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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

Course Information

About this course:

This course masters your skills in using network programmability principles,

protocols, tools, and mechanisms to implement and support automation solutions in service provider network infrastructure

The course introduces powerful automation solutions with which you can streamline network operations. You will also learn using modern data models to deploy, configure, monitor, and operate service provider network environments. 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. The traditional, time-consuming, error prone, device-by-device CLI management will not be required anymore.

Upon completing this course, you will be fully prepared to take the Automating Cisco Service Provider Solutions (300-535 SPAUTO) exam, passing which will get you the Cisco Certified DevNet Specialist - Service Provider Automation and Programmability certification. Once certified, you satisfy the concentration exam requirement for two professional-level certifications:

- Cisco Certified DevNet Professional
- CCNP Service Provider

Course Objective:

After taking this course, you should be able to:

- 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
- 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

Audience:

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

Prerequisite:

You should have the following knowledge and skills before taking this exam:

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

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

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

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