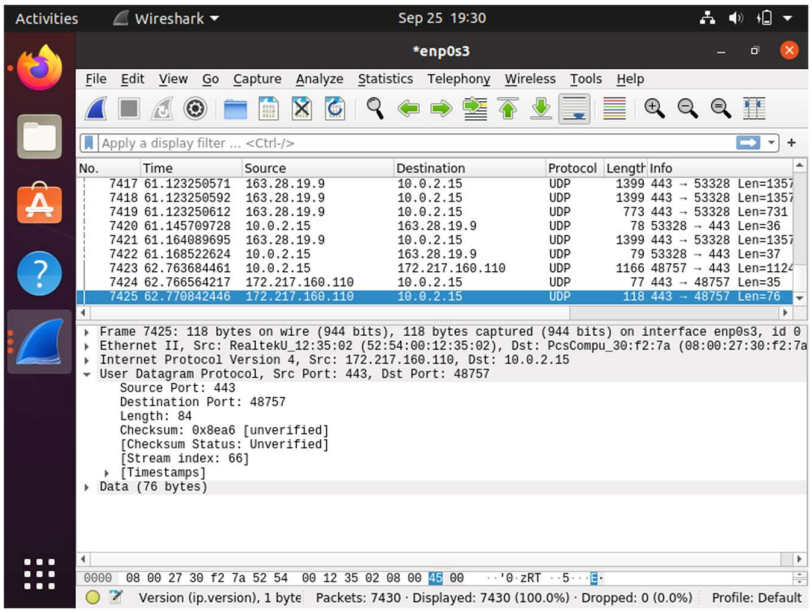
計算機網路 HW1　　系級：資工三　　姓名：何翊豪　　學號：B09902046

1. Analysis of UDP packets

a. Screen shot:



b. Which website?

The website is Youtube, and Youtube provides users to watch live streaming and videos uploaded by other users.

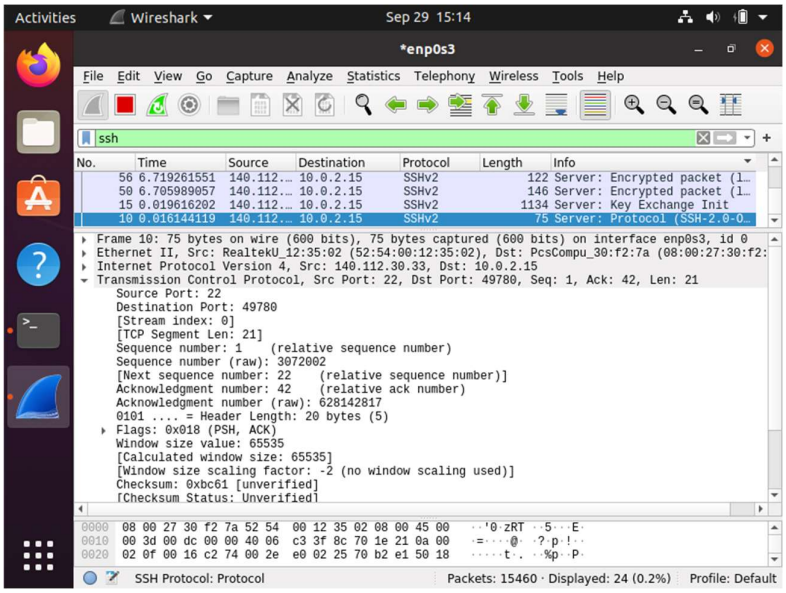
c. Which port?

This application uses port 443 to provide HTTPS services, which is safer than HTTP.

2. Analysis of TCP packets

a. Connect to b09902046@linux2.csie.ntu.edu.tw

b. Screen shot:



c. Which port?

This SSH server uses port 22.

d. Public or Private IP?

My machine uses private IP, because it uses 10.0.2.15, and we know that IP from 10.0.0.0 to 10.255.255.255 are private IP.

3. Comparing between UDP and TCP packets

a. same fields:

i. source port

ii. destination port

iii. checksum

b. different fields:

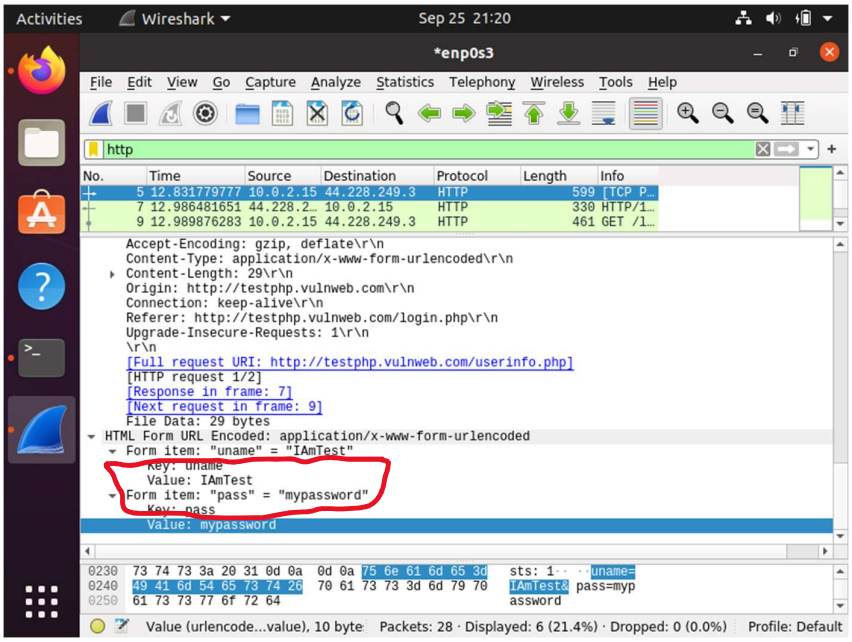
i. acknowledgment number (only TCP)

ii. urgent pointer (only TCP)

iii. flags (only TCP)

4. Find out a plaintext password

a. Screen shot:



b. Which Website?

The website is "http://testphp.vulnweb.com/".

c. Why not safe to send passwords in plaintext?

If hackers stole passwords from the database, because the passwords are without encryption, they will get many people's passwords directly. Also, many people used to use same passwords for different places, hackers therefore can use it to try to login people's social media accounts or bank accounts, etc.

5. Other observations

When I was doing this homework, I observed that:

a. Most websites use HTTPS instead of HTTP, due to security issues.

b. TCP header use “flags” to establish and terminate connections.

c. UDP is used when fast data transmit speed is important, such as streaming.

d. In Ubuntu, we can use “$ ip r” to display default gateway IP address.

e. TCP is more reliable than UDP, because TCP can perform error check.