DCNX7K (CONFIGURING CISCO NEXUS 7000/7700 SERIES SWITCHES) 3.1

Objetivo

Upon completing this course, you will be able to meet these objectives: â□¢ Identify the specific products that make up the Cisco Nexus product families and provide a high level overview of their features and common deployment models; â□¢ You will also be able to recognize the advanced data center class features and functionality of the Cisco Nexus 7000 Series Switch; â□¢ Explain common network architectures implemented using the products and features of the Cisco Nexus product family will also be presented; â□¢ Cisco Nexus 7000 Series Switch hardware components, like the chassis, supervisor, and line cards, determine the device features and role in data center architecture; â□¢ You will learn to identify the chassis and components of the Cisco Nexus 7000 Switch; â□¢ You will also describe the Cisco Nexus 7000 and 7700 Series packet flow, and the VOQ operation; â□¢ Provide an overview of the Cisco Nexus 2000 hardware and support of the Cisco Nexus 2000 with Cisco Nexus 7000 Series; â□¢ Describe how to perform hardware installation, verify and troubleshoot system hardware of the Cisco Nexus 7000 Series Switches; â□¢ Understand the architecture, usage, high availability, and licensing features of the Cisco NX-OS Software; â□¢ You will learn how to use the management features that are available on the Cisco Nexus 7000 Series Switch, and how to configure those features to support the management infrastructure requirements; â□¢ You will also learn these troubleshooting process basics and available tool; â□¢ Describe the concept of Cisco Cisco Dynamic Fabric and how it is used on Cisco Nexus 7000 Series Switches; â□¢ Describe the purpose, architecture, and use of VDCs on the Cisco Nexus 7000 Series Switch, configure and verify its operation; â□¢ Describe and configure the Layer 2 switching and related features on the Cisco Nexus 7000 Series Switch; â□¢ Describe the port channel configuration, the concept of vPC and how to configure and troubleshoot vPCs on the Cisco Nexus 7000 Series Switch; â□¢ Understand the operation of Cisco FabricPath to build scalable and highly available Layer 2 networks on the Cisco Nexus 7000 Series Switch; â□¢ Describe and configure the Layer 3 switching features on the Cisco Nexus 7000 Series Switch, and how to manage the routes and IP traffic through the use of the Route Policy Manager and policy-based routing; â□¢ Describe MPLS features that are available on Cisco Nexus 7000 Series Switches and configure MPLS, MPLS Layer 2 and Layer 3 Virtual Private Networks (VPNs) and MPLS Traffic Engineering (TE); â□¢ Describe basic and advanced Cisco OTV features on the Cisco Nexus 7000 Series Switch, also describe how to configure the OTV and some of the advanced OTV features that are available on the Cisco Nexus 7000 Series Switches; â□¢ Describe the concept, use, and configuration of the Locator/ID Separation Protocol (LISP) on the Cisco Nexus 7000 Switch; â□¢ Describe FCoE and FCoE features on the Cisco Nexus 7000 Series Switch; configure and verify their operation; â□¢ Describe the security features that are available on the Cisco Nexus 7000 Series Switch; configure and verify their operation; â□¢ Describe the QoS features that are available on the Cisco Nexus 7000 Series Switches; configure and verify their operation; â□¢ Describe the concept of the Intelligent Traffic Director feature and how to configure and verify ITD on Cisco Nexus 7000 Series Switches.

PÃºblico Alvo

Data Center professionals wanting design, deploy, operation and troubleshoot Cisco Nexus 7000/7700 solutions.

PrÃ©-Requisitos

It is recommended, but not required, to have the following skills and knowledge before attending this course: â¢ Good understanding of data center technologies, networking protocols, routing, and switching; â¢ Recommended CCNAÂ® Data Center Certification or equivalent knowledge; â¢ Recommended attendance at the Implementing Cisco IP Routing (ROUTE) class or equivalent knowledge; â¢ Recommended attendance at the Implementing Cisco IP Switched Networks (SWITCH) class or equivalent knowledge.

Carga HorÃiria

40 horas (5 dias).

