MPLS (IMPLEMENTING CISCO MPLS) 3.0

Objetivo

Upon completion of the course, students will have the knowledge and skills to: 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

PÃºblico Alvo

Channel Partners Customers Employees

PrÃ©-Requisitos

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

Carga HorÃiria

40 horas (5 dias).

ConteÃºdo ProgramÃitico

Module 1: MPLS Concepts
Lesson 1-1: Introducing Basic MPLS Concepts
Lesson 1-2: Introducing MPLS Labels and Label Stack
Lesson 1-3: Identifying MPLS Applications
Lesson 1-4: Module Summary
Lesson 1-5: Module Self-Check

Module 2: Label Assignment and Distribution
Lesson 2-1: Discovering LDP Neighbors
Lesson 2-2: Introducing Typical Label Distribution in Frame-Mode MPLS
Lesson 2-3: Introducing Convergence in Frame-Mode MPLS

Lesson 2-4: Module Summary
Lesson 2-5: Module Self-Check

Module 3: Frame-Mode MPLS Implementation on Cisco IOS Platforms
Lesson 3-1: Introducing CEF Switching
Lesson 3-2: Configuring Frame-Mode MPLS on Cisco IOS Platforms
Lesson 3-3: Monitoring Frame-Mode MPLS on Cisco IOS Platforms
Lesson 3-4: Troubleshooting Frame-Mode MPLS on Cisco IOS Platforms
Lesson 3-5: Module Summary
Lesson 3-6: Module Self-Check

Module 4: MPLS Virtual Private Network Technology
Lesson 4-1: Introducing Virtual Private Networks
Lesson 4-2: Introducing MPLS VPN Architecture
Lesson 4-3: Introducing the MPLS VPN Routing Model
Lesson 4-4: Forwarding MPLS VPN Packets
Lesson 4-5: Module Summary
Lesson 4-6: Module Self-Check

Module 5: MPLS VPN Implementation
Lesson 5-1: Using MPLS VPN Mechanisms of Cisco IOS Platforms
Lesson 5-2: Configuring an MP-BGP Session Between PE Routers
Lesson 5-3: Configuring VRF Tables
Lesson 5-4: Configuring Small-Scale Routing Protocols Between PE and CE Routers
Lesson 5-5: Monitoring MPLS VPN Operations
Lesson 5-6: Configuring OSPF as the Routing Protocol Between PE and CE Routers
Lesson 5-7: Configuring BGP as the Routing Protocol Between PE and CE Routers
Lesson 5-8: Troubleshooting MPLS VPNs
Lesson 5-9: Module Summary
Lesson 5-10: Module Self-Check

Module 6: Complex MPLS VPNs
Lesson 6-1: Introducing Overlapping VPNs
Lesson 6-2: Introducing Central Services VPNs
Lesson 6-3: Introducing the Managed CE Routers Service
Lesson 6-4: Module Summary
Lesson 6-5: Module Self-Check

Module 7: Internet Access and MPLS VPNs
Lesson 7-1: Combining Internet Access with MPLS VPNs
Lesson 7-1: Combining Internet Access with MPLS VPNs
Lesson 7-3: Module Summary
Lesson 7-4: Module Self-Check

Module 8: MPLS Traffic Engineering Overview
Lesson 8-1: Introducing MPLS Traffic Engineering Components
Lesson 8-2: MPLS Traffic Engineering Operations
Lesson 8-3: Configuring MPLS Traffic Engineering on Cisco IOS Platforms

Lesson 8-4: Monitoring Basic MPLS TE on Cisco IOS Platforms
Lesson 8-5: Module Summary
Lesson 8-6: Module Self-Check

Lab Detals:
Discovery 1: Verifying CEF Switching
Discovery 2: Enabling MPLS
Discovery 3: Change IP TTL Propagation
Discovery 4: Configure MP-IBGP
Discovery 5: Configure the VRF Instances
Discovery 6: Configure RIP as a PE-CE Routing Protocol
Discovery 7: Configure EIGRP as a PE-CE Routing Protocol
Discovery 8: Configure OSPF as a PE-CE Routing Protocol
Discovery 9: Configure BGP as a PE-CE Routing Protocol
Discovery 10: Configure a Central Services VPN
Discovery 11: Configure MPLS Traffic Engineering
Challenge 1: Implement the Service Provider's and Customer's IP Addressing and IGP Routing
Challenge 2: Implement the Core MPLS Environment in the Service Provider Network
Challenge 3: Implement EIGRP Based VPNs
Challenge 4: Implement OSPF Based MPLS VPNs
Challenge 5: Implement BGP Based MPLS VPNs
Challenge 6: Implement MPLS Traffic Engineering