Implementing Cisco Service Provider Advanced Routing Solutions (SPRI) 2.0

Duration: 40 HRS

Description

The **Implementing Cisco Service Provider Advanced Routing Solutions (SPRI)** course teaches you theories and practices to integrate advanced routing technologies including routing protocols, multicast routing, policy language, Multiprotocol Label Switching (MPLS), and segment routing, expanding your knowledge and skills in service provider core networks.

Prerequisite

Before taking this course, you should have Service Provider knowledge at the professional level, equivalent to the material in the following Cisco courses:

- Intermediate to advanced knowledge of Cisco Internetwork Operating System (Cisco IOS®) or IOS XE and Cisco IOS XR Software configuration

- Knowledge of IPv4 and IPv6 TCP/IP networking

- Intermediate knowledge of BGP, OSPF, and ISIS routing protocols

- Understanding of MPLS technologies

- Understanding of multicast technologies

- Familiarity with segment routing

- Knowledge at the professional level equivalent to those learned in the following certifications:

- Implementing and Administering Cisco Solutions (CCNA®)

- Understanding Cisco Service Provided Network Foundations (SPFNDU)

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

Outline

- Configure OSPF Multiarea Networks

- Configure OSPF Special Area Types

- Configure OSPF Optimization Features

- Configure IS-IS Multilevel Networks

- Configure IS-IS Optimization Features

- Introducing Routing Protocol Tools

- Introducing Routing Policy Language

- Influencing Outbound BGP Route Selection

- Influencing Inbound BGP Route Selection

- Scaling BGP in Service Provider Networks

- Implementing Route Redistribution

- Troubleshooting Routing Protocols

- Improving BGP Convergence and Implementing Advanced Operations

- Multiprotocol Label Switching

- Cisco MPLS Traffic Engineering

- Troubleshooting MPLS

- Segment Routing

- Implementing Segment Routing

- Segment Routing for IPv6

- Implementing Segment Routing for IPv6

- Segment Routing TI-LFA

- Segment Routing Traffic Engineering

- Advanced Segment Routing Traffic Engineering Features

- Securing BGP

- Deploying IPv6 Tunneling Mechanisms

- IP Multicast Concepts and Technologies

- Implementing PIM-SM Protocol

- Implementing PIM-SM Enhancements

- Implementing Interdomain IP Multicast

- Implementing MPLS

- Implementing Distributed Rendezvous Point Solution in Multicast Network

Lab Outline

- Implement OSPF Special Area Types (IPv4 and IPv6)

- Implement OSPF Route Summarization (IPv4 and IPv6)

- Implement Multiarea IS-IS

- Implement IS-IS Route Summarization

- Implement Outbound BGP Route Selection

- Implement Inbound BGP Route Selection

- Implement BGP Route Reflectors

- Implement Route Redistribution

- Troubleshoot Routing Protocols

- Configure and Verify IGP Segment Routing

- Configure and Verify SRv6

- Configure and Verify SR TI-LFA Using OSPF

- Configure and Verify SR TI-LFA Using IS-IS

- Configure and Verify SR-TE Using OSPF

- Configure and Verify SR-TE Using IS-IS

- Configure and Verify ODN and Flexible Algorithm

- Implement BGP Security Options

- Implement Tunnels for IPv6

- Enable and Optimize PIM-SM

- Implement PIM-SM Enhancements

- Implement MPLS in the Service Provider Core

- Implement Rendezvous Point Distribution

Who should attend

This course is for professionals who need knowledge about implementing various Service Provider core technologies and advanced routing technologies.

- Network administrators

- System engineers

- Project managers

- Network designers