UNIT-4

The Transport Layer

The Internet Transport Protocols: TCP

- Introduction to TCP
- The TCP Service Model
- The TCP Protocol
- The TCP Segment Header
- TCP Connection Establishment
- TCP Connection Release
- TCP Connection Management Modeling
- TCP Transmission Policy
- TCP Congestion Control
- TCP Timer Management
- Wireless TCP and UDP
- Transactional TCP

TCP

- For most internet application ,reliable, sequenced delivery is needed.UDP can not provide this.

- TCP(Transmission control protocol) was specifically designed to provide a reliable end to end byte stream over an unreliable internetwork.

- In Internetwork different parts may have wildly different topologies, BW,delay,packet size and other parameters.

- TCP entity is the part of ,either a library procedure, a user process,or part of kernel.

The TCP Service Model

- TCP service is obtained by both sender and receiver creating end points.

- Each socket address contain host add and local port add of 16 bit.

- All TCP connection are full duplex and point to point.(It does not support broadcasting and multicasting.)

- A TCP connection is a byte stream not a msg stream i.e msg boundaries are not preserved end to end.

The TCP Service Model (2)

(a)

(b)
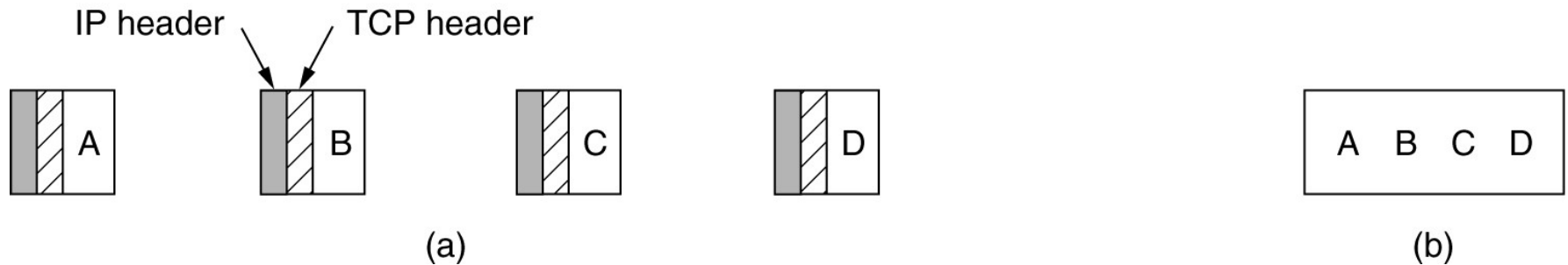
(a) Four 512-byte segments sent as separate IP datagrams.

(b) The 2048 bytes of data delivered to the application in a single READ CALL.
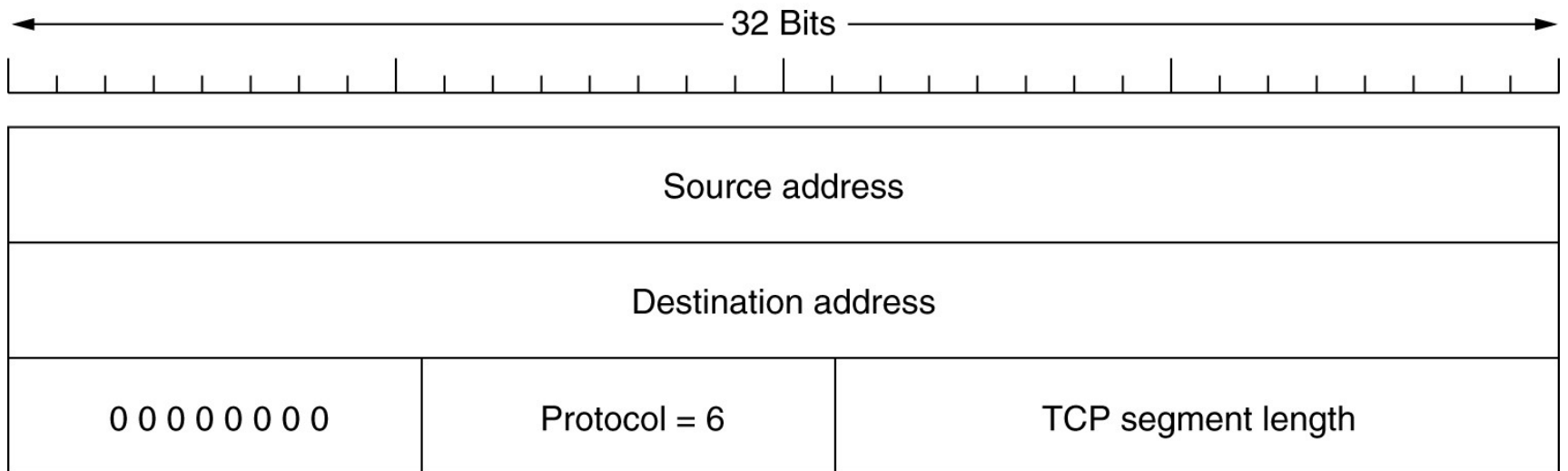
TCP protocol

