

Infiniband Concepts & Solutions

**Solution
Technology**



This seminar is designed to provide a comprehensive summary of the InfiniBand architecture. The course takes the student through the documentation and simplifies all aspects of the InfiniBand specification. You will learn the required basics to fully understand InfiniBand and the application aspects in order to construct an InfiniBand based System Area Network.

InfiniBand Architecture

Why a new I/O Interconnect
Architectural Features and Model
System Area Networks
Subnets, Switches & Routers

IBA Layered Architecture

Upper Layer
Transport Layer
Network Layer
Link Layer
Physical Layer

Verbs & Verb Concepts

HCA & TCA
Queue Pairs
Work Queue Elements
Completion Queue
Memory Regions

Management Concepts

Subnet Manager
Subnet Management Agent
General Service Agent
Power Management

Transport Functions & Services

Reliable Connection
Unreliable Connection
Reliable Datagrams
Unreliable Datagrams
Raw Packets
Send & Atomics
RDMA Read/Write

Addressing

Global IDs
Local IDs
Multicast IDs
Unicast IDs
Globally Unique Identifiers

Switching & Routing Headers & Packet Formats

GRH, LRH, BTH & ETH Headers
Data Packet Formats

Segmentation of Data

Physical Components

Connectors & Cabling
1X, 4X, 12X
Copper & Optical Transmission

Channel Adapters

Memory Translation & Protection
Virtual Lanes
DMA & Memory Management
Adapter & Port IDs
Requirements

Other Topics Include:

I/O Units
Link & Phy blocks
Ordered Sets & Control Symbols
Performance Counters
Hardware Management
Baseboard Management
Partitions
Simplified Address Resolution

Flow Control

Link Level
Coalescing ACKs
Credits and ACK/NAK Protocol

IBA Operations

Abnormal Conditions
Duplicate Packets
Ghost Packets
Invalid or Lost Packets
Stale Packets
Connection Protocol
Error Management
Typical I/O Transactions
SCSI RDMA Protocol
Channel & Memory Semantics
Memory Binding
Memory Windows
Memory Regions

Who Should Attend: This seminar is specifically for developers, integrators, managers, marketing personnel, technical writers and others with a need for an understanding of System Area Networks as implemented using InfiniBand technology.

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