

IPv4 Datagram (1/3)

1

Header (20 – 60 bytes)

Version	IHL	Service type	Packet length	
Identification			Flags	Fragment offset
TTL		Protocol	Header checksum	
Source address				
Destination address				
Options and padding				
Data				

➔ maximal datagram length: **65.535 bytes**

IPv4 Datagram (2/3)

2

Version: (0100=4)

Length: Length of the IP header (min=5, max=15 → 32 bit words)

Service type: Priority (0-7), D(elay), T(hroughput), R(eliability)

Packet length: 16 bits

Identification number: Individual fragments
(possibly assigned by router)

Flags: First bit reserved, DF / MF (*don't / more fragment*)

Fragment offset: Offset of fragment in original data packet

Time to Live: Life of a packet – is decremented at routers (hop)

Protocol: Number of higher-order transport protocol

Header checksum: Must be recalculated with each hop

Options and padding: Routing variants, etc.

IPv4 Datagram (3/3)

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Options:

- **strict source routing:** Specifies exact routing path
- **loose source routing:** Specifies router that must be visited
- **record route:** Every visited router appends its own address
- **timestamp:** Every visited router appends its own address with current time information