Mellanox Academy
Online Training (E-learning)
2013-2014
Mellanox offers a variety of training methods and learning solutions for instructor-led training classes and remote online learning (e-learning), including the following:

**For Online Academy:**

- Simulators
- 24/7, Self-Paced Interactive learning
- Exercises
- Summary Exam
- Certification
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>InfiniBand Fundamentals</td>
<td>4</td>
</tr>
<tr>
<td>Working with Mellanox OFED in InfiniBand Environments</td>
<td>6</td>
</tr>
<tr>
<td>Working with ConnectX-3 VPI Adapter Card</td>
<td>8</td>
</tr>
<tr>
<td>Working with ConnectX-3 Pro Adapter Card</td>
<td>10</td>
</tr>
<tr>
<td>Working with Connect-IB Adapter Card</td>
<td>12</td>
</tr>
<tr>
<td>SX1036 Switch System</td>
<td>14</td>
</tr>
<tr>
<td>SX6036 Switch System</td>
<td>16</td>
</tr>
<tr>
<td>SX1012 Switch System</td>
<td>18</td>
</tr>
<tr>
<td>InfiniBand Essentials</td>
<td>20</td>
</tr>
<tr>
<td>Mellanox Products</td>
<td>22</td>
</tr>
</tbody>
</table>
InfiniBand Fundamentals

Why should I take this course?

InfiniBand is a high-speed server-interconnect technology. Its greater speed, lower latency, and greater scalability are among its many advantages, and it has become the primary alternative to Ethernet as the interconnect protocol of choice.

Knowledge is power! Whether you are looking to maximize your Mellanox experience, seeking new career opportunities, or trying to become a foremost expert in interconnect technologies, this is the place to acquire the necessary knowledge and skills.

What you will learn

This course provides the fundamentals for the InfiniBand technology from a usability point of view and builds on the details of the InfiniBand architecture specification. It is designed to meet the needs of anyone who installs, configures, manages, troubleshoots or monitors InfiniBand fabrics. This course combines InfiniBand theory of operations through a series of interactive units, simulators, videos and on-line learning resources that provide a comprehensive learning approach to the high performance network arena.

Course Topics

* InfiniBand Introduction
* InfiniBand Architecture
* Fabric Management
* InfiniBand Drivers
* InfiniBand Utilities and Tools

Course Objectives

* Describe the InfiniBand (IB) protocol foundations
* list and describe the main features of InfiniBand fabrics
* List the main InfiniBand topologies and their pros and cons
* Describe the layer structure of InfiniBand Architecture
* Describe the basic management concepts and functions of InfiniBand fabrics
* Perform basic operations with the Subnet Manager that are related to the management of the fabric
* Operate basic SM operations of an InfiniBand switch using its CLI

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Describe the processes during the fabric initialization process
Read management outputs from the fabric and underrated their implications
List the common OFED commands and their usage
Perform management and diagnostic tasks with OFED commands

Course Duration
7 Hours

Target Audience
Network administrators, network architects, IT managers, and technicians who work or intend to work in an InfiniBand environment

Course Prerequisites
General understanding of networking concepts and principles

What’s inside?
* Interactive self-paced courseware
* Videos
* Summary Exam
* Related documentation according to course topics
* Simulators
* Summary Exam and exercises for knowledge implementation

Related Courses
* Working with Mellanox OFED in InfiniBand Environments
* Product based courses of InfiniBand switches and Host Channel Adapters
Working with Mellanox OFED in InfiniBand Environments

Why should I take this course?

Mellanox OFED is a software stack for RDMA and kernel bypass applications which relies on the open-source OpenFabrics Enterprise Distribution (OFED™) software stack from OpenFabrics.org.

The software provides High Performance Computing (HPC) sites and enterprise data centers with flexibility and investment protection as computing evolves toward applications that require extreme speeds, massive scalability, and utility-class reliability.

Learn to control, manage, and diagnose an InfiniBand fabric by understanding its driver utilities, operations, and protocols.

What you will learn

By enrolling in this course, you will be able to learn about Mellanox OFED, its capabilities, advantages, components, and architecture. You will learn to install the software stack across various OS environments, manage and utilize the OFED through different commands, and develop the ability to comprehend and use tools that will enable you to maintain an InfiniBand fabric.

