



# N10-004

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## Table of Contents

Topic 1: Network Technologies (221 Questions)	4
Part 1, Explain the function of common networking protocols (81 questions)	4
Part 2, Identify commonly used TCP and UDP default ports (27 questions)	79
Part 3, Identify the following address formats (9 questions)	98
Part 4, Given a scenario, evaluate the proper use of the following addressing technologies and addressing schemes (39 questions)	102
Part 5, Identify common IPv4 and IPv6 routing protocols (9 questions)	129
Part 6, Explain the purpose and properties of routing (12 questions)	138
Part 7, Compare the characteristics of wireless communication standards (44 questions)	149
Topic 2: Network Media and Topologies (186 Questions)	183
Part 1, Categorize standard cable types and their properties (32 questions)	183
Part 2, Identify common connector types (14 questions)	199
Part 3, Identify common physical network topologies (38 questions)	207
Part 4, Given a scenario, differentiate and implement appropriate wiring standards (7 questions)	227
Part 5, Categorize WAN technology types and properties (21 questions)	231
Part 6, Categorize LAN technology types and properties (41 questions)	241
Part 7, Explain common logical network topologies and their characteristics (17 questions)	262
Part 8, Install components of wiring distribution (16 questions)	272
Topic 3: Network Devices (73 Questions)	278
Part 1, Install, configure and differentiate between common network devices (27 questions)	278
Part 2, Identify the functions of specialized network devices (21 questions)	296
Part 3, Explain the advanced features of a switch (22 questions)	313
Part 4, Implement a basic wireless network (3 questions)	328
Topic 4: Network Management (122 Questions)	330
Part 1, Explain the function of each layer of the OSI model (39 questions)	330
Part 2, Identify types of configuration management documentation (1 question)	364
Part 3, Given a scenario, evaluate the network based on configuration management documentation (5 questions)	364
Part 4, Conduct network monitoring to identify performance and connectivity issues (10 questions)	368
Part 5, Explain different methods and rationales for network performance optimization (14 questions)	375
Part 6, Given a scenario, implement the following network troubleshooting methodology (14 questions)	385

Part 7, Given a scenario, troubleshoot common connectivity issues and select an appropriate solution (39 questions)	397
Topic 5: Network Tools (73 Questions)	428
Part 1, Given a scenario, select the appropriate command line interface tool and interpret the output to verify functionality (42 questions)	428
Part 2, Explain the purpose of network scanners (3 questions)	463
Part 3, Given a scenario, utilize the appropriate hardware tools (28 questions)	464
Topic 6: Network Security (59 Questions)	483
Part 1, Explain the function of hardware and software security devices (7 questions)	483
Part 2, Explain common features of a firewall (11 questions)	489
Part 3, Explain the methods of network access security (22 questions)	495
Part 4, Explain methods of user authentication (7 questions)	514
Part 5, Explain issues that affect device security (8 questions)	519
Part 6, Identify common security threats and mitigation techniques (4 questions)	526

**Total number of questions: 732**

# Topic 1: Network Technologies (221 Questions)

Part 1, Explain the function of common networking protocols (81 questions)

## QUESTION NO: 1

**You work as the network administrator at TestKing.com. The TestKing.com management wants you to connect the clients to a news server with a suitable protocol.**

**What should you do?**

- A. You should consider using NNTP.
- B. You should consider using NCP.
- C. You should consider using SMTP.
- D. You should consider using IMAP4.

**Answer: A**

**Explanation: The Network News Transfer Protocol (NNTP) is the TCP/IP protocol used to access Usenet news servers. Usenet news servers contain thousands of individual message boards known as newsgroups. Each newsgroup is about a particular subject (cars, dating, computers, etc.). Chances are, if you have an interest, there is a newsgroup about it. The details of the NNTP protocol are specified in RFC 977.**

**Incorrect Answers:**

**B:** TCP/IP has replaced the earlier Network Control Protocol (NCP) protocol in 1983 becoming the official transport mechanism for all connections.

**C:** SMTP is used to allow for a simple e-mail service responsible for forwarding and receiving messages. SMTP servers typically make use of the POP or IMAP protocol.

**D:** IMAP4 allows users to download mail selectively whilst being able to look at the message header or simply download a part of a message. The IMAP4 protocol can also be used to store messages on the e-mail server in a hierarchical structure, and link to documents and Usenet newsgroups.

**References:**

David Groth and Toby Skandier, Network+ Study Guide (4th Edition), Sybex, Alameda CA, 2005, pp. 102, 116

## **QUESTION NO: 2**

**You work as the network administrator at TestKing.com. You have received instruction to make use of a protocol to transmit usernames and passwords as clear-text.**

**What should you do?**

- A. You should consider using SSH.
- B. You should consider using RADIUS.
- C. You should consider using PAP.
- D. You should consider using CHAP.

