

Course:	<i>DCNX5K v3.0 - Configuring Cisco Nexus 5000 / 2000 Series Switch</i>
Duration:	<i>5 days lecture course and hands-on lab</i>
Fees:	<i>\$3,395 USD</i>
Cisco Learning Credits:	<i>34</i>
Kit:	<i>Digital Version</i>

Course Details

Configuring Cisco Nexus 5000 Series Switches (DCNX5K) v3.0 is a 5 day ILT training program designed to serve the needs of systems and field engineers, consulting systems engineers, technical solutions architects, and Cisco integrators and partners who install and implement Cisco Nexus 5000 Series Switches and Cisco Nexus 2000 Series Fabric Extenders. This course covers the key components and procedures required to configure, manage, and troubleshoot these Cisco Nexus platforms.

A certification exam is not associated with this course. The course focuses on the product hardware, its architecture, key features, and market differentiators, with extensive feature configuration and hands on labs. Engineers will practice to simulate in Nexus 5000 Series Switch deployment and trouble-shooting.

Laptop requirements

Students registering for this course will be receive digital format course kit. To be able to view digital kit students will need to bring a laptop. The recommended system requirements are as under;

- *Windows 7 or 8.1 or 10 is recommended. Mac OSX 10.6 or greater is supported as well.*
- *Intel Celeron or better processors are preferred.*
- *1 GB or more of RAM*
- **Browser requirement:** *Internet Explorer 10 or Mozilla Firefox. (Safari, Mozilla Firefox for Mac OSX)*
- *Note: Our labs currently cannot run on Microsoft Edge (Windows 10) due to it not supporting Extensions/Add-ons or Google Chrome due to Java being removed from the platform itself.*
- *All students are required to have administrator rights to their PCs and cannot be logged in to a domain using any Group Policies that will limit their machine's capabilities.*
- *If you do not have administrator rights to your PC, you at least need permissions to download, install, and run Cisco Any Connect Client and Java.*
- *All PCs require the latest Java Runtime Environment, which can be downloaded from www.java.com.*

Objective

After completing this course the students will learn and understand about;

1. Cisco Nexus 5000 Series Switch family and the Cisco Nexus 2000 Series Fabric Extenders
2. Configure basic interface parameters on the Cisco Nexus 5000 Series Switch interfaces and configure VLANs on the Cisco Nexus 5000 Series Switches
3. Use and configure the RSTP protocol and RSTP extensions on the Cisco Nexus Series Switches
4. Understand FibreChannel Protocol, including FibreChannel addressing, flow control, and login procedures
5. Operation of the FibreChannel over Ethernet (FCoE) protocol, the adapters that are used, and the FCoE Initialization Protocol (FIP). Role of the IEEE DCB Ethernet enhancements required to support FCoE in a unified fabric
6. Configure the Cisco Nexus 5000 Series Switches in switch mode to support FCoE
7. Establish and utilize a structured methodology for troubleshooting FCoE implementations
8. Requirements and the configuration of the relevant SAN switching features on the Cisco Nexus 5000 Series Switches and Cisco MDS switches to support FCoE
9. Understand SAN management tools that can be utilized to manage the Cisco Nexus 5000 Series Switches in a Cisco Unified Fabric
10. Configure the Cisco Nexus 5000 Series Switches in N_Port Virtualization (NPV) mode to support FCoE and configure N_Port ID Virtualization (NPIV)
11. Establish and utilize a structured methodology for troubleshooting the SAN
12. Configure the security features available on the Cisco Nexus 5000 Series Switches, including system message logging, authentication, authorization, and accounting, role-based access control, Secure Shell, and access control lists
13. Configure the system management features available on the Cisco Nexus 5000 Series Switches, including configuring Cisco Fabric Services

Prerequisite Skills and Knowledge

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

- Good understanding of networking protocols
- Recommended CCNA Data Center Certification

Course Outline

This course includes 4 Modules

Module 1: Cisco Nexus 5000 Series Switches

Lesson 1: Describing the Cisco Nexus Product Family

- Cisco Nexus Data Center Product Overview

Lesson 2: Describing Cisco Nexus 3000 Series Switches

- Cisco Nexus 3000 Series Switches
- Cisco Nexus 3000 Series Switch Features

Lesson 3: Describing Cisco Nexus 4000 Series Switches

- Cisco Nexus 4000 Series Switches
- Cisco Nexus 4000 Series Switch Features

Lesson 4: Describing Cisco Nexus 5500 and 5600 Series Switches

- Cisco Nexus 5500 Series Switches
- Cisco Nexus 5500 Series Switch Features
- Cisco Nexus 5500 Series Switch System Architecture
- Cisco Nexus 5600 Series Switches
- Cisco Nexus 5600 Series Switch Features
- Traffic Forwarding Paths

