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Exam N10-007

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Craig Zacker   is the author or co-author of dozens of books, manuals, articles, and websites on computer and networking topics. He has also been an English professor, a technical and copy editor, a network administrator, a webmaster, a corporate trainer, a technical support engineer, a minicomputer operator, a literature and philosophy student, a library clerk, a photographic darkroom technician, a shipping clerk, and a newspaper boy. He lives in a little house with his beautiful wife and a neurotic cat.

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Contents

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* Source: CompTIA 9th Annual Information Security Trends study: 500 U.S. IT and Business Executives Responsible for Security
** Source: CompTIA Employer Perceptions of IT Training and Certification

Introduction

Welcome to *CompTIA Network+ Practice Tests: Exam N10-007*. This book gives you a focused, timesaving way to review your networking knowledge and prepare to pass the Computing Technology Industry Association (CompTIA) Network+ exam. The book combines realistic exam prep questions with detailed answers and two complete practice tests to help you become familiar with the types of questions that you will encounter on the Network+ exam. By reviewing the objectives and sample questions, you can focus on the specific skills that you need to improve before taking the exam.

How This Book Is Organized

The first five chapters of this book are based on the five objective domains published by CompTIA for the N10-007 Network+ exam. There are 200 questions for each objective domain, broken down into the individual subdomains and covering each of the suggested topics. The next two chapters each contain a 100-question practice test covering all of the objective domains. Once you have prepared each of the objective domains individually, you can take the practice tests to see how you will perform on the actual exam.

Interactive Online Learning Environment and Test Bank

The interactive online learning environment that accompanies *CompTIA Network+ Practice Tests: Exam N10-007* provides a test bank with study tools to help you prepare for the certification exam, and increase your chances of passing it the first time. The online test bank runs on multiple devices. The test bank includes the following:

Chapter Tests The questions in the chapters align with objectives in the exam outline. Use these questions to test your knowledge.

Practice Exams Two practice exams are provided to prepare you for the type of questions to expect on the actual exam.

> Go to http://www.wiley.com/go/netplustestprep to register and gain access to this interactive online learning environment and test bank with study tools.

Who Should Read This Book

CompTIA recommends, but does not require, that candidates for the Network+ exam meet the following prerequisites:

- CompTIA A+ certification or equivalent knowledge
- At least 9 to 12 months of work experience in IT networking

CompTIA's certification program relies on exams that measure your ability to perform a specific job function or set of tasks. CompTIA develops the exams by analyzing the tasks performed by people who are currently working in the field. Therefore, the specific knowledge, skills, and abilities relating to the job are reflected in the certification exam.

Because the certification exams are based on real-world tasks, you need to gain hands-on experience with the applicable technology in order to master the exam. In a sense, you might consider hands-on experience in an organizational environment to be a prerequisite for passing the Network+ exam. Many of the questions relate directly to specific network products or technologies, so use opportunities at your school or workplace to practice using the relevant tools. Candidates for the exam are also expected to have a basic understanding of enterprise technologies, including cloud and virtualization.

How To Use This Book

Although you can use this book in a number of ways, you might begin your studies by taking one of the practice exams as a pretest. After completing the exam, review your results for each Objective Domain and focus your studies first on the Objective Domains for which you received the lowest scores.

As this book contains only practice questions and answers, the best method to prepare for the Network+ exam is to use this book along with a companion book that provides more extensive explanations for the elements covered in each objective domain. Todd Lammle's *CompTIA Network+ Study Guide: Exam N10-007* provides complete coverage of all the technology you need to know for the exam.

After you have taken your pretest, you can use the chapters for the objective domains in which you need work to test your detailed knowledge and learn more about the technologies involved. By reviewing why the answers are correct or incorrect, you can determine if you need to study the objective topics more.

What's Next

The next step is to review the objective domains for the Network+ N10-007 exam and think about which topics you need to work on most. Then, you can turn to the appropriate chapter and get started. Good luck on the exam.

