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Learning Style: On Demand

Technology: Cisco

Difficulty: Intermediate

Course Duration: 40 Hours

Implementing Automation for Cisco Service Provider Solutions (SPAUI) v1.0 - On Demand

About this course:

The Implementing Automation for Cisco Service Provider Solutions (SPAUI) v1.0 course prepares you to implement and support automation solutions in 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 CLI management. The course also introduces powerful automation solutions that can streamline network operations.

This course helps you prepare for the Automating Cisco Service Provider Solutions (300-535 SPAUTO) exam. By passing this exam, you earn the Cisco Certified DevNet Specialist - Service Provider Automation and Programmability certification, and you satisfy the concentration exam requirement for two professional-level certifications:

- CCNP Service Provider
- Cisco Certified DevNet Professional

Course Objective:

After taking this course, you should be able to:

- 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

Audience:

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

Prerequisite:

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

- CCNP equivalent level of knowledge for Routing and Switching (R&S)
- Cisco IOS XE and Cisco IOS XR working experience

- Service provider operations experience with routing, Multi-Protocol Label Switching (MPLS) and 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)

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

- Implementing and Operating Cisco Service Provider Network Core Technologies (SPCOR)
- Implementing Cisco Service Provider Advanced Routing Solutions (SPRI)
- Implementing Cisco Service Provider VPN Solutions (SPVI)
- Introducing Automation for Cisco Solutions (CSAU)

Course Outline:

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