

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

What you'll learn

The Implementing Automation for Cisco Service Provider Solutions (SPAUI) v1.0 training 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 training also introduces powerful automation solutions that can streamline network operations.

This training covers Yet Another Next Generation (YANG) data models and validation tools, Representational State Transfer Configuration Protocol RESTCONF and Network Configuration Protocol (NETCONF) management protocols, model-driven telemetry with Google Remote Procedure Call (gRPC) and Google Network Management Interface (gNMI), traffic automation with XR Transport Control (XTC), Secure Shell (SSH)-based automation tools like NetMiko and Ansible, orchestration provided by Network Services Orchestration (NSO), Network Function Virtualization (NFV) lifecycle management with Elastic Services Controller (ESC), and network operations automation with WAN Automation Engine (WAE). This training prepares you for the 300-535 Automating and Programming Cisco® Service Provider Solutions (SPAUTO) exam.

Introducing Automation for Cisco Solutions (CSAU) is required prior to enrolling in Implementing Automation for Cisco Service Provider Solutions (SPAUI) because it provides crucial foundational knowledge essential to success. This training also earns you 24 Continuing Education (CE) credits towards recertification.

How you'll benefit

This training will help you:

Use network programmability to scale and streamline Service Provider network infrastructure

Gain hands-on experience in using modern data models to manage Service Provider network infrastructure

What to expect in the exam



The 300-535 SPAUTO exam certifies your knowledge and skills related to implementing service provider automated solutions, including programming concepts, orchestration, programming OS, and automation tools.

After you pass 300-535 SPAUTO, you earn the Cisco Certified DevNet Specialist - Service Provider Automation and Programmability certification, and you satisfy the concentration exam requirement for these professional-level certifications:

CCNP Service Provider

Cisco Certified DevNet Professional

Who should enroll

This training is designed for Service Provider networking professionals in job roles such as:

Network administrators

Network architects

Network designers

Network engineers

Network managers

Network Operations Center (NOC) personnel

Network supervisors

Technology areas

Network automation

Service provider

Training overview

Objectives

After taking this training, 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

Prerequisites

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

CCNP equivalent level of knowledge for Routing and Switching (R and 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)

The following Cisco trainings can help you gain the knowledge you need to prepare for this training:

Introducing Automation for Cisco Solutions (CSAU)

Implementing and Operating Cisco Service Provider Network Core Technologies (SPCOR)

Implementing Cisco Service Provider Advanced Routing Solutions (SPRI)

Implementing Cisco Service Provider VPN Services (SPVI)

Lab outline

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