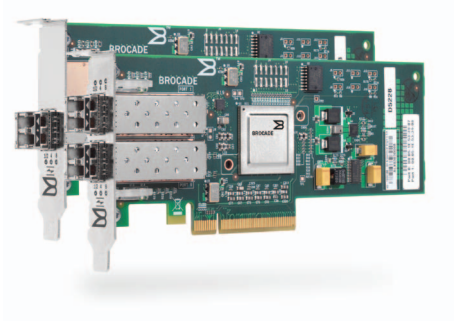
# BROCADE 815 AND 825 FC HBAs

## SERVER CONNECTIVITY

## Server Connectivity for Next-Generation Data Centers

### HIGHLIGHTS

- Uniquely enables end-to-end (server-to-storage) management in Brocade DCF environments
- Maximizes bus throughput with a Fibre Channel to PCIe 2.0a Gen2 (x8) bus interface with intelligent lane negotiation
- Maximizes I/O transfer rates with up to 500,000 IOPS per port at 8 Gbit/sec
- Enhances security with Fibre Channel-Security Protocol (FC-SP) for device authentication
- Supports virtualized environments with N_Port ID Virtualization (NPIV) for 255 virtual ports



The Brocade® 815 (single port) and Brocade 825 (dual ports) 8 Gbit/sec Fibre Channel to PCIe Host Bus Adapters (HBAs) provide a new level of server connectivity through unmatched hardware capabilities and unique software configurability. This new class of HBAs is designed to help IT organizations deploy and manage end-to-end SAN services across next-generation data centers.

### STRATEGIC DATA CENTER FABRIC ARCHITECTURE

Most data centers were designed to meet basic connectivity options for physical servers, switches, and storage. As virtualization becomes more prevalent, however, organizations require new connectivity options with higher performance, improved service levels, simplified management, and greater data protection for both physical and virtualized environments.

The Brocade Data Center Fabric (DCF) architecture provides a strategic framework to help simplify data center connectivity, optimize performance and scalability, and reduce cost and risk. It combines storage networking and server-to-server clustering into a converged infrastructure composed of Fibre Channel switches, directors, and backbones along with this new class of HBA.

### END-TO-END STORAGE NETWORKING

As part of the Brocade DCF architecture, the Brocade 815 and Brocade 825 HBAs lay the foundation for extending fabric intelligence to servers, virtual machines, applications, and services—enabling end-to-end storage network management.

By installing Brocade HBAs, organizations will have the foundation to leverage NPIV and Quality of Service (QoS) from the virtual port throughout the fabric.

### UNIFIED MANAGEMENT

For local or remote management, Brocade provides Host Connectivity Manager (HCM) native GUI and CLI tools to configure and monitor its HBAs. In addition, Brocade Data Center Fabric Manager (DCFM™) provides unified, end-to-end management across fabrics with Brocade Fibre Channel switches and HBAs. Both DCFM and HCM provide open APIs and standards-based interfaces for integration with popular third-party applications and higher-level frameworks to help orchestrate Brocade hardware and SAN services.

### MAXIMIZING INVESTMENTS

To help optimize technology investments, Brocade and Dell offer complete solutions that include education, support and services. For more information, contact an authorized Dell sales partner, or your Dell representative, or visit www.dell.com.

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## KEY FEATURES

**High-performance configuration:**
- Intelligent PCIe lane negotiation to maximize bus throughput
- Parallel I/O engines to support simultaneous I/O transfers
- Hardware-based low/medium/high data prioritization enables QoS
- Flow control to maximize link utilization between HBAs and adjacent switch ports

**Centralized management and provisioning:**
- Local and remote management of distributed HBAs with fabric-based boot LUN discovery for automated SAN boot configuration to quickly deploy diskless servers
- FC-ping, FC-Traceroute, and LED port beaconing to simplify fault isolation

**Data protection, authentication, and encryption:**
- Data protection across PCIe and FC (T10 CRC), memory blocks, and ASIC (ECC)
- FC-SP security for device authentication and the capability for in-flight AES-GCM data encryption

**Enhanced server virtualization:**
- Multiple I/O data queues to increase performance for virtualized environments
- Certified for Microsoft, Novell, and VMware hypervisors

## BROCADE 815 AND BROCADE 825 SPECIFICATIONS

| Fibre Channel Specifications | |
|---|---|
| Data rate | Per port: 8 Gbit/sec (1600 MB/sec); 4 Gbit/sec (800 MB/sec); 2 Gbit/sec (400 MB/sec) |
| Performance | Up to 500,000 IOPS per port (maximum) |
| Protocols | SCSI-FCP, FCP-2, FCP-3, FC-SP |
| Topology | Point-to-point (N_Port), switched fabric (N_Port) |
| Distance support | 50 meters at 8 Gbit/sec on 62.5/125 µm Multi-Mode Fiber (MMF) |
| **Host Specifications** | |
| Server platform | Dell PowerEdge® Servers (T410, R905, R900, R805, T710, R910, R810, R710, R610, R410, T610, R510, R815, R715, NX3100, PE2970) |
| Bus interface | PCI Express Gen 2.0 Compatible (x8), with MSI-X and INTx |
| **Software** | |
| Driver- and HCM-supported operating systems | Windows Server 2008/R2, Windows Server 2003/R2, RHEL 4/5, SLES 9/10/11, Solaris 10 (x86), and VMware ESX 3.5 |
| Brocade DCFM/EFCM support | Yes |
| APIs | SNIA-HBA-API 2.0 and FDMI-I |
| **Warranty and Support** | |
| Warranty and support | Three years Advanced Replacement hardware warranty and related 24×7×365 telephone and e-mail access to live technical support |
| **Physical Specifications** | |
| Transceivers | 8 Gbit/sec Fibre Channel LC-style pluggable (SFP+), MMF (850 nm) |
| Form factor | PCI Express low-profile form factor; 16.77 cm × 6.89 cm (6.60 in. × 2.71 in.) |
| Bracket size | Standard: 1.84 cm × 12.08 cm (.73 in. × 4.76 in.)<br>Low profile: 1.84 cm × 8.01 cm (.73 in. × 3.15 in.) |

| Environmental and Power Requirements | |
|---|---|
| Airflow | No airflow required |
| Operating temperature | 0° C/32° F to 55° C/131° 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 | 6 W (typical) |
| Operating voltage | 3.3 V |
| **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 |
| Japan | CISPR22 Class B and JEIDA (Harmonics); VCCI-B |
| European Union | EN60950-1; EN55022 Class B and EN55024; TUVBauart, 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 |
| **Ordering Information** | |
| TWWC3 | 815, Single port 8Gbps FC HBA with 1 SWL SFP |
| 2MR3M | 825, Dual port 8Gbps FC HBA with 2 SWL SFP's |

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