

هادی حقاری
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192.168.1.0/24, n=4

$$2^n = 4 \Rightarrow n = 2$$

1111111, 11111111, 11111111, 110000000

192.168.1.0/26

255.255.255.192

تعداد IP های قابل استفاده: $2^n - 2 \Rightarrow 2^6 - 2 = 62$

192.168.1.0 - 192.168.1.63

192.168.1.64 - 192.168.1.127

192.168.1.128 - 192.168.1.191

192.168.1.192 - 192.168.1.255

172.16.0.0/16, n=16

$$2^n = 16 \Rightarrow n = 4$$

11111111, 11111111, 11110000, 0000000000

255.255.240.0

172.16.0.0/20

$$2^n - 2 \Rightarrow 2^4 - 2 = 16 - 2 = 14$$

172.16.0.0 - 172.16.15.255

172.16.16.0 - 172.16.31.255

172.16.32.0 - 172.16.47.255

172.16.48.0 - 172.16.63.255

172.16.64.0 - 172.16.79.255

10.0.0.0/8, n = 64

$$2^n = 64 \Rightarrow n = 6$$

11111111, 11111100, 00000000, 00000000

10.0.0.0/14

255.252.0.0

$$2^2 - 2 = 2$$

10.0.0.0 - 10.3.255.255

10.4.0.0 - 10.7.255.255

10.8.0.0 - 10.11.255.255

10.12.0.0 - 10.15.255.255

10.16.0.0 - 10.19.255.255

192.168.10.0/24, n = 8

$$2^n = 8 \Rightarrow n = 3$$

11111111, 11111111, 11111111, 11100000

192.168.10.0/27

255.255.255.224

$$2^5 - 2 = 30$$

192.168.10.0 - 192.168.10.31

192.168.10.32 - 192.168.10.63

192.168.10.64 - 192.168.10.95

192.168.10.96 - 192.168.10.127

192.168.10.128 - 192.168.10.159

$$172.31.0.0/16, n=128$$

$$2^n = 128 \Rightarrow n = 7$$

1111111.1111111.11111110.0000000000

255.255.254.0

172.31.0.0/23

$$2^n - 2 \Rightarrow 2^1 - 2 = 0$$

172.31.0.0 - 172.31.1.255

172.31.2.0 - 172.31.3.255

172.31.4.0 - 172.31.5.255

172.31.6.0 - 172.31.7.255

172.31.8.0 - 172.31.9.255

$$10.10.0.0/16, n=1000$$

$$2^n = 1024 \Rightarrow n = 10$$

1111111.1111111.1111111.1100000000

255.255.255.192

10.10.0.0/26

$$2^6 \Rightarrow 64 - 2 = 62$$

10.10.0.0 - 10.10.0.63

10.10.0.64 - 10.10.0.127

10.10.0.128 - 10.10.0.191

10.10.0.192 - 10.10.0.255

10.10.1.0 - 10.10.1.63

192.168.0.0 / 16, n = 1024

$$2^n = 1024 \Rightarrow n = 10$$

1111111.1111111.1111111.1100000000

255.255.255.192

192.168.0.0 / 26

$$2^6 \Rightarrow 64 - 2 = 62$$

192.168.0.0 - 192.168.0.63

192.168.0.64 - 192.168.0.127

192.168.0.128 - 192.168.0.191

192.168.0.192 - 192.168.0.255

192.168.1.0 - 192.168.1.63