

# InfiniBand Professional Training for AI and ML Deployments

Customized Instructor Led Remote or Onsite Training



ACADEMY

## TRAINING DELIVERY METHOD

Instructor-led remote training via our WebEx training environment.  
Training includes access to hands-on environment based on real switches and servers.

## TARGET AUDIENCE

Good understanding of networking concepts.

## TRAINING DURATION

**Remote:** 4 sessions of 4 hours each

**Onsite:** 3-days

## TRAINING OUTLINE

### InfiniBand Introduction

- InfiniBand Trade Association
- What is InfiniBand?
- InfiniBand key features - InfiniBand fabric components
- Topologies

### InfiniBand Architecture

- The physical layer
  - Overview
  - Mechanisms
- The data link layer
  - Overview
  - Mechanisms & services
- The network layer
  - Overview
  - Mechanisms
- The transport layer
  - Overview
  - Mechanisms & services
- The upper layers
  - Structure – verbs & protocols
  - Mechanisms & services

### Fabric Management

- Introduction to subnet management concepts
- Subnet Manager
- Fabric addressing
- Node's identifiers
- Fabric Initialization stages
- Basic routing algorithms

### InfiniBand Drivers and Tools

- Mellanox OFED for Linux/Windows overview
- Upgrading OFED version
- Burning firmware
- OFED utilities overview
- Cluster based utilities
- Node based utilities
- Route based utilities
- Diagnostic utilities
- Performance tuning guidelines
- GPU Directs

### Troubleshooting Best Practices

- Troubleshooting using PM counters
- Troubleshooting using OpenSM logs
- Troubleshooting case studies
- Troubleshooting best practices

### InfiniBand Networking for NVIDIA AI Solutions

#### DGX/DGX POD/ DGX SuperPOD

- DGX A100 – The Universal System for AI Workloads
- DGX A100/POD/SuperPOD Network Connections
- DGX A100/POD/SuperPOD Topology
- DGX A100/POD/SuperPOD Commands

#### InfiniBand Networking NVIDIA AI Enterprise

- VGPU - overview
- NVAIE – overview
- NVAIE server requirements

## Optional Train Topics (Not included in the default training duration)

### Advanced Features

- Sharp overview and configuration
- Self-healing (Shield) overview and configuration
- Adaptive routing

### UFM Enterprise

- UFM dashboard functionality
- How to monitor the fabric
- How to analyze congestion
- How to manage devices

### Monitoring and Troubleshooting Best Practices

- Troubleshooting using PM counters
- Troubleshooting using OpenSM logs
- Troubleshooting case studies
- SNMP configuration
- Email notifications configuration
- remote logging configuration
- opensm logs
- Scheduled fabric scan task
- Automatic switch backup configuration
- Automatic switch dump scheduled task