uCertify

# Course Outline

## CCNA Certification Study Guide, Volume 2 (200-301)




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3. Exercises, Quizzes, Flashcards & Glossary

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4. Expert Instructor-Led Training
5. ADA Compliant & JAWS Compatible Platform
6. State of the Art Educator Tools
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8. Chapter & Lessons

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   Chapter 3: TCP/IP

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   Chapter 6: IP Routing

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## 1. Course Objective

Get certified for the Cisco CCNA certification exam with the CCNA Certification Study Guide, Volume 2 (200-301) course and lab. The CCNA course and lab cover the CCNA 200-301 exam objectives and provides an understanding of the topics such as access points, controllers (Cisco DNA Center and WLC), endpoints, servers, virtualization fundamentals, Cisco Wireless Architectures, and AP modes, and more.

## 2. Pre-Assessment

Pre-Assessment lets you identify the areas for improvement before you start your prep. It determines what students know about a topic before it is taught and identifies areas for improvement with question assessment before beginning the course.

## 3. Exercises

There is no limit to the number of times learners can attempt these. Exercises come with detailed remediation, which ensures that learners are confident on the topic before proceeding.




## 4. Quizzes

Quizzes test your knowledge on the topics of the exam when you go through the course material. There is no limit to the number of times you can attempt it.




## 5. flashcards

Flashcards are effective memory-aiding tools that help you learn complex topics easily. The flashcard will help you in memorizing definitions, terminologies, key concepts, and more. There is no limit to the number of times learners can attempt these. Flashcards help master the key concepts.




## 6. Glossary of terms

uCertify provides detailed explanations of concepts relevant to the course through Glossary. It contains a list of frequently used terminologies along with its detailed explanation. Glossary defines the key terms.



## 7. Expert Instructor-Led Training

uCertify uses the content from the finest publishers and only the IT industry's finest instructors. They have a minimum of 15 years real-world experience and are subject matter experts in their fields. Unlike a live class, you can study at your own pace. This creates a personal learning experience and gives you all the benefit of hands-on training with the flexibility of doing it around your schedule 24/7.

## 8. ADA Compliant & JAWS Compatible Platform

uCertify course and labs are ADA (Americans with Disability Act) compliant. It is now more accessible to students with features such as:

- Change the font, size, and color of the content of the course
- Text-to-speech, reads the text into spoken words
- Interactive videos, how-tos videos come with transcripts and voice-over
- Interactive transcripts, each word is clickable. Students can clip a specific part of the video by clicking on a word or a portion of the text.

JAWS (Job Access with Speech) is a computer screen reader program for Microsoft Windows that reads the screen either with a text-to-speech output or by a Refreshable Braille display. Student can easily navigate uCertify course using JAWS shortcut keys.

## 9. State of the Art Educator Tools

uCertify knows the importance of instructors and provide tools to help them do their job effectively. Instructors are able to clone and customize course. Do ability grouping. Create sections. Design grade scale and grade formula. Create and schedule assessments. Educators can also move a student from self-paced to mentor-guided to instructor-led mode in three clicks.

## 10. Award Winning Learning Platform (LMS)

uCertify has developed an award winning, highly interactive yet simple to use platform. The SIIA CODiE Awards is the only peer-reviewed program to showcase business and education technology's finest products and services. Since 1986, thousands of products, services and solutions have been

recognized for achieving excellence. uCertify has won CODiE awards consecutively for last 7 years:

- **2014**
    1. Best Postsecondary Learning Solution

- **2015**
    1. Best Education Solution
    2. Best Virtual Learning Solution
    3. Best Student Assessment Solution
    4. Best Postsecondary Learning Solution
    5. Best Career and Workforce Readiness Solution
    6. Best Instructional Solution in Other Curriculum Areas
    7. Best Corporate Learning/Workforce Development Solution

- **2016**
    1. Best Virtual Learning Solution
    2. Best Education Cloud-based Solution
    3. Best College and Career Readiness Solution
    4. Best Corporate / Workforce Learning Solution
    5. Best Postsecondary Learning Content Solution
    6. Best Postsecondary LMS or Learning Platform
    7. Best Learning Relationship Management Solution

- **2017**
    1. Best Overall Education Solution
    2. Best Student Assessment Solution
    3. Best Corporate/Workforce Learning Solution
    4. Best Higher Education LMS or Learning Platform

- **2018**
    1. Best Higher Education LMS or Learning Platform

2. Best Instructional Solution in Other Curriculum Areas
3. Best Learning Relationship Management Solution

- **2019**
  1. Best Virtual Learning Solution
  2. Best Content Authoring Development or Curation Solution
  3. Best Higher Education Learning Management Solution (LMS)

- **2020**
  1. Best College and Career Readiness Solution
  2. Best Cross-Curricular Solution
  3. Best Virtual Learning Solution

## 11. Chapter & Lessons

uCertify brings these textbooks to life. It is full of interactive activities that keeps the learner engaged. uCertify brings all available learning resources for a topic in one place so that the learner can efficiently learn without going to multiple places. Challenge questions are also embedded in the chapters so learners can attempt those while they are learning about that particular topic. This helps them grasp the concepts better because they can go over it again right away which improves learning.

