

BROCADE 200E SWITCH



STORAGE AREA NETWORK

Small SAN Affordability with Growth Capabilities

HIGHLIGHTS

- Provides an affordable, flexible foundation for entry-level SANs, and an edge switch for core-to-edge SAN environments
- Simplifies configuration and administration with easy-to-use tools such as the Brocade EZSwitchSetup wizard
- Enables “pay-as-you-grow” scalability from single-switch fabrics to full-fabric enterprise capabilities with Ports On Demand scalability from 8 to 12 or 16 ports in 4-port increments
- Offers dual functionality as either a full-fabric SAN switch or as a Brocade Access Gateway
- Provides 4 Gbit/sec performance and availability characteristics typically associated with larger enterprise-class solutions
- Protects existing investments in Brocade Fabric OS and Brocade M-EOS*-based environments through native E_Port switch interoperability
- Protects existing device investments with auto-configuring 1, 2, and 4 Gbit/sec capabilities
- Increases flexibility by connecting into any SAN fabric in Brocade Access Gateway mode

As the value and volume of business data continue to rise, organizations need technology solutions that are easy to implement and manage, and that can grow and change with minimal disruption. Today, Brocade® data center infrastructure solutions can help organizations simplify their IT management infrastructures, shrink data backup windows, improve system performance, and reduce overall storage costs.

The 4 Gbit/sec Brocade 200E 8-port Fibre Channel switch provides an affordable single-switch solution for new small SANs or existing SANs that are being deployed or upgraded with newer technology. To help new users deploy their SANs, the Brocade 200E features the EZSwitchSetup wizard and other key usability and configuration enhancements. It also provides growth options with Ports On Demand scalability,

the ability to add multiple switches to the SAN, Brocade Access Gateway support for alternative SAN connectivity, and enterprise-class functionality that enables its use as an edge switch in larger SAN fabrics.

INCREASED EFFICIENCY TO MANAGE BUSINESS GROWTH

The Brocade 200E significantly increases performance and functionality for SANs at an entry-level price. Based on fifth-generation Brocade technology, the Brocade 200E combines auto-sensing 1, 2, and 4 Gbit/sec Fibre Channel throughput with new features that greatly enhance switch operation. As a result, organizations can enjoy the advantages of low-cost device connectivity and powerful capabilities that make SAN technology highly accessible and affordable.



* Brocade M-EOS fabrics are McDATA switches and directors running McDATA Enterprise OS.

BROCADE ACCESS GATEWAY MODE

The Brocade 200E can be deployed either as a full-fabric Fibre Channel SAN switch or as a Brocade Access Gateway, which provides connectivity into any SAN (the default mode setting is a switch). Organizations can easily enable Brocade Access Gateway mode via a command line interface, Brocade Web Tools, or Brocade Fabric Manager.

As a powerful Brocade Fabric OS feature that enables seamless connectivity into heterogeneous SAN environments, Brocade Access Gateway enhances fabric scalability and simplifies management. It leverages N_Port ID Virtualization (NPIV) capabilities to seamlessly connect servers with SANs, thereby providing interoperability with any SAN fabric through a single solution.

Operating in Brocade Access Gateway mode, the Brocade 200E significantly improves fabric scalability by reducing domain count considerations, resolving domain management challenges, simplifying management, and providing extremely cost-effective server connectivity into the SAN.

Note: Brocade Access Gateway Mode is supported only in 16-port configurations.

PAY-AS-YOU-GROW SCALABILITY

Designed for small and medium-sized organizations, the Brocade 200E integrates innovative hardware and software features that make it easy to deploy, manage, and integrate into a wide range of IT environments. With powerful yet flexible capabilities—such as Ports On Demand scalability from 8 to 12 or 16 ports in 4-port increments—the Brocade 200E enables organizations to start small and grow their storage networks in a non-disruptive manner.

BACKWARD AND FORWARD COMPATIBILITY

The Brocade 200E is fully interoperable with existing Brocade switches, with native E_Port interoperability for seamless connectivity into Brocade Fabric OS® (FOS) or M-Enterprise OS (M-EOS)* environments. This interoperability enables the Brocade 200E to support entry-level and small fabrics that serve a variety of purposes, such as easing e-mail storage growth and streamlining data backup. In addition, the Brocade 200E can enable seamless expansion to larger core-to-edge network architectures as business needs dictate. As a result, these capabilities make it ideal for key SAN solutions such as LAN-free backup and server and storage consolidation.

