BROCADE 7500E EXTENSION SWITCH

DATA CENTER

Enabling Lower-Cost Global Data Mobility

HIGHLIGHTS

- Provides a simple, cost-effective Fibre Channel over IP (FCIP) storage and SAN extension solution for smaller enterprises, remote offices, and service providers

- Optimizes performance and resource utilization with Fast Write acceleration, storage-optimized protocol enhancements, and data compression

- Provides remote SAN connectivity while isolating IP WAN networks and SAN fabrics for increased resiliency and availability

- Provides high-availability features, including redundant power and cooling

- Simplifies deployment and management with easy-to-use Web-based tools for local and remote management

- Features a software license upgrade to activate additional ports and capabilities

- Protects investments through interoperability with the Brocade family of Fibre Channel SAN solutions as well as full Brocade 7500 and Brocade FR4-18i extension offerings

Due to increased business and regulatory requirements, organizations of all sizes regularly need to move, share, and protect their data—but they often face significant challenges in doing so. For instance, smaller organizations might lack the dedicated resources, skills, or budgets for high-end data protection systems and business continuity. Larger enterprises might need to connect multiple remote sites in a robust manner, yet have limited budget to do so. And IP network service providers might need a proven remote connectivity solution that interoperates with existing Storage Area Network (SAN) infrastructures and is simple to deploy and manage.

The Brocade® 7500E Extension Switch, leveraging leading-edge Brocade 7500 technology, provides the performance, ease of use, and cost-effectiveness

required to meet these and other business requirements. The Brocade 7500E combines Fibre Channel over IP (FCIP) capabilities with fabric isolation for point-to-point connectivity of remote SAN fabrics or Fibre Channel storage over IP Wide Area Networks (WANs) without merging fabrics.
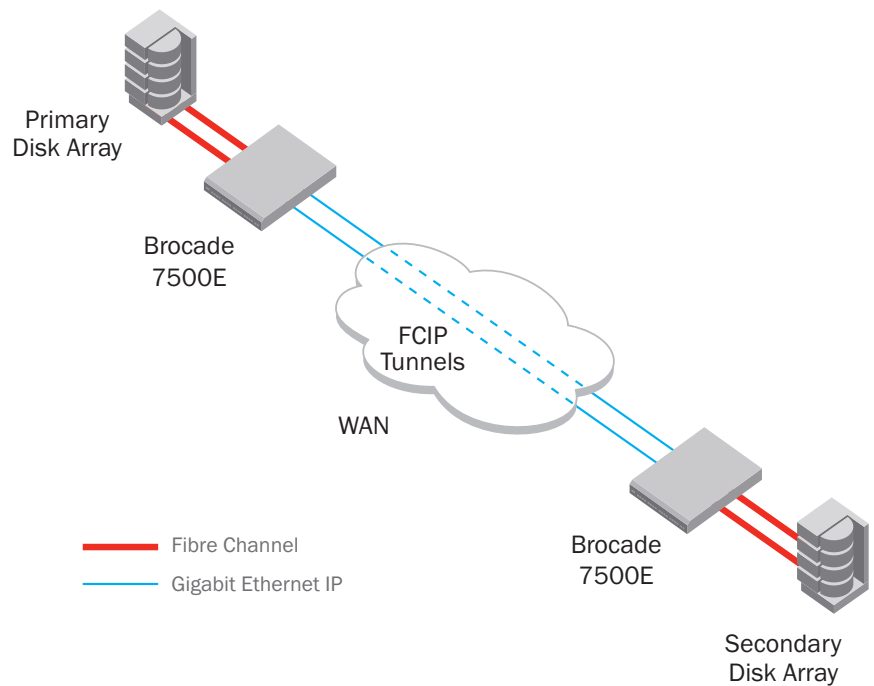
By avoiding fabric merges, the Brocade 7500E provides WAN link and remote SAN fault isolation to increase availability for mission-critical applications and to minimize the impact of network failures. As a result, it is ideal for supporting strategic initiatives for disaster recovery, business continuity, and data migration.

A bundled package, the Brocade 7500E includes two 4 Gbit/sec Fibre Channel ports and two 1 Gigabit Ethernet ports; redundant power supplies and fans; and advanced functionality to optimize storage application

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Figure 1.
Connecting directly to remote Fibre Channel storage, the Brocade 7500E reduces the cost of business continuity and remote data migration.

Primary Disk Array

Brocade 7500E

FCIP Tunnels

WAN

Brocade 7500E

Secondary Disk Array

— Fibre Channel
— Gigabit Ethernet IP

performance and resiliency across extended distances (see Figures 1 and 2). An easy-to-use GUI simplifies deployment and management, reducing administrative time and costs.

The Brocade 7500E is interoperable with existing Fibre Channel and IP assets, as well as advanced Brocade Fabric OS® (FOS) features such as Virtual Fabrics. A transparent upgrade path to additional ports and advanced functionality provides investment protection, making it an excellent entry-level and/or remote site FCIP solution.

