BROCADE ADVANCED ACCELERATOR FOR FICON

DATA CENTER

Accelerating FICON Application Performance over Distance

HIGHLIGHTS

- Extends the capabilities of the Brocade 7800 and Brocade FX8-24 SAN extension platforms to provide unprecedented effectiveness for mainframe business continuance, disaster recovery, global data mobility, and consolidation
- Combines unmatched data management techniques with protocol intelligence to enable robust FICON extension over FCIP solutions at virtually any distance
- Leverages data center-proven Read/Write Tape Pipelining to deliver unequaled FICON application performance across IP WANs
- Provides intelligent IBM Global Mirror emulation to accelerate data flows and maintain the integrity of command and acknowledgement sequences
- Improves host, storage, and WAN resource utilization to reduce costs and increase efficiency
- Maximizes flexibility for FICON storage placement, enabling data center consolidation and resource optimization

As business continuance, disaster recovery, and global data mobility become more important to today's IT organizations, distance plays an increasingly larger role. Mainframe channel architectures have evolved to improve performance over distance but are typically unable to meet the requirements of today's global enterprise without the help of specialized channel extension solutions.

Brocade® Advanced Accelerator for FICON® (Brocade Advanced Accelerator), an optional software license for the industry-leading Brocade 7800 Extension Switch and Brocade FX8-24 Extension Blade, enables the industry's highest-performance and most robust mainframe extension solutions over virtually any distance. The combined solution supports strategic business initiatives such as business continuance, disaster recovery, consolidation, data migration, and global data access.

Brocade Advanced Accelerator uses advanced networking technologies, data management techniques, and protocol intelligence to accelerate FICON disk and tape read and write operations over distance, while maintaining the integrity of command and acknowledgement sequences. It supports Tape Pipelining for FICON tape and virtual tape as well as emulation for IBM z/OS Global Mirror (formerly eXtended Remote Copy or XRC). Brocade Advanced Accelerator provides unprecedented application performance across IP WANs over distances that would otherwise be impossible, impractical, or too expensive with standard Fibre Channel connections.

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By providing such an intelligent approach for extending FICON applications, Brocade Advanced Accelerator helps organizations:

- Meet shorter backup and recovery objectives
- Deploy more effective business continuance and disaster recovery strategies
- Meet compliance requirements
- Provide secure, global data access and sharing
- Consolidate data centers and rebalance storage resources
- Migrate to new mainframe architectures or extend existing FICON architectures

FASTER TAPE BACKUP AND RECOVERY OVER DISTANCE

The unique read and write Tape Pipelining capability, available for both FICON tape and virtual tape devices, minimizes the impact of distance (latency) on the sustainable throughput of tape backup and recovery over distance. With Brocade Advanced Accelerator, the Brocade 7800 and Brocade FX8-24 pre-acknowledge write sequences from the host and efficiently stream multiple write chains across the IP WAN to the remote site, queuing for the actual write to the remote control unit.

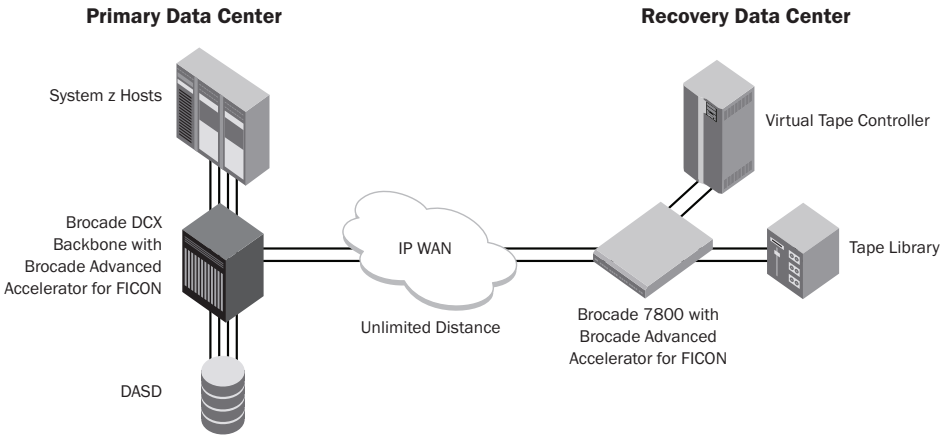
As a result, the remote FICON tape or virtual tape system appears local to the server and is able to sustain consistently high performance over thousands of miles (see Figure 1). The read Tape Pipelining capability works in a similar way, significantly reducing recovery time over extended distances. In addition to speeding backup and recovery, the Brocade Tape Pipelining capabilities optimize WAN bandwidth utilization and keep tape assets operating at peak performance.

DISK ACCELERATION FOR IMPROVED BUSINESS CONTINUANCE

For IBM z/OS Global Mirror (XRC) environments, Brocade Advanced Accelerator provides intelligent emulation to accelerate data flows while managing command and data transmissions to maintain the integrity of command and acknowledgement sequences.

