

CCNA: Cisco Certified Network Associate

Duration: 40 Hours

Certification Level: Associate

Course Overview

The **CCNA certification** course is designed to provide foundational knowledge in networking, IP connectivity, network access, IP services, security, and automation. It prepares learners for the **Cisco CCNA 200-301 certification exam**, which validates the skills required to install, configure, and troubleshoot networks. This course is ideal for those looking to start their career as a network engineer.

Course Objectives

By the end of the course, participants will be able to:

- Understand networking protocols and concepts
 - Configure and troubleshoot routers and switches
 - Implement basic network security measures
 - Learn about network automation and programmability
 - Prepare for the **Cisco CCNA 200-301 certification exam**
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Course Modules

Module 1: Network Fundamentals (6 Hours)

- Introduction to networking
- OSI and TCP/IP models
- IPv4 and IPv6 addressing
- Subnetting and VLSM (Variable Length Subnet Masking)
- Networking topologies and cabling

Module 2: Network Access (6 Hours)

- Ethernet switching and MAC address tables
- VLANs (Virtual Local Area Networks) and trunking
- Inter-VLAN routing

- Spanning Tree Protocol (STP)

Module 3: IP Connectivity (6 Hours)

- Static routing and dynamic routing protocols (OSPF)
- Default routes and routing table interpretation
- Routing fundamentals and configuration

Module 4: IP Services (6 Hours)

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

Module 5: Security Fundamentals (6 Hours)

- Network security threats and vulnerabilities
- Device hardening and securing access
- Access Control Lists (ACLs)
- Authentication, Authorization, and Accounting (AAA)

Module 6: Automation and Programmability (4 Hours)

- Introduction to Software Defined Networking (SDN)
- Controller-based networking and Cisco DNA
- Using REST APIs and JSON for automation

Module 7: Exam Preparation and Labs (6 Hours)

- Review key exam objectives and concepts
- Hands-on lab exercises and practice scenarios
- Practice exam questions and exam tips
- Final exam strategy and course wrap-up

Target Audience

This course is ideal for:

- Beginners in networking
- IT professionals aiming for Cisco certification
- Network support technicians and engineers

- Anyone aspiring to become a network engineer
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Certification

Upon successful completion, candidates are prepared to take the **Cisco CCNA 200-301** exam and earn the **Cisco Certified Network Associate** certification, a globally recognized credential in the networking field.