PERFORMANCE-OPTIMIZED SAN EXTENSION

To deliver high performance, resiliency, and resource optimization, the Brocade 7500E provides the following advanced SAN extension capabilities and features:

- Write acceleration (Fast Write for FCIP) capabilities to significantly improve application response time over distance

- Hardware-based compression to optimize bandwidth utilization and reduce costs

- Storage-optimized TCP for unprecedented network resiliency, even when using sub-optimal WAN links

- Remote SAN connectivity without merging fabrics—providing a more secure and reliable distance-connectivity solution

As a result, the Brocade 7500E helps provide a high-performance point-to-point remote data replication solution over any distance, improving global data mobility for greater operating efficiency.

SIMPLIFIED DEPLOYMENT AND ADMINISTRATION

To help organizations quickly and effectively deploy and manage new remote data replication solutions, the Brocade 7500E includes everything needed for SAN extension, including Fast Write and compression capabilities. In addition, intuitive Web-based management tools streamline deployment and reduce administration time.

Because the Brocade 7500E leverages the standard Brocade Fabric OS® (FOS) and Brocade management tools, it provides a consistent, centralized management platform that minimizes training and deployment time while significantly reducing overall costs. And with qualifications by all leading storage vendors, the Brocade 7500E provides a proven, interoperable solution.

COMPLETE INVESTMENT PROTECTION

As data center fabrics evolve to support increased data growth and business continuity requirements, the Brocade 7500E will continue to provide extension capabilities for protecting data between data centers. These capabilities include emerging technologies such as FCoE, where new servers and storage connecting to the data center fabric will be able to leverage extension services to access resources at remote sites.
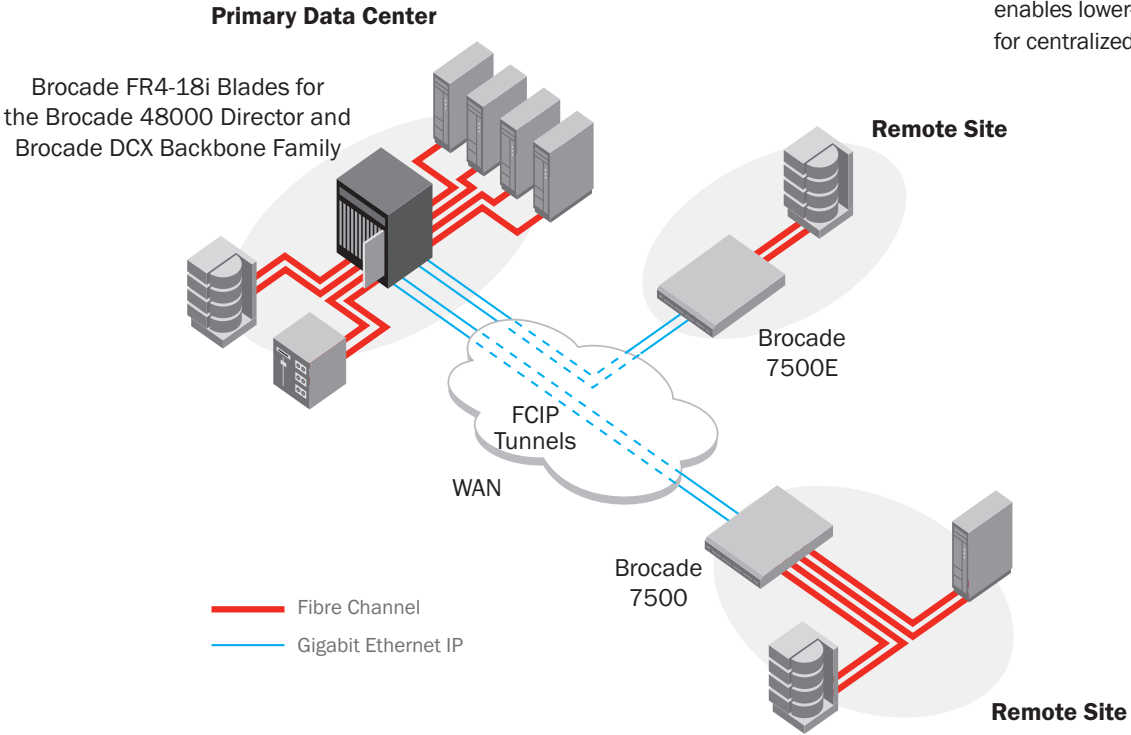
Moreover, the Brocade 7500E is upgradable to full Brocade 7500 capabilities with a simple software license upgrade for higher scalability and advanced functionality. This "pay-as-you-grow" strategy helps organizations minimize upfront costs and protect future investments as their business needs change.

MAXIMIZING SAN 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.

Primary Data Center

Brocade FR4-18i Blades for
the Brocade 48000 Director and
Brocade DCX Backbone Family

Remote Site

Brocade
7500E

FCIP
Tunnels

WAN

Brocade
7500

— Fibre Channel
— Gigabit Ethernet IP

Remote Site

Figure 2.
Interconnecting remote SAN fabrics to a
central data center, the Brocade 7500E
enables lower-cost remote data replication
for centralized backup.

