
Building Cisco Service Provider Next-Generation Networks, Part 1

Duration: 5 Days **Course Code: SPNGN1** **Version: 1.0**

Overview:

This 5-day course is designed to provide network engineers and technicians with the basic knowledge and skills required 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 Software, IOS XE Software, and Cisco IOS XR Software features to operate and support a service provider network.

Objectives:

- **After you complete this course you will be able to:**
 - Describe how networks function, and identify major network components, functions of network components, and the OSI reference model
 - Using the host-to-host packet delivery process, describe issues that are related to increasing traffic on an Ethernet LAN and identify switched LAN technology solutions to Ethernet networking issues
 - Describe the reasons for extending the reach of a LAN and the methods that can be used
 - Describe the reasons for connecting networks with routers and how routed networks transmit data by using TCP/IP
 - Describe the function of WANs and the major devices of WANs
 - Configure PPP encapsulation, static and dynamic routing, and NAT
 - Describe different management tools that are used to manage a service provider network
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Prerequisites:

Attendees should meet the following prerequisites:

- Basic computer literacy
- Basic Microsoft Windows navigation skills
- Basic Internet usage skills

Testing and Certification

Recommended preparation for exam(s):

- **640-875** - Building Cisco Service Provider Next-Generation Networks, Part 1
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Follow-on-Courses:

Delegates looking to achieve CCNA SP Certification, will also need attend the following course

- SPNGN2 - Building Cisco Service Provider Next-Generation Networks, Part 1
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Content:

IP Fundamentals

- Defining Functions of Networking
- Introducing TCP/IP Layers and the OSI Reference Model
- Managing IP Addressing
- Describing the TCP/IP Transport Layer
- Explaining Network Security

Explaining IP Addressing and Subnets

Basic LAN Switching

- Understanding Ethernet
- Connecting to an Ethernet LAN
- Using Switched LAN Technology
- Operating a Cisco Switch
- Understanding Switch Security
- Performing Switched Network Optimizations
- Troubleshooting Switch Issues

Basic IP Routing

- Exploring the Functions of Routing
- Introducing the Cisco IOS XR
- Configuring Basic Routing
- Configuring EIGRP
- Understanding Cisco Router Security

Connectivity Technologies

- Describing Access Technologies
- Introducing Service Provider Access, Edge, and Transport Technologies
- Enabling the WAN Internet Connection
- Introducing Encapsulation
- Introducing VPN

Network Management and Security

- Collecting Device Data
- Configuring Network Management Tools
- Using AAA

Labs

- Lab 1-1: Verify Host IP Configuration
- Case Study 1-2: Configure Subnetting
- Lab 2-1: Configure a Cisco Switch
- 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

Additional Information:

Cisco currently offer two associate level certifications aimed specifically at Service providers. CCNA SP and CCNA SP OPS. Please ensure you are on your required certification path before starting this course as there are distinct differences between the areas covered.

Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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