uCertify

Course Outline

CCNP ENCOR (350-401)



27 Mar 2024

1. Course Objective
2. Pre-Assessment
3. Exercises, Quizzes, Flashcards & Glossary

   Number of Questions
4. Expert Instructor-Led Training
5. ADA Compliant & JAWS Compatible Platform
6. State of the Art Educator Tools
7. Award Winning Learning Platform (LMS)
8. Chapter & Lessons

   Syllabus

   Chapter 1: Introduction

   Chapter 2: Packet Forwarding

   Chapter 3: Spanning Tree Protocol

   Chapter 4: Advanced STP Tuning

   Chapter 5: Multiple Spanning Tree Protocol

   Chapter 6: VLAN Trunks and EtherChannel Bundles

   Chapter 7: IP Routing Essentials

   Chapter 8: EIGRP

   Chapter 9: OSPF

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   Chapter 18: Wireless Signals and Modulation

Chapter 19: Wireless Infrastructure
Chapter 20: Understanding Wireless Roaming and Location Services
Chapter 21: Authenticating Wireless Clients
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Chapter 23: Enterprise Network Architecture
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1. Course Objective

Get certified for the Cisco CCNP certification exam with the CCNP ENCOR (350-401) course and lab. The course and lab cover the 350-401 exam objectives and teach you how to work with dual-stack (IPv4 and IPv6) architecture, virtualization, infrastructure, network assurance, security, automation, and many more. The CCNP training guide helps you master the techniques required for path selection, static routing, virtual routing and forwarding, 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. 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.



4. 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.



5. 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.



6. 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.

7. 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.

8. 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.

9. 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

10. 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

- Goals and Methods
- Who Should Read This Course?
- Strategies for Exam Preparation
- How This Course Is Organized
- Certification Exam Topics and This Course

Chapter 2: Packet Forwarding

- Network Device Communication

- Forwarding Architectures
- Review All Key Topics
- Use the Command Reference to Check Your Memory
- References in This Lesson

Chapter 3: Spanning Tree Protocol

- Spanning Tree Protocol Fundamentals
- Rapid Spanning Tree Protocol
- Review All Key Topics
- Use the Command Reference to Check Your Memory

Chapter 4: Advanced STP Tuning

- STP Topology Tuning
- Additional STP Protection Mechanisms
- Review All Key Topics
- Use the Command Reference to Check Your Memory

Chapter 5: Multiple Spanning Tree Protocol

- Multiple Spanning Tree Protocol

- Review All Key Topics
- Use the Command Reference to Check Your Memory

Chapter 6: VLAN Trunks and EtherChannel Bundles

- VLAN Trunking Protocol
- Dynamic Trunking Protocol
- EtherChannel Bundle
- Review All Key Topics
- Use the Command Reference to Check Your Memory

Chapter 7: IP Routing Essentials

- Routing Protocol Overview
- Path Selection
- Static Routing
- Virtual Routing and Forwarding
- Review All Key Topics
- Use the Command Reference to Check Your Memory

Chapter 8: EIGRP

- EIGRP Fundamentals
- Path Metric Calculation
- Failure Detection and Timers
- Route Summarization
- Review All Key Topics
- References in This Lesson

Chapter 9: OSPF

- OSPF Fundamentals
- OSPF Configuration
- Default Route Advertisement
- Common OSPF Optimizations
- Review All Key Topics
- Use the Command Reference to Check Your Memory
- References in This Lesson

Chapter 10: Advanced OSPF

- Areas

- Link-State Announcements
- Discontiguous Networks
- OSPF Path Selection
- Summarization of Routes
- Route Filtering
- Review All Key Topics
- Use the Command Reference to Check Your Memory
- References in This Lesson

Chapter 11: OSPFv3

- OSPFv3 Fundamentals
- OSPFv3 Configuration
- IPv4 Support in OSPFv3
- Review All Key Topics
- Use the Command Reference to Check Your Memory
- References in This Lesson

Chapter 12: BGP

- BGP Fundamentals

- Basic BGP Configuration
- Route Summarization
- Multiprotocol BGP for IPv6
- Review All Key Topics
- Use the Command Reference to Check Your Memory
- References in This Lesson

Chapter 13: Advanced BGP

- BGP Multihoming
- Conditional Matching
- Route Maps
- BGP Route Filtering and Manipulation
- BGP Communities
- Understanding BGP Path Selection
- Review All Key Topics
- Use the Command Reference to Check Your Memory
- References in This Lesson

Chapter 14: Multicast

- Multicast Fundamentals
- Multicast Addressing
- Internet Group Management Protocol
- Protocol Independent Multicast
- Rendezvous Points
- Review All Key Topics
- References in This Lesson

Chapter 15: QoS

- The Need for QoS
- QoS Models
- Classification and Marking
- Policing and Shaping
- Congestion Management and Avoidance
- Review All Key Topics
- References In This Lesson

Chapter 16: IP Services

- Time Synchronization
- First-Hop Redundancy Protocol
- Network Address Translation
- Review All Key Topics
- Use the Command Reference to Check Your Memory

Chapter 17: Overlay Tunnels

- Generic Routing Encapsulation (GRE) Tunnels
- IPsec Fundamentals
- Cisco Location/ID Separation Protocol (LISP)
- Virtual Extensible Local Area Network (VXLAN)
- Review All Key Topics
- Use the Command Reference to Check Your Memory

