

Course Training

Implementing and Operating Cisco Service Provider Network Core Technologies (SPCOR) [350-501]

Course Content

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.

Course Objectives

After taking this training, 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

Course Prerequisite

- 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

Who should attend

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

Course 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