

Subnetting

Divide 10.0.0.0/16 to 10.0.0.0/19

10.0.0.0/16 it means that the first two 8bits are reserved for network and remaining bits are for host.

10.0.00000000.00000000/17 it means that the first two 8bits and the 17 bit are reserved for network and the remaining bits for host.

Similarly 10.0.00000000.00000000/18 it means that the first two 8bits and the 17,18bit are reserved for network and the remaining bits for host.

To calculate the no.of subnets for host for 17bit we can do it by $2^{17}=131072 / 2$

the 17 bit can be either 0,1

To calculate the no.of subnets for host for 18bit we can do it by $2^{18}= 262144 / 4$

The 17 and 18 bit can be combination of 00,01,10,11

To calculate the no.of subnets for host for 19bit we can do it by $2^{19}=524288 / 8 = 65535$

The 17,18 and 19 bit can be combination of

000

001

010

011

100

101

110

111

The ip of 10.0.0.0/19 is - 00000000

10.0.00000000.00000000 (minimum) [10.0.0.0]

10.0.00000000.00000001 [10.0.0.1]

10.0.00000000.00000010 [10.0.0.2]

10.0.00000000.00000011 [10.0.0.3]

...

..

10.0.00011111.11111111 (maximum) [10.0.31.255]

The ip of 10.0.0.0/19 is – 00100000

10.0.00100000.00000000 (minimum) [10.0.32.0]

10.0.00100000.00000001 [10.0.32.1]

10.0.00100000.00000010 [10.0.32.2]

10.0.00100000.00000011 [10.0.32.3]

...

...

...

10.0.001111.11111111 (maximum) [10.0.63.255]

The ip of 10.0.0.0/19 is – 01000000

10.0.01000000.00000000 (minimum) [10.0.64.0]

10.0.01000000.00000001 [10.0.64.1]

10.0.01000000.00000010 [10.0.64.2]

10.0.01000000.00000011 [10.0.64.3]

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10.0.01011111.11111111 (maximum) [10.0.95.255]

The ip of 10.0.0.0/19 is – 01100000

10.0.01100000.00000000 (minimum) [10.0.96.0]

10.0.01100000.00000001 [10.0.96.1]

10.0.01100000.00000010 [10.0.96.2]

10.0.01100000.00000011 [10.0.96.3]

...

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...

10.0.01111111.11111111 (maximum) [10.0.127.255]

The ip of 10.0.0.0/19 is – 10000000

10.0.10000000.00000000 (minimum) [10.0.128.0]

10.0.10000000.00000001 [10.0.128.1]

10.0.10000000.00000010 [10.0.128.2]

10.0.10000000.00000011 [10.0.128.3]

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10.0.10011111.11111111 (maximum) [10.0.159.255]

The ip of 10.0.0.0/19 is – 10100000

10.0.10100000.00000000 (minimum) [10.0.160.0]

10.0.10100000.00000001 [10.0.160.1]

10.0.10100000.00000010 [10.0.160.2]

10.0.10100000.00000011 [10.0.160.3]

...

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...

10.0.10111111.11111111 (maximum) [10.0.191.255]

The ip of 10.0.0.0/19 is – 11000000

10.0.11000000.00000000 (minimum) [10.0.192.0]

10.0.11000000.00000001 [10.0.192.1]

10.0.11000000.00000010 [10.0.192.2]

10.0.11000000.00000011 [10.0.192.3]

...

...

...

10.0.11011111.11111111 (maximum) [10.0.223.255]

The ip of 10.0.0.0/19 is - 11100000

10.0.11100000.00000000 (minimum) [10.0.224.0]

10.0.11100000.00000001 [10.0.224.1]

10.0.11100000.00000010 [10.0.224.2]

10.0.11100000.00000011 [10.0.224.3]

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10.0.11111111.11111111 (maximum) [10.0.255.255]

