**Scenario!** we use 60 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.NNHHHHHH

(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 60 ip address for our network, so our range is below then 64. We use first 6 bits for network and remaining two bit 128 and 64 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 2 bit so

22 = 4 number of block

**size of block**

**Formula**

Total hosts/number of block = size of block

So, in this case

256/4=64

64+64+64+64 = 256 :--- we divide our hosts in 4 blocks with 64 equal host to each block

**New subnet mask**

We add our borrow bit to make new subnet mask

128+64 = 192 (we write our borrow bits in new subnet mask)

= 255.255.255.192 /26 (in class c we have 24 default network bit. Now we add 2 borrow bit, so our new subnet mask has 26 bits of network)

**Table**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Block** | **hosts** | **unused** | **network** | **/slash** | **mask** | **range** | **Broadcast** |
| 1 | **62** | **2** | **192.168.1.0** | **/26** | **255.255.255.192** | **192.168.1.1**  **192.168.1.62** | **192.168.1.63** |
| **2** | **62** | **2** | **192.168.1.64** | **/26** | **255.255.255.192** | **192.168.1.65**  **192.168.1.126** | **192.168.1.127** |
| **3** | **62** | **2** | **192.168.1.128** | **/26** | **255.255.255.192** | **192.168.1.129**  **192.168.1.190** | **192.168.1.191** |
| **4** | **62** | **2** | **192.168.1.192** | **/26** | **255.255.255.192** | **192.168.1.193**  **192.168.1.254** | **192.168.1.255** |