

Networking with Cisco® Devices



Course Code: MIE-CCNA

Overview

CCNA® is the first step in the Cisco® Career certifications. This package is designed for people relatively new to networking technology and provides a solid understanding of network fundamentals.

Individuals who are new to the networking industry that have a desire to become Cisco™ certified.



This course prepares an individual to have a detail and practical understanding of both LAN and WAN networking, switching and routing using the study guide as shown on the right.

It also enables one to prepare for the CCNA® certification. Course covers topics to one to take the CCNA **640-802** exam started in Nov-07, which include topics cover in INTRO and ICND.

Who should take this class?

Network Engineers seeking to achieve a CCNA® certification or those who wanted a good foundation for I.T. Networking.

Pre-requisites

Some basic background of Networking would be useful.

What you will learn

- | | |
|---|---|
| <ul style="list-style-type: none">• Network Technologies Overview• Basic Networking concepts• IP addressing in-depth• IP address in-depth• Preparing Network Connection• Basic switch and router setup• Managing your network devices• Bridging and Switching concepts and configuration• VLAN concepts and implementation• Routing Introduction | <ul style="list-style-type: none">• Configuring Distance Vector and Link State routing protocol• Advance IP addressing implementation• Securing network using Access List• Advance IP features and configuration• WAN Introduction• Frame Relay concept and implementation• ISDN Introduction and configuration |
|---|---|

CCNA® (Cisco Certified Network Associate) Exam

Required Exams(s) which need to be purchased separately unless otherwise stated is 640-801 CCNA

Bonus:

Each participant will receive a “CCNA Cisco Certified Network Associate Study Guide”, which comes with a CDROM.

REGISTRATION AND INFORMATION

education@ecs.com.sg
www.ecs.com.sg/training
TEL: (65) 6393-4448
FAX: (65) 6294-4097

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Course Outline

1. Internetworking
2. Introduction to TCP/IP
3. Subnetting, Variable Length Subnet Masks (VLSMs), and Troubleshooting TCP/IP
4. Cisco's Internetworking Operating System (IOS) and Security Device Manager (SDM)
5. Managing a Cisco Internetwork
6. IP Routing
7. Enhance IGRP (EIGRP) and Open Shortest Path First (OSPF)
8. Layer 2 Switching and Spanning tree Protocol (STP)
9. Virtual LANs (VLANs)
10. Security
11. Network Address Translation (NAT)
12. Cisco's Wireless Technologies <Overview>
13. Internet Protocol Version 6 (IPv6) <Overview>
14. Wide Area Networks

Cisco Certified Network Associate (CCNA) Exam 640-802 Objectives

Exam Number : 640-802 CCNA
Associated Certifications : CCNA
Duration : 90 Minutes (50-60 questions)
Available Languages : English
Click Here to Register : [Pearson VUE](#)

Exam Description Exam Topics Recommended Training Additional Resources
Exam Description

The **640-802** Cisco Certified Network Associate (CCNA) is the composite exam associated with the Cisco Certified Network Associate certification. Candidates can prepare for this exam by taking the Interconnecting Cisco Networking Devices Part 1 (ICND1) v1.0 and the Interconnecting Cisco Networking Devices Part 2 (ICND2) v1.0 courses. This exam tests a candidate's knowledge and skills required to install, operate, and troubleshoot a small to medium size enterprise branch network. The topics include connecting to a WAN; implementing network security; network types; network media; routing and switching fundamentals; the TCP/IP and OSI models; IP addressing; WAN technologies; operating and configuring IOS devices; extending switched networks with VLANs; determining IP routes; managing IP traffic with access lists; establishing point-to-point connections; and establishing Frame Relay connections.

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The following topics are general guidelines for the content likely to be included on the Cisco Certified Network Associate exam. However, other related topics may also appear on any specific delivery of the exam. In order to better reflect the contents of the exam and for clarity purposes, the guidelines below may change at any time without notice.

Exam Topics	Related Chapter we cover
Describe how a network works	
<ul style="list-style-type: none"> 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 	<p>1 1 1 1 1,2 1,9 1,3 6 1 1,2 1,14</p>
Configure, verify and troubleshoot a switch with VLANs and interswitch communications	
<ul style="list-style-type: none"> 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.) 	<p>1,8 1,8 8 8 8,9 8,9 9 9 9 9 9 9 9 9 9 9 9 9</p>
Implement an IP addressing scheme and IP Services to meet network requirements in a medium-size Enterprise branch office network.	
<ul style="list-style-type: none"> 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 	<p>2,3 1 4 3 3 3 13</p>

