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**SCHOOL ID: ALT/SOE/024/1866**

**PROJECT QUESTION: BRIDGED NETWORK & PACKET CAPTURE**

## TASK 1

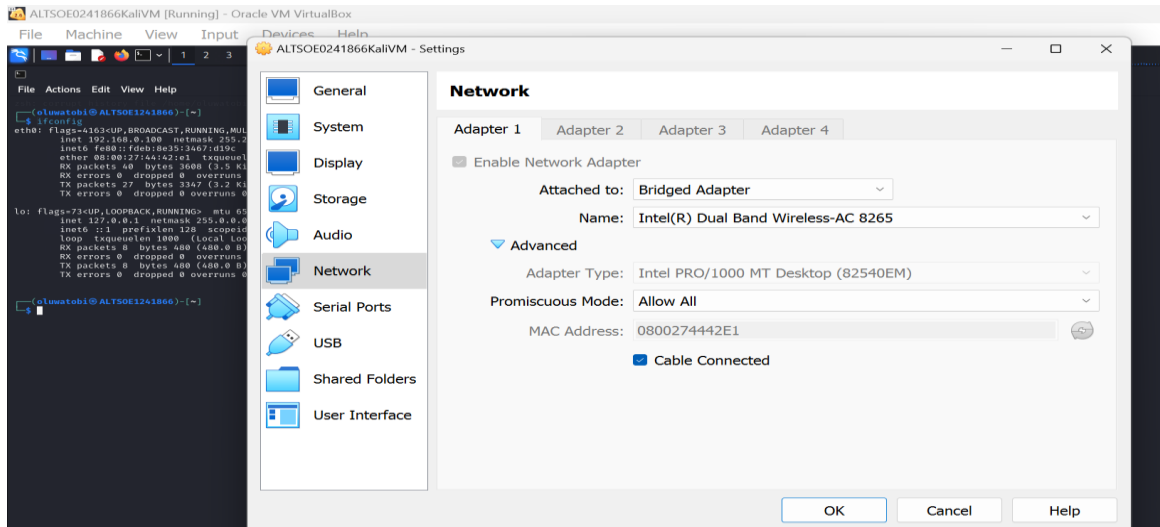


Image 1.1 showing network configuration on Kali Linux VM

**EXPLANATION:** The bridged network on kali Linux was configured via settings.

Settings-Network-Click on Attached to- change from Nat to Bridged adapter- click on promiscuous mode and change to allow all- click ok

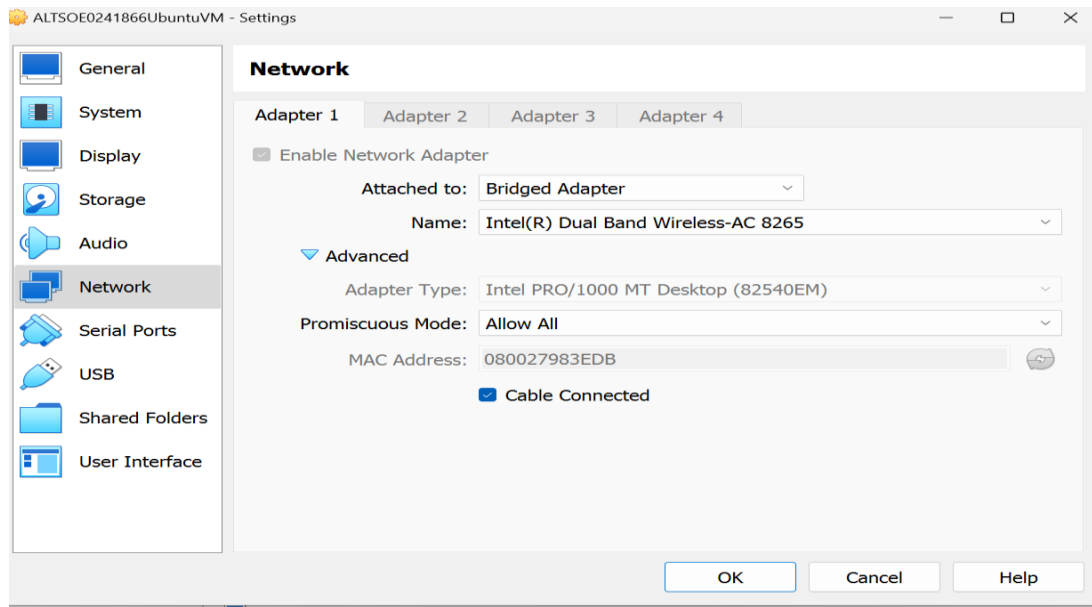


Image 1.1 showing network configuration on Ubuntu VM

**EXPLANATION:** The bridged network on Ubuntu was configured via settings.

Settings-Network-Click on Attached to- change from Nat to Bridged adapter- click on promiscuous mode and change to allow all- click ok

