Implementing and Operating Cisco Service Provider Network Core Technologies

Course Code	SPCOR
Duration	5 days

Overview

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

Please note that this course is a combination of Instructor-Led and Self-Paced Study; 5 days in the classroom and approximately 3 days of self-study. The self-study content will be provided as part of the digital courseware that you will receive at the beginning of the course and should be part of your preparation for the exam.

Audience

Individuals looking to verify, troubleshoot and optmize next-generation, Service Provider IP network infrastructures.

Learning Objectives

By actively participating in this course, you will learn about the following:

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

Pre-Requisites

- 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

Recommended courses:
- CCNA - Implementing and Administering Cisco Solutions

Course Contents

Modules
- 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 Service
- Configuring L2VPN Services
- Configuring L3VPN Services
- Implementing Multicast
- Describing QoS Architecture
- Implementing QoSImplementing 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

Labs
- 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

Exam Details

This course leads to 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.

Further Information

For more information or to book this course, please contact our Course Enquiries Team on **01752 227330** (Option 2) or email us at **enquiries@skilltec.co.uk**.