A BETTER WAY TO IMPROVE BUSINESS OPERATIONS

One of the primary benefits of a SAN environment is the consolidation of hardware resources in an easy-to-manage infrastructure. This centralized approach helps increase operational efficiency and staff productivity, two critical requirements for small and medium-sized businesses. With fewer physical resources to manage, staff members can handle additional business growth or focus on other strategic initiatives.

High-performance 4 Gbit/sec Fibre Channel capabilities speed data transfer to help keep data flowing and applications running. As a result, organizations can significantly improve storage utilization in distributed e-mail environments, for example. In addition, a SAN-based architecture enables LAN-free backup and more efficient storage resource management—increasing overall system performance and productivity (see Figure 1).

SUPERIOR NETWORK PERFORMANCE

The Brocade 200E provides high performance with all ports capable of operating at 1, 2, and 4 Gbit/sec (full duplex) to enable up to 128 Gbit/sec of uncongested throughput. Auto-sensing and speed-matching of data traffic ensures interoperability with previous 1 and 2 Gbit/sec devices. To provide more targeted performance, enhanced Brocade Inter-Switch Link (ISL) Trunking combines up to four ISLs between a pair of switches into a single, logical high-speed trunk capable of up to 16 Gbit/sec of throughput.

SIMPLIFIED MANAGEMENT

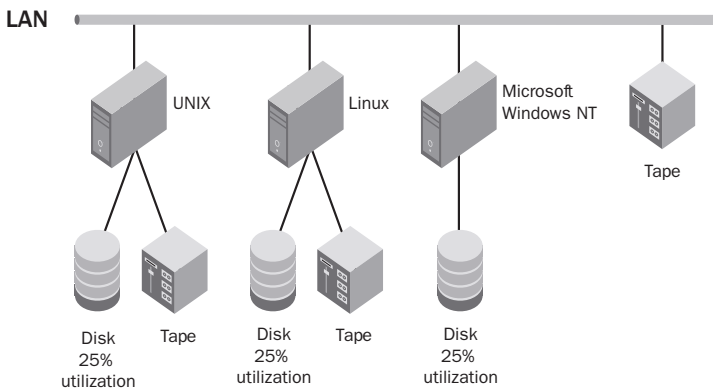
All Brocade switches are based on the intelligent Brocade Fabric OS®, which provides the integrated building blocks for highly reliable and scalable SAN environments. To manage their switch configurations, organizations can use a command line interface, the Brocade Web Tools utility, or the Brocade Fabric Manager application. In addition, Brocade offers the following advanced software solutions to further enhance business operations:

- Brocade EZSwitchSetup wizard streamlines new SAN deployment with easy 3-step configuration.
- Brocade Advanced Zoning permits only authorized devices and applications to access data, thereby increasing security and control.
- Brocade Advanced Performance Monitoring enables end-to-end performance monitoring of the entire SAN fabric.
- Brocade Fabric Watch enables organizations to proactively monitor the health of the network with comprehensive thresholds and alerts that help prevent outages.
- Brocade ISL Trunking combines multiple ports, aggregating their throughput into a single logical high-speed link between switches.
- Brocade security enhancements help protect data and provide a secure management environment.
- The Brocade SMI Agent enables the integration of a broad range of powerful Brocade switch functions into popular third-party management tools, enabling organizations to continue using their storage management tools of choice.

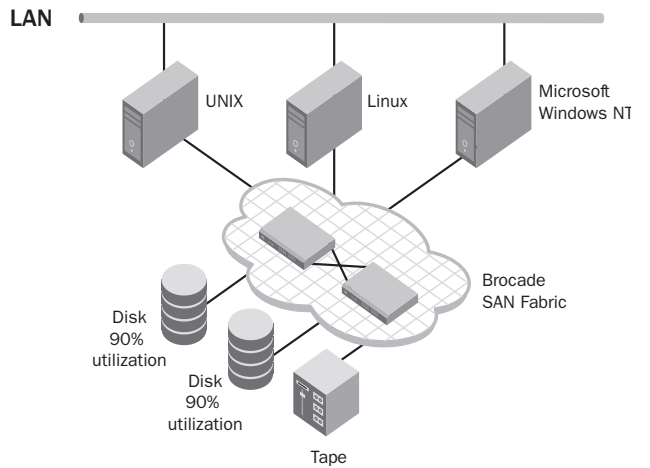
Figure 1.

A Brocade SAN-based data backup solution can significantly improve data availability and resource utilization compared to traditional direct-attached storage environments.

