

Network Layer (Internet)

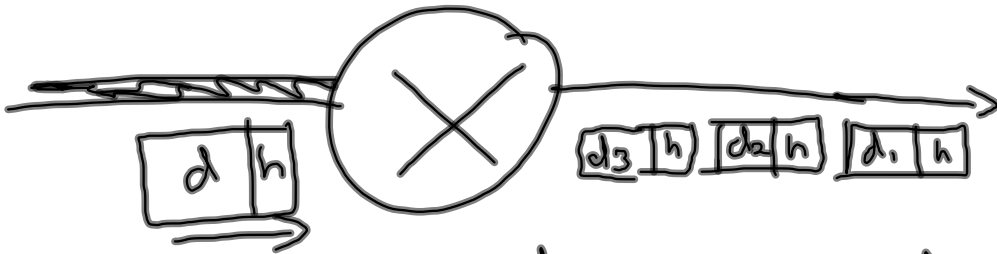
- Routing / Forwarding
- IP
- ICMP - internet control message protocol

IP Datagrams

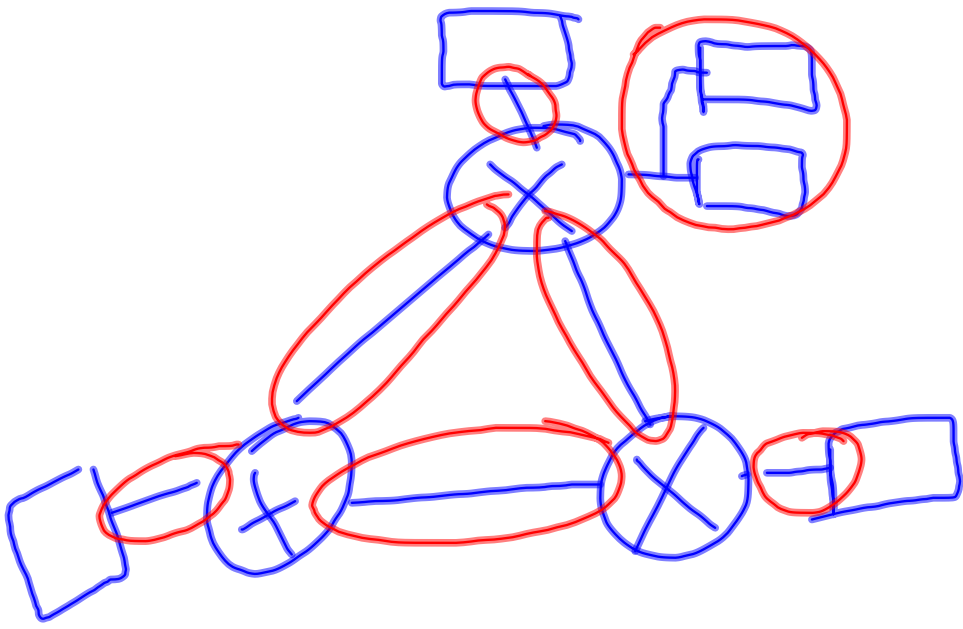
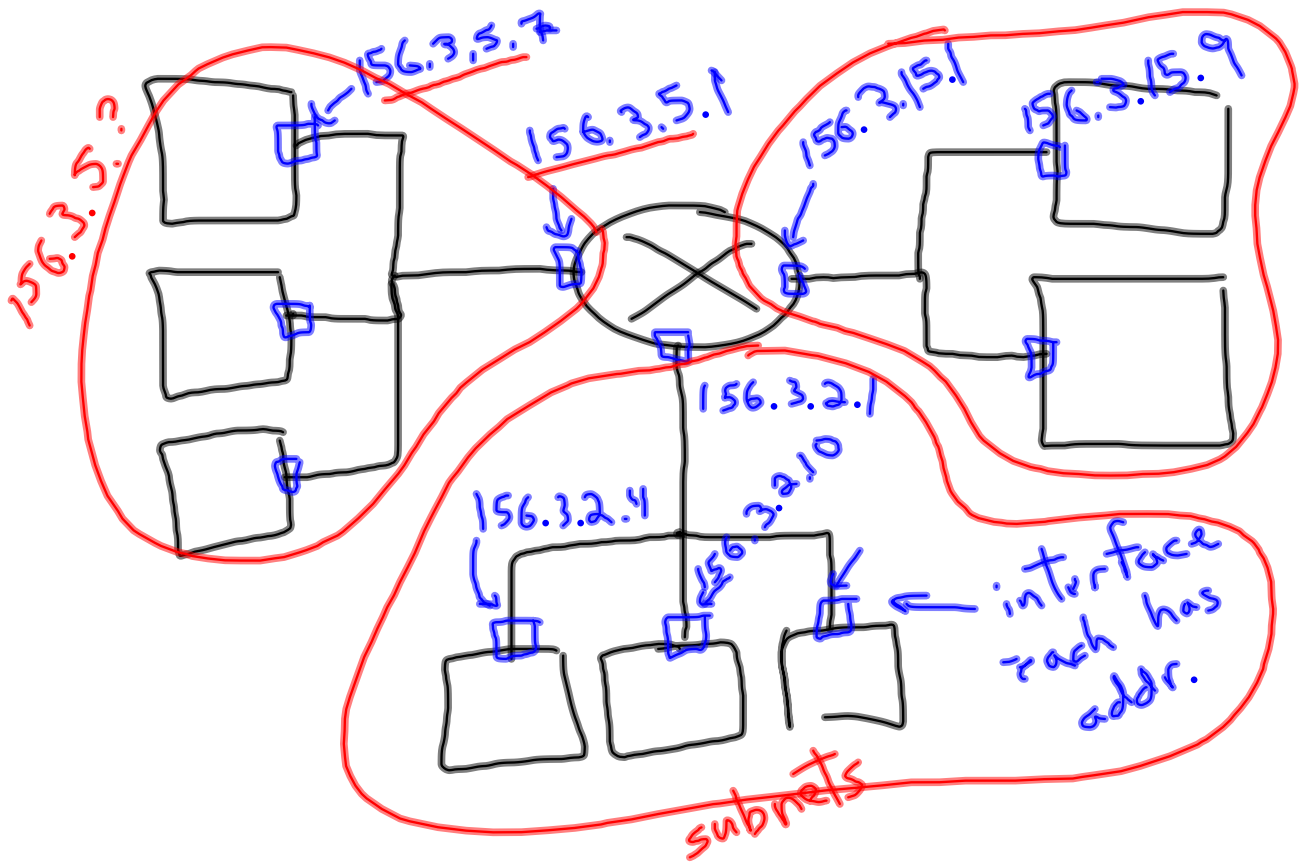
- version : IP_{v4} , IP_{v6}
- length : (4 bits) - 32 bit words
(header)
- length = header + data
(total) ↗ 16 bit
- src/dest IP addr.
- time to live - # of hops
- fragmenting info:
 - 16 bit id
 - flags { don't fragment
more fragments
 - offset
- upper layer protocol | — tcp
| — udp
| — icmp
- checksum

