



Implementing and Operating Cisco Service Provider Network Core Technologies (SPCOR)

What you'll learn in this course

The Implementing and Operating Cisco Service Provider Network Core Technologies (SPCOR) training teaches you how to configure, verify, troubleshoot, and optimize next-generation, Service Provider IP network infrastructures. It provides a deep dive into Service Provider technologies including core architecture, services, networking, automation, quality of services, security, and network assurance.

This training also helps you prepare to take the 350-501 Implementing and Operating Cisco® Service Provider Network Core Technologies (SPCOR) exam, which is part of the CCNP® Service Provider certification and the Cisco Certified Specialist – Service Provider Core certification. This training also earns you 64 Continuing Education (CE) credits towards recertification.

Course duration

- Instructor-led training: 5 days in the classroom with hands-on lab practice plus the equivalent of 3 days of self-study material
- Virtual instructor-led training: 5 days of web-based classes with hands-on lab practice plus the equivalent of 3 days of self-study material
- E-learning: Equivalent of 8 days of content with videos, practice, and challenges

How you'll benefit

This course will help you:

- Configure, verify, troubleshoot, and optimize next-generation, Service Provider IP network infrastructures
- Deepen your understanding of Service Provider technologies including core architecture, services, networking, automation, quality of services, security, and network assurance
- Prepare to take the 350-501 Implementing and Operating Cisco® Service Provider Network Core Technologies (SPCOR) exam

Who should enroll

- Network administrators
- Network engineers
- Network managers
- System engineers
- Project managers
- Network designers

Technology areas

- Service provider networking
- Enterprise networking

Course details

Objectives

After taking this course, you should be able to:

- Describe the Service Provider network architectures, concepts, and transport technologies
- Describe the Cisco Internetwork Operating System (Cisco IOS®) software architectures, main IOS types, and their differences
- Implement Open Shortest Path First (OSPF) in the Service Provider network
- Implement Integrated Intermediate System-to-Intermediate System (IS-IS) in the Service Provider network
- Implement Border Gateway Protocol (BGP) routing in Service Provider environments
- Implement route maps and routing policy language
- Describe IPv6 transition mechanisms used in the Service Provider networks
- Implement high-availability mechanisms in Cisco IOS XR software
- Implement traffic engineering in modern Service Provider networks for optimal resource utilization
- Describe segment routing and segment routing traffic engineering concepts
- Describe the VPN technologies used in the Service Provider environment
- Configure and verify Multiprotocol Label Switching (MPLS) L2VPN in Service Provider environments
- Configure and verify MPLS L3VPN in Service Provider environments
- Implement IP multicast services
- Describe the Quality of Service (QoS) architecture and QoS benefits for SP networks
- Implement QoS in Service Provider environments
- Implement control plane security in Cisco devices
- Implement management plane security in Cisco devices
- Implement data plane security in Cisco devices
- Describe the Yet Another Next Generation (YANG) data modeling language
- Implement automation and assurance tools and protocols
- Describe the role of Cisco Network Services Orchestrator (NSO) in Service Provider environments
- Implement virtualization technologies in Service Provider environments

Recommended knowledge and training

- Intermediate knowledge of Cisco IOS or IOS XE
- Familiarity with Cisco IOS or IOS XE and Cisco IOS XR Software configuration
- Knowledge of IPv4 and IPv6 TCP/IP networking
- Intermediate knowledge of IP routing protocols
- Understanding of MPLS technologies
- Familiarity with VPN technologies

Outline

- Describing Service Provider Network Architectures
- Describing Cisco IOS Software Architectures
- Implementing OSPF for Cisco IOS XR
- Implementing IS-IS for Cisco IOS XR
- Implementing BGP in Service Provider Network
- Implementing Route Maps and RPL
- Transitioning to IPv6 for Cisco IOS XR and IOS XE
- Implementing High Availability in Networking
- Implementing MPLS for Cisco IOS XR
- Implementing Cisco MPLS Traffic Engineering
- Describing Segment Routing
- Describing VPN Services
- Configuring L2VPN Services
- Configuring L3VPN Services
- Implementing Multicast for Cisco IOS XR
- Describing QoS Architecture
- Implementing QoS for Cisco IOS XR
- Implementing Control Plane Security
- Implementing Management Plane Security
- Implementing Data Plane Security
- Introducing Network Programmability
- Implementing Automation and Assurance
- Introducing Cisco NSO
- Implementing Virtualization in Service Provider Environment

How to enroll

To enroll in the SPCOR course or explore our larger catalog of courses on Cisco Digital Learning, contact us at [<training@fastlane-mea.com>](mailto:training@fastlane-mea.com)

Lab outline

- Deploy Cisco IOS XR and IOS XE Basic Device Configuration
- Implement OSPF Routing
- Implement Integrated IS-IS Routing
- Implement Basic BGP Routing
- Filter BGP Prefixes Using RPL
- Implement MPLS in the Service Provider Core
- Implement Cisco MPLS Traffic Engineering (TE)
- Implement Segment Routing
- Implement Ethernet over MPLS (EoMPLS)
- Implement MPLS L3VPN
- Implement BGP Security
- Implement Remotely Triggered Black Hole (RTBH) Filtering