ConteÃºdo ProgramÃitico

Course Introduction
Course Outline
Course Objectives

Introduction Cisco Nexus 7000/7700 Series Switches
Cisco Nexus Product Family
Explain Cisco Unified Fabric: Trends in the Data Center
Explain Cisco Nexus Product Family
Explain Cisco Nexus 7000/7700 Series Switch
Cisco Nexus 7000/7700 Series Switch Deployment Models
Explain Data Center Architecture Design Evolution
Explain Single-Layer Data Center Models
Explain Multitier Data Center Model
Explain Scalable Spine-Leaf Data Center Fabric

Architecture: Cisco Nexus 7000 Series Switch Hardware
Cisco Nexus 7000 and 7700 Series Switch Chassis
Explain Cisco Nexus 7000 and 7700 Series Switch Common Foundation
Explain Cisco Nexus 7000 Series Switch Chassis Family
Explain Cisco Nexus 7700 Series Switch Chassis Family
Explain Key Chassis Components
Explain Cisco Nexus 7000/7700 Series Switch Power Supplies
Explain Cisco Nexus 7000/7700 Series Switch Fan Cooling
Cisco Nexus 7000 Series Switch Supervisor, I/O, and Fabric Modules
Explain Cisco Nexus 7000/7700 Series Supervisor Modules
Explain Cisco Nexus 7000/7700 Series Switch Product Identification Scheme
Explain Cisco Nexus 7000/7700 Series Switch I/O Module Families
Explain Cisco Nexus 7000/7700 Series Switch M1 and M2 I/O Modules
Explain Cisco Nexus 7000/7700 Series F2, F2E, and F3 I/O Modules
Explain Cisco Nexus 7000/7700 Series I/O Modules Forwarding Engine
Explain Cisco Nexus 7000/7700 Series Switch I/O Module Scalability

Explain Cisco Nexus 7000/7700 Series Crossbar Switch Fabric Modules
Explain Cisco Nexus 7000/7700 Series Network Analysis Module
Explain Cisco Nexus 7000/7700 Series Hardware High-Availability Features
Cisco Nexus 7000 Series Switch Forwarding and Packet Flow
Explain Cisco Nexus 7000/7700 Series Virtual Output Queuing
Explain Cisco Nexus 7000/7700 Series Packet Flow and Arbitration
Explain Cisco Nexus 7000/7700 Series Layer 2 and Layer 3 Forwarding

Architecture: Cisco NX-OS Software
Cisco NX-OS Architecture, Key Features, and Capabilities
Explain Cisco NX-OS Software Architecture
Explain Cisco NX-OS High-Availability Infrastructure Components
Explain Cisco NX-OS Software Key Features
Explain Cisco IOS to NX-OS Conversion tool
How Verify Hardware Installation Using show Commands]
How Troubleshoot Common Hardware Issues
Cisco Nexus 7000/7700 Series Licensing Model
Explain Cisco NX-OS Software Licensing for Cisco Nexus 7000 Series
Explain Obtaining and Installing the License Key File

Cisco Nexus 7000/7700 Administration, Management, and Troubleshooting
Using Cisco Nexus Management Interfaces and Setup Utilities
Explain Switch CLI and GUI Management Interfaces
Explain NX-OS Setup Utility
Explain PowerOn Auto Provisioning
Managing Cisco Nexus User Access with Cisco NX-OS
Explain Cisco NX-OS User Management
Explain User Account and Role Configuration
Explain Password Recovery Procedure
Explain AAA Configuration for Integration with RADIUS, TACACS+, and LDAP
Configuring Cisco Nexus Management Features
Explain & Configure System Management Features
Explain & Configure Secure Shell Configuration
Explain & Configure SNMP Configuration
Explain & Configure The XML Interface Feature
Explain & Configure Cisco Fabric Services Feature
Explain & Configure Cisco Smart Call Home
Explain & Configure Scheduler Tool
Explain & Configure NTP and PTP Feature
Explain & Configure Pong Service
Explain & Configure Cisco NX-OS IP SLA
Explain & Configuration Backup and Restore
Explain & Deploy ISSU In-Service Software Upgrades and Downgrades
Explain & Deploy Cisco NX-OS Image Recovery
Explain & Deploy EPLD Image Upgrade
Using Troubleshooting Processes and Tools
Explain Troubleshooting Process
Explain & Using Cisco NX-OS Tools

Explain & Using Embedded Ethanalyzer Tool
Explain & Configure SPAN and ERSPAN
Explain & Configure NetFlow
Explain & Configure System Message Log Configuration
Explain & Configuring Online Diagnostics
Explain & Using the OBFL Feature
Explain & Configuring RMON
Explain & Configuring Cisco EEM
Explain & Using Embedded Logic Analyzer Module