BEFORE SAN



AFTER SAN



SEAMLESS UPGRADES TO PROTECT INVESTMENTS

To help protect existing investments, the Brocade 200E provides a seamless upgrade path from Brocade entry-level to large enterprise SAN offerings. The switch is designed to integrate with heterogeneous environments that include multiple operating systems (such as Windows, UNIX, Linux, HPUX, Solaris, AIX, and others), enabling organizations to build cost-efficient, easy-to-manage SAN fabrics.

MAXIMIZING SAN INVESTMENTS

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

BROCADE 200E SPECIFICATIONS

Systems Architecture	
Fibre Channel ports	Switch mode (default): 16 ports in 4-port increments through Ports on Demand licenses at 8, 12, and 16 universal (E, F, and FL) ports Access Gateway mode: 12 F_Ports, 4 N_Ports
Scalability	Full fabric architecture with 239 switches maximum
Performance	1, 2, and 4 Gbit/sec port speeds
Aggregate bandwidth	128 Gbit/sec end to end
Maximum fabric latency	1.2 µsec with no contention, cut-through routing at 4 Gbit/sec
Maximum frame size	2112-byte payload
Classes of service	Class 2, Class 3, Class F (inter-switch frames)
Port types	Switch mode: FL_Port, F_Port, and E_Port; self-discovery based on switch type (U_Port) Brocade Access Gateway mode: F_Port and NPIV-enabled N_Port
Data traffic types	Fabric switches supporting unicast and broadcast
Media types	Small Form-factor Pluggable (SFP) laser Short-wave up to 500 meters (1640 feet) Long-wave up to 10 kilometers (6.2 miles)
Fabric services	Simple Name Server (SNS), Registered State Change Notification (RSCN), Brocade Advanced Zoning, Brocade Web Tools, Brocade EZSwitchSetup wizard, Admin Domains, SMI-S, Fibre Channel Arbitrated Loop support, and Management Services
<i>Note: Some fabric services do not apply or are unavailable in Brocade Access Gateway mode</i>	Optional fabric services include Brocade Fabric Watch, Brocade Extended Fabrics, Brocade Advanced Performance Monitoring, Brocade Fabric Manager, Brocade Inter-Switch Link (ISL) Trunking
Options	SFP media, fixed rail kit
Mechanicals	
Enclosure	Non-port to port side airflow; 1U, 19-inch EIA-compliant
Size	Width: 16.87 inches (42.85 centimeters) Height: 1.69 inches (4.29 centimeters) Depth: 12.10 inches (30.73 centimeters)
System weight	8.8 lbs (without media)
Management	
Management software supported	Brocade Advanced Web Tools with ease-of-use and ease-of-setup features; SSH, Telnet, HTTPS/SSL, RADIUS; SNMP v3 (FE MIB, FC Management MIB); Brocade Advanced Web Tools; Brocade EFCM Standard/Enterprise 9.x (optional); Brocade Fabric Manager (optional: FOS environments only); third-party applications utilizing the Brocade SMI Agent
Management access	10/100 Ethernet port (RJ-45); serial port (RS-232); in-band through Management Server
Diagnostics	POST and embedded online/offline diagnostics
Environmentals	
Temperature	Operating: 0°C to 40°C (32°F to 104°F) Non-operating: -50°C to 100°C (-58°F to 212°F)
Humidity	Operating: 10% to 85% non-condensing Non-operating: 10% to 90%, non-condensing
Altitude	Operating: Up to 3000 meters (9800 feet) Storage: Up to 12 km (32,200 feet)
Shock	Operating: 20G, 6 ms half-sine Non-operating: 15G, 12-18 ms trapezoid
Vibration	Operating: 0.5 g sine, 0.4 grms random, 5 to 500 Hz Non-operating: 2.0 g sine, 1.1 grms random, 5 to 500 Hz
Airflow	High speed: 37 CFM Low speed (65% speed): 18 CFM cu. ft./min.
Noise goal	< 53 dB
Heat dissipation	45 W, 154 BTU/hr
CO ₂ emissions	116 kg per year (with 16 ports at 0.42 kg/kWh) 1.81 kg per Gbit/sec per year
Power	
AC input	Nominal: 100 to 240 VAC, 1.0 A
Frequency	47 to 63 Hz
Power consumption	45 W nominal, 60 W maximum
Safety	
Underwriters Laboratories, UL60950; Canadian Standards Association, CSA60950; TUV Rheinland of North America, EN60950; Nemko, EN60950 Low Voltage Directive (73/23/EEC) for CE Marking in European Union	

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

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

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