DIGITAL FORENSICS PROJECT – QUESTION 1

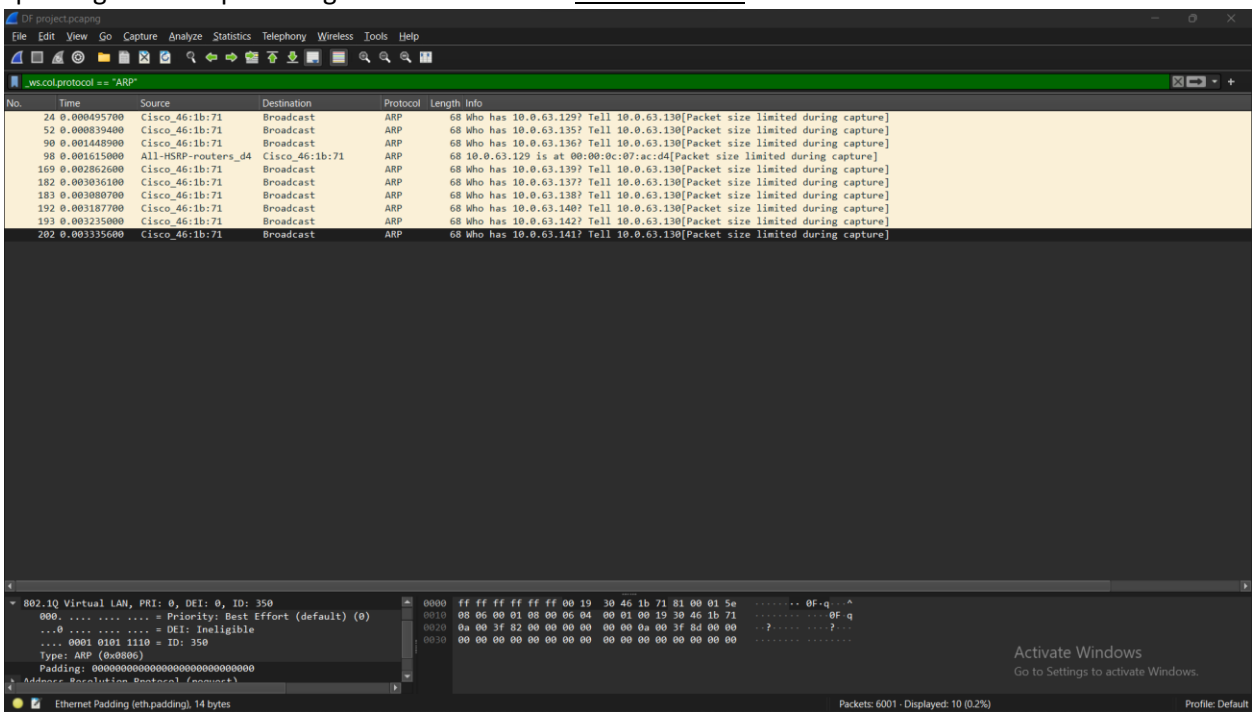
As a forensic examiner, you are required to analyze the given capture file using Wireshark and answer the following questions in your report:
https://drive.google.com/file/d/16GR5hpLa-Jlo7HcJiN2BFAIMLO0I3IG5/view?usp=sharing

