

## Training Delivery Options

---

This training can be delivered either on-site or from remote via the Mellanox Academy WebEx platform. Both delivery methods include access to our hands-on lab.

## Target audience

---

Field experience of configuring basic networking protocols.  
Good understanding of networking concepts.

## Training Duration

---

On-site: 3 days + 1 optional day to cover networking concepts and models recap

Remote: 4 virtual sessions + 1 optional session to cover networking concepts and models recap

## Training Outline – [Topics can be mixed according to training needs]

---

**TOPICS MARKED WITH RED ASTERISK (\*) INCLUDE HANDS-ON WORKSHOPS WITH MELLANOX EQUIPMENT.**

### Introduction to Networking

- OSI Model, TCP/IP Model
- TCP/IP Protocol Suite
  - Application Layer Protocols
    - HTTP/DNS/FTP
  - Transport layer protocols
    - TCP/UDP
  - Network layer protocols
    - IPv4
    - IPv4 addressing
    - Subnetting IPv4 networks
  - IPv4 services: ARP, ICMP, DHCP
- Ethernet technologies
  - Ethernet evolution
  - Ethernet frame structure and MTU
  - MAC addresses and MAC address tables
  - Ethernet switches
- Network topologies
  - Network topology
  - Modular Data Center design
  - Leaf-Spine design
  - Fat-Tree design

## Introduction to Mellanox Ethernet Solutions

- SN2000/3000 switch family
- ONYX OS
- Adapter cards
- Cables and transceivers
  - Copper and fiber cables overview
  - When to use what (copper vs. fiber, SFP+, QSFP, SFP28, QSFP28)
  - Transceivers
  - Split ports with breakout cables

## Sonic Introduction and Architecture

- SONIC overview
- SONiC Community
- Current status and roadmap
- Why sonic on Mellanox platforms
- Sonic Architecture - OK
  - High level review
  - Start up flow
  - Configuration model

## Sonic Installation and Features

- SONiC Installation
- SONiC main features
  - Port Configuration and cable breakout
  - Buffers
  - ACL and Mirroring
  - QoS (PFC, PFC Asymmetric, PFC WD, ECN, WRED)
  - CRM
  - ISSU
  - Telemetry
  - SONiC Configurable table size

## Layer 2 Common Configurations

- VLAN
- LAG

## Layer 2 Common Configurations

- FRR Routing package
- Data Plane L3 Interfaces
- OSPF
- BGP

## Debuggability

- MLNX SDK Debuggability
- MLNX FW tools