INSTRUCTOR
ALTON

Subnetting a Class C Network #2

Details & Requirements

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

How many host bit do we need to borrow?

2 host bits, $2^2 = 4$ Subnets

How many host addresses per subnet?

6 host bits left, $2^6 = 64$ Addresses / Subnet

$2^6 - 2 = 62$ Addresses / Subnet

What are the valid subnets?

192.168.1.**0**, 192.168.1.**64**,
192.168.1.**128**, 192.168.1.**192**

New Subnet Mask?

11111111.11111111.11111111.**11**000000
255.255.255.192 or /26

Subnet	Network /Subnet Address	Host IP Addresses	Broadcast Address
1	192.168.1.**0**	1 thru 62	192.168.1.**63**
2	192.168.1.**64**	65 thru 126	192.168.1.**127**
3	192.168.1.**128**	129 thru 190	192.168.1.**191**
4	192.168.1.**192**	193 thru 254	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	$2^6 = 64$	$2^2 = 4$	$2^2 - 2 = 2$