



Implementing Cisco Enterprise Advanced Routing and Services (ENARSI)

COURSE OVERVIEW

The Implementing Cisco Enterprise Advanced Routing and Services (ENARSI) v1.0 gives you the knowledge you need to install, configure, operate, and troubleshoot an enterprise network. This course covers advanced routing and infrastructure technologies, expanding on the topics covered in the Implementing and Operating Cisco Enterprise Network Core Technologies (ENCOR) v1.0 course.

This course helps prepare you to take the exam, Implementing Cisco® Enterprise Advanced Routing and Services (300-410 ENARSI), which leads to the new CCNP® Enterprise and Cisco Certified Specialist – Enterprise Advanced Infrastructure Implementation certifications.

WHO WILL BENEFIT FROM THIS COURSE?

- Enterprise network engineers
- System engineers
- System administrators
- Network administrators

PREREQUISITES

Before taking this course, you should have:

- General understanding of network fundamentals
- Basic knowledge of how to implement LANs
- General understanding of how to manage network devices
- General understanding of how to secure network devices
- Basic knowledge of network automation

These Cisco courses are recommended to help you meet these prerequisites:

- Implementing and Operating Cisco Enterprise Network Core Technologies (ENCOR) v1.0
- Interconnecting Cisco Networking Devices, Part 1 (ICND1) v3.0
- Interconnecting Cisco Networking Devices, Part 2 (ICND2) v3.0

COURSE OBJECTIVES

After taking this course, 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 behavior
- 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

COURSE OUTLINE

Day 1:

- Implementing EIGRP
- Optimizing EIGRP
- Troubleshooting EIGRP

Day 2:

- Implementing OSPF
- Optimizing OSPF
- Troubleshooting OSPF
- Configuring Redistribution

Day 3:

- Configuring Redistribution
- Troubleshooting Redistribution
- Implementing Path Control
- Implementing IBGP
- Optimizing IBGP

Day 4:

- Optimizing IBGP
- Implementing MP-BGP
- Troubleshooting BGP
- Configuring VRF-Lite



Day 5:

- Implementing DMVPN
- Implementing DHCP
- Securing Cisco Routers
- Troubleshooting Infrastructure Security and Services

Self-Study

- Exploring MPLS
- Introducing MPLS L3 VPN Architecture
- Introducing MPLS L3 VPN Routing
- Introducing IPv6 First Hop Security
- Configuring Virtual Routing and Forwarding (VRF)-Lite
- Troubleshooting with DNA Center Assurance
- Topics on troubleshooting EIGRP, OSPF, BGP, and Redistribution
- Topics on CoPP
- Topics on troubleshooting 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
- LAB: 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
- 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
- Configure BGP Advanced Features
- Configure BGP Route Reflectors
- Configure MP-BGP for IPv4 and IPv6
- Troubleshoot BGP Issues
- Implement PBR
- Configure Routing with VRF-Lite
- Implement Cisco IOS DMVPN
- Obtain IPv6 Addresses Dynamically



- Troubleshoot DHCPv4 and DHCPv6 Issues
- Troubleshoot IPv4 and IPv6 Access Control List (ACL) Issues
- Configure and Verify Control Plane Policing
- Configure and Verify Unicast Reverse Path Forwarding (uRPF)
- Troubleshoot Network Management Protocol Issues: Lab 1
- Troubleshoot Network Management Protocol Issues: Lab 2

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