



## Cisco Training - HD Telepresence

### DCUFI: Implementing Cisco Data Center Unified Fabric v5.0

Gain the skills needed to install, configure, manage, and troubleshoot the Cisco Nexus 7000 and 5000 Switches and the Cisco Nexus 2000 Series Fabric Extenders in this 5-day Cisco course.

\$3,695.00

- 5 Days
- Promotional and package discounts may apply

### Upcoming Dates

### Course Description

The Implementing Cisco Data Center Unified Fabric (DCUFI) v5.0 is a five-day instructor-led training course designed for Systems and Field Engineers, Consulting Systems Engineers, Technical Solutions Architects, and Cisco Integrators and Partners who install and implement the Cisco Nexus 7000 and 5000 Series switches and the Cisco Nexus 2000 Series Fabric Extenders.

This course covers the key components and procedures needed to install, configure, and manage the Cisco Nexus 7000, 5000, 2000, and MDS Series switches in the network and SAN environment.

### Course Outline

#### Module 1: Cisco Nexus Product Overview

- Describe the Cisco Unified Fabric products in the Cisco Data Center Network Architecture.

#### Lesson 1: Describing the Cisco Data Center Network Architecture

- Cisco Unified Fabric Fundamentals
- Structured Layers: Core, Aggregation, Access
- Product Placement
- Positioning of Product Families in the Architecture

#### Lesson 2: Identifying Cisco Nexus Products

- The Cisco Nexus Family of Products
- Important Features of Cisco Nexus 7000 I/O Modules
- Important Features of Cisco NX-OS

#### Module 2: Cisco Nexus Switch Feature Configuration

- Select and configure the distinctive Cisco Nexus switch features to meet the implementation requirements and expectations in the Cisco Data Center Network Architecture.

## **Lesson 1: Understanding High Availability and Redundancy**

- Network-Level High Availability
- System-Level High Availability
- Cisco IOS In-Service Software Upgrade (ISSU)

## **Lesson 2: Configuring Virtual Device Contexts**

- Using VDCs in Data Centers
- Virtual Device Contexts (VDCs)
- Resource Allocation
- New VDC Features in Cisco NX-OS 6.1
- Configuring VDCs
- Management Settings
- Storage VDCs

## **Lesson 3: Configuring Layer 2 Switching Features**

- Basic Interface Parameters
- Cisco Nexus 7000 and Cisco Nexus 5000 Series Switch Feature Comparison
- VLAN Configuration
- Spanning Tree Protocol Extensions

## **Lesson 4: Configuring PortChannels**

- Using PortChannels and Virtual PortChannels
- Configuring PortChannels
- vPC Architecture
- Configuring a vPC
- Configuring the FEX
- Configuring Enhanced vPCs

## **Lesson 5: Implementing Cisco FabricPath**

- Implement Cisco FabricPath
- Verify Cisco FabricPath

## **Lesson 6: Configuring Layer 3 Switching Features**

- Routing Protocols
- First Hop Redundancy Protocols
- Bidirectional Forwarding Detection
- Layer 3 Virtualization
- Unicast RIB and FIB
- Route Policy Manager
- Policy-Based Routing (PBR)
- IPv6

## **Lesson 7: Configuring IP Multicast**

- IP Multicast
- Configuring IGMP and MLD
- Configuring PIM
- Configuring IGMP Snooping

- Configuring MSDP

### **Module 3: Cisco Nexus Switch Advanced Feature Configuration**

- Identify and configure advanced features of the Cisco Nexus Series switches.

#### **Lesson 1: Describing Cisco OTV**

- Cisco OTV
- Basic Cisco OTV Configuration
- Advanced Cisco OTV Configuration

#### **Lesson 2: Configuring MPLS**

- Multiprotocol Label Switching
- Multiprotocol Label Switching VPNs

#### **Lesson 3: Configuring LISP**

- Locator/ID Separation Protocol
- Configuring LISP

#### **Lesson 4: Configuring QoS**

- QoS on the Cisco Nexus Family of switches
- Modular QoS CLI
- Marking
- Mutation Mapping
- Policing
- Queuing and Scheduling
- Monitoring QoS

#### **Lesson 5: Configuring Security Features**

- DHCP Snooping
- Dynamic ARP Inspection
- IP Source Guard
- Unicast Reverse Path Forwarding
- Traffic Storm Control
- Port Security
- Control Plane Pol

### **Module 4: Cisco Nexus Storage Features**

- Describe the Fibre Channel Protocol, the FCoE Initiation Protocol (FCP), and the Data Center Bridging (DCB) enhancements. In addition, you will be able to configure FCoE on the Cisco Nexus 5000 Series Switches, including the Cisco Nexus 5000 and 5500 Platform switches, Cisco Nexus 7000 Series Switches, and Cisco MDS Family of switches.

