WSA-3 Kadir Burak Tokmak - 2036200

1. Traceroute sends 29 unique ICMP requests to 151.101.130.167 which is identified to be twitch.tv's IP Address resolved by DNS request. These 29 requests sometimes repeat themselves with identical sequence numbers and data. TTL fields starts from 1 and goes until 29.

2. Time to live exceeded in wireshark
   No 57 : 192.168.01
   No 80 : 10.59.10.217
   No 81 : 10.40.130.106
   No 82: 10.40.129.141
   No 83: 10.38.208.110
   No 84: 10.38.207.126
   No 85: 10.36.6.142
   No 86: 10.40.130.105
   No 90: 195.219.156.21
   No 91: 195.219.50.20
   No 92: 5.23.30.17
   No 93: 4.69.163.18
   No 102: 212.162.24.214

   Output addresses of trace route
   192.168.0.1
   10.59.10.217
   10.38.208.110
   10.40.129.141
   10.38.207.126
   10.40.130.106
   10.40.130.105
   10.36.6.142
   195.219.156.21
   5.23.30.17
   195.219.50.20
   4.69.163.18
   212.162.24.214
   151.101.130.167

3. Traceroute finds its route with time to live option in the header. Time to live starts at 1 shows the hop limit of the packet. By increasing TTL by 1 for every stop and look for time to live exceeded responses we can find out the IP addresses that are in our route to destination. If we run the same traceroute we might not get same results every time. Although some of the route can be same since they are fixed positions like our own IP address, rest can be changed. Since global and regional routers use dynamic routing protocols like OSPF and EIGRP and these protocols have some metrics to adapt the traffic ongoing. Their routing for our destination IP can change to send packets faster. Some of the route has changed second time I ran the traceroute command.

4. Packet No 403 IP Header length:20 bytes

5. Protocol value for UDP: 17 Protocol value for ICMP=1

6. Since the ping was 5000 bytes and MTU of the networks can't handle all of it, fragmentation of the packet happens which is reassembled after all fragments are received. 3 fragments used to transfer this ping at packets 408-409-410 which is reassembled in 411. Response following the ping also received fragmented and assembled.