

TCP/IP Protocol Suite

Outline

2.3 *TCP/IP Protocol Suite*

2.4 *Addressing*

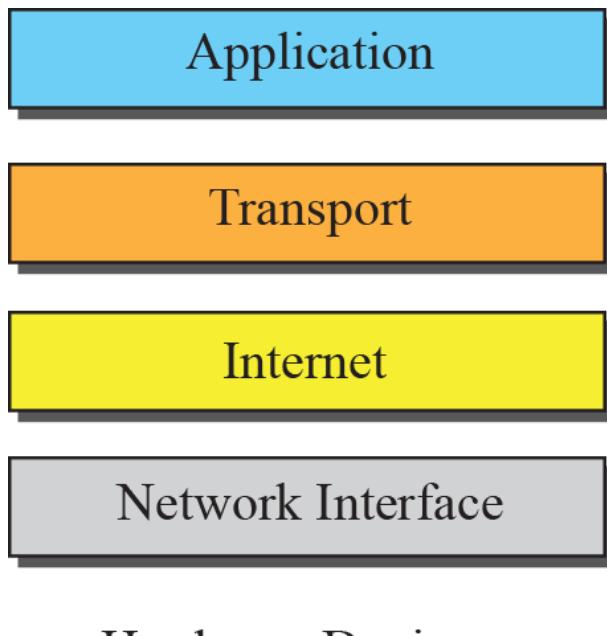
TCP/IP PROTOCOL SUITE

The TCP/IP protocol suite was developed prior to the OSI model. Therefore, the layers in the TCP/IP protocol suite do not match exactly with those in the OSI model. The original TCP/IP protocol suite was defined as four software layers built upon the hardware. Today, however, TCP/IP is thought of as a five-layer model with the layers named similarly to the ones in the OSI model. Figure 2.7 shows both configurations.

