FIREFLY

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Implementing Cisco IP Routing

DURATION: 5 DAYS COURSE CODE: ROUTE FORMAT: LECTURE/LAB

COURSE DESCRIPTION

ROUTE v2.0 includes major updates and follows an updated blueprint. However, note that this course does not cover all items listed on the blueprint. Some older topics have been removed or simplified, while several new IPv6 routing topics have been added. Course content has been adapted to Cisco IOS Software Release 15 and technically updated. Course also introduces new type of labs, called discovery labs. Discovery labs are instructor guided lab through which student explores new topics in an interactive way. All labs are developed only as virtual labs. To get the full course experience, you should cover everything, including Introduction, Discovery labs, Summary, and Module Self-Check.

WHO SHOULD ATTEND

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

PREREQUISITES

The knowledge and skills that a learner must have before attending this Curriculum are as follows:

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 SNMP, Syslog, and NetFlow access

Managing Cisco device configurations, Cisco IOS images, and licenses

It is highly recommended that this course be taken after the following Cisco courses:

Interconnecting Cisco Networking Devices v2.0, Part 1 (ICND1 v2.0) and Part 2 (ICND2 v2.0)

Interconnecting Cisco Networking Devices: Accelerated version 2.0 (CCNAX v2.0)

LEARNING OBJECTIVES

Describe routing protocols, different remote connectivity options, and their impact on routing and implementing RIPng

Configure EIGRP in IPv4 and IPv6 environments

Configure OSPF in IPv4 and IPv6 environments

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 OUTLINE

1. Basic Network and Routing Concepts
   - Differentiating Routing Protocols
   - Understanding Network Technologies
   - Connecting Remote Locations with the Headquarters
   - Implementing RIPng
2. EIGRP Implementation
   - Establishing EIGRP Neighbor Relationships
   - Building the EIGRP Topology Table
   - Optimizing EIGRP Behavior
   - Configuring EIGRP for IPv6
   - Discovering Named EIGRP Configuration
3. OSPF Implementation
   - Establishing OSPF Neighbor Relationship
   - Building the Link State Database
   - Optimizing OSPF Behavior
   - Configuring OSPFv3
4. Configuration of Redistribution
   - Implementing Basic Routing Protocol Redistribution
   - Manipulating Redistribution Using Route Filtering
5. Path Control Implementation
   - Using Cisco Express Forwarding Switching
   - Implementing Path Control
6. 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
7. Routers and Routing Protocol Hardening
   - Securing Cisco Routers
   - Describing Routing Protocol Authentication Options
   - Configuring EIGRP Authentication
   - Configuring OSPF Authentication
   - Configuring BGP Authentication

DISCOVERY LABS

1: Configuring IPv6 and RIPng
2: Configuring EIGRP for IPv4
3: Investigating EIGRP for IPv4 Behavior
4: Configuring EIGRP for IPv6
5: Configuring Named EIGRP for IPv4 and IPv6
6: Configuring OSPF for IPv4
7: Investigating OSPF for IPv4 Behavior
8: Optimizing OSPF for IPv4
9: Configure OSPFv3
10: Configuring Route Redistribution and Filtering
11: Configuring Path Control
12: Configuring Basic Internet Connectivity
13: Configuring BGP for IPv4
14: Configuring BGP for IPv6
15: Configuring EIGRP Authentication
16: Configuring OSPF and BGP Authentication

Students will get an additional 10 e-lab credits to use in the 30 days following class.