

## **SPFNDU**

The **Understanding Cisco Service Provider Network Foundations (SPFNDU)** training is designed to provide you with the foundational knowledge for the suite of Cisco® Certified Network Professional (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. You will learn about architectures, protocols, software and hardware platforms, and solutions within the service provider realm. This training 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
- Qualify for professional-level job service provider roles
- Earn 30 CE credits towards recertification

## **Who Should Enroll**

- Network Administrators
- Network Engineers
- Network Managers
- System Engineers
- Project Managers
- Network Designers

## **Course Objectives**

- 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 (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

## Course Prerequisites

There are no prerequisites for this training. However, the knowledge and skills you are recommended to have before attending this training are:

- Knowledge of IPv4 and IPv6 Transmission Control Protocol/Internet Protocol (TCP/IP) networking
- Familiarity with a typical service provider environment
- Basic knowledge about networking devices and their roles

These skills can be found in the following Cisco Learning Offering:

- Implementing and Administering Cisco Solutions (CCNA)

## Course Outline

1. Introducing Service Provider Architectures
2. Describing Internet Governance Organizations
3. Configuring the Cisco IOS and Cisco IOS XE Router
4. Configuring Cisco IOS XR Router
5. Introducing Access and Core Technologies in Service Provider Environment
6. Introducing Routing Technologies in Service Provider Environment

7. Describing MPLS
8. Implementing Layer 3 Services
9. Introducing Switching Technologies in the Service Provider Environment
10. Introducing Overlay Technologies
11. Implementing Service Provider Services
12. Introducing Programmability on Cisco IOS XR Routers

## Lab Outline

1. Review Lab Environment
2. Examine Governance Data
3. Perform an Initial Cisco IOS XE Configuration
4. Configure Connectivity and Connectivity Verification on Cisco IOS XE Devices
5. Perform Initial Cisco IOS XR Configuration
6. Configure and Verify Connectivity on Cisco IOS XR Devices
7. Configure IS-IS
8. Configure RIPv2 and RIPv6
9. Configure Basic BGP
10. Configure MPLS
11. Configure IP SLA
12. Configure HSRP with Object Tracking
13. Configure VRFs
14. Configure NTP
15. Use Linux CLI
16. Configure IOS XR Using a Bash Script