

BROCADE 1007 CNA FOR IBM BLADECENTER

SERVER CONNECTIVITY

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

HIGHLIGHTS

- High-performance line-rate 10 Gbps Ethernet for enterprise-class, reliable LAN connectivity for IBM 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)
- An integral part of the Brocade DCB/FCoE solution for IBM BladeCenter, which includes the Brocade 8470 Switch Module for IBM BladeCenter and Brocade Data Center Fabric Manager (DCFM)

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. Blade server technology is a key enabler of server consolidation and virtualization, two major industry trends aimed at helping address this challenge.

The Brocade® 1007 Converged Network Adapter (CNA) for IBM BladeCenter is a powerful dual-port 10 Gbps Ethernet Network Interface Card (NIC) that enables the transport of Fibre Channel traffic over a 10 Gigabit Ethernet (GbE) connection using Data Center Bridging (DCB) and Fibre Channel over Ethernet (FCoE) protocols. This approach provides best-in-class LAN connectivity and server I/O consolidation for blade servers, helping to reduce cost and complexity in next-generation data center environments.

IMPROVED TCO THROUGH I/O CONSOLIDATION

By leveraging DCB and FCoE technologies, the Brocade 1007 enables organizations to consolidate multiple 1 GbE NICs and Fibre Channel Host Bus Adapters (HBAs)

into a single mezzanine card. Combined with the Brocade 8470 Switch Module for IBM BladeCenter and Brocade Data Center Fabric Manager (DCFM®), the Brocade 1007 provides a powerful 10 Gbps solution that helps consolidate both TCP/IP and storage (iSCSI/Fibre Channel) traffic over a single link, while providing native Fibre Channel connectivity. This helps significantly reduce server deployment costs, as well as power and cooling requirements, delivering best-in-class LAN and Storage Area Network (SAN) connectivity while reducing Total Cost of Ownership (TCO).

INTEGRATED MANAGEMENT

The Brocade 1007 can be managed via Command Line Interface (CLI), a Graphical User Interface (GUI) element manager—Brocade Host Connectivity Manager (HCM)—or Brocade DCFM.



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Brocade DCFM enables organizations to simultaneously monitor and manage multiple CNAs—along with Brocade HBAs, switches, directors, and backbones—from a single, centralized location. By leveraging Brocade DCFM, organizations can apply a holistic approach to data center management in both physical and virtual environments.

With the Brocade 1007, Brocade DCFM supports Virtual Machine (VM) discovery in VMware ESX environments. 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, enabling network administrators to more efficiently manage their storage network resources.

In addition, the Brocade 1007 seamlessly integrates with IBM BladeCenter management tools, including IBM BladeCenter Open Fabric Manager (BOFM) and IBM Systems Director, to deliver an integrated management experience.

UNMATCHED PERFORMANCE

The Brocade 1007 is a low-latency adapter that delivers 10 Gbps line-rate performance per port. With stateless networking offloads such as TCP checksum and segmentation offloads, CPU cycles can be more efficiently dedicated to additional application processing, enabling greater VM scalability.

The Brocade 1007 delivers full hardware-based FCoE offload to provide superior performance for storage applications, with up to 330,000 IOPS per port for enterprise e-mail (4 KB block size) and 205,000 IOPS per port for database applications (8 KB block size). This represents more than twice the performance of competitive offerings, which means that organizations of all sizes can scale their virtual server deployments and virtualize highly demanding applications with greater confidence, resulting in improved server resource utilization and reduced capital and operational costs.

OPTIMIZED FOR VIRTUAL ENVIRONMENTS

In virtual environments, multiple applications share a physical switch port. Virtualization hypervisors implement virtual switching technologies to connect the VMs to the network, and to move data between VMs.

The Brocade 1007 supports Virtual Machine Optimized Ports (VMOPs), a feature that offloads the hypervisor of essential virtual switching tasks, such as incoming packet classification and sorting tasks. This helps reduce latency and improve throughput while freeing CPU cycles that can be used to further scale an organization's virtual environment.

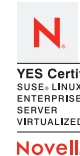
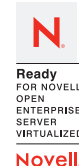
MAXIMIZING INVESTMENTS

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

BROCADE 1007 SPECIFICATIONS

Host Specifications	
Server platform	IBM BladeCenter HS22, HS22V
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-5
Performance	Up to 500,000 IOPS per port (1,000,000 IOPS per dual-port adapter) <ul style="list-style-type: none"> • 330,000 IOPS per port with 4 KB block size and 60% read/40% write operations (typical e-mail) • 205,000 IOPS per port with 8 KB 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	
DCB support	Priority-based Flow Control (PFC: 802.1Qbb) Enhanced Transmission Selection (ETS: 802.1Qaz) Data Center Bridging eXchange (DCBX)
Performance	10 Gbps full-duplex line rate
Frame sizes	All standard Ethernet frame sizes supported, including: 9600 byte jumbo frames and mini-jumbo frames
Ethernet acceleration	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 filtering

Software	
Supported operating systems	Windows Server 2003/2008; Windows Server 2008 R2; RHEL 5; SLES 10/11; and VMware ESX 3.5, ESX/ESXi 4.0, ESX/ESXi 4.1
Brocade DCFM support	Yes (Professional, Professional Plus, Enterprise)
Management integration	IBM BladeCenter Open Fabric Manager (BOFM) IBM Systems Director
Management APIs	SNIA HBA API v2.0, SMI-S, and FDMI-1
Physical Specifications	
Form factor	Approximate height: 13 mm (0.5 in) Approximate width: 160 mm (6.3 in) Approximate depth: 124 mm (4.9 in) Approximate weight: 127 g (0.28 lb)
Environment and Power Requirements	
Airflow	Provided by blade system enclosure
Operating temperature and altitude	0 to 50 °C (32 to 122 °F) at 0 to 3048 m (0 to 10,000 ft)
Non-operating temperature and altitude	-40 to 73 °C (-40 to 163 °F) at 0 to 12,193 m (0 to 40,000 ft)
Operating humidity	10% to 93% (non-condensing) at 50 °C (122 °F)
Non-operating humidity	10% to 93% (non-condensing) at 60 °C (140 °F)
Power dissipation	8.5 W (nominal); 9.5 W (maximum)
Operating voltage	3.3 V



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