BROCADE BR1741M-K 10 GBPS CNA

SERVER CONNECTIVITY

Enterprise-Class Blade Server Connectivity for Next-Generation Virtualized Data Centers

HIGHLIGHTS

- High-performance line-rate 10 Gbps Ethernet for enterprise-class, reliable LAN connectivity for Dell blade servers

- Data Center Bridging (DCB) support for low-latency, lossless, and deterministic 10 Gbps Ethernet connectivity and storage over Ethernet applications (FCoE/iSCSI)

- Advanced Ethernet performance, including IPv4 and IPv6 checksum offload, Receive Side Scaling (RSS), Header Data Split (HDS), jumbo frame support, and TCP Segmentation Offload (TSO)

- Scalable connectivity features—including virtual switching offloads—across a secure, multiprotocol, lossless environment

- Unified Fibre Channel, FCoE, and Ethernet driver stack that enables a single driver for both Brocade Converged Network Adapters (CNAs) and Fibre Channel Host Bus Adapters (HBAs)

The Brocade BR1741M-k Converged Network Adapter (CNA) for Dell PowerEdge M-Series blade servers is a powerful dual-port 10 Gbps Ethernet Network Interface Card (NIC) that supports the new Data Center Bridging (DCB) and Fibre Channel over Ethernet (FCoE) standards to deliver enterprise-class LAN connectivity and server I/O consolidation to help reduce cost and complexity in next generation data center environments.

IMPROVED TCO THROUGH I/O CONSOLIDATION

DCB is a new set of standards aimed at enhancing the widely adopted Ethernet protocol to deliver a low-latency, lossless and deterministic network infrastructure for storage and other highly demanding traffic types. FCoE encapsulates Fibre Channel frames and transmits them over this enhanced Ethernet infrastructure while preserving the Fibre Channel constructs and management paradigm.

The Brocade BR1741M-k CNA leverages these technologies to enable organizations to consolidate 1/10 GbE NIC and Fibre Channel HBA mezzanine cards into a single adapter, and to transport both TCP/IP and storage (iSCSI/FC) traffic over a common link. This brings drastic reductions in blade server deployment costs, as well as power

and cooling requirements, delivering best-in-class connectivity while reducing Total Cost of Ownership (TCO).

UNIFIED MANAGEMENT

Brocade Network Advisor can monitor and manage multiple mezzanine and stand-up CNAs across a data center simultaneously—along with Brocade HBAs, switches, directors, and backbones—all from a single central location.

The Brocade BR1741M-k CNA also enables Virtual Machine (VM) discovery in VMware ESX environments within Brocade Network Advisor. VM discovery provides an end-to-end view of the VM-to-LUN path information for all the VMs running on each physical server. This provides unprecedented levels of visibility into the virtual server infrastructure for SAN administrators, enabling them to more efficiently manage their storage network resources.
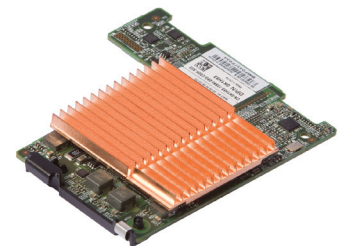
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UNMATCHED PERFORMANCE

With the recent advances in server technology, servers are capable of running more workloads than ever. This drives higher consolidation and virtualization ratios and unprecedented I/O requirements.

The Brocade BR1741M-k CNA is a fully featured 10 GbE NIC delivering full 10 Gbps line rate performance on both ports. It provides industry standard stateless networking offloads such as TCP checksum and segmentation offloads for improved performance and more efficient CPU usage, which can be dedicated for additional application processing.

In addition, the Brocade CNA delivers full hardware-based FCoE offload to provide superior performance for storage applications with up to twice the performance of competing offerings in real world application scenarios.

OPTIMIZED FOR VIRTUAL ENVIRONMENTS

The Brocade BR1741M-k CNA supports NPIV with up to 255 virtual ports, and is qualified with all major hypervisor solutions in the industry. Leveraging NPIV technology, organizations can not only extend Brocade fabric services to the server, but all the way to the VM and application level. Virtual Machine Optimized Ports (VMOP) is a feature that offloads the hypervisor of essential packet classification tasks, providing for reduced latency and improved throughput while freeing CPU cycles that can be used to further scale an organization's virtualization environment.

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BROCADE BR1741M-K CNA SPECIFICATIONS

Host Specifications	
Server platform	Dell PowerEdge M610, M610x, M710, M710HD and M910
Bus interface	PCI Express Gen 2.0
FCoE Specifications	
Protocols	FC-SP, FC-LS, FC-GS, FC-FS2, FC-FDMI, FC-CT, FCP, FCP-2, FCP-3, FC-BB-5
Performance	Up to 500K IOPS per port (1M IOPS per adapter)
	• 330,000 IOPS per port with 4KB block size and 60% read / 40% write operations (typical e-mail)
	• 205,000 IOPS per port with 8KB block size and 60% read / 40% write operations (typical database)
Logins	Support for 2048 logins and 4096 exchanges
Class of service	Class 3, Class 2 control frames supported
Ethernet Specifications	
Data Center Bridging (DCB) support	Priority-Based Flow Control (PFC: 802.1Qbb)
	Enhanced Transmission Selection (ETS: 802.1Qaz)
	Congestion Notification (802.1Qau)
	DCBX Data Center Bridging Exchange Protocol
Performance	10 Gbps full-duplex line rate
Frame sizes	9600 byte jumbo frames and mini-jumbo frames supported
Ethernet standards compliance	802.3ae, 802.1P/Q, 802.3x, 802.3ad, 802.3ap
Stateless offloads	IPv4/IPv6, TCP, and UDP checksum offload; IPv4 header checksum offload; TCP Segmentation Offload (TSO); Receive Side Scaling (RSS); Header Data Split (HDS); VLAN insertion/stripping and VLAN filtering
Software	
Driver- and Brocade Host Connectivity Manager (HCM)-supported operating systems	Windows Server 2003/2008; Windows Server 2008 R2; RHEL 4/5; SLES 10/11; Solaris 10 (x86); and VMware ESX 3.5, ESX/ESXi 4.0/4.1
Brocade Network Advisor	Yes (Professional, Professional Plus, Enterprise)
Management APIs	SNIA HBA API v2.0, SMI-S, and FDMI-1
Physical Specifications	
Form factor	Dell SFF mezzanine card form factor. 9.2 cm (3.6 in) × 8.4 cm (3.3 in) × 3.7 cm (1.46 in)
Environmental and Power Requirements	
Airflow	200 Linear Feet/Minute (LFM), 65° C (149° F) inlet ambient temperature
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	10% to 93% (relative, non-condensing)
Non-operating humidity	10% to 93% (relative, non-condensing)
Agency Approvals	
United States	UL 60950-1, Second Edition, cCSAus; FCC Class A
Canada	CSA 60950-1-07,Second Edition ICES-003 Class A; cCSAus
Japan	VCCI V-3 /2009.04, VCCI V-4 2009.04, VCCI Class A
European Union	EN60950-1:2006+A11 ; EN55022 Class A and EN55024; TUVBauart, CE Mark
Australia, New Zealand	EN55022 and CISPR22 Class A or AS/NZS; CISPR22; C-Tick
Korea	KN22 and KN24; KCC Mark Class A