Managing Cisco Network Operating Systems (CNIOS)

What you'll learn in this course

The Managing Cisco Network Operating Systems (CNIOS) training introduces the fundamental concepts of Cisco networking operating systems, including IOS XE, NX-OS, and IOS XR. This training is designed for individuals who are new to Cisco or networking professionals who want to deepen their understanding of Cisco operating systems used across various network devices. Upon completion of this training, you will be able to navigate the command-line interface (CLI), configure basic settings as well as advanced protocols, and understand the unique features and architectures of Cisco network operating systems.

Course duration

- Instructor-led training: 5 days in the classroom with hands-on lab practice plus the equivalent of 3 days of self-study material
- Virtual instructor-led training: 5 days of web-based classes with hands-on lab practice plus the equivalent of 3 days of self-study material
- E-learning: Equivalent of 8 days of content with videos, practice, and challenges

How you'll benefit

This course will help you:

- Get familiar with Cisco IOS XE, NX-OS, and IOS XR operating systems
- Navigate CLIs of individual systems, perform initial setup, upgrade, and troubleshooting
- Navigate Cisco documentation, interact with Cisco Technical Assistance Center (TAC), and automate different platforms
- Configure important features, such as Virtual Port Channel (vPC), Fibre Channel, virtual extensible LAN (VXLAN), and router clustering
- Earn 37 CE credits toward recertification

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Who should enroll

- Junior Network Engineers
- NOC Engineers
- IT Operations Engineers
- Network Administrators

Technology areas

- Enterprise

Course Prerequisites

There are no prerequisites for this training. However, the knowledge and skills you are recommended to have before attending this training are:

- Familiarity and basic understanding of core networking concepts
- Fundamental knowledge and understanding of Cisco network devices, such as routers and switches
- Basic understanding of network security concepts, including common threats, firewalls, and how to harden a network

These skills can be found in the following Cisco Learning Offerings:

- Implementing and Administering Cisco Solutions (CCNA)
- Network Fundamentals for Network Adjacent Engineers (NETFND)
- Understanding Cisco Data Center Foundations (DCFNDU)
- Understanding Cisco Service Provider Network Foundations (SPFNDU)
- Network Administrator (NETADM)

Objectives

After taking this course, you should be able to:

- Navigate the CLIs of IOS XE, NX-OS, and IOSXR
- Perform initial setup, upgrades, and troubleshooting on various Cisco platforms
- Configure essential network features, such as vPCs, Fibre Channel, VXLAN, and router clustering
- Explore automation options and learn how to interact with Cisco TAC
- Gain proficiency in navigating Cisco documentation and securing network environments

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Outline

- Overview of Cisco Network Operating Systems
- Evolution of Cisco Network Operating Systems
- Comparison of Cisco IOS, IOS XE, NX-OS, and IOS XR
- Introduction to Cisco Modeling Labs
- Introduction to Cisco ISO XE
- Use of Cisco IOS XE CLI and Configuration Management
- Unique Features of Cisco IOS XE
- IOS XE Software Management and Upgrade Process
- Introduction to Cisco NX-OS
- Use of Cisco NX-OS CLI and Configuration Management
- Unique Features of Cisco NX-OS
- Cisco NX-OS Software Management and Upgrade Process
- Introduction to Cisco IOS XR
- Use of Cisco IOS XR CLI and Configuration Managment
- Unique Features of Cisco IOS XR
- Cisco IOS XR Software Management and Upgrade Process
- Common Protocols and Configurations
- Automation and Programmability
- Cisco Network Automation Platforms
- Monitoring Tools
- Troubleshooting and Best Practices
- Cisco Documentation Navigation
- Cisco Operating Systems Licensing
- Security and Device Hardening
- Cisco Network Security Tools and Sites

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How to enroll

To enroll in the CNIOS course or explore our larger catalog of courses on Cisco Digital Learning, contact us at <training@fastlane-mea.com>

Lab outline

- Create the First Lab Topology
- Perform Basic Configuration on Cisco IOS XE Router
- Configure Static Routing on Cisco IOS XE Router
- Configure OSPF Routing Protocol on IOS XE Platform
- Configure Network Address Translation on Cisco IOS XE Systems
- Perform an Upgrade of a Cisco IOS XE Router
- Deploy a Containerized Application on a Cisco IOS XE Device
- Perform Initial Cisco NX-OS Switch Configuration
- Configure Virtual Port Channel
- Configure Fibre Channel on Cisco MDS Switches
- Configure VXLAN
- Upgrade Cisco Nexus Switches in vPC
- Install Third-Party Tool on Cisco Nexus Switch
- Perform Initial Configuration on Cisco IOS XR Router
- Perform Basic Configuration of Cisco IOS XR Router
- Configure a Layer 3 Virtual Private Network
- Create a Routing Policy
- Perform Upgrade of a Cisco IOS XR Router
- Deploy a Containerized Application on Cisco IOS XR Device
- Enable Remote Access
- Configure Layer 2 Interfaces and VLANs
- Configure Layer 3 Interfaces and Routing
- Manage a Cisco Nexus Switch with NETCONF
- Manage Cisco Catalyst Router with RESTCONF
- Automate Cisco IOS XR Router with Ansible
- Automate Cisco Catalyst Switch with Terraform
- Configure SNMP, Logging, and Telemetry on Cisco Catalyst Router
- Troubleshoot Common Network Issues
- Capture Network Traffic and Identify the Issue
- License Cisco IOS XRv Router with Cisco Smart Licensing Manager
- Secure Console and Remote Access on Cisco Devices
- Implement Port Security
- Implement Access Lists on Cisco Devices
- Explore Configuration of Cisco Network Devices Using CLI Analyzer