Implementing Cisco Service Provider Next Generation Core Network Services

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

Overview:

This 5-day course is focused on the concepts and capabilities of Multiprotocol Label Switching (MPLS) and on the best practices for implementing QoS in a new or existing Service Provider environment. MPLS Traffic Engineering (MPLS TE) services are also explored in more detail.
Hands-on labs provide the practice delegates need to ensure a thorough understanding of MPLS and MPLSTE in a Service Provider environment as well as exposure to IOS/IOS XE and IOS XR deployments.

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 MPLS and MPLS TE in the core portion of service provider environments, and assure QoS in the service provider backbone.

Objectives:

- **After you complete this course you will be able to:**

- Describe the features of MPLS, and how MPLS labels are assigned and distributed

- Discuss the requirement for traffic engineering in modern networks that must attain optimal resource utilization

- Introduce the concept of QoS and explain the need to implement QoS

- Classify and mark network traffic to implement an administrative policy requiring QoS

- Compare the different Cisco QoS queuing mechanisms used to manage network congestion

- Explain the concept of traffic policing and shaping, including token bucket, dual token bucket, and dual-rate policing

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** and **ADVSPROUTE** recommended.

Testing and Certification

Recommended preparation for exam(s):

- **642-887SPCORE** - Implementing Cisco Service Provider Next Generation Core Network Services
This is one of four exams required for the Cisco Certified Network Professional for Service Providers Certification.

Follow-on-Courses:

The following courses are recommended for further study :

- **SPEDGE -** Implementing Cisco Service Provider Next Generation Edge Network Services

Content:

Multiprotocol Label Switch

- Introducing Cisco IP NGN Architecture
- Introducing MPLS
- Introducing MPLS Applications
- Label Distribution Protocol
- Introducing MPLS Forwarding
- Operating MPLS Forwarding
- Implementing MPLS in the Service Provider Core

MPLS Traffic Engineering

- Introducing MPLS Traffic Engineering Components
- MPLS TE Operations
- Implementing MPLS TE
- Protecting MPLS TE Traffic

QoS in the Service Provider Network,

- Understanding QoS
- Implementing QoS in the SP Network
- Implementing MPLS Support for QoS

QoS Classification and Marking

- Understanding Classification and Marking
- Using the Modular QoS CLI
- Implementing Advanced QoS Techniques

QoS Congestion Management and Avoidance

- Managing Congestion
- Implementing Congestion Avoidance

QoS Traffic Policing and Shaping

- Understanding Traffic Policing and Shaping
- Implementing Traffic Policing
- Implementing Traffic Shaping

Labs:

- Hardware Lab 1: Implement MPLS in the Service Provider Core
- Hardware Lab 2: Implement MPLS TE
- Hardware Lab 3: The Need for QoS
- Hardware Lab 4: Implement MPLS Support for QoS
- Hardware Lab 5: Implement Classification and Marking
- Hardware Lab 6: Implement Queuing
- Hardware Lab 7: Implement Congestion Avoidance
- Hardware Lab 8: Implement Traffic Policing
- Hardware Lab 9: Implement Traffic Shaping

Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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