Deploying Cisco Service Provider Network Routing (CS-SPROUTE) 1.2

Modality: Virtual Classroom

Duration: 3.5 Days

CLC: 33 Units

About this course:

The course of SPROUTE is intended to support service provider experts with information on the utilization of progressive routing in implementing adaptability for Cisco switches that are associated with WANs and LANs. The objective is to train experts to drastically increase the number of routers and sites using these procedures instead of redesigning the system when extra wiring and site setups are included. The training of SPROUTE reinforces the instruction by providing understudies with hands-on labs to assure that they completely see how to apply progressed routing within their systems.

Also, the course includes classroom exercises with remote labs that are helpful to gain functional aptitudes on deploying Cisco IOS XR and Cisco IOS/IOS XE highlights to support and work a network service provider. This course likewise helps the understudies in the preparation for the exam of Cisco: 642-883 SPROUTE.

The normal pay for Cisco Certified Network Engineer is $77,484 annually.

Course Objectives:

- Recognize the typical routing prerequisites and list the protocols of routing in service provider networks.
- Explain steps expected to execute OSPF in the service provider networks.
- Pinpoint the normal routing necessities and afterward rattle off the routing conventions in the service provider networks.
- Discover the steps that are needed in order to execute OSPF in the service provider network
- Describe the importance of the routing protocol of Integrated IS-IS for internal routing and maintain the steps in executing Integrated IS-IS into the service provider network
- BGP Implementation to join an enterprise to a service provider, and to an upstream service provider.
- Explain tools used for manipulation of routing redistribution, routing protocol, and BGP route selection

Audience:

- Network engineers, network administrators, systems engineers, and network managers who would like to implement IP routing in the environments of the service provider.
- Individuals preparing for the certification of CCNP Service Provider.
- Project managers and Network designers.
- Program managers.

Prerequisites:

Intermediate information on Cisco IOS XR Software design and Cisco IOS/IOS XE.

Suggested prerequisite courses:

Implementing Cisco IOS Network Security v3.0 (IINS)

Course Outline:

Module 1: Service Provider Routing

Lesson 1: Understanding Service Provider Routing Protocols

- Overview of Routing Protocols
- Overview of OSPF
- Overview of IS-IS
- Overview of BGP

Module 2: Implement OSPF in the Service Provider Network

Lesson 1: Introducing OSPF Routing

- OSPF Characteristics
- Structure of OSPF Network
- OSPF Operation
- OSPF Link-State Database

Lesson 2: Understanding OSPF Operation

- OSPF Packets
- OSPF Neighbor States
- OSPF Network Types
- Enabling OSPF on a Link

Lesson 3: Implementing OSPF Routing

- Implement OSPF
- Advanced OSPF Setup
- Secure OSPF

Lesson 4: Implementing OSPF Special Area Types

- OSPF Summarization
- OSPF Area Types
- OSPF Stub Area

- OSPF Not-So-Stubby Area

Module 3: Implement Integrated IS-IS in the Service Provider Network

Lesson 1: Introducing IS-IS Routing

- IS-IS Routing
- IS-IS Addressing
- IS-IS Router Types
- IS-IS Packets
- IS-IS Network Types

Lesson 2: Implementing Integrated IS-IS Routing

- Implement OSI Area Routing
- Implement IS-IS Routing

Module 4: Implement BGP in the Service Provider Network

Lesson 1: Introducing BGP Routing

- Connecting a Service Provider with BGP
- BGP Operation

Lesson 2: Implementing Basic BGP Routing

- Implement Basic BGP
- BGP Neighbor Authentication and Neighbor Reset
- BGP Route Selection Process and Path Attributes

Module 5: Routing Protocol Tools and Route Manipulation
Lesson 1: Introducing Routing Protocol Tools

- Routing Protocol Tools Overview
- Prefix Lists
- AS Path-Based Filtering
- Route Maps
- Routing Policy Language

Lesson 2: Implementing Route Redistribution

- Need for Redistribution
- Implement Redistribution

Lesson 3: Influencing BGP Route Selection

- BGP Weight
- BGP Local Preference
- AS Path Prepending
- BGP Multi-Exit Discriminators
- BGP Communities

Lab Outline

- Lab 2-1: Implement OSPF Routing
- Lab 2-2: Implement OSPF Special Area Types
- Lab 3-1: Implement Integrated IS-IS Routing
- Lab 4-1: Implement Basic BGP Routing
- Lab 5-1: Implement Route Redistribution
- Lab 5-2: Influence BGP Route Selection

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