Chapter

1

Networking Concepts

THE COMPTIA NETWORK+ EXAM N10-007 TOPICS COVERED IN THIS CHAPTER INCLUDE THE FOLLOWING:

✓ **1.1 Explain the purposes and uses of ports and protocols**

- Protocols and Ports
    - SSH 22
    - DNS 53
    - SMTP 25
    - SFTP 22
    - FTP 20, 21
    - TFTP 69
    - TELNET 23
    - DHCP 67, 68
    - HTTP 80
    - HTTPS 443
    - SNMP 161
    - RDP 3389
    - NTP 123
    - SIP 5060, 5061
    - SMB 445
    - POP 110
    - IMAP 143
    - LDAP 389
    - LDAPS 636
    - H.323 1720
- Protocol Types
    - ICMP
    - UDP

- Access control list
- Distributed switching
- Packet-switched vs. circuit-switched network
- Software-defined networking

✓ **1.4 Given a scenario, configure the appropriate IP addressing components**

- Private vs. public
- Loopback and reserved
- Default gateway
- Virtual IP
- Subnet mask
- Subnetting
  - Classful
    - Classes A, B, C, D, and E
  - Classless
    - VLSM
    - CIDR notation (IPv4 vs. IPv6)
- Address assignments
  - DHCP
  - DHCPv6
  - Static
  - APIPA
  - EUI64
  - IP reservations

✓ **1.5 Compare and contrast the characteristics of network topologies, types and technologies**

- Wired topologies
  - Logical vs. physical
  - Star
  - Ring
  - Mesh
  - Bus

- Wireless topologies
  - Mesh
  - Ad hoc
  - Infrastructure
- Types
  - LAN
  - WLAN
  - MAN
  - WAN
  - CAN
  - SAN
  - PAN
- Technologies that facilitate the Internet of Things (IoT)
  - Z-Wave
  - Ant+
  - Bluetooth
  - NFC
  - IR
  - RFID
  - 802.11

✓ **1.6   Given a scenario, implement the appropriate wireless technologies and configurations**

- 802.11 standards
  - a
  - b
  - g
  - n
  - ac
- Cellular
  - GSM
  - TDMA
  - CDMA

- Frequencies
    - 2.4GHz
    - 5.0GHz
- Speed and distance requirements
- Channel bandwidth
- Channel bonding
- MIMO/MU-MIMO
- Unidirectional/omnidirectional
- Site surveys

✓ **1.7 Summarize cloud concepts and their purposes**

- Types of services
    - SaaS
    - PaaS
    - IaaS
- Cloud delivery models
    - Private
    - Public
    - Hybrid
- Connectivity methods
- Security implications/considerations
- Relationship between local and cloud resources

✓ **1.8 Explain the functions of network services.**

- DNS service
    - Record types
        - A, AAA
        - TXT (SPF, DKIM)
        - SRV
        - MX
        - CNAME
        - NS
        - PTR

- Internal vs. external DNS
- Third-party/cloud-hosted DNS
- Hierarchy
- Forward vs. reverse zone
- DHCP service
  - MAC reservations
  - Pools
  - IP exclusions
  - Scope options
  - Lease time
  - TTL
  - DHCP relay/IP helper
- NTP
- IPAM

1. Which of the following pairs of well-known ports are the default values you would use to configure a POP3 email client?

   A. 110 and 25

   B. 143 and 25

   C. 110 and 143

   D. 80 and 110

   E. 25 and 80

2. Which of the following server applications use two well-known port numbers during a typical transaction?

   A. NTP

   B. SNMP

   C. HTTP

   D. FTP

3. Which of the following protocols does the Ping utility use to exchange messages with another system?

   A. UDP

   B. TCP

   C. ICMP

   D. IGMP

4. Which of the following components does the port number in a transport layer protocol header identify?

   A. A transport layer protocol

   B. An application

   C. A gateway

   D. A proxy server

5. Which of the following organizations is responsible for assigning the well-known port numbers used in transport layer protocol headers?