Chapter 18: Wireless Signals and Modulation

- Understanding Basic Wireless Theory
- Carrying Data Over an RF Signal
- Review All Key Topics

Chapter 19: Wireless Infrastructure

- Wireless LAN Topologies
- Pairing Lightweight APs and WLCs
- Leveraging Antennas for Wireless Coverage
- Review All Key Topics

Chapter 20: Understanding Wireless Roaming and Location Services

- Roaming Overview
- Roaming Between Centralized Controllers
- Locating Devices in a Wireless Network
- Review All Key Topics

Chapter 21: Authenticating Wireless Clients

- Open Authentication
- Authenticating with Pre-Shared Key
- Authenticating with EAP
- Authenticating with WebAuth
- Review All Key Topics

Chapter 22: Troubleshooting Wireless Connectivity

- Troubleshooting Client Connectivity from the WLC
- Troubleshooting Connectivity Problems at the AP
- Review All Key Topics

Chapter 23: Enterprise Network Architecture

- Hierarchical LAN Design Model
- Enterprise Network Architecture Options
- Review All Key Topics

Chapter 24: Fabric Technologies

- Software-Defined Access (SD-Access)
- Software-Defined WAN (SD-WAN)
- Review All Key Topics

Chapter 25: Network Assurance

- Network Diagnostic Tools
- Debugging
- NetFlow and Flexible NetFlow

- Switched Port Analyzer (SPAN) Technologies
- IP SLA
- Cisco DNA Center Assurance
- Review All Key Topics

Chapter 26: Secure Network Access Control

- Network Security Design for Threat Defense
- Next-Generation Endpoint Security
- Network Access Control (NAC)
- Review All Key Topics

Chapter 27: Network Device Access Control and Infrastructure Security

- Access Control Lists (ACLs)
- Terminal Lines and Password Protection
- Authentication, Authorization, and Accounting (AAA)
- Zone-Based Firewall (ZBFW)
- Control Plane Policing (CoPP)
- Device Hardening

- Review All Key Topics
- Use the Command Reference to Check Your Memory

Chapter 28: Virtualization

- Server Virtualization
- Network Functions Virtualization
- Review All Key Topics

Chapter 29: Foundational Network Programmability Concepts

- Command-Line Interface
- Application Programming Interface
- Data Models and Supporting Protocols
- Cisco DevNet
- GitHub
- Basic Python Components and Scripts
- Review All Key Topics
- References in This Lesson

Chapter 30: Introduction to Automation Tools

- Embedded Event Manager
- Agent-Based Automation Tools
- Agentless Automation Tools
- Review All Key Topics

11. Practice Test

Here's what you get

100	2	100
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.

12.  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

Packet Forwarding

- Assigning IP Addresses to Routed Interfaces
- Creating a Switched Virtual Interface
- Creating a VLAN and Viewing its Assignment to Port Mapping
- Configuring an Access Port
- Configuring and Viewing a Trunk Port Status
- Configuring Routed Subinterfaces
- Configuring a Routed Switch Port

Spanning Tree Protocol

- Identifying the Root Ports and Viewing the STP Information of a Switch

Advanced STP Tuning

- Viewing and Modifying the STP Port Cost
- Changing STP System Priority
- Configuring a Loop Guard on a Switch Port
- Configuring a BPDU Guard on a Switch Port
- Enabling STP Portfast on Specific Interfaces
- Configuring the Error Recovery Service for a BPDU Guard

Multiple Spanning Tree Protocol

- Configuring MST
- Configuring MST Interface Cost and Priority

VLAN Trunks and EtherChannel Bundles

- Implementing Port Security
- Configuring the Sample Port Channel
- Configuring and Verifying the Maximum Links

IP Routing Essentials

- Configuring Static Routing
- Configuring Directly Attached Static Routes

OSPF

- Configuring OSPF
- Configuring OSPF with Explicit IP Addresses and Explicit Subnets

Advanced OSPF

- Configuring OSPF Distribute List

OSPFv3

- Configuring OSPFv3
- Configuring OSPFv3 Passive Interfaces

BGP

- Configuring BGP
- Configuring BGP Route Aggregation
- Configuring IPv6 BGP

Advanced BGP

- Configuring a Route Map with the continue Keyword
- Configuring BGP Distribute List

IP Services

- Configuring Multi-Stratum NTP
- Configuring VRRP
- Configuring Static NAT
- Configuring PAT
- Configuring Dynamic NAT

Overlay Tunnels

- Configuring GRE Tunnels
- Configuring IPSec

Network Assurance

- Adding a Less Specific Route
- Pinging with Multiple Options
- Configuring the Logging Buffer Size and Severity Level
- Using Conditional Debugging
- Configuring NetFlow and NetFlow Data Export

Network Device Access Control and Infrastructure Security

- Creating and Applying a Numbered Standard ACL
- Creating and Applying a Numbered Extended ACL

- Configuring vty Access Using SSH
- Configuring a Username with the Privilege Level
- Configuring AAA for Device Access Control
- Configuring an Access List for CoPP

Introduction to Automation Tools

- Creating a Manually Triggerd EEM Applet

Here's what you get

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LIVE LABS	VIDEO TUTORIALS	HOURS

13. 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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