

CSE 366: Systems Networking

[1] CIDR: Classless InterDomain Routing

- Classful network: The IP addresses and subnets are within same network.

A Class: 255.0.0.0

B Class: 255.255.0.0

C Class: 255.255.255.0

There will be a lot of unused IP address space.

Class A has more than 16 million IP addresses.

Class B has more than 65000 IP addresses.

Only a limited number of class A and B address space has been allocated for Internet uses.

- Supernetting: Allow multiple networks to be specified by one subnet mask.
- CIDR (pronounced “cider”): CIDR notion specifies the number of bits set to a 1 that make up the subnet mask.

A Class: 255.0.0.0 11111111.00000000.00000000.00000000 (8 bits)

B Class: 255.255.0.0 11111111.11111111.00000000.00000000 (16 bits)

C Class: 255.255.255.0 11111111.11111111.11111111.00000000 (24 bits)

CIDR	Number of bits	Subnet Mask
/8	11111111.00000000.00000000.00000000	255.0.0.0
/9	11111111.10000000.00000000.00000000	255.128.0.0
/10	11111111.11000000.00000000.00000000	255.192.0.0
/11	11111111.11100000.00000000.00000000	255.224.0.0
/12	11111111.11110000.00000000.00000000	255.240.0.0
/13	11111111.11111000.00000000.00000000	255.248.0.0
/14	11111111.11111100.00000000.00000000	255.252.0.0
/15	11111111.11111110.00000000.00000000	255.254.0.0
/16	11111111.11111111.00000000.00000000	255.255.0.0
/17	11111111.11111111.10000000.00000000	255.255.128.0
/18	11111111.11111111.11000000.00000000	255.255.192.0
/19	11111111.11111111.11100000.00000000	255.255.224.0
/20	11111111.11111111.11110000.00000000	255.255.240.0
/21	11111111.11111111.11111000.00000000	255.255.248.0
/22	11111111.11111111.11111100.00000000	255.255.252.0
/23	11111111.11111111.11111110.00000000	255.255.254.0
/24	11111111.11111111.11111111.00000000	255.255.255.0
/25	11111111.11111111.11111111.10000000	255.255.255.128
/26	11111111.11111111.11111111.11000000	255.255.255.192
/27	11111111.11111111.11111111.11100000	255.255.255.224
/28	11111111.11111111.11111111.11110000	255.255.255.240
/29	11111111.11111111.11111111.11111000	255.255.255.248
/30	11111111.11111111.11111111.11111100	255.255.255.252
/31	11111111.11111111.11111111.11111110	255.255.255.254
/32	11111111.11111111.11111111.11111111	255.255.255.255