

NAMA : FEBIANNE DIVA PRINITA

NIM : 1204200203

KELAS : IS 03-03

1. Ubahlah bilangan biner dibawah ini menjadi bilangan desimal sehingga diketahui IP Address-nya

a. 11111011.00001001.01010101.00001111= 251.9.85.15

8	7	6	5	4	3	2	1
1	1	1	1	1	0	1	1
128	64	32	16	8	0	2	1

$$128+64+32+16+8+2+1= 251$$

8	7	6	5	4	3	2	1
0	0	0	0	1	0	0	1
0	0	0	0	8	0	0	1

$$8+1=9$$

8	7	6	5	4	3	2	1
0	1	0	1	0	1	0	1
0	64	0	16	0	4	0	1

$$64+16+4+1=85$$

8	7	6	5	4	3	2	1
0	0	0	0	1	1	1	1
0	0	0	0	8	4	2	1

$$8+4+2+1=15$$

b. 00011011.11001100.11011011.01010101= 27.204.219.85

8	7	6	5	4	3	2	1
0	0	0	1	1	0	1	1
0	0	0	16	8	0	2	1

$$16+8+2+1=27$$

8	7	6	5	4	3	2	1
1	1	0	0	1	1	0	0
128	64	0	0	8	4	0	0

$$128+64+8+4=204$$

8	7	6	5	4	3	2	1
1	1	0	1	1	0	1	1
128	64	0	16	8	0	2	1

$$128+64+16+8+2+1=219$$

8	7	6	5	4	3	2	1
0	1	0	1	0	1	0	1
0	64	0	16	0	4	0	1

$$64+16+4+1=85$$

c. 11000011.00100100.01111010.11011100=195.36.122.220

8	7	6	5	4	3	2	1
1	1	0	0	0	0	1	1
128	64	0	0	0	0	2	1

$$128+64+2+1=195$$

8	7	6	5	4	3	2	1
0	0	1	0	0	1	0	0
0	0	32	0	0	4	0	0

$$32+4=36$$

8	7	6	5	4	3	2	1
0	1	1	1	1	0	1	0
0	64	32	16	8	0	2	0

$$64+32+16+8+2=122$$

8	7	6	5	4	3	2	1
1	1	0	1	1	1	0	0
128	64	0	16	8	4	0	0

$$128+64+16+8+4=220$$

d. 00000011.01010111.11100111.00100100 = 3.87.321.36

8	7	6	5	4	3	2	1
0	0	0	0	0	0	1	1
0	0	0	0	0	0	2	1

$$2+1=3$$

8	7	6	5	4	3	2	1
0	1	0	1	0	1	1	1
0	64	0	16	0	4	2	1

$$64+16+4+2+1=87$$

8	7	6	5	4	3	2	1
1	1	1	0	0	1	1	1
128	64	32	0	0	4	2	1

$$128+64+32+4+2+1=231$$

8	7	6	5	4	3	2	1
0	0	1	0	0	1	0	0
0	0	32	0	0	4	0	0

$$32+4=36$$

e. 11011110.00010000.00100100.11111100=222.16.36.252

8	7	6	5	4	3	2	1
1	1	0	1	1	1	1	0
128	64	0	16	8	4	2	0

$$128+64+16+8+4+2=222$$

8	7	6	5	4	3	2	1
0	0	0	1	0	0	0	0
0	0	0	16	0	0	0	0

$$16=16$$

8	7	6	5	4	3	2	1
0	0	1	0	0	1	0	0
0	0	32	0	0	4	0	0

$$32+4=36$$

8	7	6	5	4	3	2	1
1	1	1	1	1	1	0	0
128	64	32	16	8	4	0	0

$$128+64+32+16+8+4=252$$

2. Ubahlah IP Address dari desimal menjadi biner

a. 192.180.122.1 = 11000000.10110100. 01111010. 00000001

192	96	48	24	12	6	3	1
0	0	0	0	0	0	0	1

$$11000000$$

180	90	45	22	11	5	2	1
1	0	1	1	0	1	0	0

$$10110100$$

122	61	30	15	7	3	1	1
0	1	1	1	1	0	1	0

$$01111010$$

							1
0	0	0	0	0	0	0	1

$$00000001$$

b. 201.10.109.1 = 11001001. 00001010. 01101101. 00000001

201	100	50	25	12	6	3	1
1	1	0	0	1	0	0	1

$$11001001$$

					10	5	2
0	0	0	0	1	0	1	0

00001010

109	54	27	13	6	3	2	1
0	1	1	0	1	1	0	1

01101101

							1
0	0	0	0	0	0	0	1

00000001

c. 10.10.10.1 = 00001010.00001010.00001010. 00000001

				10	5	2	1
0	0	0	0	0	1	0	1

00001010

				10	5	2	1
0	0	0	0	0	1	0	1

00001010

				10	5	2	1
0	0	0	0	0	1	0	1

00001010

128	64	32	16	8	4	2	1
0	0	0	0	0	0	0	1

00000001

d. 212.212.212.1 = 11010100. 11010100. 11010100. 00000001

212	106	53	26	13	6	3	1
0	0	1	0	1	0	1	1

11010100

212	106	53	26	13	6	3	1
0	0	1	0	1	0	1	1

11010100

