HDTC Training Center

Provide

Technical proposal of the Training program

Cisco IP Routing

Course Overview:

This hands-on training course provides a comprehensive understanding of Cisco IP routing technologies, focusing on configuration, troubleshooting, and implementation of scalable and secure enterprise routing solutions using Cisco routers and IOS. The course emphasizes real-world application of dynamic routing protocols such as OSPF, EIGRP, BGP, and route redistribution.

General Objective:

To enable participants to design, configure, operate, and troubleshoot complex enterprise-level IP routing infrastructures using Cisco routers, aligned with Cisco professional certification standards.

Program Objectives:

By the end of this program, participants will be able to:

- Understand key IP routing concepts and Cisco IOS routing architecture
- Configure and verify EIGRP, OSPFv2/v3, and BGP for IPv4/IPv6 networks
- Implement route filtering, redistribution, and path control
- Troubleshoot routing protocol issues using Cisco tools and commands
- Secure and optimize routing updates using authentication and route summarization
- Apply policy-based routing and track network performance.

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Program Outlines:

Module 1: Introduction to Enterprise IP Routing

- Review of TCP/IP and OSI models
- Cisco IOS routing fundamentals
- Static routing and default routes
- Introduction to dynamic routing protocols
- Administrative distance and route selection

Module 2: IPv6 Routing – Static Routing

- Finding Feature Information
- Prerequisites for IPv6Routing: Static Routing
- Restrictions for IPv6Routing: Static Routing
- Information About IPv6Routing: Static Routing
- How to Configure IPv6 Static Routing?
- Configuration Examples for IPv6 Static Routing
- Feature Information for IPv6 Routing: Static Routing

Module 3: IPv4 Loop-Free Alternate Fast Reroute

- Feature Information
- Prerequisites for IPv4 Loop-Free Alternate Fast Reroute
- Restrictions for IPv4 Loop-Free Alternate Fast Reroute
- Information About IPv4 Loop-Free Alternate Fast Reroute
- How to Configure IPv4 Loop-Free Alternate Fast Reroute
- Configuration Examples for IPv4 Loop-Free Alternate Fast Reroute
- Feature Information for Configuring IPv4 Loop-Free Alternate Fast Reroute

Module 4: IP Event Dampening

- Finding Feature Information
- Restrictions for IP Event Dampening
- Information About IP Event Dampening
- How to Configure IP Event Dampening?
- Configuration Examples for IP Event Dampening

- Additional References for IPv6 Policy-Based Routing
- Feature Information for IP Event Dampening

Module 5: EIGRP Configuration and Troubleshooting

- EIGRP concepts and features
- EIGRP for IPv4 and IPv6
- Neighbor relationships and DUAL algorithm
- Load balancing and metric tuning
- Troubleshooting EIGRP adjacencies and routing loops

Module 6: OSPF Deep Dive (Single and Multi-Area)

- OSPFv2 vs. OSPFv3 overview
- Router roles, LSAs, and SPF algorithm
- Multi-area OSPF and backbone area design
- Passive interfaces and authentication
- Troubleshooting OSPF neighbor states and convergence issues

Module 7: BGP and Advanced Routing

- BGP basics: path vector protocol, attributes, and neighbors
- iBGP vs. eBGP configuration
- Route reflectors and confederations
- Prefix lists, route maps, and filtering
- Troubleshooting BGP peering and path selection

Module 8: Redistribution, Policy-Based Routing, and Route Control

- Route redistribution between protocols
- Redistribution filtering with route-maps
- Policy-based routing (PBR) and tracking
- IP SLA basics
- Final lab: Full routing scenario integration
- Review & Q&A for certification alignment

Target Audience:

- Network engineers and administrators
- IT infrastructure specialists
- CCNA-certified professionals seeking advancement
- Professionals preparing for Cisco ENARSI (300-410) certification
- Enterprise network architects or support staff

Training methods:

- Technology-Based Learning.
- Simulation in Training.
- On-the-job guidance.
- Trainer-Led Training.
- Work Teams and Roles.
- Films and Videos.
- Case Studies and Workshops.

Financial proposal of the Training program

Cisco IP Routing

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Financial proposal:

★ **Price**

$ 3750 USD per participant, +5% Value Added Tax (VAT).

✓ This fee covers attendance, educational materials, office

supplies, and only an attendance certificate from HDTC.

★ **Venue:**

✓ Cairo

★ **Number of days / Training Date:**

✓ 5 Days

✓ From 8 To 12 September 2025

★ **Timing:**

✓ From 9:00 AM To 2:00 PM