

Subject.

Date.

192.168.1.0/24  $n=4 \Rightarrow$  ||||| . ||||| . ||||| . 00000000

$\hookrightarrow 2^{24} = 4 \rightarrow n=2 \Rightarrow \underbrace{255.255.255}_{b/24} . \underbrace{192}_{b/6} \Rightarrow 192.168.1.0/26$

$2^{16} = 64 \Rightarrow 192.168.1.0 \rightarrow 192.168.1.63$

$192.168.1.64 \rightarrow 192.168.1.127$

$192.168.1.128 \rightarrow 192.168.1.191$

$192.168.1.192 \rightarrow 192.168.1.255$

172.16.0.0/16  $n=16 \Rightarrow 255.255.0.0 \Rightarrow 2^{16} = 16 \rightarrow n=4 \Rightarrow \underbrace{255.255}_{20} . \underbrace{240.0}_{12} / 20$

$2^{12} = 4096 \Rightarrow 172.16.0.0 \rightarrow 172.16.15.255$

$172.16.16.0 \rightarrow 172.16.31.255$

$172.16.32.0 \rightarrow 172.16.63.255$

$172.16.64.0 \rightarrow 172.16.95.255$

$172.16.96.0 \rightarrow 172.16.127.255$

10.0.0.0/8  $n=64 \Rightarrow 255.0.0.0 \Rightarrow 2^{64} = 64 \rightarrow n=6 \Rightarrow \underbrace{255.252}_{14} . \underbrace{0.0}_{18} / 14$

$2^{18} = 262144 \Rightarrow 10.0.0.0 \rightarrow 10.3.255.255$

$10.4.0.0 \rightarrow 10.7.255.255$

$10.8.0.0 \rightarrow 10.11.255.255$

$10.12.0.0 \rightarrow 10.15.255.255$

$10.16.0.0 \rightarrow 10.19.255.255$

192.168.10.0/24  $n=8 \Rightarrow 255.255.255.0 \Rightarrow 2^{24} = 8 \rightarrow n=3 \Rightarrow \underbrace{255.255.255}_{27} . \underbrace{224}_{5} / 27$

$2^{25} = 32 \Rightarrow 192.168.10.0 \rightarrow 192.168.10.31$

$192.168.10.32 \rightarrow 192.168.10.63$

$192.168.10.64 \rightarrow 192.168.10.95$

$192.168.10.96 \rightarrow 192.168.10.127$

$192.168.10.128 \rightarrow 192.168.10.159$

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$$172.31.0.0/16 \quad n=128 \Rightarrow 255.255.0.0 \xrightarrow{2^{128}} 2 = 128 \rightarrow n=7 \Rightarrow \underbrace{255.255.254.0}_{23} / \underbrace{23}_9$$

$$\begin{aligned} 2^{19} = 512 \Rightarrow 172.31.0.0 &\rightarrow 172.31.1.255 \\ 172.31.2.0 &\rightarrow 172.31.3.255 \\ 172.31.4.0 &\rightarrow 172.31.5.255 \\ 172.31.6.0 &\rightarrow 172.31.7.255 \\ 172.31.8.0 &\rightarrow 172.31.9.255 \end{aligned}$$

$$10.10.0.0/16 \quad n=1000 \Rightarrow 255.255.0.0 \xrightarrow{2^{1000}} 2 = 1000 \rightarrow n=10 \Rightarrow \underbrace{255.255.255.192}_{26} / \underbrace{6}_6$$

$$\begin{aligned} 2^{16} = 64 \Rightarrow 10.10.0.0 &\rightarrow 10.10.0.63 \\ 10.10.0.64 &\rightarrow 10.10.0.127 \\ 10.10.0.128 &\rightarrow 10.10.0.191 \\ 10.10.0.192 &\rightarrow 10.10.0.255 \\ 10.10.1.0 &\rightarrow 10.10.1.63 \end{aligned}$$

$$192.168.0.0/16 \quad n=1024 \Rightarrow 255.255.0.0 \xrightarrow{2^{1024}} 2 = 1024 \rightarrow n=10 \Rightarrow \underbrace{255.255.255.192}_{26} / \underbrace{6}_6$$

$$\begin{aligned} 2^{16} = 64 \Rightarrow 192.168.0.0 &\rightarrow 192.168.0.63 \\ 192.168.0.64 &\rightarrow 192.168.0.127 \\ 192.168.0.128 &\rightarrow 192.168.0.191 \\ 192.168.0.192 &\rightarrow 192.168.0.255 \\ 192.168.1.0 &\rightarrow 192.168.1.63 \end{aligned}$$