

CCNP ENCORE (350-401)

Duration: 40 Hours

Certification Level: Professional

Course Overview

The **CCNP ENCORE (350-401)** certification course is designed for networking professionals looking to validate their skills in core networking technologies, including routing and switching, security, automation, and network management. This course prepares you for the **Cisco CCNP ENCORE exam**, ensuring you have a strong foundation in the implementation and troubleshooting of complex network solutions.

Course Objectives

By completing this course, participants will:

- Understand and implement advanced routing protocols
 - Learn how to configure and troubleshoot complex networks
 - Implement secure network infrastructures
 - Apply network automation techniques to optimize operations
 - Prepare for the **CCNP ENCORE 350-401 certification exam**
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Course Modules

Module 1: Network Fundamentals (6 Hours)

- OSI and TCP/IP models in-depth
- Networking components and technologies
- IP addressing and subnetting
- Routing concepts: Static, Dynamic, and Default Routes
- Introduction to IPv6 and its configuration

Module 2: Layer 2 Technologies (6 Hours)

- Ethernet and MAC address tables
- VLANs (Virtual Local Area Networks) and Trunking
- Spanning Tree Protocol (STP)

- Link Aggregation and EtherChannel
- First Hop Redundancy Protocols (FHRP)

Module 3: Routing Technologies (8 Hours)

- Routing protocols: OSPF, EIGRP, BGP
- Routing table management and redistribution
- Inter-VLAN Routing and Layer 3 Switches
- Policy-based routing
- Routing protocol authentication

Module 4: IP Services (6 Hours)

- DHCP (Dynamic Host Configuration Protocol)
- DNS (Domain Name System) configuration
- Network Address Translation (NAT)
- Quality of Service (QoS) implementation
- Network Time Protocol (NTP) and Syslog

Module 5: Security Fundamentals (6 Hours)

- Network security concepts
- Implementing access control lists (ACLs)
- Secure routing protocols (OSPF, EIGRP)
- VPNs (Virtual Private Networks): Site-to-Site and Remote Access
- AAA (Authentication, Authorization, Accounting) with RADIUS and TACACS+

Module 6: Automation and Programmability (4 Hours)

- Introduction to network automation
- Configuration management tools (e.g., Ansible, Puppet)
- REST APIs for network automation
- Cisco DNA Center and SD-WAN
- Scripting with Python for network automation

Module 7: Troubleshooting and Maintenance (4 Hours)

- Troubleshooting network issues using CLI tools
 - Monitoring and diagnostic tools (ping, traceroute, show commands)
 - Troubleshooting routing and switching issues
 - Troubleshooting network security issues
 - Maintenance and firmware updates
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Target Audience

This course is designed for:

- Networking professionals aiming for Cisco certification
- Network engineers and administrators
- IT professionals looking to advance their networking skills
- Anyone planning to pursue the **CCNP ENCORE 350-401** exam