212	106	53	26	13	6	3	1
0	0	1	0	1	0	1	1

11010100

							1
0	0	0	0	0	0	0	1

00000001

e. 96.90.9.9= 01100000.01011010.00001001.00001001

	96	48	24	12	6	3	1
0	1	1	0	0	0	0	0

01100000

	90	45	22	11	5	2	1
0	1	0	1	1	0	1	0

01011010

				9	4	2	1
0	0	0	0	1	0	0	1

00001001

				9	4	2	1
0	0	0	0	1	0	0	1

00001001

3. Tentukan Jenis IP Kelas dari soal nomor 1a s.d 1e serta 2a s.d 2e

Nomor 1

- a. 251.9.85.15 = KELAS E
- b. 27.204.219.85 = KELAS A
- c. 195.36.122.220 = KELAS C
- d. 3.87.321.36 = KELAS A
- e. 222.16.36.252 = KELAS C

Nomor 2

- a. 192.180.122.1 = KELAS C
- b. 201.10.109.1 = KELAS C
- c. 10.10.10.1 = KELAS A
- d. 212.212.212.1 = KELAS C
- e. 96.90.9.9 = KELAS A

4. Tentukan 2 network awal dan 1 network terakhir dari soal berikut ini:

- a. 202.31.20.0/26

11111111.11111111.11111111.11000000 = 255.255.255.192

Jumlah Subnet : $2^2 = 4$

Jumlah Host Per-Subnet : $256 - 192 = 64 / 26 = 64$

Subnet 1 :

Range Host : 202.31.20.0 – 202.31.20.63

Network ID : 202.31.20.0

Host Valid / Range IP : 202.31.20.1 – 202.31.20.62

Broadcast ID : 202.31.20.63

Subnet 2 :

Range Host : 202.31.20.64 – 202.31.20.127

Network ID : 202.31.20.64

Host Valid / Range IP : 202.31.20.65 – 202.31.20.126

Broadcast ID : 202.31.20.127

Subnet Terakhir :

Range Host : 202.31.20.192 – 202.31.20.255

Network ID : 202.31.20.192

Host Valid / Range IP : 202.31.20.193 – 202.31.20.254

Broadcast ID : 202.31.20.255

b. 102.202.103.0 /28

11111111.11111111.11111111.11110000 = 255.255.255.240

Jumlah Subnet = $2^4 = 16$

Jumlah Host Per-Subnet : $2^8 - 240 = 16 / 24 = 16$

Subnet 1 :

Range Host : 102.202.103.0 – 102.202.103.15

Network ID : 102.202.103.0

Host Valid / Range IP : 102.202.103.1 – 102.202.103.14

Broadcast ID : 102.202.103.15

Subnet 2 :

Range Host : 102.202.103.16 – 102.202.103.31

Network ID : 102.202.103.16

Host Valid / Range IP : 102.202.103.17 – 102.202.103.30

Broadcast ID : 102.202.103.31

Subnet Terakhir :

Range Host : 102.202.103.240 – 102.202.103.255

Network ID : 102.202.103.240

Host Valid / Range IP : 102.202.103.241 – 102.202.103.254

Broadcast ID : 102.202.103.255

c. 189.129.32.0 /27

11111111.11111111.11111111.11100000 = 255.255.255.224

Jumlah Subnet : $2^3 = 8$

Jumlah Host Per-Subnet : $256 - 224 = 32 / 25 = 32$

Subnet 1 :

Range Host : 189.129.32.0 – 189.129.32.31

Network ID : 189.129.32.0

Host Valid / Range IP : 189.129.32.1 – 189.129.32.30

Broadcast ID : 189.129.32.31

Subnet 2 :

Range Host : 189.129.32.32 – 189.129.32.63

Network ID : 189.129.32.32

Host Valid / Range IP : 189.129.32.33 – 189.129.32.62

Broadcast ID : 189.129.32.63

Subnet Terakhir :

Range Host : 189.129.32.224 – 189.129.32.255

Network ID : 189.129.32.224

Host Valid / Range IP : 189.129.32.225 – 189.129.32.254

Broadcast ID : 189.129.32.255