BROCADE 1867 FIBRE CHANNEL HBA FOR IBM FLEX SYSTEM FC5022

SERVER CONNECTIVITY

Optimized, Automated, and Integrated Expert Systems Network Architecture

HIGHLIGHTS

- Provides a new class of Fibre Channel adapter designed around an optimized, automated, and integrated expert systems network architecture for the IBM Flex System FC5022
- Leverages Brocade technology to provide 16 Gbps end-to-end Storage Area Network (SAN) connectivity while optimizing IBM Flex System scalability
- Extends the power of the SAN when used together with Brocade SAN switches, providing valuable Fibre Channel services to the server and virtual applications
- Simplifies and unifies SAN and adapter management through Brocade Network Advisor, reducing operational costs and complexity

To keep pace with dynamic and growing business demands, many organizations are transitioning their data centers to private cloud architectures in order to leverage the many benefits of virtualization. This approach enables them to optimize, automate, and integrate their IT server and Storage Area Network (SAN) resources to increase business agility and resiliency while future-proofing the infrastructure and operational environment.

The Brocade® 1867 Fibre Channel Host Bus Adapter (HBA) for IBM Flex System FC5022 meets all the connectivity needs of cloud-enabled data centers while providing unmatched performance, application-aware services, unified management, and reduced cost and complexity. It is the simplest, most flexible, and most powerful server connectivity adapter designed to extend fabric services to Virtual Machines (VMs) and applications in highly demanding virtualized environments. Delivering full-duplex, line-rate 16 Gbps Fibre Channel speeds, and one million IOPS for Fibre Channel storage applications, the Brocade 1867—in conjunction with the IBM Flex System FC5022—is the ideal platform to support the most demanding mission-critical workloads in the largest data centers.

REALIZING THE POTENTIAL OF 16 GBPS FIBRE CHANNEL

The potential benefits of deploying 16 Gbps Fibre Channel instead of 8 Gbps are particularly significant in the context of the future architectural capabilities of the

The Brocade One™ strategy helps simplify networking infrastructures through innovative technologies and solutions. The Brocade 1867 Fibre Channel Host Bus Adapter (HBA) supports this strategy by simplifying and optimizing server connectivity to Fibre Channel fabrics in highly virtualized data centers.

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IBM Flex System FC5022. Organizations can utilize 16 Gbps internal bandwidth between the Brocade 1867 and the Brocade 6547 Switch Modules to eliminate oversubscription. By running end-to-end 16 Gbps Fibre Channel between server compute nodes and SAN switch modules, organizations can minimize connectivity complexity and reduce physical resources, enabling substantial savings while helping to ensure growth potential. Finally, 16 Gbps Fibre Channel provides sufficient performance headroom to increase the density of VMs on the server compute nodes while meeting the demands of shared Virtual Desktop Infrastructure (VDI) and Solid-State Disk (SSD) storage technologies.

INCREASING SAN EFFICIENCY

When 16 and 8 Gbps Brocade 1867 HBAs are used with the 4, 8, and 16 Gbps Brocade 6547 Switch Modules in an IBM Flex System chassis, they increase automation for more efficient deployment, reconfiguration, and serviceability processes. As a result, these adapters and switches deliver considerable value by simplifying the deployment of server and SAN resources, reducing infrastructure and operational costs, as well as maximizing server and SAN reliability, availability, and resiliency.

Extend Fabric Services to the Server and Applications

Together, the Brocade 1867 and the Brocade 6547 support Brocade Server Application Optimization (SAO) technology to extend the intelligence and advanced fabric services of Brocade industry-leading Fibre Channel fabrics into server compute nodes. SAO extends Quality of Service (QoS) from the fabric to the VM and application levels, enabling organizations to virtualize mission-critical applications and scale virtualization environments with confidence. SAO also enables organizations to assign three QoS levels to virtualized applications to ensure workloads will not be impacted by congestion or misbehaving devices, helping organizations more efficiently meet application Service Level Agreements (SLAs).

Simplify and Unify Operational Management

The Brocade 1867 provides a robust and holistic management stack—including a Command Line Interface (CLI), an element manager called the Host Connectivity Manager (HCM), and unified management through Brocade Network Advisor—as well as IBM framework management and orchestration tools, such as IBM Total Storage Productivity Center and Systems Director.

Brocade Network Advisor centralizes and unifies the management of Brocade SAN, LAN, and compute node (server) adapter connectivity resources under a single pane of glass. It can monitor and manage multiple adapters across a data center, including performance monitoring across groups of adapters, diagnostics capture, event management, and fabric-wide broadcast of unified driver upgrades. In addition, Brocade Network Advisor provides VM visibility in VMware ESXi environments, giving network administrators unprecedented levels of visibility into the virtualized server infrastructure.