This course combines both OFED theory and hands-on practice through a series of interactive units, simulators, videos, and on-line learning resources that provide a comprehensive learning approach to the high performance network arena.

Course Topics

* Mellanox OFED Introduction
* Mellanox Windows OFED Installation
* Mellanox Linux OFED Installation
* Mellanox OFED Utilities
Course Objectives

- Describe OFED
- Describe Mellanox OFED and its key features
- Understand and explain the Mellanox OFED architecture
- Perform Mellanox OFED installation and uninstall for Windows and Linux
- Understand basic installation troubleshooting scenarios
- Manage, diagnose, and utilize the fabric using various OFED commands
- Use a Command Line Interface (CLI)

Course Duration

4 hours

Target Audience

Network administrators, IT managers, and technicians who work or intend to work in an InfiniBand environment.

Course Prerequisites

InfiniBand Essentials/Fundamentals Course

What's inside?

- Interactive self-paced courseware
- Videos
- Summary Exam
- Related Documentation

Related Courses

- InfiniBand Fundamentals Course
- ConnectX®-3 Adapter Card Course
- ConnectX®-3 Pro Adapter Card Course
- Connect-IB Adapter Card Course
Why should I take this course?

The ConnectX-3 VPI single/dual-port adapter card contains the latest Virtual Protocol Interconnect (VPI) technology, which allows the adapter card to support InfiniBand and Ethernet protocols.

The ConnectX-3 VPI adapter card provides the highest performing and most flexible interconnect solution for PCI Express Gen 3.0 servers used in Enterprise Data Centers, High-Performance Computing, and embedded environments.

In order to utilize the ConnectX-3 VPI capabilities, it is important to learn the best practices for installing, configuring, and managing the adapter card and for performing basic diagnostic troubleshooting procedures.

What you will learn

This course will guide you through the process of installing and managing the ConnectX-3 VPI. You will learn and practice initial installation to the server, manage your adapter card using a shell connection to maximize its features, work with its LED indicator functionality, and identify and solve physical problems using the troubleshooting module for Linux and Windows users.

In addition, you will learn about the benefits and key features of ConnectX-3 VPI, and the best practices for utilizing them.

Course Topics

- ConnectX-3 VPI Introduction
- ConnectX-3 VPI Installation
- ConnectX-3 VPI Management for Linux users
- ConnectX-3 VPI Management for Windows users
- ConnectX-3 VPI Troubleshooting for Linux users
- ConnectX-3 VPI Troubleshooting for Windows users
**Course Objectives**

- Describe the benefits and the main features of ConnectX-3 VPI
- Diagnose the ConnectX-3 VPI status based on the LED indicators
- Install the adapter card to the server and verify connectivity
- Manage your card using a shell connection for Linux or Windows users
- Work with multiple adapter cards
- Upgrade the adapter card firmware
- Identify and repair common faults using physical troubleshooting steps and operation debug steps
- List the common OFED commands and their usage
- Perform management and diagnostic tasks with OFED commands

**Course Duration**

5½ hours

**Target Audience**

Network Administrators and managers who work or intend to work with Mellanox equipment

**Course Prerequisites**

General understanding of InfiniBand and Ethernet fabrics and management concepts.

**What’s inside?**

- Interactive self-paced courseware
- Videos
- Simulators
- Summary Exam and exercises for knowledge implementation
- Related documentation according to course topics

**Related Courses**

Working with Mellanox OFED in InfiniBand Environments.
Why should I take this course?

The ConnectX-3 Pro single/dual-port adapter card, with hardware offload engines for overlay networks, provides the highest performing and most flexible interconnect solution for private clouds, enterprise data centers, and high performance computing.

The ConnectX-3 Pro contains the latest Virtual Protocol Interconnect (VPI) technology, which allows the adapter card to support InfiniBand and Ethernet protocols.

In order to utilize the ConnectX-3 Pro capabilities, it is important to learn the best practices for installing, configuring, and managing the adapter card and for performing basic diagnostic troubleshooting procedures.

