Learning Services
Cisco Training on Demand
Implementing Cisco IP Routing (ROUTE)

Overview
Implementing Cisco® IP Routing (ROUTE) Version 2.0 is a Cisco Training on Demand course. It prepares you to configure and optimize a routing domain using Open Shortest Path First (OSPF) Protocol, Enhanced Interior Gateway Routing Protocol (EIGRP), Border Gateway Protocol (BGP), Policy Based Routing (PBR), IP service level agreement (SLA), and configure redistribution when needed. The course covers routing for both IPv4 and IPv6, and teaches how to explain routing protocols, networking technologies, and remote connectivity options. The course also explores routing protocols, such as RIP, EIGRP, and OSPF, which all have a particular role or function in a network.

In addition, the course teaches how to translate from private to public address spaces using NAT and PAT, configure multihomed connections, and how to implement BGP for IP version 4 and version 6, which is helpful because BGP is the de facto standard used for Internet routing today. To protect the routing protocol from becoming a vector of attack, the course also teaches how to secure communication between routers to ensure the integrity of the advertised network paths.

Interested in purchasing this course in volume at discounts for your company? Contact ctod-sales@cisco.com.

Duration
The ROUTE Cisco Training on Demand course is a self-paced course based on the 5-day instructor-led training version. It consists of 16 sections of consumable segments of instructor video and text totaling more than 12 hours of instruction along with interactive activities, 38 hands-on lab exercises, content review questions, and challenge questions.
Target Audience
This course is designed for network engineers and technicians, support engineers, system engineers, network analysts, senior network administrators, and those preparing for the 300-101 ROUTE exam.

Objectives
After completing this course, you should be able to:

- Describe routing protocols, different remote connectivity options, and their impact on routing, and implement Routing Information Protocol Next Generation (RIPng)
- Configure EIGRP in an IPv4 and IPv6 environment
- Configure OSPF in an 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

Course Prerequisites
The knowledge and skills recommended before attending this course are:

- Describing network fundamentals
- Establishing Internet and WAN connectivity (IPv4 and IPv6)
- Managing network device security
- Operating a medium-sized LAN with multiple switches, supporting VLANs, trunking, and spanning tree
- Troubleshooting IP connectivity (IPv4 and IPv6)
- Configuring and troubleshooting EIGRP and OSPF (IPv4 and IPv6)
- Configuring devices for Simple Network Management Protocol (SNMP), Syslog, and NetFlow access
- Managing Cisco device configurations, Cisco IOS® images, and licenses

Course Outline
- Section 1: Describing Routing Protocols
- Section 2: Implementing RIPng
- Section 3: Implementing EIGRP
- Section 4: Configure EIGRP for IPv6
- Section 5: Discovering Named EIGRP Configuration
- Section 6: Establishing OSPF
- Section 7: Optimizing OSPF Behavior
- Section 8: Configuring OSPFv3
- Section 9: Configuring Redistribution
- Section 10: Implementing Path Control
- Section 11: Establishing Internet Connectivity
• Section 12: Implementing BGP
• Section 13: Implementing BGP for IPv6
• Section 14: Securing Cisco Routers
• Section 15: Configuring EIGRP Authentication
• Section 16: Configuring OSPF and BGP Authentication

Labs Outline

This course contains 38 hands-on virtual lab exercises.

Figure 1. Topology for All Labs in Implementing Cisco IP Routing (ROUTE) v2.0

The labs included in this course are:

• Discovery Lab 2.3: Configuring RIPng
• Challenge Lab 2.5: Configure RIPng
• Discovery Lab 3.5: Configuring and Investigating Basic EIGRP
• Discovery Lab 3.10: Building the EIGRP Topology Table
• Discovery Lab 3.19: EIGRP Stub Routing
• Discovery Lab 3.22: EIGRP Summarization
• Discovery Lab 3.24: EIGRP Load Balancing
• Challenge Lab 3.25: Configure EIGRP
• Discovery Lab 4.3: EIGRP for IPv6 Configuration
• Challenge Lab 4.5: Configure and Optimize EIGRP for IPv6
• Discovery Lab 5.3: Discovering the Named EIGRP Configuration
• Challenge Lab 5.6: Implement EIGRP for IPv4 and IPv6 through Named Configuration
• Discovery Lab 6.7: Basic OSPF Configuration Introduction
• Discovery Lab 6.15: Building the Link-State Database
• Discovery Lab 6.20: OSPF Path Selection
• Challenge Lab 6.24: Configure OSPF
• Discovery Lab 7.4: OSPF Route Summarization
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