Lesson 5: Describing Cisco Nexus 6000 Series Switches

- Cisco Nexus 6000 Series Switches
- Cisco Nexus 6000 Series Switch Features

Lesson 6: Describing Cisco Nexus 2000 Series Fabric Extenders

- ToR and EoR Deployment Models
- Cisco Nexus 2000 Series Fabric Extender
- Cisco Nexus 7000 with Cisco Nexus 5000 Series and Cisco Nexus 2000
- Fabric Extenders Deployment
- Cisco FEX Technology

Module 2: Cisco Nexus 5000 Series Switch Administration and Management

Lesson 1: Describing the Cisco NX-OS Software Architecture

- Cisco NX-OS Software Architecture
- Cisco NX-OS High-Availability Features
- Stateful and Stateless Process Restart
- The Cisco NX-OS Software CLI
- Licensing Cisco Nexus 5000 Series Switches

Lesson 2: Configuring System Management Features

- *Cisco Nexus 5000 Series Switch Management Methods and Features*
- *Configure File System Management*
- *Configure Cisco Fabric Services*
- *Configure the PTP Server*
- *Configure SNMP*
- *Configure Checkpoints and Rollback*
- *Configure Module Preprovisioning*
- *Configure ISSU*

Lesson 3: Configuring User Management

- *Cisco Nexus 5000 Series Switch User Management Features*
- *Configure AAA*
- *Configure RBAC*
- *Configure SSH*
- *Configure ACLs*
- *Configure IEEE 802.1X*

Lesson 4: Configuring Cisco Prime DCNM

- *Cisco Prime DCNM*
- *Network Configuration Protocol*
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Lesson 5: Describing Administration and Management Troubleshooting Tools

- *Troubleshooting Strategies*
- *Troubleshooting Tools*

- *Configure System Message Logs*
- *Etheralyzer Tool*
- *SPAN and RSPAN*
- *Configure Cisco GOLD*
- *Configure Cisco Smart Call Home*

Module 3: Cisco Nexus 5000 Series Switch LAN Features

Lesson 1: Configuring Cisco Nexus 2000 Series Fabric Extenders

- *Configure Cisco Nexus 2000 Series Fabric Extender*
- *Configure Static Pinning*
- *Configure Dynamic Pinning*

Lesson 2: Troubleshooting Cisco Nexus 2000 Series Fabric Extenders

- *Cisco Nexus 2000 Series Fabric Extenders: Common Issues*
- *Troubleshoot Fabric Link Failure*
- *Troubleshoot FEX Offline*
- *Troubleshoot Host Port Offline*

Lesson 3: Configuring Layer 2 Switching Features

- *Configure Ethernet Interfaces*
- *Port Profiles*
- *Access and Trunk Interfaces*
- *Configure VLANs*
- *Configure Spanning Tree Protocol*
- *Configure DHCP Snooping*
- *Dynamic ARP Inspection*
- *IP Source Guard*
- *Configure Traffic Storm Control*

Lesson 4: Troubleshooting Layer 2 Switching

- *Troubleshooting Layer 2 Switching*
- *MAC Address Table Troubleshooting*
- *VLAN Troubleshooting*
- *Troubleshoot STP Issues*

Lesson 5: Describing vPC Technology and Enhanced vPC

- *Port Channels*
- *Virtual Port Channels*
- *vPC Building Blocks*
- *vPC and Enhanced vPC Designs*
- *vPC and ISSU*

Lesson 6: Configuring vPCs and EvPCs

- *Configure vPCs*
- *Configure Enhanced vPC*

Lesson 7: Troubleshooting vPCs and EvPCs

- *Perform vPC Consistency Checks*
- *Troubleshoot EvPC Deployments*

Lesson 8: Describing Cisco Adapter-FEX and VM-FEX

- *Cisco Adapter-FEX*
- *Cisco VM-FEX*
- *Configure Cisco Adapter-FEX*
- *Configure Cisco VM-FEX*

Lesson 9: Cisco FabricPath

- *Cisco FabricPath*
- *Cisco FabricPath Components*
- *Cisco FabricPath Traffic Flows*