- Every byte on TCP connection has its own 32 bit sequence no.

- Data exchanged in the form of segment.

- TCP s/w decide the length of segment.

- Sliding window protocol used. In TCP entities.
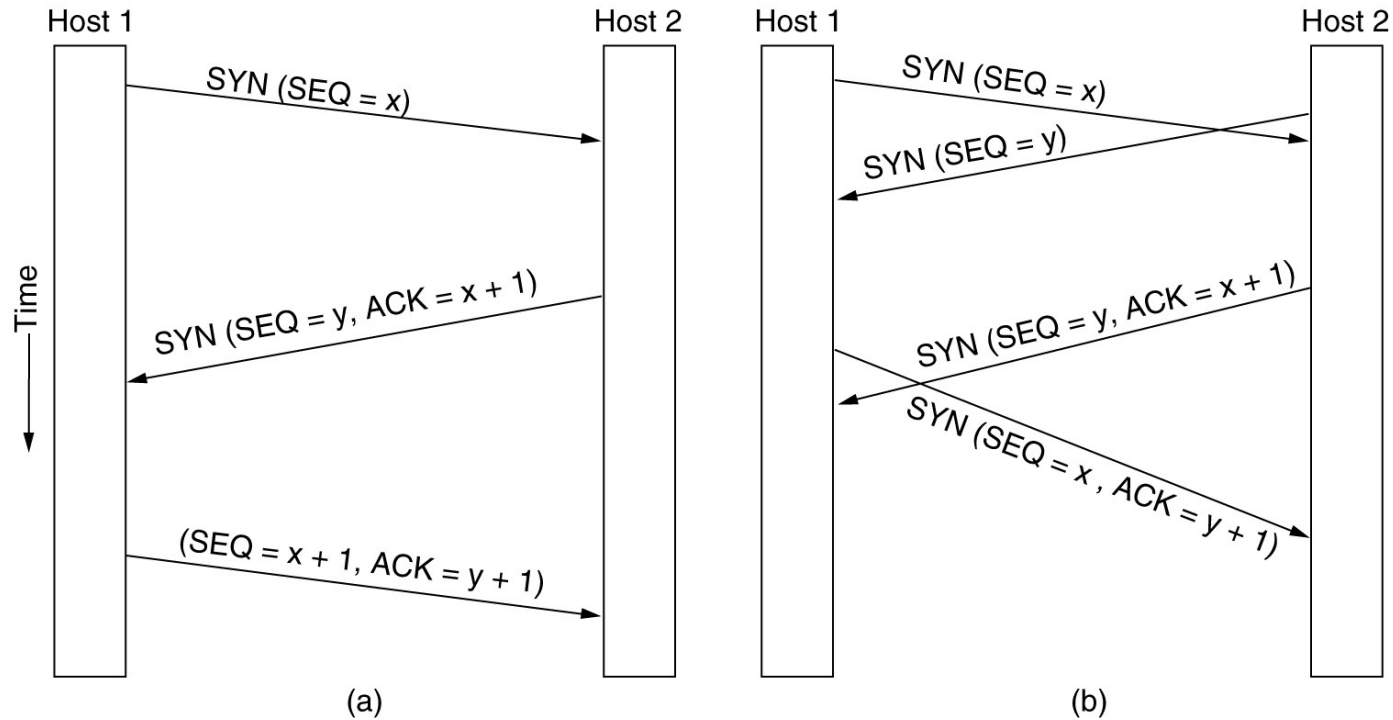
The TCP Segment Header
