

Lecture 8: (finish up DNS) Transport Layers

reading 3.1-3.4 (up to, not including, principles of reliable data transfer)

main difficulty: best-effort service

- lose packets
- reordered
- low throughput
- delay - latency / jitter
- data corruption

UDP - User Datagram Protocol

no additional guarantees
(option checksum)

link layer - post truck (local deliveries)

network layer - postal network (house to house)

transport layer - mom (name on the envelope)

All UDP does is add ports to your packet.

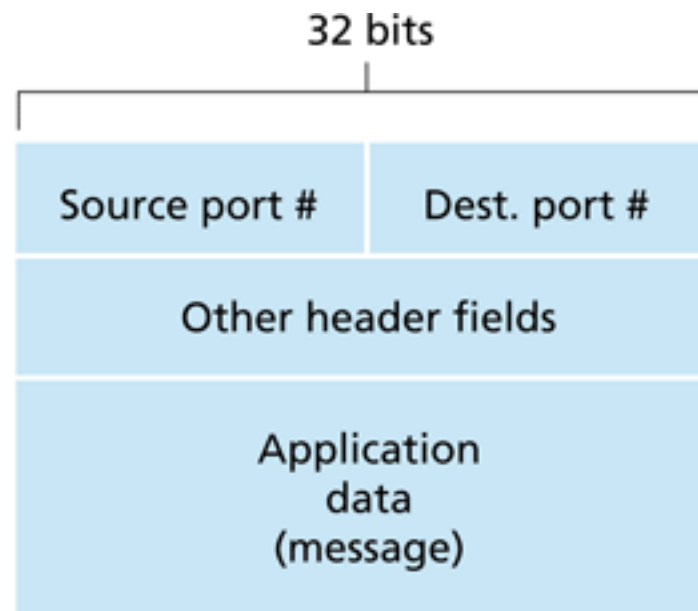


Figure 3.3 ♦ Source and destination port-number fields in a transport-layer

with TCP

- no lost packets
 - ask dst. to ACK each packet
 - retx on packet loss
- ordering guarantee
 - sequence number in each packet
 - buffer packets and sort by seq. no
- low throughput
 - compression (possible)
 - parameter tuning (possible)
- delay - latency / jitter
 - propagation delay latency is a lost cause
 - link speed could use smaller packets
- data corruption
 - detect errors (through checksum)
 - fix errors (through error correcting codes)