1.1 Is this an Attack? Justify your answer.

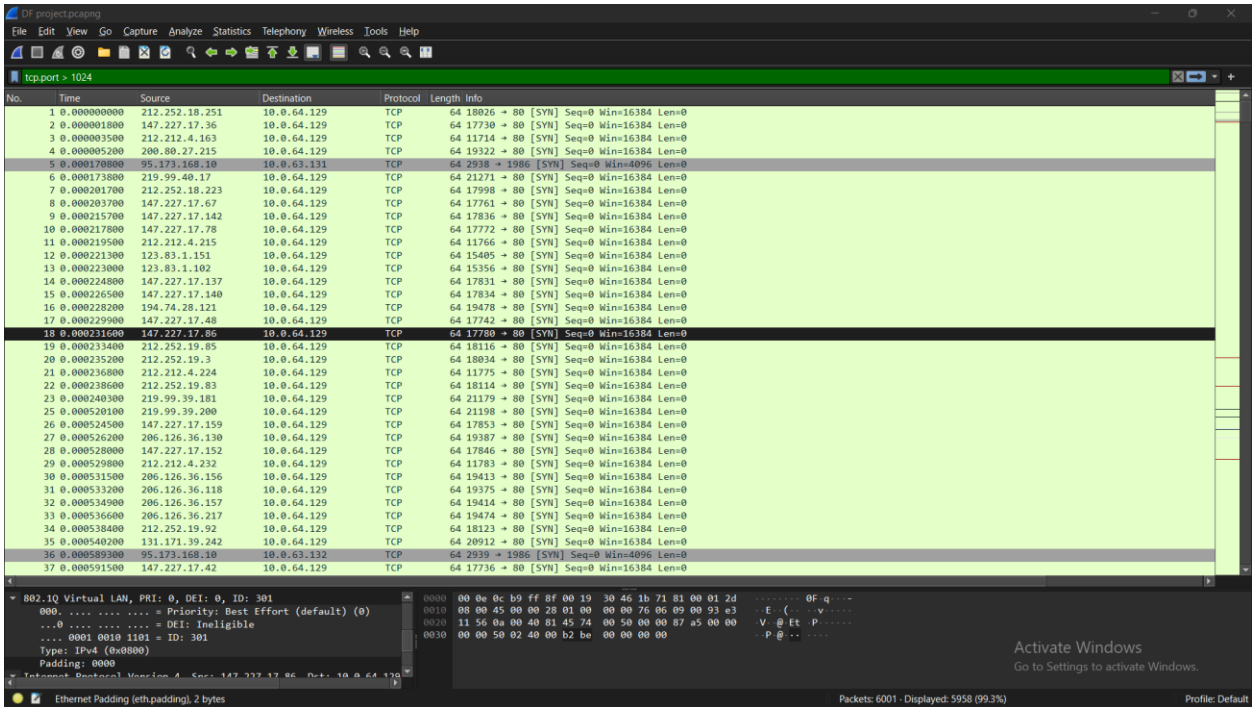
Yes, it is a Distributed Denial of Service attack (DDoS)

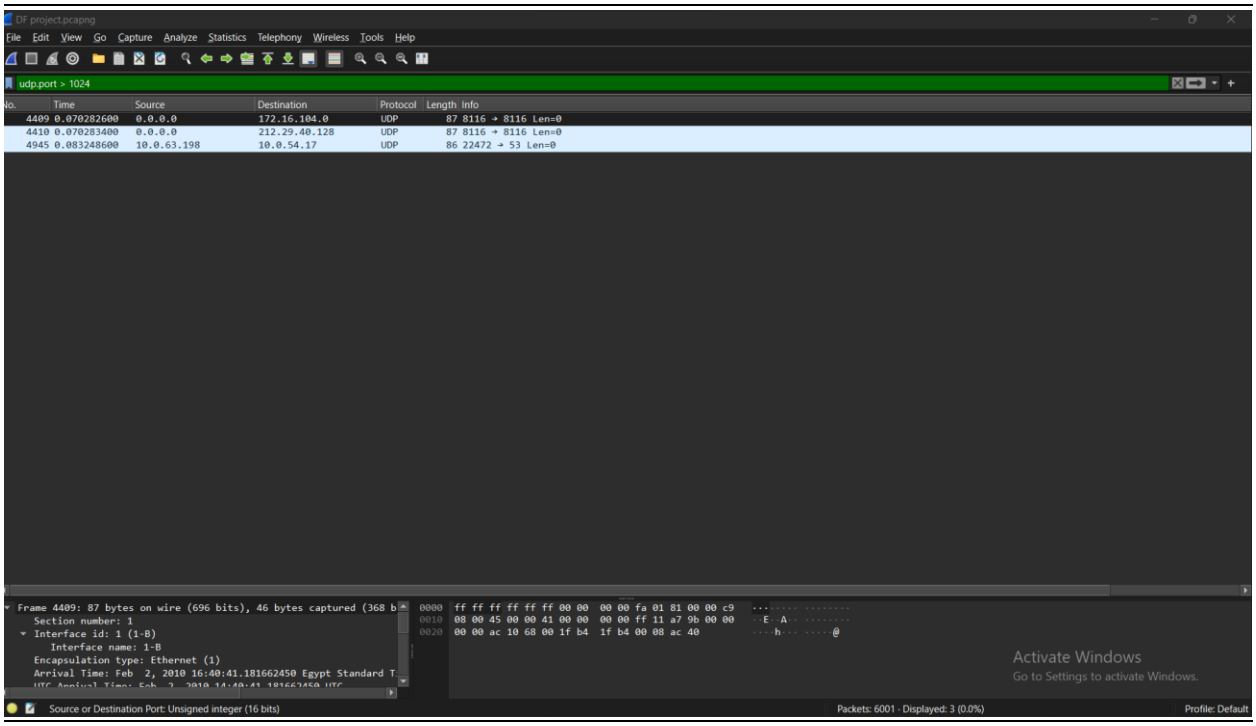
Justification:

