CI - MPLS
Implementing Cisco MPLS

Summary

Duration	Vendor	Category
5 Days	Cisco	CCIP

Introduction

The course will enable learners to gather information from the technology basics to advanced VPN configuration. The focus of the course is on VPN technology issues of MPLS from the Service Providers perspective and how to configure some of those features and functions in an existing routed environment. A basic introductory level of some of the more updated features and functions such as Traffic Engineering, Fast Reroute and Any Transport over MPLS (AToM) are introduced.

This is a 5 day Instructor-led course. This course replaces version 2.1 with the following enhancements:

- Improved labs
- Clearer explanations
- More information on VPNs
- An introduction to Traffic Engineering
- Correction of errors in previous version
- Elimination from course of ATM-related references

Prerequisites

Cisco Certified Network Associate (CCNA) certification or equivalent level of working knowledge and experience, completion of CCNA Basics and ICND courseware is recommended training for CCNA. Equivalent knowledge and skill that can be acquired by attending Cisco's training courses Building Scalable Cisco Internetworks (BSCI) and Configuring BGP on Cisco Routers (BGP). Practical experience with deploying and operating networks based on Cisco network devices and Cisco IOS is strongly recommended. The QoS course is highly recommended because QoS knowledge is assumed in several sections of the course.

Course Objectives

After completing this course the student should be able to:

- Describe how the service provider infrastructure is attacked
- Describe the features of MPLS
- Describe how MPLS labels are assigned and distributed
- Identify the Cisco IOS tasks and command syntax necessary to implement MPLS on frame-mode Cisco IOS platforms
- Describe the MPLS peer-to-peer architecture and explain the routing and packet forwarding model in this architecture

- Identify the Cisco IOS command syntax required to successfully configure, monitor, and troubleshoot VPN operations
- Identify how the MPLS VPN model can be used to implement managed services and Internet access
- Describe the various Internet access implementations that are available and the benefits and drawbacks of each model
- Provide an overview of MPLS Traffic Engineering

Course Outline

- Introducing Basic MPLS Concepts
- Introducing MPLS Labels and Label Stack
- Identifying MPLS Applications
- Discovering LDP Neighbors
- Establishing the Service Provider IGP Routing Environment
- Introducing Typical Label Distribution in Frame-Mode MPLS
- Introducing Convergence in Frame-Mode MPLS
- Introducing MPLS Label Allocation, Distribution, and Retention Modes
- Introducing CEF Switching
- Configuring Frame-Mode MPLS on Cisco IOS Platforms
- Monitoring Frame-Mode MPLS on Cisco IOS Platforms
- Troubleshooting Frame-Mode MPLS on Cisco IOS Platforms
- Establishing the Core MPLS Environment
- Introducing Virtual Private Networks
- Introducing Overlay and Peer-to-Peer VPNs
- Categorizing VPNs
- Introducing MPLS VPN Architecture
- Introducing MPLS VPN Routing Model
- Forwarding MPLS VPN Packets
- Using MPLS VPN Mechanisms of Cisco IOS Platforms
- Configuring VRF Tables
- Configuring an MP-BGP Session Between PE Routers
- Configuring Small-Scale Routing Protocols Between PE and CE Routers
- Monitoring MPLS VPN Operations
- Initial MPLS VPN Setup
- Running EIGRP Between PE and CE Routers
- Configuring OSPF as the Routing Protocol Between PE and CE routers
- Running OSPF Between PE and CE Routers
- Running OSPF Between PE and CE Routers - complete
- Configuring BGP as the Routing Protocol Between PE and CE routers
- Troubleshooting MPLS VPNs
- Running BGP Between PE and CE Routers

Associated Certifications & Exams

The MPLS 642-611 exam is a qualifying exam for the CCIP certification (Cisco Certified Internetwork Professional).

On successful completion of this course students will receive a Torque IT attendance certificate.