SPNGN1:Building Cisco Service Provider Next-Generation Networks, Part 1 v1.0

Course ID #: 1575-976-ZZ-W

Hours: 35

Course Content

Course Description:

Building Cisco Service Provider Next-Generation Networks, Part 1 course is associated with the CCNA Service Provider certification. The course is a 5-day Instructor Lead Training course that provides network engineers and technicians with the basic knowledge and skills necessary to support a service provider network. The course provides knowledge of the major components of a network and helps learners to understand how service provider networks function. The course introduces IP Next-Generation Network (IP NGN) architecture that helps service providers to build modern, scalable and reliable networks. The course also includes classroom activities with remote labs that are useful to gain practical skills for deploying basic Cisco IOS / IOS XE and Cisco IOS XR software features to operate and support service provider networks.

At Course Completion:

Upon completing the SPNGN1 course, the learner will be able to meet these overall objectives:
- Describe the purpose and function of IP and data network devices
- Describe QoS, MPLS, multicast, high availability, and VPN technologies
- Describe and differentiate IPv4 and IPv6 addressing schemes
- Describe and configure switched and routed network technologies
- Configure IP services like NAT and DHCP
- Configure Cisco IOS, IOS XE, and IOS XR software on Cisco platforms
- Configure transport, access, and edge technologies, as well as security in the network
- Configure network management protocols like Netflow, SNMP, and CDP on Cisco platforms

Target Student:

This course is intended for:
- Channel Partner / Reseller
- Customer
- Employee

Deliver Method:

This course is delivered through a mix of instructor-led training (ILT) and hands-on labs.

Topics:

Module 1: IP Fundamentals
- Lesson 1: Defining Functions of Networking
- Lesson 2: Introducing TCP / IP Layers and the OSI Reference Model
- Lesson 3: Describing TCP / IP Network Layer
- Lesson 4: Describing TCP / IP Transport Layer
- Lesson 5: Explaining Network Security
- Lesson 6: IP Addressing and Subnets
- Case Study 1-2: Configure Subnetting

Module 2: Basic LAN Switching
- Lesson 1: Understanding Ethernet
- Lesson 2: Connecting to an Ethernet LAN
- Lesson 3: Switched LAN Technology
- Lesson 4: Operating a Cisco Switch
- Lesson 5: Switch Security
- Lesson 6: Performing Switched Network Optimizations
- Lesson 7: Troubleshooting Switch Issues

Module 3: Basic IP Routing
- Lesson 1: Exploring the Functions of Routing
- Lesson 2: Introduction to the Cisco IOS XR
- Lesson 3: Configuring Basic Routing
- Lesson 4: Configuring EIGRP
- Lesson 5: Understanding Cisco Router Security

Module 4: Connectivity Technologies
- Lesson 1: Access Technologies
- Lesson 2: Introducing Service Provider Access, Edge, and Transport Technologies
- Lesson 3: Enabling the WAN Internet Connection
- Lesson 4: Introducing Encapsulation
- Lesson 5: Introducing VPN

Module 5: Network Management and Security Labs
- Lab 1-1: Verify Host IP Configuration
- Lab 1-2: Configure Subnetting
- Lab 2-1: Configure Cisco Switches
- Lab 3-1: Configure Basic Router Configuration
- Lab 4-1: Implement Internet Connectivity
- Lab 4-2: Configure Data Link Layer Encapsulation
- Lab 5-1: Configure Network Management Tools
- Lab 5-2: Configure AAA