   A. Institute for Electronic and Electrical Engineers (IEEE)

   B. Internet Assigned Numbers Authority (IANA)

   C. Internet Engineering Task Force (IETF)

   D. International Organization for Standardization (ISO)

6. A client on a TCP/IP network is attempting to establish a session with a server. Which of the following correctly lists the order of Transmission Control Protocol (TCP) session establishment messages?

   A. SYN, ACK, SYN, ACK

   B. SYN, SYN, ACK, ACK

C. SYN/ACK, SYN/ACK

D. SYN, SYN/ACK, ACK

7. Which of the following is the default well-known port number for the Hypertext Transfer Protocol (HTTP) used for web client/server communications?

A. 22

B. 20

C. 80

D. 1720

8. The secured version of the Hypertext Transfer Protocol (HTTPS) uses a different well-known port from the unsecured version. Which of the following ports is used by HTTPS by default?

A. 25

B. 80

C. 110

D. 443

9. Which of the following Transmission Control Protocol (TCP) control bits is set to 1 to initiate the termination of a session?

A. SYN

B. URG

C. FIN

D. END

E. PSH

10. What field in the Transmission Control Protocol (TCP) Option subheader specifies the size of the largest segment a system can receive?

A. MSS

B. Window

C. MMS

D. WinMS

11. What is the term for the combination of an IPv4 address and a port number, as in the following example: 192.168.1.3:23?

A. Socket

B. OUI

C. Well-known port

D. Network address

E. Domain

12. Which of the following protocols generate messages that are carried directly within Internet Protocol (IP) datagrams, with no intervening transport layer protocol? (Choose all correct answers.)

    A. ICMP

    B. IGMP

    C. SMTP

    D. SNMP

13. Which of the following protocols is used to exchange directory service information?

    A. RDP

    B. LDAP

    C. SNMP

    D. SMB

14. Which of the following is the primary application layer protocol used by web browsers to communicate with web servers?

    A. HTTP

    B. HTML

    C. SMTP

    D. FTP

15. Which of the following protocols appears on the network as a service that client computers use to resolve names into IP addresses?

    A. DHCP

    B. BOOTP

    C. DNS

    D. SNMP

16. Which of the following protocols use(s) the term *datagram* to describe the data transfer unit it creates? (Choose all correct answers.)

    A. Ethernet

    B. IP

    C. TCP

    D. UDP

17. What is the native file sharing protocol used on all Microsoft Windows operating systems?

    A. Hypertext Transfer Protocol (HTTP)

    B. Network File System (NFS)

    C. File Transfer Protocol (FTP)

    D. Server Message Block (SMB)

    E. Lightweight Directory Access Protocol (LDAP)

18. When analyzing captured TCP/IP packets, which of the following control bits must you look for in the Transmission Control Protocol (TCP) header to determine whether the receiving host has successfully received the sending host's data?

A. ACK

B. FIN

C. PSH

D. SYN

E. URG

19. Which of the following terms describes the Transmission Control Protocol (TCP) exchange that establishes a connection prior to the transmission of any data?

A. Synchronization

B. Initialization exchange

C. Connection establishment

D. Three-way handshake

20. Alice has been instructed to install 100 Windows workstations, and she is working on automating the process by configuring the workstations to use PXE boots. Each workstation therefore must obtain an IP address from a DHCP server and download a boot image file from a TFTP server. Which of the following well-known ports must Alice open on the firewall separating the workstations from the servers? (Choose all correct answers.)

A. 65

B. 66

C. 67

D. 68

E. 69

21. Which of the following explanations best describes the function of a Transmission Control Protocol (TCP) or User Datagram Protocol (UDP) port number?

A. The port number indicates to the receiver that the sender can activate a specific port only.

B. The port number is used by both the sender and the receiver to identify the application that generated the information in the datagram.

C. The port number is used only by the receiver to indicate the application process running on the sender.

D. The port number is used by both the sender and the receiver to negotiate a well-known server port for the communicating processes.

