# Implementing and Administering Cisco Solutions (CCNA)

**ID** CCNA   **Price** 3,195.— €(excl. tax)   **Duration** 5 days

The new CCNA training teaches a broad range of basic knowledge about modern network technology. This course comprises:

- 5 days of extensive training in our training centers or the virtual classroom
- 3 days of self-study on special topics
- Virtual lab, which is available, even after the end of the classroom training, from the first day of training for 90 days and a total lab time of 60 hours.
- CCNA 200-301 exam voucher

## Course Overview

This training teaches you how to install, operate, configure, and verify a basic IPv4 and IPv6 network, configure network components, such as switches, routers, and wireless local area network (LAN) controllers (WLNs), manage network devices, and identify basic security threats. This training also covers the introduction of AI and machine learning (ML) in network operations.

This Learning Path prepares you for the Cisco Certified Network Associate (200-301 CCNA) v1.1 exam. If passed, you earn your Cisco Certified Network Associate (CCNA).

### How You'll Benefit

This training will help you:

- Learn the knowledge and skills to install, configure, and operate a small- to medium-sized network
- Gain a foundation in the essentials of networking, security, and automation
- Prepare for the 200-301 CCNA v1.1 exam
- Earn 30 CE credits toward recertification

### What to Expect in the Exam

Cisco Certified Network Associate (200-301 CCNA) v1.1 is a 120-minute exam associated with the CCNA certification. The exam tests your knowledge and skills related to:

- Network fundamentals
- Network access
- IP connectivity
- IP services
- Security fundamentals
- Automation and programmability

## Who should attend

This course is designed for anyone seeking CCNA certification. The course also provides foundational knowledge for all support technicians involved in the basic installation, operation, and verification of Cisco networks.

The job roles best suited to the material in this course are:

- Entry-level Network Engineers
- Entry-level Network Administrators
- Entry-level Network Support Technicians
- Entry-level Help Desk Technicians

## This course is part of the following Certifications

Cisco Certified Network Associate (CCNA)

## Prerequisites

Before taking this course, you should have:

- Basic computer literacy
- Basic PC operating system navigation skills
- Basic Internet usage skills
- Basic IP address knowledge

There are no formal prerequisites for CCNA certification, but you should make sure to have a good understanding of the exam topics.

## Course Objectives

- Identify the components of a computer network and describe their basic characteristics
- Understand the model of host-to-host communication
- Describe the features and functions of the Cisco IOS Software
- Describe LANs and the role of switches within LANs
- Describe Ethernet as the network access layer of transmission control protocol and the internet protocol (TCP/IP) and describe the operation of switches
- Install a switch and perform the initial configuration
- Describe the TCP/IP internet layer, IPv4, its addressing scheme, and subnetting
- Describe the TCP/IP transport layer and application layer
- Explore the functions of routing
- Implement basic configuration on a Cisco router
- Explain host-to-host communications across switches and routers
- Identify and resolve common switched network issues and common problems associated with IPv4 addressing
- Describe IPv6 main features, addresses and configure and verify basic IPv6 connectivity
- Describe the operation, benefits, and limitations of static routing
- Describe, implement and verify virtual local area networks (VLANs) and trunks
- Describe the application and configuration of inter-VLAN routing
- Explain the basics of dynamic routing protocols and describe components and terms of open shortest path first (OSPF)
- Explain how spanning tree protocol (STP) and rapid spanning tree protocol (RSTP) work
- Configure link aggregation using EtherChannel
- Describe the purpose of Layer 3 redundancy protocols
- Describe basic wide-area network (WAN) and virtual private network (VPN) concepts
- Describe the operation of access control lists (ACLs) and their applications in the network
- Configure internet access using dynamic host configuration protocol (DHCP) clients and explain and configure network address translation (NAT) on Cisco routers
- Describe the basic quality of service (QoS) concepts
- Describe the concepts of wireless networks, which types of wireless networks can be built and how to use WLC
- Describe network and device architectures and introduce virtualization
- Explain software-defined networks
- Configure basic Cisco IOS system monitoring tools
- Describe the management of Cisco devices
- Describe the current security threat landscape
- Describe threat defense technologies
- Implement a basic security configuration of the device management plane
- Implement basic steps to harden network devices

- Discuss the need of network programmability in Enterprise networks, common programmability protocols, and configuration management tools
- Describe AI and ML in network operations

## Detailed Course Outline

This class includes lecture sections and some self-study sections. In instructor-led classes, lectures are delivered in real-time, either in person or via video conferencing. In e-learning classes, the lectures are on recorded videos.

- Exploring the Functions of Networking
- Introducing the Host-To-Host Communications Model
- Operating Cisco IOS Software
- Introducing LANs
- Exploring the TCP/IP Link Layer
- Starting a Switch
- Introducing the TCP/IP Internet Layer, IPv4 Addressing, and Subnets
- Explaining the TCP/IP Transport Layer and Application Layer
- Exploring the Functions of Routing
- Configuring a Cisco Router
- Exploring the Packet Delivery Process
- Troubleshooting a Simple Network
- Introducing Basic IPv6
- Configuring Static Routing
- Implementing VLANs and Trunks
- Routing Between VLANs
- Introducing OSPF
- Building Redundant Switched Topologies
- Improving Redundant Switched Topologies with EtherChannel
- Explaining the Basics of ACL
- Enabling Internet Connectivity
- Introducing AI and ML in Network Operations
- Introducing System Monitoring
- Managing Cisco Devices
- Securing Administrative Access
- Implementing Device Hardening
- Exploring Layer 3 Redundancy
- Introducing WAN Technologies
- Introducing QoS
- Explaining Wireless Fundamentals
- Introducing Architectures and Virtualization
- Explaining Software-Defined Networking
- Introducing Network Programmability
- Examining the Security Threat Landscape
- Implementing Threat Defense Technologies

# About Fast Lane

Fast Lane is a global, award-winning specialist in technology and business training as well as consulting services for digital transformation. As the only global partner of the three cloud hyperscalers- Microsoft, AWS and Google- and partner of 30 other leading IT vendors, Fast Lane offers qualification solutions and professional services that can be scaled as needed. More than 4,000 experienced Fast Lane professionals train and advise customers in organizations of all sizes in 90 countries worldwide in the areas of cloud, artificial intelligence, cyber security, software development, wireless and mobility, modern workplace, as well as management and leadership skills, IT and project management.

## Fast Lane Services

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✓ Remote Labs
✓ Talent Programs
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✓ Instructor-Led Online Training
✓ FLEX Classroom – Classroom & Online Hybrid
✓ Onsite & Customized Training
✓ E-Learning
✓ Blended & Hybrid Learning
✓ Mobile Learning

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with high-end training centers around the globe

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with over 19.000 combined certifications

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