

1. In the "Stop and Wait" elementary data link protocol, what is the purpose of the "stop" part?

- a) To halt data transmission indefinitely
- b) To synchronize sender and receiver
- c) To request retransmission of lost data
- d) To manage network congestion

Answer: b) To synchronize sender and receiver

2. Which of the following automatic repeat request (ARQ) techniques retransmits only the lost data frames?

- a) Go-Back-N
- b) Selective Repeat
- c) Stop and Wait
- d) Distance Vector Routing

Answer: b) Selective Repeat

3. What is the primary responsibility of the Internet Control Message Protocol (ICMP)?

- a) Routing packets through the network
- b) Managing network congestion
- c) Reporting errors and providing diagnostics
- d) Handling domain name resolution

Answer: c) Reporting errors and providing diagnostics

4. Which routing algorithm calculates the shortest path to a destination based on a cost metric?

- a) Distance Vector Routing
- b) Link State Routing
- c) OSPF
- d) EIGRP

Answer: ~~a) Distance Vector Routing~~

OSPF

What is the main purpose of subnetting in networking?

- a) To increase the size of the IP address space
- b) To create smaller, more manageable network segments
- c) To hide the network topology from external users
- d) To establish a connection-oriented protocol

Answer: b) To create smaller, more manageable network segments

Which of the following is a feature of Transmission Control Protocol (TCP)?

- a) Connectionless communication
- b) Unreliable data delivery
- c) Three-way handshake for connection establishment
- d) Best-effort delivery without error checking

Answer: c) Three-way handshake for connection establishment

In the context of IP addressing, which class of IP addresses is typically used for multicast communication?

- a) Class A
- b) Class B
- c) Class C
- d) Class D

Answer: d) Class D

What is the primary purpose of the Border Gateway Protocol (BGP) in networking?

- a) Managing local network traffic
- b) Exchanging routing information within a single network
- c) Routing traffic between autonomous systems (ASes)
- d) Providing encryption for data transmission

Answer: c) Routing traffic between autonomous systems (ASes)

Which layer of the OSI model is responsible for logical addressing and routing in a network?

- a) Data Link Layer
- b) Transport Layer
- c) Network Layer
- d) Physical Layer

Answer: c) Network Layer

In IPv4, how many bits are used to represent an IP address?

- a) 16 bits
- b) 32 bits
- c) 64 bits
- d) 128 bits

Answer: b) 32 bits

Which of the following is a feature of a Connection-Oriented Protocol?

- a) No acknowledgment of data receipt
- b) Data transmission without a pre-established connection
- c) Reliable data delivery with acknowledgments
- d) Minimal overhead in data transmission

Answer: c) Reliable data delivery with acknowledgments

What does ARP stand for in networking?

- a) Address Resolution Protocol
- b) Advanced Routing Protocol
- c) Application Relay Protocol
- d) Asynchronous Routing Protocol

Answer: a) Address Resolution Protocol

Which of the following is not a valid IPv4 address class?

- a) Class A
- b) Class E
- c) Class F
- d) Class G

Answer: d) Class G

In the context of subnetting, what is the purpose of a subnet mask?

- a) To determine the host portion of an IP address
- b) To identify the network portion of an IP address
- c) To specify the default gateway for a subnet
- d) To encrypt data within a subnet

Answer: b) To identify the network portion of an IP address

Which routing protocol is designed for use within an Autonomous System (AS) and uses a proprietary metric known as "feasible distance"?

- a) RIP (Routing Information Protocol)
- b) OSPF (Open Shortest Path First)
- c) EIGRP (Enhanced Interior Gateway Routing Protocol)
- d) BGP (Border Gateway Protocol)

Answer: c) EIGRP (Enhanced Interior Gateway Routing Protocol)

What is the primary function of the Internet Group Management Protocol (IGMP) in networking?

- a) Managing network congestion
- b) Resolving domain names to IP addresses
- c) Facilitating multicast group membership management
- d) Detecting and correcting errors in data transmission

Answer: c) Facilitating multicast group membership management

Which of the following is a characteristic of a Noisy Channel in networking?

- a) Error-free data transmission
- b) Unreliable data transmission with potential errors
- c) High bandwidth and low latency
- d) Dedicated point-to-point communication

Answer: b) Unreliable data transmission with potential errors

What type of IP address is used for loopback testing and is typically represented as 127.0.0.1?

- a) Class A
- b) Class B
- c) Class C
- d) Class D

Answer: Loopback addresses are part of Class A, but 127.0.0.1 is commonly used for loopback testing.

