

IP Header

Bit Number

1
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1

Version	IHL	Type of Service	Total Length			
Identification			Flags	Fragment Offset		
Time to Live		Protocol	Header Checksum			
Source Address						
Destination Address						
Options (optional)						

IP Header Contents

Version

4 IP version 4

Internet Header Length

Number of 32-bit words in the header;
 min. value = 5 (20 bytes) & max. value = 15 (60 bytes)

Type of Service (PreDTRCx) --> Differentiated Services

Precedence (000-111)	000
D (1 = minimum delay)	0
T (1 = maximum throughput)	0
R (1 = maximum reliability)	0
C (1 = minimum cost)	1
x (reserved and set to 0)	1

Total Length

Number of bytes in packet; maximum length = 65,535

Flags (xDM)

x (reserved and set to 0)
 D (1 = Don't Fragment)
 M (1 = More Fragments)

Fragment Offset

Position of this fragment in the original datagram,
 in units of 8 bytes

Protocol

1 ICMP	17 UDP	57 SKIP
2 IGMP	47 GRE	88 EIGRP
6 TCP	50 ESP	89 OSPF
9 IGRP	51 AH	115 L2TP

Header Checksum

Covers IP header only

Addressing

NET_ID	RFC 1918 PRIVATE ADDRESSES
0-127 Class A	10.0.0.0 - 10.255.255.255
128-191 Class B	172.16.0.0 - 172.31.255.255
191-223 Class C	192.168.0.0 - 192.168.255.255
224-239 Class D (multicast)	
240-255 Class E (experimental)	

Options (0-40 bytes; padded to 4-byte boundary)

0 End of Options list	68 Timestamp
1 No operation (pad)	131 Loose source route
7 Record route	137 Strict source route