The Internet Protocol

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The Internet Protocol

- Purpose
  - the Internet Protocol (IP) provides a method for hosts on an internet to talk
- Features:
  - datagram communication between any two hosts on the Internet
  - header likely to be correct
  - no guarantee of data correctness
  - no guarantee packet will be delivered

Packet Format

- Version
- IHL
- Type of Service (ToS)
- Total Length
- Identification, Flags, Fragment Offset
- Time to Live (TTL)
- Protocol

Packet Format...

- Header Checksum
- Source Address, Destination Address
- Options
  - Loose Source Routing, Strict Source Routing, Record Route, Internet Timestamp
  - Obsolete: Security, Stream ID

Fragmentation & Reassembly

- allows IP packets to be larger than a L2 net on the path can handle
- Fields
  - don’t fragment bit
  - id field
  - offset

Avoiding Fragmentation

- TCP
- Protocol Design
  - Path MTU Discovery
  - Use typical minimum MTU

References

- RFC791
- RFC1191