

Implementing Cisco Catalyst 9000 Series Switches

Duration: 3 Days Course Code: ENC9K Version: 2.0

Overview:

The Implementing Cisco Catalyst 9000 Series Switches (ENC9K) course provides insight into Cisco Catalyst 9000 Series Switches and its solution components. Cisco Catalyst 9000 Series Switches are the next generation in the Cisco Catalyst family of enterprise LAN access, aggregation, and core switches. The switches integrate the new realities of the digital era. The switches are twice as fast, with double the capacity, providing end-to-end security, and automation using centralized management in the Cisco DNA Center.

Target Audience:

Network engineers, designers, managers, and system engineers who are adopting the Cisco Digital Network Architecture (Cisco DNA) and who will use Cisco Catalyst 9000 Switches to enable an SD-Access solution provisioned with DNA Center.

Objectives:

- **After completing this course you should be able to:**
- Review the Cisco Catalyst 9000 Series Switches identify the switches' features and examine the functionalities purpose-built for Cisco DNA and the SD-Access solution.
- Describe the Cisco Catalyst 9200 Series Switch architecture, model types, port types, uplink modules, components including power supplies, and other switch features and capabilities.
- Describe the Cisco Catalyst 9300 Series Switch architecture, model types, port types, uplink modules, and components, including power supplies and stacking cables.
- Describe the Cisco Catalyst 9400 Series Switches, different modular chassis, supervisor and line card options, architectural components, uplink, and power redundancy, and Multigigabit ports
- Describe the Cisco Catalyst 9500 Series Switches, model types, switch components, RFID support, architecture, and switch profiles.
- Describe the Cisco Catalyst 9600 Series Switch architecture, supervisor and line card options, and high availability features.
- Position the different Cisco Catalyst 9000 Series Switch model types in the network, and map older Cisco Catalyst switches to the 9000 family for migration.
- Examine management capabilities of the Cisco Catalyst 9000 Series Switches.
- Describe the Cisco Catalyst 9000 Series Switches deployed in a Cisco StackWise Virtual environment and an SD-Access fabric.
- Describe the new Cisco IOS XE software management, patchability, and Graceful Insertion and Removal (GIR) features on the Cisco Catalyst 9000 Series Switches.
- Describe the scalability and performance features supported by the Cisco Catalyst 9000 Series Switches.
- Describe the Cisco Catalyst 9000 Series Switch support for security, Quality of Service (QoS), and Internet of Things (IoT) convergence features.
- Describe the Cisco Catalyst 9000 Series support for cloud hosting and connectivity, along with automation features
- Explore the SD-Access solution fundamentals, deployment models for the Cisco Catalyst 9000 Series Switch, and the use of Cisco DNA Center to manage infrastructure devices.

Prerequisites:

Attendees should meet the following prerequisites:

- Cisco CCNP Routing and Switching certification or equivalent experience
- Knowledge of configuring LAN routing and switching with legacy Cisco Catalyst switches

Testing and Certification

Recommended as preparation for the following exams:

- There are no exams currently aligned to this course

- Familiarity with the Cisco IOS XE operating system
 - Awareness of Cisco Identity Services Engine (ISE) as an authentication platform and policy manager
 - Familiarity with using network management software
 - Knowledge of Cisco Unified Computing Systems fundamentals
 - Familiarity with Cisco Intent-based networking and policy-based management automation technologies
 - DCACI - Implementing Cisco Application Centric Infrastructure
 - ENCOR - Implementing and Operating Cisco Enterprise Network Core Technologies
 - SCOR - Implementing and Operating Cisco Security Core Technologies
-

Follow-on-Courses:

Should you wish to learn more about the Cisco Identity Services Engine (ISE) then the following course is recommended:

- SISE - Implementing and Configuring Cisco Identity Services Engine Bootcamp
-

Content:

Introducing Cisco Catalyst 9000 Series Switches

- Introducing Cisco Catalyst 9000 Platforms
- Introducing Cisco UDAP ASIC 2.0 and 3.0
- Cisco UDAP 2.0 and 3.0 Core Architecture
- Packet Walk with ASIC
- Cisco Open IOS XE
- Role of Cisco Catalyst 9000 Series Switches in Cisco DNA Architecture
- Cisco Catalyst 9000 Series Licensing