Troubleshooting Memory and Packet Flow Issues

Evaluating Memory Using the Built-in Platform Monitoring Tool
Evaluating Platform Memory Utilization on a High Level
Evaluating Platform Memory Utilization on a Detailed Level
How Troubleshooting Packet Flow Issues

Architecture: Cisco Nexus 7000/7700 Series Switches

Explain Cisco Network Analysis Module (NAM-2)

Virtual Device Contexts (VDC) on Cisco Nexus 7000/7700 Series Switches

Using Virtual Device Contexts

Explain Virtual Device Contexts
Explain Virtualization Hierarchy
Explain Communicating Between VDCs
Explain Virtualization Scalability
Explain VDC Types
Explain VDC Resources
Explain VDC Management

Deploy & Configuring VDCs

Explain & Deploy VDC Licensing
Explain & Deploy VDC Guidelines & Limitations
Explain & Configure VDCs
Explain & Verify VDCs
Explain & Allocating VDC Resources
Explain & Configure Resource Templates

Management Settings for VDCs

Explain Management Settings for Virtual Device Contexts
Explain Allocate Interfaces to a VDC
Explain VDC Navigation
Explain Manage VDC Configuration
Explain Non-default VDC Suspension and Reload
Explain VDC High-Availability Policies

Layer 2 Features on Cisco Nexus 7000/7700 Series Switches

Describing and Configuring Interface Features

Explain & Configure Basic Interface Parameters
Explain & Configure Dedicated vs. Shared Mode
Explain & Configure UniDirectional Link Detection

Configuring VLANs and Advanced VLAN Features

Explain & Deploy Configure Layer 2 Interfaces
Explain & Configure VLANs
Explain & Configure Port Profiles
Explain & Configure Configure VTP
Explain & Configure Configure Private VLANs
Explain & Configure Configure MVRP

Configuring STP and STP Extensions

Explain STP Overview and Configuration
Explain & Configure PVST+
Explain & Configure MST
Explain & Configure STP Extensions & Tools

Configuring Q-in-Q

Explain Q-in-Q VLAN Tunnels
Explain & Configure Q-in-Q VLAN Tunnels

Architecture: Cisco Nexus 2000 Series Fabric Extender

Cisco Nexus 2000 Series FEX Hardware

Explain Cisco Nexus FEX Technology
Explain Cisco Nexus 2000 Series Fabric Extender Models
Explain Cisco Nexus 7000 Parent Switch Cabling Options
Explain Cisco Nexus 7000 Series Switch and Cisco Nexus 2000 Series Fabric Extender Topologies
Explain Cisco Nexus 7000 Series Switch and Cisco Nexus 2000 Series Fabric Extender Features

Configuring Cisco Nexus 2000 FEX

Deploy FEX on Cisco Nexus 7000/7700
Explain & Deploy Cisco Nexus 2000 Series Fabric Extenders
Explain & Configure FEX Layer 2 Interfaces
Explain & Configure FEX Layer 3 Interfaces
Explain & Verify Cisco Nexus 2000 Series Fabric Extenders Configuration

Port Channels on Cisco Nexus 7000/7700 Series Switches

Describing Traditional Port Channels

Explain Port Channel Operation
Explain & Configure Layer 2 and Layer 3 Port Channels
Explain & Verify Port Channels
Explain & Configure Port Channel Load Balancing

Describing vPCs (Virtual Port Channels)

Explain vPC Concept and Benefits
Explain vPC Architecture
Explain vPC Control and Data Plane Operation
Explain vPC Peer Link Failure
Explain vPC Peer Switch
Explain Layer 3 and vPC Interactions
Explain Supported Layer 3 and vPC Designs
Explain vPC and FHRPs
Explain Multicast with vPC

Configuring vPCs

Explain vPC-Supported Hardware
Explain & Configure vPCs

How Verify the vPC
How Optimizing vPCs
Troubleshooting vPC
Explain Initial Troubleshooting Checklist
How Troubleshoot vPC Initialization
How Troubleshoot vPC Peer Keepalives
How Troubleshoot vPC Cisco Fabric Services
How Troubleshoot Common vPC Issues

