

Cisco DNA Center Programmability Integration Fundamentals

Duración: 3 Días **Código del Curso: N1_DNACPF**

Temario:

DNACPF (Cisco DNA Center Programmability Integration Fundamentals) is a 3-day, instructor-led, Cisco DNA Center course that will help you to become familiar with programmable infrastructure concepts and integrations that support Cisco SD-Access, DNA Center, and the Cisco Catalyst 9000 Series switch programming. In this course you will learn about production solutions that run on or interact with IOS-XE on the Catalyst 9000 switches.

Dirigido a:

The primary audience for this course is as follows:

- Personnel involved in SD-Access Design, Implementation, and Integration
- Network Operations team with SD-Access solution
- Network admin staff that deal with Software Defined Networking
- Network Administrators
- Network Architects
- Network Engineers

Objetivos:

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| ■ Upon completing this course, the learner will be able to meet these overall objectives: | ■ Understand SD-Access |
| ■ Describe what is SDN and Network Programmability | ■ Discuss how to apply Cisco Software-Defined Access programmatically |
| ■ Describe use cases and examples of Catalyst 9000 programmability | ■ Understand the Use Cases and Problems Solved with SDN programmability |
| ■ Learn about Python and how it automates the Catalyst 9000 | ■ Explain an overview of OpenFlow and Network Controllers |
| ■ Understand object-oriented programming | ■ Explain an overview of Human Interaction DevOps-Style |

Prerequisitos:

It is recommended, but not required, that students have the following knowledge and skills:

- Familiarity with Catalyst 9k Switches
- Familiarity with DNA Center and SD-Access

Contenido:

Module 1: SD-Access Introduction

- SDA Quick Overview
- SDA Key Benefits
- Technical Overview
- LISP
- Cisco Trustsec
- VXLAN
- Network Fabric
- SDA Overlay Key Components
- Control Plane
- Data Plane
- Policy Plane
- SDA Fabric Roles ; Terminology
- DNA Controller
- Identity Services
- Analytics Engine (NDP)
- Control Plane
- Edge Nodes
- Border Nodes
- Virtual Network
- Scalable Groups
- VXLAN Encapsulation

Module 2: SDA Wireless Architecture

- SDA Wireless Architecture Overview
- SDA Wireless Benefits
- Policy Rollout
- Wireless Integration in SDA Fabric

Module 3: SDA Deployment

- Security Analytics
- Firewalls
- Public and Private Cloud Integration

Module 5: DNA Assurance

- DNA Center Architecture
- Cisco DNA Assurance Introduction
- DNA Assurance Architecture
- Telemetry Collection Overview
- DNA Assurance Getting Started
- Full Stack Visibility
- Network ; Client Experience
- Intelligent Capture
- Real Time Monitoring RF
- Path Trace
- Sensor-based Proactive Monitoring
- Application Experience
- Issue Remediation
- AI Network Analytics
- Machine Reasoning

Module 6: Python Programming

- Programmability Overview
- APIs Primer
- Python Foundation Overview
- Lists, Tuples ; Dictionaries
- Control Sentences
- Functions
- Modules
- Classes
- Error Handling (Exceptions)

Module 7: Programming SDA and DNA Center

- DNA Center Architecture Overview
- DNA Controller
- DNA Center Automation
- DNA Center APIs
- Building DNA Center Applications

Module 8: Cisco Catalyst 9K Introduction

- Intent Based Networking
- Cisco Catalyst 9K Features and Characteristics
- Cisco Catalyst 9K IOS-XE
- Catalyst 9K Platform Support
- Linux Service Containers Introduction
- Python Programmability Introduction
- Zero-Touch Provisioning, iPXE, PnP
- CLI – Legacy, Python CLI, Guest Shell

Module 9: Catalyst 9K and Cisco Application Framework

- Operations

- Messages

- Using RestConf

■ Telemetry Introduction

Module 12: Model Driven Telemetry

- Yang Data Streaming
- Telemetry History
- gRPC
- Collectors ; Renderers
- ELK

- Elastic Search

- Logstash

- Kibana

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- Telegraph

- Influx

- Grafana

- Quick Start with Docker
- Publication Types
- Telemetry Subscriptions
- IOS-XE 16.x and 17.x Yang Model Support
- Yang Model Metadata
- CLI and XML Configuration Examples
- Pipeline
- Splunk

Module 13: 3rd Party Integrations

- ServiceNow
- Splunk

LAB OUTLINE

Lab 1: Intro DNA Center

Lab 2: DNA Assurance

Lab 3: DNA Center API Discovery

Lab 4: Setup Machine for Development

- Digital Network Architecture
- Campus Fabric Automation
- Smart CLI
- Programmable APIs
- DNA Center – SD-Access WorkFlow

- Design

- Provision

- Policy

- Assurance

Module 4: SDA Center Ecosystems Integrations

- Event Notifications and Webhooks
- Integrations Overview
- DevOps Integrations
- ChatOps Integrations
- Use Cases

- ITSM Integrations

- Client Insights with Apple Analytics

- IP Address Management (IPAM)

- Network Orchestrators

- Policy Orchestrators

- Cisco Application Framework / Virtual Service Infra (IOX)
- Cisco Catalyst 9K Application Hosting
- Application Hosting Value Proposition
- Catalyst 9K Switching Application Ecosystem
- Virtual Machines
- KVMs
- Containers

- General LXC (Linux Service Containers)

- GuestShell (pre-packaged LXC)

- Other pre-packaged LXC's, ie PerfSonar

- Python Programmability in Depth
- Python API
- Zero Touch Provisioning (ZTP) and Plug 'n Play

Module 10: Catalyst 9K EEM Python Module

- EEM Overview
- Python Scripting in EEM
- EEM Python Package
- Python-Supported EEM Actions
- EEM CLI Library Command Extensions

Module 11: Data Models ; Model Driven Programmability

- Why Models are Important
- YANG data models

- Native models

- IETF models

- OpenConfig models

- Data Encoding

- XML

- JSON

- YANG Tools

- YANG Explorer

- YANG Catalog

- Pyang

- NetConf

- History

Lab 5: Python Overview

Lab 6: Programming Cisco DNA Center

Lab 7: Managing the Guest Shell

Lab 8: Running Python Scripts as Part of EEM Applet Actions

Lab 9: NETCONF/RESTConf

Lab 10: YANG Data Modeling ; YANG Explorer, YANG Catalog and pYANG

Lab 11: Catalyst 9K - Application Hosting

Lab 12: Programming Telemetry

Lab 13: Integrating DNAC with ServiceNow

Lab 14: Integrating DNAC with Splunk

- Protocol layers
- Operations
- Messages
- Using NetConf
- RESTConf
- History
- Protocol layers

Más información:

Para más información o para reservar tu plaza llámanos al (34) 91 425 06 60

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