

## Implementing Cisco Service Provider Advanced Routing Solutions (SPRI)

### COURSE OVERVIEW:

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 prepares you for the 300-510 Implementing Cisco® Service Provider Advanced Routing Solutions (SPRI) exam.

This course will help you:

- Gain the high-demand skills to maintain and operate advanced technologies related to Service Provider core networks
- Increase your knowledge and skills for implementing Service Provider core advanced technologies through hands-on application and practical instruction
- Prepare to take the 300-510 SPRI exam

### WHO WILL BENEFIT FROM THIS COURSE?

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

### PREREQUISITES:

- 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:
- 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 Provided Network Foundations (SPFNDU)
- Implementing and Operating Cisco Service Provider Network Core Technologies (SPCOR)

## **COURSE OBJECTIVES:**

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 (ISIS) 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, ISIS, 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 verifying the PIM-SM protocol
- Implement enhanced Protocol-Independent Multicast - Sparse Mode (PIM-SM) features
- Implement Multicast Source Discovery Protocol (MSDP) in the interdomain environment
- Implement mechanisms for dynamic Rendezvous Point (RP) distribution

## **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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Sunset Learning Institute (SLI) has been an innovative leader in developing and delivering authorized technical training since 1996. Our goal is to help our customers optimize their cloud technology investments by providing convenient, high quality technical training that our customers can rely on. We empower students to master their desired technologies for their unique environments.

What sets SLI apart is not only our immense selection of trainings options, but our convenient and consistent delivery system. No matter how complex your environment is or where you are located, SLI is sure to have a training solution that you can count on!

#### **Premiere World Class Instruction Team**

- All SLI instructors have a four-year technical degree, instructor level certifications and field consulting work experience.
- Sunset Learning has won numerous Instructor Excellence and Instructor Quality Distinction awards since 2012

#### **Enhanced Learning Experience**

- The goal of our instructors during class is ensure students understand the material, guide them through our labs and encourage questions and interactive discussions.

#### **Convenient and Reliable Training Experience**

- You have the option to attend classes at any of our established training facilities or from the convenience of your home or office with the use of our HD-ILT network (High Definition Instructor Led Training)
- All Sunset Learning Institute classes are guaranteed to run – you can count on us to deliver the training you need when you need it!

#### **Outstanding Customer Service**

- Dedicated account manager to suggest the optimal learning path for you and your team
- Enthusiastic Student Services team available to answer any questions and ensure a quality training experience