

Module 1: Deploying the Cisco Nexus 7000

Lesson 1: Overview of the Nexus 7000

Cisco Nexus 7000 Series Chassis Overview
Supervisor Engine and Line Cards
Fabric Modules
Virtual Output Queuing Overview
VoQ Operation
Power Supplies and Cooling
Connectivity Management Processor
Site Preparation

Lesson 2: Overview of NX-OS

Introducing NX-OS
NX-OS Process Recovery
NX-OS Supervisor Redundancy
ISSU

Lesson 3: Introduction to Virtual Device Contexts

Introducing Virtualization
VDC Design
VDC Configuration
High Availability

Lesson 4: Managing the Nexus 7000

SNMP and XML
Generic OnLine Diagnosis
Embedded Event Manager
SMART Call Home
Data Center Network Manager
System Message Logging
AAA
Role-Based Access Control
Configuration Rollback

Lesson 5: Layer 2 Protocols and Features

Nexus 7000/NX-OS Layer 2 Overview
VLANs and PVLANs
Spanning-Tree Protocols
Port-Channels
Virtual Port-Channels (vPC)
IGMP Snooping
Unidirectional Link Detection
Overlay Transport Protocol (OTV)
FabricPath (L2MP)
Nexus 2248TP

Lesson 6: Layer 3 Protocols and Features

Layer 3 Unicast Routing Overview
First-Hop Routing Protocols
Object Tracking
Routing Virtualization
Routing Protocols
Bidirectional Forwarding Detection (BFD)
Policy Routing
Tunnels
Layer 3 Multicast

Lesson 7: Quality of Service

Nexus 7000 Series QoS Overview
Port QoS
Forwarding Engine QoS
Modular QoS CLI Overview
Table Maps
Class Map
Policy Map
Service Policy

Lesson 8: Security

Introduction to Nexus/NX-OS Security
Traffic Integrity
Storm Control
Control Plane Protection
Hardware Rate Limiting
Access Control
Admission Control
Data Confidentiality

Lesson 9: Troubleshooting Tools

Etheralyzer: Wireshark in NX-OS
SPAN and RSPAN
Troubleshooting Checklist

Lesson 10: Troubleshooting Process

Cisco NX-OS Software Troubleshooting Process



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Course Outline

Module 2: Introduction to the Cisco Nexus 5000

Lesson 1: Overview of the Nexus 5000

- Challenges in the Data Center
- I/O Consolidation
- Cisco Nexus 5000 Switch Products
- Cisco NX-OS Software Architecture
- Network Design
- FCoE Adapters and Software Stack
- Cisco Nexus 5000 Switch Management Tools
- Managing a Cisco Nexus 5000 Switch with Cisco Device Manager
- Monitoring an FCoE Network with Cisco Fabric Manager

Lesson 2: Overview of the Nexus 2000

- Cisco Nexus 2000 Fabric Extender
- Cisco Nexus 2000 Forwarding

Lesson 3: FC Protocol Primer

- Fibre Channel Layering and Services
- Fibre Channel Addressing
- Fibre Channel Frames
- Fibre Channel Flow Control
- Zoning Overview
- Fibre Channel Routing
- The RSCN Process

Lesson 4: Understanding the FCoE Protocol

- Current FCOE Architecture
- FCOE Enode MAC Addresses
- FCOE Initialization Protocol

Lesson 5: Data Center Architecture

- Access Layer and DC Design
- Cisco Nexus 5000 vPC
- Nexus Supported Layer 2 and FCOE Topologies Summary

Lesson 6: Understanding Ethernet Enhancements

- Converged Enhanced Ethernet
- Priority Flow Control
- Bandwidth Management
- Data Center Bridging Exchange
- Congestion Management

Lesson 7: Configuring NPV Mode

- N_Port Identifier Virtualization
- Understanding NPV Mode
- Configuring NPV Mode

Lesson 8: Configuring the Cisco Nexus 5000 in Switch Mode

- Switch Configuration Overview
- Configuring Connectivity and Administrative Access
- Configuring Nexus 5K Interfaces
- Configuring Ethernet Uplink Ports
- Configuring the FC Uplink Ports
- Verifying the Configuration
- Additional Configuration Components
- Configuring the Cisco Nexus 2000

Lesson 9: Managing Traffic Flow

- Understanding QoS Policy Management
- Tuning the MTU Value
- Configuring Priority Flow Control
- Nexus 5000 QoS from 4.1(3)N1(1)
- IGMP Snooping

Lesson 10: Configuring HA

- High Availability in an FCoE Network
- Configuring Server-Side HA
- Understanding Port-Channels
- Configuring Ethernet PortChannels
- Configuring Fibre Channel PortChannels
- Configuring Virtual PortChannels



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Course Labs

Cisco Nexus 7000 Labs

- Lab 1: Exploring the Nexus 7000 Hardware Platform
- Lab 2: Create and Configure VDCs
- Lab 3: First-Hop Redundancy Protocols
- Lab 4: Configuring Routing Protocols
- Lab 5: Configuring OTV
- Lab 6: VDC and VRF Interoperation
- Lab 7: QoS on the Cisco Nexus 7000
- Lab 8: Security
- Lab 9: Troubleshooting the Nexus Control Plane

Cisco Nexus 5000 Labs

- Lab 1: Configuring the Switch for Administrative Access
- Lab 2: Configuring the Cisco Nexus 5000 Switch for FCoE Connectivity
- Lab 3: Configuring the Cisco Nexus 5000 in NPV Mode
- Lab 4: Traffic Engineering
- Lab 5: Configuring the Nexus 2000 as a Remote Line Card
- Lab 6: Configuring Nexus 2000 with VPC



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