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DCCN Assignment #2

IP Address : 120.0.0.0/20

120 . 00000000 . 00000000 . 00000000

120 . 11111111 . 1111¹⁶0000⁸0000⁴0000² . 00000000

$$\begin{aligned}\text{No. of Networks} &= 2^n \\ &= 2^{12} \\ &= 4096\end{aligned}$$

$$\begin{aligned}\therefore n &= 20 - 8 \\ &= 12\end{aligned}$$

$$\begin{aligned}\text{No. of IPs} &= 2^n - 2 \\ &= 2^{12} - 2 \\ &= 4096 - 2 \\ &= 4094 \text{ IP Addresses}\end{aligned}$$

Network 1

NID = 120.0.0.0

First IP = 120.0.0.1

Last IP = 120.0.15.254

BID = 120.0.15.255

Network 2

$$\text{NID} = 120.0.16.0$$

$$\text{First IP} = 120.0.16.1$$

$$\text{Last IP} = 120.0.31.254$$

$$\text{BID} = 120.0.31.255$$

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Last Network

$$\text{NID} = 120.255.240.0$$

$$\text{First IP} = 120.255.240.1$$

$$\text{Last IP} = 120.255.255.254$$

$$\text{BID} = 120.255.255.255$$