NetworkProGuide CIDR/IPv4 Cheat Sheet

Subnets

CIDR	Subnet Mask	# of Addresses	Wildcard
/0	0.0.0.0	4,294,967,296	255.255.255.255
/1	128.0.0.0	2,147,483,648	127.255.255.255
/2	192.0.0.0	1,073,741,824	63.255.255.255
/3	224.0.0.0	536,870,912	31.255.255.255
/4	240.0.0.0	268,435,456	15.255.255.255
/5	248.0.0.0	134,217,728	7.255.255.255
/6	252.0.0.0	67,108,864	3.255.255.255
/7	254.0.0.0	33,554,432	1.255.255.255
/8	255.0.0.0	16,777,216	0.255.255.255
/9	255.128.0.0	8,388,608	0.127.255.255
/10	255.192.0.0	4,194,304	0.63.255.255
/11	255.224.0.0	2,097,152	0.31.255.255
/12	255.240.0.0	1,048,576	0.15.255.255
/13	255.248.0.0	524,288	0.7.255.255
/14	255.252.0.0	262,144	0.3.255.255
/15	255.254.0.0	131,072	0.1.255.255
/16	255.255.0.0	65,536	0.0.255.255
/17	255.255.128.0	32,768	0.0.127.255
/18	255.255.192.0	16,384	0.0.63.255
/19	255.255.224.0	8,192	0.0.31.255
/20	255.255.240.0	4,096	0.0.15.255
/21	255.255.248.0	2,048	0.0.7.255
/22	255.255.252.0	1,024	0.0.3.255
/23	255.255.254.0	512	0.0.1.255
/24	255.255.255.0	256	0.0.0.255
/25	255.255.255.128	128	0.0.0.127
/26	255.255.255.192	64	0.0.0.63
/27	255.255.255.224	32	0.0.0.31
/28	255.255.255.240	16	0.0.0.15
/29	255.255.255.248	8	0.0.0.7
/30	255.255.255.252	4	0.0.0.3
/31	255.255.255.254	2	0.0.0.1
/32	255.255.255.255	1	0.0.0.0

Classful Ranges

A	0.0.0.0 - 127.255.255.255
B	128.0.0.0 - 191.255.255.255
C	192.0.0.0 - 223.255.255.255
D	224.0.0.0 - 239.255.255.255
E	240.0.0.0 - 255.255.255.255

Reserved Ranges

RFC 1918	10.0.0.0 - 10.255.255.255
Localhost	127.0.0.0 - 127.255.255.255
RFC 1918	172.16.0.0 - 172.31.255.255
RFC 1918	192.168.0.0 - 192.168.255.255

CIDR notation

Classless interdomain routing (CIDR) notation is a compact representation of an IP address and its associated routing prefix. It's expressed as a / followed by a number (e.g. /0 or /10).

VLSM

CIDR is based on the variable-length subnet masking (VLSM) technique, which allows the specification of arbitrary-length prefixes.

Decimal to Binary

Subnet Mask			Wildcard		
0	0000	0000	**255**	1111	1111
128	1000	0000	**127**	0111	1111
192	1100	0000	**63**	0011	1111
224	1110	0000	**31**	0001	1111
240	1111	0000	**15**	0000	1111
248	1111	1000	**7**	0000	0111
252	1111	1100	**3**	0000	0011
254	1111	1110	**1**	0000	0001
255	1111	1111	**0**	0000	0000