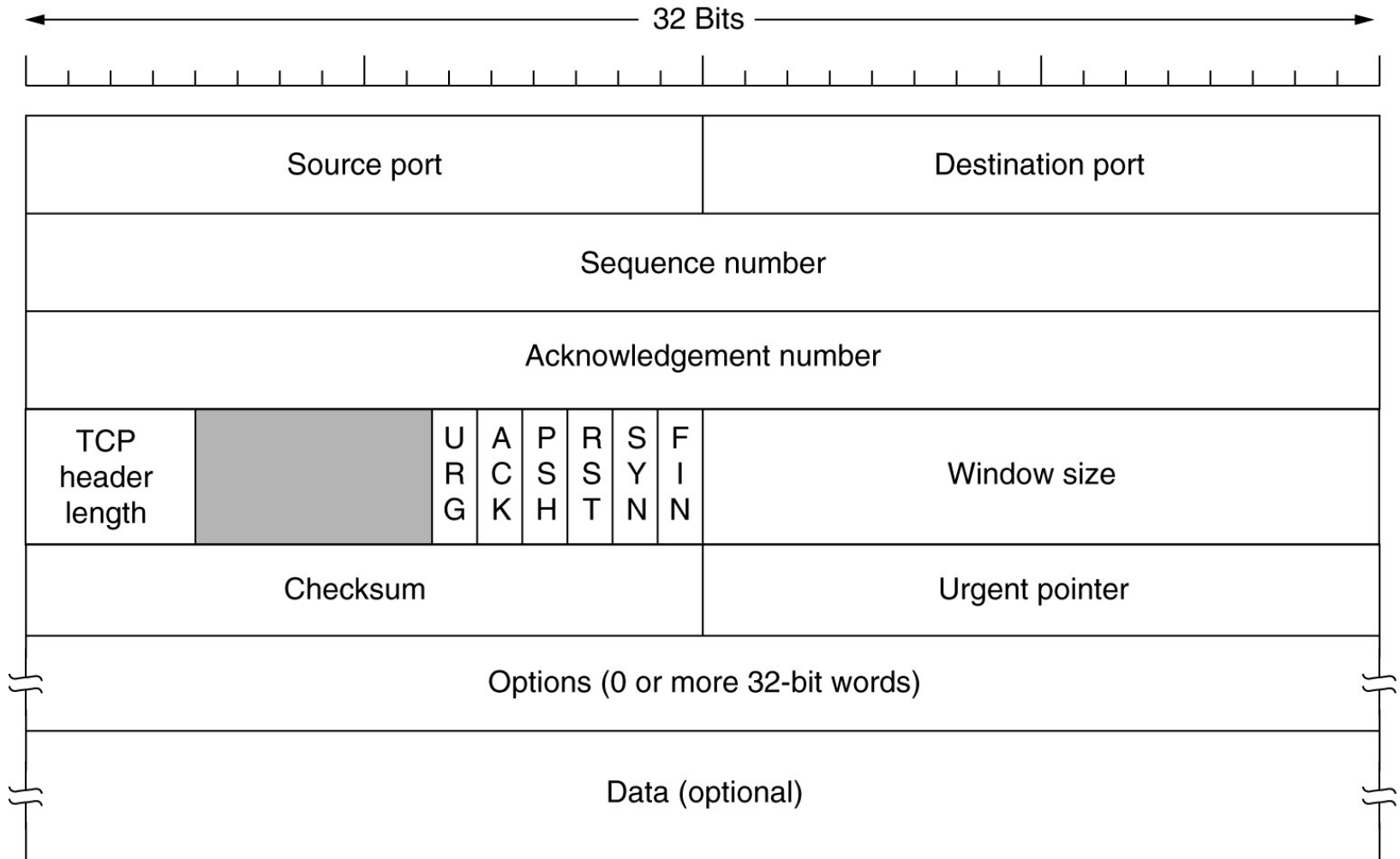
TCP Header.

The TCP Segment Header (2)

The pseudoheader included in the TCP checksum.

TCP Connection Establishment

(a) TCP connection establishment in the normal case.
(b) Call collision.

Thank you