

(۱)

$$n = 4$$

$$\log_2 4 = 2$$

1111111.11111111.11111111.110000

255.255.255.192

192.168.1.0/26

$$8 - 2 = 6$$

$$2^6 = 64$$

- 192.168.1.0 to 192.168.1.63

- 192.168.1.64 to 192.168.1.127

- 192.168.1.128 to 192.168.1.191

- 192.168.1.192 to 192.168.1.255

Removing Broadcast & Host

- 192.168.1.1 to 192.168.1.62

- 192.168.1.65 to 192.168.1.126

- 192.168.1.129 to 192.168.1.190

- 192.168.1.193 to 192.168.1.254

(۲)

$$n = 16$$

$$\log_2 16 = 4$$

11111111.11111111.11110000.00000000

255.255.240.0

172.16.0.0/20

$$16 - 4 = 12$$

$$2^{12} = 4096$$

- 172.16.0.0 to 172.16.15.255

- 172.16.16.0 to 172.16.31.255

- 172.16.32.0 to 172.16.47.255

- 172.16.48.0 to 172.16.63.255

- 172.16.64.0 to 172.16.79.255

- 172.16.80.0 to 172.16.95.255

Removing Broadcast & Host

- 172.16.0.1 to 172.16.15.254
- 172.16.16.1 to 172.16.31.254
- 172.16.32.1 to 172.16.47.254
- 172.16.48.1 to 172.16.63.254
- 172.16.64.1 to 172.16.79.254
- 172.16.80.1 to 172.16.95.254

(۳)

$$n = 64$$

$$\log_2 64 = 6$$

11111111.11111100.00000000.00000000

255.252.0.0

10.0.0/14

$$24 - 6 = 18$$

$$2^{18} = 262,144$$

- 10.0.0.0 to 10.3.255.255

- 10.4.0.0 to 10.7.255.255

- 10.8.0.0 to 10.11.255.255

- 10.12.0.0 to 10.15.255.255

- 10.16.0.0 to 10.19.255.255

Removing Broadcast & Host

- 10.0.0.1 to 10.3.255.254

- 10.4.0.1 to 10.7.255.254

- 10.8.0.1 to 10.11.255.254

- 10.12.0.1 to 10.15.255.254

- 10.16.0.1 to 10.19.255.254

(۴)

$$n = 8$$

$$\log_2 8 = 3$$

11111111.11111111.11111111.11100000

255.255.255.0

192.168.10.0/27

$$8 - 3 = 5$$

$$2^5 = 32$$

- 192.168.10.0 to 192.168.10.31

- 192.168.10.32 to 192.168.10.63

- 192.168.10.64 to 192.168.10.95

- 192.168.10.96 to 192.168.10.127

Removing Broadcast & Host

- 192.168.10.1 to 192.168.10.30

- 192.168.10.33 to 192.168.10.62

- 192.168.10.65 to 192.168.10.94

- 192.168.10.97 to 192.168.10.126

(5)

$$n = 128$$

$$\log_2 128 = 7$$

11111111.11111111.11111110.00000000

255.255.254.0

172.31.0.0/23

$$16 - 7 = 9$$

$$2^9 = 512$$

- 172.31.0.0 to 172.31.1.255

- 172.31.2.0 to 172.31.3.255

- 172.31.4.0 to 172.31.5.255

- 172.31.6.0 to 172.31.7.255

Removing Broadcast & Host

- 172.31.0.1 to 172.31.1.254

- 172.31.2.1 to 172.31.3.254

- 172.31.4.1 to 172.31.5.254

- 172.31.6.1 to 172.31.7.254

(6)

$$n = 1000$$

$$\log_2 1000 \approx 10$$

11111111.11111111.11111111.11000000

255.255.255.192

10.10.0.0/26

$$16 - 10 = 6$$

$$2^6 = 64$$

- 10.10.0.0 to 10.10.0.63
- 10.10.0.64 to 10.10.0.127
- 10.10.0.128 to 10.10.0.191
- 10.10.0.192 to 10.10.0.255

Removing Broadcast & Host

- 10.10.0.1 to 10.10.0.62
- 10.10.0.65 to 10.10.0.126
- 10.10.0.129 to 10.10.0.190
- 10.10.0.193 to 10.10.0.254

(Y

$$n = 1024$$

$$\log_2 1024 = 10$$

11111111.11111111.11111111.11000000

255.255.255.192

192.168.0.0/26

$$16 - 10 = 6$$

$$2^6 = 64$$

- 192.168.0.0 to 192.168.0.63
- 192.168.0.64 to 192.168.0.127
- 192.168.0.128 to 192.168.0.191
- 192.168.0.192 to 192.168.0.255

Removing Broadcast & Host

- 192.168.0.1 to 192.168.0.62
- 192.168.0.65 to 192.168.0.126
- 192.168.0.129 to 192.168.0.190
- 192.168.0.193 to 192.168.0.254