

Jared Rotolo HW2

Q3) A)	Interface	Address in bit form
a)	2	209.100. <u>0.0</u> \leftarrow Ignore
b)	1	209.100. <u>00000000.00000000</u> \leftarrow Ignore
c)	3	209.100. <u>00010001</u> . <u>0</u> \leftarrow Ignore
d)	4	Otherwise

i) 209.100.00100010. ~~0111~~ 01100101
First 16 match a.

Interface ~~2~~ chosen, only match
2

ii) 209.100.00010001.00000101

First 16 match a

First 24 match c

Interface 3 chosen, longest prefix matching

iii) 209.100.00000000.00000001

First 16 match a

First 30 match b

Interface ~~2~~ chosen, longest prefix matching
1

iv) 209.100.00000000.00010100

First 16 match a

Interface ~~2~~ chosen.
2

v) 209.101. ~~0001~~ 00011011.00001010

First 16 match a

Interface 2 chosen.

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	Interface	Addr Prefix
Q1b)	A	130.207
	B	130.207.1101
	C	130.207.1101001
	D	Otherwise

i) 130.207.11010400

Matches A

Matches B

Interface B due to longest prefix matching

ii) 130.207.11110000

Matches A

Interface A is chosen

iii) This would not be necessary as the packets sent would still take priority going to Interface A and B already

130.207.11011000 does not match any longer / different ~~prefix~~ packet.

If we were expecting a packet to match this, it would be useful.

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Q21 a) Org A is 68.35.0.0 to 68.35.0.31
Org B is 68.35.0.32 to 68.35.1.255
Org C is 68.35.2.0 to 68.35.63.255
as B cannot take addresses from A and
C cannot take addresses from A and B

↳ 68.35.1.0 belongs to B as it is between
68.35.0.32 to 68.35.1.255 which is range
of Org B

↳ 68.35.0.1 belongs to A as it is between
68.35.0.0 to 68.35.0.31 which is range
of Org A

↳ 68.35.255.4 belongs to none as it
is too big

↳ 68.35.32.5 ^{belongs} ~~belongs~~ to C as it is between
68.35.2.0 to 68.35.63.255 which is range of
Org C

↳ 68.35.17.17 belongs to C as it is between
68.35.2.0 to 68.35.63.255 which is range of
Org C

b)

Organization	Address	Interface
A	68.35.0.0	X
B	68.35.0.32	Y
C	68.35.2.0	Z

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Q3

NAT table

VAN LAN

192.168.0.1 75.25.30.30

~~23567~~ 5000

23567

i) 192.168.0.1 → 75.25.30.30

Source IP ↑

Destination IP ↑

23567 ↙

5000 ↙

Source Port ↓

Destination Port ↓

ii) ~~Source IP~~

75.25.30.30 → 130.208.8.101

Source IP ↑

Destination IP ↑

5000 ↙

234 ↙

Source Port ↓

Destination Port ↓

iii) 130.208.8.101 → 75.25.30.30 ↙

Source IP ↑

Destination IP ↑

234 ↙

5000 ↙

Source Port ↓

Destination Port ↓

iv) 75.25.30.30 → 192.168.0.1 ↙

Source IP ↑

Destination IP ↑

5000 ↙

23567 ↙

Source Port ↓

Destination Port ↓