Fibre Channel Topologies: Arbitrated Loop and Switched Fabric

The first day of this intensive seminar focuses on the operation of the Fibre Channel Arbitrated Loop. What is it? How does it work? Where will it be used? If you've ever tried reading the various standards, you've probably found that they're frequently more confusing than helpful. Sure, standards tell you what you can and can't do, but what about understanding the how's and why's behind the standard? This seminar takes you through all of the loop protocols and operations to give you a sound understanding of basic loop operations. You'll look at actual traces to help you understand how Loop Initialization, Arbitration, Fairness and the Opening and Closing of Loop Circuits work. When you get back to work, you'll find yourself taking the reference manuals that you receive with you to the lab to help you solve that tough problem.

What is Arbitrated Loop?
- Background
- Arbitrated Loop Applications
- Configurations
- Loop vs. Other Fibre Channel Topologies
- Loop Port Types

Arbitrated Loop Concepts
- Loop Initialization
- Arbitration and Fairness
- Opening a Loop Circuit
- Closing a Loop Circuit
- Transferring a loop circuit
- Loop Addressing
- Arbitrated Loop physical address (AL_PA)
- Addressing limitations
- AL_PA assignment

New FC-AL Ordered Sets
- Arbitrate (ARB)
- Open a loop circuit (OPN)
- Close a loop circuit (CLS)
- Dynamic half-duplex (DHD)

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_Prot 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

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

Opening a Loop Circuit
- Full-duplex open (OPNyx)
- Half-duplex open (OPNyy)
- Replicate mode
- Broadcast (OPNbr)
- Multicast (OPNyr)

Flow Control
- Buffer-to-buffer (BB) credit
- Alternate BB_Credit model
- Use of zero BB Credit
- Dynamic credit signaling
- Zero credit overhead

Closing a Loop Circuit
- The closing protocol Enhancing performance with transfer

High Availability Loops
- Strategies for robustness
- Port bypass circuit
- Dual loop approaches
- Arbitrated Loop hubs
- Unmanaged hubs
- Managed hubs

The second day of this intensive seminar takes you through the basic operations and functions of the Fibre Channel Switched Fabric topology. From introduction and concepts through addressing and initialization to fabric services, it's all here. Whether you are designing a product to attach to a switched fabric topology, designing an installation using Fibre Channel switches, or even designing the switches themselves, there is something for you in this seminar.

Who Should Attend: This seminar is intended for those who require a detailed understanding of the Fibre Channel topologies. The audience includes product architects, development team hardware, firmware, software, and test engineers, product planners, managers, or others involved in planning, implementation, analysis, or testing of Fibre Channel 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

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