CS144
An Introduction to Computer Networks

What the Internet is

The IP Service

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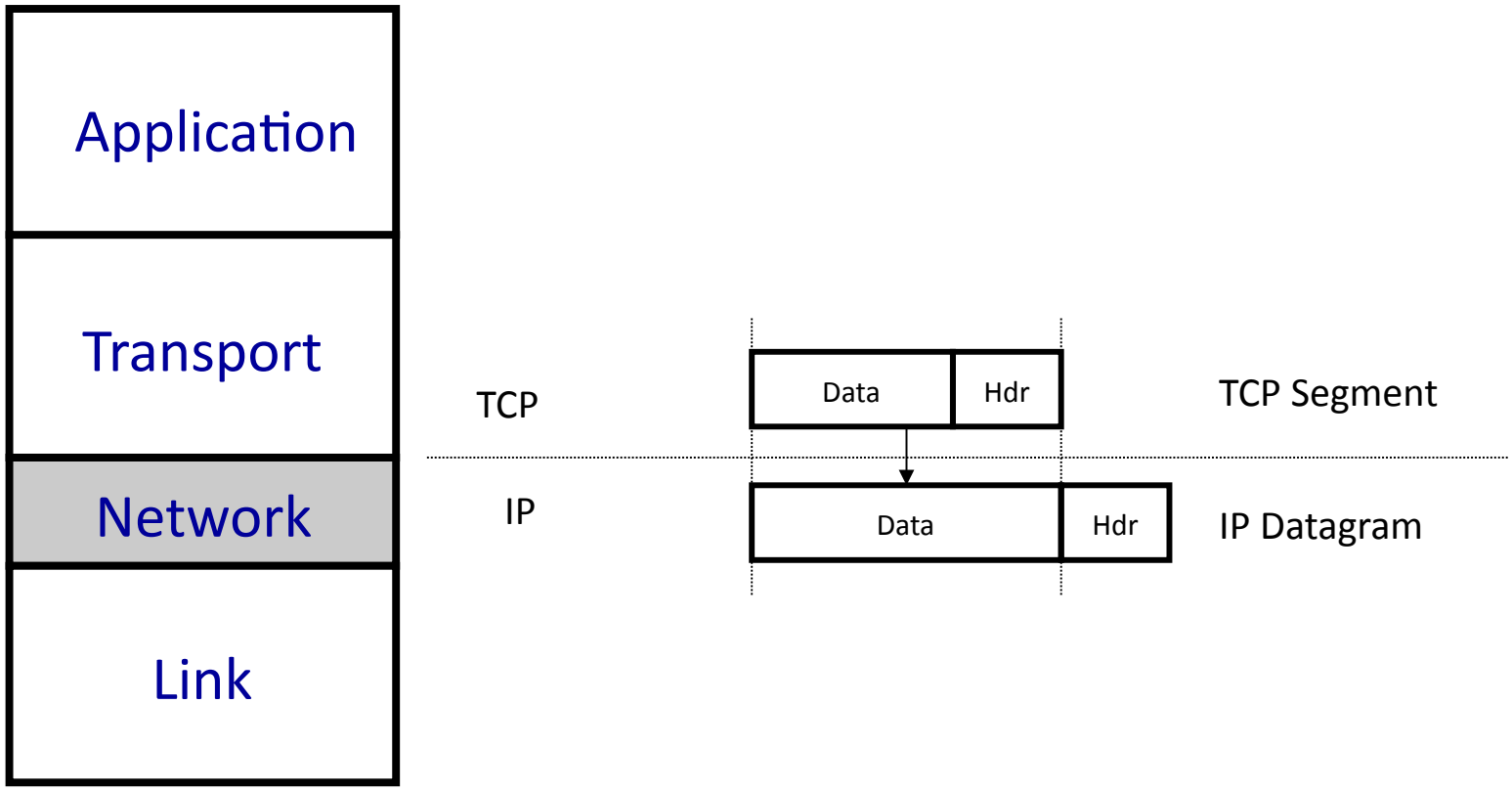
The Internet Protocol (IP)



