



CCNA®

Routing & Switching

(Exam Code : 200-125)

Course Objective :

Participants will learn how to install, operate, configure, and verify a basic IPv4 and IPv6 network, including configuring a LAN switch, configuring an IP router, connecting to a WAN, and identifying basic security threats. It also includes more in-depth topics that teach learners how to perform basic troubleshooting steps in enterprise branch office networks, preparing students for the Cisco CCNA certification. Upon completing this course, you will have the skills and knowledge to:

- Install, operate, and troubleshoot a medium-sized network, including connecting to a WAN and implementing network security
- Describe the effects of new technologies such as IoE, IoT, IWAN, and SDN on network evolution

Prerequisite:

Participants should be familiar with :

- Basic computer literacy & Basic PC operating system navigation skills
- Basic Internet usage skills & Basic IP address knowledge
- Understanding of network fundamentals

Training Methodology & Materials:

- Practical hands-on sessions, 80% lab-based and 20% theory-based.
- Additional and well-designed labs handouts are given to enhance further enhance the courseware given.

Certificate Of Attendance :

Certificate Of Attendance will be awarded to participants completing the course achieving minimum 75% attendance.

Training Duration:

Full-Time : 5 Weekdays or 5 Sats
Time : 9am – 5.40pm

Part-Time : 11 sessions
Time : 6.30pm - 10.00pm (twice a week)

Course Fee:

Normal Course Fee : S\$2000
Regn Fee : S\$50
Exam Fee : S\$493* (Includes S\$50 exam proctor fee)

* Exam fee subject to final confirmation from Cisco at exam regn

All fees subject to prevailing GST. Call us to check on latest promotion.

SDF, Absentee Payroll and PIC Grants available. Course eligible for SkillsFuture Credit Claim. Terms and conditions apply.

Cisco Certification Exam

This course will help the participants to prepare for the Cisco Exam.

Exam Code : 200-125 (CCNA ver 3.0).

DETAILED COURSE OUTLINE

1. Network Fundamentals

- 1.1 Compare and contrast OSI and TCP/IP models
- 1.2 Compare and contrast TCP and UDP protocols
- 1.3 Describe the impact of infrastructure components in an enterprise network
- 1.4 Describe the effects of cloud resources on enterprise network architecture
- 1.5 Compare and contrast collapsed core and three-tier architectures
- 1.6 Compare and contrast network topologies
- 1.7 Select the appropriate cabling type based on implementation requirements
- 1.8 Apply troubleshooting methodologies to resolve problems
- 1.9 Configure, verify, and troubleshoot IPv4 addressing and subnetting
- 1.10 Compare and contrast IPv4 address types
- 1.11 Describe the need for private IPv4 addressing
- 1.12 Identify the appropriate IPv6 addressing scheme to satisfy addressing requirements in a LAN/WAN environment
- 1.13 Configure, verify, and troubleshoot IPv6 addressing
- 1.14 Configure and verify IPv6 Stateless Address Auto Configuration
- 1.15 Compare and contrast IPv6 address types

2. LAN Switching Technologies

- 2.1 Describe and verify switching concepts
- 2.2 Interpret Ethernet frame format
- 2.3 Troubleshoot interface and cable issues (collisions, errors, duplex, speed)
- 2.4 Configure, verify, and troubleshoot VLANs (normal/extended range) spanning multiple switches
- 2.5 Configure, verify, and troubleshoot interswitch connectivity

- 2.6 Configure, verify, and troubleshoot STP protocols
- 2.7 Configure, verify and troubleshoot STP related optional features
- 2.8 Configure and verify Layer 2 protocols
- 2.9 Configure, verify, and troubleshoot (Layer 2/Layer 3) EtherChannel
- 2.10 Describe the benefits of switch stacking and chassis aggregation

3. Routing Technologies

- 3.1 Describe the routing concepts
- 3.2 Interpret the components of a routing table
- 3.3 Describe how a routing table is populated by different routing information sources
- 3.4 Configure, verify, and troubleshoot inter-VLAN routing
- 3.5 Compare and contrast static routing and dynamic routing
- 3.6 Compare and contrast distance vector and link state routing protocols
- 3.7 Compare and contrast interior and exterior routing protocols
- 3.8 Configure, verify, and troubleshoot IPv4 and IPv6 static routing
- 3.9 Configure, verify, and troubleshoot single area and multi-area OSPFv2 for IPv4 (excluding authentication, filtering, manual summarization, redistribution, stub, virtual-link, and LSAs)
- 3.10 Configure, verify, and troubleshoot single area and multi-area OSPFv3 for IPv6 (excluding authentication, filtering, manual summarization, redistribution, stub, virtual-link, and LSAs)
- 3.11 Configure, verify, and troubleshoot EIGRP for IPv4 (excluding authentication, filtering, manual summarization, redistribution, stub)
- 3.12 Configure, verify, and troubleshoot EIGRP for IPv6 (excluding authentication, filtering, manual summarization, redistribution, stub)
- 3.13 Configure, verify, and troubleshoot RIPv2 for IPv4 (excluding authentication, filtering, manual summarization, redistribution)
- 3.14 Troubleshoot basic Layer 3 end-to-end connectivity issues

4. WAN Technologies

- 4.1 Configure and verify PPP and MLPPP on WAN interfaces using local authentication
- 4.2 Configure, verify, and troubleshoot PPPoE client-side interfaces using local authentication
- 4.3 Configure, verify, and troubleshoot GRE tunnel connectivity
- 4.4 Describe WAN topology options
- 4.5 Describe WAN access connectivity options
- 4.6 Configure and verify single-homed branch connectivity using eBGP IPv4 (limited to peering and route advertisement using Network command only)
- 4.7 Describe basic QoS concepts

5. Infrastructure Services

- 5.1 Describe DNS lookup operation
- 5.2 Troubleshoot client connectivity issues involving DNS
- 5.3 Configure and verify DHCP on a router (excluding static reservations)
- 5.4 Troubleshoot client- and router-based DHCP connectivity issues
- 5.5 Configure, verify, and troubleshoot basic HSRP
- 5.6 Configure, verify, and troubleshoot inside source NAT
- 5.7 Configure and verify NTP operating in a client/server mode

6. Infrastructure Security

- 6.1 Configure, verify, and troubleshoot port security
- 6.2 Describe common access layer threat mitigation techniques
- 6.3 Configure, verify, and troubleshoot IPv4 and IPv6 access list for traffic filtering
- 6.4 Verify ACLs using the APIC-EM Path Trace ACL analysis tool
- 6.5 Configure, verify, and troubleshoot basic device hardening
- 6.6 Describe device security using AAA with TACACS+ and RADIUS

7. Infrastructure Management

- 7.1 Configure and verify device-monitoring protocols
- 7.2 Troubleshoot network connectivity issues using ICMP echo-based IP SLA
- 7.3 Configure and verify device management
- 7.4 Configure and verify initial device configuration
- 7.5 Perform device maintenance
- 7.6 Use Cisco IOS tools to troubleshoot and resolve problems
- 7.7 Describe network programmability in enterprise network architecture



SINGAPORE
WORKFORCE SKILLS
QUALIFICATIONS



CCNA-Routing & Switching ver 3.0



IT Enabler Consultancy Pte Ltd

(Co Reg No. 200211025Z)

35 Selegie Road #09-06 Parklane Shopping Mall Singapore 188307 | Tel: 6333 4843 | Fax: 6333 4883 | www.ienabler.com.sg