Name Resolution

Total points 3

1. What transport layer protocol does DNS normally use? **1 / 1 point**

- ○ IP
- ◉ UDP
- ○ TCP
- ○ ICMP

Correct
Great job! While DNS over TCP does exist, UDP is the most common protocol.

2. A DNS TTL determines what? **1 / 1 point**

- ○ How far away a DNS can be from you
- ◉ How long a DNS entry is allowed to be cached
- ○ How many DNS resolutions can take place before the IP has to change
- ○ How many steps there are in the resolution process

Correct
Awesome! TTL stands for Time to Live and determines how long a DNS entry can be cached.

3. How many root servers are there? **1 / 1 point**

- ○ 8
- ◉ 13
- ○ 16
- ○ 17

Correct
You got it! There are 13 root servers.

Name Resolution in Practice

Total points 4

1. An A Record contains what? **1 / 1 point**

- ○ A CNAME
- ◉ An IPv4 address
- ○ An IPv6 address
- ○ A fully qualified domain name

Correct
Yep! An A record contains an IPv4 address.

2. Select all that are true. **1 / 1 point**

- ☑ One domain name can point to one IP.

Correct
That's right! This is a valid DNS setup.

- ☑ One domain name can point to many IPs.

Correct
That's right! This is a valid DNS setup.

- ☑ Many domain names can point to the same IP.

Correct
That's right! This is a valid DNS setup.

3. MX stands for _____. 1 / 1 point

- ○ Micro extreme
- ○ Micro exchange
- ◉ Mail exchange
- ○ Meta exchange

Correct
Correct! An MX record stores a mail server's IP.

4. A fully qualified domain name can contain how many characters? 1 / 1 point

- ○ 63
- ○ 64
- ○ 127
- ◉ 255

Correct
You nailed it! An FQDN is limited to a total length of 255 characters.

Dynamic Host Configuration Protocol

Total points 3

1. What are the four things that all computers need configured in order to operate on a modern network? Check all that apply. **1 / 1 point**

- [ ] An NTP server
- [x] An IP address

  Correct
  Wohoo! All computers need these four things configured in order to operate on a modern computer network.

- [x] A default gateway

  Correct
  Wohoo! All computers need these four things configured in order to operate on a modern computer network.

- [ ] A MAC address
- [ ] A TCP port
- [x] A name server

  Correct
  Wohoo! Computers need a name server in order to operate on a network.

- [x] A subnet mask

  Correct
  Wohoo! All computers need these four things configured in order to operate on a modern computer network.

2. When using Fixed Allocation DHCP, what's used to determine a computer's IP? **1 / 1 point**

- ( ) Location
- ( ) A subnet mask
- ( ) A record
- (•) A MAC address

  Correct
  Great job! Fixed Allocation DHCP ensures that computers receive an IP address reserved for it via its MAC address.

3. The process by which a client configured to use DHCP attempts to get network configuration information is known as _____. 1 / 1 point

- ○ DHCP Offer
- ○ DHCP Request
- ◉ DHCP Discovery
- ○ DHCP Acknowledgement

Correct
Awesome! DHCP Discovery is how a client determines configuration information.

Network Address Translation

Total points 3

1. NAT addresses concerns over the dwindling IPv4 address space by _____. 1 / 1 point

- ○ allowing networks to use fewer IP addresses overall.
- ○ allowing users to move to IPv6 when they want.
- ◉ allowing computers using non-routable address space to communicate with the Internet.
- ○ performing IP masquerading.

Correct
Nice work! NAT allows networks to use non-routable address space for their internal devices.

2. What technique allows for inbound traffic through a NAT? **1 / 1 point**

- ○ Port preservation
- ◉ Port forwarding
- ○ Port authority
- ○ Ephemeral ports

Correct
Right on! Port forwarding is a technique that allows for inbound traffic through a router configured to NAT.

3. The total number of IPv4 addresses is approximately: **1 / 1 point**

- ○ 4.2 million
- ◉ 4.2 billion
- ○ 4.2 trillion
- ○ Uncountable

Correct
Correct! There are approximately 4.2 billion IPv4 addresses. Wowza!

VPNs & Proxies

Total points 3

1. Two-factor authentication is_____. **1 / 1 point**

- ○ a method that requires two usernames.
- ◉ a method where you need more than a username and a password.
- ○ a method where you authenticate twice.
- ○ a method where you need two passwords.

Correct
You got it! Two-factor authentication requires a username/password and something extra.

