6210 Central Ave, Portage, IN. 46368 Phone: 219.764.3800 Fax: 219.764.3805 Web: http://www.ctclc.com

IMPLEMENTING CISCO SERVICE PROVIDER ADVANCED ROUTING SOLUTIONS (SPRI) V1.0

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.

How you'll benefit

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 though hands-on application and practical instruction
- Earn 40 CE credits toward recertification
- Prepare to take the 300-510 SPRI exam

Why Attend with Current Technologies CLC

- Our Instructors are the top 10% rated by Cisco
- Our Lab has a dedicated 1 Gig Fiber Connection for our Labs
- Our Labs run up to Date Code for all our courses

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Course Duration

5 day

Course Price

$4,595.00

Methods of Delivery

- Instructor Led
- Virtual ILT

Certification Exam

300-510

Cisco CE Credits

40

Objectives

Upon completing this course, the student will 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

Who Should Attend

The primary audience for this course is as follows:

- Network Engineers
- Network Administrators
- Project Managers

- Network Designers

Prerequisites

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

- 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

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

Module 1: Implementing and Verifying Open Shortest Path First Multi-area Networks

Module 2: Implementing and Verifying Intermediate System to Intermediate System Multilevel Networks

Module 3: Introducing Routing Protocol Tools, Route Maps, and Routing Policy Language

Module 4: Implementing Route Redistribution

Module 5: Influencing Border Gateway Protocol Route Selection

Module 6: Scaling BGP in Service Provider Networks

Module 7: Securing BGP in Service Provider Networks

Module 8: Improving BGP Convergence and Implementing Advanced Operations

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Module 9: Troubleshooting Routing Protocols

Module 10: Implementing and Verifying MPLS

Module 11: Implementing Cisco MPLS Traffic Engineering

Module 12: Implementing Segment Routing

Module 13: Describing Segment Routing Traffic Engineering (SR TE)

Module 14: Deploying IPv6 Tunneling Mechanisms

Module 15: Implementing IP Multicast Concepts and Technologies

Module 16: Implementing PIM-SM Protocol

Module 17: Implementing PIM-SM Enhancements

Module 18: Implementing Interdomain IP Multicast

Module 19: Implementing Distributed Rendezvous Point Solution in Multicast Network

LAB OUTLINE

- 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