



## Overview

The Cisco CCNA® Service Provider (CCNA Service Provider) certification identifies networking professionals who have associate-level knowledge and skills in deploying and maintaining service provider IP next-generation networks.

The CCNA Service Provider certification emphasizes the network engineer's day-to-day responsibilities of configuring, implementing, and troubleshooting complex carrier-grade network infrastructures.

As service provider infrastructures continue to consolidate legacy networks and adapt new, innovative service offerings over a common IP backbone, there is a growing demand for network engineers who can understand and translate network engineering designs and then accurately deploy and verify those implementations.

## Good Candidates for the CCNA Service Provider Certification

The CCNA Service Provider certification is designed for technical professionals who need to understand and implement Cisco service provider next-generation network infrastructures, technologies, and products. Good candidates for this

certification include networking engineers who work at service provider companies and at enterprises that require maximum network reliability to support critical business functions (for example, financial services companies) and want to deploy carrier-grade-like networks.

More specifically, the primary candidate for this certification includes:

- Service provider network engineers, such as IP or core backbone engineers, infrastructure engineers, edge or aggregation engineers, access engineers, implementation engineers, field engineers, and technical support personnel
- Enterprise network engineers supporting carrier-grade-like network infrastructures
- Channel partner sales engineers "selling to" service providers
- Channel partner field engineers supporting service providers
- Service provider reseller engineers
- Cisco service provider engineers, including Cisco systems engineers, network consulting engineers (NCE), and consulting systems engineers (CSE)

## Benefits of the Cisco CCNA Service Provider Certification

- The Cisco CCNA Service Provider certification provides an entry point for networking professionals wanting to pursue a network engineering career in the highly complex and rapidly evolving service provider sector.
- The entire Cisco CCNA Service Provider certification program provides a validated-development path for networking professionals pursuing the highly valued network engineering role in the service provider area.
- This certification validates Cisco's commitment in the service provider community and addresses the growing demand for training in complex carrier-grade network infrastructures.

## The Role of a Service Provider Network Engineer Associate

The Cisco CCNA Service Provider certification was developed to deliver associate-level, job-ready practical skills and knowledge for the network engineer job role. The skills validated through this certification and its supporting curriculum enable key responsibilities to be fulfilled for the network engineer role, including:

- Interpreting basic network engineering design diagrams
- Implementing network and service build-outs from basic engineering design documents
- Providing input to network designers on network compatibility and optimization suggestions
- Verifying implementations and the start of new services with end-to-end testing
- Providing technical support to operations personnel
- Providing support to remote installation personnel and validating new services
- Performing regression testing prior to network implementations to verify product and feature interoperability and performance to specs
- Providing limited verification of high availability of implementations

## Cisco CCNA Service Provider Curriculum

The Cisco CCNA Service Provider curriculum introduces the candidate to the IP next-generation network (NGN) architecture and provides network engineers with technical information and practice activities to configure, implement, and verify/troubleshoot Cisco Service Provider networking technologies and products for scalable carrier-grade networks. The curriculum also includes remote labs that are useful in providing practical skills on Cisco IOS®, IOS XE, and IOS XR operating systems and command line interfaces.

The curriculum consists of two courses and covers the following major domain areas:

- **Building Cisco Service Provider Next-Generation Networks, Part 1 (SPNGN1) course**
  - IP Networks
  - IPv4 and IPv6 Addressing
  - Switched Network Technologies I (including bridging, switching, Spanning Tree Protocol, Link Aggregation Control Protocol (LACP), Port Aggregation Protocol (PAgP), and Flex Links)
  - Routed Network Technologies I (including Interior Gateway Protocol (IGP) versus Exterior Gateway Protocol (EGP), Enhanced Interior Gateway Routing Protocol (EIGRP), Virtual Routing and Forwarding (VRF), Generic Routing Encapsulation (GRE), route redistribution, and classful versus classless routing)
  - IP Services
  - Cisco Operating Systems and Platforms I (including Cisco IOS, IOS XE, IOS XR CLI operations and configurations)
  - Transport Technologies [including SONET/Synchronous Digital Hierarchy (SDH), Dense Wave Division Multiplexing (DWDM)/IPoDWDM, Passive Optical Network (PON), Metro Ethernet, Gigabit Ethernet, Data Over Cable Service Interface Specification (DOCSIS)]
  - Security in the Network
  - Network Management



- **Building Cisco Service Provider Next-Generation Networks, Part 2 (SPNGN2) course**
  - IP Next-Generation Network Architecture
  - Switched Networked Technologies II [including Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree (MST), Per-VLAN Spanning Tree Plus (PVSTP), VLAN, trunking, InterVLAN routing, REP, 802.1QinQ (QinQ)]
  - Routed Networked Technologies II [including Open Shortest Path First (OSPF), Intermediate System to Intermediate System (IS-IS), Border Gateway Protocol (BGP), Hot Standby Router Protocol (HSRP), Virtual Router Redundancy Protocol (VRRP), Gateway Load Balancing Protocol (GLBP), Access Control List (ACL), Label Distribution Protocol (LDP), Carrier Grade Network Address Translation (NAT)/NAT64]
  - Cisco Operating Systems and Platforms II (including Managing IOS XE and IOS XR software packages)

## Why the Cisco CCNA Service Provider Certification?

- The Cisco CCNA Service Provider certification provides a highly recognized industry credential for network engineering professionals and distinguishes them in the competitive world of IT networking.
- This certification validates network engineer skills in the configuration, implementation, and verification testing or troubleshooting of current service provider IP next-generation networks.
- This certification provides an associate-level entry point for a network engineer career path in deploying the latest industry and Cisco technologies in scalable IP next-generation networks.

## Learn More

For more information about the Cisco CCNA Service Provider certification, visit [www.cisco.com/web/learning/certifications/associate/ccna\\_serviceprovider](http://www.cisco.com/web/learning/certifications/associate/ccna_serviceprovider).