BROCADE GLOBAL SERVICES

Brocade Global Services has the expertise to help organizations build scalable, efficient cloud infrastructures. Leveraging 15 years of expertise in storage, networking, and virtualization, Brocade Global Services delivers world-class professional services, technical support, and education services, enabling organizations to maximize their Brocade investments, accelerate new technology deployments, and optimize the performance of networking infrastructures.

MAXIMIZING INVESTMENTS

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

BROCADE 1867 SPECIFICATIONS

Models	
IBM part number	88Y6370 (dual-port)
Fibre Channel Specifications	
Data rate	14,025 Gbps (1600 MB/sec) per port and 8.5 Gbps (800 MB/sec), auto-sensing, full duplex
Performance	500,000 IOPS per port (1,000,000 IOPS per dual-port adapter)
Fibre Channel protocols	SCSI-FCP, FCP-2, FCP-3, FC-SP
Topology	Point-to-point (N_Port), switched fabric (N_Port), and NPIV (N_port ID Virtualization)
Boot options	Boot from SAN (including DAS point-to-point topology) Fabric-based Boot LUN Discovery
LUN masking	Initiator-based LUN masking for storage traffic isolation
Target Rate Limiting (TRL)	TRL throttles the data traffic when accessing slower-speed storage targets to avoid back pressure problems (automated when used with Brocade switches).
I/O Virtualization	
Single-Root I/O Virtualization (SR-IOV)	SR-IOV provides up to 255 Virtual Functions (VFs) per adapter. *Note: Hardware-capable, support-enabled in a future software release.*
Brocade vFLink virtual HBAs (vHBAs)	vFLink provides up to four PCIe Physical Functions (PFs) and vHBAs per port (eight PFs/vHBAs per dual-port adapter) with configurable vHBA bandwidth allocations in 100 Mbps increments. *Note: Hardware-capable, support-enabled in a future software release.*
Host Specifications	
Chassis connectivity	IBM Flex System Enterprise chassis, one or two dual-port 16/8 Gbps Fibre Channel adapters per compute node
Compute nodes supported	IBM Flex System x240 Compute Node
Operating systems supported	Microsoft Windows 2003/2008/Windows7, Red Hat Enterprise Linux, Novell SUSE Linux Enterprise Server*Note: Visit the Brocade OEM IBM Adapter Interoperability Matrix page for more details at:* www.brocade.com/downloads/documents/interoperability/IBM-HBA-CNA-Interoperability-Matrix.pdf.
VM hypervisors supported	VMware ESX/ESXi, Windows Server 2008 Hyper-V, Linux XEN

Software	
Management software included	Brocade Configuration Utility (BCU) Command Line Interface (CLI) Brocade Host Connectivity Manager (HCM) Brocade Network Advisor (optional VMware vCenter plug-in)
APIs	SNIA-HBA-API 2.0 and FDMI-I
Brocade Server Application Optimization (SAO)	SAO extends Quality of Service (QoS) to VMs and applications. *Note: SAO requires an optional software license and Brocade 6547 Switch Module(s).*
Physical Specifications	
Form factor dimensions	Depth: 4.19 in. (10.65 cm) Width: 3.34 in. (8.49 cm) Height: 1.64 in. (4.15 cm)
Weight	0.31 lb (0.14 kg)
Environmental and Power Requirements	
Airflow	Provided by IBM Flex System Enterprise chassis
Operating altitude Non-operating altitude	3050 meters (10,000 ft.) 3050 meters (10,000 ft.)
Operating temperature Non-operating temperature	10°C to 35°C/50°F to 95°F (dry bulb) 5°C to 45°C/41°F to 113°F (dry bulb)
Operating humidity Non-operating humidity	20% to 80% (relative, non-condensing) 8% to 80% (relative, non-condensing)
Power dissipation	8.5 W (maximum); 8.0 W (nominal)
Operating voltage	12 V per PCIe 2.0 specifications
Warranty and Support	
IBM limited warranty	One-year IBM limited warranty, or, when installed in an IBM Flex System, these cards assume the IBM system's base warranty and any IBM ServicePac upgrade.
Agency Approvals	
United States	Bi-Nat UL/CSA 60950-1 2nd Ed; ANSI C63.4; cCSAus; FCC Class B
Canada	Bi-Nat UL/CSA 60950-1 2nd 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; KC Mark Class B
Taiwan	CNS 13438(95) Class A; BSMI Mark

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