BROCADE EXTENDED FABRICS

STORAGE AREA NETWORK

Extending SAN Connectivity over Distance

HIGHLIGHTS

- Provides switched fabric connectivity to move more data over longer distances at a lower cost
- Extends all of the scalability, reliability, and performance benefits of Fibre Channel SANs beyond traditional distance limitations
- Enables innovative business continuity and disaster recovery solutions for fast, reliable data replication and backup across metropolitan distances
- Optimizes switch buffering to ensure the highest-possible performance over extended links
- Protects investments by operating with 1, 2, 4, 8, 10, and 16 Gbps Brocade fixed and modular Fibre Channel solutions
- Maximizes bandwidth by leveraging dark fiber and leading-edge Dense Wave Division Multiplexing (DWDM) technology—providing more links over longer distances

The Brocade One™ strategy helps simplify networking infrastructures through innovative technologies and solutions. Brocade Extended Fabrics supports this strategy by seamlessly extending SANs over distance to support business continuity, disaster recovery, and other distance initiatives.

Fibre Channel-based networking technology delivers the highest reliability and performance for 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 30 kilometers (km) using enhanced long-wave optics and dark fiber—enabling Storage Area Network (SAN) deployments in campus environments.

However, today's organizations often require SAN deployments over distances well beyond 30 km to support distributed facilities, enable consolidation and new cloud architectures, and meet stricter business continuance requirements. To address these and other extended-distance SAN requirements, Brocade offers the innovative Extended Fabrics capability.

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 Wave Division Multiplexing (WDM) and dark fiber 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 long-distance WDM dark fiber links while Brocade Extended Fabrics enables SAN management over extended distances. As a result, organizations can use Extended Fabrics to implement strategic applications such as synchronous or asynchronous data replication, high-speed remote backup, continuous data protection, Virtual Tape Libraries (VTL), cost-effective remote storage centralization, and improved business continuance.

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In this type of configuration, Brocade Extended Fabrics enables:

- **Fabric interconnectivity over Fibre Channel at longer distances:** Inter-Switch Links (ISLs) or Inter-Fabric Links (IFLs) use dark fiber or Dense Wave Division Multiplexing (DWDM) connections to transfer data. As Fibre Channel speeds increase, the maximum supported distance over an Extended Fabrics ISL will decrease. However, the latest Brocade 16 Gbps technology sets a new benchmark for extended distances—up to 100 km—to move more data over longer distances at a lower cost. Refer to the *Brocade Fabric OS Administrator's Guide* for additional information.
- **Simplified management over distance:** 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 Brocade Network Advisor.

ADVANCED BUFFERING FOR HIGHER PERFORMANCE

Brocade Extended Fabrics is ideal for deploying a single extended fabric over dark fiber 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, or DWDM connections. This design provides high bandwidth at long distances, improving scalability with simplified management. Brocade ISL Trunking is also supported over long-distance Fibre Channel links, delivering even greater bandwidth and resiliency.

In addition, Brocade Extended Fabrics optimizes switch buffering to ensure the highest-possible performance on ISLs. When Extended Fabrics is enabled, 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 full bandwidth to efficiently utilize the connection over the extended links.

BROCADE GLOBAL SERVICES

Brocade Global Services has the expertise to help organizations build scalable, efficient cloud infrastructures. Leveraging 15 years of expertise in storage, networking, and virtualization, Brocade Global Services delivers world-class professional services, technical support, network monitoring services, and education, enabling organizations to maximize their Brocade investments, accelerate new technology deployments, and optimize the performance of networking infrastructures.

MAXIMIZING INVESTMENTS

To help optimize technology investments, Brocade and its partners offer complete solutions that include professional services, technical support, and education. For more information, contact a Brocade sales partner or visit www.brocade.com.

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