

DCNX

Implementing Cisco NX-OS Switches and Fabrics in the Data Center

40 horas

Data Center & Cloud

Cisco

Cisco Continuing Education Credits

40 CE Credits

INTRODUÇÃO

Implementing Cisco NX-OS Switches and Fabrics in the Data Center (DCNX) course is a five-day product training course designed as a comprehensive hands-on experience for data center systems engineers, field engineers, architects, and Cisco partners who implement data center solutions with the Cisco Nexus Series switch platforms.

OBJETIVO DO CURSO

Upon completing this course, students will be able to meet these objectives:

- Describe the platforms that make the Cisco Nexus 9000, 7000, 3000, and 2000 product families;
- Describe Cisco Nexus Platforms Implementation;
- Describe Cisco Nexus platform management;
- Describe Port Channels and Virtual Port Channels;
- Configure First Hop Redundancy protocols;
- Configure the security features of Cisco Nexus devices;
- Describe the Cisco Nexus devices routing and forwarding;
- Describe VXLAN;
- Describe QoS on Cisco Nexus devices;
- Describe system management and monitoring processes;
- Describe Cisco NX-OS Programmability;
- Describe Cisco Nexus storage services;
- Configure device aliases and zoning;
- Configure FCoE;
- Configure NPIV and NPV modes.

PÚBLICO-ALVO

Professionals interested in implementing, configuring, operating and management Cisco Data Center Nexus solutions.

PRÉ-REQUISITOS

The knowledge and skills that students are expected to have before attending this course are:

- Students should be familiar with Cisco data center technologies;
- Students should understand networking protocols, routing, and switching.

Course Introduction

Overview
Course Goal and Objectives
Course Flow

Section 1: Describing Cisco Nexus Series Switches

Describe the platforms that make the Cisco Nexus 9000, 7000, 3000, and 2000 product families
Describe Cisco Nexus 9000 Series Switches
Describe Cisco Nexus 7000 Series Switches
Describe Cisco Nexus 3000 Series Switches
Describe Cisco Nexus 2000 Series Fabric Extenders

Section 2: Describing Cisco Nexus Platforms Implementation

Describe Cisco Nexus in Data Center Architecture
Describe Cisco NX-OS Software
Describe the Licensing Model

Section 3: Describing Cisco Nexus Platforms Management

Describe Cisco Nexus CLI and GUI Management Interfaces
Describe Cisco NX-OS Setup Utility
Describe Virtual Device Context on Cisco Nexus 7000 Series
Describe PowerOn Auto Provisioning
Describe Cisco NX-OS User Management
Describe Cisco NX-OS AAA Services

Section 4: Describing Port Channels and Virtual Port Channels

Describe Port Channel Operation
Describe vPC Concepts and Benefits
Describe vPC Architecture
Describe vPC Control and Data Plane

Section 5: Configuring First Hop Redundancy Protocols

Describe HSRP
Describe VRRP
Configure First Hop Redundancy protocols

Section 6: Configuring Cisco Nexus Security Features

Configure the security features of Cisco Nexus devices
Configure Access Control Lists
Configure Port Security
Configure DHCP Snooping
Configure Dynamic ARP Inspection
Configure IP Source Guard
Configure Unicast RPF
Configure Keychain Management
Configure Control Plane Policing
Configure MACsec

Section 7: Describing Cisco NX-OS Routing and Forwarding

Describe Routing in Cisco NX-OS

Describe Multicast Routing in Cisco NX-OS

Describe Unicast and Multicast RIB and FIB in NX-OS

Describe Layer 3 Best Practices for vPC

Section 8: Describing Virtual Extensible LAN

Describe VXLAN Benefits over VLAN

Describe VXLAN Overlay

Describe VXLAN MP-BGP EVPN Control Plane

Describe VXLAN Data Plane

Section 9: Describing QoS on Cisco Nexus Devices

Describe QoS on Cisco Nexus Devices

Configure QoS on Cisco Nexus Devices

Describe Monitoring of QoS Statistics

Section 10: Configuring System Management and Monitoring

Describe system management and monitoring processes

Configure System Management

Configure System Monitoring and Troubleshooting Tools

Section 11: Describing Cisco NX-OS Programmability

Describe On-Box Programmability on Cisco NX-OS

Describe functionality provided by Bash, Guest-shell, LXC Containers, Python API, and EEM

