CSCI-376-01 S23 Computer Networking

A solution to Test #4

1. F F T F T F F F T T

2. This is a DNS query. The purpose of a DNS query is to request the IP address associated with a domain name, in this case, "www.amazon.com".

3. We know we are now using this query to send email because this query requests an "A" record, not an "MX" record.

4. There are 4 answers to the query:
   >> "www.amazon.com" is a CNAME/alias for "tp.47cf2c8c9-frontier.amazon.com".
   >> "tp.47cf2c8c9-frontier.amazon.com" is a CNAME/alias for "www.amazon.com.edgekey.net".
   >> "www.amazon.com.edgekey.net" is a CNAME/alias for "e15316.dsca.akamaiedge.net".
   >> "e15316.dsca.akamaiedge.net" has an IP address of 184.86.253.92

5. The query did not use a 3-way handshake because it uses UDP as a transport protocol and UDP does not use a 3-way handshake.

6. George's IP address is 209.140.209.140 with a subnet mask of 255.255.255.0, which, when ANDed together, gives a network ID of 209.140.209.0.
   The destination has an IP address of 184.86.253.92 with a subnet mask of 255.255.255.0, which, when ANDed together, gives a network ID of 184.86.253.0.
   The two network IDS are not equal, therefore the packet must be sent to the router.

7. The exchange uses TLS version 1.3. The data exchange is encryption keys.

8. The HTML we get from Amazon is encrypted, since we used "HTTPS". It might also be in gzip format.

9.

IP Start	IP End	Subnet Mask	Number of Hosts
192.168.1.32	**192.168.1.63**	255.255.255.224	**30**
209.140.230.128	**209.140.230.191**	**255.255.255.192**	62
192.168.0.0	**192.168.15.255**	255.255.240.0	4094
192.168.20.96	192.168.20.103	**255.255.255.248**	6

10. The TTL value determines the number hops a packet will take on the route to a destination. That value is decremented each time the packet passes from router to router. A traceroute is executed by sending an ICMP packet with a TTL of 1, reporting the router that sends an error, and repeating this cycle, incrementing the TTL, until the packet reaches the destination.

11. You catch an Ether Bunny, with an Ether Net, of course!

Last modified: Monday, 3 April 2023, 12:33 PM