

CCNA(Routing & Switching) Regular

Course Introduction

The Cisco Certified Network Associate (CCNA) Routing and Switching training program will make ready the candidate to sit and pass for CCNA composite exam (200-125) a 90-minute, 60–75 question assessment that is associated with the CCNA Routing and Switching certification. This training programme will be helpful to acquire the knowledge and skills related to network fundamentals, LAN switching technologies, IPv4 and IPv6 routing technologies, WAN technologies, infrastructure services, infrastructure security, and infrastructure management..



Course Objectives

After completing this course the student should be able to :

- Build a functional access switch configuration to support the specified network operational parameters, given a network
- Use Cisco IOS commands to configure VLANs, VTP, IEEE 802.1Q trunking, and ISL trunking, given a functioning access layer switch
- Use show and debug commands to identify anomalies in VLAN, VTP, ISL trunking, and Spanning-Tree operation, given an operational access layer switch
- Describe the features and operation of static and dynamic routing, including RIP, IGRP, EIGRP, and OSPF
- Use show and debug commands to identify anomalies in routing operation, given an operational router
- Use Cisco IOS commands to configure standard and extended access lists, given a functioning router and serial interfaces using HDLC and PPP encapsulation for leased line connections, given a functioning router



Course Duration

CCNA Certification preparation program consists of **50 Hours** training including theory class room sessions and Practical Lab sessions.

Course Exam and Certification

Upon completion of the certification preparation program, student can attend the online CCNA Certification **Exam (200-125)** in the Pearson VUE testing center in anywhere around the world.

Course Fees

CCNA Certification preparation Program's Course Fee for public batch is **QR. 2500** Per Person. Certification Exam (200-125) Fee is **\$325**.



Course Schedule

Contact office for latest CCNA course schedule. Call: 504486692 / 55714515 / 44550883

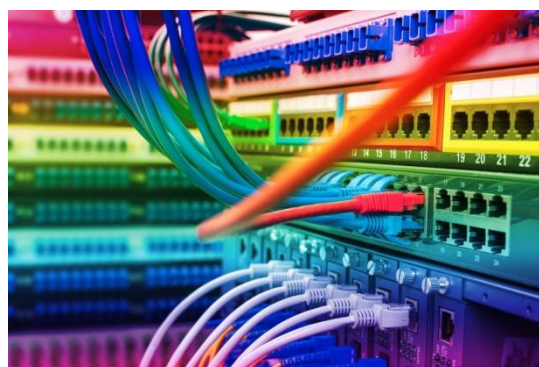
Course Outline

A. Describe how a network works

- Describe the purpose and functions of various network devices
- Select the components required to meet a network specification
- Use the OSI and TCP/IP models and their associated protocols to explain how data flows in a network
- Describe common networked applications including web applications
- Describe the purpose and basic operation of the protocols in the OSI and TCP models
- Describe the impact of applications (Voice Over IP and Video Over IP) on a network
- Interpret network diagrams
- Determine the path between two hosts across a network
- Describe the components required for network and Internet communications
- Identify and correct common network problems at layers 1, 2, 3 and 7 using a layered model approach
- Differentiate between LAN/WAN operation and features

B. Configure, verify and troubleshoot a switch with VLANs and interswitch communications

- Select the appropriate media, cables, ports, and connectors to connect switches to other network devices and hosts
- Explain the technology and media access control method for Ethernet networks
- Explain network segmentation and basic traffic management concepts
- Explain basic switching concepts and the operation of Cisco switches
- Perform and verify initial switch configuration tasks including remote access management
- Verify network status and switch operation using basic utilities (including: ping, traceroute, telnet, SSH, arp, ipconfig), SHOW & DEBUG commands
- Identify, prescribe, and resolve common switched network media issues, configuration issues, auto negotiation, and switch hardware failures
- Describe enhanced switching technologies (including: VTP, RSTP, VLAN, PVSTP, 802.1q)
- Describe how VLANs create logically separate networks and the need for routing between them
- Configure, verify, and troubleshoot VLANs
- Configure, verify, and troubleshoot trunking on Cisco switches
- Configure, verify, and troubleshoot interVLAN routing
- Configure, verify, and troubleshoot VTP
- Configure, verify, and troubleshoot RSTP operation
- Interpret the output of various show and debug commands to verify the operational status of a Cisco switched network.
- Implement basic switch security (including: port security, trunk access, management vlan other than vlan1, etc.)