Learners can do Flashcards, Exercises, Quizzes and Labs related to each chapter. At the end of every lesson, uCertify courses guide the learners on the path they should follow.

## Syllabus

### Chapter 1: Introduction

- Cisco’s Network Certifications
- What Does This Course Cover?
- CCNA Exam Overview

- CCNA Certification Exam 200-301 Objectives

## Chapter 2: Network Fundamentals

- Network Components
- Next-Generation Firewalls and IPS
- Network Topology Architectures
- Physical Interfaces and Cables
- Ethernet Cabling
- Summary
- Exam Essentials

## Chapter 3: TCP/IP

- Introducing TCP/IP
- TCP/IP and the DoD Model
- IP Addressing
- IPv4 Address Types
- Summary
- Exam Essentials

## Chapter 4: Easy Subnetting

- Subnetting Basics
- Summary
- Exam Essentials

## Chapter 5: Troubleshooting IP Addressing

- Cisco’s Way of Troubleshooting IP
- Summary
- Exam Essentials

## Chapter 6: IP Routing

- Routing Basics
- The IP Routing Process
- Configuring IP Routing
- Configuring IP Routing in Our Network
- Dynamic Routing
- Routing Information Protocol (RIP)
- Summary

- Exam Essentials

## Chapter 7: Open Shortest Path First (OSPF)

- Open Shortest Path First (OSPF) Basics
- Configuring OSPF
- OSPF and Loopback Interfaces
- Verifying OSPF Configuration
- Summary
- Exam Essentials

## Chapter 8: Layer 2 Switching

- Switching Services
- Configuring Catalyst Switches
- Summary
- Exam Essentials

## Chapter 9: VLANs and Inter-VLAN Routing

- VLAN Basics
- Identifying VLANs

- Routing Between VLANs
- Configuring VLANs
- Summary
- Exam Essentials

## Chapter 10: Enhanced Switched Technologies

- Spanning Tree Protocol (STP)
- Types of Spanning-Tree Protocols
- Modifying and Verifying the Bridge ID
- Spanning-Tree Failure Consequences
- PortFast and BPDU Guard
- EtherChannel
- Summary
- Exam Essentials

## Chapter 11: Access Lists

- Perimeter, Firewall, and Internal Routers
- Introduction to Access Lists
- Standard Access Lists

- Extended Access Lists
- Monitoring Access Lists
- Summary
- Exam Essentials

## Chapter 12: Network Address Translation (NAT)

- When Do We Use NAT?
- Types of Network Address Translation
- NAT Names
- How NAT Works
- Testing and Troubleshooting NAT
- Summary
- Exam Essentials

## Chapter 13: IP Services

- Exploring Connected Devices Using CDP and LLDP
- Network Time Protocol (NTP)
- SNMP

- Syslog
- Secure Shell (SSH)
- Summary
- Exam Essentials

## Chapter 14: Security

- Network Security Threats
- Three Primary Network Attacks
- Network Attacks
- Security Program Elements
- Layer 2 Security Features
- Authentication Methods
- Managing User Accounts
- Security Password Policy Elements
- User-Authentication Methods
- Setting Passwords
- Summary
- Exam Essentials

## Chapter 15: First Hop Redundancy Protocol (FHRP)

- Client Redundancy Issues
- Introducing First Hop Redundancy Protocol (FHRP)
- Hot Standby Router Protocol (HSRP)
- Summary
- Exam Essentials

## Chapter 16: Virtual Private Networks (VPNs)

- Virtual Private Networks
- GRE Tunnels
- Summary
- Exam Essentials

## Chapter 17: Quality of Service (QoS)

- Quality of Service
- Trust Boundary
- QoS Mechanisms
- Summary

- Exam Essentials

## Chapter 18: Internet Protocol Version 6 (IPv6)

- Why Do We Need IPv6?
- The Benefits and Uses of IPv6
- IPv6 Addressing and Expressions
- How IPv6 Works in an Internetwork
- IPv6 Routing Protocols
- Configuring IPv6 on Our Internetwork
- Configuring Routing on Our Internetwork
- Summary
- Exam Essentials

## Chapter 19: Troubleshooting IP, IPv6, and VLANs

- Endpoints
- Servers
- IP Config
- Troubleshooting IP Network Connectivity
- Troubleshooting IPv6 Network Connectivity

- Troubleshooting VLAN Connectivity
- Summary
- Exam Essentials

## Chapter 20: Wireless Technologies

- Wireless Networks
- Basic Wireless Devices
- Wireless Principles
- Nonoverlapping Wi-Fi channels
- Radio Frequency (RF)
- Wireless Security
- Summary
- Exam Essentials