#### **Lesson 1: Describing Fibre Channel Protocol**

- SCSI Protocol
- Fibre Channel
- Fibre Channel Login and Communication
- Fibre Channel Addressing Schemes
- VSANs and IRV

- FSPF Protocol
- Zoning
- N-Port ID Virtualization
- N-Port Virtualization

### **Lesson 2: Describing FCoE Protocol**

- FCoE Essentials
- FCoE Architecture
- FCoE Initialization Protocol
- Supported FCoE Topologies
- FCoE Hardware

### **Lesson 3: Identifying DCB Enhancements**

- Data Center Bridging
- Priority Flow Control
- Enhanced Transmission Selection
- DCBX Protocol

### **Lesson 4: Configuring FCoE**

- FCoE Configuration
- FCoE VLANs and Virtual Interfaces
- FCoE with Enhanced vPC and Cisco Adapter FEX

### **Lesson 5: Configuring SAN Switching Features**

- FCoE on Cisco MDS
- Fibre Channel Interfaces
- Domain Parameters
- VSAN Management
- VSAN Trunking
- SAN Port Channels
- FLOGI and FCNS Databases
- Cisco Fabric Services on Cisco MDS

### **Lesson 6: Configuring NPV Mode**

- N-Port ID Virtualization
- NPIV Configuration
- NPV Mode
- NPV Configuration
- FCoE NPV Feature
- FCoE NPV Configuration

### **Lesson 7: Using SAN Management Tools**

- Cisco Prime DCNM for SAN
- Cisco Device Manager

### **Module 5: Cisco Nexus Switch Management**

- Identify and configure the management tools that are available on the Cisco Nexus Family of switches.

## **Lesson 1: Using the CMP**

- Connectivity Management Processor
- Configuring the CMP
- Verifying the CMP
- Upgrading the CMP
- Using the CMP

## **Lesson 2: Configuring User Management**

- User Management Features
- Authentication, Authorization, and Accounting
- Secure Shell
- User Accounts and Roles

## **Lesson 3: Describing System Management**

- System Management Features
- Configuring Cisco Fabric Services
- Configuring NTP and PTP
- Configuring EEM
- Configuring NetFlow
- Configuring Smart Call Home
- Configuring Scheduler
- Configuring SPAN and ERSPAN
- Configuring SNMP
- Using XML Interface
- Implementing Cisco Prime DCNM for LAN
- Integrating vCenter Manager
- Licensing
- Upgrading the Firmware and EPLDs

### **Labs:**

- Lab 2-1: Configure Layer 2 Switching Features
- Lab 2-2: Configure vPCs
- Lab 2-3: Configure Cisco FabricPath
- Lab 2-4: Configure Layer 3 Switching
- Lab 3-1: Configure OTV
- Lab 3-2: Configure QoS
- Lab 3-3: Configure Security Features

## **Audience**

The primary audience for this course is as follows:

- Data Center Designers, Data Center Administrators, and System Engineers.

The secondary audience for this course is as follows:

- Data Center Engineers and Managers.

The tertiary audience for this course is as follows:

- Program Managers and Project Managers.

## Prerequisites

The knowledge and skills that a learner must have before attending this course are as follows:

- Cisco CCNA® Data Center certification.
- A good understanding of the Fibre Channel Protocol and the SAN environment.
- Recommended attendance of a Fibre Channel Protocol class or equivalent experience.
- Recommended attendance of the Implementing Cisco Storage Network Solutions (ICSNS) class or equivalent experience.

Recommended reading of books by Robert Kembel on Fibre Channel and Fibre Channel switched fabrics.

## What You Will Learn

Upon completing this course, the learner will be able to meet these overall objectives:

- Describe the Cisco Unified Fabric products in a Cisco Data Center network architecture.
- Select and configure the distinctive Cisco Nexus Series switch features to meet the implementation requirements and expectations in the Cisco Data Center architecture.
- Configure advanced features, such as Overlay Transport Virtualization (OTV), Multiprotocol Label Switching (MPLS), Locator/ID Separation Protocol (LISP), security, and quality of service (QoS).
- Identify which management tools are available for the Cisco Nexus switches and how to configure the relevant management tool in order to support the given design.
- Understand the Fibre Channel Protocol, the Fibre Channel over Ethernet (FCoE) protocol, and the Data Center Bridging (DCB) enhancements, as well as how to configure FCoE on the Cisco Nexus 5000 7000, MDS Series, and 5500 Platform switches.