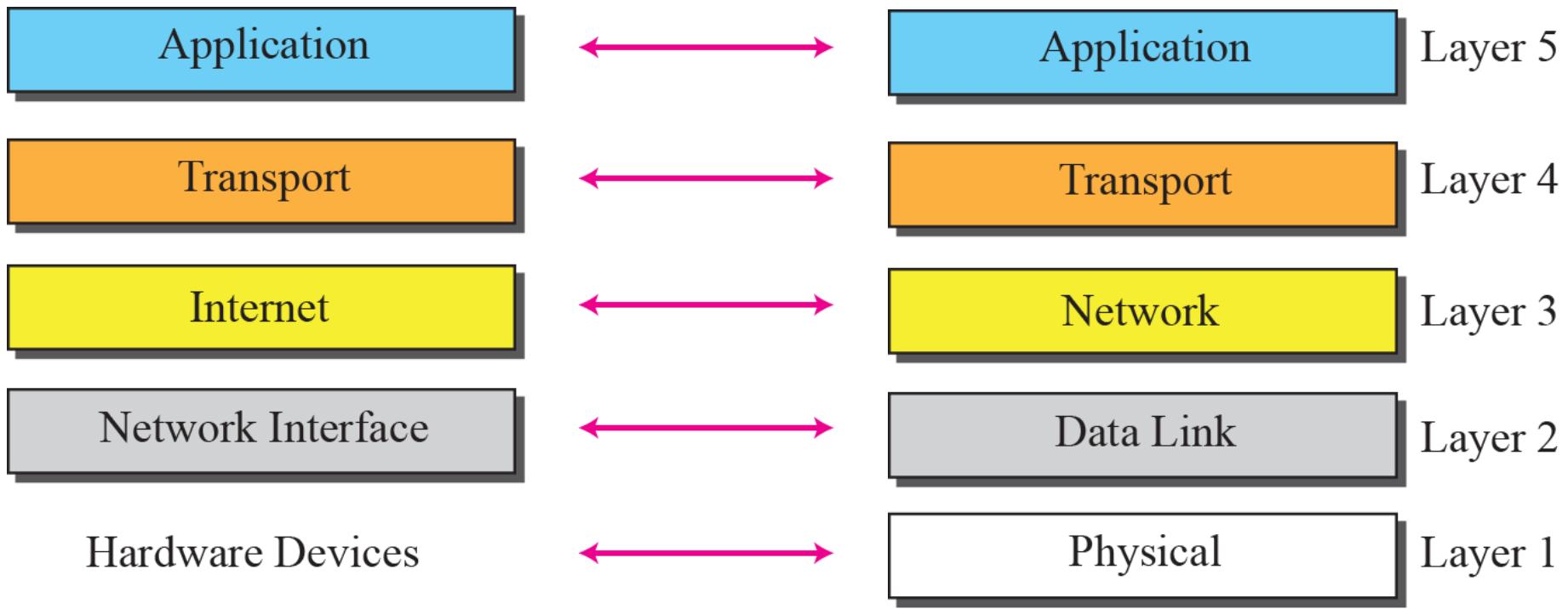
Topics Discussed in the Section

- ✓ Comparison between OSI and TCP/IP
- ✓ Layers in the TCP/IP Suite

Layers in the TCP/IP Protocol Suite

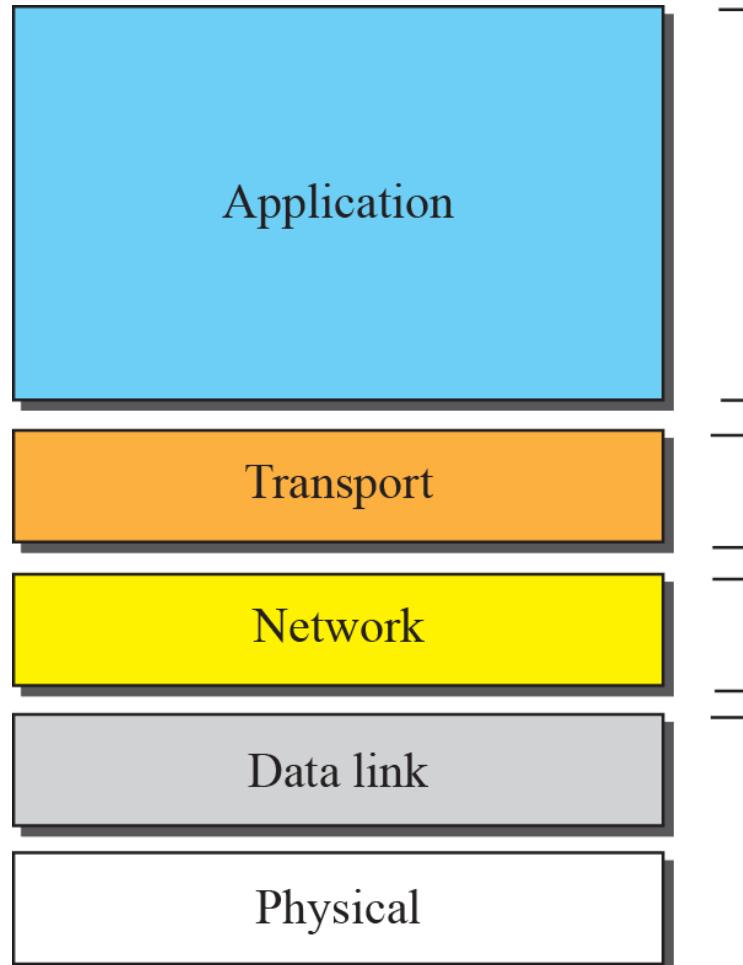
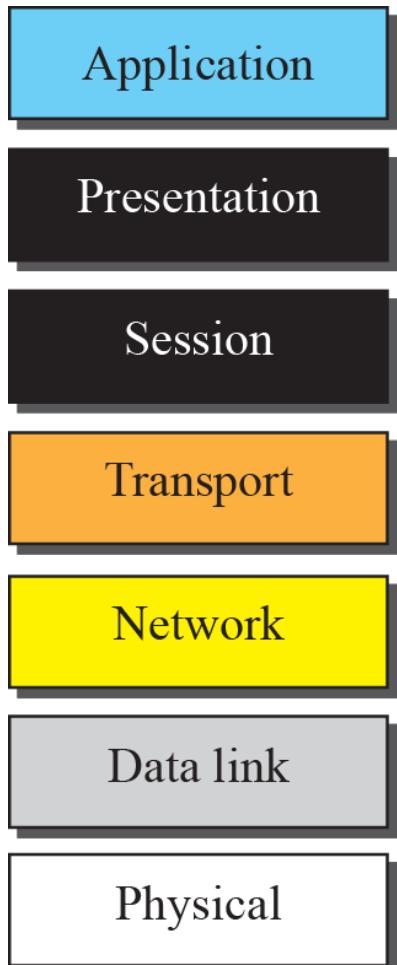


