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# Implementing Automation for Cisco Enterprise Solutions

DURATION: 3 DAYS

COURSE CODE: ENAUI

FORMAT: LECTURE/LAB

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## COURSE DESCRIPTION

The Implementing Automation for Cisco Enterprise Solutions (ENAUI) v1.0 course teaches you how to integrate programmability and automation in the Cisco®-powered Enterprise Campus and Wide Area Network (WAN) using programming concepts, orchestration, telemetry, and automation tools to create more efficient workflows and more agile networks. Through a combination of lessons and hands-on labs, you will gain knowledge and skills for using Cisco Internetworking Operating System (Cisco IOS®-XE) for device-centric automation, Cisco Digital Network Architecture (Cisco DNA™) Center for the intent-based enterprise network, Cisco Software-Defined (SD) WAN, and Cisco Meraki™. You will study software development toolkits, industry-standard workflows, tools, and Application Programming Interface (APIs), such as Python, Ansible, Git, JavaScript Object Notation (JSON), YAML Ain't Markup Language (YAML), Network Configuration Protocol (NETCONF), Representational State Configuration Protocol (RESTCONF), and Yet Another Generation (YANG).

This course prepares you for the 300-435 Automating Cisco Enterprise Solutions (ENAUTO) certification exam.

The 300-435 ENAUTO exam certifies your knowledge and skills in implementing Enterprise automated solutions, including programming concepts, Python programming, APIs, controllers, and automation tools.

After you pass 300-435 ENAUTO, you earn the Cisco Certified DevNet Specialist - Enterprise Automation and Programmability certification, and you satisfy the concentration exam requirement for the CCNP® Enterprise 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  
Sales engineer  
Account manager

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## PREREQUISITES

Basic programming language concepts  
Basic understanding of virtualization  
Ability to use Linux and CLI tools, such as Secure Shell (SSH) and bash  
Networking knowledge equivalent to the CCNP level  
Foundational understanding of Cisco DNA, Meraki, and Cisco SD-WAN

## LEARNING OBJECTIVES

Describe the various models and APIs of the Cisco IOS-XE platform to perform Day 0 operations, improve troubleshooting methodologies with custom tools, augment the Command-Line Interface (CLI) using scripts, and integrate various workflows using Ansible and Python

Explain the paradigm shift of model-driven telemetry and the building blocks of a working solution

Control the tools and APIs to automate Cisco DNA infrastructure managed by Cisco DNA Center™

Demonstrate workflows (configuration, verification, health checking, and monitoring) using Python, Ansible, and Postman

Explain Cisco SD-WAN solution components, implement a Python library that works with the Cisco SD-WAN APIs to perform configuration, inventory management, and monitoring tasks, and implement reusable Ansible roles to automate provisioning new branch sites on an existing Cisco SD-WAN infrastructure

Manage the tools and APIs to automate Cisco Meraki managed infrastructure and demonstrate workflows (configuration, verification, health checking, monitoring) using Python, Ansible, and Postman

## COURSE OUTLINE

1. **Introducing Cisco SD-WAN Programmability**
2. **Building Cisco SD-WAN Automation with Python**
3. **Building Cisco SD-WAN Automation with Ansible**
4. **Managing Configuration with Ansible and Network Automation and Programmability Abstraction Layer with Multi-vendor support (NAPALM)**
5. **Implementing On-Box Programmability and Automation with Cisco IOS XE Software**
6. **Implementing Model-Driven Telemetry**
7. **Day 0 Provisioning with Cisco IOS-XE**
8. **Automating Cisco Meraki**
9. **Implementing Meraki Integration APIs**
10. **Implementing Automation in Enterprise Networks**
11. **Building Cisco DNA Center Automation with Python**
12. **Automating Operations using Cisco DNA Center**

## DISCOVERY LABS

- 1: Perform Administrative Tasks Using the Cisco SD-WAN API
- 2: Build, Manage, and Operate Cisco SD-WAN Programmatically
- 3: Consume SD-WAN APIs Using the Uniform Resource Identifier (URI) Module
- 4: Build Reports Using Ansible-Viptela Roles
- 5: Manage Feature Templates with Ansible
- 6: Use NAPALM to Configure and Verify Device Configuration
- 7: Implement On-Box Programmability and Automation with Cisco IOS XE Software
- 8: Use Python on Cisco IOS XE Software
- 9: Implement Streaming Telemetry with Cisco IOS XE
- 10: Implement Cisco Meraki API Automation
- 11: Explore Cisco Meraki Integration APIs
- 12: Explore Cisco Meraki Webhook Alerts