Describe Ansible for Cisco NX-OS

Section 12: Describing Cisco Nexus Storage Services

Describe IP Storage on Cisco Nexus Switches

Describe Fibre Channel

Describe Fibre Channel Flow Control

Describe Fibre Channel Domain Initialization

Describe Fibre Channel Addressing

Section 13: Configuring Fibre Channel over Ethernet

Describe Fibre Channel over Ethernet

Describe FCoE Requirements

Describe Data Center Bridging

Describe FCoE Addressing Scheme

Describe FCoE Initialization Protocol

Describe FCoE Port Types

Section 14: Describing Device Aliases and Zoning

Describe Distributed Device Alias Services

Describe Zoning

Describe Zone Merging

Describe Recovering from Zone Merge Failures

Describe Enhanced Zoning

Section 15: Configuring NPIV and NPV Modes

Describe N-Port ID Virtualization

Describe Fibre Channel NPV Mode

Describe FCoE NPV Mode

Labs

Discovery 1: Test Cisco Nexus Platforms

Task 1: Test Connectivity to the Cisco Nexus Devices

Task 2: Test the Key Hardware and Software Parameters

Task 3: Test the Environment Parameters

Discovery 2: Configure User Management

Task 1: Configure AAA Server

Task 2: Configure AAA Login Authentication

Task 3: Configure RBAC

Discovery 3: Configure vPC

Task 1: Configure vPC Components

Task 2: Configure vPC Connectivity

Task 3: Configure Interface Tracking

Task 4: Troubleshoot Different vPC Failure Scenarios

Discovery 4: Configure FHRP Protocols

Task 1: Configure HSRP

Task 2: Configure VRRP

Task 3: Configure HSRP With Object Tracking

Task 4: Troubleshoot Different HSRP Failure Scenarios

Discovery 5: Configure Cisco Nexus Security Features

Task 1: Configure Keychain Authentication

Task 2: Configure Access Lists

Task 3: Configure CoPP

Task 4: Configure Port Security

Task 5: Configure MACsec Between Two Cisco Nexus 9000 Switches

Discovery 6: Configure OSPF

Task 1: Configure OSPF as a Point-to-Point Link

Task 2: Configure OSPF as a Broadcast Domain

Task 3: Configure OSPF Authentication

Task 4: Configure Dynamic Routing Over vPC

Task 5: Troubleshoot Common OSPF Configuration Errors

Discovery 7: Configure VXLAN

Task 1: Configure Multicast Routing

Task 2: Configure VXLAN Bridging Using a Layer 2 VNI

Task 3: Configure Layer 3 VNI

Task 4: Configure Anycast Gateway

Discovery 8: Configure QoS

Task 1: Configure QoS Classification on Cisco Nexus

Task 2: Configure QoS Marking on the Cisco Nexus

Task 3: Configure QoS Policing on the Cisco Nexus

Discovery 9: Configure System Management

Task 1: Configure PTP

Task 2: Test the Configuration Replace Feature

Task 3: Test the Configuration Rollback Feature

Discovery 10: Configure Cisco NX-OS On-Box Programmability

Task 1: Test Guest Shell Features on Cisco NX-OS

Task 2: Configure EEM and Python for Onboard Monitoring

Task 3: Configure Enhanced CLI Using Python

Discovery 11: Configure Containers on Cisco NX-OS

Task 1: Configure Simple Container on Cisco Nexus 9000

Task 2: Configure Webserver Using the Containers

Discovery 12: Configure Cisco NX-OS Using Ansible

Task 1: Explore the Cisco NX-OS Ansible Modules

Task 2: Modify Switch Configuration Using the Ansible

Discovery 13: Configure Basic Fibre Channel Features

Task 1: Preparing the Cisco Nexus 9000 Switch for Fibre Channel

Task 2: Configure Fibre Channel Connectivity

Task 3: Configuring Fibre Channel Port Channel

Discovery 14: Configure FCoE

Task 1: Configure FCoE

Task 2: Test Fibre Channel Databases

Discovery 15: Configure Fiber Channel Device Aliases and Zoning

Task 1: Configure Device Aliases and Distribution

Task 2: Configure Enhanced Zoning

Task 3: Verify SAN Operations

Discovery 16: Configure NPV

Task 1: Migrate SAN to NPV Design