



# SYLLABUS CCNA 200-301

**2 Months | Classroom & Online Program**

**WE HELP YOU TO ARCHIEVE  
YOUR DREAM CAREER**

  
**Rahitech**  
— **SOLUTION**

# About RAHITECH IT SOLUTION and the Program

RAHITECH is a leading company in professional training and staffing, focused on enhancing employability and upskilling working professionals and students through its training programs. The programs are comprehensive and industry-relevant in Software Engineering, Business Management, Business Analytics, Data Science, Machine Learning, Artificial Intelligence, Cloud Computing, Cyber Security, Digital Marketing, Core Engineering Trainings programs for Mechanical, Electrical, Civil Engineers and many more.

Our focus is solving the low employability challenges by offering 100+ 'Campus to Corporate' and 'Next Step Career' programs to Professionals and Students. Through our training programs, we provide custom-trained talent to multiple organizations based on their landscape requirements. We are one of the very few organizations to provide job assurance to professionals.



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**We have been partnering with various industry experts for developing our Job Oriented Training Programs, Curriculum Management, Content Development and Training Delivery for Placement Track Programs since last couple of years. RahiTech has the capability and expertize to offer trained resources to SME and MNC with scale in India and Abroad.”**

**VIKAS RASKAR**  
**Director, RahiTech**



RAHITECH's Placement Track Program in IT—IMS administration is developed in collaboration with various Industry Experts. This program is focused on empowering professionals to fast track careers in Various IT Technologies. In this 4 Months initiative experiential learning program, learner gets access to 300+ hours of Classroom or online training, practical and live weekend interactive sessions with Mentors and Industry Experts to reinforce their learnings with an industry perspective.

The program is carefully designed to help you become a cross-platform expertise in various technologies like CISCO, Microsoft & Red Hat. Through a combination of expert lectures, demo sessions and hands-on practical labs along with On Job Training Assignments, you will be able to build solutions that the industry expects of you as a Cloud professional.

Basis our Placement Records and Confidence about your placement we offer you a money back policy if you are not placed\* for jobs with top employers across Industries in India and abroad.



# CCNA Exam v1.0 (CCNA 200-301)

CCNA Exam v1.0 (CCNA 200-301) is a 120-minute exam associated with the CCNA certification. This exam tests a candidate's knowledge and skills related to network fundamentals, network access, IP connectivity, IP services, security fundamentals, and automation and programmability. The course, Implementing and Administering Cisco Solutions (CCNA), helps candidates prepare for this exam. The following topics are general guidelines for the content likely to be included on the exam. However, other related topics may also appear on any specific delivery of the exam. To better reflect the contents of the exam and for clarity purposes, the guidelines below may change at any time without notice.

## 1.0 Network Fundamentals

### 1.1 Explain the role and function of network components

- 1.1.a Routers
- 1.1.b L2 and L3 switches
- 1.1.c Next-generation firewalls and IPS
- 1.1.d Access points
- 1.1.e Controllers (Cisco DNA Center and WLC)
- 1.1.f Endpoints
- 1.1.g Servers

### 1.2 Describe characteristics of network topology architectures

- 1.2.a 2 tier
- 1.2.b 3 tier
- 1.2.c Spine-leaf
- 1.2.d WAN
- 1.2.e Small office/home office (SOHO)
- 1.2.f On-premises and cloud

### 1.3 Compare physical interface and cabling types

- 1.3.a Single-mode fiber, multimode fiber, copper
- 1.3.b Connections (Ethernet shared media and point-to-point)
- 1.3.c Concepts of PoE

### 1.4 Identify interface and cable issues (collisions, errors, mismatch duplex, and/or speed)

### 1.5 Compare TCP to UDP

### 1.6 Configure and verify IPv4 addressing and subnetting

### 1.7 Describe the need for private IPv4 addressing

1.8 Configure and verify IPv6 addressing and prefix

1.9 Compare IPv6 address types

1.9.a Global unicast

1.9.b Unique local

1.9.c Link local

1.9.d Anycast

1.9.e Multicast

1.9.f Modified EUI 64

1.10 Verify IP parameters for Client OS (Windows, Mac OS, Linux)

1.11 Describe wireless principles

1.11.a Nonoverlapping Wi-Fi channels

1.11.b SSID

1.11.c RF

1.11.d Encryption

1.12 Explain virtualization fundamentals (virtual machines)

1.13 Describe switching concepts

1.13.a MAC learning and aging

1.13.b Frame switching

1.13.c Frame flooding

1.13.d MAC address table

## **2.0 Network Access**

2.1 Configure and verify VLANs (normal range) spanning multiple switches

2.1.a Access ports (data and voice)

