Networking Academy

CCNP Enterprise: Core Networking (ENCOR) and CCNP Enterprise: Advanced Routing (ENARSI)

Product Overview

Updated April 2020

CCNP Enterprise Version 8.0

- Curriculum Overview
- Course Designs
- Assessments
- Certification & Exam Alignment
- Lab Equipment
- Logistics

CCNP Version 8 Will Be The Best Yet!

Enhanced Course Design

Improved Assessments

Certification Alignment

CCNP Enterprise Curriculum

Curriculum Overview

The two courses in this CCNP Enterprise version 8.0 curriculum provide students with knowledge and skills needed to configure, operate and troubleshoot large scale enterprise networks. The courses cover a broad range of routing, switching and wireless topics along with security best practices used in software-driven digital networks.

Career Prep

By the end of the CCNP course series, students gain practical, hands-on experience preparing them for the CCNP Enterprise certification exams and career-ready skills for professional-level roles in the Information & Communication Technologies (ICT) industry.

Learning Components

- Series of 2 courses:
  1. CCNP Enterprise: Core Networking (ENCOR)
  2. CCNP Enterprise: Advanced Routing (ENARSI)
- Hands-on labs and optional Cisco Packet Tracer network simulation activities
- Videos and quizzes reinforce learning
- Exams to measure learning outcomes
- Assessment features to improve exam security

Features

Certification Aligned

Target Audience: Students interested in pursuing a career as a Network Engineer or Systems Engineer

Prerequisites: None required but CCNA level knowledge is needed for success

Course Delivery: Instructor-led

Estimated Time to Complete: 140 hours total (70 hours per course)

Recommended Next Course: Broaden skills with DevNet Associate, CyberOps Associate, Python or Emerging Tech Workshops

CCNP Enterprise: Core Networking (ENCOR)

Course Overview

This first course in the 2-course CCNP Enterprise series covers switching, routing, wireless, and related security topics, along with the technologies that support software-defined, programmable networks.

Benefits

This course directly prepares for the Cisco Enterprise Network Core Technologies exam (350-401 ENCOR) to earn an Enterprise Core Specialist certification.

Completion of both courses in the CCNP Enterprise course series prepares for the CCNP Enterprise certification exam.

Learning Components

- 29 chapters
- 41 hands-on labs
- 24 Packet Tracer activities (optional)
- 7 videos
- 29 Chapter quizzes
- 11 Chapter-Group exams
- 1 Final exam
- 1 practice certification exam

Features

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering

Recommended Preparation; CCNA or equivalent knowledge & skills

Instructor Training Required: Yes

Languages: English

Course Delivery: Instructor-led

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Estimated Time to Complete: 70 hours

Recommended Next Course: CCNP Enterprise: Advanced Routing (ENARSI)

CCNP Enterprise: Advanced Routing (ENARSI)

Course Overview

This second of the 2-course CCNP Enterprise series focuses on implementation and troubleshooting of advanced routing and redistribution for OSPF, EIGRP and BGP along with VPN technologies, infrastructure security and management tools used in Enterprise networks.

Benefits

This course directly prepares for the Cisco Enterprise Advanced Routing and Services concentration exam (300-410) to earn the Enterprise Advanced Infrastructure Implementation Specialist certification.

By also passing the core exam (350-401 ENCOR) you will earn the CCNP Enterprise certification.

Learning Components

- 23 chapters
- 40 hands-on labs
- 20 Packet Tracer activities (optional)
- 2 videos
- 23 Chapter quizzes
- 6 Chapter-Group exams
- 1 Final exam
- 2 Skills assessments
- 1 practice certification exam

Features

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering

Recommended Preparation; CCNP Enterprise: Core Networking or equivalent knowledge & skills

Instructor Training Required: Yes

Languages: English

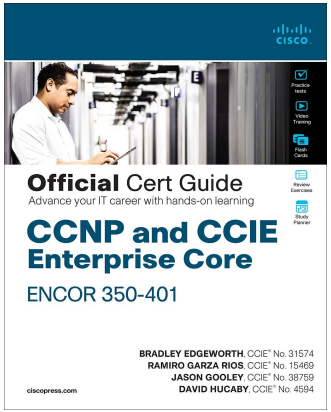
Course Delivery: Instructor-led

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Estimated Time to Complete: 70 hours

