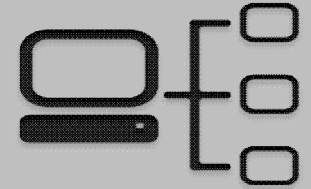


Class A Example #2



Details & Requirements

- Network Address: 15.0.0.0
- Default Subnet Mask: 255.0.0.0
- Requires 4096 Subnets

How many host bit do we need to borrow?

- 12 host bit, $2^{12} = 4,096$ Subnets

How many addresses hosts per subnet?

- 12 host bits left, $2^{12} = 4,096$ Addresses / Subnet
- $2^{12} - 2 = 4,094$ Hosts / Subnet

New Subnet Mask?

- 11111111. **11111111.11110000.00000000**
- 255.255.240.0 or /20

What are the valid subnets?

- Equation: $256 - \text{Subnet Mask} = 256 - 240 = 16$
- 0, 16, 32, 48, 64, 80, 96, 112, 128, 144, 160, 176, 192, 208, 224, 240 in 3rd Octet → Increment 1 in 2nd Octet and repeat sequence in 3rd Octet.

Subnet	Subnet Address	Host IP Addresses	Broadcast Address
1	15.0.0.0	15.0.0.1 to 15.0.15.254	15.0.15.255
2	15.0.16.0	15.0.16.1 to 15.0.31.254	15.0.31.255
3	15.0.32.0	15.0.32.1 to 15.0.47.254	15.0.47.255
↓			
16	15.0.240.0	15.0.240.1 to 15.0.255.254	15.0.255.255
17	15.1.0.0	15.1.0.1 to 15.1.15.254	15.1.15.255
18	15.1.16.0	15.1.16.1 to 15.1.31.254	15.1.31.255
19	15.1.32.0	15.1.32.1 to 15.1.63.254	15.1.63.255