PROFESSIONAL CERTIFICATION OUTLINE

CCNA Certification

Cisco Certified Network Associate • 200-301 CCNA (v1.1)

A comprehensive, enterprise-aligned technical training curriculum engineered for network engineers, cybersecurity analysts, and IT infrastructure specialists. Master core routing, switching, security hardening, and programmable SDN infrastructure.

WHY ALL SAFE • Industry Achievements & Institutional Credibility

VERIFIED TRACK RECORD

PILLAR 01 • MARKET LEADERSHIP

1. Pakistan's Leading Cyber Security Platform

Pioneering offensive and defensive cybersecurity training, trusted by leading universities, corporate enterprises, and defense professionals nationwide for elite technical capacity building.

PILLAR 02 • GLOBAL IMPACT

2. Trained 2,000+ Students Internationally

Empowered a diverse global alumni network spanning 15+ countries, equipping learners with practical command-line muscle memory, live lab experience, and enterprise deployment skills.

PILLAR 03 • CAREER OUTCOMES

3. Global Success Stories

Alumni actively employed across multinational technology firms, telecom providers, Fortune 500 infrastructure teams, and Security Operations Centers (SOC) across the globe.

PILLAR 04 • NEXT-GEN INNOVATION

4. Partner of First Security AI Platform

Official partner integrating **Securiti AI Pro**—the pioneering AI-powered platform for automated network topology analysis, configuration validation, and real-time security diagnostics.

6	11	24/7	FREE
CORE BLUEPRINT DOMAINS	HANDS-ON ENTERPRISE LABS	LIVE MENTORSHIP SUPPORT	SECURITI AI PRO™ ACCESS

Enrollment: +92 321 2077222 • allsafeus@gmail.com
www.allsafeinnovate.com

PROGRAM OVERVIEW & ARCHITECTURE

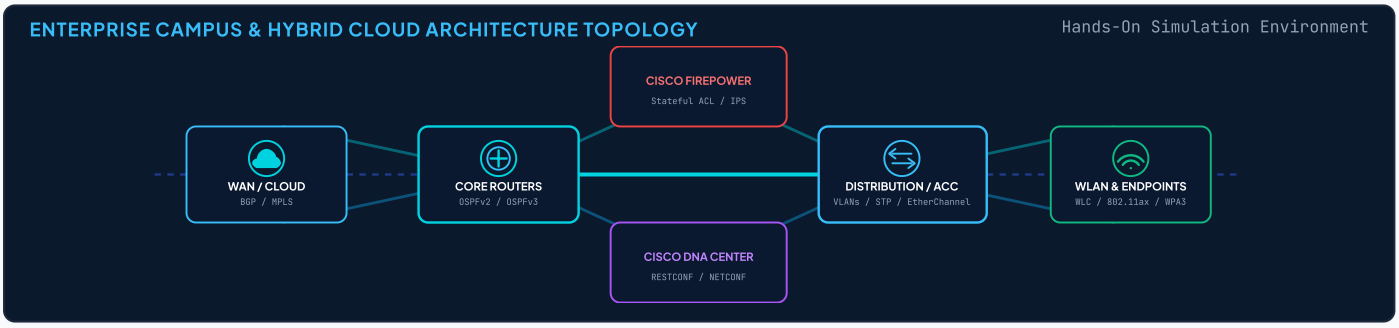
Enterprise Network Architecture & The ALL SAFE Advantage

Bridging theoretical networking and defense-in-depth infrastructure through practical labs, real-world topology builds, and continuous mentorship.

What is Cisco CCNA & Why Does It Matter?

Global Benchmark Credential

The **Cisco Certified Network Associate (CCNA 200-301)** is the world's most recognized benchmark credential for enterprise IT infrastructure, cybersecurity engineering, and systems administration. It validates verified proficiency to configure, operate, and troubleshoot complex corporate routed and switched networks, establish resilient multi-site connectivity, deploy access control and wireless security, and interface with modern software-defined programmable networks (SDN). In modern IT and cybersecurity, networking is the fundamental foundation—you cannot secure, automate, or optimize an infrastructure you do not thoroughly understand.



The 6 ALL SAFE Institutional Advantages

WHY CHOOSE ALL SAFE?

1. Live Practical Sessions

Interactive instructor-led CLI sessions with real Cisco hardware & Packet Tracer/GNS3 topologies, hands-on packet analysis, and live troubleshooting drills.

2. 24/7 Mentorship Support

Continuous dedicated mentorship and learning assistance to help students master technical concepts, resolve difficult lab bugs, and maintain steady progress.