## TASK 2

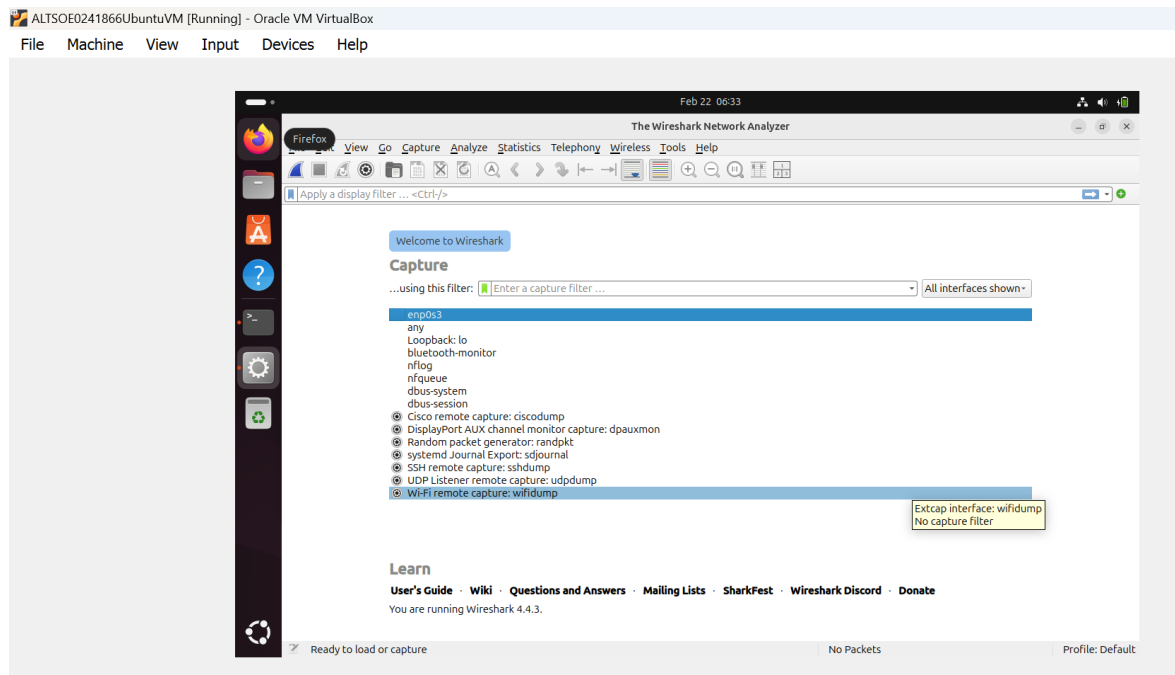
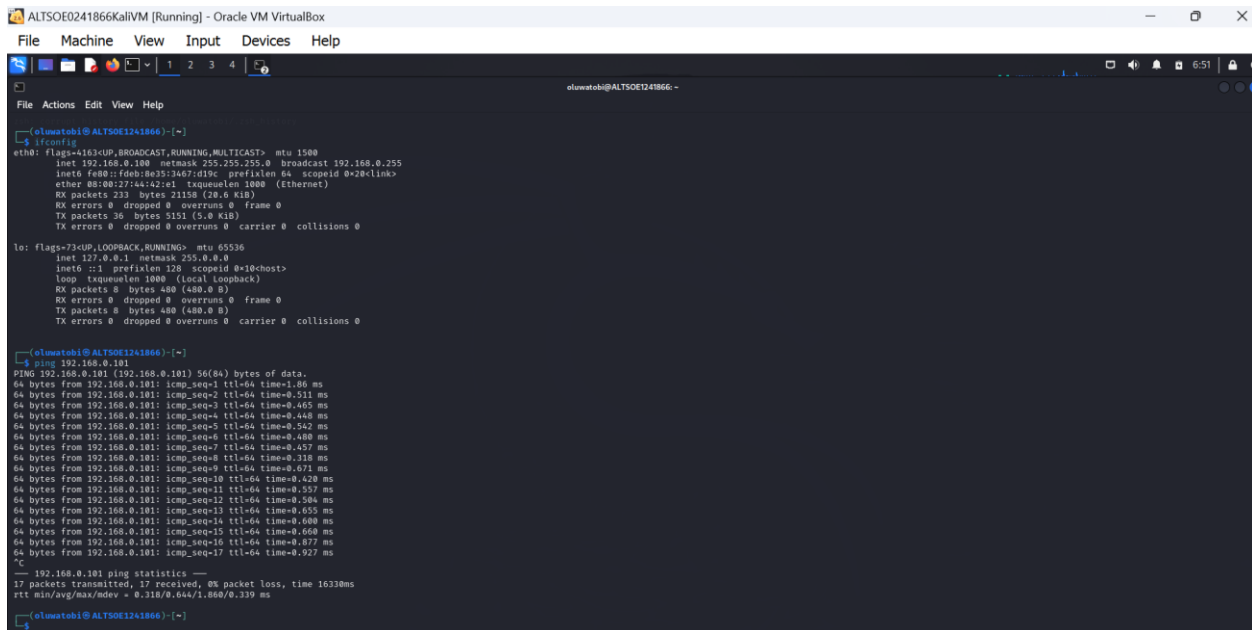