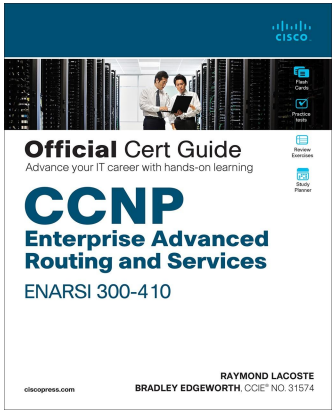
Course Content

Both courses require the Cisco Press Official Cert Guide as student textbook



Certification Guide
Available in book and e-Book formats

Book
ISBN-10: 1-58714-523-5
ISBN-13: 978-1-58714-523-0



Certification Guide
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Book
ISBN-10: 1-58714-525-1
ISBN-13: 978-1-58714-525-4

Enhanced Course Design

Learning Effectiveness

- ✔ Designed for skills progression
- ✔ Better student engagement
- ✔ Improved user experience

- New! Quizzes, chapter-group exams, and secure final exam
- New! Videos for topics not covered in labs
- New! Labs, assessments and videos embedded within new UI for improved student experience
- New! Optional Packet Tracer activities for further skill-building and practice

Enhanced Course Design

Improved Outcomes

- ✔ Build hands-on skills
- ✔ Additional preparation for certification exams

- New! Certification practice exam
- New! Virtual Machine lab to practice network programmability
- New! Final exam and hands-on skills assessment
- New! Ability to earn a Cisco digital learning credential (70% min score on 1st attempt of final)

Improved Assessments

ENCOR Chapter Group Assessment Mapping

Chapter		Chapter-Group Assessments
1	Packet Forwarding	L2 Redundancy
2	Spanning Tree Protocol	
3	Advanced Spanning Tree	
4	Multiple Spanning Tree Protocol	
5	VLAN Trunks and EtherChannel Bundles	
6	IP Routing Essentials	Routing Essentials and EIGRP
7	EIGRP	
8	OSPF	OSPF
9	Advanced OSPF	
10	OSPRv3	
11	BGP	BGP
12	Advanced BGP	
13	Multicast	Multicast and QoS
14	QoS	
15	IP Services	IP Services and VPNs

Chapter		Chapter-Group Assessments
17	Wireless Signals and Modulation	Wireless Essentials
18	Wireless Architecture Infrastructure	
19	Understanding Wireless Roaming and Location Services	
20	Wireless Security Authenticating Wireless Clients	Wireless Security and Connectivity
21	Wireless Troubleshooting Troubleshooting Wireless Connectivity	
22	Enterprise Network Architecture	Network Design and Monitoring
23	Fabric SDN Technologies	
24	Network Assurance	
25	Secure Access Control	Access Control and Infrastructure Security
26	Network Device Access Control and Infrastructure Security	
27	Virtualization	Virtualization, Automation, and Programmability
28	Foundational Network Programmability Concepts	
29	Introduction to Automation Tools	

Improved Assessments

ENARSI Chapter Group Assessment Mapping

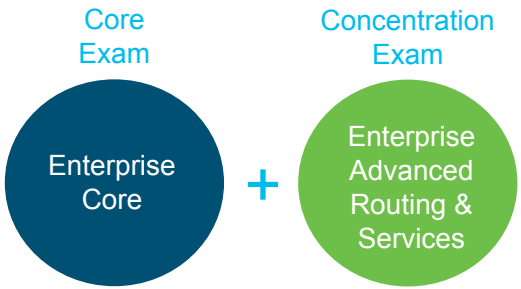
Chapter		Chapter-Group Assessments
1	IPv4 and IPv6 Addressing and Routing Review	Routing Concepts and EIGRP
2	EIGRP	
3	Advanced EIGRP	
4	Troubleshooting EIGRP	
5	EIGRPv6	
6	OSPF	OSPF
7	Advanced OSPF Configuration	
8	Troubleshooting OSPFv2	
9	OSPFv3	
10	Troubleshooting OSPFv3 and Address Families	
11	BGP	BGP
12	Advanced BGP	
13	BGP Best Path Selection	
14	Troubleshooting BGP	

Chapter		Chapter-Group Assessments
15	Route Maps and Policy Based Routing	Conditional Forwarding and Route Redistribution
16	Redistribution	
17	Troubleshooting Redistribution	
18	VRFs, MPLS and MPLS Layer 3 VPNs	VPNs
19	Dynamic Multipoint VPN	
20	Securing DMVPN Tunnels	
21	Troubleshooting IPv4 and IPv6 ACLs and Prefix Lists	Infrastructure Security and Management
22	Infrastructure Security	
23	Device Management and Management Tools Troubleshooting	