3. Free International Certs

Free international certification opportunities through eligible ALL SAFE scholarship and merit programs. **Eligibility and applicable program terms must be confirmed.*

4. International Experts Community

Connect with a global community of cybersecurity and networking professionals, CCIEs, and enterprise infrastructure leads for networking, technical discussions, and career advice.

5. Securiti AI Pro — Free

Get free access to Securiti AI Pro, ALL SAFE's proprietary AI-powered security diagnostic and simulation assistant. Practice topology debugging and syntax validation (*subject to terms*).

6. Career-Oriented Learning

Develop enterprise-grade practical skills designed around actual job market demands, building a rock-solid foundation for top infrastructure and cybersecurity roles.

OFFICIAL CISCO BLUEPRINT

Cisco CCNA 200-301 Complete Domain Curriculum

Comprehensive coverage across all six official Cisco exam domains, integrating deep protocol mechanics, packet-level analysis, and real-world CLI laboratory configuration.

Module 01: Network Fundamentals

20% Exam Weight

Architecture & Topologies: Routers, L2/L3 switches, Next-Gen Firewalls (NGFW), Wireless LAN Controllers (WLC), Access Points (AP), PoE/PoE+; 2-tier, 3-tier, and spine-leaf architectures; Cat5e/6/6a copper, single-mode (SMF) & multi-mode (MMF) fiber optics; interface speed, duplex, collisions, and CRC errors.
Addressing & Protocols: TCP 3-way handshake, windowing & flow control vs UDP transport; IPv4 VLSM subnetting & CIDR budgeting; IPv6 Global Unicast (GUA), Link-Local (LLA), SLAAC, EUI-64 & anycast; Type-1/2 hypervisors, virtual switches & VMs; Ethernet frame switching logic, MAC learning, aging & CAM table flooding.

Hands-On Labs: Lab 01: Router Initial Hardening & SSHv2 • Lab 02: Switch Management & SVI Config • Lab 04: IPv4 VLSM Budgeting & Dual-Stack IPv6 Deployment.

Module 02: Network Access

20% Exam Weight

VLANs & Trunking: Multi-switch VLAN segmentation (Data, Voice, Management); IEEE 802.1Q encapsulation & native VLAN security; Inter-VLAN routing via Router-on-a-Stick (subinterfaces) & Layer 3 Switch SVIs; EtherChannel bundling (LACP active/passive, PAgP, static ON, hashing algorithms).
Spanning Tree & Wireless: Rapid PVST+ (802.1w) operation (Root bridge election, port roles/states: discarding, learning, forwarding, PortFast, BPDU Guard); CDP & LLDP; Cisco Enterprise Wireless architecture (centralized WLC, FlexConnect, CAPWAP tunnels, 802.11ax Wi-Fi 6, WPA3-Enterprise, AP association states).

Hands-On Labs: Lab 03: 802.1Q VLANs & ROAS Inter-VLAN Routing • Lab 10: Layer 2 Hardening (Port Security Sticky MAC, DHCP Snooping, Dynamic ARP Inspection).

Module 03: IP Connectivity

25% Exam Weight

Routing Decision Tree: Routing table anatomy (network prefix, mask, next-hop IP, administrative distance, metric); Longest Prefix Match algorithm; static routing, default routes (0.0.0.0/0), host routes (/32), and floating static routes for automated redundant ISP failover.
Single-Area OSPFv2: Link-state architecture; Hello/Dead timer intervals; neighbor adjacency states (Down to Full); DR/BDR election priority on broadcast multi-access links; Router ID selection; passive interfaces; point-to-point network types; route metric cost bandwidth tuning; First Hop Redundancy (HSRP, VRRP virtual IPs).

Hands-On Labs: Lab 05: Static & Floating Static Failover Routing • Lab 06: Single-Area OSPFv2 Adjacency, DR/BDR Tuning & Cost Metric Optimization.

Module 04: IP Services

10% Exam Weight

NAT & DHCP Operations: Inside/outside local & global addressing; Static NAT (1-to-1 mapping), Dynamic NAT pools, and Port Address Translation (PAT / Overload); Cisco IOS DHCP server pools, lease times, exclusions, and DHCP Relay (`ip helper-address`) forwarding.
Operations & Quality of Service: NTP stratum hierarchy & MD5 auth; DNS lookup resolution; SNMPv2c community strings vs SNMPv3 (authPriv encryption); Syslog levels 0-7; QoS fundamentals (classification, marking, CoS, DSCP values, queuing: FIFO, CBWFQ, policing, shaping); Secure management via SSHv2 & SFTP.

