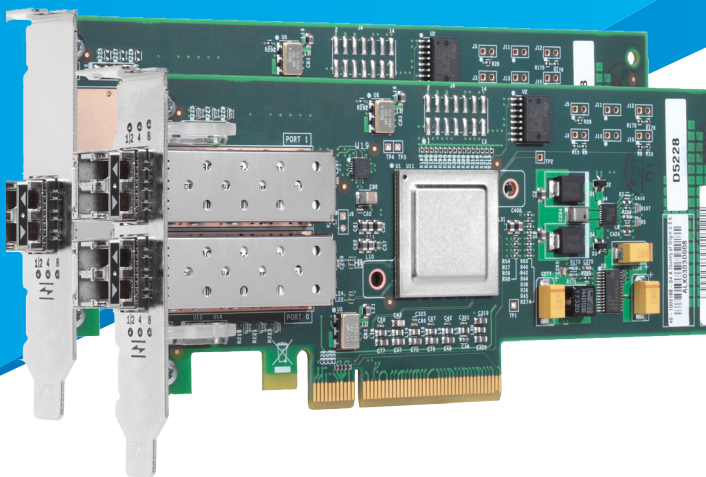


# QLogic BR-815 and BR-825

## Fibre Channel Adapters



- Provides high-performance, line-rate 8Gbps Fibre Channel for enterprise-class, reliable SAN connectivity
- Maximizes bus throughput with a Fibre Channel-to-PCIe® Gen2 (x8) bus interface with intelligent lane negotiation
- Delivers unprecedented performance with up to 500,000 IOPS per port, 1,000,000 IOPS per dual-port adapter, and up to 1600MBps per port, full duplex
- Provides fabric-based boot LUN discovery for simplified SAN boot configuration for both DAS and diskless server deployments
- Supports NPIV with up to 255 virtual ports
- Provides optimal support for Windows Server 2012, including support for Virtual Fibre Channel

### OVERVIEW

#### SERVER CONNECTIVITY FOR NEXT-GENERATION DATA CENTERS

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 usage, reduce ongoing operational costs, and increase their flexibility and responsiveness.

Two major industry trends aimed at reducing cost and complexity—server consolidation and virtualization—have quickly become the highest priorities for server administrators. Most data centers were designed to meet basic connectivity needs for physical servers, switches, and storage. However, consolidation and virtualization drive new connectivity requirements that legacy solutions are no longer able to meet, such as streamlined manageability, increased performance, and virtualization awareness. Performance of the applications under load and manageability are often critical concerns for organizations deploying server virtualization.

The BR-815 and BR-825 Fibre Channel adapters are a new class of server connectivity products with unmatched hardware capabilities and unique software features. This new class of adapters is designed to help IT organizations deploy and manage end-to-end SAN services across next-generation data centers.

#### 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 switches.

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

QLogic adapters also enable VM discovery in VMware® ESX® environments within BNA. VM discovery provides an end-to-end view of the VM-to-LUN path information for all the VMs running on each physical server, with detailed information such as host OS, assigned CPU and memory resources, and all the data stores associated with each VM. This level of visibility into the virtual server infrastructure for SAN administrators enables them to more efficiently manage their storage network resources. Coupled with N\_Port ID virtualization (NPIV), Network Advisor can also provide end-to-end performance statistics with VM granularity, increasing visibility down to the LUN level.

Boot-over-SAN enables the deployment of both direct-attached storage (DAS) point-to-point topology as well as diskless servers and centralized management of OS images in the shared storage pool. Traditional boot-over-SAN environments, however, require access to each individual adapter BIOS (and each individual server console), making them cumbersome to configure, laborious to maintain, and prone to human error. To simplify the management of boot-over-SAN environments, QLogic adapters provide fabric-based boot LUN discovery—a feature that enables each server to automatically retrieve its boot LUN information from the switch fabric. Boot LUN discovery provides a centralized management point for all boot-over-SAN operations, enabling organizations to fully reap the benefits of diskless servers. In addition, to account for the disk spinup delay time when servers and storage devices are powered on simultaneously, users can configure a 1-, 2-, 5-, or 10-minute delay to boot with the boot-up delay feature.

### UNMATCHED PERFORMANCE

With the recent advances in server technology, including Intel® Romley processors, servers are now capable of running more workloads than ever. This increased capacity drives higher consolidation and virtualization ratios, with more VMs being deployed per server, which in turn drives unprecedented I/O requirements. The superior performance of QLogic adapters provides the necessary bandwidth and I/O power for the most demanding environments.

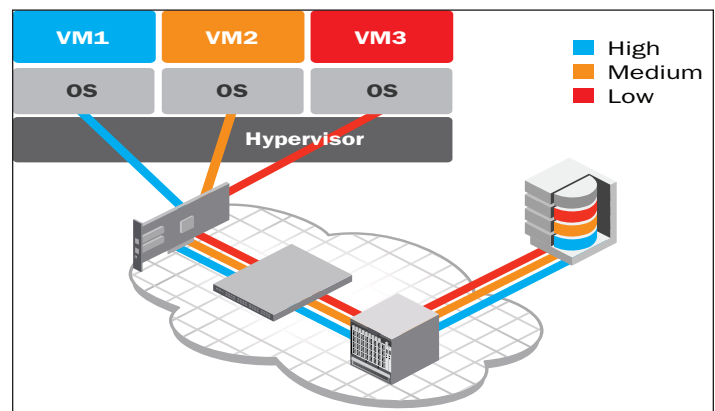
Ultimately, increased performance means that businesses of all sizes can scale their virtual server deployments and virtualize highly demanding applications with greater confidence, resulting in better server resource utilization and lower capital and operational costs.