## Chapter 21: Configuring Wireless Technologies

- WLAN Deployment Models
- Setting Up a Wireless LAN Controller (WLC)
- Joining Access Points (APs)

- Wireless LAN Controllers (WLC)
- WLC Port Types
- WLC Interface Types
- AP Modes
- AP and WLC Management Access Connections
- Summary
- Exam Essentials

## Chapter 22: Virtualization, Automation, and Programmability

- Virtual Machine Fundamentals
- Virtualization Components
- Virtualization Features
- Virtualization Types
- Virtualization Solutions
- Automation Components
- Summary
- Exam Essentials

## Chapter 23: SDN Controllers

- Traditional Network Monitoring Systems (NMS)
- Traditional Network Configuration Managers (NCMs)
- Traditional Networking
- Introduction to SDN
- Separating the Control Plane
- Controller-Based Architectures
- SDN Network Components
- DNA Center Overview
- Summary
- Exam Essentials

## Chapter 24: Configuration Management

- Team Silos
- DevOps
- Infrastructure as Code (IaC)
- Ansible
- Ansible Tower/AWX
- Puppet

- Chef
- Summary
- Exam Essentials

Chapter 25: Appendix A: Additional Content

## 12. Practice Test

### Here's what you get

| 49 | 2 | 99 |
|---|---|---|
| PRE-ASSESSMENTS QUESTIONS | FULL LENGTH TESTS | POST-ASSESSMENTS QUESTIONS |

### Features

Each question comes with detailed remediation explaining not only why an answer option is correct but also why it is incorrect.

#### Unlimited Practice

Each test can be taken unlimited number of times until the learner feels they are prepared. Learner can review the test and read detailed remediation. Detailed test history is also available.

Each test set comes with learn, test and review modes. In learn mode, learners will attempt a question and will get immediate feedback and complete remediation as they move on to the next question. In test mode, learners can take a timed test simulating the actual exam conditions. In review mode, learners can read through one item at a time without attempting it.

## 13. Live Labs

The benefits of live-labs are:

- Exam based practical tasks
- Real equipment, absolutely no simulations
- Access to the latest industry technologies
- Available anytime, anywhere on any device
- Break and Reset functionality
- No hardware costs

## Lab Tasks

**TCP/IP**

- Showing Cisco IOS File Systems Configuration on a Router

**Easy Subnetting**

- Configuring a CIDR-Based IP Network

**Troubleshooting IP Addressing**

- Viewing the IP Address, Mask, and Default Router Settings on Windows
- Viewing the IP Address, Mask, and Default Router Settings on Linux

**IP Routing**

- Using the show ip route Command

**Open Shortest Path First (OSPF)**

- Configuring OSPF

**Layer 2 Switching**

- Using the show Command
- Implementing Port Security

**VLANs and Inter-VLAN Routing**

- Configuring Interfaces as Trunk Ports
- Creating a New VLAN and Placing Switch Ports into that VLAN

**Enhanced Switched Technologies**

- Configuring Port Fast and Rapid Spanning Tree

**Access Lists**

- Creating and Applying an ACL at the CLI Using Named Access List Configuration
- Adding to and Displaying a Numbered ACL Configuration

**Network Address Translation (NAT)**

- Configuring Network Address Translation

**IP Services**

- Setting the Date, Time, Timezone, and Daylight Savings Time
- Seeing Severity 3 and 5 Messages at the Console and Severity 3 Only in the Buffer
- Configuring Syslog and Viewing Settings on a Router
- Disabling the Timestamp and Enabling a Sequence Number in Log Messages

**Security**

- Using dig for Passive Reconnaissance
- Using nslookup for Passive Reconnaissance
- Performing ARP Spoofing
- Spoofing MAC Address
- Configuring DHCP Snooping
- Encrypting IOS Passwords with the service password-encryption Command
- Encoding a Password as Type 5 (MD5)

**First Hop Redundancy Protocol (FHRP)**

- Configuring HSRP

**Virtual Private Networks (VPNs)**

- Configuring GRE Tunnels

**Internet Protocol Version 6 (IPv6)**

- Enabling IPv6 Routing and Routing Protocols
- Configuring Static Routing

**Troubleshooting IP, IPv6, and VLANs**

- Configuring VLANs

**SDN Controllers**

- Configuring SNMPv3

**Configuration Management**

- Creating and Running a Playbook
- Creating an ansible.cfg File

## Here's what you get

| 33 | 34 | 46 |
|---|---|---|
| LIVE LABS | VIDEO TUTORIALS | MINUTES |

## 14. Post-Assessment

After completion of the uCertify course Post-Assessments are given to students and often used in conjunction with a Pre-Assessment to measure their achievement and the effectiveness of the exam.

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