**Scenario!** we use 72 pc in our network

Default subnet mask for **class C** **255.255.255.0 /24**

**Default Portion of class c**

NNNNNNNN.NNNNNNNN.NNNNNNNN.HHHHHHHH

After apply subneting

NNNNNNNN.NNNNNNNN.NNNNNNNN.NHHHHHHH

(Borrow bit for network)

28 = 256 Available hosts in Class C

**Bits scheme**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **power of 2** | **27** | **26** | **25** | **24** | **23** | **22** | **21** | **20** |
| **decimal** | **128** | **64** | **32** | **16** | **8** | **4** | **2** | **1** |
| **bit position** | **eight** | **seven** | **six** | **five** | **fourth** | **third** | **second** | **First** |

Note:- we check our range in bits scheme in this case we need 72 ip address for our network, so our range is below then 128. We use first 7 bits for network and remaining one bit 128 is borrowed to network as shown in above.

**Block**

**Number of block**

Formula

2n = ---------- number of block , n mean number of bit borrow

In this case we borrow 1 bit so

21 = 2 number of block

**size of block**

**Formula**

Total hosts/number of block = size of block

So, in this case

256/2=128

128+128 = 256 :--- we divide our hosts in 2 blocks with 128 equal host to each block

**New subnet mask**

We add our borrow bit to make new subnet mask

128 = 128 (we write our borrow bits in new subnet mask)

= 255.255.255.128 /25 (in class c we have 24 default network bit. Now we add 1 borrow bit, so our new subnet mask has 26 bits of network)

**Table**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Block** | **Host** | **Unused** | **Network** | **/slash** | **Mask** | **Range** | **Broadcast** |
| 1 | 128 | 54 | 192.168.1.0 | 25 | 255.255.255.128 | 192.168.1.1 192.168.1.126 | 192.168.1.127 |
| 2 | 128 | 54 | 192.168.1.128 | 25 | 255.255.255.128 | 192.168.1.129  192.168.1.125 | 192.168.1.256 |