

# Building Cisco Service Provider Next Generation Networks, Part 2 (SPNGN2)

Duration: **5 days**

## Who should attend?

Primary target audience:

1. This course is intended primarily for network administrators, network engineers, network managers, and systems engineers who would like to understand how service provider networks function.

Secondary target audience:

1. This course is intended for network designers and project managers. This course is also recommended to all individuals preparing for CCNA SP certification.

## Prerequisites

This is an introductory course for networking. Any exposure or experience to Networking or with Service Providers will be useful. The following knowledge and skills are recommended:

1. Basic computer literacy
2. Basic Microsoft Windows navigation skills
3. Basic Internet usage skills
4. Basic knowledge of networking concepts
5. Basic knowledge of Cisco IOS/IOS XE and Cisco IOS XR software configuration
6. Skills and knowledge equivalent to those learned in [Building Cisco Service Provider Next-Generation Networks, Part 1 \(SPNGN1\)](#)

## Course Objectives

Upon completing this course, you will be able to meet these objectives:

1. Describe the Cisco IP NGN architecture
2. Expand a small, switched LAN to a medium-size LAN with multiple switches, supporting VLANs, trunking, and STP
3. Describe routing concepts as they apply to a P-network and discuss considerations when implementing routing on the network
4. Implement internal and external routing protocols: OSPF, IS-IS, and BGP
5. Describe and implement basic MPLS
6. Determine how to apply ACLs that are based on network requirements, and implement ACLs on a P-network
7. Describe when to use NAT and implement NAT on Cisco routers

8. Describe basic IPv6 concepts and use different configuration scenarios to implement IPv6
9. Describe the fundamentals of Cisco IOS XR technology

## Course Content

The Building Cisco Service Provider Next-Generation Networks, Part 2 (SPNGN2) v1.2 course is an instructor-led course that is presented by Cisco Learning Partners to their end-user customers. This five-day course provides network engineers and technicians with the knowledge and skills that are necessary to implement and support a provider network (P-network).

The course focuses on using Cisco routers and switches that are connected in LANs and WANs, and they are typically found in the P-network. Upon completing this course, learners will be able to configure, verify, and troubleshoot the various Cisco networking devices.

The course also includes classroom activities with remote labs that are useful to gain practical skills when deploying Cisco IOS/IOS XE Software and Cisco IOS XR Software features to operate and support the P-network.