# CCIE Enterprise Infrastructure Expert Level Certification (350-401 ENCOR)

**Duration:** 80 Hours
**Certification Level:** Expert

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## Course Overview

The **CCIE Enterprise Infrastructure (350-401 ENCOR)** certification is designed for networking professionals aiming to demonstrate their expertise in advanced enterprise networking technologies. The course covers a wide range of topics including network infrastructure, security, automation, and wireless technologies. This certification validates skills in planning, implementing, and troubleshooting complex enterprise network infrastructures and prepares professionals for expert-level roles in enterprise networking.

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## Course Objectives

Upon completing this course, participants will:

- Master advanced routing and switching concepts
- Understand and implement network automation and SD-WAN
- Learn to configure and troubleshoot complex enterprise networks
- Implement security solutions for enterprise infrastructures
- Prepare for the **CCIE Enterprise Infrastructure Expert** certification exam

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## Course Modules

### Module 1: Network Fundamentals (10 Hours)

- Overview of enterprise network design
- OSI and TCP/IP models
- IP addressing, subnetting, and routing fundamentals
- Review of routing protocols: OSPF, EIGRP, and BGP
- Layer 2 and Layer 3 technologies in enterprise networks

### Module 2: Advanced Routing and Switching (14 Hours)

- Advanced configuration of OSPF, EIGRP, and BGP
- Route redistribution techniques
- MPLS (Multiprotocol Label Switching)
- Advanced Layer 2 switching concepts: STP, EtherChannel, and VLANs
- High availability technologies: HSRP, VRRP, GLBP

## Module 3: Enterprise Network Security (12 Hours)

- Secure network design and implementation
- Implementing firewalls, ACLs, and VPNs
- Intrusion Prevention and Detection Systems (IPS/IDS)
- Secure routing protocols and configurations
- Endpoint security and policy enforcement

## Module 4: Enterprise Automation and SDN (10 Hours)

- Introduction to network automation and SDN
- Cisco DNA Center and SD-WAN
- Implementing automation with Ansible and Python
- Infrastructure as Code (IaC) and configuration management
- Network programmability with APIs

## Module 5: Wireless and Mobility (8 Hours)

- Enterprise wireless LAN architecture
- Wireless standards and configuration
- Implementing security in wireless networks
- Troubleshooting wireless networks
- Mobility and roaming in enterprise wireless environments

## Module 6: Data Center and Cloud Technologies (8 Hours)

- Introduction to data center and cloud integration
- Data center switching and routing protocols
- Network virtualization and network function virtualization (NFV)
- Cloud network architectures and hybrid environments
- Integrating data centers with enterprise networks

## Module 7: Troubleshooting and Maintenance (10 Hours)

- Advanced network troubleshooting techniques
- Using diagnostic tools for enterprise networks
- Monitoring and performance management
- Troubleshooting routing, switching, and security issues
- Configuration management and version control

### Module 8: CCIE Lab and Exam Preparation (8 Hours)

- Hands-on lab practice for real-world scenarios
- Mock exams and practical exercises
- Final exam preparation and study tips
- Understanding the CCIE exam format and structure

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# Target Audience

This course is ideal for:

- Network engineers and architects aiming for expert-level certifications
- Professionals responsible for implementing and managing enterprise network infrastructures
- IT professionals seeking advanced skills in network security, automation, and SD-WAN
- Those preparing for the **CCIE Enterprise Infrastructure Expert** certification exam