

COMP372I Assignment3

Q 1

For a target IP address of 14.12.72.8/24, find the following.

1. Target IP address in binary

00001110 00001100 01001000 00001000

2. Subnet mask in Binary

11111111 11111111 11111111 00000000

3. Subnet mask in dotted decimal

255.255.255.0

4. First address (i.e., network address) of the block

$00001110\ 00001100\ 01001000\ 00000000_2 = 14.12.72.0/24$

5. Last address (i.e., broadcast address) of the block

$00001110\ 00001100\ 01001000\ 11111111_2 = 14.12.72.255/24$

6. First host address of the block

14.12.72.1/24

7. Last host address of the block

14.12.72.254/24

8. Number of addresses in the block

$2^{(32-24)} = 2^8 = 256$

9. Maximum number of hosts in the block

254

Q 2

For a target IP address of 200.107.16.17/18, find the following.

1. Target IP address in binary

11001000 01101011 00010000 00010001

2. Subnet mask in binary

11111111 11111111 11000000 00000000

3. Subnet mask in dotted decimal

255.255.192.0

4. First address (i.e., network address) of the block

$11001000\ 01101011\ 00000000\ 00000000_2 = 200.107.0.0/18$

5. Last address (i.e., broadcast address) of the block

$11001000\ 01101011\ 00111111\ 11111111_2 = 200.107.63.255/18$

6. First host address of the block

200.107.0.1/18

7. Last host address of the block

200.107.63.254/18

8. Number of addresses in the block

$$2^{(32-18)} = 2^{14} = 16,384$$

9. Maximum number of hosts in the block

16382

Q3

1. Display all the packets with source address 192.168.100.102.

```
ip.src == 192.168.100.102
```

| ip.src == 192.168.100.102 | | | | | | | |
|---------------------------|----------|-----------------|-----------------|----------|--------|--|--|
| No. | Time | Source | Destination | Protocol | Length | Info | |
| 1 | 0.000000 | 192.168.100.102 | 142.104.193.247 | TCP | 74 | 45979 → 80 [SYN] Seq=0 Win=5840 Len=0 MSS=1460 SACK_PERM | |
| 3 | 0.002444 | 192.168.100.102 | 142.104.193.247 | TCP | 66 | 45979 → 80 [ACK] Seq=1 Ack=1 Win=5888 Len=0 TSval=611216 | |
| 4 | 0.002527 | 192.168.100.102 | 142.104.193.247 | HTTP | | 505 GET / HTTP/1.1 | |
| 6 | 0.067816 | 192.168.100.102 | 142.104.193.247 | TCP | 66 | 45979 → 80 [ACK] Seq=440 Ack=1449 Win=8832 Len=0 TSval=6 | |
| 8 | 0.067876 | 192.168.100.102 | 142.104.193.247 | TCP | 66 | 45979 → 80 [ACK] Seq=440 Ack=1491 Win=8832 Len=0 TSval=6 | |

2. Display all the packets with source address 192.168.100.102 and destination address 142.104.193.247.

```
ip.src == 192.168.100.102 && ip.dst == 142.104.193.247
```

| ip.src == 192.168.100.102 && ip.dst == 142.104.193.247 | | | | | | | |
|--|----------|-----------------|-----------------|----------|--------|--|--|
| No. | Time | Source | Destination | Protocol | Length | Info | |
| 1 | 0.000000 | 192.168.100.102 | 142.104.193.247 | TCP | 74 | 45979 → 80 [SYN] Seq=0 Win=5840 Len=0 MSS=1460 SACK_PERM | |
| 3 | 0.002444 | 192.168.100.102 | 142.104.193.247 | TCP | 66 | 45979 → 80 [ACK] Seq=1 Ack=1 Win=5888 Len=0 TSval=611216 | |
| 4 | 0.002527 | 192.168.100.102 | 142.104.193.247 | HTTP | | 505 GET / HTTP/1.1 | |
| 6 | 0.067816 | 192.168.100.102 | 142.104.193.247 | TCP | 66 | 45979 → 80 [ACK] Seq=440 Ack=1449 Win=8832 Len=0 TSval=6 | |
| 8 | 0.067876 | 192.168.100.102 | 142.104.193.247 | TCP | 66 | 45979 → 80 [ACK] Seq=440 Ack=1491 Win=8832 Len=0 TSval=6 | |

3. Display all the HTTP packets.

http

| http | | | | | | |
|------|----------|-----------------|-----------------|----------|--------|---|
| No. | Time | Source | Destination | Protocol | Length | Info |
| 4 | 0.002527 | 192.168.100.102 | 142.104.193.247 | HTTP | 505 | GET / HTTP/1.1 |
| 47 | 0.094991 | 142.104.193.247 | 192.168.100.102 | HTTP | 1232 | HTTP/1.1 200 OK (text/html) |
| 53 | 0.802932 | 192.168.100.102 | 142.104.193.247 | HTTP | 583 | GET /shared/shared_rootsite/images/logos/favicon.ico HTTP/1.1 |
| 57 | 0.807179 | 142.104.193.247 | 192.168.100.102 | HTTP | 344 | HTTP/1.1 200 OK (image/x-icon) |
| 61 | 0.807483 | 192.168.100.102 | 142.104.193.247 | HTTP | 606 | GET /shared/shared_rootsite/layout-components/css/layout.css HTTP/1.1 |

4. Display all the TCP packets with source address 192.168.100.102.

ip.src == 192.168.100.102 && tcp

| ip.src == 192.168.100.102 && tcp | | | | | | |
|----------------------------------|----------|-----------------|-----------------|----------|--------|--|
| No. | Time | Source | Destination | Protocol | Length | Info |
| 3 | 0.002444 | 192.168.100.102 | 142.104.193.247 | TCP | 66 | 45979 → 80 [ACK] Seq=1 Ack=1 Win=5888 Len=0 TSval=611216 |
| 4 | 0.002527 | 192.168.100.102 | 142.104.193.247 | HTTP | 505 | GET / HTTP/1.1 |
| 6 | 0.067816 | 192.168.100.102 | 142.104.193.247 | TCP | 66 | 45979 → 80 [ACK] Seq=440 Ack=1449 Win=8832 Len=0 TSval=611216 |
| 8 | 0.067876 | 192.168.100.102 | 142.104.193.247 | TCP | 66 | 45979 → 80 [ACK] Seq=440 Ack=1491 Win=8832 Len=0 TSval=611216 |
| 10 | 0.070721 | 192.168.100.102 | 142.104.193.247 | TCP | 66 | 45979 → 80 [ACK] Seq=440 Ack=2939 Win=11648 Len=0 TSval=611216 |

5. Display all ICMP packets.

icmp

| icmp | | | | | | |
|------|------|--------|-------------|----------|--------|------|
| No. | Time | Source | Destination | Protocol | Length | Info |
| | | | | | | |

I didn't find one :(