2.1.b Default VLAN

2.1.c Connectivity

2.2 Configure and verify interswitch connectivity

2.2.a Trunk ports

2.2.b 802.1Q

2.2.c Native VLAN

2.3 Configure and verify Layer 2 discovery protocols (Cisco Discovery Protocol and LLDP)

2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)

2.5 Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations

2.5.a Root port, root bridge (primary/secondary), and other port names

- 2.5.b Port states (forwarding/blocking)
- 2.5.c PortFast benefits
- 2.6 Compare Cisco Wireless Architectures and AP modes
- 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, and LAG)
- 2.8 Describe AP and WLC management access connections (Telnet, SSH, HTTP, HTTPS, console, and TACACS+/RADIUS)
- 2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings

## 3.0 IP Connectivity

- 3.1 Interpret the components of routing table
  - 3.1.a Routing protocol code
  - 3.1.b Prefix
  - 3.1.c Network mask
  - 3.1.d Next hop
  - 3.1.e Administrative distance
  - 3.1.f Metric
  - 3.1.g Gateway of last resort
- 3.2 Determine how a router makes a forwarding decision by default
  - 3.2.a Longest match
  - 3.2.b Administrative distance
  - 3.2.c Routing protocol metric
- 3.3 Configure and verify IPv4 and IPv6 static routing
  - 3.3.a Default route
  - 3.3.b Network route
  - 3.3.c Host route
  - 3.3.d Floating static
- 3.4 Configure and verify single area OSPFv2
  - 3.4.a Neighbor adjacencies
  - 3.4.b Point-to-point
  - 3.4.c Broadcast (DR/BDR selection)
  - 3.4.d Router ID
- 3.5 Describe the purpose of first hop redundancy protocol

## **4.0 IP Services**

- 4.1 Configure and verify inside source NAT using static and pools
- 4.2 Configure and verify NTP operating in a client and server mode
- 4.3 Explain the role of DHCP and DNS within the network
- 4.4 Explain the function of SNMP in network operations
- 4.5 Describe the use of syslog features including facilities and levels
- 4.6 Configure and verify DHCP client and relay
- 4.7 Explain the forwarding per-hop behavior (PHB) for QoS such as classification, marking, queuing, congestion, policing, shaping)
- 4.8 Configure network devices for remote access using SSH
- 4.9 Describe the capabilities and function of TFTP/FTP in the network