What you will learn

This course will guide you through the process of installing and managing the ConnectX-3 Pro. You will learn and practice initial installation to the server, manage your adapter card using a shell connection to maximize its features, work with its LED indicator functionality, and identify and solve physical problems using the troubleshooting module for Linux and Windows users.

In addition, you will learn about the benefits and key features of ConnectX-3 Pro, and the best practices for utilizing them.

Course Topics

* ConnectX-3 Pro Introduction
* ConnectX-3 Pro Installation
* ConnectX-3 Pro Management for Linux users
* ConnectX-3 Pro Management for Windows users
* ConnectX-3 Pro Troubleshooting for Linux users
* ConnectX-3 Pro Troubleshooting for Windows users
**Course Objectives**

- Describe the benefits and main features of ConnectX-3 Pro
- Learn how the ConnectX-3 Pro improves performance by using advanced NVGRE and VXLAN hardware offloads
- Diagnose the ConnectX-3 Pro status based on the LED indicators
- Install the adapter card to the server and verify connectivity
- Manage the card using a shell connection for Linux or Windows users
- Work with multiple adapter cards
- Upgrade the adapter card firmware
- Identify and repair common faults using physical troubleshooting steps and operation debug steps

**Course Duration**

5½ hours

**Target Audience**

Network Administrators and managers who work or intend to work with Mellanox equipment

**Course Prerequisites**

General understanding of InfiniBand and Ethernet fabrics and management concepts.

**What’s inside?**

- Interactive self-paced courseware
- Videos
- Simulators
- Summary Exam and exercises for knowledge implementation
- Related documentation according to course topics

**Related Courses**

Working with Mellanox OFED in InfiniBand Environments.
Working with Connect-IB Adapter Card

Why should I take this course?

The Connect-IB is a Single/Dual-Port InfiniBand Host Channel Adapter (HCA) card. The adapter card processes up to 130 million messages per second, five times higher than any other InfiniBand solution.

Maximum bandwidth is delivered across PCI Express 3.0 x16 and two ports of FDR InfiniBand, supplying more than 100Gb/s of throughput together with consistent low latency across all CPU cores.

In order to utilize the Connect-IB capabilities in the InfiniBand fabric, it is important to learn the best practices for installing, configuring, and managing the adapter card and for performing basic diagnostic troubleshooting procedures.

What you will learn

This course will guide you through the process of installing, managing, and troubleshooting Connect-IB. You will learn and practice initial installation to the server, manage your adapter card using a shell connection to maximize its features, work with its LED indicator functionality, and identify and solve physical problems using the troubleshooting module.

In addition, you will learn about the benefits and key features of Connect-IB, and the best practices for utilizing them.

Course Topics

* Connect-IB Introduction
* Connect-IB Installation
* Connect-IB Management
* Connect-IB Troubleshooting
Course Objectives

* Describe the benefits of Connect-IB
* Describe the main features of Connect-IB
* Locate the main interfaces of Connect-IB
* Diagnose the Connect-IB status based on the LED indicator
* Install the adapter card to the server
* Verify server connectivity
* Manage your card using a shell connection
* Upgrade your card firmware
* Identify the source of a problem
* Use physical troubleshooting steps
* Use operation debug steps

Course Duration

2 hours

Target Audience

Network Administrators and managers who work or intend to work with Mellanox equipment

Course Prerequisites

General understanding of InfiniBand and Ethernet fabrics and management concepts.

What’s inside?

* Interactive self-paced courseware
* Videos
* Simulators
* Summary Exam and exercises for knowledge implementation
* Related documentation according to course topics

Related Courses

Working with Mellanox OFED in InfiniBand Environments.
SX1036 Switch System

Why should I take this course?

The SX1036 Edge Switch system is one of Mellanox’s primary building blocks in Ethernet networks and contains the latest VPI technology, which allows this switch to support InfiniBand and Ethernet protocols.

The SX1036 switch system provides a high-performance fabric solution with 36 ports that deliver up to 2.88Tb/s of non-blocking throughput to High-Performance Computing, High Frequency Trading, and Enterprise Data Centers, with ultra-low latency.

