Cheatography

IP Addressing Cheat Sheet

by Goldilocks (adeason) via cheatography.com/20845/cs/3900/

ADDRESS CLASS: A, B, C

Class:	A	B	C
Range	0-127	128-191	192-223
N/H	N.H.H.H	N.N.H.H	N.N.N.H
Network Bits	Nx8 = 8	Nx8 = 16	Nx8 = 24
Host Bits	Hx8 = 24	Hx8 = 16	Hx8 = 8
# Addresses	16,777,210	66,536	256
Private Range	10.0.0.0 - 10.255.255.255	172.16.0.0 - 172.31.255.255	192.168.0.0 - 192.168.255.255
Subnet Mask	255.0.0.0	255.255.0.0	255.255.255.0

ADDRESS CLASS: D & E

CLASS	RANGE	NOTE
D	224 - 239	reserved for multicasting
E	240 - 255	reserved for research & development

Power of 2 table

2^0	1	2^8	256
2^1	2	2^9	512
2^2	4	2^10	1,024
2^3	8	2^11	2,048
2^4	16	2^12	4,096
2^5	32	2^13	8,192
2^6	64	2^14	16,384
2^7	128	2^15	32,768

BIT, VALUE, MASK

BIT	VALUE	N-BITS / H-BITS	MASK
1	128	1 / 7	10000000
2	192	2 / 6	11000000
3	224	3 / 6	11100000
4	240	4 / 4	11110000
5	248	5 / 3	11111000
6	252	6 / 2	11111100
7	254	7 / 1	11111110
8	255	8 / 0	11111111

SOME FORMULAS	
# BLOCKS FOR LARGE #s	2^H / 256 = # BLOCKS
NUMBER OF SUBNETS =	2^n (n = Number of borrowed bits from host)
NUMBER HOSTS PER SUBNET =	(2^h - 2) (h = Number of Host bits)

Hosts have always been with the "-2" part. Because the network address and broadcast address have always been unusable for hosts.

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