



## Implementing and Administering Cisco Solutions v2.1 (CCNA)

- 5 Days
- Lecture and Hands-on Labs

### Course Overview

Cisco's CCNA v2.0 accelerates the journey from “plugging in cables” to confidently designing, configuring, and troubleshooting small-to-medium enterprise networks. Through a tightly-woven mix of lecture and lab you'll install and harden switches, route IPv4 and IPv6 traffic, build resilient Layer-2 topologies, enable secure Internet connectivity, and finish with a look at software-defined networking and Cisco DNA Center automation. The week is deliberately structured so that every lecture immediately rolls into a matching lab, cementing concepts while keeping energy high. By Friday you will have practiced every skill area measured by the 200-301 CCNA exam, while also seeing how those skills map to real-world projects such as bring-ups, migrations, and brown-field troubleshooting.

Review this course online at <https://www.alta3.com/courses/ccna>

### Who Should Attend

- Entry-level network engineers
- Network administrators & support technicians
- Help-desk staff who must isolate L1–L3 problems

### What You'll Learn

- Explain network components and the host-to-host model
- Install, configure, and verify Layer-2 switches and VLANs
- Subnet and address IPv4/IPv6 networks, then route them with static routes & OSPF
- Build redundant topologies with STP, EtherChannel, and FHRPs
- Secure device management planes, ports, and end-to-end traffic with ACLs & NAT
- Configure basic WLANs on a Wireless LAN Controller
- Monitor devices, back up/upgrade IOS, and automate tasks with Cisco DNA Center

### Outline

#### Lectures

1. Exploring the Functions of Networking
2. Introducing the Host-To-Host Communications Model
3. Operating Cisco IOS Software
4. Introducing LANs
5. Exploring the TCP/IP Link Layer
6. Starting a Switch
7. Introducing the TCP/IP Internet Layer, IPv4 Addressing, and Subnets

8. Explaining the TCP/IP Transport Layer and Application Layer
9. Exploring the Functions of Routing
10. Configuring a Cisco Router
11. Exploring the Packet Delivery Process
12. Troubleshooting a Simple Network
13. Introducing Basic IPv6
14. Configuring Static Routing
15. Implementing VLANs and Trunks
16. Routing Between VLANs
17. Introducing OSPF
18. Building Redundant Switched Topologies
19. Improving Redundant Switched Topologies with EtherChannel
20. Explaining the Basics of ACL
21. Enabling Internet Connectivity
22. Introducing AI and ML in Network Operations
23. Introducing System Monitoring
24. Managing Cisco Devices
25. Securing Administrative Access
26. Implementing Device Hardening
27. Exploring Layer 3 Redundancy
28. Introducing WAN Technologies
29. Introducing QoS
30. Explaining Wireless Fundamentals
31. Introducing Architectures and Virtualization
32. Explaining Software-Defined Networking
33. Introducing Network Programmability
34. Examining the Security Threat Landscape
35. Implementing Threat Defense Technologies

#### Labs

1. Get Started with Cisco CLI
2. Observe How a Switch Operates
3. Perform Basic Switch Configuration
4. Inspect TCP/IP Applications
5. Configure an Interface on a Cisco Router
6. Configure and Verify Layer 2 Discovery Protocols
7. Configure Default Gateway

8. Explore Packet Forwarding
9. Troubleshoot Switch Media and Port Issues
10. Troubleshoot Port Duplex Issues
11. Configure Basic IPv6 Connectivity
12. Configure and Verify IPv4 Static Routes
13. Configure IPv6 Static Routes
14. Configure VLANs and Trunks
15. Configure Inter-VLAN Routing
16. Configure and Verify Single-Area OSPF
17. Configure and Verify EtherChannel
18. Configure and Verify IPv4 ACLs
19. Configure a Provider-Assigned IPv4 Address
20. Configure Static NAT
21. Configure Dynamic NAT and PAT
22. Configure and Verify NTP
23. Create the Cisco IOS Image Backup
24. Upgrade Cisco IOS Image
25. Secure Console and Remote Access
26. Enable and Limit Remote Access Connectivity
27. Configure and Verify Port Security

## Prerequisites

- Basic Computer and Networking Knowledge
- Basic Understanding of TCP/IP
- Experience with Operating Systems
- No Prior Cisco Experience Required