

# Implementing Cisco IP Routing (ROUTE)



Experts in Networking

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This course is designed for network professionals who want to correctly implement routing based solutions given a network design using Cisco IOS services and features, where implementation of routing includes planning, configuring and verification

This course is a component of the Cisco CCNP Routing and Switching curriculum designed to help delegates with information on the use of advanced routing in implementing scalability for Cisco routers that are connected to LANs and WANs.

### Pre-requisites

- ICND1
- ICND2

Course	Course Objectives
<p><b>Implementing Cisco IP Routing (ROUTE)</b></p> <p>This course forms part of the following Cisco certifications:</p> <p><b>CCNP</b> (<i>Cisco Certified Network Professional</i>)</p> <p><b>CCDP</b> (<i>Cisco Certified Design Professional</i>)</p> <p><b>CCIP</b> (<i>Cisco Certified Internetworking Professional</i>)</p> <p><u>Certification</u> Required topics are covered for the Cisco exam: <b>642-902 ROUTE</b></p> <p><u>Duration</u> 4 days</p>	<p>Upon completion of this course, the delegate will be able to:</p> <ul style="list-style-type: none"><li>• Plan and document the configuration and verification of routing protocols and its optimization in enterprise networks</li><li>• Identify the technologies, components, and metrics of EIGRP to implement and verify EIGRP routing in diverse, large-scale internetworks based on requirements</li><li>• Identify, analyze, and match OSPF multiarea routing functions and benefits for routing efficiencies in network operations in order to implement and verify OSPF routing in a complex enterprise network</li><li>• Implement and verify a redistribution solution in a multi-protocol network that uses IOS features to control path selection and loop free topology according to a given network design and requirements</li><li>• Evaluate common network performance issues and identify the tools needed to provide a layer 3 path control that uses IOS features to control the path</li><li>• Implement and verify a layer 3 solution using BGP to connect an enterprise network to a service provider</li></ul>

## Course Content

### **Planning Routing Services to Requirements**

- Assessing Complex Enterprise Network Requirements
- Common Maintenance Processes and Procedures

### **Implementing an EIGRP-Based Solution**

- Planning Routing Implementations with EIGRP
- Implementing and Verifying Basic EIGRP for the Enterprise LAN Architecture
- Configuring and Verifying EIGRP for the Enterprise WAN Architecture
- Implementing and Verifying EIGRP Authentication
- Advanced EIGRP Features in an Enterprise Network

### **Implementing a Scalable Multiarea Network OSPF-Based Solution**

- Planning Routing Implementations with OSPF as Scalable Routing Protocol
- How OSPF Packet Processes Work
- Improving Routing Performance in a Complex Enterprise Network
- Configuring and Verifying OSPF Routing
- Configuring and Verifying OSPF Route Summarization
- Configuring and Verifying OSPF Special Area Types
- OSPF area types
- Configuring and Verifying OSPF Authentication

### **Implement an IPv4-Based Redistribution Solution**

- Assessing Network Routing Performance and Security Issues
- Operating a Network Using Multiple IP Routing Protocols
- Configuring and Verifying Route Redistribution

### **Implementing Path Control**

- Assessing Path Control Network Performance Issues
- Lab 5-1 Debrief
- References to additional Path Control in E-Learning

### **Connection of an Enterprise Network to an ISP Network**

- Planning the Enterprise-to-ISP Connection
- Considering the Advantages of Using BGP
- Comparing the Functions and Uses of EBGP and IBGP
- Configuring and Verifying Basic BGP Operations
- Using the BGP Attributes and Path Selection Process