Implementing Automation for Cisco Service Provider Solutions (SPAUI)

Description

The Implementing Automation for Cisco Service Provider Solutions (SPAUI) v1.0 course prepares you to implement and support automation solutions in a Service Provider network infrastructure, using network programmability principles, protocols, tools, and mechanisms. Through a combination of lessons and hands-on labs, you will learn to deploy, configure, monitor, and operate Service Provider network environments using modern data models. These models allow you to represent operational data and new network management protocols in order to administer hundreds or thousands of devices in a single operation, replacing traditional, time-consuming, error prone, device-by-device Command Line Interface (CLI) management. The course also introduces powerful automation solutions that can streamline network operations.

Niveau
Intermédiaire
Course Content
Implementing Network Device Programmability Interfaces with NETCONF and RESTCONF

- Implement NETCONF Protocol
- Implement RESTCONF Protocol

Implementing Model-Driven Programmability with YANG

- YANG Data Models
- YANG Tools
- YANG Development Kit

Implementing Model-Driven Telemetry

- Implementing Model-Driven Telemetry with gRPC
- Implementing Model-Driven Telemetry with gNMI

Automating Service Provider Network Traffic with Cisco XTC

- Cisco XTC Fundamentals
- Configure Cisco XTC

Automating Networks with Tools That Utilize SSH

- Implement Device Configurations with Python Netmiko Library
- Implement Device Configurations with Ansible Playbooks

Orchestrating Network Services with Cisco NSO

- Cisco NSO Fundamentals
- Cisco NSO Device Manager
- Cisco NSO Services
- Implement Device Configurations with Python

Automating Virtualized Resources with Cisco Elastic Services Controller

- Cisco ESC Architecture
- Cisco ESC Resource Management

Automating the WAN with Cisco WAE

- Describe the Cisco WAE Components

Lab / Exercises

- Explore NETCONF Protocol in Cisco Devices
- Configure Cisco IOS XE Devices with RESTCONF
- Explore Cisco and OpenConfig YANG Data Models with YANG Tools
- Use ncclient and Python to Configure Cisco Devices
- Use YANG Development Kit (YDK) to Configure Cisco Devices
- Configure Model-Driven Telemetry with gRPC
- Configure Model-Driven Telemetry with gNMI
- Configure Path Disjointness with Cisco XTC
- Use Python Netmiko Library to Configure Cisco Devices
- Use Ansible to Configure Cisco Devices
- Use Cisco NSO Device Manager
- Create a Loopback Service Template
- Use Cisco NSO REST API with Postman
- Explore and Use Cisco WAE Features

Documentation

- Digital courseware included

Exam

- This course prepares you to the 300-535 SPAUTO Automating and Programming Cisco® Service Provider Solutions exam. If you wish to take this exam, please contact our secretariat who will let you know the cost of the exam and will take care of all the necessary administrative procedures for you.

Participant profiles

- Network administrators
- Network architects
- Network designers
- Network engineers
- Network managers
- Network Operations Center (NOC) personnel
- Network supervisors

Prerequisites

- CCNP equivalent level of knowledge for Routing and Switching (R&S)
- Cisco Internetworking Operating System (IOS XE) and Cisco IOS XR working experience
- SP Operations experience with routing, Multi-Protocol Label Switching (MPLS) and Virtual Private Network (VPN) Solutions
- Network Programmability Basics (Network Programming Foundations, APIs and Protocols, Network Model Driven APIs and Protocols, Configuration Management with Ansible, Service Provider Network Automation workflows)

Objectives

- Use NETCONF and RESTCONF programmability protocols on Cisco devices
- Describe and use tools to validate YANG data models on Cisco devices
- Describe and configure model-driven telemetry on Cisco devices
- Describe and configure network traffic automation with Cisco XTC
- Describe and use network automation tools that utilize SSH
- Automate service provider network configuration with Cisco NSO
- Describe how to automate virtualized resources with Cisco ESC
- Describe how to automate service provider WAN with Cisco WAE

Virtual Classroom Registration Price (CHF)
2850
Duration (in Days)
3
Reference
CIS-SPAUI