Image 2.1 showing that wireshark has been installed and is running

**EXPLANATION:** To install Wireshark on Ubuntu, open the terminal and type command “sudo apt install wireshark”. From the above screenshot, wireshark has already been installed hence the feedback ‘wireshark is already the latest version’. Then to run wireshark, type in the command “sudo wireshark” and click enter.

## TASK 3



```
ALTISOE0241866KaliVM [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

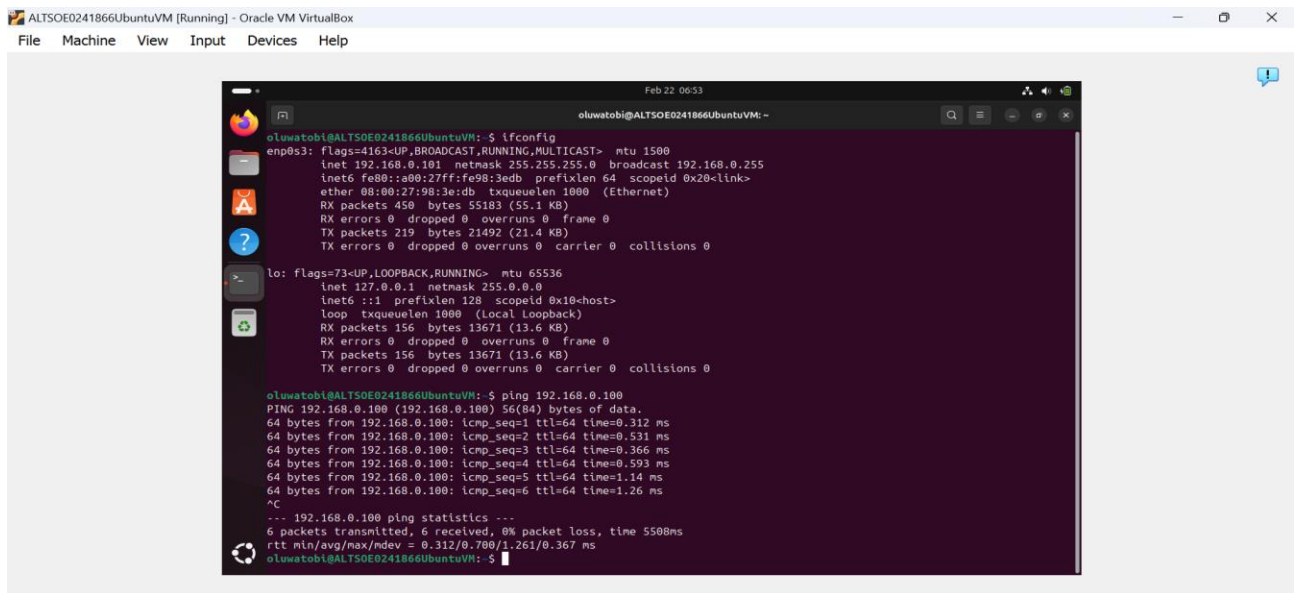
aluwatobi@ALTISOE1241866:~$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.0.100 netmask 255.255.255.0 broadcast 192.168.0.255
    inet6 fe80::fdeb:8a35:3467:d19c prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:14:42:a1 txqueuelen 1000 (Ethernet)
    RX packets 233 bytes 21158 (20.6 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 36 bytes 3151 (<0.0 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (local loopback)
    RX packets 0 bytes 480 (480.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 480 (480.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

aluwatobi@ALTISOE1241866:~$ ping 192.168.0.101
PING 192.168.0.101 (192.168.0.101) 56(84) bytes of data:
 64 bytes from 192.168.0.101: icmp_seq=1 ttl=64 time=1.86 ms
 64 bytes from 192.168.0.101: icmp_seq=2 ttl=64 time=0.511 ms
 64 bytes from 192.168.0.101: icmp_seq=3 ttl=64 time=0.465 ms
 64 bytes from 192.168.0.101: icmp_seq=4 ttl=64 time=0.448 ms
 64 bytes from 192.168.0.101: icmp_seq=5 ttl=64 time=0.542 ms
 64 bytes from 192.168.0.101: icmp_seq=6 ttl=64 time=0.480 ms
 64 bytes from 192.168.0.101: icmp_seq=7 ttl=64 time=0.457 ms
 64 bytes from 192.168.0.101: icmp_seq=8 ttl=64 time=0.510 ms
 64 bytes from 192.168.0.101: icmp_seq=9 ttl=64 time=0.671 ms
 64 bytes from 192.168.0.101: icmp_seq=10 ttl=64 time=0.420 ms
 64 bytes from 192.168.0.101: icmp_seq=11 ttl=64 time=0.537 ms
 64 bytes from 192.168.0.101: icmp_seq=12 ttl=64 time=0.504 ms
 64 bytes from 192.168.0.101: icmp_seq=13 ttl=64 time=0.655 ms
 64 bytes from 192.168.0.101: icmp_seq=14 ttl=64 time=0.608 ms
 64 bytes from 192.168.0.101: icmp_seq=15 ttl=64 time=0.660 ms
 64 bytes from 192.168.0.101: icmp_seq=16 ttl=64 time=0.877 ms
 64 bytes from 192.168.0.101: icmp_seq=17 ttl=64 time=0.927 ms
^C
--- 192.168.0.101 ping statistics ---
17 packets transmitted, 17 received, 0% packet loss, time 1633ms
rtt min/avg/max/mdev = 0.318/0.644/1.860/0.339 ms

aluwatobi@ALTISOE1241866:~$
```