Cisco FabricPath on Cisco Nexus 7000/7700 Series Switches
Architecture: Cisco FabricPath Solution
Explain Cisco FabricPath Architecture
Explain Cisco FabricPath MAC Address Learning
Explain Basic Cisco FabricPath Data Plane Operation
Explain Cisco FabricPath Interaction with Spanning Tree
Explain Cisco FabricPath and IP Multicast Routing
Explain Virtual Port Channel+
Explain vPC+ and HSRP
Explain Anycast HSRP
Explain Cisco Fabric Extenders with Cisco FabricPath
Configuring Cisco FabricPath
How Configure Cisco FabricPath
How Configure vPC+
Troubleshooting Cisco FabricPath
How Troubleshooting Cisco FabricPath
Using Cisco FabricPath Pong Tool
FabricPath & DFA
Cisco DFA Architecture Overview
Explain Cisco DFA Architecture
Explain Optimized Networking
Explain Virtual Fabrics
Explain Fabric Management
Explain Cisco DFA Service Support
Explain Workload Automation
Explain Cisco DFA Deployment Requirements

Layer 3 Features on Cisco Nexus 7000/7700 Series Switches
Architecture: NX-OS Layer 3 Forwarding Architecture
Explain Cisco NX-OS Routing and Forwarding
Explain Unicast and Multicast RIB and FIB
Configuring Routing Protocols
Explain Routing Protocol Configuration Overview
How Configure Static Route
How Configure OSPF
How Configure EIGRP
How Configure IS-IS
How Configure BGP
Configuring Route Policy Manager and PBR

Explain Configure Route Policy Manager
How Configure PBR
Configuring Layer 3 Virtualization
Explain Layer 3 Virtualization Overview
How Configure VRF
Configuring FHRP Protocols
How Configure HSRP
How Configure VRRP
How Configure GLBP
Configuring BFD
Explain BFD Overview
How Configure BFD
Configuring Multicast
How Configure Multicast

MPLS on Cisco Nexus 7000/7700 Series Switches
Architecture: MPLS on Cisco Nexus
Explain Multiprotocol Label Switching Overview
Explain Layer 3 Unicast VPN
Explain Layer 2 VPN
Explain MPLS Traffic Engineering
Configuring MPLS
Explain MPLS on Cisco Nexus 7000 Series Switches
How Configure the MPLS Feature Set
How Configure MPLS LDP
Configuring MPLS Layer 3 VPNs
Explain MPLS Layer 3 VPNs General Configuration Steps
How Configure MPLS in the Core
How Configure MPLS Layer 3 VPN Customers
Configuring MPLS Layer 2 VPNs
Explain MPLS Layer 2 VPN Features on Cisco Nexus 7000 Series Switches
Explain MPLS Layer 2 VPNs General Configuration Steps
How Configure the MPLS Layer 2 VPN Feature
Configuration Example: EoMPLS
Configuration Example: VPLS
Overview: Configure MPLS TE

Cisco OTV on Cisco Nexus 7000/7700 Series Switches
Architecture: Cisco OTV on Cisco Nexus
Explain Cisco OTV Overview
Explain Cisco OTV Terminology
Explain Cisco OTV Control Plane
Explain Cisco OTV Data Plane
Explain Cisco OTV Unicast-Only Transport Infrastructure
Explain Cisco OTV Data Plane Encapsulation
Explain Spanning Tree and Cisco OTV
Explain Unknown Unicast and Cisco OTV
Explain ARP Traffic Control

Explain Multihoming
Explain FHRP Isolation
Explain Cisco OTV and QoS
Explain Cisco OTV Fast Convergence
Configuring Basic Cisco OTV
Explain Cisco OTV Guidelines
Configure Basic Cisco OTV
How Verify Cisco OTV
Configuring Cisco OTV Advanced Features
How Configure Cisco OTV Authentication
How Configure FHRP Isolation
How Configure a Dedicated Broadcast Group
How Configure OTV VLAN Translation
How Configure OTV Fast Convergence and Fast Failure Detection
How Configure OTV Tunnel Depolarization with Secondary IP

VXLAN on Cisco Nexus 7000/7700 Series Switches
Architecture: VXLAN MP-BGP on Cisco Nexus
Explain Data Center Overlay Technologies
Explain VXLAN Basic
Explain Data Plane Learning & Packet Flow
Explain VXLAN and MP-BGP Control Plane
Explain VXLAN and MP-BGP Gateway Functions
Configuring VXLAN on Cisco Nexus
Explain VXLAN Support on Nexus
Configure VXLAN Flood & Learn
Configure VXLAN Using MP-BGP
How Verify VXLAN Configuration

