

Implementing Cisco Catalyst 9000 Series Switches

Durée: 180 Jours **Réf de cours: ENC9K** **Version: 4.0** **Méthodes d'apprentissage: E-learning**

Résumé:

The Implementing Cisco Catalyst 9000 Switches (ENC9K) course introduces you to the architecture, capabilities, and implementation of the Cisco® Catalyst® 9000 switching platform. This hands-on course covers many features of this Cisco IOS® XE platform and describes how to manage devices from a single dashboard called Cisco DNA Center™. You will learn how to use the Cisco Catalyst 9000 family of switches to enable Software Defined Access (SD-Access) and provide end-to-end security and automation with centralized management using Cisco DNA Center.

This course is worth 18 Continuing Education Credits.

e-Learning

Interactive self-paced content that provides flexibility in terms of pace, place and time to suit individuals and organisations. These resources also consist of online books, educational podcasts and vodcasts, and video-based learning.

Public visé:

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.

Objectifs pédagogiques:

- **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 ThousandEyes Enterprise Agent using the Docker environment 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.

Pré-requis:

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
- 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
- CCNA - Mettre en oeuvre et administrer des solutions réseaux Cisco
- ENAUI - Implementing Automation for Cisco Enterprise Solutions
- SDAFND - Comprendre les fondamentaux de Cisco SDA

Test et certification

Recommended as preparation for the following exams:

- There are no exams currently aligned to this course

Après cette formation, nous vous conseillons le(s) module(s) suivant(s):

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

- SISE - Mettre en oeuvre et configurer la solution Cisco Identity Services Engine
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Contenu:

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

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

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

- Application Hosting on Cisco Catalyst 9000 Series Switches Using the CLI
- Perform GIR on a Cisco Catalyst 9000 Series Switch
- Application Hosting on Cisco Catalyst 9300 Using Cisco DNA Center
- Configuring and Verifying a Switch Stack
- Enable and Verify Encrypted Traffic Analytics
- Configure Perpetual PoE and Fast PoE on a Cisco Catalyst 9000 Series Switch
- Configure Packet Capture on a Cisco Catalyst 9300 Series Switch
- Explore Switch Management Automation and Programmability

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

Subscription

- Open IOS XE Containers and Hosted Applications

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+