



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

Course ID #: 7000-238-ZZ-Z

Hours: 35

Course Content

Course Description:

Implementing and Operating Cisco Service Provider Network Core Technologies (SPCOR 350-501) is a 5-day course which 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.

At Course Completion:

After completing this course, 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

Prerequisites:

- Intermediate knowledge of Cisco IOS or IOS XE
- Familiarity with Cisco IOS or IOS XE and Cisco IOS XR Software configuration



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- Knowledge of IPv4 and IPv6 TCP/IP networking
- Intermediate knowledge of IP routing protocols
- Understanding of MPLS technologies
- Familiarity with VPN technologies

Target Student:

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

Topics:

Describing Service Provider Network Architectures

Describing Cisco IOS Software Architectures

Implementing OSPF

Implementing IS-IS

Implementing BGP

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

Transitioning to IPv6

Implementing High Availability in Networking

Implementing MPLS

Implementing Cisco MPLS Traffic Engineering

Describing Segment Routing

Describing VPN Services

Configuring L2VPN Services

Configuring L3VPN Services

Implementing Multicast

Describing QoS Architecture

Implementing QoS

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 Environments