2. VPNs are known as a _____ protocol. **1 / 1 point**

- ○ connectionless
- ○ network layer
- ◉ tunneling
- ○ data link layer

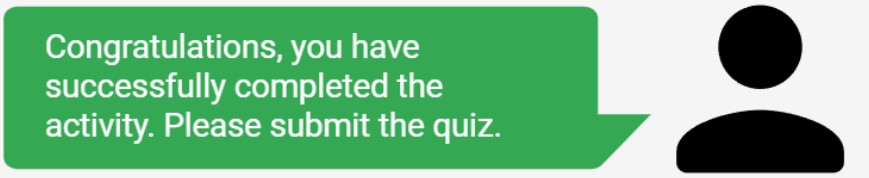
Correct
Nice job! VPNs are tunneling protocols.

3. A proxy is something that _____. 1 / 1 point

- ○ sends data across a single network segment.
- ◉ communicates on behalf of something else.
- ○ allows for many devices to speak to one other device.
- ○ encrypts traffic sent across the Internet.

Correct
Awesome! While proxies are many things, they primarily communicate on behalf of something else.

Let's test your knowledge of networking services! You're an IT Support Specialist at a new company. As your company grows, your manager asks you to solve various networking problems. Drag the correct network device or server onto the network to solve each of her requests. Good luck!



Possible Services

Drop Here

Completed Requests

1. Question

1 / 1 point

A technique that's used to route traffic to different destinations, depending on factors like location, congestion, or link health, is known as ____.

- unicast
- anycast
- multicast
- broadcast

Expand

Correct

You got it! Anycast lets you route traffic depending on many factors.

2. Question

1 / 1 point

A concept that involves iterating over a list of items one by one in an orderly fashion is known as _____.

- round robin
- recursion
- authoritative lookup
- multiplexing

Expand

Correct

Nice job! Round robin ensures a fairly equal distribution across its members.

3. Question

1 / 1 point

A _____ record is responsible for resolving an IP to a domain name.

- CNAME
- PTR
- NTP
- TXT

Expand

Correct

You nailed it! PTR records operate as the inverse of an A Record.

4. Question

1 / 1 point

The final step of the DHCP Discovery process is known as _____.

- (●) DHCPACK
- ( ) DHCPOFFER
- ( ) DHCPDISCOVER
- ( ) DHCPREQUEST

Expand

Correct
That's right! A DHCPACK is the final step in the DHCP Discovery process.

5. Question

1 / 1 point

A service that might appear to be a single server to external clients, but actually represents many servers living behind it, is known as a _____.

- ( ) VPN
- ( ) multiplexer
- (●) reverse proxy
- ( ) proxy

Expand

Correct
Great job! A reverse proxy allows for a single server to appear to be the endpoint for many servers behind it.

6. Question

1 / 1 point

A company moves a popular website to a new web host. Which of the following will change as a result?

- ( ) Domain name
- ( ) Network service
- (●) Internet Protocol (IP) address
- ( ) Root name server

Expand

Correct
Woohoo! The IP address will certainly change. However, with DNS in place the name stays the same and users will never know that the website moved.

7. Question

1 / 1 point

The Domain Name System (DNS) network service uses which transport layer protocol?

- IP (Internet Protocol)
- Transmission Control Protocol (TCP)
- User Datagram Protocol (UDP)
- Hypertext Transfer Protocol (HTTP)

Expand

Correct

Awesome! DNS uses the UDP protocol for queries and resolution. It is a connectionless protocol.

10. Question

1 / 1 point

An IT engineer is planning a website upgrade with load balancing features. What technology is used?

- Port forwarding
- Round robin
- Web proxy
- Reverse proxy

Expand

Correct

Nice job! A reverse proxy allows for load balancing of web server content.

12. Question

1 / 1 point

A company with a large number of hosts creates three subdomains under a main domain. For easier management of the host records, how many zones should be used?

- 3
- 2
- 1
- 4

Expand

Correct

You nailed it! Four (4) zones would include the parent and the three (3) subdomains.

14. Question

1 / 1 point

A Virtual Private Network (VPN) uses a particular layer from the OSI reference model to carry an encrypted payload that actually contains an entire second set of packets. Which layer is used?

- Presentation
- Application
- Network
- Transport

Expand

Correct
You got it! The payload section of the transport layer is used to contain an entire second set of packets.

15. Question

1 / 1 point

What is the importance of using DNS?

- Assigning addresses
- Get connected
- Securing a network
- Name resolution

Expand

Correct
Awesome! The Domain Name System (DNS) use records to resolve numeric addresses to friendly names.

16. Question

1 / 1 point

When a client computer sends a request to a Domain Name System (DNS) server, what type of packet is sent?

- SYN
- ACK
- TCP
- SYN/ACK

Expand

Correct
Awesome! The requesting client initiates a query with a DNS server by sending a Synchronize (SYN) packet as a first step in the three-way handshake.