In dynamic routing, what is the primary role of a routing protocol such as OSPF?

- a) To manually configure routes on routers
- b) To exchange routing tables between routers
- c) To use fixed, predetermined routes for data transmission
- d) To broadcast data packets to all network devices

Answer: b) To exchange routing tables between routers

Which of the following is an example of a Distance Vector Routing Protocol?

- a) OSPF
- b) RIP
- c) BGP
- d) EIGRP

Answer: b) RIP (Routing Information Protocol)

In IPv6, what is the total number of bits used for representing an IP address?

- a) 32 bits
- b) 64 bits
- c) 128 bits
- d) 256 bits

Answer: c) 128 bits

Which transport layer protocol is connectionless and does not guarantee reliable data delivery?

- a) TCP
- b) UDP
- c) ICMP
- d) HTTP

Answer: b) UDP (User Datagram Protocol)

What is the primary purpose of Static Routing in networking?

- a) To automatically adapt to network topology changes
- b) To manually configure fixed routes on routers
- c) To maintain dynamic routing tables
- d) To establish reliable connections between devices

Answer: b) To manually configure fixed routes on routers

What is the role of the Address Resolution Protocol (ARP) in networking?

- a) To resolve domain names to IP addresses
- b) To manage network congestion
- c) To map IP addresses to MAC addresses on a local network
- d) To route data packets between autonomous systems

Answer: c) To map IP addresses to MAC addresses on a local network

Which IP address class is typically used for multicast groups?

- a) Class A

- b) Class B
- c) Class C
- d) Class D

Answer: d) Class D

In networking, what is the purpose of Network Address Translation (NAT)?

- a) To provide encryption for data transmission
- b) To map private IP addresses to a single public IP address
- c) To route traffic between autonomous systems
- d) To manage network congestion

Answer: b) To map private IP addresses to a single public IP address

Which routing protocol is commonly used for routing between autonomous systems on the Internet?

- a) RIP (Routing Information Protocol)
- b) OSPF (Open Shortest Path First)
- c) EIGRP (Enhanced Interior Gateway Routing Protocol)
- d) BGP (Border Gateway Protocol)

Answer: d) BGP (Border Gateway Protocol)

In the OSI model, which layer is responsible for end-to-end communication, flow control, and error checking?

- a) Data Link Layer
- b) Transport Layer
- c) Network Layer
- d) Physical Layer

Answer: b) Transport Layer

What is the primary purpose of the Three-Way Handshake in the Transmission Control Protocol (TCP)?

- a) To establish a secure encrypted connection

- b) To synchronize sequence numbers and establish a connection
- c) To route data packets between routers
- d) To manage network congestion

Answer: b) To synchronize sequence numbers and establish a connection

Which class of IP addresses is reserved for multicast groups and cannot be assigned to individual devices?

- a) Class A
- b) Class B
- c) Class C
- d) Class D

Answer: d) Class D

In subnetting, what is the purpose of a subnet mask?

- a) To identify the network portion of an IP address
- b) To specify the default gateway for a subnet
- c) To determine the host portion of an IP address
- d) To provide encryption for data transmission

Answer: a) To identify the network portion of an IP address

Which dynamic routing protocol is based on the concept of exchanging link-state advertisements (LSAs)?

- a) RIP
- b) OSPF
- c) EIGRP
- d) BGP

Answer: b) OSPF (Open Shortest Path First)

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- a) Managing network congestion



- b) Resolving domain names to IP addresses
- c) Facilitating multicast group membership management
- d) Detecting and correcting errors in data transmission

Answer: c) Facilitating multicast group membership management

In a network, what is the primary function of a router?

- a) To provide physical connectivity to devices
- b) To forward data packets between different networks
- c) To assign IP addresses to devices
- d) To manage network security

Answer: b) To forward data packets between different networks

In computer networking, what is the primary role of a firewall?

- a) To boost network performance
- b) To prevent unauthorized access and protect against threats
- c) To facilitate data encryption
- d) To provide network redundancy

Answer: b) To prevent unauthorized access and protect against threats

Which of the following is a private IP address range for use within an internal network?

- a) 10.0.0.0 - 10.255.255.255
- b) 169.254.0.0 - 169.254.255.255
- c) 172.16.0.0 - 172.31.255.255
- d) 192.168.0.0 - 192.168.255.255

Answer: c) 172.16.0.0 - 172.31.255.255

Which networking protocol is responsible for translating domain names into IP addresses?