### OPTIMIZED FOR VIRTUAL ENVIRONMENTS

In a non-virtualized environment, every application is tied to a physical server, which in turn connects to a physical SAN switch port in a “static” manner. Applying network policies such as zoning or QoS—or monitoring application performance—is simple because the application is permanently associated with the physical port.

With server virtualization, multiple applications reside in a physical server and share a physical SAN port. Furthermore, applications can move across the virtualized server infrastructure, based on a number of user-defined policies, to respond to dynamic business requirements. A virtualization-aware SAN infrastructure and server connectivity solution enables organizations to apply network policies at the VM level. Such policies will then be able to “follow” the application transparently as it moves to a new physical server.

QLogic adapters were built from the ground up with virtualization in mind. They support NPIV with up to 255 virtual ports, and they are qualified with all major hypervisor solutions in the industry. Leveraging NPIV technology, organizations can not only extend QLogic fabric services to the server, but all the way to the VM and application level. Brocade Server Application Optimization (SAO) helps IT organizations avoid downtime and more effectively meet their SLAs by allowing them to apply QoS policies with a per-VM granularity and ensure that mission-critical VMs will not be affected in the event of adapter link congestion—even as they move across the infrastructure. SAO also provides isolation to protect individual VMs from the effect of slow-drain devices that would otherwise impact the entire physical server and all applications.



SAO extends QoS to the VM level

**Optimal Support for Windows Server 2012 and Windows Server 2012 R2**

By supporting Windows Server® 2012, QLogic Fibre Channel adapters enhance their ability to support Windows-based virtual workloads. Furthermore, their support of the Hyper-V® virtual Fibre Channel feature enables direct connectivity to Fibre Channel SANs from within a Hyper-V VM, allowing Fibre Channel SANs to seamlessly support Windows-based virtualized workloads. Support for Fibre Channel in Hyper-V guests also includes support for many high-availability features, such as virtual SANs, clustered VMs, live migration, and multipath I/O (MPIO).

**ACCELERATING SERVER DEPLOYMENT WITH DYNAMIC FABRIC PROVISIONING**

Dynamic fabric provisioning (DFP) allows organizations to eliminate fabric reconfiguration when adding or replacing servers through the virtualization of host WWNs. DFP combines Brocade switch and QLogic adapter technology to reduce or eliminate the need to modify zoning or LUN masking. In addition, DFP enables pre-provisioning of virtual WWNs, helping organizations eliminate time-consuming steps when deploying new equipment or moving devices within a switch.

**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](http://www.qlogic.com).

## Models

### BR-815

- Single-port, 8Gbps adapter

### BR-825

- Dual-port, 8Gbps adapter

## Fibre Channel Specifications

### Data Rate

- BR-815/BR-825
  - 8Gbps (1600MBps)
  - 4Gbps (800MBps)
  - 2Gbps (400MBps)

### Performance

- Up to 500,000 IOPS per port at 4Gbps and 8Gbps

### Protocols

- SCSI-FCP, FCP-2, FCP-3, FC-SP

### Topology

- Point-to-point (N\_Port), switched fabric (N\_Port), including N\_Port trunking with frame-based load balancing, FC-AL, and FC-AL2

### Class of Service

- Class 3, Class 2 control frames supported

### Dynamic Fabric Provisioning (DFP)

- DFP for Fibre Channel fabric assigned port worldwide name (FA-PWWN)

### Boot-over-SAN

- DAS (point-to-point topology) and diskless fabric-based LUN discovery
- Boot-up delay in 1-, 2-, 5-, and 10-minute intervals

### LUN Masking

- Initiator-based LUN masking for storage traffic isolation

### Target Rate Limiting

- Throttles traffic based on target's (slower) speed capability

## Host Specifications

### Server Platform

- Intel (IA32, IEM64T), AMD® (x86, 64), and Oracle® (x86, SPARC®)

### Bus Interface

- PCI Express® Gen 2.0 (x8) and Gen 3.0 compatible, with MSI-X and INTx

## Software

### Management

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

### Operating Systems

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

### APIs

- SNIA-HBA-API 2.0 and FDMI-I

## Physical Specifications

### Transceivers

- 8Gbps Fibre Channel LC-style pluggable (SFP+)
- MMF (850nm)
- Hot-swappable

### Form Factor

- PCI Express low-profile form factor; 16.77cm × 6.89cm (6.60in. × 2.71in.)

### Bracket Size

- Standard: 1.84cm × 12.08cm (0.73in. × 4.76in.)
- Low profile: 1.84cm × 8.01cm (0.73in. × 3.15in.)

## Agency Approvals

### United States

- Bi-Nat UL/CSA 60950-1 1st Ed; ANSI C63.4; cCSAus; FCC Class B

### Canada

- Bi-Nat UL/CSA 60950-1 1st Ed; ICES-003 Class B; cCSAus

### European Union

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

### Australia/New Zealand

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

### Russia

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

### Korea

- KN22 and KN24; MIC Mark Class B

### Taiwan

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

## Environmental and Power Requirements

### Airflow

- No airflow required

### Operating Temperature

- 0°C to 55°C (32°F to 131°F) (dry bulb)

### Non-operating Temperature

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

### Power Dissipation

- 6W (full line rate)

### Operating Voltage

- 3.3V

## Ordering Information

### BR-815-0010

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

### BR-825-0010

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

**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.

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