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思 科 系 列 丛 书

CCNA 与 CCNAS

认证考试英语指南

◎ 张 岐 王爱华 编著 ◎ 钟啸剑 审校

一书在手

网络考试认证

网络专业英语

全不愁



电子工业出版社
PUBLISHING HOUSE OF ELECTRONICS INDUSTRY

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内 容 简 介

本书根据 2010 年 CCNA 和 CCNAS 最新考试大纲,遵循循序渐进的原则,用英语介绍了计算机网络专业的网络基础、网络分类、网络设备、综合布线、交换与路由、网络应用、网络安全、网络操作系统和云计算等相关技术信息。本书中的每一课内容,都参考了 2010 年的国外最新文章及相关最新英文教材,内容全面,同时编著者给出了课文中的生词解释、课文中的难点注释、参考译文及练习。

本书读者群体为思科网络技术学院的所有学生、高等职业院校计算机网络专业师生、报考网络专业国际认证(CCNA 和 CCNAS 等)的人士以及从事计算机网络技术的科技人员,本书特别适合作为高职高专计算机网络专业的英语教材,同时也可供广大计算机网络专业爱好者学习参考。

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序

为了适应我国信息产业飞速发展的新形势,提高网络工程技术人员的专业英语水平,扩展他们信息技术领域的英语词汇,使他们熟悉网络方面的专业术语,了解科技英语的表达特点并掌握专业英语的翻译技巧,从而大大提高他们的业务素养并增强其在专业上与国际接轨的能力,同时满足专业人员通过 CCNA (Cisco Certified Network Associate) 认证与 CCNAS (CCNA Security) 认证的需求,作者根据多年的教学与实践编写了这本《CCNA 与 CCNAS 认证考试英语指南》。CCNA 与 CCNAS 为思科网络基础的入门认证,对于初学者来说,不少专业英文术语难以理解,导致学员学习艰难。《CCNA 与 CCNAS 认证考试英语指南》中专业词汇出现频率高,读者通过本书的学习,在参加认证考试及专业英语阅读时一定能达到事半功倍的效果。CCNA 与 CCNAS 认证考试不是英语考试,而是计算机领域的专业考试,它所涉及的英文具有一定的专业特点,没有什么复杂的语法,都是比较简单的句型,而且其对于英文的要求也不是许多考生想象的那么高,词汇量也不是很大,经常见到就会逐渐适应和熟悉。经过一段时间的学习后,不但能快速阅读课程的内容,而且大部分生词也熟悉了,为读者以后进一步的学习打下基础。对于想通过 CCNA 与 CCNAS 认证的朋友,本书一定会让您受益非浅。

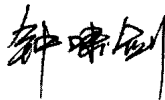
本书结构经作者精心安排分为 5 个部分,即课文、词汇、主要语法现象、练习和疯狂实战。主要语法现象对科技英语中最常见的语法现象进行了总结。在每篇课文中,都含有课文的参考译文,便于读者自学。本书主要特色是疯狂实战环节,该环节参考了 Cisco CCNA 与 CCNAS 认证考试大纲及题型,根据每篇课文涉及的内容进行练习,题量和难度适中,对读者通过 CCNA 与 CCNAS 认证考试有极大的帮助。

本书作者是来自一线的工程师和教师,在结合自身教学经验和学生反馈信息的基础上,对内容构成进行了精心组织。书中课文不仅反映了当代科技近况,而且语言流畅,用词准确,文风朴实,易于阅读和理解。同时,也满足了高职高专院校计算机及相关专业师生的专业英语教学需求。

本书的读者对象是想顺利通过 CCNA 与 CCNAS 考试认证的朋友,本书特别适合高职高专院校计算机专业的学生和从事计算机网络工程的技术人员阅读,也适用于成人教育和继续教育等。