Introducing Cisco Catalyst 9200 Series Switches

- Cisco Catalyst 9200 Product Overview
- Cisco Catalyst 9200 Series Architecture
- Fabric Edge Node for SD-Access
- MACsec-128 Link Encryption
- Cisco Catalyst 9200 Series Front Panel
- Cisco Catalyst 9200 Series Rear Panel
- Cisco Catalyst 9200 Series Switch Models
- Cisco Catalyst 9200 Switch Uplink Modules
- Cisco Catalyst 9200 Series Switches Power Supplies, Stacking and Stack Cables.
- Cisco Catalyst 9200 Series Switches Features and Capabilities

Introducing Cisco Catalyst 9300 Series Switches

- Cisco Catalyst 9300 Product Overview
- Switch Models
- Cisco Catalyst 9300 Switch Uplink Models
- Cisco Catalyst 9300 Series Switches, Power Supplies, Stacking and Stack Cables
- Enhanced Storage Options on Cisco Catalyst 9300
- Cisco Catalyst 9300 Port Layouts
- Multigigabit Ports

Introducing Cisco Catalyst 9400 Series Switches

- Cisco Catalyst 9400 Product Overview
- Cisco Catalyst 9400 4-slot Modular Switch Chassis
- Cisco Catalyst 9400 7-Slot Modular Switch Chassis
- Cisco Catalyst 9400 10-Slot Modular Switch Chassis
- Cisco Catalyst 9400 Supervisor and Line Cards
- Power Supplies
- Cisco Catalyst 9400 High Availability Features
- Cisco Catalyst 9400 Architecture
- Cisco Catalyst 9400 Supervisor Uplinks and Uplink Redundancy
- Cisco Catalyst 9400 Power Redundancy Modes
- Cisco Catalyst 9400 Multigigabit Ports

Introducing Cisco Catalyst 9600 Series Switches

- Cisco Catalyst 9600 Product Overview
- Cisco Catalyst 9600 Series Switch Architecture
- Cisco Catalyst 9600 Supervisor and Line Cards
- Cisco Catalyst 9600 Power Supplies
- Cisco Catalyst 9600 High Availability Features

Positioning Cisco Catalyst 9000 Series Switches

- Positioning Cisco Catalyst 9200 Series Switches
- Positioning Cisco Catalyst 9300 Series Switches
- Positioning Cisco Catalyst 9400 Series Switches
- Positioning Cisco Catalyst 9500 Series Switches
- Positioning Cisco Catalyst 9600 Series Switches
- Migrating from the Cisco Catalyst 2960-X/XR to Cisco Catalyst 9200
- Migrating from the Cisco Catalyst 3850 to the Cisco Catalyst 9300
- Migrating from the Cisco Catalyst 4500E to the Cisco Catalyst 9400
- Migrating from the Cisco Catalyst 4500X, 6840X and 6880 to the Cisco Catalyst 9500
- Migrating from the Cisco Catalyst 6500, 6800 to the Cisco Catalyst 9600

Examining Cisco Catalyst 9000 Series Switches Management Capabilities

- Cisco IOS XE Software Command-Line Interface
- Onboard Cisco IOS XE Software Web User Interface GUI
- Simple Network Management Protocol
- Network Programmability Features
- ThousandEyes Enterprise Agent
- Intent-Based Networking with Cisco DNA Center
- Cisco Prime Infrastructure
- Cisco Prime Infrastructure with Cisco DNA Center
- Cisco DNA Center Platform Extensibility

Deploying Cisco Catalyst 9000 Series Switches in Cisco StackWise Virtual and SD-Access Fabric

- Cisco Stackwise Virtual Topology in N-Tier Network Topology
- Deploying Cisco Catalyst 9000 Series in SD Access Fabric

