

# IPv4/CIDR Cheat Sheet

Class	Number of Bits		CIDR	# Addresses	Subnet Mask
	Subnet	Host			
A	0	32	/0	4,294,967,298	0.0.0.0
	1	31	/1	2,147,483,648	128.0.0.0
	2	30	/2	1,073,741,824	192.0.0.0
	3	29	/3	536,870,912	224.0.0.0
	4	28	/4	268,435,456	240.0.0.0
	5	27	/5	134,217,728	248.0.0.0
	6	26	/6	67,108,864	252.0.0.0
	7	25	/7	33,554,432	254.0.0.0
	8	24	/8	16,777,216	255.0.0.0
	9	23	/9	8,388,608	255.128.0.0
	10	22	/10	4,194,304	255.192.0.0
	11	21	/11	2,097,152	255.224.0.0
	12	20	/12	1,048,576	255.240.0.0
	13	19	/13	524,288	255.248.0.0
	14	18	/14	262,144	255.252.0.0
	15	17	/15	131,072	255.254.0.0
B	16	16	/16	65,536	255.255.0.0
	17	15	/17	32,768	255.255.128.0
	18	14	/18	16,384	255.255.192.0
	19	13	/19	8,192	255.255.224.0
	20	12	/20	4,096	255.255.240.0
	21	11	/21	2,048	255.255.248.0
	22	10	/22	1,024	255.255.252.0
	23	9	/23	512	255.255.254.0
C	24	8	/24	256	255.255.255.0
	25	7	/25	128	255.255.255.128
	26	6	/26	64	255.255.255.192
	27	5	/27	32	255.255.255.224
	28	4	/28	16	255.255.255.240
	29	3	/29	8	255.255.255.248
	30	2	/30	4	255.255.255.252
	31	1	/31	2	255.255.255.254
	32	0	/32	1	255.255.255.255

CIDR – Classless InterDomain Routing – Compact representation of IP address and subnet mask

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How does the CIDR work:

IP address is made up of 4 octets, each octet containing 8 bits.

Format: -----.-----.-----.-----

Example: 10110011.11000100.00010011.11111010

Decimal: 179.196.19.250

The CIDR notation indicates the number of bits that are dedicated to the NETWORK (1's) starting from the left

/20 = 20 bits starting from the left are 1's; the rest are 0's

Octet #	Binary Values								Decimal
1	1	1	1	1	1	1	1	1	255
2	1	1	1	1	1	1	1	1	255
3	1	1	1	1	0	0	0	0	240
4	0	0	0	0	0	0	0	0	0

So the subnet mask of a /20 would be:

Binary: 11111111.11111111.11110000.00000000

Decimal: 255.255.240.0