A simple internetwork, showing the protocol layers used to connect H5 to H8 in Figure 3.14.
IPv4 Datagram Format

- Version: 4
- Hlen: length of the header in 32-bit words (5 if no options)
- TOS: type of service, allow packets to be treated differently based on application needs (e.g., low delay)
- Length: number of bytes in this datagram, including header (max length=65,535)
- Id/Flags/Offset: used for fragmentation and reassembly
- TTL: number of hops this datagram is allowed to travel (default=64)
- Protocol: the higher-layer protocol to which this datagram should be passed (e.g., TCP=6, UDP=17)
- Checksum: calculated for the header, receiver discards the packet that fails the checksum
- SourceAddr: IP address of the source host
- DestinationAddr: IP address of the destination host

IP Fragmentation and Reassembly

IP datagrams traversing the sequence of physical networks graphed in Figure 3.14. MTU for the point-to-point network is 532 bytes.
IP Fragmentation and Reassembly

Header fields used in IP fragmentation. (a) Unfragmented packet; (b) fragmented packets.

Forwarding table for router R2.

<table>
<thead>
<tr>
<th>NetworkNum</th>
<th>NextHop</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>R1</td>
</tr>
<tr>
<td>2</td>
<td>Interface 1</td>
</tr>
<tr>
<td>3</td>
<td>Interface 0</td>
</tr>
<tr>
<td>4</td>
<td>R3</td>
</tr>
</tbody>
</table>