

NETWORK PROFESSIONAL WITH NVIDIA ONYX

Customized Instructor Led Remote Training



ACADEMY

TRAINING DELIVERY METHOD

Instructor-led remote training sessions via Networking Academy WebEx platform.

Training includes access to hands-on environment based on real switches and servers.

TARGET AUDIENCE

This course is designed for network administrators and engineers who wish to learn how to install, configure, manage, monitor and troubleshoot ONYX based switches

TRAINING DURATION

Up to 8 sessions of 3.5 hours each | Content may be mixed and matched

TRAINING OUTLINE

INTRODCUTION TO NETWORKING

- Network topologies
 - Network topology
 - Modular Data Center design
 - Leaf-Spine design
 - Fat-Tree design
- TCP/IP Protocol Suite
 - Application Layer Protocols
 - Transport layer protocols
 - 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

NVIDIA ETHERNET SWITCH

- NVIDIA ONYX OS
 - Configuring the switch for the first time
 - Basic CLI configuration commands
 - ONYX images
 - ONYX image upgrade via CLI
 - Configuration files management
 - WebUI overview

- Basic Switch Functions:
 - Ethernet interfaces configuration
 - Splitting a port using breakout cables
 - MAC address table
 - LLDP
 - Access lists

Layer 2 features:

- VLANs
 - VLANs overview
 - IEEE 802.1Q Trunking
 - Switch port types
 - Configuring VLANs
 - Configuring switch ports in access, trunk and hybrid modes
- LAG
 - LAG overview
 - LAG load-balancing
 - LACP overview
 - Static LAG configuration
 - Dynamic LAG configuration
- MLAG
 - MLAG overview
 - MLAG configuration via CLI

LAYER 3 FUNCTIONS

- Routing Basics
- IP routers, IP packet flow, IP routing table
- Static routes configuration
- Dynamic routing protocols
- Administrative Distance
- Routing metrics
- Best routes and ECMP
- Layer 3 switches
 - Layer 3 switches
 - Enabling layer 3 capabilities
 - Configuring layer 3 interfaces
 - Inter-VLAN routing configuration
- Default gateway redundancy – VRRP and MAGP
 - Default gateway redundancy
 - VRRP overview and configuration
 - MAGP overview configuration
- OSPF
 - concepts and terminology
 - Neighbors and adjacencies
 - Path cost calculation
 - ECMP

- Basic configuration
- BGP
 - BGP concepts and terminology
 - BGP neighbors – IBGP, EBGP
 - Configuring BGP
 - Advertising BGP routes
- Multicast
 - Unicast vs. Multicast traffic
 - IGMP
 - Multicast routing protocols: PIM-DM, PIM-SM
- Network Virtualization with VXLAN
 - Network Virtualization
 - VXLAN Overview
 - VXLAN Control Planes
- EVPN
 - EVPN Overview and Features
 - VXLAN Topology with EVPN
 - Configuring EVPN
- VXLAN Routing
 - VXLAN Routing Overview
 - Configuration overview
- Data center Bridging (DCB)
 - PFC
 - ETS
 - DCBX
 - Traffic Shaping

Monitoring & Diagnostics

- Switch debugging
 - Debug per protocol (MLAG, OSPF, BGP)
 - Port mirroring
 - Port counters
- What Just Happen Telemetry

RoCE workshop

- Design considerations
- RoCE v1 vs RoCE v2
- RoCE for lossless fabric
- understanding ECN and PFC in real application scenarios
- RoCE with storage
- VLANs & RoCE
- best practices, monitoring, and fault finding
- Hands-on practice