BROCADE AP7420

STORAGE AREA NETWORK

A High-Performance Platform for Storage Applications

HIGHLIGHTS

- Utilizes an industry-standard API to provide reliable, scalable, and highly available services to storage applications
- Features a high-performance split-path architecture with hardware acceleration on every Fibre Channel port
- Provides a highly available design with failover-capable Data Path Controllers (DPCs) at every Fibre Channel port as well as dual-redundant power and cooling
- Leverages the T10 Fabric Application Integration Specification (FAIS) standard for data storage applications
- Supports the Brocade Multiprotocol Router, Brocade Data Migration Manager (DMM), and Brocade Application Resource Manager (ARM) solutions as well as leading OEM storage applications

The Brocade AP7420 is an industry-leading platform designed to maximize performance for a wide range of Storage Area Network (SAN) fabric applications. It features a unique architecture that separates the data and control paths, enabling the Brocade AP7420 to switch the majority of I/O commands—such as SCSI reads and writes—at the hardware level.

The Brocade AP7420 uses dedicated ASICs to switch the SCSI commands, so they do not have to traverse an operating system stack. Only the control commands and a small percentage of data path commands are handled by the control processing elements of the Brocade AP7420. As a result, it provides superior hardware acceleration compared to systems built on general-purpose processors and memory.

The Brocade AP7420 includes 16 Fibre Channel ports and two 1 Gigabit Ethernet ports. Each Fibre Channel port features a dedicated Fast Path Processor (FPP) that provides line-rate 2 Gbit/sec switching as well as data movement functionality. In turn, each FPP has three processors for a total of 48 processors to facilitate data movement. In addition, an 80 Gbit/sec ASIC between each FPP enables full line-rate speeds on each Fibre Channel port—accelerating performance for a wide range of fabric applications.

INDUSTRY-STANDARD API SERVICES

The Brocade AP7420 utilizes the Brocade Storage Application Services (SAS) API, an implementation of the T10 FAIS standard for reliable, scalable, and highly available data storage applications. This approach removes a layer of complexity from the applications, minimizing development and test cycles to streamline time-to-market for high-value applications.

Key capabilities of the SAS API include:

- Wire-speed hardware acceleration for data movement features such as mirroring, snapshots, write-splitting, block copy, and Logical Block Address (LBA) remapping
- Reliability and security through error handling, data integrity, and Logical Unit Number (LUN) masking services
- Granular statistics for performance management
- Scalability and availability through multiple Data Path Controllers (DPCs) and port- or DPC-level availability with no single points of failure

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A FIELD-PROVEN PLATFORM

The Brocade AP7420 and SAS API are the foundation of industry-leading storage applications developed by Brocade and Brocade OEM Partners. In fact, the platform has been field-proven in thousands of production deployments of the Brocade Multiprotocol Router, which enables Fibre Channel Routing, FCIP, and iSCSI functionality for intra-SAN connectivity, distance extension, and higher scalability of low-cost iSCSI hosts.

In addition, the Brocade AP7420 is the delivery platform for Brocade Data Migration Manager (DMM). Brocade DMM supports high-performance online and offline migrations in heterogeneous server and storage environments. Brocade DMM drives up to 1 TB per hour of offline migration throughput and enables online migrations with minimal impact on application I/O.

MAXIMIZING SAN INVESTMENTS

Brocade and its partners offer complete SAN solutions to meet a wide range of technology and business requirements. These solutions include education and training, service, and support to help optimize SAN investments. For more information, contact an authorized Brocade sales partner or visit www.brocade.com.

BROCADE AP7420 SPECIFICATIONS

Systems Architecture	
Dual-mode ports	16 total ports, Fibre Channel (E, F) and Gigabit Ethernet Licensed minimum of 8 ports, maximum of 16 ports; Ports On Demand upgrade license from 8 to 16 ports
Performance	Fibre Channel: 1.063/2.125 Gbit/sec line speed, full duplex; auto-sensing of 1 and 2 Gbit/sec port speeds; optionally programmable to fixed port speed; speed matching between 1 and 2 Gbit/sec ports Ethernet: 1.25 Gbit/sec
Aggregate bandwidth	32 Gbit/sec
Fabric latency	Depends on storage application
Maximum frame size	2112 bytes for Fibre Channel, 1518 bytes for standard Gigabit Ethernet, 2250 bytes for networks supporting jumbo packet
Classes of service	Class 3
Port types	F_Port and E_Port; self-discovery based on switch type (U_Port); Gigabit Ethernet
Media types	Small Form-Factor Pluggable (SFP) laser. Short-wave up to 500 m (1640 feet); long-wave up to 25 km (15.5 miles); and extended long-wave up to 100 km (62.1 miles). Distance depends on fiber optic cable and port speed. RJ45 Copper SFP for Gigabit Ethernet ports.
Fabric services	Standard services include Simple Name Server, Registered State Change Notification (RSCN), Brocade Advanced Zoning, Brocade Exchange-based Trunking, Brocade Advanced Web Tools (AP edition)
Options	Redundant power supply, SFP media

Management	
Management software supported	Telnet; SNMP (FE MIB, FC Management MIB); Brocade Advanced Web Tools (AP edition) and Brocade Fabric Manager; third-party applications utilizing SMI-S
Management access	Dual 10/100 Ethernet (RJ-45), serial port
Diagnostics	POST and embedded online/offline diagnostics
Supported applications	Brocade Application Resource Manager (ARM), Brocade Data Migration Manager (DMM), EMC Invista, and Fujitsu ETERNUS

Mechanicals	
Enclosure	Non-cable-side to cable-side airflow; power from cable-side; 2U, 19-in.EIA rack-compliant
Size	Height: 8.8 cm (3.5 in) Width: 42.7 cm (16.8 in) Depth: 63.5 cm (25.0 in)
System weight	15.9 kg (35.0 lb) with one power supply 18.1 kg (40.0 lb) with two power supplies

Environmentals	Operating	Non-Operating
Temperature	10° to 40°C	-25° to 70°C
Humidity	20 to 85%, non-condensing	20 to 85%, non-condensing
Altitude	3 km	3 km
Shock	105 G, 2.5 ms, half-sine	40 G, 13 ms, trapezoidal
Vibration	0.5 G (5–500–5Hz)	2.0 G (5–500–5Hz)

Power	
AC input	Nominal: 6.0A@100–120 VAC; 3.0A@200–240 VAC
Frequency	47 to 63 Hz

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For information about switch and device interoperability, visit www.brocade.com/interoperability

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