Describing Scale and Performance Features on Cisco Catalyst 9000 Series Switches

- Bandwidth Per Stack
- Uplinks
- Multigigabit Technology
- Flexible NetFlow
- Forwarding TCAM Resources, Flexible Lookup Tables Shared Across Cores, FlexTables
- Cisco Catalyst 9500 Series Flexible ASIC Templates
- Hierarchical VPLS with MPLS Access
- Routed Pseudowire IRB for IPv4 Unicast
- VRF Aware NAT
- Loop Detection Guard
- VLAN Load Balancing for FlexiLink+

Describing Security, QoS, and IoT Convergence Features on Cisco Catalyst 9000 Series Switches

- Group-Based policy and Cisco TrustSec SGT for Wired and Wireless
- AES-256 MACsec Encryption
- FabricSec Encryption
- Encrypted Traffic Analytics
- Extend Security to Infrastructure with Trustworthy Systems
- Cisco Zero Trust
- ThousandEyes for Cisco Catalyst 9000 Series Switches
- QoS Features and Packet Walk
- Describe IoT Convergence Features on Cisco Catalyst 9000 Series Switches

Describing Cloud and Automation Features on Cisco Catalyst 9000 Series Switches

- Cloud Hosting and Cloud Connectivity
- Telemetry
- DevOps Toolkit
- NETCONF and YANG Management Model
- Cisco DNA Center Programmability
- High Availability Features

Describing Cisco SD-Access Solution and Cisco Catalyst 9000 Series Switches

- Cisco SD-Access Solutions Fundamentals
- Role of the Cisco Catalyst 9000 Series in the Cisco SD-Access Solution
- Cisco DNA Center Components and Architecture
- Cisco DNA Center Four Step Automation WorkFlow for SD-Access
- Device Onboarding and Provisioning with PnP

Labs

- Lab 1: Discover and Automate the Underlay Topology using PnP Base

Introducing Cisco Catalyst 9500 Series Switches

- Cisco Catalyst 9500 Product Overview
- Cisco Catalyst 9500-32C Series Switch
- Cisco Catalyst 9500-32QC Series Switch
- Cisco Catalyst 9500-48Y4C Series Switch
- Cisco Catalyst 9500-24Y4C Series Switch
- Cisco Catalyst 9500-24Q Series Switch
- Cisco Catalyst 9500-12Q Series Switch
- Cisco Catalyst 9500-40X Series Switch
- Cisco Catalyst 9500-16X Series Switch
- Cisco Catalyst 9500 Redundant Platinum Rated Power Supply
- Cisco Catalyst 9500 Modular Fans
- Cisco Catalyst 9500 Series Switch RFID
- Cisco Catalyst 9500-32C Series Architecture
- Cisco Catalyst 9500-32QC Series Architecture
- Cisco Catalyst 9500-48Y4C Series Architecture
- Cisco Catalyst 9500-24Y4C Series Architecture
- Cisco Catalyst 9500-24Q Series 40G Architecture
- Cisco Catalyst 9500-12Q Series 40G Architecture
- Cisco Catalyst 9500-40X Series 10G Architecture
- Cisco Catalyst 9500-16X Series Architecture

Describing New Features on Cisco Catalyst 9000 Series Switches

- Open IOS XE Patchability and Software Management
- Software Upgrades, Backup and Restore
- Graceful Insertion and Removal
- New Licensing Packaging Structure
- Cisco DNA Software Capabilities by Subscription
- Open IOS XE Containers and Hosted Applications

Automation Service of Cisco DNA Center GUI

- Lab 2: Perform GIR on Cisco Catalyst 9000 Series Switch
- Lab 3: Enable and Verify Encrypted Traffic Analytics
- Lab 4: Configure Perpetual PoE and Fast PoE on the Cisco Catalyst 9000 Series Switch
- Lab 5: Explore Switch Management Automation and Programmability
- Lab 6: Deploy Cisco SD-Access Campus Fabric Using Cisco DNA Center Automation

Further Information:

For More information, or to book your course, please call us on 353-1-814 8200

info@globalknowledge.ie

www.globalknowledge.com/en-ie/

Global Knowledge, 3rd Floor Jervis House, Millennium Walkway, Dublin 1