Image 3.1 showing ping 192.168.0.101 from Kali Linux VM



```
ALTISOE0241866UbuntuVM [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

aluwatobi@ALTISOE0241866UbuntuVM:~$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.0.101 netmask 255.255.255.0 broadcast 192.168.0.255
    inet6 fe80::a00:27ff:fe98:3edb prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:98:3e:db txqueuelen 1000 (Ethernet)
    RX packets 450 bytes 55183 (55.1 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 219 bytes 21492 (21.4 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local loopback)
    RX packets 156 bytes 13671 (13.6 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 156 bytes 13671 (13.6 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

aluwatobi@ALTISOE0241866UbuntuVM:~$ ping 192.168.0.100
PING 192.168.0.100 (192.168.0.100) 56(84) bytes of data:
 64 bytes from 192.168.0.100: icmp_seq=1 ttl=64 time=0.312 ms
 64 bytes from 192.168.0.100: icmp_seq=2 ttl=64 time=0.366 ms
 64 bytes from 192.168.0.100: icmp_seq=3 ttl=64 time=0.593 ms
 64 bytes from 192.168.0.100: icmp_seq=4 ttl=64 time=1.14 ms
 64 bytes from 192.168.0.100: icmp_seq=5 ttl=64 time=1.26 ms
^C
--- 192.168.0.100 ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5598ms
rtt min/avg/max/mdev = 0.312/0.700/1.261/0.367 ms

aluwatobi@ALTISOE0241866UbuntuVM:~$
```

Image 3.1 showing ping 192.168.0.100 from Ubuntu VM

**EXPLANATION:** The first step is to determine that both VM's (Kali Linux and Ubuntu) are on the same network. The screenshot shows that they are on network 192.168.0. Once established, ping Ubuntu ip address '192.168.0.101' from Kali Linux vm and ping Kali Linux ip address '192.168.0.100' from Ubuntu vm to test network connectivity.

