



## **Module 1: Deploying the Cisco Nexus 7000**

### **Lesson 1: Overview of the Cisco 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

### **Lesson 2: Overview of Cisco NX-OS**

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

### **Lesson 3: Introduction to Virtual Device Contexts**

Introducing Virtualization  
VDC Configuration  
High Availability

### **Lesson 4: Managing the Cisco 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**

Cisco Nexus 7000/NX-OS Layer 2 Overview  
VLANs and PVLANS  
Spanning-Tree Protocols  
PortChannels  
Virtual Port Channel (vPC)  
IGMP Snooping  
Unidirectional Link Detection

## **Module 1 (continued)**

### **Lesson 6: Layer 3 Protocols and Features**

Layer 3 Unicast Routing Overview  
First-Hop Routing Protocols  
Routing Virtualization  
Routing Protocols  
Policy Routing  
Tunnels  
Layer 3 Multicast

### **Lesson 7: Quality of Service**

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

### **Lesson 8: Security**

Introduction to Cisco Nexus/NX-OS Security  
Traffic Integrity  
Control Plane Protection  
Access Control  
Admission Control  
Data Confidentiality

### **Lesson 9: Troubleshooting**

Ethalyzer: Wireshark in Cisco NX-OS  
SPAN and RSPAN



# Implementing and Configuring the Cisco Nexus 5000 and 7000

## Module 2: Introduction to the Cisco Nexus 5000

### Lesson 1: Overview of the Cisco Nexus 5000

- Challenges in the Data Center
- I/O Consolidation
- Cisco Nexus 5000 Switch Products
- Cisco Nexus 4000 Blade Switch
- Cisco Nexus 2000 Fabric Extender
- Cisco Nexus 5000 Software Architecture
- Network Design
- FCoE Adapters and Software Stack
- Cisco Nexus 5000 Switch Management Tools

### Lesson 2: Fibre Channel Primer

- Fibre Channel Layering and Services
- Fibre Channel Addressing
- Fibre Channel Frames
- Fibre Channel Flow Control
- Zoning Overview
- Fibre Channel Routing
- The Registered State Change Notification Process

### Lesson 3: Ethernet Primer

- Exploring the Packet Delivery Process
- VLANs and Trunking
- Loop Prevention with Spanning Tree Protocol
- Understanding the TCP/IP Transport Layer

### Lesson 4: Server Virtualization Primer

- Server Virtualization
- VMware Virtualization
- Virtual Networking with VMware
- Virtual Storage Networking with VMware
- Cisco Virtual Network Solutions

### Lesson 5: Understanding the FCoE Protocol

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

### Lesson 6: Data Center Architecture

- Access Layer Designs
- Cisco Nexus Data Center Design
- Cisco Nexus 5000 vPC

## Module 2 (continued)

### Lesson 7: Cisco Nexus 5000 System Architecture

- System Architecture
- Switch Fabric Data Path
- Traffic Forwarding
- Multicast

### Lesson 8: Understanding Ethernet Enhancements

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

### Lesson 9: Future Direction

- FCoE Initialization Protocol
- Lossless Ethernet Bridging
- Network interface Virtualization
- Congestion Management
- Layer 2 Multi-Pathing

## Module 3: Implementation and Configuration

### Lesson 1: Configuring FCoE Server Connectivity

- Converged Network Adapters
- Host-Based Failover
- QLogic CNAs
- Emulex CNAs
- Using the FCoE Protocol Stack

### Lesson 2: Configuring the Cisco Nexus 5000 Switch in Switch Mode

- Configuring Basic Connectivity and Administrative Access
- Configuring Virtual Interfaces
- Configuring Ethernet Uplink Ports
- Configuring the FC Uplink Ports
- Configuring the Cisco Nexus 2000
- Verifying the Configuration
- Additional Configuration Components





# Implementing and Configuring the Cisco Nexus 5000 and 7000

## Module 3 (continued)

### Lesson 3: Managing Cisco Nexus 5000 Switches with GUI Tools

Monitoring a Cisco Nexus 5000 Switch with Cisco Device Manager  
Monitoring an FCoE Network with Cisco Fabric Manager

### Lesson 4: Configuring NPV Mode

N\_Port Identifier Virtualization  
Understanding NPV Mode  
Configuring NPV Mode

### Lesson 5: Managing Traffic Flow

Understanding QoS Policy Management  
Configuring QoS Policy  
Tuning the MTU Value  
Configuring Priority Flow Control  
Version 4.1(3)N1(1) QoS Enhancements  
IGMP Snooping

### Lesson 6: Configuring High Availability

High Availability in an FCoE Network  
High Availability on a Cisco Nexus 5000 Switch  
Configuring Server-Side High Availability

## Cisco Nexus 7000 Labs

### Lab 1: Managing System Configuration

### Lab 2: Layer 2 Switching

### Lab 3: First-Hop Redundancy Protocols

### Lab 4: Configuring Routing Protocols

### Lab 5: VDC and VRF Interoperation

### Lab 6: QoS on the Cisco Nexus 7000

### Lab 7: Security

### Lab 8: Troubleshooting the Nexus Control Plane

## Cisco Nexus 5000 Labs

### Lab 9: Analyzing FCoE Packet Traces

### Lab 10: Configuring the Switch for Administrative Access

### Lab 11: Configuring the Cisco Nexus 5000 Switch for FCoE Connectivity

### Lab 12: Configuring the Cisco Nexus 5000 Switch in NPV Mode

### Lab 13: Traffic Engineering

### Lab 14: Configuring the Cisco Nexus 2000 as a Remote Line Card

### Lab 15: Configuring Cisco Nexus 2000 with VPC

### Lab 16: Configuring and Monitoring Security Features

### Lab 17: Troubleshooting FCoE Issues on the Cisco Nexus 5000 Switch

## Module 3 (continued)

### Lesson 6: (continued)

Understanding PortChannels  
Configuring Ethernet PortChannels  
Configuring Fibre Channel PortChannels

### Lesson 7: Securing the Switch

Understanding Private VLANs  
Configuring Private VLANs  
Understanding Access Control Lists  
Configuring Access Control Lists  
Port Security  
Configuring Zoning

### Lesson 8: Managing the Switch and Switch Software

Role-Based Access Control  
SNMP and XML Support  
GOLD and EEM  
Smart Call Home  
Managing NXOS

### Lesson 9: Monitoring and Troubleshooting

Diagnostics and Monitoring  
SPAN  
Ethalyzer  
Configuring SPAN  
Troubleshooting Interface Errors  
Troubleshooting Logical Interface Errors  
Password Recovery  
Corrupted Image Recovery

