Deploying Cisco Service Provider Network Advanced Routing

Duration: 5 Days  Course Code: SPADVROUTE  Version: 1.2  Delivery Method: Virtual Learning

Overview:
This 5 day course is designed to provide network engineers and technicians with the knowledge and skills required to implement and support a service provider network. Cisco routers typically found in the service provider network are used for this course. Upon completing this course, learners will be able to configure, verify, and troubleshoot advanced Border Gateway Protocol (BGP) configuration, IP multicasting, and IPv6 transition mechanisms. Hands on labs are used to gain practical skills on deploying Cisco IOS, IOS XE, and IOS XR Software features to operate and support the service provider network.

Virtual Learning
This interactive training can be taken from any location, your office or home and is delivered by a trainer. This training does not have any delegates in the class with the instructor, since all delegates are virtually connected. Virtual delegates do not travel to this course, Global Knowledge will send you all the information needed before the start of the course and you can test the logins.

Target Audience:
This course is intended primarily for network administrators, network engineers, network managers and systems engineers who would like to implement IP routing in service provider environments.

Objectives:
After you complete this course you will be able to:
- Introduce IP multicast services and the technologies that are present in IP multicasting
- Configure the provider network to support multiple BGP connections with customers and other autonomous systems
- Introduce PIM-SM as the most current scalable IP multicast routing protocol
- Describe common routing and addressing scalability issues in the provider network
- Describe service provider IPv6 transition implementations
- Describe available BGP tools and features to secure and optimize the BGP routing protocol in a service provider environment

Prerequisites:
Attendees should meet the following prerequisites:
- Intermediate to advanced knowledge of Cisco IOS/IOS XE and Cisco IOS XR Software configuration
- Attendance of SPROUTE Recommended

Testing and Certification
Recommended preparation for exam(s):
- 642-885 - Deploying Cisco Service Provider Network Advanced Routing (SPADVROUTE)
This exam is required for those delegates wishing to achieve the Cisco Certified Network Professional Service Provider Certification.

Follow-on-Courses:
The following courses are recommended for further study:
- SPCORE - Implementing Cisco Service Provider Next Generation Core Network Services
- SPEDGE - Implementing Cisco Service Provider Next GenerationEDGE Network Services
Content:

Service Provider Connectivity with BGP
- Defining Customer-to-Provider Connectivity Requirements
- Connecting a Customer to a Service Provider

Scale Service Provider Networks
- Scaling BGP in Service Provider Networks
- Introducing BGP Route Reflectors and Confederations

Secure and Optimize BGP
- Implementing Advanced BGP Operations
- Improving BGP Convergence
- Improving BGP Configuration Scalability

Multicast Overview
- Introducing IP Multicast
- Defining Multicast Distribution Trees and Forwarding
- Defining Multicast on the LAN
- Populating the Mroute Table

Labs
- Hardware Lab 1: Implement BGP Route Reflectors
- Hardware Lab 2: Implement BGP Security Options
- Hardware Lab 3: Improve BGP Scalability
- Hardware Lab 4: Implement Layer 2 and Layer 3 Multicast
- Hardware Lab 5: Enable and Optimize PIM-SM
- Hardware Lab 6: Implement PIM-SM Enhancements
- Hardware Lab 7: Implement Rendezvous Point Distribution
- Hardware Lab 8: Implement a DHCPv6 Server with Prefix Delegation
- Hardware Lab 9: Implement IPv6 Multicasting
- Hardware Lab 10: Implement Tunnels for IPv6

Defining Customer-to-Provider Connectivity
- Introducing IP Multicast
- Defining Multicast Distribution Trees and Forwarding
- Defining Multicast on the LAN
- Populating the Mroute Table

Intradomain and Interdomain Multicast Routing
- Introducing the PIM-SM Protocol
- Implementing PIM-SM Enhancements
- Implementing Interdomain IP Multicast
- Identifying Rendezvous Point Distribution Solutions

Service Provider IPv6 Transition Implementations
- Introducing IPv6 Services
- Defining IPv6 Transition Mechanisms
- Deploying IPv6 in the Service Provider Network

Additional Information:

Recertification
Cisco professional level certifications (CCNP, CCNP Service Provider Operations, CCNP Wireless, CCDP, CCNP Security CCNP Voice, and CCNP Service Provider) are valid for three years. To recertify, pass ONE of the following exams before the certification expiration date: Pass any current 642-XXX professional level exam, or Pass any current CCIE Written Exam, Pass the current CCDE Written Exam OR current CCDE Practical Exam, or Pass the Cisco Certified Architect (CCAr) interview AND the CCAr board review to extend lower certifications

Further Information:
For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931
info@globalknowledge.co.uk
www.globalknowledge.co.uk

Global Knowledge, Mulberry Business Park, Fishponds Road, Wokingham Berkshire RG41 2GY UK