## TASK 4

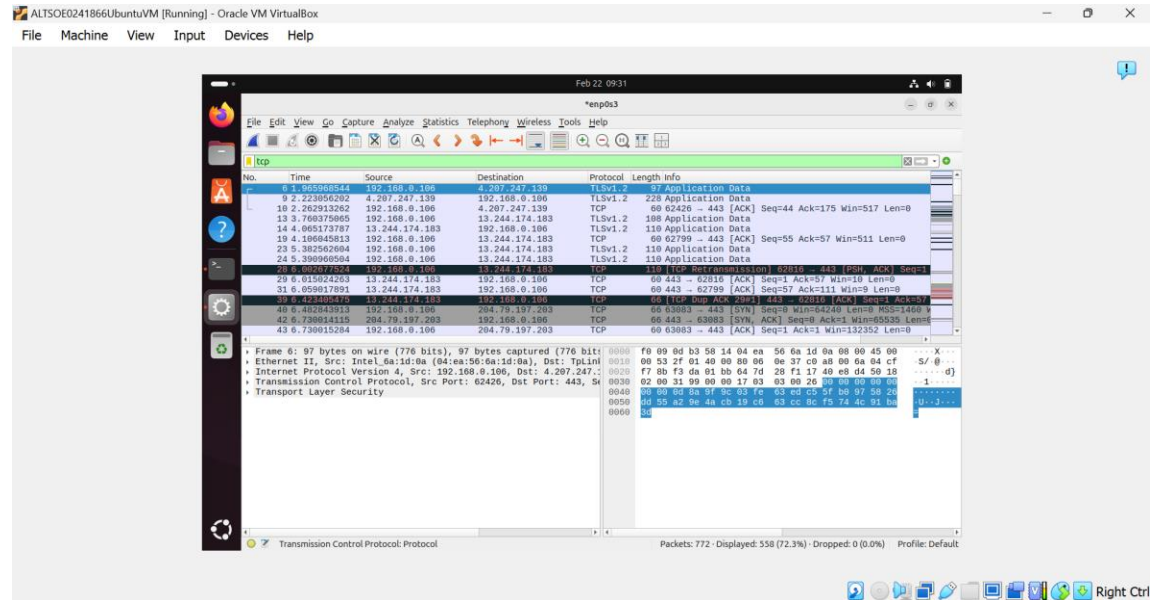


Image 4.1 showing tcp upon ping 192.168.0.101 from Kali Linux VM

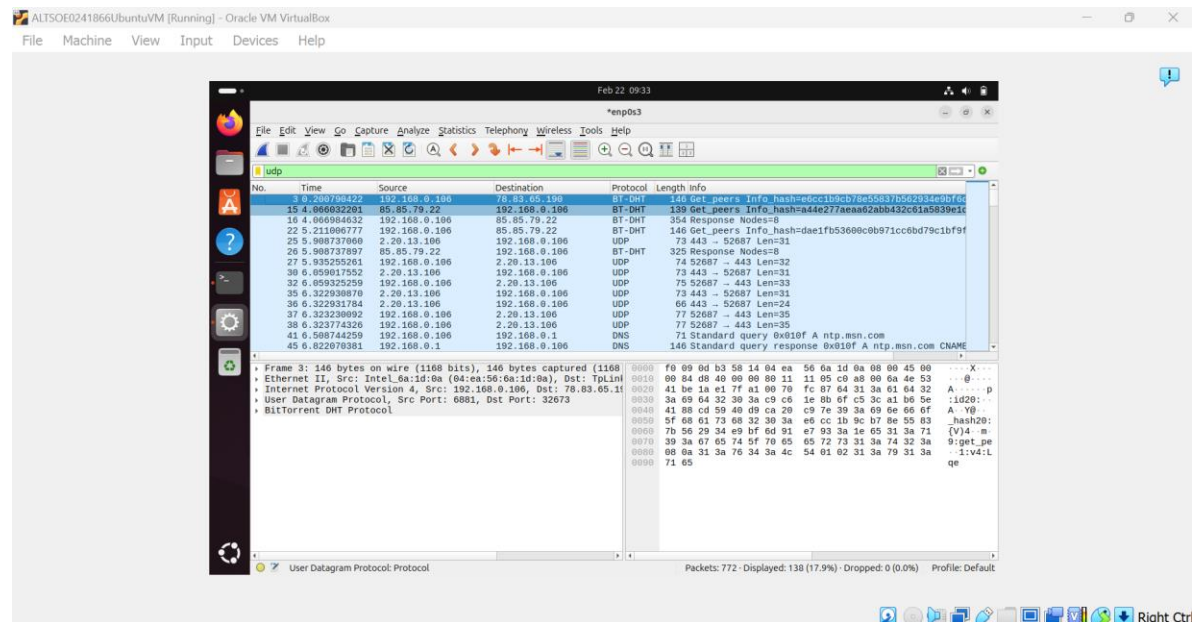


Image 4.2 showing udp upon ping 192.168.0.101 from Kali Linux VM

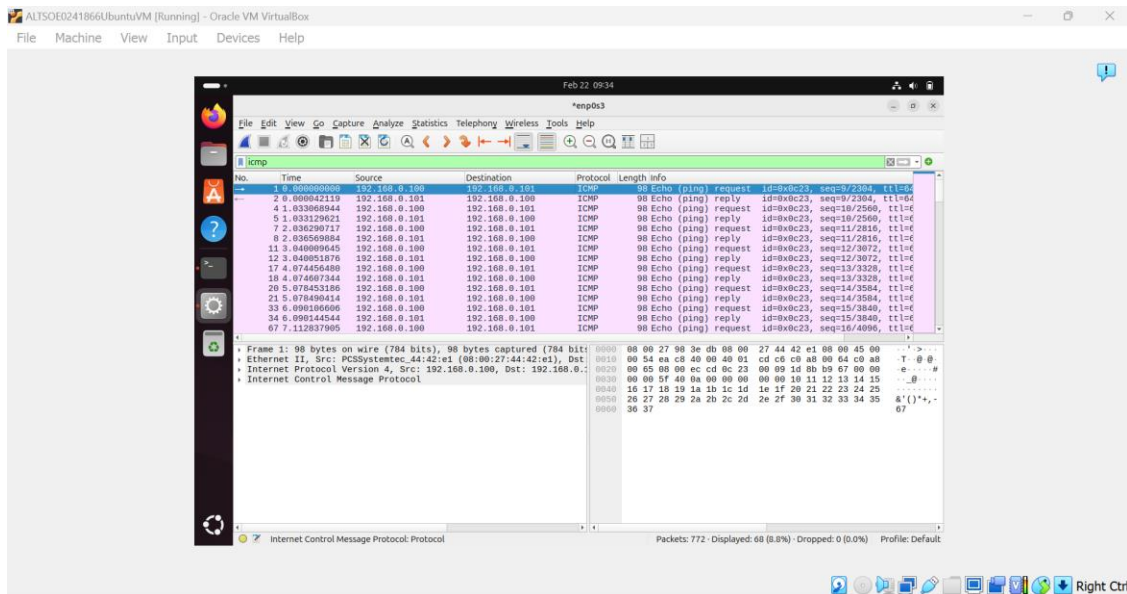


Image 4.3 showing tcp upon ping 192.168.0.101 from Kali Linux VM

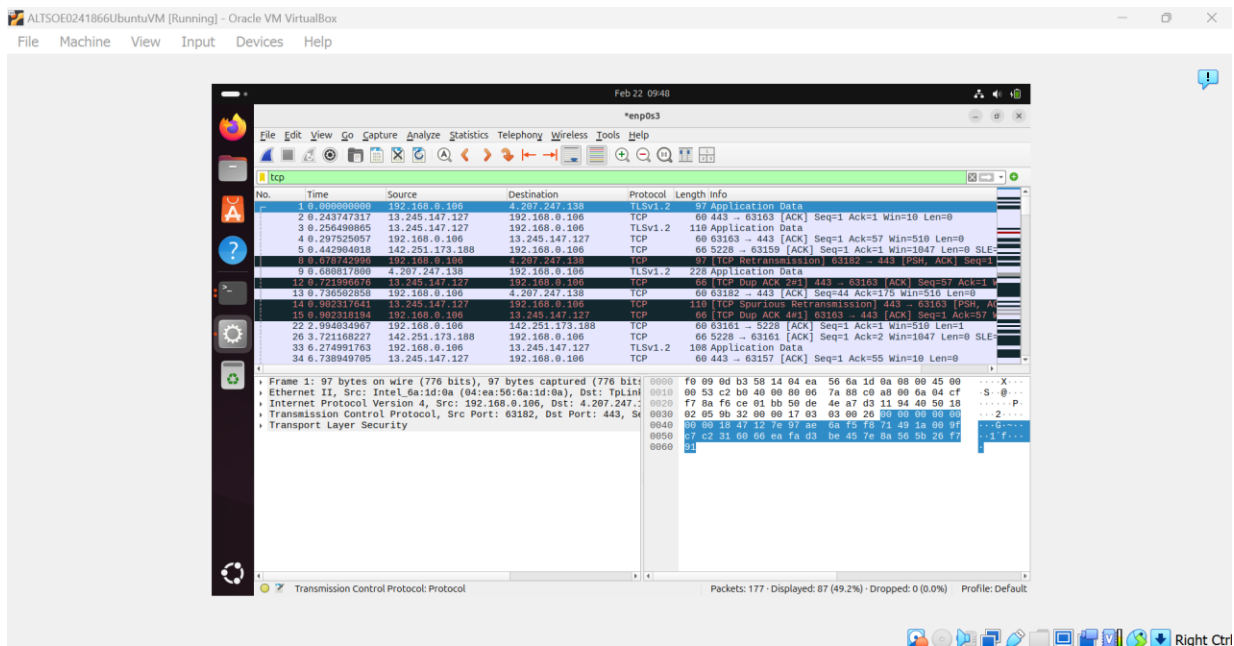


