

IMPLEMENTING CISCO IP ROUTING 2.0 (CI-ROUTE)

Temario

This 5 day course is designed to provide professionals working with medium to large networks with the skills and knowledge required to incorporate advanced routing concepts when implementing scalability for Cisco routers that are connected to LANs and WANs. Delegates will be able to dramatically increase the number of routers and sites using these techniques instead of redesigning the network when additional sites or wiring configurations are added. Labs are an important feature of this course with 2 different types of labs being used to aid learning, discovery labs are instructor guided labs through which students explore new topics in an interactive way, the challenge Labs are designed to test students understanding of the topics being taught and to provide vital hands-on practice.

Pre-requisitos

- Taking ICND1 v2.0 and ICND2 v2.0 (or CCNAX v2.0) is highly recommended
- Know how to:
 - Configure network fundamentals, including the ability to establish Internet, LAN, and WAN connectivity using both IPv4 and IPv6
 - Operate and support a medium-sized LAN that has multiple switches, including VLANs, trunking, and spanning tree functionality
 - Troubleshoot IPv4 and IPv6 connectivity issues
 - Configure and troubleshoot EIGRP and OSPF, for both IPv4 and IPv6
 - Configure devices for SNMP, Syslog, and NetFlow
 - Manage network device security, Cisco device configurations, Cisco IOS images, and licenses

Contenido

Basic Network and Routing Concepts

- Differentiating Routing Protocols
- Understanding Network Technologies
- Connecting Remote Locations with the Headquarters
- Implementing RIPng

EIGRP Implementation

- Establishing EIGRP Neighbor Relationships
- Building the EIGRP Topology Table
- Optimizing EIGRP Behavior

- Configuring EIGRP for IPv6
- Discovering Named EIGRP Configuration

OSPF Implementation

- Establishing OSPF Neighbor Relationship
- Building the Link State Database
- Optimizing OSPF Behavior
- Configuring OSPFv3

Configuration of Redistribution

- Implementing Basic Routing Protocol Redistribution
- Manipulating Redistribution Using Route Filtering

Path Control Implementation

- Using Cisco Express Forwarding Switching
- Implementing Path Control

Enterprise Internet Connectivity

- Planning Enterprise Internet Connectivity
- Establishing Single-Homed IPv4 Internet Connectivity
- Establishing Single-Homed IPv6 Internet Connectivity
- Improving Resilience of Internet Connectivity
- Considering Advantages of Using BGP
- Implementing Basic BGP Operations
- Using BGP Attributes and Path Selection Process
- Controlling BGP Routing Updates
- Implementing BGP for IPv6 Internet Connectivity

Routers and Routing Protocol Hardening

- Securing Cisco Routers
- Describing Routing Protocol Authentication Options
- Configuring EIGRP Authentication
- Configuring OSPF Authentication
- Configuring BGP Authentication

Challenge Labs

- Lab 1: Configure RIPng
- Lab 2: Configure EIGRP
- Lab 3: Configure and Optimize EIGRP for IPv6
- Lab 4: Implement EIGRP for IPv4 and IPv6 Through Named Configuration
- Lab 5: Configure OSPF
- Lab 6: Optimize OSPF
- Lab 7: Configure OSPFv3
- Lab 8: Implement Redistribution Using Route Filtering
- Lab 9: Implement Path Control
- Lab 10: Configuring BGP
- Lab 11: Configure Authentication for EIGRP Routes
- Lab 12: Configure BGP Authentication
- Lab 6-1: Configure BGP Operations
- Lab 6-2: Manipulate EBGP Path selections

Dirigido a

- Network engineers and technicians
- Support engineers
- Systems engineers
- Network analysts
- Senior network administrators
- Anyone involved in planning, implementing, verifying, and troubleshooting routing protocols in enterprise networks

Objetivos del curso

After you complete this course you will be able to:

- Describe routing protocols, different remote connectivity options. and their impact on routing and implement RIPng
- Configure EIGRP in IPv4 and IPv6 environment
- Configure OSPF in IPv4 and IPv6 environment
- Implement route redistribution using filtering mechanisms
- Implement path control using policy based routing and IP SLA
- Implement enterprise Internet connectivity

- Secure Cisco routers according to best practices and configure authentication for routing protocols
- Routing protocols, network technologies, and remote connectivity options
- RIPng in an IPv6 environment
- Technologies, operations, and metrics that EIGRP uses
- Configure and verify EIGRP in IPv4 and IPv6 environments including optimizing its behavior and named EIGRP configuration
- Multiarea OSPF including over different network types and how to optimize its database
- Configure and verify OSPFv2 in IPv4 environments and OSPFv3 in IPv4 and IPv6 environments
- Route redistribution and how it is implemented using distribute list, prefix list, and route map filtering mechanisms
- Use Cisco Express Forwarding for efficient Layer 3 packet forwarding
- Implement path control using policy based routing and IP Service Level Agreement (SLA)
- Establishing enterprise Internet connectivity for IPv4 and IPv6
- BGP for enterprise IPv4 and IPv6 Internet connectivity
- Secure Cisco routers according to best practices including the configuring routing protocol authentication