LISP on Cisco Nexus 7000/7700 Series Switches
Architecture: LISP on Cisco Nexus
Explain Locator/ID Separation Protocol
Explain LISP VM Mobility
Explain LISP ESM Multihop Mobility
Explain LISP VPN Virtualization
Configuring LISP on Cisco Nexus
Explain General LISP Configuration Steps
How Configure LISP Infrastructure
How Configure LISP Site Devices
How Configure LISP Internetworking Devices
How Configure LISP VM Mobility

FCoE on Cisco Nexus 7000/7700 Series Switches
Architecture: FCoE on Cisco Nexus
Explain Fiber Channel over Ethernet
Explain FCoE Requirements
Explain Data Center Bridging
Explain Fibre Channel Forwarder and Fibre Channel Bridge

Explain FCoE Addressing Scheme
Explain FCoE Initialization Protocol
Explain FCoE Port Types
Explain FCoE Design
Explain Multihop FCoE Design
Explain Describing FCoE Support on Cisco Nexus 7000 Series Switches
Explain FCoE Requirements
Explain Storage VDC
Explain Supported FCoE Ports

Configuring FCoE on Cisco Nexus

Explain FCoE Configuration Steps
Explain Licensing an FCoE Module
How Enable FCoE
How Create a Dedicated Storage VDC
How Allocate Shared Interfaces
How Configure VSAN-to-VLAN Mapping
How Create a Virtual Fibre Channel InterfaceVerify a Virtual Interface
How Configure Multihop FCoE
How Configure a Virtual Fibre Channel Port Channel Interface
How Configure the FC-MAP

Security Features on Cisco Nexus 7000/7700 Series Switches

Configuring Security Features

Explain Security Features
Explain & Deploy Integrated Intrusion Detection Security
How Configure ACLs
How Configure Port Security
How Configure DHCP Snooping
How Configure DAI
How Configure IP Source Guard
How Configure uRPF
How Configure Traffic Storm Control
How Configure CoPP

Cisco TrustSec on Cisco Nexus

Explain Cisco TrustSec Overview
Explain Cisco TrustSec on Cisco Nexus 7000 Series Switches
How Configure Cisco TrustSec

QoS on Cisco Nexus 7000/7700 Series Switches Describing QoS in the Data Center

Explain QoS in the Data Center

Explain Diversity of Data Center Application Flows
Explain Data Center QoS Requirements
Explain Priority Flow Control
Explain Priority-Based Bandwidth Management
Explain DCBX Protocol

Configuring QoS on Cisco Nexus

Deploy QoS on the Cisco Nexus 7000 Switch
How Configure Queuing and Scheduling on M Series I/O Modules

How Configure Network QoS, Queuing and Scheduling, and Priority Flow Control on F Series Modules
How Monitoring QoS Statistics

Cisco ITD/RISE on Cisco Nexus 7000/7700 Series Switches
Describing Cisco ITD on Cisco Nexus
Explain Cisco ITD: Multiterabit Load Balancing
Explain Cisco ITD Deployment Models
Explain Configuring Cisco ITD
How Configure Cisco ITD
How Cisco ITD Verification
Describing Cisco Rise on Cisco Nexus
Explain Cisco RISE Overview
Explain Cisco RISE For Citrix NetScaler
Explain Cisco RISE For Cisco NAM

Cisco NX-API & Python on Cisco Nexus 7000/7700 Series Switches
Explain about Using Cisco NX-API
Explain Business Nedd For Network Programmability
Explain Cisco NX-API Overview
Explain XML & JSON
Explain Cisco NX-API Request & Responses
Explain Developer Sandbox
Using Python On Cisco nexus
Using Python API on Cisco Nexus
Presents Python Examples
Explain Cisco NX-OS CLI Python Modes
Using Python Extensions
Using Python Scripting

Labs
Lab 1: Cisco Nexus 7000 Platform Discovery
Lab 2: Configuring User Management
Lab 3: Configuring System Management
Lab 4: Configuring Troubleshooting Features
Lab 5: Configuring Layer 2 Switching
Lab 6: Configuring Virtual Port Channels
Lab 7: Configuring Cisco FabricPath
Lab 8: Troubleshooting vPCs and Cisco FabricPath
Lab 9: Configuring Layer 3 Switching
Lab 10: Configuring FHRP
Lab 11: Configuring MPLS
Lab 12: Configuring Cisco OTV
Lab 13: Implementing VXLAN Bridging on the Cisco Nexus 7000 Series Switch
Lab 14: Configuring LISP
Lab 15: Configuring FCoE
Lab 15: Configuring Security Features
Lab 17: Configuring QoS
Lab 18: using Cisco Nexus 7000 Series Switch NX-API