

# BROCADE M2640 SAN ROUTER



## STORAGE AREA NETWORK

## Effective Scalability for Fibre Channel Applications

### HIGHLIGHTS

#### Unbeatable flexibility

- Blended Fabric™: FC, GE, iSCSI and iFCP connectivity on demand
- Support for full fabric, private and public loop FC devices

#### Lower cost of ownership

- Hardware-based compression to lower WAN bandwidth costs
- E\_Port for integration into existing FC fabrics
- F\_Port for direct connectivity to FC servers and storage
- Scalability and interoperability
- SAN routing to build large, stable FC fabrics
- Integration of multi-vendor FC fabrics
- Support for active-active router pair for high availability and increased scalability

#### Superior functionality

- Adaptive Rate Limiting maximizes WAN bandwidth utilization
- Fast Write™ for maximizing throughput and minimizing latency across long distances
- Storage-optimized TCP to mitigate network impairments
- Quality of Service (QoS): bandwidth management and VLAN tagging

Today's enterprise must implement secure business protection solutions and meet growing data storage and management demands. Yet with a large investment of diverse, multi-protocol equipment already in place, they are looking for routing solutions that will allow them to leverage those investments while delivering a high level of flexibility, speed, performance and stability.

The Brocade® M2640 SAN Router is the ideal multi-protocol, multi-vendor interoperability solution. A part of Brocade's family of open storage networking products, Eclipse SAN Routers use standards-based IP, Gigabit Ethernet (GE) and Fibre Channel (FC) for heterogeneous storage fabric connectivity.

With support for standard protocols such as iSCSI, iFCP and E\_Port, the Brocade M2640 can connect to IP backbones, FC fabrics and end systems, such as FC servers, FC storage and iSCSI initiators. Flexible, user-configurable interface types allow the Brocade M2640 to be deployed for multiple, concurrent applications, including SAN routing, disaster recovery and iSCSI access to FC storage. It enables tiered storage infrastructures, which map the cost/reliability of the storage resource to the criticality of the application's data. And the Brocade M2640 delivers a unique degree of fault isolation within these complex tiered environments, protecting the integrity of your data.



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SAN routing enables customers to build very large, stable FC fabrics – faults in one part of the network do not impact traffic in other parts. With Brocade’s patent-pending Fast Write technology and wire-speed operation, the Brocade M2640 is uniquely able to connect very distant data centers at a sustained wire-speed throughput to enable secure disaster recovery scenarios. The GE ports on the 2640 can also support iSCSI access to FC storage. Hardware-based compression on the GE ports enables very high-speed data transfers for high-performance applications. Storage-optimized TCP allows for use of less-than-ideal WAN links without suffering performance loss. Brocade’s iFCP and iSCSI solutions have been demonstrated to be the best-performing solutions in the industry.

Providing distance independence, the highly reliable and manageable multi-protocol storage fabric extends seamlessly from the data center to the metro area and beyond. Brocade’s products are fully compatible with the millions of IP-based LAN, MAN and WAN routers and switches already installed and mastered by IT professionals. Brocade’s SAN routers are qualified with all major storage platforms, including EMC, Engenio (formerly LSI Logic), Hitachi Data Systems, HP, IBM, Sun/StorageTek, and XIOTech.

### 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, support, service, and professional services to help optimize SAN investments. For more information, contact an authorized Brocade sales partner or visit [www.brocade.com](http://www.brocade.com).

## BROCADE M2640 SAN ROUTER SPECIFICATIONS

### Model Descriptions

Brocade M2640	Multi-Protocol SAN router with GE and FC switching support for 12 FC routing and four intelligent/TCP ports. FC ports configurable to 1 Gbit/sec or 2 Gbit/sec data rates. Out of band 10/100 Ethernet and serial management ports. Four intelligent ports provide TCP/IP support for connecting to IP campus or WAN backbones.
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### Protocol Support

Ethernet	Full duplex IEEE 802.3 Gigabit Ethernet standard on each port (1,000 Mb/s each direction); 802.3x symmetric flow control; 802.1Q VLAN support; 802.3ad active failover within link aggregated trunks; Spanning Tree Protocol (STP)
Transport Protocol (IP)	TCP
Fibre Channel	FC-AL, FC-AL-2, FC-FLA, FC-GS-2, FC-GS-3, FC-FG, FC-PH, FC-PH-2, FC-PH-3, FC-PLDA, FC-SW, FCSW-2, FCP, F_Port and E_Port
IP Storage	iSCSI, iFCP
QoS	802.1p marking, adaptive rate limiting, bandwidth management, VLAN tagging
Performance	Wire-rate performance on all ports; exclusive Fast Write technology for improved write performance over long distances; support for jumbo frames; hardware- and software-based compression; storage-optimized TCP

### Physical Media

Multi-service interfaces use small form factor plug (SFP) modules. Modules are available for both FC and GE supporting multi-mode fiber (MMF), single-mode fiber (SMF) and copper cables.

1000Base-SX	550m over MMF
1000Base-LX	10Km over SMF
100-M5-SN-I	550m over MMF (1Gb FC)
100-SM-LL-L	10Km over SMF (1Gb FC)
100-TW-EL-S	33m over shielded twisted-pair (1Gb FC)
1000Base-T	100m over unshielded twisted-pair (copper GE)

### LED Indicators

CPU heartbeat, GE/FC link, port activity, port fault, 10/100 Ethernet management port

## BROCADE M2640 SAN ROUTER SPECIFICATIONS (CONTINUED)

Management	
SANvergence® Manager	Centralized Java-based graphical user interface (GUI) for network-wide management such as zoning, E_Port configuration, iSCSI LUN virtualization and device discovery for all SANs in the enterprise.
EFCM	GUI-based client/server application with centralized, end-to-end visualization for proactive monitoring and comprehensive management of multi-vendor, multi-protocol and multi-site SANs through a single interface.
Element Manager™	Web-based Java applet for configuring, monitoring and troubleshooting individual SAN routers.
Management Interface:	In-band management through TCP ports Out-of-band 10/100 Ethernet management port Standard SNMP Fibre Alliance MIB v3.0, MIB-II, RMON groups 1 (statistics), 2 (history), 3 (alarms) and 9 (events), Brocade MIBs Full Command Line Interface (CLI) via telnet, SSHv2 and/or console port

Security	
Authentication via RADIUS, SSHv2, password encryption	
Storage Name Service (SNS)	
Directory services for storage devices	
Interoperates with existing Fibre Channel SNS	
SNMP Support	

Power Requirements	
U.S./Japan	nominal 100/120 VAC, 50 to 60 Hz
Europe/Australia	nominal 220/240 VAC, 50 to 60 Hz

Power Consumption	
Dual redundant power supplies and fans, each with maximum power consumption of 250 watts	
Power	190 watts
Environmental Requirements	
Temperature	41 <sub>i</sub> to 104 <sub>i</sub> F (5 <sub>i</sub> to 40 <sub>i</sub> C)
Humidity	20% to 85% non-condensing
Heat Output	650 BTU/hr
Size and Weight	
Height	1.66 in (42.2 mm)
Width	16.9 in (429.3 mm)
Depth	25.425 in (645.8 mm)
Weight	25 lb (11.4 Kg)
Regulatory Compliance	
Meets safety and emissions requirements	
CB, CE, ULcUL, UL AR +S, GS, GOST, NOM / NYCE, AUS/NZ, FCCA, IECS 003, MIC, VCCI, CCC, BSMI	

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