Learning Services

Implementing Cisco IP Routing (ROUTE) Technical Edition

Overview

Implementing Cisco IP Routing (ROUTE) Technical Edition Cisco® Training on Demand is a boot camp-style training solution that teaches you how to plan, configure, implement, verify, and monitor a scalable routed network using a range of routing protocols.

You also gain knowledge and skills through advanced lectures and challenge labs that focus on routing protocols for both IPv4 and IPv6: Enhanced Interior Gateway Routing Protocol (EIGRP) and Open Shortest Path First (OSPF) Protocol for an enterprise and Border Gateway Protocol (BGP) for enterprise Internet connectivity. Through a series of in-depth lectures and lab exercises, you learn how to redistribute routes, implement path control, and secure Cisco routers.

Duration

The ROUTE Technical Edition Training on Demand consists of 12 modules totaling more than 20 hours of video, along with 38 hands-on lab exercises.

Target Audience

The primary audience for this course is individuals responsible for designing, implementing, or supporting routers or routing-related technologies.
Objectives

Upon completion of this course, you should be able to:

● Describe routing protocols, different remote connectivity options, and their impact on routing and implementing Routing Information Protocol Next Generation (RIPng)
● Configure EIGRP and OSPF in IPv4 and IPv6 environments
● Implement route redistribution using filtering mechanisms, path control using Policy-Based Routing (PBR) and IP Service-Level Agreement (IP SLA), and enterprise Internet connectivity
● Secure Cisco routers according to best practices and configure authentication for routing protocols

Course Prerequisites

The knowledge and skills necessary before attending this course are:

● Describing network fundamentals
● Establishing Internet and WAN connectivity (IPv4 and IPv6)
● Operating a medium-sized LAN with multiple switches, supporting VLANs, trunking, and Spanning Tree Protocol (STP)
● 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, licenses, and network device security

It is highly recommended that this course be taken after completing the courses Interconnecting Cisco Network Devices, Part 1 v3.0 (ICND1) and Interconnecting Cisco Network Devices, Part 2 v3.0 (ICND2).

Course Outline

● Module 1: ROUTE Introduction
● Module 2: Basic Network and Routing Concepts
● Module 3: EIGRP Implementation
● Module 4: OSPF Implementation
● Module 5: Implementing RIPng
● Module 6: EIGRP for IPv6
● Module 7: OSPFv3
● Module 8: Implementing Basic Router Protocol Redistribution
● Module 9: Planning Enterprise Internet Connectivity
● Module 10: Router Authentication
● Module 11: PPPoE Client
● Module 12: Using Cisco Express Forwarding
Lab Outline

This course contains 38 hands-on virtual lab exercises, powered by Cisco Learning Labs and Cisco IOL (Cisco IOS Software on Linux).

Topology for all labs in the course:

The labs included in this course are:

- Discovery 1: Configuring RIPng
- Discovery 2: Configuring and Investigating Basic EIGRP
- Discovery 3: Building the EIGRP Topology Table
- Discovery 4: EIGRP Stub Routing
- Discovery 5: EIGRP Summarization
- Discovery 6: EIGRP Load Balancing
- Discovery 7: EIGRP for IPv6 Configuration
- Discovery 8: Discovering the Named EIGRP Configuration
- Discovery 9: Basic OSPF Configuration Introduction
- Discovery 10: Building the Link-State Database
- Discovery 11: OSPF Path Selection
- Discovery 12: OSPF Route Summarization
- Discovery 13: OSPF Stub Areas
- Discovery 14: Implementing OSPFv3
- Discovery 15: Basic Redistribution
- Discovery 16: Manipulate Redistribution
- Discovery 17: Manipulate Redistribution Using Route Maps
- Discovery 18: Analyzing Cisco Express Forwarding
- Discovery 19: Implementing PBR
- Discovery 20: Configuring NAT Virtual Interface
- Discovery 21: Basic IPv6 Internet Connectivity
● Discovery 22: Basic BGP Configuration
● Discovery 23: Influencing BGP Path Selection
● Discovery 24: BGP for IPv6
● Discovery 25: Configuring EIGRP Authentication
● Discovery 26: OSPF Authentication Configuration
● Challenge 1: Configure RIPng
● Challenge 2: Configure EIGRP
● Challenge 3: Configure and Optimize EIGRP for IPv6
● Challenge 4: Implement EIGRP for IPv4 and IPv6 Through Named Configuration
● Challenge 5: Configure OSPF
● Challenge 6: Optimize OSPF
● Challenge 7: Configure OSPFv3
● Challenge 8: Implement Redistribution Using Route Filtering
● Challenge 9: Implement Path Control
● Challenge 10: Configure BGP
● Challenge 11: Configure Authentication for EIGRP Routes
● Challenge 12: Configure BGP Authentication

Instructor Bio
Charles Stizza is currently a member of the Data Center Switching Technical Assistance Center (TAC) team based out of Research Triangle Park, North Carolina. He has more than 15 years of experience in technology, with expertise in many areas including routing protocols, data center, and virtualization. When not teaching or supporting Cisco customers, Charles enjoys spending his time mentoring professionals to assist them in growing to their fullest potential.

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