Configuring Cisco Nexus Switches and Fabrics in the Data Center (DCCNX)

Modality: Virtual Classroom

Duration: 3 Days

CLC: 30 Units

About this course:

The **Configuring Cisco Nexus Switches (DCCNX)** v1.0 course shows you how to install, configure, and manage Cisco Nexus® Series Switch platforms using Cisco® NX-OS to support highly available, secure, scalable virtualized data centers. Through expert instruction and hands-on practice, you will learn how to deploy Cisco NX-OS software features including networking, virtualization, security, storage services, system management, and monitoring. You will also be introduced to automating Cisco Nexus devices using Cisco NX-OS Software programmability features.

For a technical overview of Cisco Nexus Switches, consider taking the **Introducing Cisco NX-OS Switches and Fabrics in the Data Center (DCINX)** course.

This course will help you:

- Gain the knowledge and skills to deploy advanced capabilities of Cisco Nexus NX-OS Software and Cisco Nexus Series data center switches
- Learn through Cisco’s unique combination of lessons and hands-on practice using enterprise-grade Cisco learning technologies, data center equipment, and software
- Succeed in today’s demanding data center operations roles

Course Objective:

After taking this course, you should be able to:

- Describe the Cisco Nexus devices routing and forwarding
- Describe Overlap Transport Virtualization (OTV)
- Describe and configure Virtual Extensible LAN (VXLAN)
- Describe Locator/ID Separation Protocol (LISP)
- Describe the key features of Cisco Nexus devices
- Describe Cisco Intelligent Traffic Director
- Describe Quality of Service (QoS) on Cisco Nexus devices
- Understand Cisco Nexus storage services
- Configure device alliances and zoning
- Configure Fibre Channel over Ethernet (FCoE)
- Configuring N-Port Identifier Virtualization (NPIV) and N-Port Virtualization (NPV) Modes
- Describe NX-API and network orchestration solutions, and program Cisco NX-OS with Python
- Explain system management, monitoring, and troubleshooting processes
- Explain the troubleshooting processes

Audience:

- Data center systems engineers
- Data center field engineers
- Data center architects
- Technical decision makers
- Network architects
- Cisco integrators and partners

Prerequisite:

To fully benefit from this course, you should have the following knowledge and skills:

- Familiarity with Cisco data center technologies
- Understand networking protocols, routing, and switching

These are the recommended Cisco courses that may help you meet these prerequisites:

- **Implementing and Administering Cisco Solutions** (CCNA®)
- **Understanding Cisco Data Center Foundations** (DCFNDU)
- **Implementing and Operating Cisco Data Center Core Technologies** (DCCOR)
- **Introducing Cisco Nexus Series Switches** (DCINX)

Course Outline:

Describing the Cisco NX-OS Routing and Forwarding

- Routing Overview
- Multicast Routing
- Cisco NX-OS Routing and Forwarding
- Unicast and Multicast Routing Information Base (RIB) and Forwarding Information Base (FIB)

Describing Overlay Transport Virtualization

- Cisco OTV Overview
- Cisco OTV Control and Data Planes
- Failure Isolation
- Cisco OTV Features
- Optimizing Cisco OTV

Describing Virtual Extensible LAN

- VXLAN Benefits over VLAN
- Layer 2 and Layer 3 VXLAN Overlay
- VXLAN Multiprotocol-Border Gateway Protocol (MP-BGP) Ethernet VPN (EVPN) Control Plane
- VXLAN Data Plane

Describing Locator/ID Separation Protocol

- Locator/ID Separation Protocol
- LISP VM Mobility
- LISP Embedded Syslog Manager (ESM) Multihop Mobility
- LISP VPN Virtualization

Explaining Cisco Nexus Security Features

- Access Control Lists
- Port Security
- Dynamic Host Configuration Protocol (DCHP) Snooping
- Dynamic Address Resolution Protocol (ARP) Inspection
- IP Source Guard
- Unicast Reverse-path Forwarding (RPF)
- Traffic Storm Control
- Control Plane Policing

Cisco Intelligent Traffic Director

- Cisco ITD Overview
- Cisco ITD Deployment Models
- Cisco ITD Configuration and Verification

Describing QoS on Cisco Nexus Devices

- QoS on Cisco Nexus Devices
- Configure QoS on Cisco Nexus Devices
- Monitor QoS Statistics

Introducing Cisco Nexus Storage Services

- Fibre Channel
- Fibre Channel Flow Control
- Fibre Channel Domain Initialization
- Fibre Channel Addressing
- Fabric Shortest Path First (FSPF) Protocol

Describing Device Aliases and Zoning

- Distributed Device Alias Services Overview
- Zoning Overview
- Zone Merging
- Recovering from Zone Merge Failures
- Enhanced Zoning Overview

Configuring Fibre Channel Over Ethernet

- Fibre Channel Over Ethernet
- FCoE Requirements
- Data Center Bridging
- FCoE Addressing Scheme
- FCoE Initialization Protocol
- FCoE Port Types
- Storage Virtual Device Context (VDC)

Configuring NPIV and NPV Modes

- Cisco NPV Mode
- N-Port ID Virtualization

Managing Automation and Programmability of Cisco Nexus Devices

- Cisco NX-OS Representational State Transfer (RESTful) API
- Network Orchestration
- Programming Cisco NX-OS with Python

Configuring System Management and Monitoring

- System Management Overview
- System Monitoring Tools

Troubleshooting Cisco Nexus Switches

- Cisco Nexus Troubleshooting Tools
- Shell Access and Linux Containers
- Troubleshooting Memory and Packet Flow Issues

Labs:

- Configure Open Shortest Path First (OSPF)
- Configure Cisco OTV
- Configure VXLAN
- Configure Cisco Nexus Security Features
- Configure Basic Fibre Channel Features
- Configure Device Aliases and Zoning
- Configure FCoE
- Configure NPV
- Manage Switch over Cisco NX-API
- Program a Switch with Python
- Configure System Management and Monitoring
- Troubleshoot Cisco Nexus Switches CPU and Memory Issues