Data replication is performed by pulling information from a primary data store by the System Data Mover (SDM) using a remote

Figure 1.
Leveraging Brocade Advanced Accelerator, Brocade extension solutions provide local-like backup and recovery performance over thousands of miles.



read operation. When Brocade Advanced Accelerator is enabled, the Brocade 7800 or Brocade FX8-24 pre-reads certain read sequences, accelerating data flows to the host and queuing them at the channel for immediate presentation to SDM. All read responses are then available for immediate presentation to the channel when requested, significantly accelerating performance over distance and improving business continuance (see Figure 2).

FLEXIBLE GEOGRAPHIC PLACEMENT OF MAINFRAME STORAGE

By reducing the impact of distance on remote storage application performance, Brocade Advanced Accelerator maximizes flexibility for the placement of storage resources. Without protocol limitations, Brocade Advanced Accelerator enables FICON disk and tape resources to be located wherever business needs dictate, anywhere in the world. As a result, recovery sites can be located further away from production sites, improving data protection while enabling data center consolidation and global data access.

FICON EXTENSION EXPERTISE AND SUPPORT

Leveraging 25 years of expertise in mainframe storage network extension, Brocade offers consulting, implementation, support, and managed services. Whether procured from Brocade or through Brocade Partners, these services help organizations maximize their existing investments, accelerate new technology deployment, and optimize the overall performance of storage infrastructures.

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.

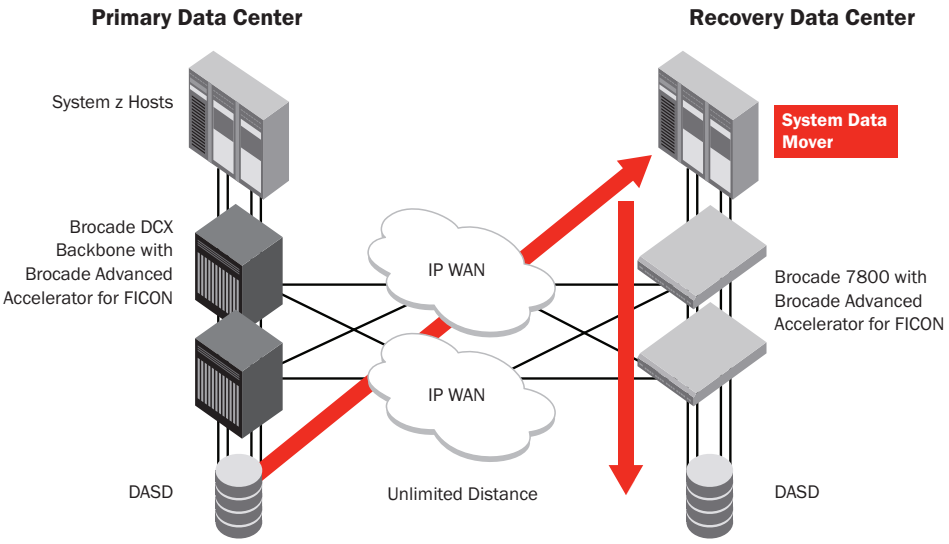


Figure 2.
The Brocade FX8-24 and Brocade 7800 utilize FCIP extension and Brocade Advanced Accelerator to enable robust mainframe business continuity solutions.

BROCADE ADVANCED ACCELERATOR FOR FICON SPECIFICATIONS

Specifications	
Connection type	Fibre Channel over IP (FCIP)
Line speed	FICON/Fibre Channel: 1.063, 2.125, 4.250, and 8.500 Gbps line speed, full duplex FCIP: 1 Gbps and 10 Gbps line speed (Brocade FX8-24 only)
Maximum distance	Virtually unlimited
Fabric latency	Less than 8 microseconds (FC-to-FC routed traffic) 30 microseconds (FCIP)
Maximum frame size	2112-byte payload for Fibre Channel 1500-byte Ethernet packets with FCIP
Classes of service	Class 2 and 3
Port types	F_Port and E_Port; self-discovery based on switch type (U_Port); Gigabit Ethernet for VE
Fabric services	Brocade Advanced Zoning, Dynamic Path Selection (DPS), FDMI, Enhanced Group Management (EGM), Frame Redirection, Registered State Change Notification (RSCN), Reliable Commit Service (RCS), and Simple Name Server (SNS). Optional fabric services include Advanced Performance Monitoring, Adaptive Networking, Extended Fabrics, Fabric Watch, FICON with CUP, and ISL Trunking.
Extension services	Advanced Compression, FCIP services, FICON disk and tape emulation, FICON Frame Batching, and Storage-Optimized TCP. Optional extension services include FCIP Trunking, Adaptive Rate Limiting, and FCIP QoS.

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