

COMP3331 Lab7

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1 Exercise 1

1.1 Question 1

Subnet Table:

Subnet	Number	Netmask
Subnet 1	10.1.1.0	255.255.255.0
Subnet 2	10.1.2.0	255.255.255.0
Subnet 3	10.1.0.0	255.255.0.0

Interface Table:

Interface	Ip Address
H1	10.1.1.2
H2	10.1.1.3
H3	10.1.2.2
H4	10.1.2.3
R1a	10.1.1.1
R1b	10.1.0.2
R1c	10.1.2.1
NAT-i	10.1.0.1

1.2 Question 2

Since the IPv6 will use 128-bit of address, it can count more than all the sand on earth. Hence, it's impossible to run out of the address space in foreseeable future. The NAT mechanism is dealing with the address is not enough in IPv4. So if every device can be directly addressed by IPv6 in public network, there's no need to setup an NAT device in subnet.

1.3 Question 3

It's tedious to remember the IPv6 address and difficult to type into address bar without any error.

1.4 Question 4

HTTP as an example:

There's some IP address and port number inside UDP segment. If NAT leave it as what it is, others may not find the correct address because it's belong to subnet and need to translate. In this case, if NAT doesn't do the support, all the application base on this protocol wont work.

2 Exercise 2

2.1 Question 1

192.168.1.100

2.2 Question 2

Source 192.168.1.100:4335

Destination 64.233.169.104:80

2.3 Question 3

At 7.158797

2.4 Question 4

At 7.108986

Source: 192.168.1100:4335

Destination: 64.233.169.104:80

2.5 Question 5

Source: 64.233.169.104:80

Destination: 192.168.1100:4335

At 7.108986

2.6 Question 6

At 6.069168

2.7 Question 7

Source 71.192.34.104:4335

Destination: 64.233.169.104:80

The destination ip and port are same as Question 2.

2.8 Question 8

The response in frame and next request in frame are changed

2.9 Question 9

The checksum is changed, because the checksum includes the source IP and destination, so it will be changed (because source IP is changed).

2.10 Question 10

At 6.117570

2.11 Question 11

Source: 64.233.169.104:80

Destination: 71.192.34.104:4335

The destination port and IP are different.

2.12 Question 12

TCP SYN at 6.035475

The server to client TCP SYN/ACK at 6.067775

2.13 Question 13

Segment Name	Source IP	Destination IP
TCP SYN	71.192.34.104	64.233.169.104
TCP SYN/ACK	64.233.169.104	71.192.34.104

The source of TCP SYN and the destination of TCP SYN/ACK are different. The destination of TCP SYN and Source of TCP SYN/ACK are the same.

2.14 Question 14

Source	Destination
192.168.1.100:4335	71.192.34.104:4335

Maybe there's a line for:

Source	Destination
71.192.34.104:4335	192.168.1.100:4335

2.15 Question 15

Browser will check an online blacklist by URL. So if the URL is in the blacklist, the browser blocks the request.

3 Exercise 3