Fragmenting

links have MTU (max. transmission unit)



$$d = d_1 + d_2 + d_3$$



156.3.5.15
└── subnet ─┘ └── interface ─┘

subnet
mask

255.255.255.0

00110100.00000011.00000101.00001111 &
11111111.11111111.11111111.00000000

0111... .00000000

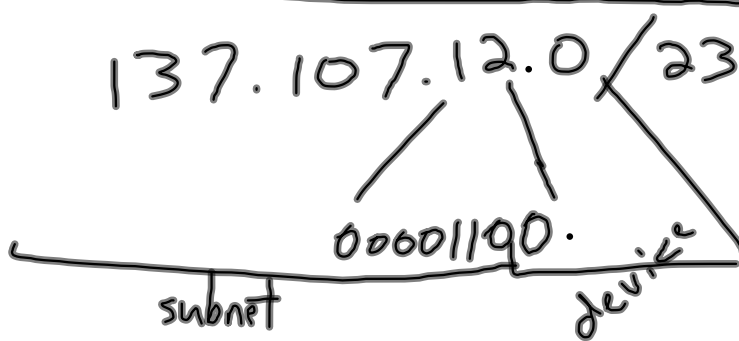
old formats

classes	subnet	device
A -	8	24
B -	16	16
C -	24	8

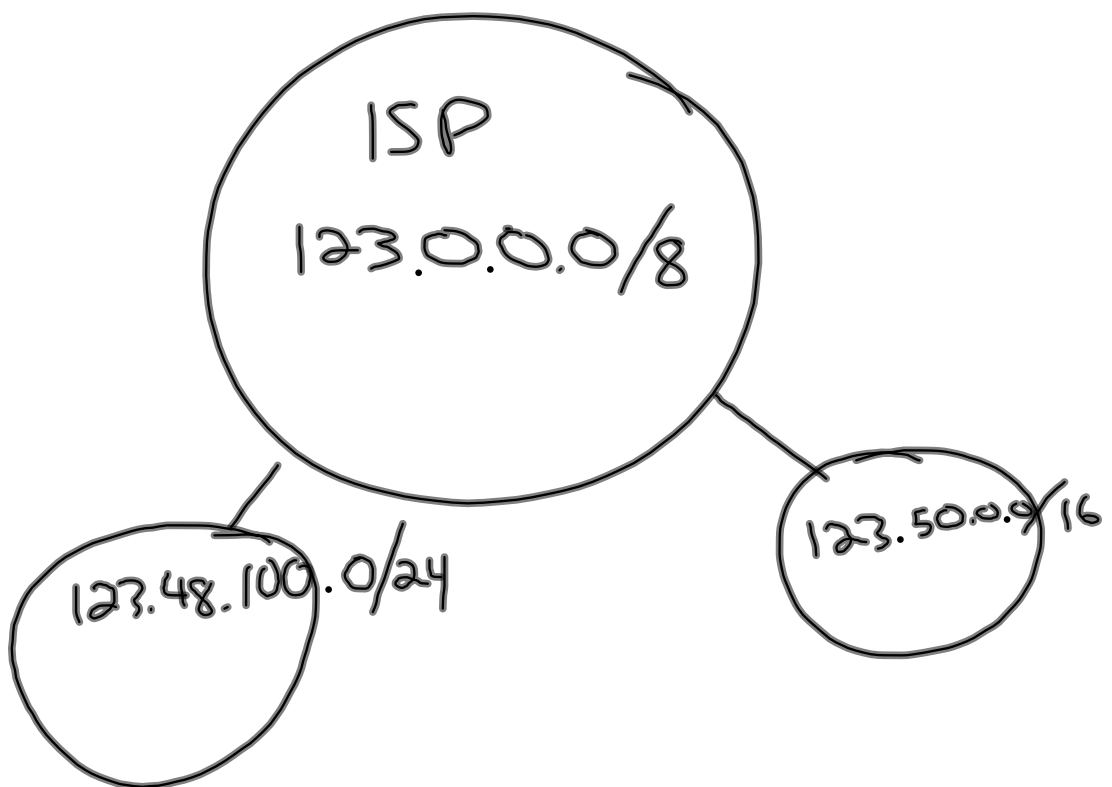
CIDR: classless interdomain routing

cs 138.234.72.0/24
gburg 138.234.0.0/16

bits on subnet
bits on subnet



137.107.13.54



private
addr.

10.0.0.0/8

172.16.0.0/12

192.168.0.0/16