Implementing Cisco Enterprise Advanced Routing and Services (ENARSI)

Course Duration: 40 Hours (5 Days)

Overview

The Implementing Cisco Enterprise Advanced Routing and Services (ENARSI) course is designed to provide network professionals with the knowledge necessary to implement and troubleshoot advanced routing technologies and services. This course prepares candidates for the CCNP ENARSI exam, a crucial step towards the CCNP Enterprise certification, and also helps those with a CCNA ENARSI background to advance their skills. Covering a wide range of topics from Layer 3 Technologies, VPN Technologies, Infrastructure Security, to Infrastructure Services, learners will delve into Troubleshooting administrative distance, Route maps, Loop prevention mechanisms, and understand complex concepts such as VRF-Lite and Bidirectional Forwarding Detection. The course emphasizes real-world application, ensuring that participants can manage and optimize modern enterprise networks effectively. By completing this course, learners will enhance their professional value and be equipped with the skills needed in today's networking environments.

Audience Profile

The Implementing Cisco Enterprise Advanced Routing and Services (ENARSI) course is designed for IT professionals seeking expertise in Cisco routing and services.

- Network engineers involved in the deployment and maintenance of enterprise network infrastructure
- Systems engineers focused on supporting and troubleshooting network systems
- Cisco network consultants who guide clients in implementing advanced routing services
- IT professionals preparing for the Cisco ENARSI 300-410 certification exam
- Network administrators looking to enhance their routing knowledge and skills
- Network designers responsible for designing efficient enterprise routing solutions
- Technical support personnel who assist in resolving advanced routing issues within an organization
- Network analysts interested in deepening their understanding of Layer 3 technologies and VPNs
- Security engineers working on infrastructure security measures within a Cisco environment
- IT managers overseeing teams that maintain complex network infrastructures

Course Syllabus

After taking this training, you should be able to:

- Configure classic Enhanced Interior Gateway Routing Protocol (EIGRP) and named EIGRP for IPv4 and IPv6
- Optimize classic EIGRP and named EIGRP for IPv4 and IPv6
- Troubleshoot classic EIGRP and named EIGRP for IPv4 and IPv6
- Configure Open Shortest Path First (OSPF)v2 and OSPFv3 in IPv4 and IPv6 environments
- Optimize OSPFv2 and OSPFv3 behaviour
- Troubleshoot OSPFv2 for IPv4 and OSPFv3 for IPv4 and IPv6
- Implement route redistribution using filtering mechanisms
- Troubleshoot redistribution
- Implement path control using Policy-Based Routing (PBR) and IP Service Level Agreement (SLA)
- Configure Multiprotocol-Border Gateway Protocol (MP-BGP) in IPv4 and IPv6 environments
- Optimize MP-BGP in IPv4 and IPv6 environments
- Troubleshoot MP-BGP for IPv4 and IPv6
- Describe the features of Multiprotocol Label Switching (MPLS)
- Describe the major architectural components of an MPLS VPN
- Identify the routing and packet forwarding functionalities for MPLS VPNs
- Explain how packets are forwarded in an MPLS VPN environment
- Implement Cisco Internetwork Operating System (IOS®) Dynamic Multipoint VPNs (DMVPNs)
- Implement Dynamic Host Configuration Protocol (DHCP)
- Describe the tools available to secure the IPV6 first hop
- Troubleshoot Cisco router security features
- Troubleshoot infrastructure security and services

Lab outline

- Configure EIGRP Using Classic Mode and Named Mode for IPv4 and IPv6
- Verify the EIGRP Topology Table
- Configure EIGRP Stub Routing, Summarization, and Default Routing
- Configure EIGRP Load Balancing and Authentication
- Troubleshoot EIGRP Issues
- Configure OSPFv3 for IPv4 and IPv6
- Verify the Link-State Database
- Configure OSPF Stub Areas and Summarization
- Configure OSPF Authentication
- Troubleshoot OSPF Issues
- Implement Routing Protocol Redistribution
- Manipulate Redistribution
- Manipulate Redistribution Using Route Maps

- Troubleshoot Redistribution Issues
- Implement PBR
- Configure IBGP and External Border Gateway Protocol (EBGP)
- Implement BGP Path Selection