BROCADE EXTENDED FABRICS

STORAGE AREA NETWORK

Special Features to Extend SAN Connectivity Distance

HIGHLIGHTS

- Provides switched fabric connectivity over longer distances up to 500 kilometers
- Extends all of the scalability, reliability, and performance benefits of Fibre Channel SANs beyond traditional distance limitations
- Enables an innovative disaster recovery approach for reliable, fast data transfer to remote backup facilities
- Protects investments by operating with 1, 2, and 4 Gbit/sec Brocade SAN switches and directors
- Maximizes bandwidth by leveraging leading-edge dark fiber and Dense Wave Division Multiplexing (DWDM) technology
- Enhances business continuance by facilitating strategic applications such as wide area data replication, high-speed remote backup, and remote storage centralization

Fibre Channel-based networking technology has revitalized the reliability and performance of server and storage environments—providing a robust infrastructure to meet the most demanding business requirements. In addition to improving reliability and performance, Fibre Channel provides the capability to distribute server and storage connections over distances up to 10 kilometers—enabling SAN deployment in campus environments.

However, today's organizations often require SAN deployment over distances well beyond 10 kilometers to support distributed facilities and stricter business continuance requirements. To address these extended-distance SAN requirements, Brocade® offers the innovative Extended Fabrics software.

A BETTER WAY TO EXTEND CONNECTIVITY

Brocade Extended Fabrics is an optional licensed feature for Brocade SAN switches and directors, enabling organizations to leverage the increased availability of dark fiber and DWDM equipment in major metropolitan areas. The most effective configuration for implementing extended-distance SAN fabrics is to deploy Fibre Channel switches at each location in the SAN. Each switch handles local interconnectivity and multiplexes traffic across the long-distance link while the Extended Fabrics software enables SAN management over extended distances.

In this type of configuration, the Extended Fabrics software enables:

- **Fabric interconnectivity over Fibre Channel at longer distances:** Inter-Switch Links (ISLs) use dark fiber or DWDM connections to transfer data. Distances of up to 500 kilometers are possible with 1 Gbit/sec switches, 250 kilometers with 2 Gbit/sec switches, and 100 kilometers with 4 Gbit/sec switches.
- **Single, distributed fabric services such as the Name Server and Brocade Zoning:** Each device attached to the SAN appears as a local device, an approach that simplifies 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 the Brocade Web Tools switch management utility.

ADVANCED BUFFERING FOR HIGHER PERFORMANCE

Extended Fabrics software 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 over extended long-wave transceivers, Fibre Channel repeaters, and DWDM devices. This design facilitates bandwidth sharing for multiple SANs.

In addition, Extended Fabrics software optimizes switch buffering to ensure the highest possible performance on ISLs. When Extended Fabrics is installed on gateway switches, the ISLs (E_Ports) are configured with a large pool of buffer credits. The enhanced switch buffers help ensure that data transfer can occur at near-full bandwidth to efficiently utilize the connection over the extended links. As a result, organizations can use Extended Fabrics to implement strategic applications such as wide area data replication, high-speed remote backup, cost-effective remote storage centralization, and business continuance.

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.

EXTENDED FABRICS

Connection type	Native Fibre Channel
Line speed	1, 2, and 4 Gbit/sec
Maximum	Up to 500 km at 1 Gbit/sec; up to 250 km at 2 Gbit/sec; up to 100 km at 4 Gbit/sec
Interconnect distance	Extended long-wave transceivers; Fibre Channel repeaters; DWDM
Fabric services	Simple Name Server and Brocade Zoning
Management	Fabric-wide access

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