Image 4.4 showing tcp upon ping 192.168.0.100 from Ubuntu VM

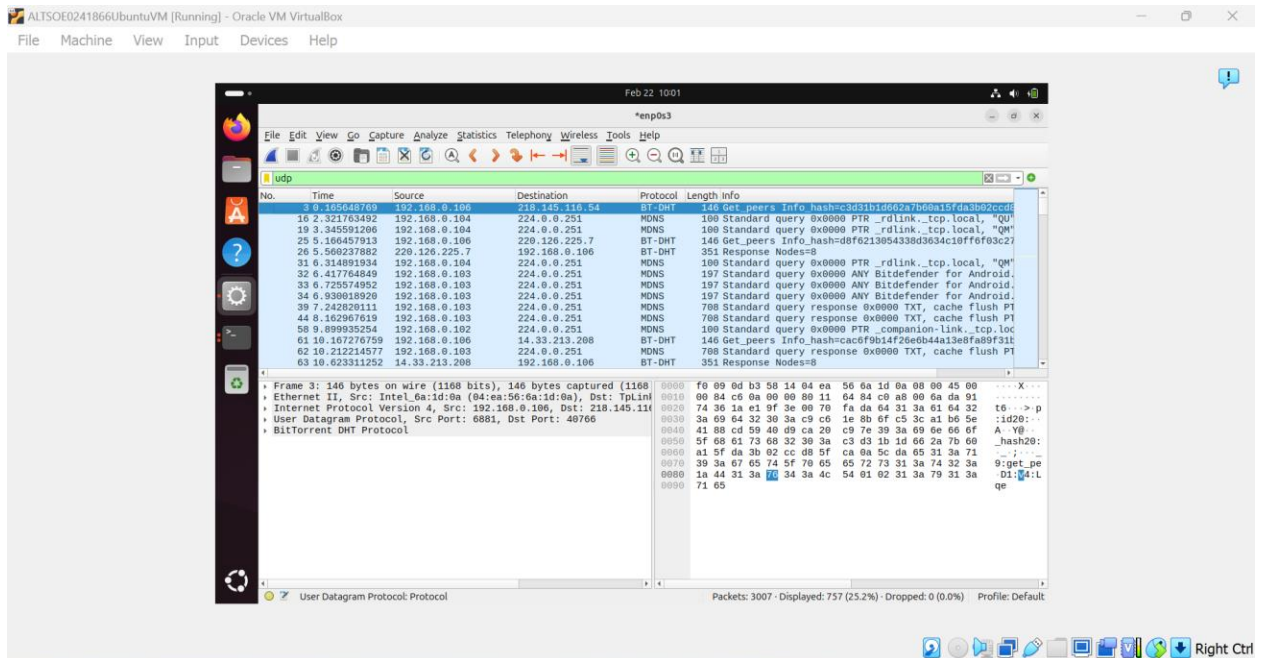


Image 4.4 showing udp upon ping 192.168.0.100 from Ubuntu VM

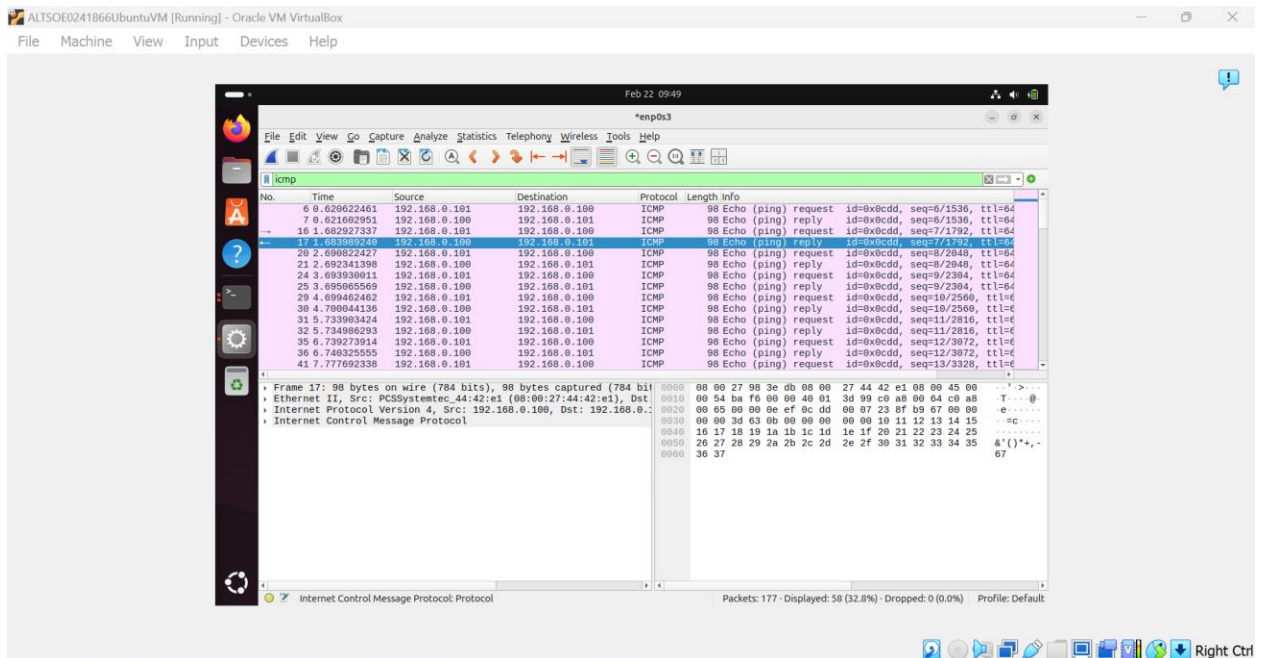


Image 4.4 showing icmp upon ping 192.168.0.100 from Ubuntu VM



**EXPLANATION:** Wireshark was used as an analysis tool to analyze packets sent between two virtual machines and shows that communications protocols used to