- Different source IPs are sending to the same destination IP (attempt to overwhelm a target system or network with a flood of traffic).
- [Packet size limited during capture] -- Was repeated multiple times which indicates a big traffic of data was being forced into transmission.
- Distinct/unexpected protocol (ARP) repeated multiple times which might indicate for ARP spoofing or cache poisoning which is an attack. **– What is ARP???????**



- Unusual source/destination ports (Greater than 1024)

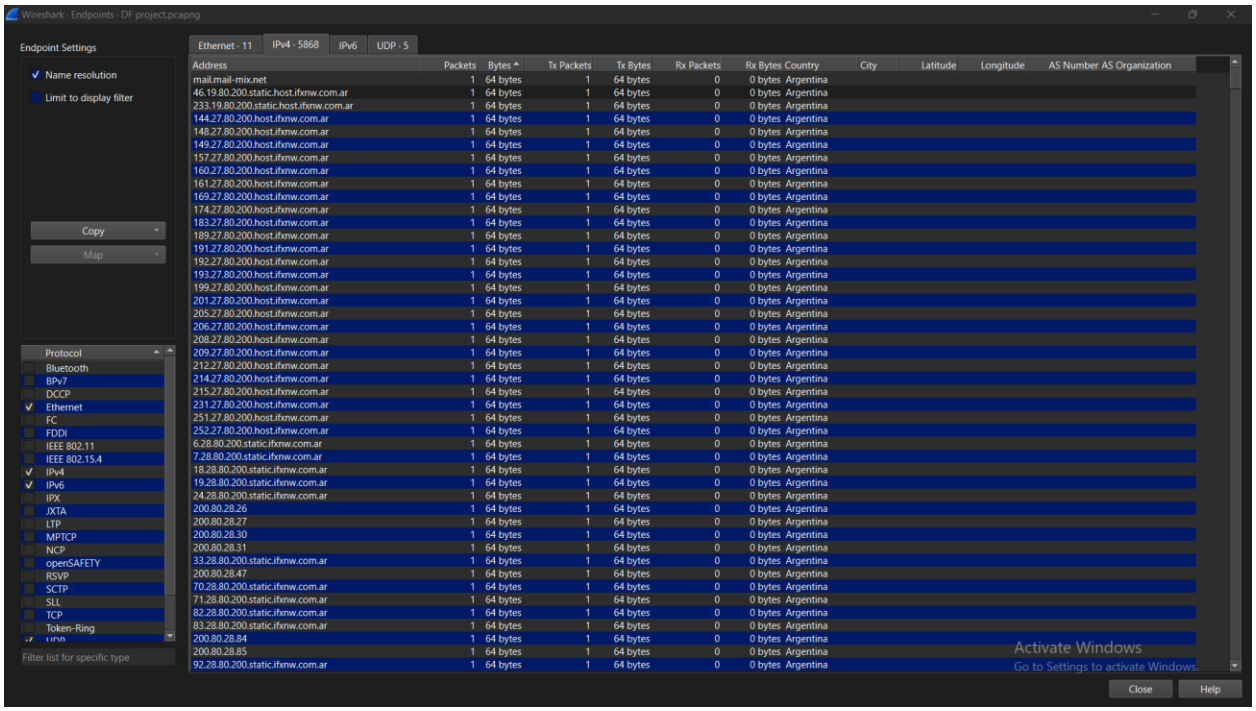




1.2 Discover the source geo IP country? (do your own research)

Argentina.

