

2017-2-60-096

Ruashed Md. Banket - Ekhuda

(1)

1

here IP: 75.156.223.185 | class A

	75	00000000	00000000	00000000
subnet mask	11111111	11111111	00000000	00000000
3rd subnet	0000011	11111111	11111111	
				(Broadcast)
6th subnet	0000110	00000000	00000001	(1st host)
6th subnet	0000110	11111111	11111110	(Last host)

(a) subnet mask: 255.254.0.0 /15 (CIDR)

(b) Broadcast address of 3rd subnet: 75.7.255.255

(c) 1st host of 6th subnet: 75.12.0.1

Last host of 6th subnet: 75.13.255.254

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(2)

2

here IP: 142.240.232.73/26 | class B

~~2~~

<u>142</u>	<u>240</u>	<u>00000000</u>	<u>00000000</u>
1st subnet		00000000	01 000000
Last subnet		11111111	10 000000
7th subnet		00000001	11 111110 (last host)

(a) number of usable subnets possible within the

network:  $2^{10} - 2 = 1022$

(b) 1st subnet: 142.240.0.64

Last subnet: 142.240.255.128

(c) Last host IP of the 7th subnet: 142.240.1.254



4

hence,

$$JA = 10 \text{ msec}$$

$$JI = 19 \text{ msec}$$

$$JH = 16 \text{ msec}$$

$$JK = 18 \text{ msec}$$

$$JN = 12 \text{ msec}$$

$$JM = JA + AM = 10 + 14 = 24 \text{ msec}$$

$$JM = JI + IM = 19 + 6 = 25 \text{ msec}$$

$$JM = JH + HM = 16 + 21 = 37 \text{ msec}$$

$$JM = JK + KM = 18 + 6 = 24 \text{ msec}$$

$$JM = JN + NM = 12 + 12 = 24 \text{ msec}$$

hence the lowest path value is 24 msec.

So J can reach M through

$$J \rightarrow A \rightarrow M$$

$$\text{or } J \rightarrow K \rightarrow M$$

$$\text{or } J \rightarrow N \rightarrow M$$

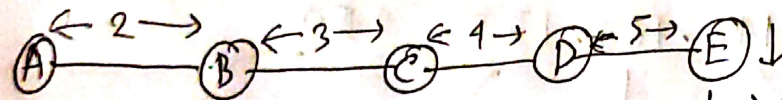
by using any of the path.

3/

3/

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(4)



14 12 9 5

14 12 9

14 12

14

20 + 2 = 22

22

28 + 2 = 30

30

12 + 2 = 14

20

28

9 + 3 = 12

12

21 + 4 = 25

25

5 + 4 = 9

9

9

5

13

21

5

5

5

5

initially

(bad news) down  
1st exchange

2nd exchange

3rd exchange

4th exchange

5th exchange  
up (good news)

6th exchange

7th exchange

8th exchange



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(5)

5 |

here, destination Address

142.163.135.250

→ (host IP)  
(destination)

10001110

10100011

10000111

11111011

10001110

10100011

11001000

00010110

main router  
address

~~142~~  
under  
operation

10001110

142

10100011

163

10000000

128

00010010

18

so the subnet IP: 142.163.128.18 | class B

And

142

163

subnet  
00000000

00000000

$$\text{so } 2^6 - 2 = 64 - 2$$

= 62 subnets are possible.