Class A N.H.H.H
Class B N.N.H.H
Class C N.N.N.H

7 department 7 LAN/VPC ~300 host

148.37.0.0 ----> 1 network 2^16 = 65536 Host
2^16 - 2 = 65534 Host

Need: 7 Network IDs, 300 Host IDs

Subnetting:

10010100.00100101.00000000.00000000 148.37.0.0

2 network
10010100.00100101.00000000.00000000 148.37.0.0
10010100.00100101.10000000.00000000 148.37.128.0

4 network

```
10010100.00100101.00000000.00000000    148.37.0.0
10010100.00100101.01000000.00000000
10010100.00100101.10000000.00000000
10010100.00100101.11000000.00000000
```

8 network

```
10010100.00100101.00000000.00000000    148.37.0.0
10010100.00100101.00100000.00000000
10010100.00100101.01000000.00000000
10010100.00100101.01100000.00000000
10010100.00100101.10000000.00000000
10010100.00100101.10100000.00000000
10010100.00100101.11000000.00000000
10010100.00100101.11100000.00000000
```

16 network

10010100.00100101.00000000.00000000	148.37.0.0
10010100.00100101.00010000.00000000	148.37.16.0
10010100.00100101.00100000.00000000	148.37.32.0
10010100.00100101.00110000.00000000	148.37.48.0
10010100.00100101.01000000.00000000	148.37.64.0
10010100.00100101.01010000.00000000	148.37.80.0
10010100.00100101.01100000.00000000	148.37.96.0
10010100.00100101.01110000.00000000	148.37.112.0
10010100.00100101.10000000.00000000	148.37.128.0
10010100.00100101.10010000.00000000	148.37.144.0
10010100.00100101.10100000.00000000	148.37.160.0
10010100.00100101.10110000.00000000	148.37.176.0
10010100.00100101.11000000.00000000	148.37.192.0
10010100.00100101.11010000.00000000	148.37.208.0
10010100.00100101.11100000.00000000	148.37.224.0
10010100.00100101.11110000.00000000	148.37.240.0

LAN/VPC-1

10010100.00100101.00010000.00000000	148.37.16.0 L/B
10010100.00100101.00010000.00000001	148.37.16.1
10010100.00100101.00010000.00000010	148.37.16.2
10010100.00100101.00010000.00000011	148.37.16.3
10010100.00100101.00010000.00000100	148.37.16.4
10010100.00100101.00010000.00000101	148.37.16.5
.	
.	
10010100.00100101.00010000.11111111	148.37.16.255
10010100.00100101.00010001.00000000	148.37.17.0
10010100.00100101.00010001.00000001	148.37.17.1
10010100.00100101.00010001.00000010	148.37.17.2
10010100.00100101.00010001.00000011	148.37.17.3
10010100.00100101.00010001.00000100	148.37.17.4
.	
.	
10010100.00100101.00010001.00101101	148.37.17.45

.

.

10010100.00100101.00011111.11111111 148.37.31.255 B/C

LAN/VPC-2

```
10010100.00100101.00100000.00000000    148.37.32.0 L/B
10010100.00100101.00100000.00000001    148.37.32.1
10010100.00100101.00100000.00000010    148.37.32.2
10010100.00100101.00100000.00000011    148.37.32.3
10010100.00100101.00100000.00000100    148.37.32.4
10010100.00100101.00100000.00000101    148.37.32.5
.
.
10010100.00100101.00100000.11111111    148.37.32.255
.
.
10010100.00100101.00101111.11111111    148.37.47.255 B/C
```

148.37.56.25 - IP adresli hostun hangi network de yer aldığını bana söyleyin

Artık tek başına IP adresine bakarak hostun hangi network de yer aldığını söyleyebilmemiz mümkün değil. Network id değerini çıkarmak için başka bir değere daha ihtiyacımız var. Ona da SubnetMask adını veriyoruz.

SubnetMask: bir IP adresinde network id ve subnet id bitlerinin tamamının 1(turn-on) olduğu ve host ları gösteren bitlerin 0 olduğu adrese subnet mask diyoruz.

SubnetMask
11111111.11111111.11110000.00000000

148.37.56.25 - 255.255.240.0

Subnet mask - Logical AND boolean

```
10010100.00100101.00111000.00011001    148.37.56.25
11111111.11111111.11110000.00000000    255.255.240.0
---------------------------------- Logical AND - boolean
10010100.00100101.00110000.00000000    148.37.48.0
```

T T : T
T F : F
F T : F
F F : F

CIDR: ClassLESS InterDomain Routing

148.37.56.25 /20 CIDR Gösterimi
148.37.56.25 - 255.255.240.0