SecureNinja
The Cybersecurity Experts

Web: www.secureninja.com
Phone: 703.535.8600
Email: info@secureninja.com

# CCNP Enterprise

Secure Ninja's CCNP Enterprise 15-day intensive Boot Camp for the Cisco CCNP Enterprise certification will provide the necessary training to prepare candidates for the core and concentration CCNP Security exams. The bootcamp will provide the necessary training to prepare candidates for the CCNP Enterprise core exam and concentrations in Implementing Cisco Enterprise Advanced Routing and Services, Implementing Cisco SD-WAN Solutions, Designing Cisco Enterprise Networks, Designing Cisco Enterprise Wireless Networks, Implementing Cisco Enterprise Wireless Networks (ENARSI, ENSDWI, ENSLD, ENWLSI, ENAUTO). Attendees will learn to plan, configure, and verify the implementation of secure enterprise LAN and WAN routing solutions using technologies such as dual-stack (IPv4 and IPv6) architecture, virtualization, infrastructure, network assurance, security, and automation.  To attain the CCNP Enterprise certification and gain the knowledge needed to further maintain networks and diagnose and resolve network problems quickly and effectively, students will need to successfully pass the Enterprise core exam and an Enterprise concentration exam.

## Certification Completion

The learner will **need** to meet these overall objectives of the CCNP Enterprise Core Exam:

Implementing and Operating Cisco Enterprise Network Core Technologies (350-401 ENCOR)

- Illustrate the hierarchical network design model and architecture using the access, distribution, and core layers
- Troubleshoot Layer 2 connectivity using VLANs and trunking
- Describe the features, metrics, and path selection concepts of the Enhanced Interior Gateway Routing Protocol (EIGRP)
- Implementation and optimization of Open Shortest Path First (OSPF)v2 and OSPFv3, including adjacencies, packet types, and areas, summarization, and route filtering for IPv4 and IPv6
- Implementing External Border Gateway Protocol (EBGP) interdomain routing, path selection, and single and dual-homed networking
- Configure secure administrative access for Cisco IOS devices using the Command-Line Interface (CLI) access, Role-Based Access Control (RBAC), Access Control List (ACL), and Secure Shell (SSH), and explore device hardening concepts to secure devices from less secure applications, such as Telnet and HTTP
- Define the components and features of Cisco SD-WAN solutions, including the orchestration plane, management plane, control plane, and data plane

And (**1**) of the following CCNP Enterprise concentration exam objectives:

Implementing Cisco Enterprise Advanced Routing and Services v1.0 (300-410 ENARSI)

- Troubleshoot Layer 3 technologies as well as OSPF, EIGRP, BGP in an IPv4 and IPv6 environment
- Describe Bidirectional Forwarding Detection
- Troubleshoot Infrastructure Services including device management console, SNMP,

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DHCP (in IPv4 and IPv6 environment)
- Troubleshoot network problems using Cisco DNA Center assurance
- Troubleshoot device security, control plane policing, and router security features such as IPv4 ACLs and IPv6 traffic filter
- Verify DMVPN connectivity and configure using GRE/mGRE, NHRP, IPsec and Spoke-to-spoke

## Implementing Cisco SD-WAN Solutions (300-415 ENSDWI)

- Design, deploy, configure, and manage Cisco Software-Defined WAN (SD-WAN) solution in a large-scale live network
- Describe options for Cisco SD-WAN cloud and on-premises and on-premises deployment
- Implement Direct Internet Access (DIA) and Cisco SD-WAN Cloud OnRamp options
- Explain how to deploy WAN Edge devices
- Provide secure end-to-end segmentation for protecting critical enterprise compute resources
- Define and implement advanced control policies, such as policies for custom topologies and service insertion
- Describe Cloud security integration and Cisco SD-WAN security features
- Describe components of vManage, software image management from vManage, and REST API monitoring

## Designing Cisco Enterprise Networks (300-420 ENSLD)

- Create stable, secure, and scalable routing enterprise network designs for IS-IS, EIGRP, OSPF, BGP
- Create structured Dual Stack (IPv4 and IPv6) addressing plans
- Design campus networks for high availability and describe Layer 2/Layer 3 infrastructures for Enterprise campus networks
- Describe SD-Access Architecture and SD-Access fabric design
- Design high availability for enterprise WAN and site-to-site VPN
- Describe Cisco SD-WAN design considerations and architecture
- Design end-to-end QoS policies and network management techniques
- Describe multicast routing concepts such as source trees, shared trees, RPF, rendezvous points