Learn the best practices for utilizing the switch capabilities, configuring, managing, and performing basic diagnostic troubleshooting procedures, all from the experts at Mellanox.

What you will learn

This course provides the required set of skills to configure and manage the SX1036 switch through a set of an interactive learning units, videos and simulators.
You will learn about its physical and application features, its benefits, and the best practices for utilizing them.
You will also learn how to diagnose and troubleshoot basic hardware problems, upgrade its firmware, and debug common faults based on our specialists' knowledge and experience.

Course Topics

* SX1036 Introduction
* SX1036 LED Indicators
* SX1036 Management
* SX1036 System File Management
* SX1036 Basic Hardware Troubleshooting
* SX1036 Troubleshooting Form
* SX1036 VPI Configurations
Course Objectives

- Perform initial switch configuration
- Manage the switch using MLNX-OS and WebUI with basic commands
- Upgrade the MLNX-OS software
- Diagnose the switch status based on the LED indicators
- Identify and repair common faults during a short debug session
- Fill out the troubleshooting form during the debug session
- Change the switch profile system from InfiniBand to Ethernet and vice versa

Course Duration

3 hours

Target Audience

Network Administrators and managers who work or intend to work with Mellanox equipment

Course Prerequisites

- Complete InfiniBand Fundamentals Introduction unit
- InfiniBand and Ethernet concepts

What’s inside?

- Interactive self-paced courseware
- Videos
- Simulators
- Summary Exam and exercises for knowledge implementation
- Related documentation according to course topics
Why should I take this course?

The SX6036 Edge Switch system is one of Mellanox’s primary building blocks in Ethernet networks and contains the latest VPI technology, which allows this switch to support InfiniBand and Ethernet protocols.

The SX1036 switch system provides a high-performance fabric solution with 36 ports that deliver up to 4.032Tb/s of non-blocking throughput to High-Performance Computing and Enterprise Data Centers, with 170ns port-to-port latency.

Learn the best practices for utilizing the switch capabilities, configuring, managing, and performing basic diagnostic troubleshooting procedures, all from the experts at Mellanox.

What you will learn

This course provides the required set of skills to configure and manage the SX6036 switch through a set of an interactive learning units, videos, and simulators.

You will learn about its physical and application features, its benefits, and the best practices for utilizing them.

You will also learn how to diagnose and troubleshoot basic hardware problems, upgrade its firmware, and debug common faults based on our specialists’ knowledge and experience.

Course Topics

* SX6036 Introduction
* SX6036 LED Indicators
* SX6036 Management
* SX6036 System File Management
* SX6036 Basic Hardware Troubleshooting
* SX6036 Troubleshooting Form
* SX6036 VPI Configurations
Course Objectives

- Perform initial switch configuration
- Manage the switch using MLNX-OS and WebUI with basic commands
- Upgrade the MLNX-OS software
- Diagnose the switch status based on the LED indicators
- Identify and repair common faults during a short debug session
- Fill out the troubleshooting form during the debug session
- Change the switch profile system from InfiniBand to Ethernet vice versa

Course Duration

3 Hours

Target Audience

Network administrators and managers who work or intend to work with Mellanox equipment

Course Prerequisites

- Complete InfiniBand Fundamentals Introduction unit
- InfiniBand and Ethernet concepts

What’s inside?

- Interactive self-paced courseware
- Videos
- Simulators
- Summary Exam and exercises for knowledge implementation
- Related documentation according to course topics
SX1012 Switch System

Why should I take this course?

The SX1012 is a minimal form factor 40GbE Top of Rack switch system for high-performance computing, storage, cloud, and database deployments, providing 12 QSFP interfaces that can operate at speeds of 1GbE, 10GbE, 40GbE, or 56GbE.

The high availability solution of the SX1012 meets the customer needs by providing a smaller footprint and a more flexible configuration that improves the utilization of the hardware, lowers power consumption, and therefore reduces the capital and operational costs significantly.

Learn the best practices for utilizing the switch capabilities, configuring, managing, and performing basic diagnostic troubleshooting procedures, all from the experts at Mellanox.