Sorting by "Bytes" displayed IP addresses based on the number of Bytes sent:



1.3 How many countries are involved?

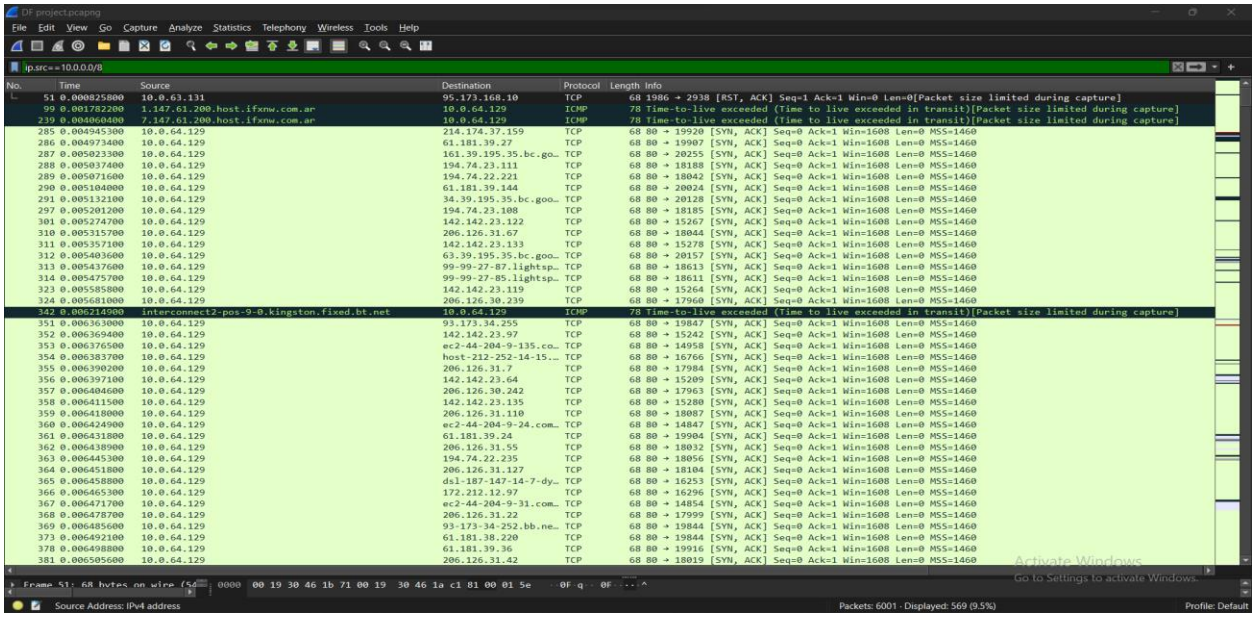
19 countries.

➔ Argentina, Canada, China, Germany, India, Japan, Mexico, Russia, Turkey, UK, US, Belgium, Australia, Sweden, Switzerland, Colombia, Slovenia, Netherlands

1.4 Choose any of the identified locations in Question 2, how many packets come from the location you choose? Mention the location and the number of packets.

I choose the **United States (US).**

Number of packets: **569**



1.5 Are these packets made by a pot or normal devices?

Packets are made by normal devices.

- (Most of them are with source /destination MAC addresses from Cisco.
- No environmental metrics were shown.
- Looked for protocols that might indicate IoT devices communication and there were none.

1.6 Extract the TTL of the packets and show how it can be used in discovering attacks.

TTLs of the US packets:

- **255 – "**The maximum TTL value". It could suggest potential packet spoofing, as the packet might have originated from nearby or directly from the source rather than going through multiple network hops.

- **254 – "**A common initial TTL value set by many operating systems". Might indicate altered routing paths or attempts to blend in with normal traffic by setting TTL to a commonly expected value.

- **248, 247, 246, 245 and 243** – Might indicate a typical number of hops for certain types of traffic. Could indicate route manipulation, altered traffic paths, or potential attacks like packet injection.

- **127, 126, 63 and 62** – "Intermediate TTL values". Sudden changes in TTL values compared to the normal for specific traffic could indicate anomalies, route manipulation, or traffic redirection attempts.

- **52 and 47** - Unexpectedly low TTL values for specific traffic might suggest potential spoofing or route alteration.