Lesson 10: Configuring Cisco FabricPath

- *Configuring Cisco FabricPath*

Lesson 11: Troubleshooting Cisco FabricPath

- *Common Cisco FabricPath Issues*
- *Troubleshooting Cisco FabricPath*

Lesson 12: Describing Cisco DFA

- *Cisco DFA Architecture*
- *Optimized Networking*
- *Virtual Fabrics*
- *Fabric Management*
- *Cisco DFA Service Support*
- *Workload Automation*
- *Cisco DFA Guidelines and Limitations*

Module 4: Cisco Nexus 5000 Series Switch SAN Features

Lesson 1: Describing FCP

- *SAN Protocols*
- *Fibre Channel*
- *Fibre Channel Flow Control*
- *Fibre Channel Domain Initialization*
- *Fibre Channel Addressing*
- *FSPF Protocol*
- *Fibre Channel Login Procedures*
- *Virtual Fabrics and Zoning*

Lesson 2: Describing SAN Switching

- *Fibre Channel Interfaces*
- *SAN Port Channels*
- *Distributed Device Alias Service*

Lesson 3: Configuring SAN Switching

- *Configure Fibre Channel Interfaces*
- *Configure Domain Parameters*
- *Configure and Manage VSANs*
- *Configure ISLs*
- *Configure SAN Port Channels*
- *Configure the Device Alias*
- *Configure and Manage Zoning*

Lesson 4: Troubleshooting SAN Switching

- *Common SAN Issues*
- *Troubleshoot Zoning*

- *Troubleshoot SAN Port Channel*
- *Troubleshoot VSANs*

Lesson 5: Describing Cisco NPV Mode and NPIV

- *Cisco NPV Mode*
- *N-Port ID Virtualization*

Lesson 6: Configuring Cisco NPV Mode and NPIV

- *Configure Cisco NPV Mode*
- *Configure NPIV*

Lesson 7: Troubleshooting Cisco NPV Mode and NPIV

- *Common Cisco NPV and NPIV Issues*
- *Troubleshoot Cisco NPV Mode*
- *Troubleshooting NPIV Mode*

Module 5: Cisco Nexus 5000 Series Switch Unified Fabric Features

Lesson 1: Describing Data Center Bridging Enhancements

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

Lesson 2: Describing the FCoE Protocol

- *FCoE Architecture*
- *FCoE Emulated Node*
- *FCoE Initialization Protocol*
- *Multihop FCoE*
- *FCoE, Port Channels, and vPCs*
- *FCoE Adapters*

Lesson 3: Configuring FCoE

- *Configure FCoE*
- *FCoE VLANs and Virtual Interfaces*

Lesson 4: Describing Dynamic FCoE with Cisco FabricPath

- *Dynamic FCoE with Cisco FabricPath*
- *Configure Dynamic FCoE with Cisco FabricPath*

Lesson 5: Troubleshooting FCoE

- *Common FCoE Issues*
- *Troubleshooting FCoE*
- *Lab Outline*

Lab Outline

This course includes 18 labs

- 1) *Lab 2-1 Initial Switch Configuration*
- 2) *Lab 2-2 Configuring User Management*
- 3) *Lab 2-3 Graphical Management Tools*
- 4) *Lab 2-4 Configuring System Management*
- 5) *Lab 2-5 Upgrading NX-OS Software with ISSU*
- 6) *Lab 2-6 Using Troubleshooting Tools*
- 7) *Lab 3-1 Configure Layer 2 Switching*
- 8) *Lab 3-2 Trouble-shooting Layer 2 Switching*
- 9) *Lab 3-3 Connect Cisco Nexus 2000 Fabric Extender (FEX)*
- 10) *Lab 3-4 Provisioning Nexus 2000 FEX Active-Active Connection (vPC)*
- 11) *Lab 3-5 Configure a Host vPC. Troubleshooting Nexus 5000 vPC Problems*
- 12) *Lab 3-6 Configuring Nexus 5000 QoS*
- 13) *Lab 3-7 Configuring Cisco FabricPath*
- 14) *Lab 3-8 Configuring Nexus 5000 FCoE*
- 15) *Lab 3-9 Troubleshooting FCoE*
- 16) *Lab 3-10 Configuring SAN Switching*
- 17) *Lab 3-11 Configuring N_Port Virtualization & NPIV*
- 18) *Lab 3-12 Troubleshooting SAN Switching*