Introducing Automation for Cisco Solutions (CPLL-CSAU)

Duration: 180 Days

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.

This training also earns you 16 Continuing Education (CE) credits toward recertification.

Skills You'll Learn:

- To define and differentiate between waterfall and agile software development methodologies
- To construct and interpret Python scripts using the Python request module
- To understand and construct HTTP-based API calls to network devices

Learning Path 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 a number of 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