

Brocade Extended Fabrics provides switched fabric connectivity over longer distances—up to 100 km at full Fibre Channel bandwidth (approximately 100 MB/sec).

## BROCADE EXTENDED FABRICS

### Highlights

- Extends all of the scalability, reliability, and performance benefits of Fibre Channel Storage Area Networks (SANs) beyond the native 10 km distance specified by the Fibre Channel standard
- Enables the use of full-performance applications over extended distances, including disaster recovery, remote backup, extended storage consolidation, remote mirroring, and tape consolidation applications

## Special features to extend SAN connectivity distance

### THE GROWING NEED FOR LONGER DISTANCE CONNECTIVITY

Fibre Channel-based networking storage technology has revitalized server and storage environments. In addition to improving reliability and performance, Fibre Channel provides the capability to distribute server and storage connections over distances up to 10 km and beyond—enabling SAN deployment in campus environments.

Faced with today's rapidly changing and ever-increasing business requirements, many enterprise environments now require SAN deployment over even greater distances to support distributed facilities and address business continuance requirements. A key factor in the progression of extended distance SANs has been the rapid deployment and accessibility of "dark" fiber as well as the deployment of Dense Wave Division Multiplexing (DWDM) equipment in major metropolitan areas. This technology provides a strong foundation for Brocade® Extended Fabrics.™

### NEW WAYS TO EXTEND CONNECTIVITY

The best way to implement extended distance SAN fabrics is to use Fibre Channel switches—such as the Brocade SilkWorm® family—in the fabric at each location in the SAN. In this type of configuration, each switch handles local interconnectivity and multiplexes traffic across the link.

The Brocade Extended Fabrics feature provides the flexibility to implement and manage SANs over extended distances, including:

- **Fabric interconnectivity over Fibre Channel at distances up to 100 km:** In this implementation, Inter-Switch Links (ISLs) use dark fiber or DWDM connections to transfer data.
- **Single, distributed fabric services such as the Name Server and Zoning:** Each device attached to the SAN appears as a local device, thereby simplifying deployment and administration.
- **A comprehensive management environment:** All management traffic flows through internal SAN

connections, so the fabric can be managed from a single administrator console using Brocade WEB TOOLS™ switch management software.

#### EXTENDED FABRICS FEATURE FOR LEVERAGING DARK FIBER

The Brocade Extended Fabrics feature is ideal for deploying single, distributed fabrics over dark fiber-based or DWDM-based Metropolitan Area Networks (MANs). These extended distance connections use standard switch ports that provide E\_Port interconnectivity via Extended Long-Wave Gigabit Interface Converters (GBICs), Fibre Channel Repeaters, and DWDM devices. This design facilitates bandwidth sharing for multiple SANs.

In addition, the Extended Fabrics feature optimizes switch buffering to ensure the highest possible performance on ISLs. When the Extended Fabrics feature is installed on gateway switches, the ISLs (E\_Ports) are configured with up to 60 buffer credits. The enhanced switch buffers help ensure that data transfer can occur at near-full bandwidth to efficiently utilize the connection over these extended links.

For more information, visit  
[www.brocade.com](http://www.brocade.com).

For more information about  
Brocade white papers and offerings,  
visit the SAN Solution Center at  
[www.brocade.com/SAN](http://www.brocade.com/SAN).

For information about Brocade  
training and education, visit  
[www.brocade.com/education\\_services](http://www.brocade.com/education_services).

#### Extended Fabrics

Connection type	Native Fibre Channel
Line speed	1 Gbit/sec nominal
Maximum distance	Up to 100 km
Interconnect	Extended Long-Wave GBICs Fibre Channel Repeaters DWDM
Topology restrictions	A maximum of 32 switches
Fabric services	Simple Name Service, Zoning
Management	Fabric-wide access



#### Corporate Headquarters

1745 Technology Drive  
San Jose, CA 95110  
T: (408) 487-8000  
F: (408) 487-8101  
[info@brocade.com](mailto:info@brocade.com)

#### European Headquarters

29, route de l'Aéroport  
Case Postale 105  
1211 Geneva 15, Switzerland  
T: +41 22 799 56 40  
F: +41 22 799 56 41  
[europa-info@brocade.com](mailto:europa-info@brocade.com)

#### Asia Pacific Headquarters

The Imperial Tower 15th Fl.  
1-1-1 Uchisaiwaicho,  
Chiyoda-ku, Tokyo 100-0011  
Japan  
T: +81 3 5219 1510  
F: +81 3 3507 5900  
[apac-info@brocade.com](mailto:apac-info@brocade.com)

© 2001 by Brocade Communications Systems, Incorporated. All Rights Reserved. 06/01 GA-DS-012-01

Brocade, SilkWorm, Extended Fabrics, Remote Switch, Fabric Aware, Fabric OS, Fabric Watch, QuickLoop, WEB TOOLS, SOLUTIONware, Secure Fabric OS, and Zoning are trademarks or registered trademarks of Brocade Communications Systems, Inc., in the United States and/or in other countries. All other brands, products, or service names are or may be trademarks or service marks of, and are used to identify, products or services of their respective owners.

Notice: This document is for informational purposes only and does not set forth any warranty, express or implied, concerning any equipment, equipment feature, or service offered or to be offered by Brocade. Brocade reserves the right to make changes to this document at any time, without further notice, and assumes no responsibility for its use. This informational document describes features that may not be currently available. Contact a Brocade sales office for information on feature and product availability.