communicate. In this case, I pinged the IP address '192.168.0.101' for Ubuntu from Kali Linux and pinged the IP address '192.168.0.100' for Kali Linux VM from Ubuntu VM. Then using Wireshark, I was able to analyze the packets and display the communication protocols 'tcp, udp and icmp'.

## TASK 5

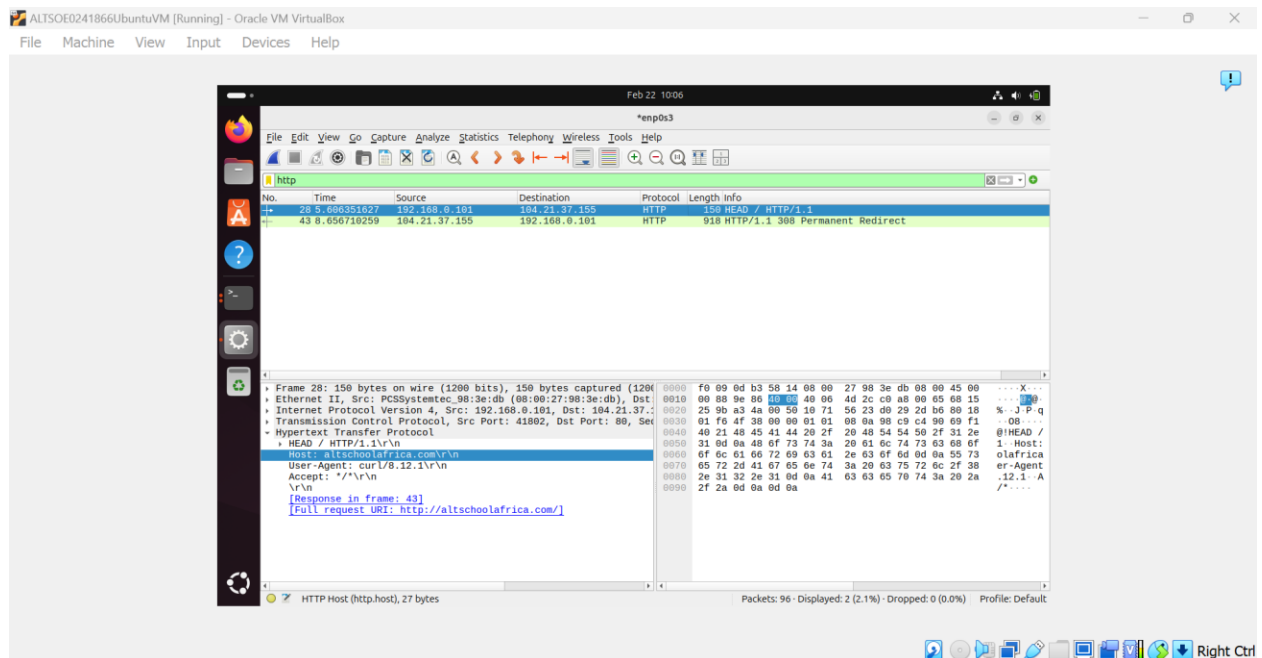


Image 5.1 showing the http packet on Wireshark

**EXPLANATION:** Wireshark was used to capture the http packet for website <http://altschoolafrica.com>. I ran the command `curl -I http://altschoolafrica.com` to get the http header and then launched Wireshark. While Wireshark was running, I ran the command `curl -I http://altschoolafrica.com` again to then capture the http packet and see the communication (request and reply) between the virtual machine and the website.