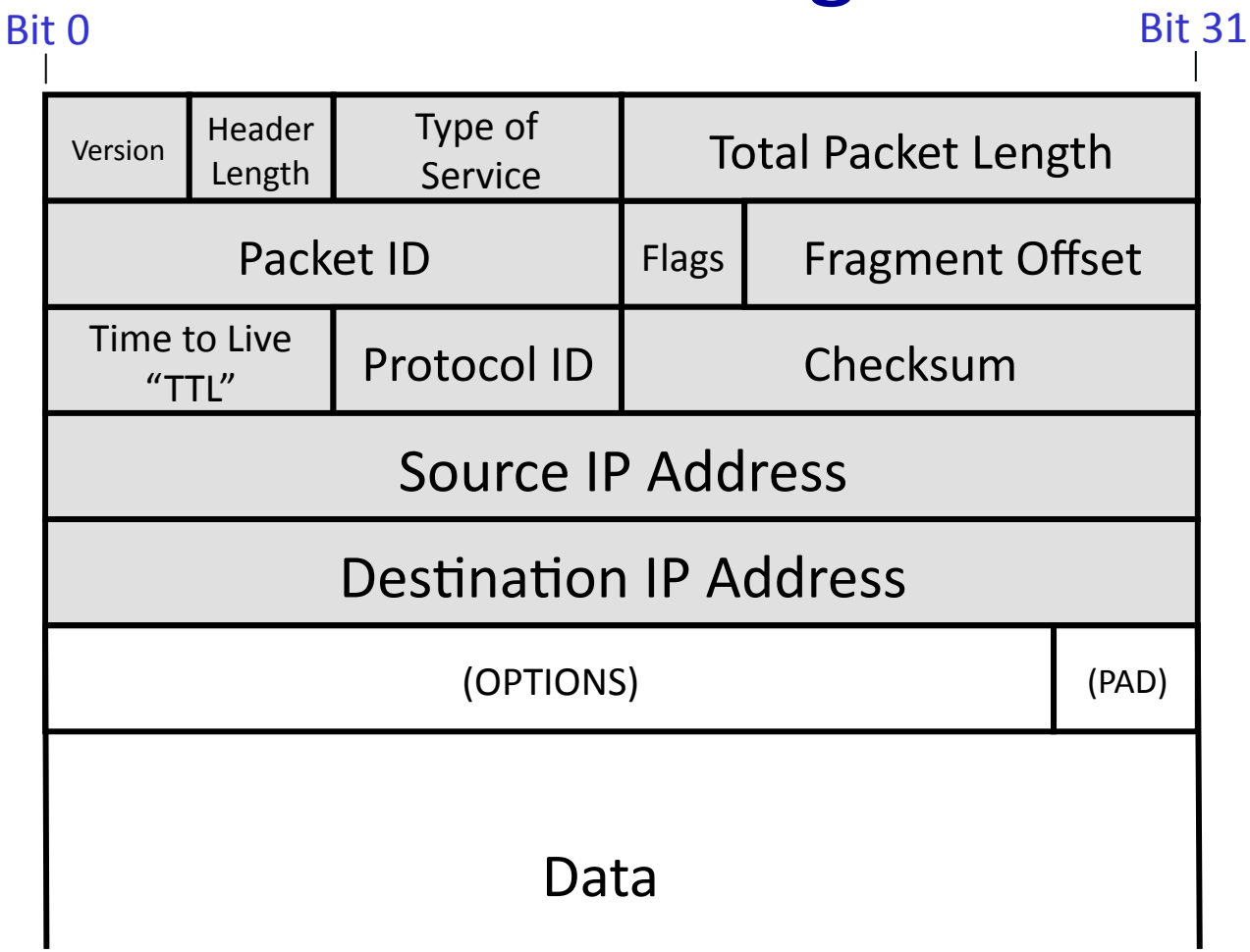
The IP Service Model

Property	Behavior
Datagram	Individually routed packets. Hop-by-hop routing.
Unreliable	Packets might be dropped.
Best effort	…but only if necessary.
Connectionless	No per-flow state. Packets might be mis-sequenced.

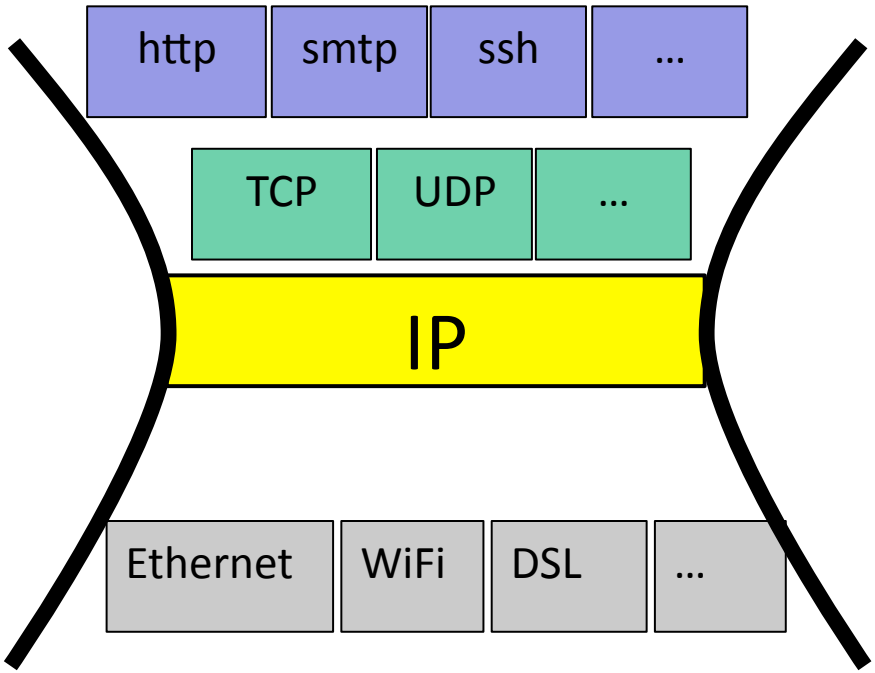
The IP Service Model (Details)

- Tries to prevent packets looping forever.
- Will fragment packets if they are too long.
- Uses a checksum to reduce chances of delivering to wrong destination.
- Allows for new versions of IP
  - Currently IPv4 with 32 bit addresses
  - And IPv6 with 128 bit addresses
- Allows for new options to be added to header.

IPv4 Datagram



The Hourglass Model of IP



Summary

We use IP every time we send and receive Internet packets.

It provides a deliberately simple service:

- Datagram
- Unreliable
- Best-effort
- Connectionless

<The End>