期望本书的出版能为我国 IT 业的发展,为信息产业从业人员素养的提高,为我国高等职业教育的发展作出贡献。

黑龙江省计算机教研会“C 调的华丽”网络大赛组委会负责人



2011 年 6 月

前 言

随着计算机网络技术和通信技术的迅速发展及广泛应用, 计算机网络技术在经济和社会发展中的地位日趋重要。然而, 国内计算机网络技术的应用与研究水平明显滞后于西方, 尤其是美、英等发达国家。如何才能跟上计算机网络技术发展及应用的步伐, 并迅速地掌握与应用其最新成果, 提高我国工程技术人员的专业英语水平已成为当务之急。只有每个从事计算机网络技术人员掌握一定量的计算机网络英语知识, 我国的计算机网络技术应用水平才能得到迅猛发展, 我们才能在世界上有一定的话语权。

伴随着思科网络技术学院在全国的迅速普及, 计算机网络专业及学习网络课程的学生数量迅速增加, 考取国际认证的考生也在逐年增加, 而我国计算机网络专业英语教材少之又少, 为了有效地帮助广大学员及考生能够迅速突破网络专业英语障碍, 编著者有针对性地编写了本书, 这正是本书的编写目的之一。另外, 希望广大读者通过阅读书中这些有关计算机网络专业基本知识的英语文章, 更好地掌握计算机网络专业英语术语和英语单词, 提高网络专业英语阅读能力。

本书的编写以循序渐进为原则, 根据网络专业各门核心课程前后开课顺序, 并充分参考了 CCNA、CCNAS、CCNP 和 MCSE 最新考试大纲要求; 精心组织, 合理选材; 全书取材广泛, 内容安排合理。主要内容包括网络基础、网络分类、网络设备、综合布线、交换与路由、网络应用、网络安全、网络操作系统、云计算等相关技术信息 10 个单元 32 课, 考虑读者的需要, 本书给出了重点词汇、难句注释、参考译文及课后练习等内容。

另外, 根据学员的需要, 编著者精心为每个章节摘选了 CCNA, CCNAS 和 MCSE 方面的历年考试真题, 供读者学习参考。

本书主要由张岐和王爱华编写, 其中, 第八、九单元由王爱华负责编写, 第四、五、六、七单元由张岐负责编写, 第二、三单元由赵明负责编写, 第一、十单元由姜晶负责编写, 张岐和王爱华负责全书的统稿工作。在本书出版过程中, 得到了电子工业出版社编辑宋梅老师在策划方面的大力帮助与支持, 在此表示由衷的谢意!

在本书编写过程中, 得了黑龙江省计算机教研会“C 调的华丽”网络大赛组委会负责人钟啸剑同志的大力支持和关心, 钟啸剑同志对本书进行了校审, 并为本书写了序, 在此表示衷心的感谢。

由于计算机网络发展日新月异, 加之编著者水平有限, 书中难免有错漏之处, 敬请广大读者学员批评指正。编著者信箱: zhangyueq@163.com。

衷心希望本书的出版能为我国高等院校计算机网络专业的发展, 为信息产业职工素养的提高, 为我国网络教育的发展作出贡献。

编著者

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Unit One Network Fundamentals

网络基础

Lesson 1 Computer Networking

Computer networking is a linking of the network devices and computers with each other to provide data communications and share network resources such as printer, scanner, modem, CD/DVD and internet access.¹ A computer network can be interconnected with the UTP/STP cables, coaxial cables, and fiber optics and wireless devices through the radio waves. Today, no business can work effectively without the data communications within the organization. A network can be designed by different layouts known as topologies.²

The common topologies include star, tree, mesh, hybrid and ring. Star topology is the most common topology in Ethernet-based local area network.³ There are specialized rules and standards, the network devices communicate with each other based on these standards. One of these specialized standards and agree-up ways is known as protocols, TCP/IP is the protocol suite that contains multiple communication protocols such as TCP, IP, SMTP, FTP, DHCP, LDAP, PPP, Telnet and many others.⁴ TCP/IP works together and it is the most common communication protocol for LAN, WAN and Internet. The communications on the Internet is based on the IP address, which is a part of the TCP/IP stacks. No computers on the Internet or in the LAN/MAN/WAN can communicate without a unique IP address.⁵

Networking and data communications provide the flexibility, easy way of work and communications with each other, and today every kind of business in the world, which involves more than one computer, but requires a computer network.⁶ A network can be set up by using the following things.

