Configuring Cisco NX-OS Switches and Fabrics in the Data Center (DCCNX) v1.0

What you'll learn in 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.

Course duration

- Instructor-led training: 3 days in the classroom with hands-on lab practice
- Virtual instructor-led training: 3 days of web-based classes with hands-on lab practice
- E-learning: Equivalent of 3 days of instruction with videos, practice, and challenges

How you'll benefit

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

Who should enroll

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

How to enroll

E-learning

- To buy a single e-learning license, visit the Cisco Learning Network Store.
- For more than one license, or a learning library subscription, contact us at learning-bdm@cisco.com.

Instructor-led training

- Find a class at the Cisco Learning Locator.
- Arrange training at your location through Cisco Private Group Training.

Technology areas

- Data center

Course details

Objectives

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

Prerequisites

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 NX-OS Switches and Fabrics in the Data Center (DCINX)**

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

Lab outline

- 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

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