**Answer: C**

**Explanation: Of all the authentication schemes in use today, the Password Authentication Protocol (PAP) is arguably the simplest. In PAP, pairs of usernames and passwords are used. When a client wants to authentication to a server, for example, the client will send the username and password to the server over the network. The username and password are sent in clear text, that is to say, unencrypted. The server receives the username and password and compares them to an encrypted, locally stored table of username-password pairs. If the username and password is a match, the client is authenticated.**

### **Incorrect Answers:**

**A:** Secure Shell (SSH) is used to establish a secure Telnet session over a standard TCP/IP connection. The Secure Shell (SSH) protocol is also used to run programs on remote systems whilst logging in to other systems and move files from one system to another always maintaining a strong, encrypted connection.

**B:** RADIUS is mainly used as an authentication and accounting service. The RADIUS service is used for authenticating users over various types of links including dial-up.

**D:** Challenge Handshake Authentication Protocol (CHAP) requires having both the client and server configured with the same text phrase or known as a shared secret. The server would then compare the hash received from the client with the hash value it calculated when a match is verified the client is authenticated.

### **References:**

David Groth and Toby Skandier, Network+ Study Guide (4th Edition), Sybex, Alameda CA, 2005, pp. 117, 340-341.

**QUESTION NO: 3**

**You work as the network administrator at TestKing.com. A new TestKing.com technician wants to know which protocols are needed for E-mail traffic.**

**What should you tell him? (Choose THREE)**

- A. You should inform the technician that he can use POP3.
- B. You should inform the technician that he can use SNMP.
- C. You should inform the technician that he can use SMTP.
- D. You should inform the technician that he can use NTP.
- E. You should inform the technician that he can use TFTP.
- F. You should inform the technician that he can use IMAP4.
- G. You should inform the technician that he can use SSH.

**Answer: A, C, F**

**Explanation: POP3: Post Office Protocol (POP) provides a storage mechanism for incoming mail; the latest version of the standard is known as POP3. When a client connects to a POP3 server, all the messages addressed to that client are downloaded; there is no way to download messages selectively. Once the messages are downloaded, the user can delete or modify messages without further interaction with the server. In some locations, POP3 is being replaced by another standard, IMAP.**

SMTP: Simple Mail Transfer Protocol (SMTP) allows for a simple e-mail service and is responsible for moving messages from one e-mail server to another. The e-mail servers run either Post Office Protocol (POP) or Internet Mail Access Protocol (IMAP) to distribute e-mail messages to users.

IMAP4: Internet Message Access Protocol (IMAP) allows users to download mail selectively, look at the message header, and download just a part of a message, store messages on the e-mail server in a hierarchical structure, and link to documents and Usenet newsgroups. Search commands are also available so that users can locate messages based on their subject, header or content. IMAP has strong authentication features and supports the Kerberos authentication scheme originally developed at MIT. The current version of IMAP is version 4.

**Incorrect Answers:**

**B:**

Simple Network Management Protocol (SNMP) protocol is used to allow network administrators to collect information about the network. The protocol can additionally be used for collecting information about devices on the network which includes hubs, routers, and bridges.

**D:** Network Time Protocol (NTP) is used to synchronize (or set) computer clocks to some standard time source like a nuclear clock. You should also keep in mind that the protocol with synchronization utilities is used to keep all computers on a network set to the same time.

**E:** Trivial File Transfer Protocol (TFTP) is primarily used to boot diskless workstations and to transfer boot images to and from routers. The TFTP protocol additionally uses UDP instead of TCP, which makes for faster transfers but with no reliability.

**G:** Secure Shell (SSH) is used to establish a secure Telnet session over a standard TCP/IP connection. The Secure Shell (SSH) protocol is also used to run programs on remote systems whilst logging in to other systems and move files from one system to another always maintaining a strong, encrypted connection.

**References:**

David Groth and Toby Skandier, Network+ Study Guide (4th Edition), Sybex, Alameda CA, 2005, pp. 115-117.

**QUESTION NO: 4**

**You work as the network administrator at TestKing.com. TestKing.com uses different operating systems in the company. You have given the instruction to use a protocol to authenticate resources which will include computers, users and printers.**

**What should you do?**

- A. You should consider using the LDAP protocol.
- B. You should consider using the SMTP protocol.
- C. You should consider using the TCP protocol.
- D. You should consider using the UDP protocol.

**Answer: A**

**Explanation:**

**In large networks, most administrators have set up some kind of directory that keeps track users and resources (e.g., NDS, Active Directory). In order to have a standard method of accessing directories, the Lightweight Directory Access Protocol (LDAP) was developed. It allows clients to perform object lookups with a directory using a standard method. LDAP was originally specified as RFCs 1487 (version 1) and 1777 (version 2), with RFC 3377 proposing the commonly used third version, which fixes a number of shortcomings in the protocol.**

**Incorrect Answers:**

**B:** You should not consider making use of the SMTP protocol because the protocol is used to allow for a simple e-mail service responsible for forwarding and receiving messages. SMTP servers typically make use of the POP or IMAP protocol.