## Designing Cisco Enterprise Wireless Networks (300-425 ENWLSD)

- Describing and Implementing a Structured Wireless Design Methodology2
- Describing and Implementing Industry Protocols and Standards
- Describing and Implementing Cisco Enhanced Wireless Features
- Examining Cisco Mobility and Roaming
- Describing and Implementing Specific Vertical Designs
- Describing Nnd Implementing the Wireless Design Process
- Examining Special Considerations in Advanced Wireless Designs

## Implementing Cisco Enterprise Wireless Networks (300-430 ENWLSI)

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- Implement and troubleshoot advanced capabilities in wireless network services
- Implement and troubleshoot QoS in wireless networks
- Implement a secure wireless client and troubleshoot wireless client connectivity issues
- Implement network settings to provide a secure wireless network infrastructure

Automating and Programming Cisco Enterprise Solutions (300-435 ENAUTO)

- Acquire the skills and knowledge to customize tools, methods, and processes that improve network performance and agility
- Use modern programming languages, APIs, and systems such as Python, Ansible, and Git to automate, streamline, and enhance business operations
- Learn how to leverage the various models and APIs of the Cisco IOS XE platform to perform day-zero operations, improve troubleshooting methodologies with custom tools, augment the CLI using scripts, and integrate various workflows using Ansible and Python
- Learn how to leverage the tools and APIs to automate the Cisco DNA infrastructure managed by Cisco DNA Center
- Understand Cisco SD-WAN solution components, implement a Python library that works with the Cisco SDWAN APIs to perform configuration, inventory management, and monitoring tasks, and implement reusable Ansible roles to automate provisioning new branch sites on an existing Cisco SD-WAN infrastructure
- Learn how to leverage the tools and APIs to automate Cisco Meraki managed infrastructure and demonstrate workflows (configuration, verification, health checking, monitoring) using Python, Ansible, and Postman

## Topics Covered:

1. Examining Cisco Enterprise Network Architecture
2. Understanding Cisco Switching Paths
3. Implementing Campus LAN Connectivity
4. Building Redundant Switched Topology
5. Implementing Layer 2 Port Aggregation
6. Understanding EIGRP
7. Implementing OSPF
8. Optimizing OSPF
9. Exploring EBGP
10. Implementing Network Redundancy
11. Implementing NAT
12. Introducing Virtualization Protocols and Techniques
13. Understanding Virtual Private Networks and Interfaces
14. Understanding Wireless Principles
15. Examining Wireless Deployment Options
16. Understanding Wireless Roaming and Location Services
17. Examining Wireless AP Operation
18. Understanding Wireless Client Authentication
19. Troubleshooting Wireless Client Connectivity
20. Introducing Multicast Protocols
21. Introducing QoS

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22. Implementing Network Services
23. Using Network Analysis Tools
24. Implementing Infrastructure Security
25. Implementing Secure Access Control
26. Understanding Enterprise Network Security Architecture
27. Exploring Automation and Assurance Using Cisco DNA Center
28. Examining the Cisco SD-Access Solution
29. Understanding the Working Principles of the Cisco SD-WAN Solution
30. Understanding the Basics of Python Programming
31. Introducing Network Programmability Protocols
32. Introducing APIs in Cisco DNA Center and vManage

## Required Exams

- 350-401 ENCOR Implementing Cisco Enterprise Network Core Technologies

And (1) of the following:

- 300-410 ENARSI Implementing Cisco Enterprise Advanced Routing and Services
- 300-430 ENWLSI Implementing Cisco Enterprise Wireless Networks
- 300-425 ENWLSD Designing Cisco Enterprise Wireless Networks
- 300-435 ENAUTO Automating and Programming Cisco Enterprise Solutions
- 300-425 ENWLSD Designing Cisco Enterprise Wireless Networks
- 300-415 ENSDWI Implementing Cisco SD-WAN Solutions

Course Length

96 hours

## Follow up Courses

CCIE