



Developing Applications and Automating Workflows Using Cisco Core Platforms (DEVASC)

COURSE CONTENT

The Developing Applications and Automating Workflows Using Cisco Core Platforms (DEVASC) v1.0 course helps you prepare for Cisco® DevNet Associate certification and for associate-level network automation engineer roles. You will learn how to implement basic network applications using Cisco platforms as a base, and how to implement automation workflows across network, security, collaboration, and computing infrastructure. The course gives you hands-on experience solving real world problems using Cisco Application Programming Interfaces (APIs) and modern development tools.

This course will help you:

- Take advantage of the network when you implement applications to fulfill business needs
- Gain a foundation in the essentials of applications, automation, and Cisco platforms
- Prepare for the 200-901 DEVASC exam, which earns Cisco Certified DevNet Associate certification

COURSE OBJECTIVE

After taking this course, you should be able to:

- Describe the importance of APIs and use of version control tools in modern software development
- Describe common processes and practices used in software development
- Describe options for organizing and constructing modular software
- Describe HTTP concepts and how they apply to network-based APIs
- Apply Representational State Transfer (REST) concepts to integration with HTTP-based APIs
- Describe Cisco platforms and their capabilities
- Describe programmability features of different Cisco platforms
- Describe basic networking concepts and interpret simple network topology
- Describe interaction of applications with the network and tools used for troubleshooting issues
- Apply concepts of model-driven programmability to automate common tasks with Python scripts
- Identify common application deployment models and components in the development pipeline
- Describe common security concerns and types of tests, and utilize containerization for local development
- Utilize tools to automate infrastructure through scripting and model-driven programmability

PREREQUISITES

There are no formal prerequisites for Cisco Certified DevNet Associate certification, but you should make sure to have a good understanding of the exam topics before taking the exam.

And before taking this course, you should have:

- Basic computer literacy
- Basic PC operating system navigation skills
- Basic Internet usage skills
- Hands-on experience with a programming language (specifically Python)

COURSE OUTLINE

This class includes lecture sections and self-study sections. In instructor-led classes, lectures are delivered in real-time, either in person or via video conferencing. In e-learning courses, the lectures are on recorded videos. In both versions, you will need to review self-study sections on your own before taking the certification exam.

- Section title
- Practicing Modern Software Development
- Describing Software Development Process
- Designing Software
- Introducing Network-Based APIs
- Consuming REST-Based APIs
- Employing Programmability on Cisco Platforms
- Introducing Cisco Platforms
- Describing IP Networks (ELT only)
- Relating Network and Applications
- Employing Model-Driven Programmability with YANG
- Deploying Applications
- Testing and Securing Applications
- Automating Infrastructure

Lab outline

- Parse API Data Formats with Python
- Use Git for Version Control
- Identify Software Architecture and Design Patterns on a Diagram
- Implement Singleton Pattern and Abstraction-Based Method
- Inspect HTTP Protocol Messages
- Use Postman
- Troubleshoot an HTTP Error Response
- Utilize APIs with Python
- Use the Cisco Controller APIs
- Use the Cisco Webex Teams™ Collaboration API
- Interpret a Basic Network Topology Diagram
- Identify the Cause of Application Connectivity Issues
- Perform Basic Network Configuration Protocol (NETCONF) Operations
- Use Cisco Software Development Kit (SDK) and Python for Automation Scripting
- Utilize Bash Commands for Local Development
- Construct a Python Unit Test
- Interpret a Dockerfile
- Utilize Docker Commands to Manage Local Developer Environment
- Exploit Insufficient Parameter Sanitization
- Construct Infrastructure Automation Workflow