22. What is the valid range of numbers for the ephemeral client ports used by the Transmission Control Protocol (TCP) and User Datagram Protocol (UDP)?

A. 1023 through 65534

B. 1 through 1024

C. 49152 through 65535

D. 1024 to 49151

23. Which of the following statements about the User Datagram Protocol (UDP) are true? (Choose all correct answers.)

    A. UDP does not use packet sequencing and acknowledgments.

    B. UDP uses packet sequencing and acknowledgments.

    C. UDP is a connection-oriented protocol.

    D. UDP is a connectionless protocol.

    E. UDP has an 8-byte header.

    F. UDP has a 20-byte header.

24. Which of the following port values are used by the File Transfer Protocol (FTP)? (Choose all correct answers.)

    A. 21

    B. 23

    C. 20

    D. 53

    E. 69

25. Which of the following protocols provides connectionless delivery service at the transport layer of the Open Systems Interconnection (OSI) model?

    A. TCP

    B. HTTP

    C. UDP

    D. ARP

26. What is the valid range of numbers for the well-known Transmission Control Protocol (TCP) and User Datagram Protocol (UDP) ports used by servers?

    A. 1024 through 49151

    B. 1 through 49151

    C. 49152 through 65534

    D. 1 through 1023

27. Ralph is a network administrator who has just installed a new open source email server for the users at his company. The server is configured to send and receive Internet email and create a mailbox for each user that will permanently store the user's mail on the server. Ralph next uses a protocol analyzer to examine the network traffic resulting from the new server installation. Which of the following new protocols should Ralph expect to see in his network traffic analysis? (Choose all correct answers.)

    A. SNMP

    B. SMTP

    C. POP3

    D. IMAP

    E. RIP

28. Which of the following values could a web client use as an ephemeral port number when communicating with a web server?

    A. 1

    B. 23

    C. 80

    D. 1024

    E. 1999

    F. 50134

29. Which of the following protocols provides connection-oriented service with guaranteed delivery at the transport layer of the OSI model?

    A. TCP

    B. HTTP

    C. UDP

    D. IP

30. Which of the following protocols is limited to use on the local subnet only?

    A. Address Resolution Protocol (ARP)

    B. Dynamic Host Configuration Protocol (DHCP)

    C. Domain Name System (DNS)

    D. Simple Mail Transfer Protocol (SMTP)

31. At which of the following layers of the Open Systems Interconnection (OSI) model do the protocols on a typical local area network use MAC addresses to identify other computers on the network?

    A. Physical

    B. Data link

    C. Network

    D. Transport

32. Which of the following organizations developed the Open Systems Interconnection (OSI) model?

    A. International Telecommunication Union (ITU-T)

    B. Comité Consultatif International Télégraphique et Téléphonique (CCITT)

    C. American National Standards Institute (ANSI)

    D. Institute of Electrical and Electronics Engineers (IEEE)

    E. International Organization for Standardization (ISO)

33. Which layer of the Open Systems Interconnection (OSI) model is responsible for the logical addressing of end systems and the routing of datagrams on a network?

A. Physical

B. Data link

C. Network

D. Transport

E. Session

F. Presentation

G. Application

34. What layer of the Open Systems Interconnection (OSI) model is responsible for translating and formatting information?

A. Physical

B. Data link

C. Network

D. Transport

E. Session

F. Presentation

G. Application

35. Which of the following devices typically operates at the network layer of the Open Systems Interconnection (OSI) model?

A. Proxy server

B. Hub

C. Network interface adapter

D. Router

36. Which layer of the Open Systems Interconnection (OSI) model provides an entrance point to the protocol stack for applications?

A. Physical

B. Data link

C. Network

D. Transport

E. Session

F. Presentation

G. Application

37. Which layer of the Open Systems Interconnection (OSI) model is responsible for dialogue control between two communicating end systems?

A. Physical

B. Data link