What you will learn

This course provides the required set of skills to configure and manage the SX1012 switch through a set of an interactive learning units, videos and simulators. You will learn about its physical and application features, its benefits, and the best practices for utilizing them. You will also learn how to diagnose and troubleshoot basic hardware problems, upgrade its firmware, and debug common faults based on our specialists’ knowledge and experience.

Course Topics

* SX1012 Introduction
* SX1012 LED Indicators
* SX1012 Management
* SX1012 System File Management
* SX1012 Basic Hardware Troubleshooting
* SX1012 Troubleshooting Form
* SX1012 VPI Configurations
Course Objectives

- Perform initial switch configuration
- Manage the switch using MLNX-OS and WebUI with basic commands
- Upgrade the MLNX-OS software
- Diagnose the switch status based on the LED indicators
- Identify and repair common faults during a short debug session
- Fill out the troubleshooting form during the debug session
- Change the switch profile system from InfiniBand to Ethernet and vice versa

Course Duration

3 Hours

Target Audience

Network administrators and managers who work or intend to work with Mellanox Equipment

Course Prerequisites

- Complete InfiniBand Fundamentals Introduction unit
- InfiniBand and Ethernet concepts

What’s inside?

- Interactive self-paced courseware
- Videos
- Simulators
- Summary Exam and exercises for knowledge implementation
- Related documentation according to course topics
InfiniBand Essentials

Why should I take this course?

InfiniBand is a high-speed server-interconnect technology. Its greater speed, lower latency, and greater scalability are among its many advantages, and it has become the primary alternative to Ethernet as the interconnect protocol of choice.

This course is the first step into the world of InfiniBand. If you are looking to become more familiar with InfiniBand’s benefits, uses, architecture layers, management concepts, and basic tools, this is the best place to start.

What you will learn

This course is designed to meet the needs of anyone who wishes to be familiar with the basic principles of InfiniBand fabrics, its components, layers and basic management concepts.

For those who wish to understand the architecture, configure, manage and maintain InfiniBand fabrics we recommend to take the “InfiniBand Fundamentals” course and the “Working with Mellanox OFED in InfiniBand Environments” course.

Course Topics

* InfiniBand Introduction
* InfiniBand Architecture Layers Overview
* Fabric Management Concepts
* InfiniBand Drivers and Utilities

Course Objectives

* Describe the main features and elements of Infiniband fabrics
* Describe the 5 layers of the InfiniBand layers model
* Describe the basic management concepts of InfiniBand fabrics
* Describe the main features of Mellanox OFED
* Get familiar with the installation process of Mellanox OFED
* Get familiar with OFED basic management tools
Course Duration
2 hours

Target Audience
Anyone who wishes to understand the basic principles of InfiniBand fabrics

Course Prerequisites
General understanding of networking concepts and principles

What’s inside?
* Interactive self-paced courseware
* HOW-TOs Videos
* Related Documentation

Related Courses
InfiniBand Fundamentals Course

Course Completion Requirements
85% completion of each courseware module
Why should I take this course?

The demand for more computing power, efficiency and scalability is constantly accelerating in the HPC, enterprise, cloud computing and Web 2.0 markets. To address these demands Mellanox provides complete end-to-end solutions (silicon, adapter cards, switch systems, cables and software) supporting InfiniBand and Ethernet networking technologies.

In this course you will learn how Mellanox's InfiniBand and Ethernet technology can take your specific solution to the next level of performance, power and cost.

What you will learn

This course provides a complete overview about Mellanox end to end interconnect solutions.

Through a series of interactive self-paced sessions you will learn about the core technologies that drive Mellanox products their key features, benefits and what is the most suitable product for your needs.

Course Topics

* Company overview
* Integrated circuits
* Network adapter cards
* Switch systems
* Management software
* Acceleration software
* Cables
Course Objectives

* Describe what are the key features and benefits of Mellanox products
* Select a suitable set of products per a required solution

Course Duration

90 minutes

Target Audience

Network Administrators, network architects and IT managers who work or intend to work with Mellanox equipment.

What’s inside?

* Interactive self-paced courseware
* Videos
* Summary Exam
* Related documentation according to course topics
* Simulators
* Summary Exam and exercises for knowledge implementation