

Implementing and Operating Cisco Service Provider Network Core Technologies

Duration: 5 Days Course Code: SPCOR Version: 1.0 Delivery Method: Virtual Learning

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 approx 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.

Virtual Learning

This interactive training can be taken from any location, your office or home and is delivered by a trainer. This training does not have any delegates in the class with the instructor, since all delegates are virtually connected. Virtual delegates do not travel to this course, Global Knowledge will send you all the information needed before the start of the course and you can test the logins.

Target Audience:

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

Objectives:

- **After completing this course 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

Prerequisites:

Attendees should meet the following prerequisites:

- 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
- CCNABC - Cisco CCNA Routing and Switching Boot Camp (CCNAX - Accelerated)

Testing and Certification

Recommended as preparation for the following exams:

- **350-501** - Implementing and Operating Cisco® Service Provider Network Core Technologies (SPCOR) exam.
After passing the 350-501-Implementing and Operating Cisco® Service Provider Network Core Technologies (SPCOR) exam, you will automatically be awarded the Cisco Certified Specialist – Service Provider Core certification and will have completed the mandatory core element of the Cisco CCNP Service Provider Certification.

Follow-on-Courses:

- SPAUI - Implementing Automation for Cisco Service Provider Solutions
- SPRI - Implementing Cisco Service Provider Advanced Routing Solutions
- SPVI - Implementing Cisco Service Provider VPN Services

Content:

Describing Service Provider Network Architectures	Implementing Cisco MPLS Traffic Engineering	Implementing Data Plane Security
Describing Cisco IOS Software Architectures	Describing Segment Routing	Introducing Network Programmability
Implementing OSPF	Describing VPN Service	Implementing Automation and Assurance
Implementing IS-IS	Configuring L2VPN Services	Introducing Cisco NSO
Implementing BGP	Configuring L3VPN Services	Implementing Virtualization in Service Provider Environments
Implementing Route Maps and Routing Protocol for LLN [Low-Power and Lossy Networks] (RPL)	Implementing Multicast	Labs
Transitioning to IPv6	Describing QoS Architecture	■ Deploy Cisco IOS XR and IOS XE Basic Device Configuration
Implementing High Availability in Networking	Implementing QoSImplementing Control Plane Security	■ Implement OSPF Routing
Implementing MPLS	Implementing Management Plane Security	■ 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

Further Information:

For More information, or to book your course, please call us on 353-1-814 8200

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