BROCADE 7500E SPECIFICATIONS

System Architecture	
Ports	4 ports: 2 Fibre Channel (E, F, FL, EX) ports and 2 Gigabit Ethernet (VE, VEX) ports; software license upgrade available to activate 14 additional Fibre Channel ports
Port speeds	Fibre Channel: Auto-sensing of 1, 2, and 4 Gbit/sec port speeds
	Ethernet: 1.25 Gbit/sec
IP WAN aggregate bandwidth	Two Gigabit Ethernet ports each supporting one FCIP tunnel up to 50 Mbit/sec for an aggregate bandwidth of 100 Mbit/sec
Fabric latency	30 microseconds (FCIP)
Maximum frame size	2112-byte payload for Fibre Channel, 2250-byte payload for Gigabit Ethernet, 2048-byte payload for Fibre Channel routed networks
Classes of service	Class 2 and 3

Courtesy of

Port types	FL_Port, F_Port, EX_Port, and E_Port; self-discovery based on switch type (U_Port); Gigabit Ethernet for VE and VEX
Media types	Hot-pluggable, industry-standard Small Form-factor Pluggable (SFP), LC connector
	Fibre Channel and Gigabit Ethernet ports: Short-Wavelength Laser (SWL) up to 300 meters (984 feet)
	Fibre Channel ports only: Long-Wavelength Laser (LWL) up to 10 km (6.2 mi); Extended Long-Wavelength Laser (ELWL) up to 30 km (18.6 mi); Certified third-party CWDM SFPs up to 80 km (49.6 mi)
	Gigabit Ethernet ports only: RJ-45 Copper SFP
	Distance depends on fiber-optic cable and port speed

BROCADE 7500E SPECIFICATIONS (CONTINUED)

Fabric services	Simple Name Server, Registered State Change Notification (RSCN), Brocade FC-FC Routing Service, Brocade Advanced Zoning, Brocade Web Tools, FCIP Tunneling Service, Brocade Advanced ISL Trunking, Advanced Performance Monitoring, Traffic Isolation, Brocade Advanced Zoning (default zoning, port/WWN zoning, broadcast zoning), Dynamic Path Selection (DPS), Extended Fabrics, Fabric Watch, FDMI, Frame Redirection, FSPF, IPoFC, Management Server, N_Port Trunking, NPIV, NTP v3, Port Fencing, Reliable Commit Service (RCS), Simple Name Server (SNS)
FIPS certification	FIPS 140-2 Level 2-compliant package available

Management

Supported management software	Telnet, SSH, HTTP, SNMP v1/v3 (FE MIB, FC Management MIB), Auditing, Syslog, Brocade Advanced Web Tools, Brocade Fabric Watch, Brocade Data Center Fabric Manager (DCFM) Enterprise (Brocade DCX, DCX-4S) or DCFM Professional (Brocade DCX-4S only), Brocade Fabric Manager (optional, FOS environments only), Brocade EFCM 9.x (optional), command line interface, Administrative Domains, trial licenses for add-on capabilities, third-party applications utilizing the Brocade SMI-S Agent
Security	DH-CHAP (between switches and end devices), FIPS 140-2 L2-compliant, HTTPS, IPsec, IP filtering, LDAP, Port Binding, RADIUS, Role-Based Access Control (RBAC), Secure Copy (SCP), Secure RPC, SSH v2, SSL, Switch Binding, Trusted Switch
Management access	10, 100 Mbit/sec Ethernet (RJ-45), serial port, in-band management via Gigabit Ethernet WAN ports
Diagnostics	POST and embedded online/offline diagnostics

Mechanical

Enclosure	Non-cable-side to cable-side airflow; power from cable side; 1U, 19-in. EIA rack-compliant
Size	Width: 42.87 cm (16.88 in)
	Height: 4.30 cm (1.69 in)
	Depth: 64.56 cm (25.40 in)
System weight	13.7 kg (30.2 lb) with two power supplies, no SFPs

Environmental

Temperature	Operating: 10°C to 40°C; Non-operating: –25°C to 70°C
Humidity	Operating: 20 to 85%, non-condensing Non-operating: 20 to 85%, non-condensing
Altitude	3 km
Shock	Operating: 105 G, 2.5 ms, half-sine Non-operating: 40 G, 13 ms, trapezoidal
Vibration	Operating: 0.5 G (5–500–5Hz) Non-operating: 2.0 G (5–500–5Hz)
Heat dissipation	730 BTU per hour
CO_2 emissions	846 kg per year

Power

AC input	2.2 A for 100–120 VAC
	1.2 A for 200–220 VAC
Frequency	47 to 63 Hz

For information about supported SAN standards, visit www.brocade.com/sanstandards

For information about hardware regulatory compliance, visit www.brocade.com/regulatorycompliance

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

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