Hands-On Labs: Lab 07: Enterprise DHCP Pools, Relay Agents & PAT Overload Deployment • Lab 09: Enterprise Syslog, NTP Synchronization & SNMPv3 Hardening.

Module 05: Security Fundamentals

15% Exam Weight

Hardening & Threat Defense: Enterprise threat landscape, vulnerabilities, exploits, CIA triad; network device hardening (console/VTY passwords, banner motd, exec-timeout, secret Type 8/9 PBKDF2 hashing); password policies & MFA; physical security controls.
Filtering & Secure Tunnels: Standard & Extended IPv4 Access Control Lists (ACLs); Layer 2 security (Port Security with sticky MAC violation protect/restrict/shutdown, DHCP Snooping untrusted ports, Dynamic ARP Inspection); AAA security frameworks (RADIUS vs TACACS+); Site-to-Site IPsec VPN tunnels (IKEv2, ESP AES-256), SSL VPNs & WPA3 Wi-Fi.

Hands-On Labs: Lab 08: Standard & Extended Access Control Lists (ACLs) • Layer 2 Port Security Violation Modes & Dynamic ARP Inspection Defense.

Module 06: Automation & Programmability

10% Exam Weight

Software-Defined Architecture: Traditional vs controller-based networking; separation of control, data, and management planes; Cisco Catalyst Center (DNA Spaces), SD-Access, SD-WAN fabrics, and Cisco ACI underlay/overlay fabrics (VXLAN).
APIs, Formats & Network AI: RESTful APIs (CRUD operations, HTTP verbs: GET, POST, PUT, DELETE, response codes 200, 201, 400, 404, token authentication); data serialization (JSON, XML, YAML validation); configuration management tools (Ansible playbooks, Terraform declarative syntax); AI/ML in network operations (predictive telemetry).

Hands-On Labs: Lab 11: Network Automation with Python & Ansible • Querying RESTCONF/NETCONF APIs, parsing JSON telemetry, and automated switchport provisioning.

CAREER ACCELERATION

CCNA Career Scope, Student Roadmap & Admissions

How CCNA mastery accelerates professional IT careers across enterprise infrastructure, cohort specifications, and registration.

CCNA Career Scope & Target Enterprise Roles — Industry Job Matrix

ENTERPRISE ROLE	CORE OPERATIONAL RESPONSIBILITIES	CAREER TRAJECTORY
Network Support Engineer	Triage enterprise connectivity tickets, diagnose switchport faults, analyze router interface errors, and support corporate LAN users.	Sr. Support Specialist
Network Administrator	Configure and manage enterprise VLANs, maintain ACL policies, administer DHCP/DNS, and execute Cisco IOS software upgrades.	Lead Network Architect
NOC Engineer (Ops Center)	24/7/365 infrastructure monitoring, outage escalation, link failover validation, and SLA adherence across multi-site networks.	Tier-3 SRE / Lead
IT Support Specialist	Enterprise workstation connectivity, DHCP/DNS client settings, AnyConnect VPN provisioning, and office Wi-Fi roaming.	Systems Administrator
Junior Network Engineer	Assist senior architects in deploying branch routers, staging access switches, and configuring dynamic OSPF routing.	Enterprise Solutions Lead
Infrastructure & Tech Support	Rack-and-stack installations, structured cabling, patch panels, hybrid cloud connectivity, and virtual switch management.	Cloud Infrastructure Eng.

The 7-Step Student Learning Journey

1. **Enrollment** — Onboarding
2. **Fundamentals** — IP & Subnets
3. **Core Concepts** — VLANs & OSPF
4. **Hands-On Labs** — 11 Enterprise Labs
5. **Troubleshoot** — Packet Tracing
6. **Exam Prep** — Blueprint Review
7. **Cisco Exam** — CCNA Credential

Course Duration:	10 Weeks (60+ Hours Live + Labs)	**Training Mode:**	Live Interactive Online + Cloud Labs
Class Schedule:	Weekend & Weekday Evening Batches	**Trainer Credentials:**	Senior Cisco Certified Architects (CCIE / CCNP)
Starting Date:	Upcoming Cohort (Contact Admissions)	**Course Fee:**	Inquire for Cohort Packages & Discounts

START BUILDING YOUR NETWORKING CAREER WITH ALL SAFE

Take the next step toward developing professional networking skills through practical training, expert mentorship, and a supportive technical learning community.

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Contact ALL SAFE Today to Enroll in the CCNA Training Program.