

In-Depth Switch Fabrics

**Solution
Technology**



Probably no element is more important to the successful deployment and operation of Fibre Channel Storage Area Networks than the switched fabric. While Arbitrated Loop may suffice for a modest SAN environment, high performance, high-availability configurations have come to rely on the switched fabric topology.

This two-day in-depth seminar takes you through the Fibre Channel Switched Fabric topology inside and out to help you understand how the fabric works. From introduction and concepts through addressing and initialization to fabric services, its all here. Whether you are designing a product to attach to a fabric topology, an installation using Fibre Channel switches, or even the switches themselves, there is something for you in this seminar.

Each student takes with them a detailed reference manual written by Robert Kembel; one of the architects of the Fibre Channel Protocol. This is recognised as one of the most in depth resources in detailing and solving Fibre Channel issues.

Introduction and Concepts

Fibre Channel Topologies
Zoning Virtual Private
Storage Networks

Fibre Channel Bridges

Switched Fabric Concepts

Fabric elements
Class-of-Service Behavior
Frame Routing
Frame Delivery Order
Fibre Channel Port Types

Fibre Channel Addresses

Node Port Address Assignment
Address Space Partitioning
Destination-Based Routing
Address Space Usage

Node Port Initialization

Determination of Port
Operating Mode
Fabric Login (FLOGI)
State Change Registration
Port Discovery
N_Port Login

Fibre Channel Services

Fibre Channel Common
Transport Protocol (FC-CT)
FC-CT Authentication

Directory Server

The Name Server
Name Server Database
Name Server Registration
Name Server Queries
The IP Address Server

Management Server

The Fabric Configuration
Server
The Unzoned Name Server
The Fabric Zone Server

Other Server Functions

Time Server
Key Distribution Server
Alias Server

Switched Fabric Internals

Switch Internal Link Services
Inter-switch Links (ISLs)
ISL Initialization
Determination of Port
Operating Mode
Exchanging Link Parameters

Fabric Configuration

Build and Reconfigure Fabric
Principal Switch Selection
Domain_ID Assignment
Merging Fabrics

Routing Designs

Crossbar Switch Router
Shared Memory Router
Backplane Bus Router

Routing Protocols

Fabric Shortest Path First (FSPF)
Link State Records
Link State Updates
Link State Acknowledgements
FSPF Backbone Protocol

ISL Flow Control

R_RDY Flow Control
Virtual Circuit Flow Control

Distributed Services Model

Distributed Name Server
Distributed Fabric
Configuration Server
Distributed State Change Notification

High-Availability Fabrics

Redundant Links
Redundant Switches
Alternate Path Routing

Who Should Attend: This seminar is intended for those who require an in-depth understanding of the Fibre Channel Switched Fabric topology. The audience includes product architects, development team hardware, firmware, software, and test engineers, product planners, managers, or others involved in the planning, implementation, analysis, or testing of Arbitrated Loop products.

Prerequisites: Attendees should have a sound working knowledge of Fibre Channel or have previously completed the "Comprehensive Introduction to Fibre Channel" seminar.

Course Length: 2 Days