Certification & Exam Alignment

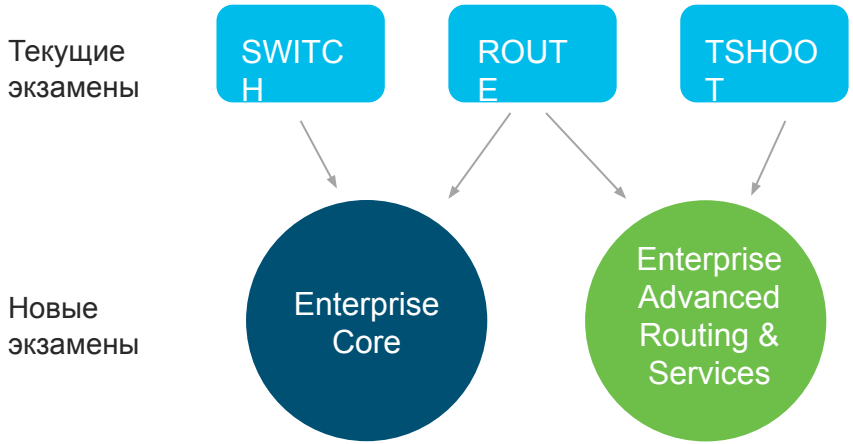
Certification Alignment

Professional Level



- Cisco has evolved to a new CCNP Enterprise certification streamlined to require passing two exams
- The **Enterprise Core exam (350-401)** tests a candidate's knowledge of implementing core enterprise network technologies including dual stack architecture, virtualization, infrastructure, network assurance, security and automation and earns a **Cisco Specialist certification** for **Enterprise Core**
- The **Enterprise Advanced Routing and Services exam (300-410)** tests a candidate's knowledge for implementation and troubleshooting of advanced routing technologies and services including Layer 3, VPN services, infrastructure security, infrastructure services, and infrastructure automation and earns a **Cisco Specialist certification** for **Enterprise Advanced Infrastructure Implementation**
- Passing both exams earns a **CCNP Enterprise certification**

CCNP Enterprise



Основаны на темах и лабах из ROUTE/SWITCH/TSHOOT с добавлением:

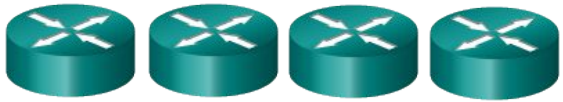
- Virtualization
- Wireless
- Network Programmability
- Automation
- Analytics

Lab Equipment

CCNP Enterprise 8.0 – Lab Equipment

CCNP R&S 7

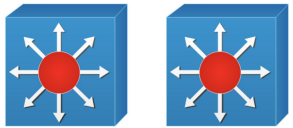
4221



or 4321 or 4331

2960

3650



Multilayer switch Multilayer switch

Server and End Devices

For CCNP Enterprise 8.0:

- NIM-2T Serial ports needed for 2 of 3 routers
- Packet Tracer 7.3.0 or higher required for optional Packet Tracer activities

Refer to posted [CCNP Enterprise Equipment List]

