

DigiP's Sub Netting Cheat Sheet

Octet Bit Values: all 1's = 255 ex: 11111111								
128	64	32	16	8	4	2	1	Binary Bit Value
2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0	2 to the power of
128	192	224	240	248	252	254	255	Subnet Mask

For every borrowed bit(Starting Left to right) you add the Binary Bit values to get the Subnet Mask. The Binary value in row 3 is the divider you use for your Base Network ID.

N = Number of Borrowed Bits $2^N = \text{Total Subnets}$ 32 total bits, 8 in each octet. Number of Borrowed bits plus default mask, subtracted from 32 gives you the value of H.
 H = Number of Remaining Bits $2^H - 2 = \text{Total Hosts}$

1-126 = A 128-191 = B 192-223 = C The First OCTET in an IP address determines the Class and Default Subnet Mask.

IP address:		
Subnet Mask:		Number of Bits Borrowed (N):
CIDR Notation:		Number of Remaining Bits (H):
New Subnet Mask:		
New CIDR:	$2^N = \text{Total Subnets:}$	
Divider:	$2^H - 2 = \text{Total Hosts:}$	
	Ex:192.168.1.1/27 Divider is 32, Subnet Mask is 255.255.255.224	

	Base ID / Subnet	Host Start Range	Host End Range	Broadcast
1				s
2				u
3				b
4				n
5				e
6				t
7				s
8				
9				s
10				u
11				b
12				n
13				e
14				t
15				s
16				
17				s
18				u
19				b
20				n
21				e
22				t
23				s
24				
25				

First determine your IP Class. Then determine the DEFAULT subnet mask. For every borrowed bit, you add the Binary bit value, and this determines your new Subnet mask value. The ending octet you borrow from is where you begin sub netting your network.

Borrowed Bits + Default Subnet Mask Bits = CIDR Value.
 Example: 11111111 11111111 11000000 00000000
 Mask 255 255 192 0
 CIDR Value: /18