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Training overview

Implementing Cisco Enterprise Advanced Routing and Services (ENARSI)

Description

The **Implementing Cisco Enterprise Advanced Routing and Services (ENARSI)** training gives you the knowledge and skills needed to install, configure, operate, and troubleshoot a dual stack enterprise network. This training covers advanced routing and infrastructure technologies, expanding on the topics covered in the Implementing and Operating Cisco Enterprise Network Core Technologies (ENCOR) training.

This training prepares you for the 300-410 ENARSI v1.1 exam. If passed, you earn the Cisco Certified Specialist – Enterprise Advanced Infrastructure Implementation certification and satisfy the concentration exam requirement for the Cisco Certified Network Professional (CCNP) Enterprise certification. This training also earns you 40 Continuing Education (CE) credits towards recertification.

How you'll benefit

This training will help you:

- Gain the knowledge you need to install, configure, operate, and troubleshoot a dual stack enterprise network
- Qualify for professional-level job roles in advance routing and services
- Prepare for the 300-410 ENARSI 1.0 exam
- Earn 40 CE credits toward recertification

Who should enroll

- Entry-Level Network Engineers
- Network Administrators
- Network Support Technicians
- Help Desk Technicians

Technology areas

- EnterpriseNetworking
- Routing and Switching

Objectives

- Configure, optimize, and troubleshoot enhanced interior gateway routing protocol (EIGRP)
- Configure, optimize, and troubleshoot open shortest path first (OSPF)v2 and OSPFv3
- Implement and troubleshoot route redistribution using filtering mechanisms
- Implement and troubleshoot path control using policy-based routing (PBR) and IP service level agreement (SLA)
- Configure, optimize, and troubleshoot border gateway protocol (BGP)
- Implement multiprotocol BGP (MP-BGP)
- Describe the features of multiprotocol label switching (MPLS)
- Describe the major architectural components of an MPLS virtual private network (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 and troubleshoot 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
- Troubleshoot network issues with Cisco DNA Center Assurance

Prerequisites

There are no prerequisites for this training. However, the knowledge and skills you are recommended to have before attending this training are:

- General understanding of network fundamentals
- Basic knowledge of local area network (LAN) implementation
- General understanding of network device management and security
- Basic knowledge of network automation
- General understanding of interior gateway protocol (IGP) routing, including EIGRP and OSPF
- General understanding of BGP
- General understanding of infrastructure security and services, including access control lists (ACLs), simple network management protocol (SNMP), DHCP, IP SLA, Syslog, authentication, authorization, and accounting (AAA), and control plane policing (CoPP)

These skills can be found in the following Cisco Learning Offerings:

- Implementing and Administering Cisco Solutions (CCNA)
- Implementing and Operating Cisco Enterprise Network Core Technologies (ENCOR)

Outline

- Implementing EIGRP
- Optimizing EIGRP
- Troubleshooting EIGRP
- Implementing OSPF
- Optimizing OSPF
- Troubleshooting OSPF
- Configuring Redistribution
- Troubleshooting Redistribution
- Implementing Path Control
- Implementing IBGP
- Optimizing BGP
- Implementing MP-BGP
- Troubleshooting BGP
- Exploring MPLS
- Introducing MPLS L3 VPN Architecture
- Introducing MPLS L3 VPN Routing
- Configuring VRF-Lite
- Implementing DMVPN
- Implementing DHCP
- Introducing IPv6 First Hop Security
- Securing Cisco Routers
- Troubleshooting Infrastructure Security and Services
- Troubleshooting with DNA Center Assurance

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 EBGP
- Implement BGP Path Selection
- Configure BGP Advanced Features

- Configure BGP Route Reflectors
- Configure MP-BGP for IPv4 and IPv6
- Troubleshoot BGP Issues
- Configure Routing with VRF-Lite
- Implement Cisco IOS DMVPN
- Obtain IPv6 Addresses Dynamically
- Troubleshoot DHCPv4 and DHCPv6 Issues
- Troubleshoot IPv4 and IPv6 ACL Issues
- Configure and Verify uRPF
- Troubleshoot Network Management Protocol Issues: Lab 1
- Troubleshoot Network Management Protocol Issues: Lab 2

What to expect on the exam

Implementing Cisco Enterprise Advanced Routing and Services (300-410 ENARSI) v1.1 is a 90-minute exam associated with the Cisco Certified Specialist – Enterprise Advanced Infrastructure Implementation certification and satisfies the core exam requirement for the CCNP Enterprise certification.

This exam tests your knowledge of implementing and troubleshooting for advanced routing technologies and services, including:

- Layer 3
- VPN services
- Infrastructure security
- Infrastructure services