

# Implementing Automation for Cisco Enterprise Solutions (ENAU1) v1.0

## What you'll learn in this course

The **Implementing Automation for Cisco Enterprise Solutions (ENAU1)** v1.0 course teaches you how to integrate programmability and automation in the Cisco<sup>®</sup>-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<sup>®</sup>-XE) for device-centric automation, Cisco Digital Network Architecture (Cisco DNA<sup>™</sup>) Center for the intent-based enterprise network, Cisco Software-Defined (SD) WAN, and Cisco Meraki<sup>™</sup>. 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. **Introducing Automation for Cisco Solutions (CSAU)** is required prior to enrolling in **Implementing Automation for Cisco Enterprise Solutions (ENAU1)** because it provides crucial foundational knowledge essential to success.

## Course duration

- Instructor-led training: 3 days in the classroom with hands-on lab practice
- Virtual instructor-led training: 3 days of web-based classes with hands-on lab practice
- E-learning: Equivalent 3 days in the classroom

## How you'll benefit

This course will help you:

- Gain high-demand skills using modern programming languages, APIs, and systems such as Python, Ansible, and Git to automate, streamline, and enhance business operations
- Acquire the skills and knowledge to customize tools, methods, and processes that improve network performance and agility
- Prepare for the **300-435 ENAUTO** exam



## What to expect in the 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 these professional-level certifications:

- [CCNP® Enterprise](#)
- [Cisco Certified DevNet Professional](#)

## Who should enroll

This course is designed primarily for network and software engineers who are interested in learning about automation and programmability and hold the following job roles:

- Network engineer
- Systems engineer
- Wireless engineer
- Consulting systems engineer
- Technical solutions architect
- Network administrator
- Wireless design engineer
- Network manager
- Sales engineer
- Account manager

## How to enroll

- For instructor-led training, visit the [Cisco Learning Locator](#).
- For private group training, visit [Cisco Private Group Training](#).
- For e-learning, visit the [Cisco Learning Network Store](#).
- For digital library access, visit [Cisco Learning Library](#).
- For other ways to purchase e-learning, contact us at: [learning-bdm@cisco.com](mailto:learning-bdm@cisco.com).

## Technology areas

- Enterprise
- Network automation

## Course details

### Objectives

After taking this course, you should be able to:

- 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

## Prerequisites

Before taking this course, you should have the following knowledge and skills:

- 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

The following Cisco courses can help you gain the knowledge you need to prepare for this course:

- **Introducing Automation for Cisco Solutions (CSAU)**
- **Implementing and Administering Cisco Solutions (CCNA®)**
- **Implementing Cisco Enterprise Network Core Technologies (ENCOR)**

## Outline

- Introducing Cisco SD-WAN Programmability
- Building Cisco SD-WAN Automation with Python
- Building Cisco SD-WAN Automation with Ansible
- Managing Configuration with Ansible and Network Automation and Programmability Abstraction Layer with Multivendor support (NAPALM)
- Implementing On-Box Programmability and Automation with Cisco IOS XE Software
- Implementing Model-Driven Telemetry
- Day 0 Provisioning with Cisco IOS-XE
- Automating Cisco Meraki
- Implementing Meraki Integration APIs
- Implementing Automation in Enterprise Networks
- Building Cisco DNA Center Automation with Python
- Automating Operations using Cisco DNA Center



## Lab outline

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

