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**Learning Style: On Demand**

**Technology: Cisco**

**Difficulty: Intermediate**

**Course Duration: 40 Hours**

# Implementing Cisco Service Provider Advanced Routing Solutions (SPRI) v2.0 - On Demand



## About this course:

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.

This course helps you prepare for the Implementing Cisco Service Provider Advanced Routing Solutions (300-510 SPRI) exam.

## Course Objective:

After taking this course, you should be able to:

- Describe the main characteristics of routing protocols that are used in Service provider environments
- Implement advanced features of multiarea Open Shortest Path First (OSPFv2) running in service provider networks
- Implement advanced features of multilevel Intermediate System-to-Intermediate System (IS-IS) running in service provider networks
- Configure route redistribution
- Configure Border Gateway Protocol (BGP) in order to successfully connect the service provider network to the customer or upstream Service Provider
- Configure BGP scalability in service provider networks
- Implement BGP security options
- Implement advanced features in order to improve convergence in BGP networks
- Troubleshoot OSPF, IS-IS, and BGP
- Implement and verify MPLS
- Implement and troubleshoot MPLS traffic engineering
- Implement and verify segment routing technology within an interior gateway protocol
- Describe how traffic engineering is used in segment routing networks
- Implement IPv6 tunneling mechanisms
- Describe and compare core multicast concepts
- Implement and verify the Protocol-Independent Multicast - Sparse Mode (PIM-SM) protocol
- Implement enhanced PIM-SM features
- Implement Multicast Source Discovery Protocol (MSDP) in the interdomain environment

- Implement mechanisms for dynamic Rendezvous Point (RP) distribution

## Audience:

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

## Prerequisite:

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

- Intermediate to advanced knowledge of 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 IS-IS routing protocols
- Understanding of MPLS technologies
- Understanding of multicast technologies
- Familiarity with segment routing

The following Cisco courses can help you gain the knowledge you need to prepare for this course:

- Building Cisco Service Provider Next-Generation Networks Part 1 (SPNGN1)
- Building Cisco Service Provider Next-Generation Networks Part 2 (SPNGN2)
- Deploying Cisco Service Provider Network Routing (SPROUTE)
- Implementing and Administering Cisco Solutions (CCNA)
- Understanding Cisco Service Provider Network Foundations (SPFNDU)
- Implementing and Operating Cisco Service Provider Network Core Technologies (SPCOR)

## Course Outline:

- **Implementing and Verifying Open Shortest Path First Multiarea Networks**
- **Implementing and Verifying Intermediate System to Intermediate System Multilevel Networks**
- **Introducing Routing Protocol Tools, Route Maps, and Routing Policy Language**
- **Implementing Route Redistribution**
- **Influencing Border Gateway Protocol Route Selection**
- **Scaling BGP in Service Provider Networks**
- **Securing BGP in Service Provider Networks**
- **Improving BGP Convergence and Implementing Advanced Operations**
- **Troubleshooting Routing Protocols**
- **Implementing and Verifying MPLS**
- **Implementing Cisco MPLS Traffic Engineering**
- **Implementing Segment Routing**
- **Describing Segment Routing Traffic Engineering (SR TE)**
- **Deploying IPv6 Tunneling Mechanisms**
- **Implementing IP Multicast Concepts and Technologies**
- **Implementing PIM-SM Protocol**
- **Implementing PIM-SM Enhancements**
- **Implementing Interdomain IP Multicast**
- **Implementing Distributed Rendezvous Point Solution in Multicast Network**

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