+33 (0)1 48 10 09 46
formation@ambient-it.net
140 Avenue Jean Lolive 93500 Pantin - France

Updated on 20/10/2025

Sign up

CCNP Enterprise Certification Training

ALL-IN-ONE : EXAM INCLUDED IN PRICE

5 days (35 hours)

Overview

Cisco CCNP Enterprise Certification is an advanced training course for network professionals. Designed for enterprise environments, it validates skills in designing, configuring, securing and troubleshooting modern Cisco architectures.

Our CCNP Enterprise training course will give you in-depth knowledge of advanced network technologies: routing (OSPF, EIGRP, BGP), security (ACL, AAA, CoPP), quality of service (classification, queuing, shaping/policing), virtualization (VRF), SD-WAN and automation (APIs, Ansible, Python).

You'll learn how to design resilient architectures, deploy effective security policies, monitor performance and industrialize configurations through automation. The approach favors daily practical workshops and a case study to anchor each skill in an operational context.

The final day is entirely devoted to preparing for certification, with a complete mock exam and detailed correction, so that you can approach ENCOR 350-401 and your chosen specialization exam with confidence.

Like all our training courses, this one is based on the latest stable version of the Cisco CCNP Enterprise program, with a resolutely practical and operational approach.

Objectives

- Master Cisco Enterprise technologies.
- Design, configure and troubleshoot complex enterprise networks.
- Apply automation (APIs, Ansible, Python) to make deployments more reliable.

- Prepare effectively for the CCNP Enterprise exams: ENCOR 350-401 + specialization exam.

Target audience

- Network engineers
- Experienced network administrators

Prerequisites

- Mastery of CCNA basics.
- Practice with Cisco IOS XE CLI and diagnostic commands.
- Solid knowledge of IP addressing, VLAN, ACL, NAT, OSPF.

Cisco CCNP Enterprise Certification Training

[Day 1 - Morning]

Cisco Enterprise architecture and high availability

- Understanding the roles of the Core, Distribution and Access layers
- Distinguish between the management plane and the data plane
- Identify redundancy and fault tolerance requirements
- Discover EtherChannel, HSRP/VRRP and GLBP (principles)
- Practical workshop: Deploying a redundant topology and verifying failover.

[Day 1 - Afternoon]

Virtualization and network segmentation

- Segmenting a LAN with VLANs and inter-VLAN routing
- Isolating domains with VRF (Virtual Routing & Forwarding)
- Understanding VXLAN logic (overview)
- Applying access policies between segments
- Practical workshop: Configure two VRFs and test isolation.

Enterprise IP services

- Configure DHCP (server/relay) and validate address allocation
- Integrate DNS and NTP for resolution and time stamping
- Centralize logs with Syslog and expose metrics via SNMP

- Secure administration access (SSH access, passwords, banners)
- Practical workshop: Activate DHCP relay and check logging.

[Day 2 - Morning]

Advanced OSPF

- Build a reliable OSPF neighborhood (DR/BDR, timers, authentication)
- Create multiple areas and virtual links if necessary
- Adjust cost to optimize paths
- Read and interpret the OSPF routing table
- Practical workshop: Deploy a multi-area OSPF and validate routes.

[Day 2 - Afternoon] EIGRP and

BGP essentials

- Review how EIGRP works (DUAL, metrics, stability)
- Understanding BGP (eBGP/iBGP) and the exchange between ASes
- Controlling announcements with prefix-lists and route-maps
- Diagnose BGP peering (states, next-hop)
- Practical workshop: setting up BGP peering and route filtering.

Redistribution and routing policy

- Understanding the risks of multi-protocol redistribution
- Implement controlled redistribution (tags, filters)
- Avoiding loops through correct filter placement
- Use route-maps for a fine-tuned routing policy
- Practical workshop: OSPF/EIGRP/BGP redistribution without loops.

[Day 3 - Morning]

Advanced network security

- Securing authentication with AAA (TACACS+/RADIUS)
- Protecting the management plane (SSH, passwords, roles)
- Protecting the data plane with CoPP (Control Plane Policing)
- Write readable and testable IPv4/IPv6 ACLs
- Practical workshop: AAA + ACLs on routers/switches.

[Day 3 - Afternoon]

Quality of service

- Classifying and marking traffic (DSCP/CoS)
- Queue management : CBWFQ and LLQ
- Flow control: shaping and policing
- Applying QoS for voice/video (simple examples)
- Practical workshop: Deploy a QoS policy and measure its effect.

Methodical troubleshooting

- Adopt a clear diagnostic method (from simple to complex)
- Use show/debug, ping, traceroute
- Observe traffic (SPAN/ERSPAN, NetFlow)
- Reading Syslog logs and tracking KPIs
- Practical workshop: Solving a guided multi-domain incident.

[Day 4 - Morning]

SD-WAN

- Understanding vManage, vBond and vSmart roles
- Defining VPN transport and routing policies
- Measure performance and SLAs
- Identify common use cases (agencies, multi-links)
- Practical workshop: Creating a simple policy under lab SD-WAN.

[Day 4 - Afternoon]

Enterprise Wireless infrastructures

- Discover WLC/AP architecture and roaming
- Configure WPA2/WPA3 security
- WLAN segmentation (SSID, VLAN, ACL)
- Integrating basic supervision
- Practical workshop: Create a secure SSID and test access.

Automation and programmability

- Choosing the right API: RESTCONF / NETCONF
- Handling JSON / YAML formats
- Automate with Ansible or Python scripts
- Applying templates and validating changes
- Practical workshop: Pushing a configuration via Ansible.

[Day 5 - Morning]

Technical overview

- Review the essentials: OSPF, BGP, VRF, QoS, ACL
- Consolidate best operating practices
- Deal with frequently asked questions and weak points
- Prepare case study topology
- Practical workshop: Scenario-based quiz corrected by the group.

[Day 5 - Afternoon]

Enterprise network case study

- Design a LAN/WAN with IP services and security
- Deploy the architecture (VLAN, inter-VLAN, DHCP, NAT)
- Add access controls (ACLs) and verify flows
- Document design and supervision
- Practical workshop: Deploy and validate target architecture.

Preparing for CCNP certification

- Understanding the structure of exams 350-401 ENCOR + specialization
- Adopt a strategy: time management, pitfalls, priorities
- Review key topics: routing, QoS, security, automation
- Analyze results and plan final revisions
- Practical workshop: taking a mock exam + correction.

Companies concerned

This course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced IT technology, or to acquire specific business knowledge or modern methods.

Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

Practical training: 60% hands-on, 40% theory. Training material distributed in digital format to all participants.

Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Certification

A certificate will be awarded to each trainee who completes the training course.