**C:** **You should not consider making use of the TCP protocol,** like the IPX/SPX protocol stack, the TCP/IP protocol stack has two Transport layer protocols Transmission Control Protocol (TCP) and User Datagram Protocol (UDP). You should also keep in mind that TCP is connection oriented, and UDP is connectionless.

**D:** You should not consider making use of the User Datagram Protocol (UDP) protocol which is a Transport layer connectionless protocol not providing the reliability services available with TCP but provides best effort transmission services to application protocols.

**References:**

David Groth and Toby Skandier, Network+ Study Guide (4th Edition), Sybex, Alameda CA, 2005, pp. 48, 80, 116, 119

**QUESTION NO: 5**

**You work as the network administrator at TestKing.com. A new TestKing.com technician wants to know which authentication protocols can be used to transmit plain text passwords over the internet.**

**What should you reply?**

- A. You should consider using RADIUS.
- B. You should consider using PAP.
- C. You should consider using CHAP.
- D. You should consider using Kerberos.

**Answer: B**

**Explanation:**

**Of all the authentication schemes in use today, the Password Authentication Protocol (PAP) is arguably the simplest. In PAP, pairs of usernames and passwords are used. When a client wants to authentication to a server, for example, the client will send the username and password to the server over the network. The username and password are sent in clear text, that is to say, unencrypted. The server receives the username and password and compares them to an encrypted, locally stored table of username-password pairs. If the username and password is a match, the client is authenticated.**

**Incorrect Answers:**

**A:** The RADIUS service is mainly used as an authentication and accounting service. The RADIUS service is used for authenticating users over various types of links including dial-up.

**C:** The Challenge Handshake Authentication Protocol (CHAP) requires having both the client and server configured with the same text phrase or known as a shared secret. The server would then compare the hash received from the client with the hash value it calculated when a match is verified the client is authenticated.

**D:** Kerberos is not just a protocol but an entire security system. Kerberos is used to establish a user's identity when they log on to a system that uses Kerberos. Kerberos then has that identity and its security credentials are then used throughout an entire logon session. Kerberos additionally makes use of strong encryption to encrypt all transactions and communication.

**References:**

David Groth and Toby Skandier, Network+ Study Guide (4th Edition), Sybex, Alameda CA, 2005, pp. 339-341.

**QUESTION NO: 6**

**You work as the network administrator at TestKing.com. A new TestKing.com technician wants to know which of the following a connection-oriented protocol is.**

**What should you reply?**

- A. The UDP can be class as a connection-oriented protocol.
- B. The SPX can be class as a connection-oriented protocol.
- C. The TCP can be class as a connection-oriented protocol.
- D. The IP can be class as a connection-oriented protocol.

**Answer: C**

**Explanation:** TCP is the Transport layer of the protocol and serves to ensure a reliable, verifiable data exchange between hosts on a network. TCP breaks data into pieces, wraps the pieces with the information needed to identify it as a piece of the original message, and allows the pieces to be reassembled at the receiving end of the communications link. The wrapped and bundled pieces are called datagrams. Datagrams are also referred to as segments for TCP due to the way it often splits the original data into more manageable chunks.

**Incorrect Answers:**

**A:** User Datagram Protocol (UDP) is a Transport layer connectionless protocol not providing the reliability services available with TCP but provides best effort transmission services to application protocols.

**B:** IPX/SPX is connectionless and has the benefits of connectionless transports, including increased speed. You should also keep in mind that SPX uses connection-oriented services and always uses the Network layer services of IPX. You should never forget that IPX is able to operate independently of SPX, as if it were both a Network and Transport layer entity.

**References:**

David Groth and Toby Skandier, Network+ Study Guide (4th Edition), Sybex, Alameda CA, 2005, pp. 79, 119.

**QUESTION NO: 7**

**You work as a network technician at TestKing.com. The newly appointed TestKing.com trainee wants to know which network protocol has the ability to recover from lost/corrupted network packets during transmission.**

**What would your reply be?**

- A. You should inform the trainee that the Internet Protocol Security (IPSec) protocol has the ability.
- B. You should inform the trainee that the Internetwork Packet Exchange (IPX) protocol has the ability.
- C. You should inform the trainee that the Kerberos protocol has the ability.
- D. You should inform the trainee that the Transmission Control Protocol (TCP) protocol has the ability.

