Course ID
C-ROUTING

Course Title
Cisco Routing Protocols: Configuration and Maintenance

Course Duration
4 days

Related Courses

- Configuring and Administering Cisco Networking Devices (C-CCNA, 4 days)

Aimed At

I/T professionals who're seeking opportunities in network administration in the Cisco routing and WAN environments, or those already in those areas who wish to upgrade their job skills.

Group Size

5-15

Prerequisites

- Configuring and Administering Cisco Networking Devices (C-CCNA, 4 days)
- Some prior I/T experience and familiarity with networking

Course in a Nutshell

Are you a network administrator in the Cisco routing and WAN environment looking to upgrade your job skills or apply for certification? Or are you preparing to seek employment in this field? Either way, this course can help boost your career.

The course provides in-depth coverage of Cisco routing fundamentals including the IP routing principles, design of IP networks, classless IP addressing, distance-vector routing protocols, link-state routing protocols, and specific routing protocols like IS-IS, EIGRP, OSPF, and BGP. The course will help you learn and practice how to configure and troubleshoot large networks employing such protocols.

Customize It!

Customize this course to your specific background and job requirements at little-to-no additional cost. We'll tailor the topics included in the course, emphasis each topic receives, pace of coverage, and the choice of hands-on exercises to suit your needs. If you have an interest in a particular area, let us know, so we can be sure to address it.

Learn How To

- Describe IP routing principles
- Configure IP classful and classless addresses
- Configure, and troubleshoot distance-vector routing principles
- Configure and troubleshoot IP link-state routing principles
- Plan, configure, and troubleshoot OSPF in single and across multiple areas
- Plan, configure, and troubleshoot EIGRP in enterprise networks
- Describe fundamentals of IS-IS routing protocol
- Describe basics of BGP
- Plan and configure redistribution and policy-based routing

Course Outline

- IP Routing Principles
  - Key information routers need to route data
  - Classful and classless routing protocols
  - Comparison of different types of routing protocols
  - Three-layer design model for enterprise networks
  - Routing versus switching
- Configuring IP Classful and Classless Addresses
  - A brief on IP addresses
  - IP subnetting
  - Variable-length subnet masks
  - Prefix routing/CIDR
  - Summarization
- Distance-vector Routing Protocols
  - What does a distance-vector routing protocol do?
  - RIP version 1 and RIP version 2
  - IGRP and EIGRP
  - Administrative distance and choosing between protocols
  - Convergence
  - Interior and exterior gateway protocols
- IP Link-state Routing Principles
  - Overview of link-state routing protocols
  - OSPF
  - IS-IS
  - BGP-4
  - Convergence
- Planning, Configuring, and Troubleshooting OSPF in Single and across Multiple Areas
  - Features of a single area OSPF
  - Features of multi-area OSPF
  - Configuring a single area OSPF
  - Configuring a multi-area OSPF
  - Verifying OSPF operations
- Planning, Configure, and Troubleshooting EIGRP in Enterprise Networks
  - EIGRP features and operation
  - Verifying proper operation of EIGRP
  - Show and Debug command outputs
  - Selection of route in networking scenarios
- IS-IS Routing Protocol Fundamentals
  - Basic IS-IS concepts and terminology
  - Types of IS-IS routers
  - IS-IS areas
  - Establishing adjacencies
  - Configuring IS-IS on Cisco routers
  - Verification methods
- Basics of BGP
  - BGP features and operation
  - How BGP policy-based routing functions

- Configuring BGP in different networking scenarios
- Verifying proper operation of BGP

- Redistribution and Policy-based Routing
  - Selecting and configuring different ways to control routing update traffic
  - Configuring policy-based routing using route maps
  - Configuring router redistribution
  - Redistribution between BGP and interior gateway routing protocols
  - Verifying route redistribution

How You Will Learn

- An experienced I/T professional will teach this class in workshop (interactive lecture/lab) format.
- Hands-on exercises will help you understand each topic and make a bridge from theory to application.
- The instructor will offer real-life examples, applications, and case studies to enrich the class and drive home the essential points.
- You'll learn dos and don'ts, both the tricks of the trade as well as the hidden pitfalls.
- The Participant Handbooks will provide you with a structure to which you can add information and insight provided in real-time, turning it into a valuable reference resource you can take back to your job.

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