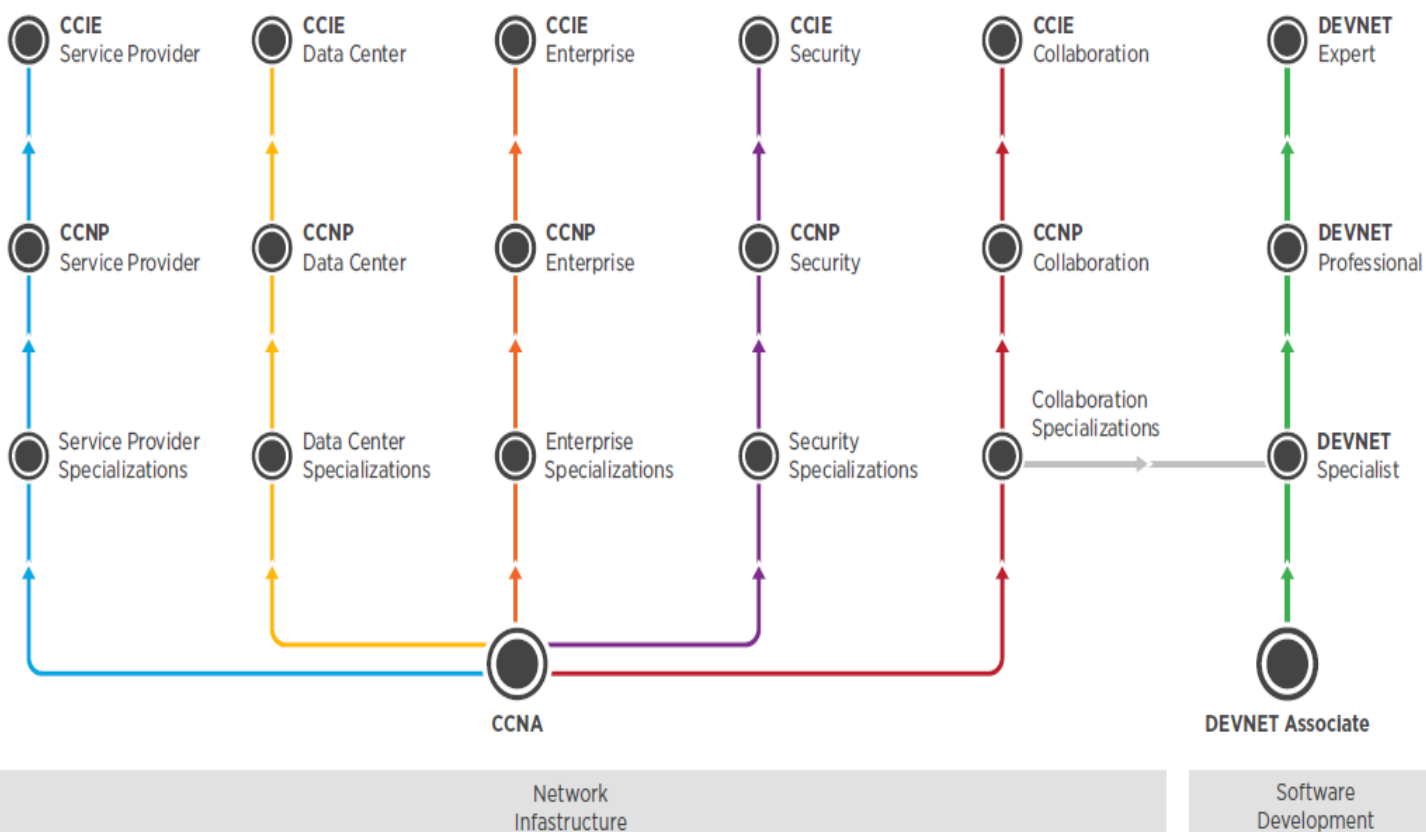
## **5.0 Security Fundamentals**

- 5.1 Define key security concepts (threats, vulnerabilities, exploits, and mitigation techniques)
- 5.2 Describe security program elements (user awareness, training, and physical access control)
- 5.3 Configure device access control using local passwords
- 5.4 Describe security password policies elements, such as management, complexity, and password alternatives (multifactor authentication, certificates, and biometrics)
- 5.5 Describe remote access and site-to-site VPNs
- 5.6 Configure and verify access control lists
- 5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection, and port security)
- 5.8 Differentiate authentication, authorization, and accounting concepts
- 5.9 Describe wireless security protocols (WPA, WPA2, and WPA3)
- 5.10 Configure WLAN using WPA2 PSK using the GUI

## 6.0 Automation and Programmability

- 6.1 Explain how automation impacts network management
- 6.2 Compare traditional networks with controller-based networking
- 6.3 Describe controller-based and software defined architectures (overlay, underlay, and fabric)
  - 6.3.a Separation of control plane and data plane
  - 6.3.b North-bound and south-bound APIs
- 6.4 Compare traditional campus device management with Cisco DNA Center enabled device
- 6.5 Describe characteristics of REST-based APIs (CRUD, HTTP verbs, and data encoding)
- 6.6 Recognize the capabilities of configuration management mechanisms Puppet, Chef, and Ansible
- 6.7 Interpret JSON encoded data

## CISCO CERTIFICATION PATH





# WHO IS THIS PROGRAM FOR?

## Technical Graduates

B.E / B.TECH / M.E / M.TECH / BCA / BSc / MCA / MSc

## Other Graduates

BA / BCom / MA / MCom / BBA / MBA / Diploma / Other Graduates

## Working Professionals in following Roles

IT Engineer

Global Helpdesk Executive

Service Desk Executive

IT Assets Executive

Desktop Support Engineer

BPO Professionals

Mechanical Engineers

Electronics & Telecom Engineers

Sales Executives

Relationship Managers

## BECOME IT PROFESSIONAL FROM NON IT BACKGROUND

Rahitech has helped 1000+ non IT Professionals to move into IT Industry by bridging the Technology Skill Gap between Professionals and Companies.

Candidates who are Engineers and other Graduates from non IT background seeking a career in IT Industry can also apply.

Fresher from all educational backgrounds can become an IT Professional through our various Training Programs



Our 1000+ Trained Candidates are working in following Companies:



## OUR NODES LOCATIONS

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NASHIK

AURANGABAD

JALGAON

KOLHAPUR

BARAMATI

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## COMPANY INFORMATION



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