

Binary Table

The ip address is represented in binary format for the devices, but for humans to be readable we always wanted to represent them in decimal form. For this we need to convert the binary bits of ip address into decimal representation and viceversa

To find the decimal equivalent of a binary number we need to multiply the bit value with $2^{\text{bit position}}$ and sum all the values to get the decimal equivalent.

$$\begin{array}{r} 1 \qquad 0 \qquad 1 \\ * \qquad * \qquad * \\ 2^2 + 2^1 + 2^0 \\ \hline 4 + 0 + 1 = 5 \end{array}$$

Instead of calculating in the above way, we can take an binary table to quickly compute the decimal equivalent of a binary number as below

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

$128 + 32 + 16 + 2 = 178$