



IMPLEMENTING AND OPERATING CISCO SERVICE PROVIDER NETWORK CORE TECHNOLOGIES (SPCOR) V1.0

The Implementing and Operating Cisco Service Provider Network Core Technologies (SPCOR) v1.0 course 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 course 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 new CCNP® Service Provider certification and the Cisco Certified Specialist – Service Provider Core certification.

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.
- Earn 64 CE credits toward recertification

Why Attend with Current Technologies CLC

- Our Instructors are the top 10% rated by Cisco
- Our Lab has a dedicated 1 Gig Fiber Connection for our Labs
- Our Labs run up to Date Code for all our courses



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Objectives

Upon completing this course, the student will 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

Course Duration

5 day

Course Price

\$4,595.00

Methods of Delivery

- Instructor Led
- Virtual ILT

Certification Exam

350-501

Cisco CE Credits

64



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Who Should Attend

The primary audience for this course is as follows:

- Network Engineers
- Network Administrators
- Network Managers
- Network Designers
- Systems Engineers
- Project Managers

Prerequisites

Before taking this course, you should have the following knowledge and skills:

- 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

Course Outline

Module 1: Describing Service Provider Network Architectures

Module 2: Describing Cisco IOS Software Architectures

Module 3: Implementing OSPF

Module 4: Implementing IS-IS

Module 5: Implementing BGP

Module 6: Implementing Route Maps and Routing Protocol for LLN [Low-Power and Lossy Networks] (RPL)



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Module 7: Transitioning to IPv6

Module 8: Implementing High Availability in Networking

Module 9: Implementing MPLS

Module 10: Implementing Cisco MPLS Traffic Engineering

Module 11: Describing Segment Routing

Module 12: Describing VPN Services

Module 13: Configuring L2VPN Services

Module 14: Configuring L3VPN Services

Module 15: Implementing Multicast

Module 16: Describing QoS Architecture

Module 17: Implementing QoS

Module 18: Implementing Control Plane Security

Module 19: Implementing Management Plane Security

Module 20: Implementing Data Plane Security

Module 21: Introducing Network Programmability

Module 22: Implementing Automation and Assurance

Module 23: Introducing Cisco NSO

Module 24: Implementing Virtualization in Service Provider Environments

LAB OUTLINE

- Deploy Cisco IOS XR and IOS XE Basic Device Configuration
- Implement OSPF Routing
- Implement Integrated IS-IS Routing



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- 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