Implementing and Operating Cisco Service Provider Network Core Technologies (SPCOR) v1.0 - On Demand

Modality: Self-Paced Learning

Duration: 40 Hours

SATV Value:

CLC: 8 Units

NATU:

SUBSCRIPTION: No

Course Information

About this course:

This course provides a deep dive into Service Provider technologies including networking, automation, quality of services, security, core architecture, services, and network assurance.

It also teaches you how to configure, verify, troubleshoot, and optimize next-generation, Service Provider IP network infrastructures.

Upon completing this course you will be fully prepared to take the Implementing and Operating Cisco Service Provider Network Core Technologies (350-501 SPCOR) exam, which is part of the new CCNP Service Provider and Cisco Certified Specialist – Service Provider Core certifications.

Course Objective:

After taking this course, you should be able to:

- 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 service provider networks
- 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
- Describe the service provider network architectures, concepts, and transport technologies

- Describe the 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
- Implement QoS in service provider environments
- Implement virtualization technologies in service provider environments

Audience:

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

Prerequisite:

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

- Intermediate knowledge of IP routing protocols
- Understanding of MPLS technologies
- Familiarity with VPN technologies
- 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

Course Outline:

- **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**