Answer

Solution :

Block of IP addresses distribution to 2600 customers :

1) First Group :

This group contains 200 medium size businesses.

It is possible to expand the size up to 256 because it is the next number in power of two after 200.

The requirement is only 200, it allows us to use 256 so 56 more customer can use it in future.

Each customer in this group needs 128 address

Total number of address is 256 * 128 =32768.

The suffix length is log2128 =7.

The prefix length is 32-7=25.

The address are

o For first customer 150.80.0.0/25 to 150.80.0.127/25.

o For second customer 150.80.0.128/25 to 150.80.0.255/25.

o For third customer 150.80.1.0/25 to 150.80.1.127/25.

o For fourth customer 150.80.1.128/25 to 150.80.1.255/25.

o Like this it continues.

o For 200th customer 150.80.99.128/25 to 150.80.99.255/25.

o The unused addresses are 150.80.100.0 to 150.80.12.255

Total addresses in first group are 256 * 128 =32768.

Used address is 200 * 128 =25600.

Reserved addresses are 32768 25600=7168, it can be used 56 more.

2) Second Group :

This group contains 400 small size businesses.

It is possible to expand the size up to 512 because it is the next number in power of two after 400.

The requirement is only 400, it allows us to use 512 so 112 more customer can use it in future.

Each customer in this group needs 16 addresses.

Total number of address is 512 * 16 =8192.

The suffix length is log216 =4.

The prefix length is 32-4=28.

The address are

o For first customer 150.80.128.0/28 to 150.80.128.15/28.

o For second customer 150.80.128.16/28 to 150.80.128.31/28.

o For third customer 150.80.128.32/28 to 150.80.128.47/28.

o For fourth customer 150.80.128.48/28 to 150.80.128.63/28.

o Like this it continues.

o For 400th customer 150.80.152.240/28 to 150.80.152.255/28.

o The unused addresses are 150.80.153.0 to 150.80.159.255

Total addresses in second group are 512 * 16 =8192.

Used address is 400 * 16 =6400.

Reserved addresses are 8192 6400=1792, it can be used to 112 more business.

3) Third Group :

This group contains 2000 households.

It is possible to expand the size up to 2048 because it is the next number in power of two after 2000.

The requirement is only 2000, it allows us to use 2048 so 48 more customer can use it in future.

Each customer in this group needs 4 addresses.

Total number of address is 2048 * 4 =8192.

The suffix length is log24 =2.

The prefix length is 32-2=30.

The address are

o For first customer 150.80.160.0/30 to 150.80.160.3/30.

o For second customer 150.80.160.4/30 to 150.80.160.7/30.

o For third customer 150.80.160.8/30 to 150.80.160.11/30.

o For fourth customer 150.80.160.12/30 to 150.80.160.15/30.

o Like this it continues.

o For 2000th customer 150.80.191.60/30 to 150.80.191.63/28.

o The unused addresses are 150.80.191.64 to 150.80.191.255

Total addresses in third group are 2048 * 4 =8192.

Used address is 2000 * 4 =8000.

Reserved addresses are 8192 8000=192, it can be used to 48 more households.

4) Design the subblocks and give the slash notation for each subblock. -did

To figure out your remaining address, calculate the total first - 8^16 (class B) = 65536 - we've used this many addresses:

Group 1: 200 * 128 = 25600

Group 2: 400 * 16 = 6400

Group 3: 2000 * 4 = 8000

65536 - 25600 - 6400 - 8000 = 25536 remaining addresses.

Thank you

Likes: 1 Dislikes: 0