C. Implement an IP addressing scheme and IP Services to meet network requirements in a medium-size Enterprise branch office network.

- Describe the operation and benefits of using private and public IP addressing
- Explain the operation and benefits of using DHCP and DNS
- Configure, verify and troubleshoot DHCP and DNS operation on a router.(including: CLI/SDM)
- Implement



static and dynamic addressing services for hosts in a LAN environment

- Calculate and apply an addressing scheme including VLSM IP addressing design to a network
- Determine the appropriate classless addressing scheme using VLSM and summarization to satisfy addressing requirements in a LAN/WAN environment
- Describe the technological requirements for running IPv6 in conjunction with IPv4 (including: protocols, dual stack, tunneling, etc).
- Describe IPv6 addresses
- Identify and correct common problems associated with IP addressing and host configurations

D. Configure, verify, and troubleshoot basic router operation and routing on Cisco devices

- Describe basic routing concepts (including: packet forwarding, router lookup process)
- Describe the operation of Cisco routers (including: router bootup process, POST, router components)
- Select the appropriate media, cables, ports, and connectors to connect routers to other network devices and hosts
- Configure, verify, and troubleshoot RIPv2
- Access and utilize the router to set basic parameters.(including: CLI/SDM)
- Connect, configure, and verify operation status of a device interface
- Verify device configuration and network connectivity using ping, traceroute, telnet, SSH or other utilities
- Perform and verify routing configuration tasks for a static or default route given specific routing requirements
- Manage IOS configuration files. (including: save, edit, upgrade, restore)
- Manage Cisco IOS.
- Compare and contrast methods of routing and routing protocols
- Configure, verify, and troubleshoot OSPF
- Configure, verify, and troubleshoot EIGRP
- Verify network connectivity (including: using ping, traceroute, and telnet or SSH)
- Troubleshoot routing issues
- Verify router hardware and software operation using SHOW & DEBUG commands.
- Implement basic router security



E. Explain and select the appropriate administrative tasks required for a WLAN

- Describe standards associated with wireless media (including: IEEE WI-FI Alliance, ITU/FCC)
- Identify and describe the purpose of the components in a small wireless network. (Including: SSID, BSS, ESS)
- Identify the basic parameters to configure on a wireless network to ensure that devices connect to the correct access point
- Compare and contrast wireless security features and capabilities of WPA security (including: open, WEP, WPA-1/2)
- Identify common issues with implementing wireless networks. (Including: Interface, mis-configuration)

F. Identify security threats to a network and describe general methods to mitigate those threats

- Describe today's increasing network security threats and explain the need to implement a comprehensive security policy to mitigate the threats
- Explain general methods to mitigate common security threats to network devices, hosts, and applications
- Describe the functions of common security appliances and applications
- Describe security recommended practices including initial steps to secure network devices

G. Implement, verify, and troubleshoot NAT and ACLs in a medium-size Enterprise branch



office network.

- Describe the purpose and types of ACLs
- Configure and apply ACLs based on network filtering requirements.(including: CLI/SDM)
- Configure and apply an ACLs to limit telnet and SSH access to the router using (including: SDM/CLI)
- Verify and monitor ACLs in a network environment
- Troubleshoot ACL issues
- Explain the basic operation of NAT
- Configure NAT for given network requirements using (including: CLI/SDM)
- Troubleshoot NAT issues

H. Implement and verify WAN links

- Describe different methods for connecting to a WAN
- Configure and verify a basic WAN serial connection
- Configure and verify Frame Relay on Cisco routers
- Troubleshoot WAN implementation issues
- Describe VPN technology (including: importance, benefits, role, impact, components)
- Configure and verify a PPP connection between Cisco routers.