- Computers with Windows/Linux operating system installed. Every computer requires a unique LAN card, which should be properly installed and configured. Ethernet cable with the RJ-45 connectors at both ends.
- A Router/Switch or hub. The other devices are bridges, transceivers, terminal servers and gateways, they can be set up according to your requirements. There are three main types of the computer networks i.e. LAN, MAN, WAN. Each network is either a peer-to-peer or client/server network. In a client/server network model, a centralized domain controller is used to control all the computer networks. It provides the services

to the clients like logon authentication, printer access, scanner access, centralized data storage, user management, resources management, DHCP, DNS, FTP and internet access.⁷

To communicate with the other computer, each computer should support the same protocol and the TCP/IP is the most commonly used protocol in a computer network. Internetwork is a type of computer network that connects the two or more different networks. There are three main types of internetworks i.e. Intranet, Extranet and Internet.⁸



New Words and Expressions

networking	n. 联网, 网络
link	n. 连接, 链接
device	n. 设备
communication	n. 通信, 通信, 交流
resource	n. 资源
printer	n. 打印机
scanner	n. 扫描仪
modem	n. 调制解调器
access	n. 访问, 访问权限 v. 访问, 接入, 使用
interconnect	v. 使互相连接
cable	n. 电缆
coaxial	adj. 同轴的
fiber	n. 纤维, 光纤
optics	n. 光学
wireless	adj. 无线的
effectively	adv. 有效地
layout	n. 布局, 设计, 安排
topology	n. 拓扑结构
star	n. 星, 恒星
hub	n. 集线器
mesh	n. 网状物; 网, 网格
hybrid	n. 混合, 混合物, 杂种
ring	n. 环, 环形物
specialize	v. 使专业化, 使专门化
specialized	adj. 专门的, 专业的
protocol	n. 协议
suite	n. 组件, 族, 群, 套房
multiple	adj. 多重的, 多种的, 多样的

Telnet	n. 远程登录协议
stack	n. 堆栈
unique	adj. 唯一的, 独特的
flexibility	n. 灵活性
involve	v. 包含, 涉及, 使陷于
install	v. 安装
configure	v. 配置
Ethernet	n. 以太网
connector	n. 连接器
router	n. 路由器
switch	n. 交换机, 交换器, 开关
bridge	n. 网桥
transceiver	n. 收发器
terminal	adj. 终端的 n. 终端机
server	n. 服务器
gateway	n. 网关
centralized	adj. 集中的
domain	n. 域, 域名
controller	n. 控制器
logon	n. 注册, 登录
authentication	n. 认证, 验证
storage	n. 存储
Intranet	n. 内联网
Extranet	n. 外联网
radio wave	声波
coaxial cable	同轴电缆
operating system	操作系统



Abbreviations (缩写)

CD (Compact Disk)	光盘
DVD (Digital Video Disk)	数字化视频光盘
UTP (Unshielded Twisted Paired)	非屏蔽双绞线
STP (Shielded Twisted Paired)	屏蔽双绞线
TCP (Transmission Control Protocol)	传输控制协议
IP (Internet Protocol)	互联网协议
SMTP (Simple Mail Transfer Protocol)	简单邮件传输协议
FTP (File Transfer Protocol)	文件传输协议

DHCP (Dynamic Host Configuration Protocol)	动态主机配置协议
LDAP (Lightweight Directory Access Protocol)	轻量级目录访问协议
PPP (Point-to-Point Protocol)	点对点通信协议
LAN (Local Area Network)	局域网
WAN (Wide Area Network)	广域网
DNS (Domain Name Service)	域名服务



Notes

1. Computer networking is a linking of the network devices and computers with each other to provide the data communications and share the network resources such as printer, scanner, modem, CD/DVD and internet access.

