

Implementing Cisco Enterprise Advanced Routing and Services (ENARSI) v1.0

What you'll learn in this course

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, **300-410 Implementing Cisco® Enterprise Advanced Routing and Services (ENARSI)**, which leads to the new CCNP® Enterprise and Cisco Certified Specialist – Enterprise Advanced Infrastructure Implementation certifications. This course also earns you 40 Continuing Education (CE) credits towards recertification.

Course duration

- Instructor-led training: 5 days with hands-on lab practice
- Virtual instructor-led training: 5 days of web-based classes with hands-on lab practice
- E-learning: Equivalent of 5 days of instruction with hands-on lab practice

How you'll benefit

This course will help you:

- Gain the knowledge you need to install, configure, operate, and troubleshoot an enterprise network
- Qualify for professional-level job roles in advance routing and services
- Earn 40 CE credits toward recertification

What to expect in the exam

This course will help you prepare for **the Implementing Cisco Enterprise Advanced Routing and Services (300-410 ENARSI)** exam. This exam tests your knowledge of implementation and troubleshooting for advanced routing technologies and services.

After you pass **300-410 ENARSI**:

- You earn the **Cisco Certified Specialist – Enterprise Advanced Infrastructure Implementation** certification.
- You satisfy the concentration requirement for the new CCNP Enterprise certification. To complete your CCNP Enterprise certification, pass the Enterprise core exam, **350-401 Implementing Cisco Enterprise Network Core Technologies (ENCOR)**.

Who should enroll

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

How to enroll

E-learning

- To buy a single e-learning license, visit the [Cisco Learning Network Store](#)
- For more than one license, or a learning library subscription, contact us at learning-bdm@cisco.com

Instructor-led training

- Find a class at the [Cisco Learning Locator](#)
- Arrange training at your location through [Cisco Private Group Training](#)

Technology areas

- Enterprise networking
- Routing and switching

Course details

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

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 v3.0
- Interconnecting Cisco Networking Devices, Part 2 v3.0

Outline

- Implementing EIGRP
- Optimizing EIGRP
- Troubleshooting EIGRP
- Implementing OSPF
- Optimizing OSPF
- Troubleshooting OSPF
- Configuring Redistribution
- Troubleshooting Redistribution
- Implementing Path Control
- Implementing Internal Border Gateway Protocol (IBGP)
- Optimizing BGP
- Implementing MP-BGP
- Troubleshooting BGP
- Exploring MPLS
- Introducing MPLS L3 VPN Architecture
- Introducing MPLS L3 VPN Routing
- Configuring Virtual Routing and Forwarding (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 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
- 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 Unicast Reverse Path Forwarding (uRPF)
- Troubleshoot Network Management Protocol Issues: Lab 1
- Troubleshoot Network Management Protocol Issues: Lab 2




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