Building Cisco Service Provider Next-Generation Networks, Part 1 (SPNGN1)

Duration 5 Days

COURSE CONTENT

The 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.

COURSE OBJECTIVES

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 IP 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

COURSE OUTLINE

Module 1, IP Fundamentals, contains 6 lessons, a lab, and case study:
- 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
- Lab 1-1: Verify Host IP Configuration
- Case Study 1-2: Configure Subnetting

Module 2, Basic LAN Switching, contains 7 lessons and a lab:
- 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
- Lab 2-1: Configuring Cisco Switches

Module 3, Basic IP Routing, contains 5 lessons and a lab:
- Lesson 1: Exploring the Functions of Routing
- Lesson 2: Introduction to the Cisco IOS XR
- Lesson 3: Configuring Basic Routing
- Lesson 4: Configuring EIGRP
- Lab 3-1: Configure Basic Router Configuration
- Lesson 5: Understanding Cisco Router Security

Module 4, Connectivity Technologies, contains 5 lessons and 2 labs:
- Lesson 1: Access Technologies
- Lesson 2: Introducing Service Provider Access, Edge, and Transport Technologies
- Lesson 3: Enabling the WAN Internet Connection
- Lab 4-1: Implement Internet Connectivity
- Lesson 4: Introducing Encapsulation
- Lab 4-2: Configure Data Link Layer Encapsulation
- Lesson 5: Introducing VPN

Module 5: Network Management and Security

WHO SHOULD ATTEND

Who Should Attend: (Learner Market in LCMS)
- Channel Partner / Reseller
- Customer
- Employee

PREREQUISITES

- None