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**Learning Style: Virtual Classroom**

**Technology: Cisco**

**Difficulty: Intermediate**

**Course Duration: 5 Days**

# Implementing Cisco Enterprise Advanced Routing and Services (ENARSI)



## About this course:

The Implementing Cisco Enterprise Advanced Routing and Services (ENARSI) v1.0 is a five-day course which 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.

## Course Objective:

Upon completing this course, the learner will be able to meet these overall objectives:

- 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

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
- Prepare for the Implementing Cisco Enterprise Advanced Routing and Services (300-410 ENARSI) exam

## Audience:

The primary audience for this course is as follows:

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

## Prerequisite:

The knowledge and skills that a learner should have before attending this course are as follows:

- 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

## Course Outline:

**Implementing EIGRP**

**Optimizing EIGRP**

**Troubleshooting EIGRP**

**Implementing OSPF**

**Optimizing OSPF**

**Troubleshooting OSPF**

**Implementing Internal Border Gateway Protocol (IBGP)**

**Optimizing BGP**

**Implementing MP-BGP**

**Troubleshooting BGP**

**Configuring Redistribution**

**Troubleshooting Redistribution**

**Implementing Path Control**

**Exploring MPLS**

**Introducing MPLS L3 VPN Architecture**

**Introducing MPLS L3 VPN Routing**

**Configuring Virtual Routing and Forwarding (VRF)-Lite**

**Implementing DMVPN**

**Implementing DHCP**

**Troubleshooting DHCP**

**Introducing IPv6 First Hop Security**

**Securing Cisco Routers**

**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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