CCNP Enterprise 8.0

4221

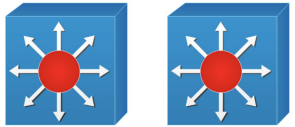
or 4321 or 4331

1 less 4221

2960

1 less 2960

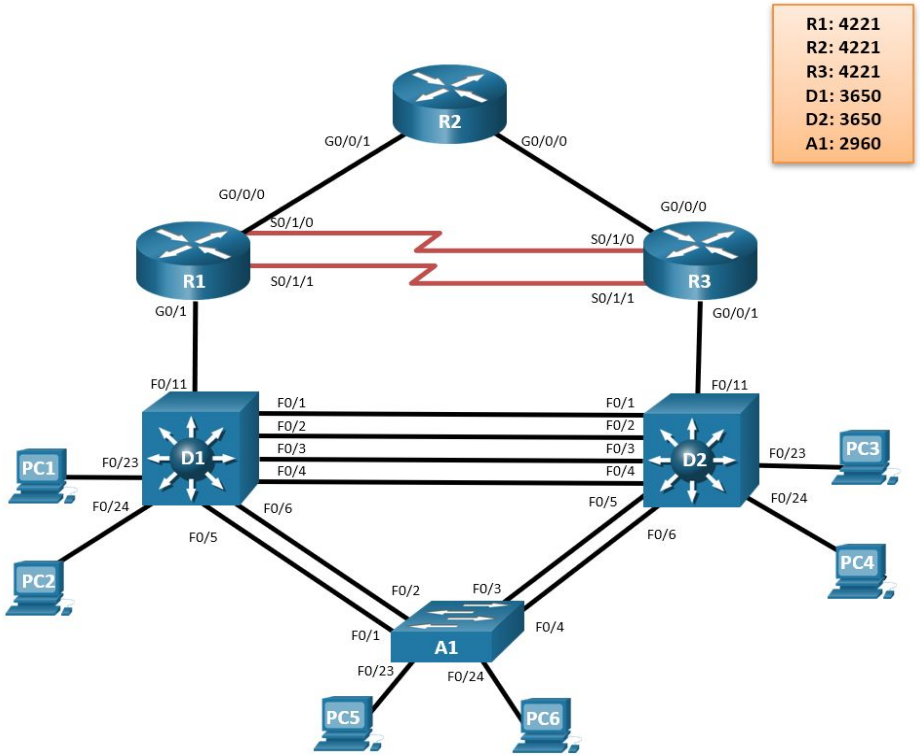
3650



Multilayer switch Multilayer switch

Server and End Devices

CCNP Enterprise 8.0 – Lab Topology



This is the same basic topology as used by CCNPv7.1;
Some connections are changed around, and there is one less 2960 L2 Switch and one less ISR4221

Most current labs can be adapted, and the LP labs can be used directly or adjusted for the topology

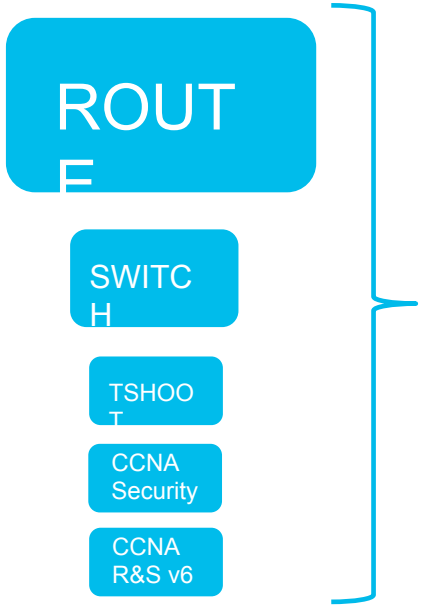
<u>CCNP Baseline Equipment Recommendation</u>
3x Cisco 4221 with SEC license (2 with NIM-2T)
2x Cisco Catalyst 3650 Switches
(WS-C3650-24TS-E)
1x Cisco Catalyst 2960+ Switch
(WS-C2960+24TC-L)
Ethernet cables as shown in the topology
2x CAB-SS-V35MT= (10' DTE Serial Cable)
2x CAB-SS-V35FC= (10' DCE Serial Cable)

<u>Computers (Virtual or Physical)</u>
Minimum 1x PC workstation host (Linux or Windows)
Minimum 1x PC server host (Linux or Windows)

Logistics

CCNP Enterprise: Core Networking (ENCOR) Leveraged and Key New Topics

Leveraged course material



CCNP Enterprise: Core Networking (ENCOR)

Key new topics

- Wireless (RF, infrastructure, roaming, authenticating, troubleshooting)
- Multicast (concepts, protocols)
- Fabric technologies (SD-Access, SD-WAN)
- Overlay tunnels (IPSec, VXLAN, LISP)
- QoS (mechanisms, applications)
- Security (network access control, threat defense, endpoint and infrastructure security)
- Programmability concepts (APIs, data models, DevNet, GitHub, Python basics)
- Virtualization concepts (NFV, VMs, virtual switching)
- Automation tools (Embedded Event Manager, Agent and Agentless tools)

CCNP Enterprise: Advanced Routing (ENARSI) Leveraged and Key New Topics

Leveraged course material

- ROUTE
- TSHOOT
- CCNA Security

CCNP Enterprise: Advanced Routing (ENARSI)

Key new topics

- MPLS Layer 3 VPNs
- Dynamic Multipoint VPN
- DMVPN security
- Advanced BGP
- Troubleshooting IPv6 ACLs
- Flexible Netflow
- Troubleshooting CoPP
- IPv6 First Hop Security
- Cisco DNA Center Assurance

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