

Introducing Cisco Nexus 9000 Switches in NX-OS Mode (DCINX9K) v2.1

What you'll learn in this course

The **Introducing Cisco Nexus 9000 Switches in NX-OS Mode (DCINX9K) v2.1** course shows you how to implement, manage, and troubleshoot Cisco Nexus® 9000 Series Switches in Cisco® NX-OS mode. Through expert instruction and extensive hands-on learning, you will learn how to deploy capabilities including Virtual Extensible LAN (VXLAN), Multiprotocol Label Switching (MPLS), high availability features, Intelligent Traffic Director, troubleshooting tools and techniques, NX-OS programmability features, and open interface technologies. The course also provides an introduction to Cisco Data Center Network Manager (DCNM) for management.

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 hands-on lab practice, videos, and challenges

How you'll benefit

This class will help you:

- Learn how to deploy and troubleshoot the Cisco Nexus 9000 Series Switches in NX-OS mode to support performance, resiliency, scalability, and enhanced operations for data centers
- Use programmability features to configure and manage the Cisco Nexus 9000 Series Switches, helping your IT organization meet high-priority business needs, save time, and reduce errors due to manual processes
- Gain knowledge and skills 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 engineers
- Data center architects
- Network designers
- Network administrators
- Network engineers
- Systems engineers
- Consulting systems engineers
- Technical solutions architects
- Field engineers
- Cisco integrators and partners

How to enroll

- For instructor-led training, visit the [Cisco Learning Locator](#).
- For private group training, visit [Cisco Private Group Training](#).
- For digital library access, visit [Cisco Platinum Learning Library](#).
- For individual e-learning, visit the [Cisco Learning Network Store](#).
- For e-learning volume discounts, contact ask_cpll@cisco.com.

Technology areas

- Data center

Course details

Objectives

After taking this course, you should be able to:

- Describe Cisco Nexus 9000 Series Switch software and hardware components
- Describe key Cisco Nexus 9000 Series Switch NX-OS software features
- Manage Cisco Nexus 9000 Series Switch configurations using Ansible
- Implement VXLAN BGP eVPN on Cisco Nexus 9000 Series Switches
- Describe MPLS Layer 3 VPN implementation on Cisco Nexus 9000 Series Switches
- Manage Cisco Nexus 9000 Series Switches using NX-API and Python
- Implement Intelligent Traffic Director
- Troubleshoot and manage Cisco Nexus 9000 Series Switches using Bash shell and Guest shell
- Manage Cisco Nexus 9000 Series Switches using Cisco DCNM

Prerequisites

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

- Good understanding of networking protocols, routing, and switching
- Understanding of Cisco data center architecture
- Experience configuring advanced routing and switching technologies such as Border Gateway Protocol (BGP) and Open Shortest Path First (OSPF)

These Cisco courses can help you meet these prerequisites:

- **Introducing Cisco Data Center Networking (DCICN)**
- **Introducing Cisco Data Center Technologies (DCICT)**
- **Implementing Cisco IP Routing (ROUTE)**
- **Implementing Cisco IP Switched Networks (SWITCH)**

Outline

- Describing the Cisco Nexus 9000 NX-OS Solution
 - Data Center Trends
 - Describing Cisco Nexus 9000 Series Hardware

- Describing Cisco Nexus 9000 Series Hardware Architecture
- Cisco Nexus 9000 NX-OS Features
- Cisco Nexus 9000 Manageability
- New Cisco Nexus 9000 NX-OS Features
- Implementing VXLAN in a Data Center
 - Network Overlays in a Data Center
 - VXLAN Overlay
 - VXLAN BGP eVPN Control Plane
 - VXLAN Data Plane
- Implementing MPLS in a Data Center
 - Label Switching Overview
 - MPLS Layer 3 VPN Control Plane
 - MPLS Data Plane
 - MPLS in Data Center
- Configuration Management, Automation, and Programmability
 - Programmability Overview
 - Cisco NX-OS RESTful API
 - Network Orchestration
 - Programming Cisco NX-OS with Python
- Cisco Nexus 9000 Topology Options
 - Traditional Data Center Topologies
 - Spine-and-Leaf Topology
 - Overlay Topologies
 - Intelligent Traffic Director
- Troubleshooting Cisco Nexus 9000 Series Switches
 - Cisco Nexus 9000 High Availability
 - Cisco Nexus 9000 Troubleshooting Tools
 - Shell Access and Linux Containers
- Managing Cisco Nexus Switches with Cisco DCNM
 - Cisco Data Center Network Manager

Lab outline

- Provision Baseline Connectivity with Ansible
- Implement VXLAN with BGP eVPN Signaling
- Manage Switch Over Cisco NX-API
- Program Switch with Python
- Configure Intelligent Traffic Director
- Troubleshoot and Manage Switches Using Bash and Guest Shell
- Provision VXLAN and Manage Switch with Cisco DCNM




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