

# Automating and Programming Cisco Enterprise Solutions (ENAUTO) 2.0

**Duration: 40 HRS**

## **Description**

The **Automating and Programming Cisco Enterprise Solutions (ENAUTO)** training teaches you how to implement Cisco Enterprise automated solutions, including programming concepts, orchestration, telemetry, and automation tools. The goal of this training is to highlight the tools and the benefits of leveraging programmability and automation in the Cisco-powered Enterprise Campus and WAN. Examined platforms include Cisco IOS XE software for device-centric automation, Cisco Catalyst Center for the intent-based enterprise network, Cisco Catalyst Software-Defined WAN (SD-WAN), and Cisco Meraki. Their current ecosystem of APIs, software development toolkits, and relevant workflows are inspected in detail together with open industry standards, tools, and APIs, such as Python, Ansible, Git, JSON/YAML, NETCONF/RESTCONF, and YANG.

## **How You'll Benefit**

This training will help you:

- Gain hands-on experience automating Cisco enterprise networks using Python, Ansible, APIs, and modern automation tools
- Explore automation across multiple Cisco platforms, including IOS XE, Catalyst Center, SD-WAN, and Meraki
- Learn to leverage AI and security best practices in network automation to boost operational efficiency and reliability
- Prepare for the 300-435 ENAUTO v2.0 exam

## **Who Should Enroll**

- Network Engineers
- Systems Engineers
- Wireless Engineers

- Consulting Systems Engineers
- Technical Solutions Architects
- Network Administrators

## Course Outline

- Network Automation Models
- Network Automation Tooling
- CLI Automation with Python
- NETCONF and RESTCONF Automation
- Automating Configuration Monitoring
- Device Automation with Ansible
- On-Box Automation
- Controller-Based Day-0 Provisioning
- Catalyst Center Day-0 with Configuration Management
- Advanced Configuration Templates
- Controller-Based Configuration Management with Ansible
- Security Automation
- Troubleshoot Controller-Based Network Automation
- Testing and Validating Network Automation
- Controller-Based Software Management
- Automate Network Health Monitoring with Controller APIs
- Monitor Network Health with Streaming Telemetry and Webhooks
- AI Capabilities in Network Controllers
- AI Assistance in Network Automation
- Security Risks in AI-based Automation
- Support AI Agents with Python FastMCP

## Lab Outline

- Explore YANG Trees with YANG Suite
- Validate XML Payloads Against the YANG Schema
- Configure and Monitor Routing with Python and Netmiko
- Configure and Monitor IPsec VPNs with Python and Netmiko
- Manage Device Configurations with ncclient
- Manage Device Configurations with RESTCONF
- Monitor Device Configurations with NETCONF and RESTCONF
- Troubleshoot Network Automation Solutions
- Configuration Compliance with Ansible
- Use Ansible to Configure and Verify Device Configuration
- EEM-Based Device Automation
- On-Box Python-Based Automation
- Python-Based ZTP for Cisco IOS XE Devices
- Manage Device Configuration with Catalyst Center APIs
- Manage Device Configuration with SD-WAN Manager APIs
- Manage Device Configuration with Cisco Meraki APIs
- Construct Advanced Jinja Configuration Templates
- Manage Catalyst Center Devices with Ansible
- Manage Cisco Catalyst SD-WAN Devices with Ansible
- Manage Cisco Meraki Networks with Ansible
- Enforce Network Segmentation with Cisco Catalyst Center APIs
- Enforce Group-Based Access Control with Cisco Catalyst Center APIs
- API-Driven Segmentation and Policy Enforcement with Meraki
- Troubleshoot Cisco Catalyst Center API Authentication

- Troubleshoot Cisco Catalyst SD-WAN Manager API Authentication
- Troubleshoot Cisco Catalyst Center API Requests
- Software Management with Cisco Catalyst Center API
- Software Management with SD-WAN Manager APIs
- Monitor Network Health with Cisco Catalyst Center APIs
- Monitor Network Health with SD-WAN Manager APIs
- Monitor Network Health with Meraki Dashboard APIs
- Subscribe to Device Telemetry Using NETCONF
- Implement Webhook-Based Alerting with Cisco Catalyst Center
- Code Development with AI Assistant
- Providing Network Information to MCP Clients Using Python FastMCP