这个句子是主系表结构。主语是 computer networking, 表语是 a linking of the network devices and computers with each other (网络设备和计算机之间彼此连接), to 是动词不定式, 表示目的, provide the data communications 和 share the network resources 是并列成分。整个句子可译为: 计算机网络是指网络设备和计算机彼此连接, 以提供数据通信和共享网络资源, 如打印机、扫描仪、调制解调器、CD/DVD 及互联网访问。

2. A network can be designed by different layouts known as topologies.

这句话使用了被动语态。known as 过去分词短语作后置定语, 可译成“人们所熟知的, 被称为的, 所说的”。整个句子可译为: 网络可以设计成不同布局方式, 这称为拓扑结构。

3. Star topology is the most common topology in Ethernet-based local area network.

在这个句子中, Ethernet-based 修饰 local area network 做定语, 译为“以太网为基础的”或“基于以太网的”。整个句子可译为: 星状拓扑是基于以太网的局域网中最常见的拓扑结构。

4. TCP/IP is the protocol suite that contains multiple communication protocols such as TCP, IP, SMTP, FTP, DHCP, LDAP, PPP, telnet and many others.

定语从句。先行词为 the protocol suite (协议族), 引导词是 that, 它在从句中做主语。整个句子可译为: TCP/IP 是指包含多种通信协议, 如 TCP, IP, SMTP, FTP, DHCP, LDAP, PPP, Telnet 和很多其他协议的协议族。

5. No computers on the Internet or in the LAN/MAN/WAN can communicate without a unique IP address.

双重否定句。without a unique IP address 短语做状语, 表示条件, 译为: 如果没有唯一的 IP 地址。on the Internet or in the LAN/MAN/WAN 短语做 computer 的后置定语。整个句子可译为: 如果没有单独的 IP 地址, 没有计算机能通过互联网或局域网 / 城域网 / 广域网进行通信。

6. Every kind of business in the world, which involves more than one computer, but requires a computer network.

这是一个定语从句。先行词是 Every kind of business in the world, 引导词是 which, 它在从句中做 involves (包含) 的主语。与 every 搭配的名词做主语时谓语动词用单数。整个

句子可译为：世界上的每一个企业涉及的不是一台计算机，而是一种计算机网络。

7. It provides the services to the clients like logon authentication, printer access, scanner access, centralized data storage, user management, resources management, DHCP, DNS, FTP and Internet access.

在这个句子中 provide (提供) 接双宾语，其中 services 是直接宾语 (指物)，clients (人) 是间接宾语。like, 介词，译为像。DHCP (动态主机配置协议)，DNS (域名服务)，FTP (文件传输协议)。整个句子可译为：它为客户提供像登录验证、打印机访问权限、扫描仪访问权限、集中数据存储、用户管理、资源管理、动态主机配置协议、域名服务、文件传输协议，以及互联网接入等服务。

8. There are three main types of internetwork i.e. Intranet, Extranet and Internet.

在这个句子中 i.e. 是拉丁词，相当于英语中的 namely/that is to say (也就是 / 即)。整个句子可译为：有三类主要的互连网络，即内联网、外联网和因特网。



Exercises

I. Translate the following Chinese terms into English.

1. 打印机
2. 扫描仪
3. 网络
4. 调制解调器
5. 接口
6. 电缆
7. 光纤
8. 局域网
9. 广域网
10. 服务器
11. 安装
12. 配置
13. 路由器
14. 集线器
15. 交换机

II. Translate the following English terms into Chinese.

1. Transceiver
2. Intranet
3. Extranet
4. Operating System
5. Bridge
6. Topology
7. DNS

8. DHCP
9. TCP
10. FTP
11. Gateway
12. Ethernet
13. Authentication
14. Controller
15. Connector

III. Choose the best answer from the four choices according to the passage.

1. What functions does computer networking have?
 - A. provide data communications
 - B. share network resources
 - C. serve the businesses effectively
 - D. All of the above
2. With which methods can a computer network be interconnected?
 - A. modem
 - B. scanner
 - C. UTP/STP cable
 - D. mouse
3. Which is the most common topology in Ethernet-based local area network?
 - A. hub topology
 - B. mesh topology
 - C. star topology
 - D. ring topology
4. Which of the following does not belong to TCP/IP suite?
 - A. FTP
 - B. DVD
 - C. Telnet
 - D. DHCP
5. Which of the following statements is not true?
 - A. No computer on the internet can communicate without a unique IP address.
 - B. TCP/IP is the most common communication protocol for LAN, WAN and internet.
 - C. Every computer requires a unique LAN card, which should be properly installed and configured.
 - D. There are two main types of computer network.

