Implementing Cisco Service Provider Advanced Routing Solutions

Course Code	SPRI
Duration	5 days

Overview

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

Audience

Engineers who maintain and operate advanced Service Provider core networks.

Learning Objectives

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

- Describing the main characteristics of routing protocols that are used in Service provider environments.
- Implementing advanced features of multiarea Open Shortest Path First (OSPFv2) running in Service Provider networks.
- Implementing advanced features of multilevel Intermediate System to Intermediate System (ISIS) running in Service Provider networks.
- Configuring route redistribution.
- Configuring Border Gateway Protocol (BGP) in order to successfully connect the Service Provider network to the customer or upstream Service Provider.
- Configuring BGP scalability in Service Provider networks.
- Implementing BGP security options.
- Implementing advanced features in order to improve convergence in BGP networks.
- Troubleshooting OSPF, ISIS, and BGP.
- Implementing and verifying MPLS.
- Implementing and troubleshooting MPLS traffic engineering.
- Implementing and verifying segment routing technology within an interior gateway protocol.
- Describing how traffic engineering is used in segment routing networks.
- Implementing IPv6 tunnelling mechanisms.
- Describing and comparing core multicast concepts.
- Implementing and verifying the PIM-SM protocol.
- Implementing enhanced Protocol-Independent Multicast - Sparse Mode (PIM-SM) features.
- Implementing Multicast Source Discovery Protocol (MSDP) in the interdomain environment.
- Implementing mechanisms for dynamic Rendezvous Point (RP) distribution.

Pre-Requisites

- ▶ 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

Recommended courses:
- ▶ SPCOR - Implementing and Operating Cisco Service Provider Network Core Technologies
- ▶ SPFNDU - Understanding Cisco Service Provider Network Foundations

Course Contents

Modules
- ▶ 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

Labs
- ▶ Implement OSPF Special Area Types (IPv4 and IPv6)
- ▶ Implement Multiarea IS-IS
- ▶ Implement Route Redistribution
- ▶ Influence BGP Route Selection
- ▶ Implement BGP Route Reflectors
- ▶ Implement BGP Security Options
- ▶ Troubleshoot Routing Protocols
- ▶ Implement MPLS in the Service Provider Core
- ▶ Implement Cisco MPLS TE
- ▶ Configure and Verify Interior Gateway Protocol (IGP) Segment Routing
- ▶ Implement Tunnels for IPv6
- ▶ Enable and Optimize PIM-SM
- ▶ Implement PIM-SM Enhancements
- ▶ Implement Rendezvous Point Distribution

Exam Details

This course leads to the 300-510 - Implementing Cisco Service Provider Advanced Routing Solutions (SPRI) exam.

Successful completion of this exam will earn you the Cisco Certified Specialist - Service Provider Advanced Routing Implementation certification, and you satisfy the concentration exam requirement for the CCNP Service Provider 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**.