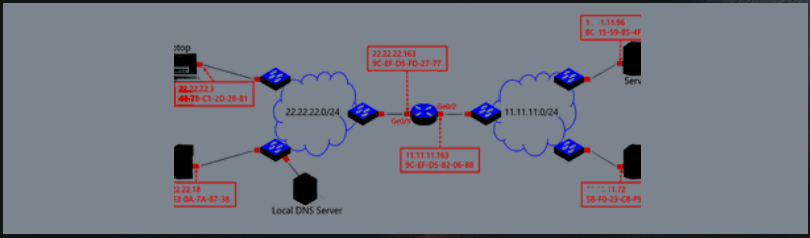
Hands-on Internet of Things Specialization

IoT Networking

Week 3 & 4

Question 1:

Consider the following figure:



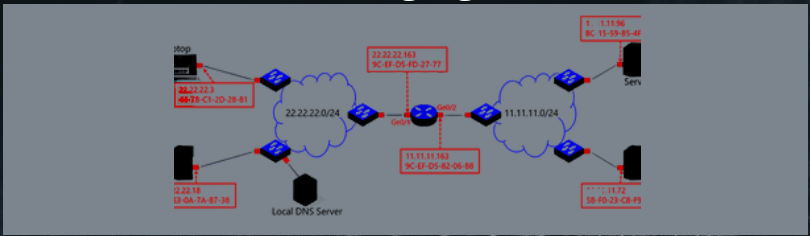
Suppose the server in the lower left sends a data packet to the server in the lower right. Write out the packet headers at each hop.

How many times does the MAC address change (ie., how many MAC addresses appear in the packet's header over time)?

Two.

Question 2:

Consider the following figure:



Suppose the server in the lower left sends a data packet to the server in the lower right. Write out the packet headers at each hop.

Assume all ARP caches are empty. How many ARP lookups are performed?

Two.

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Question 3:

Why are network cores Layer 3 instead of Layer 2?

Improved scaling

Question 4:

Why are ring topologies often used in wide-area campus networks?

Resilience

Question 5:

Which layer uses broadcast to discover paths to destinations?

Layer 2

Question 6:

Which of the following is a proper way to implement segmentation in a computer network?

All of the options are correct

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Question 7:

What happens if two hosts share the same IP address, but not the same MAC address on a LAN?

They would both respond to ARP request messages

Question 8:

You're running out of network segments. You're using very old Ethernet switches. If you have the budget, you should replace your LAN switches with ones that support:

IEEE 802.1ad (QinQ)

Question 9:

Which of the following can be learned via DHCP?

DNS server IP address

Question 10:

Is encapsulation performed in the application (user space) or within the operating system's kernel?

Kernal Space