IV. Translate the following sentences into Chinese.

1. Today, no business can work effectively without the data communications within the organization.

2. TCP/IP works together and it is the most common communication protocol for LAN, WAN and Internet.
3. Every computer requires a unique LAN card, which should be properly installed and configured.
4. In a topology, there are specialized rules and standards and based on these standards, the devices communicate with each other.
5. To communicate with the other computer, each computer should support the same protocol.
6. Internetwork is a type of computer network that connects the two or more different networks.
7. The communications on the Internet is based on the IP address, which is a part of the TCP/IP stack.
8. TCP/IP is the protocol suite that contains multiple communication protocols.

参考译文

计算机网络

计算机网络是指网络设备和计算机彼此连接, 以提供数据通信和共享网络资源, 如打印机、扫描仪、调制解调器、CD/DVD 及互联网访问。计算机网络可被 UTP/STP 电缆、同轴电缆、光纤或无线设备通过无线电波互相连接。如今, 若企业组织内部没有数据通信, 那么它就无法有效地工作。网络可以设计成不同布局方式, 称为拓扑结构。

常见的拓扑结构包括星状拓扑、树状拓扑、网状拓扑、混合拓扑和环状拓扑。在基于以太网的局域网中, 星状拓扑是最常见的拓扑。它有专门的规则 and 标准, 基于这些标准网络设备才能互相通信。其中, 人们以某些方式达成一致并被认同的标准称为协议。TCP/IP 协议族, 含有多种通信协议, 如 TCP、IP、SMTP、FTP、DHCP、LDAP、PPP、Telnet 和很多其他的协议。TCP/IP 共同协作, 它是局域网、广域网和互联网中最常见的通信协议。互联网上的通信是基于 IP 地址的, 它是 TCP/IP 协议中的一部分。在互联网、局域网、城域网和广域网中, 没有计算机能够在没有单独的 IP 地址的情况下进行通信。

网络和数据通信提供了灵活性、简单的工作方式和互相沟通方式, 今天世界上的每个企业涉及的不只是一台计算机, 而是需要一个计算机网络。通过使用以下设备可建立起一个网络。

- 安装了 Windows/Linux 操作系统的计算机。每一台计算机需要一个独立的 LAN 卡，LAN 卡应该被正确地安装和配置。两端都要用 RJ-45 连接器连接。
- 一台路由器 / 交换机或集线器。根据需求可以安装其他设备，如网桥、收发器、终端服务器和网关。有三种主要类型的计算机网络——LAN，MAN，WAN，每一种网络要么是端到端网络，要么是客户 / 服务器网络。在客户机 / 服务器网络模型中，一个集中的域控制器是用来控制所有的计算机网络的，它为客户提供像登录验证、打印机访问权限、扫描仪访问权限、集中数据存储、用户管理、资源管理、动态主机配置协议、域名服务、文件传输协议，以及互联网接入等服务。

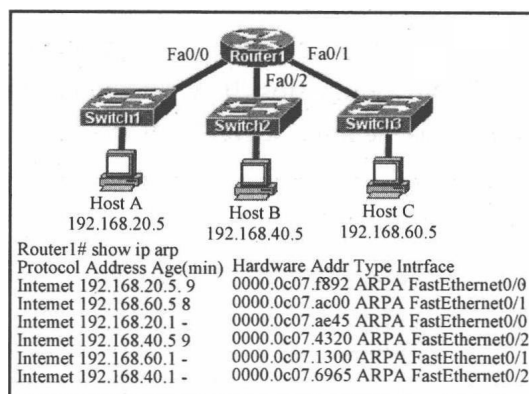
要想与其他的计算机通信，每台计算机应该支持相同的协议。TCP/IP 是在计算机网络中最常用的协议。互联网络是一种计算机网络，连接着两种或两种以上不同的网络。在互联网络中有三种主要类型，即内联网、外联网和互联网。



Crazy Combat (疯狂实战)