- a) HTTP
- b) DNS

c) DHCP

d) ICMP

Answer: b) DNS (Domain Name System)

What does NAT stand for in networking?

a) Network Address Translation

b) National Association of Telecommunications

c) Network Analysis Toolkit

d) Network Authentication Token

Answer: a) Network Address Translation

Which of the following is NOT a valid IPv6 address representation?

a) 2001:0db8:85a3:0000:0000:8a2e:0370:7334

b) 3ffe:1900:4545:3:200:f8ff:fe21:67cf/64

c) ::1

d) 256.128.64.32

Answer: d) 256.128.64.32 (This is an invalid IPv4 address.)

What is the primary function of a default gateway in a network?

a) To provide DNS services

b) To route traffic between different subnets

c) To assign IP addresses to devices

d) To manage network security

Answer: b) To route traffic between different subnets

Which layer of the OSI model is responsible for data framing and error detection?

a) Physical Layer

b) Data Link Layer

c) Network Layer

d) Transport Layer

Answer: b) Data Link Layer

Which transport layer protocol offers a connectionless, unreliable, and low-overhead data transmission service?

a) TCP

b) UDP

c) ICMP

d) ARP

Answer: b) UDP (User Datagram Protocol)

In networking, what is the purpose of a MAC address?

a) To identify a device on the internet

b) To locate the default gateway

c) To uniquely identify a network interface card (NIC)

d) To translate domain names into IP addresses

Answer: c) To uniquely identify a network interface card (NIC)

Which Internet Protocol version is designed to address the IPv4 address exhaustion problem?

a) IPv2

b) IPv3

c) IPv5

d) IPv6

Answer: d) IPv6

What is the primary purpose of the Dynamic Host Configuration Protocol (DHCP) in networking?

a) To assign unique MAC addresses to devices

b) To assign unique IP addresses to devices dynamically

c) To manage network security

d) To facilitate remote access to network devices

Answer: b) To assign unique IP addresses to devices dynamically

Which of the following is NOT a valid IPv4 address class?

a) Class X

b) Class Y

c) Class Z

d) Class E

Answer: a) Class X (Class Y and Class Z are not valid either.)

Which protocol is responsible for reporting errors and providing diagnostics related to IP packet delivery?

a) TCP

b) IGMP

c) ICMP

d) DHCP

Answer: c) ICMP (Internet Control Message Protocol)

In networking, what is the main function of a switch?

a) To route data between different networks

b) To connect devices within the same network segment

c) To provide wireless access to the internet

d) To secure network traffic with encryption

Answer: b) To connect devices within the same network segment

Which IP address class allows for a maximum of 16,777,214 hosts per network?

a) Class A

b) Class B

c) Class C

d) Class D

Answer: b) Class B A

What is the primary purpose of the Border Gateway Protocol (BGP) in networking?

- a) To manage local network traffic
- b) To facilitate communication within a single LAN
- c) To route traffic between autonomous systems (ASes)
- d) To provide security for data transmission within a LAN

Answer: c) To route traffic between autonomous systems (ASes)

In networking, what is a key advantage of using a proxy server?

- a) Enhancing data encryption
- b) Reducing latency in network communication
- c) Providing additional network security and anonymity
- d) Increasing the available bandwidth

Answer: c) Providing additional network security and anonymity

Which of the following routing algorithms is based on updating routing tables by exchanging information with neighboring routers?

- a) Distance Vector Routing
- b) Link State Routing
- c) OSPF (Open Shortest Path First)
- d) BGP (Border Gateway Protocol)

Answer: a) Distance Vector Routing

In networking, what does MTU stand for?

- a) Maximum Transmission Unit
- b) Maximum Transfer Unit
- c) Minimum Transmission Unit

d) Minimum Transfer Unit

Answer: a) Maximum Transmission Unit

Which of the following protocols is used to discover the hardware address (MAC address) of a device on a local network?

a) DNS

b) DHCP

c) ICMP

d) ARP (Address Resolution Protocol)

Answer: d) ARP (Address Resolution Protocol)

In networking, what is a VLAN?

a) A virtual private network

b) A virtual local area network

c) A virtual firewall

d) A virtual DNS server

Answer: b) A virtual local area network

Which Internet Protocol version is most commonly used today for IP communication on the global internet?

a) IPv2

b) IPv3

c) IPv4

d) IPv5

Answer: c) IPv4

What is the primary function of a modem in networking?

a) To provide network security

b) To route data between different networks

- c) To modulate and demodulate signals for digital communication over analog lines
- d) To assign IP addresses to devices

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