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<ul style="list-style-type: none"> Describe the technological requirements for running IPv6 in conjunction with IPv4 (including: protocols, dual stack, tunneling, etc). 	13
<ul style="list-style-type: none"> Describe IPv6 addresses 	3
<ul style="list-style-type: none"> Identify and correct common problems associated with IP addressing and host configurations 	3
Configure, verify, and troubleshoot basic router operation and routing on Cisco devices	
<ul style="list-style-type: none"> Describe basic routing concepts (including: packet forwarding, router lookup process) 	6
<ul style="list-style-type: none"> Describe the operation of Cisco routers (including: router bootup process, POST, router components) 	4
<ul style="list-style-type: none"> Select the appropriate media, cables, ports, and connectors to connect routers to other network devices and hosts 	1
<ul style="list-style-type: none"> Configure, verify, and troubleshoot RIPv2 	6
<ul style="list-style-type: none"> Access and utilize the router to set basic parameters.(including: CLI/SDM) 	4,6,7
<ul style="list-style-type: none"> Connect, configure, and verify operation status of a device interface 	4,6,7
<ul style="list-style-type: none"> Verify device configuration and network connectivity using ping, traceroute, telnet, SSH or other utilities 	4,6,7
<ul style="list-style-type: none"> Perform and verify routing configuration tasks for a static or default route given specific routing requirements 	6,7
<ul style="list-style-type: none"> Manage IOS configuration files. (including: save, edit, upgrade, restore) 	5
<ul style="list-style-type: none"> Manage Cisco IOS. 	5
<ul style="list-style-type: none"> Compare and contrast methods of routing and routing protocols 	6,7
<ul style="list-style-type: none"> Configure, verify, and troubleshoot OSPF 	6,7
<ul style="list-style-type: none"> Configure, verify, and troubleshoot EIGRP 	6,7
<ul style="list-style-type: none"> Verify network connectivity (including: using ping, traceroute, and telnet or SSH) 	4,5,6,7
<ul style="list-style-type: none"> Troubleshoot routing issues 	4,6,7
<ul style="list-style-type: none"> Verify router hardware and software operation using SHOW & DEBUG commands. 	4,6,7
<ul style="list-style-type: none"> Implement basic router security 	6,7,10
Explain and select the appropriate administrative tasks required for a WLAN	
<ul style="list-style-type: none"> Describe standards associated with wireless media (including: IEEE WI-FI Alliance, ITU/FCC) 	12
<ul style="list-style-type: none"> Identify and describe the purpose of the components in a small wireless network. (Including: SSID, BSS, ESS) 	12
<ul style="list-style-type: none"> Identify the basic parameters to configure on a wireless network to ensure that devices connect to the correct access point 	12
<ul style="list-style-type: none"> Compare and contrast wireless security features and capabilities of WPA security (including: open, WEP, WPA-1/2) 	12
<ul style="list-style-type: none"> Identify common issues with implementing wireless networks. (Including: Interface, missconfiguration) 	12
Identify security threats to a network and describe general methods to mitigate those threats	
<ul style="list-style-type: none"> Describe today's increasing network security threats and explain the need to implement a comprehensive security policy to mitigate the threats 	10
<ul style="list-style-type: none"> Explain general methods to mitigate common security threats to network devices, hosts, and applications 	10
<ul style="list-style-type: none"> Describe the functions of common security appliances and applications 	10
<ul style="list-style-type: none"> Describe security recommended practices including initial steps to secure network devices 	10
Implement, verify, and troubleshoot NAT and ACLs in a medium-size Enterprise branch office network	
<ul style="list-style-type: none"> Describe the purpose and types of ACLs 	10
<ul style="list-style-type: none"> Configure and apply ACLs based on network filtering requirements.(including: CLI/SDM) 	10
<ul style="list-style-type: none"> Configure and apply an ACLs to limit telnet and SSH access to the router using (including: SDM/CLI) 	10
<ul style="list-style-type: none"> Verify and monitor ACLs in a network environment 	10
<ul style="list-style-type: none"> Troubleshoot ACL issues 	10
<ul style="list-style-type: none"> Explain the basic operation of NAT 	11
<ul style="list-style-type: none"> Configure NAT for given network requirements using (including: CLI/SDM) 	11
<ul style="list-style-type: none"> Troubleshoot NAT issues 	11
Implement and verify WAN links	
<ul style="list-style-type: none"> Describe different methods for connecting to a WAN 	14
<ul style="list-style-type: none"> Configure and verify a basic WAN serial connection 	14
<ul style="list-style-type: none"> Configure and verify Frame Relay on Cisco routers 	14

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• Troubleshoot WAN implementation issues	14
• Describe VPN technology (including: importance, benefits, role, impact, components)	14
• Configure and verify a PPP connection between Cisco routers	14

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