1. In an Ethernet network, under what two scenarios can devices transmit? (Choose two.)
 - A. when they receive a special token
 - B. when there is a carrier
 - C. when they detect no other devices are sending
 - D. when the medium is idle
 - E. when the server grants access
2. When a host transmits data across a network to another host which process does the data go through?
 - A. standardization
 - B. conversion
 - C. encapsulation
 - D. synchronization
3. The network administrator has asked you to check the status of the workstation' IP stack by pinging the loopback address. Which address would you ping to perform this task?
 - A. 10.1.1.1
 - B. 127.0.0.1
 - C. 192.168.0.1
 - D. 239.1.1.1
4. Workstation A has been assigned an IP address of 192.0.2.24/28. Workstation B has been assigned an IP address of 192.0.2.100/28. The two workstations are connected with a straight-through cable. Attempts to ping between the hosts are unsuccessful. What two things can be done to allow communications between the hosts? (Choose two.)
 - A. Replace the straight-through cable with a crossover cable.
 - B. Change the subnet mask of the hosts to /25.

- C. Change the subnet mask of the hosts to /26.
 D. Change the address of Workstation A to 192.0.2.15.
 E. Change the address of Workstation B to 192.0.2.111.
5. Which protocols are found in the network layer of the OSI reference model and are responsible for path determination and traffic switching?
- A. LAN
 B. routing
 C. WAN
 D. network
6. What are three valid reasons to assign ports to VLANs on a switch? (Choose three.)
- A. to make VTP easier to implement
 B. to isolate broadcast traffic
 C. to increase the size of the collision domain
 D. to allow more devices to connect to the network
 E. to logically group hosts according to function
 F. to increase network security
7. A network administrator issues the ping 192.168.2.5 command and successfully tests connectivity to a host that has been newly connected to the network. Which protocols were used during the test?(Choose two.)
- A. ARP
 B. CDP
 C. DHCP
 D. DNS
 E. ICMP
8. Refer to the exhibit. Host A is to send data to Host B. How will Router1 handle the data frame received from Host A? (Choose three.)



- A. Router1 will strip off the source MAC address and replace it with the MAC address on the forwarding FastEthernet interface.
 B. Router1 will strip off the source IP address and replace it with the IP address on the

forwarding FastEthernet interface.

- C. Router1 will strip off the destination MAC address and replace it with the MAC address of Host B.
- D. Router1 will strip off the destination IP address and replace it with the IP address of Host B.
- E. Router1 will forward the data frame out interface FastEthernet0/1.
- F. Router1 will forward the data frame out interface FastEthernet0/2.
9. Refer to the exhibit. What will Router1 do when it receives the data frame shown? (Choose three.)

Router1# show ip arp					
Protocol	Address	Age(min)	Hardware Addr	Type	Interface
Internet	192.168.20.5	9	0000.0c07.f892	ARPA	FastEthernet0/0
Internet	192.168.60.5	8	0000.0c07.ac00	ARPA	FastEthernet0/1
Internet	192.168.20.1	-	0000.0c63.ae45	ARPA	FastEthernet0/0
Internet	192.168.40.5	9	0000.0c07.4320	ARPA	FastEthernet0/2
Internet	192.168.60.1	-	0000.0c63.1300	ARPA	FastEthernet0/1
Internet	192.168.40.1	-	0000.0c36.6965	ARPA	FastEthernet0/2

Data Frame:			
Source MAC	Source IP	Destination MAC	Destination IP
0000.0c07.f892	192.168.20.5	0000.0c63.ae45	192.168.40.5

- A. Router1 will strip off the source MAC address and replace it with the MAC address 0000.0c36.6965.
- B. Router1 will strip off the source IP address and replace it with the IP address 192.168.40.1.
- C. Router1 will strip off the destination MAC address and replace it with the MAC address 0000.0c07.4320.
- D. Router1 will strip off the destination IP address and replace it with the IP address of 192.168.40.1.
- E. Router1 will forward the data packet out interface FastEthernet0/1.
- F. Router1 will forward the data packet out interface FastEthernet0/2.
10. Refer to the exhibit. Host A pings Host B. What source MAC address and source IP address are contained in the frame as the frame leaves R2 destined for host B?

