FIREFLY

CISCO PARTNER Platinum Learning

Introducing Automation for Cisco Solutions • CSAU

DURATION: 3 DAYS | **PRICE:** USD 2890 | **CLCs:** 29 | **CE:** 16

COURSE CODE: CSAU | **FORMAT:** Virtual Classroom

COURSE DESCRIPTION

The Introducing Automation for Cisco Solutions (CSAU) training gives you a broad overview of network automation skills. Through a combination of lecture and hands-on labs, you will learn the fundamentals of automation such as working on model-driven programmability solutions with representational state transfer configuration protocol (RESTCONF) and network configuration protocol (NETCONF) protocols. The training also covers data formats and types, including Extensible Markup Language (XML), JavaScript Object Notation (JSON), Yaml Ain't Markup Language (YAML), and Yet Another Next Generation (YANG), and their value in network automation, along with DevOps tools such as Ansible and Git.

HOW YOU'LL BENEFIT

This training will help you:

- Gain an overview of the skills you need to become a next-generation engineer
- Prepare to accelerate network automation in your organization
- Increase collaboration across internal and external teams using version control systems
- Earn 16 CE credits toward recertification

WHO SHOULD ENROLL

- Automation Architects
- Automation Engineers
- Consulting Systems Engineers
- DevOps Engineers
- Network Administrators
- Network Architects
- Network Consulting Engineers
- Network Design Engineers
- Network Engineers
- Network Operators
- Network Reliability Engineers
- Sales Engineers
- Site Reliability Engineers
- Systems Engineers
- Technical Solutions Architects
- Application Developers
- Collaboration Developers
- Collaboration Solutions Architects

• IT Directors
• Mobile Developers
• Network Operations Center (NOC) Managers
• Software Architects
• Web Developers

COURSE OBJECTIVES

• Articulate the role network automation and programmability play in the context of end-to-end network management and operations
• Define and differentiate between waterfall and agile software development methodologies
• Interpret and troubleshoot Python scripts with fundamental programming constructs built for network automation use cases
• Describe how DevOps principles, tools, and pipelines can be applied to network operations
• Understand the role of network automation development environments and associated technologies such as Python virtual environments, Vagrant, and Docker
• Understand and construct HTTP-based application programming interface (API) calls to network devices
• Articulate the differences among and common use cases for XML, JSON, YAML, and protocol buffer (protobuf)
• Construct and interpret Python scripts using the Python requests module to automate devices that have HTTP-based APIs
• Understand the role YANG plays in network automation
• Understand that several tools exist to simplify working with YANG models
• Describe the functionality of RESTCONF and NETCONF and the differences between them
• Construct Ansible playbooks to configure network devices and retrieve operational state data from them
• Build Jinja2 templates and YAML data structures to generate desired state configurations

COURSE PREREQUISITES

There are no prerequisites for this training. However, the knowledge and skills you are recommended to have before attending this training are:

• Routing and switching including open shortest path first (OSPF), border gateway protocol (BGP), and basic configuration features such as interfaces, simple network management protocol (SNMP), and static routes
• Fundamentals of Python data structures and programming constructs, such as loops, conditionals, and classes, or the equivalent of 3–6 months of experience writing Python scripts
• Basic Linux commands for navigating the file system and executing scripts
• Knowledge of working with text editors

The following recommended Cisco offering may help you meet these prerequisites:

• Implementing and Administrating Cisco Solutions (CCNA)

COURSE OUTLINE

• Examining Network Management and Operations
• Exploring Software Development Methodologies
• Using Python for Network Automation
• Describing NetDevOps: DevOps for Networking
• Managing Automation Development Environments

• Introducing HTTP Network APIs
• Reviewing Data Formats and Data Encoding
• Using Python Requests to Automate HTTP-Based APIs
• Exploring YANG
Using YANG Tools
• Automating Model-Driven APIs with Python
• Introducing Ansible for Network Automation
• Templating Configurations with Jinja2

LAB OUTLINE

• Use Network Automation Scripts
• Enforce Python Fundamentals on the Interactive Interpreter
• Automate Networks with Netmiko
• Use the Git Version-Control System and Collaborate on an Internal Project
• Build Reproduceable Automation Environments
• Use HTTP-Based APIs with Postman
• Explore YAML and JSON Data
• Consume HTTP-Based APIs with Python Requests
• Explore YANG Tools
• Explore RESTCONF with Python
• Explore NETCONF with Python
• Configure Network Devices with Ansible
• Collect Network Data with Ansible
• Build and Deploy Configurations with Ansible

Instructor Led Training

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