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Implementing Automation for Cisco Data Center Solutions (DCAUI)

| PRICE: $2995 | DURATION: 3 DAYS | FORMAT: Live/Virtual |

Course Description

The Implementing Automation for Cisco Data Center Solutions (DCAUI) v1.0 course teaches you how to implement Cisco® Data Center automated solutions including programming concepts, orchestration, and automation tools. Through a combination of lessons and hands-on practice, you will manage the tools and learn the benefits of programmability and automation in the Cisco-powered Data Center. You will examine Cisco Application Centric Infrastructure (Cisco ACI®), Software-Defined Networking (SDN) for data center and cloud networks, Cisco Nexus® (Cisco NX-OS) platforms for device-centric automation, and Cisco Unified Computing System (Cisco UCS®) for Data Center compute. You will study their current ecosystem of Application Programming Interfaces (APIs), software development toolkits, and relevant workflows along with open industry standards, tools, and APIs, such as Python, Ansible, Git, JavaScript Object Notation (JSON), Yaml Ain't Markup Language (YAML), Network Configuration Protocol (NETCONF), Representational State Transfer Configuration Protocol (RESTCONF), and Yet Another Generation (YANG). This course prepares you for the 300-635 Automating Cisco Data Center Solutions (DCAUTO) certification exam.

The 300-635 DCAUTO exam certifies your knowledge and skills related to implementing Data Center automated solutions including programming concepts, orchestration, and automation tools. After you pass 300-635 DCAUTO exam, you earn the Cisco Certified DevNet Specialist – Data Center Automation and Programmability certification, and you satisfy the concentration exam requirement for the   CCNP® Data Center and Cisco Certified DevNet Professional certifications.

Who Should Attend

- Network engineer

- Systems engineer

- Wireless engineer

- Consulting systems engineer

- Technical solutions architect

- Network administrator

- Wireless design engineer

- Network manager

- Site reliability engineer

- Deployment engineer

- Sales engineer

- Account manager

Course Prerequisites

- Basic programming language concepts

- Basic understanding of virtualization and VMware

- Ability to use Linux and Command Line Interface (CLI) tools, such as Secure Shell (SSH) and bash

- CCNP level data center knowledge

- Foundational understanding of Cisco ACI

Course Objectives

- Review Cisco ACI fundamental concepts and GUI workflows, and create the case for implementing automation

- Introduce the Cisco ACI REST API, the tools already available on the Cisco Application Policy Infrastructure Controller (APIC), and understand basic API interaction using Postman

- Understand the functionality provided by the Python ACI libraries and write scripts that apply configuration and verify state on the Cisco ACI fabric

- Understand Cisco ACI Ansible modules, build playbooks that apply Infrastructure-as-Code concepts to Cisco ACI tenant configuration, and generate a health report using Ansible

- Understand Cisco ACI Apps Center integration and the benefits of integrating Kubernetes infrastructure with Cisco ACI

- Understand the API types and capabilities available on Cisco Nexus product family

- Understand Day 0 operations and how Zero Touch Provisioning (ZTP), PowerOn Auto Provisioning (POAP), and enhanced Pre-boot eXecution Environment (iPXE) fulfill these goals with their respective tooling

- Understand functionality provided by the on-box tooling on the Cisco Nexus series switches and implement simple solutions to improve daily operation

- Use Python and Ansible to leverage the NX-API to implement and verify configuration state using modern workflows

- Understand the paradigm shift of Model-Driven Telemetry and explore a fully set up pipeline for data collection and analysis

- Understand the Cisco UCS developer tools and implement management workflows leveraging Cisco UCS APIs, Python, and Ansible modules

- Leverage Cisco UCS Director APIs to manage infrastructure using Postman and Python scripts

- Review Cisco Data Center Network Manager (DCNM) product capabilities and understand how its API can be beneficial to automating the Cisco Data Center

- Understand the advantages of using Cisco Intersight™ and how to implement automation tasks using its REST APIs via Python and Ansible

Course Outline

- Describing the Cisco ACI Policy Model

- Describing the Cisco APIC REST API

- Using Python to Interact with the ACI REST API

- Using Ansible to Automate Cisco ACI

- Describing Cisco ACI Apps Center and Kubernetes Integration

- Introducing Cisco NX-OS Programmability

- Describing Day-Zero Provisioning with Cisco NX-OS

- Implementing On-Box Programmability and Automation with Cisco NX-OS

- Implementing Off-Box Programmability and Automation with Cisco NX-OS

- Understanding Model-Driven Telemetry

- Automating Cisco UCS Using Developer Tools

- Implementing Workflows Using Cisco UCS Director

- Describing Cisco DCNM

- Describing Cisco Intersight-

Lab Outline

- Use Cisco APIC Web GUI

- Discover the Cisco APIC REST API

- Use Postman with the APIC REST API

- Use Python with the Cisco APIC REST API

- Configure and Verify Cisco ACI Using Acitoolkit

- Use Cobra and Arya to Recreate a Tenant

- Manage Configuration Using Ansible

- Set Up a New Tenant the NetDevOps Way

- Create an Infrastructure Health Report

- Install an Application from the App Center on the Cisco APIC

- Power on Auto Provisioning on the Cisco Nexus 9000

- Use Bash and Guest-Shell on Cisco NX-OS

- Use Python to Enhance CLI Commands

- Trigger a Python Script Using Cisco Embedded Event Manager (EEM)

- Docker Containers on NX-OS

- Configure and Verify Using NX-API and Python

- Configure and Verify Using NETCONF/YANG

- Use Ansible with NX-OS

- Streaming Telemetry

- Connect, Query, and Modify Cisco UCS Manager Objects Using Cisco UCS PowerTool

- Connect, Query, and Modify Cisco UCS Integrated Management Controller (IMC) Objects Using Cisco IMC PowerTool

- Utilize Cisco UCS Python Software Development Kit (SDK)

- Utilize Cisco IMC Python SDK

- Implement Ansible Playbooks to Modify and Verify the Configuration of Cisco UCS Manager