**Answer: D**

**Explanation:**

**The private address spaces listed with each class description are specified in RFC 1918 as being available to anyone who wants to use IP addressing on a private network but does not want to connect these networks directly to the Internet. Private addresses are those addresses that are not permitted to be routed by Internet routers. In fact, ISPs can be fined for passing traffic with these addresses as source or destination. Conversely, public addresses are those IP addresses that are allowed to be passed by Internet routers. Examples of Class C networks are the 256 private networks ranging from 192.168.0.0 to 192.168.255.0.**

**Incorrect Answers:**

**A:** You should not consider making use of the IPSEC protocol because IP Security, or IPsec, is a security protocol designed to provide authentication and encryption over the Internet. You should also keep in mind that IPsec works at the Network layer of the OSI model (layer 3) and secures all applications that operate above it (layer 4 and above).

**B:** You should not consider making use of the SPX protocol because IPX is connectionless and has the benefits of connectionless transports, including increased speed. You should also keep in mind that SPX uses connection-oriented services and always uses the Network layer services of IPX. You should never forget that IPX is able to operate independently of SPX, as if it were both a Network and Transport layer entity.

**D:** You should not consider making use of the Kerberos protocol as is not just a protocol but an entire security system. Kerberos is used to establish a user's identity when they log on to a system that uses Kerberos. Kerberos then has that identity and its security credentials are then used throughout an entire logon session. Kerberos additionally makes use of strong encryption to encrypt all transactions and communication.

**References:**

David Groth and Toby Skandier, Network+ Study Guide (4th Edition), Sybex, Alameda CA, 2005, pp. 79, 339

**QUESTION NO: 8**

**You work as a network technician at TestKing.com. A TestKing.com sales representative uses his operating system at home which is connected to the Internet 24/7. During a meeting at work, he contacted you because he was unable to connect to his computer at home that has an IP address of 192.168.1.125.**

**What could be the cause?**

A. The outgoing connects of TestKing.com is blocked by a firewall.

- B. The computer at work does not have FTP client installed.
- C. The computer at the sales representative's house does not have the FTP server installed.
- D. The computer at home does not have a routable IP address across the Internet.

**Answer: D**

**Explanation: Application Layer is the highest layer; applications such as FTP, Telnet, and others interact through this layer.**

**Incorrect Answers:**

**A:** The outgoing connections are not blocked by the firewall because a firewall is there to protect LAN resources from attackers on the Internet. The firewall can additionally be configured to prevent computers on the network from accessing various services on the Internet.

**B, C:** The problem does not lie with having an FTP client or server because the File Transfer Protocol (FTP) protocol provides a mechanism for single or multiple file transfers between computer systems.

**References:**

David Groth and Toby Skandier, Network+ Study Guide (4th Edition), Sybex, Alameda CA, 2005, pp. 36, 37, 115.

**QUESTION NO: 9**

**You work as a network technician at TestKing.com. The newly appointed TestKing.com trainee wants to know takes place at the application layer of the OSI model.**

**What should you reply?**

- A. UDP takes place at the application layer of the OSI model.
- B. FTP takes place at the application layer of the OSI model.
- C. TCP takes place at the application layer of the OSI model.
- D. SPX takes place at the application layer of the OSI model.

**Answer: B**

**Explanation:**

**File Transfer Protocol (FTP) provides a mechanism for single or multiple file transfers between computer systems; when written in lowercase as "ftp," it is also the name of the client software used to access the FTP server running on the remote host. The FTP package provides all the tools needed to look at files and directories, change to other directories, and transfer text and binary files from one system to another. FTP uses TCP to actually move the files.**

**Incorrect Answers:**

**A:** You should not consider making use of the User Datagram Protocol (UDP) protocol which is a Transport layer connectionless protocol not providing the reliability services available with TCP but provides best effort transmission services to application protocols.

**C:** You should not consider making use of the TCP protocol, like the IPX/SPX protocol stack, the TCP/IP protocol stack has two Transport layer protocols Transmission Control Protocol (TCP) and User Datagram Protocol (UDP). You should also keep in mind that TCP is connection oriented, and UDP is connectionless.

**D:** You should not consider making use of the SPX protocol because IPX is connectionless and has the benefits of connectionless transports, including increased speed. You should also keep in mind that SPX uses connection-oriented services and always uses the Network layer services of IPX. You should never forget that IPX is able to operate independently of SPX, as if it were both a Network and Transport layer entity.

**References:**

David Groth and Toby Skandier, Network+ Study Guide (4th Edition), Sybex, Alameda CA, 2005, pp. 79-80, 119.

**QUESTION NO: 10**

**You work as a network technician at TestKing.com. The newly appointed TestKing.com trainee wants to know which protocol has the ability to access files on a remote server.**

**What should you reply?**

- A. The ARP protocols can access files on a remote server.
- B. The SIP protocols can access files on a remote server.
- C. The FTP protocols can access files on a remote server.
- D. The NTP protocols can access files on a remote server.

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