Understanding Cisco Service Provider Network Foundations (SPFNDU) v1.0

What you'll learn

The Understanding Cisco Service Provider Network Foundations (SPFNDU) v1.0 training is designed to provide you with the foundational knowledge for the suite of Cisco® CCNP® Service Provider trainings. The training expands what you learned from the Cisco CCNA® training with a focus on theoretical and practical knowledge needed for the Service Provider environment. Through a combination of lessons and hands-on practice, you will learn about architectures, protocols, software and hardware platforms, and solutions within the Service Provider realm. While this training does not lead directly to a certification exam, it does cover foundational knowledge critical to the success in the Service Provider Technology track. This training also earns you 30 Continuing Education (CE) credits towards recertification.

How you'll benefit

This training will help you:

Acquire the foundational knowledge to understand the Cisco Service Provider Network methodologies, tools, and functions

Learn the skills to manage the software and hardware platforms, structures, and protocols within the Service Provider realm

Who should enroll

This training is designed for network and software engineers and hold job roles such as:

Network administrator

Network engineer

Network manager

System engineer

Project manager

Network designer

Technology areas

Service Provider

Training overview

Objectives

After taking this training, you should be able to:

Describe network architectures, devices, and software used by service providers

Describe the various Internet governance organizations, their roles, and tools available for governance information verification

Configure Cisco Internetwork Operating System (Cisco IOS®) and Cisco IOS XE routers

Describe Cisco IOS XR software, perform initial configuration, and explain platform daily tasks

Describe various access and core technologies used by service providers

Describe various major switching technologies used by service providers

Describe major overlay technologies and their usage, and configure Virtual Extensible LAN I (VxLAN)

Describe various major routing protocols used by service providers

Configure Layer 3 services used by service providers

Describe Multiprotocol Label Switching (MPLS), components, protocols, and MPLS usage

Describe usage of various services used and maintained by service providers

Introduce Linux networking, Bourne Again Shell (BASH) scripting, and their usage within Cisco IOS XR software

Prerequisites

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

Knowledge of IPv4 and IPv6 Transmission Control Protocol/Internet Protocol (TCP/IP) networking

Familiarity with typical service provider environment

Basic knowledge about networking devices and their roles

Lab outline

Review Lab Environment

Examine Governance Data

Perform an Initial Cisco Internetworking Operating System (IOS XE) Configuration

Configure Connectivity and Connectivity Verification on Cisco IOS XE Devices

Perform Initial Cisco IOS XR Configuration

Configure and Verify Connectivity on Cisco IOS XR

Configure Intermediate System to Intermediate System (IS-IS)

Configure Routing Information Protocol (RIPv2) and RIP extension (RIPng)

Configure Basic Border Gateway Protocol (BGP)

Configure MPLS

Configure Internet Protocol Service Level Agreement (IP SLA)

Configure Hot Standby Router Protocol (HSRP) with Object Tracking

Configure Virtual Routing and Forwarding (VRFs)

Configure Network Time Protocol (NTP)

Use Linux Command Line Interface

Configure IOS XR Using a Bash Script