INSTRUCTOR
ALTON

Subnetting a Class C Network #1

Details & Requirements

You've been assigned a 192.168.1.0/24 Class C network, and you need to create two subnets from it.

How many host bit do we need to borrow?

1 host bit, 2^1 = 2 Subnets

How many host addresses per subnet?

7 host bits left, 2^7 = 128 Addresses / Subnet

2^7 - 2= 126 Addresses / Subnet

What are the valid subnets?

192.168.1.0 and 192.168.1.128

New Subnet Mask?

11111111.11111111.11111111.10000000

255.255.255.128 or /25

Subnet	#1	#2
Network Address	192.168.1.0	192.168.1.128
First Host IP	192.168.1.1	192.168.1.129
Last Host IP	192.168.1.126	192.168.1.254
Broadcast Address	192.168.1.127	192.168.1.255

Binary (N.N.N.H)	Decimal	CIDR	# Subnets (2^x)	Block Size (2^y)	# Hosts (2^y - 2)
N.N.N.00000000	255.255.255.0	/24	2^0 = 1	2^8 = 256	2^8 – 2 = 254
N.N.N.10000000	255.255.255.128	/25	2^1 = 2	2^7 = 128	2^7 – 2 = 126
N.N.N.11000000	255.255.255.192	/26	2^2 = 4	2^6 = 64	2^6 – 2 = 62
N.N.N.11100000	255.255.255.224	/27	2^3 = 8	2^5 = 32	2^5 – 2 = 30
N.N.N.11110000	255.255.255.240	/28	2^4 = 16	2^4 = 16	2^4 – 2 = 14
N.N.N.11111000	255.255.255.248	/29	2^5 = 32	2^3 = 8	2^3 – 2 = 6
N.N.N.11111100	255.255.255.252	/30	2^6 = 64	2^2 = 4	2^2 – 2 = 2