a. Original layers



b. Layers used in this book

TCP/IP and OSI model



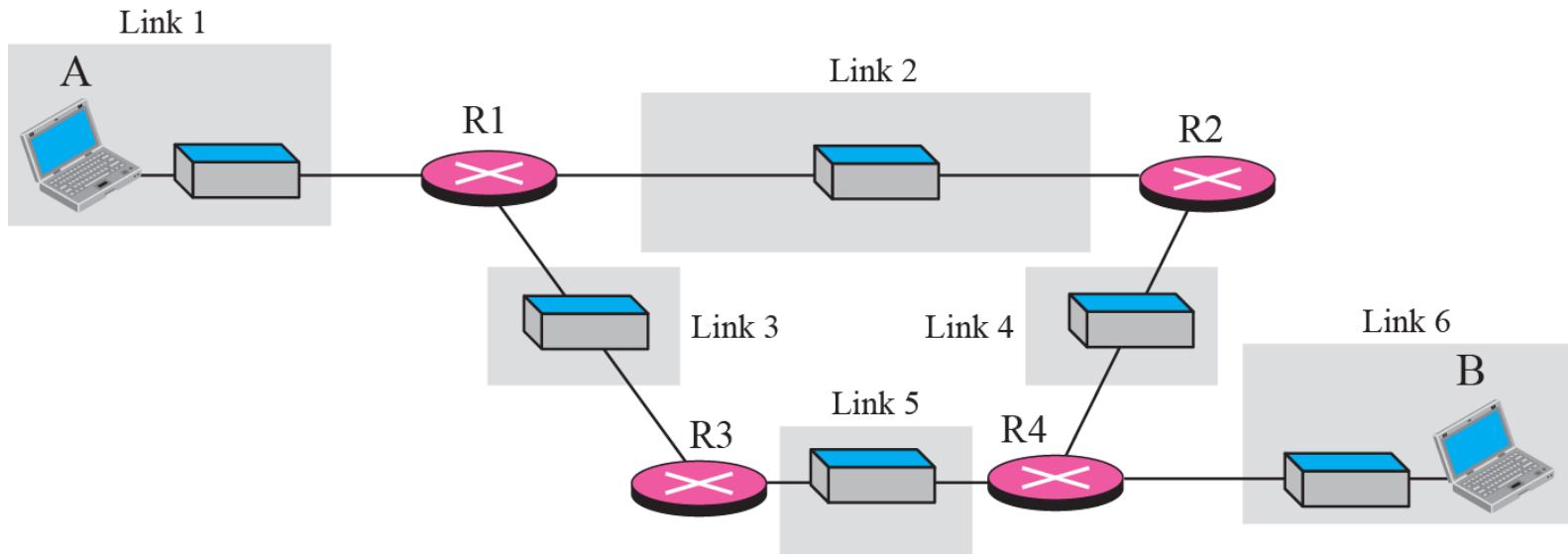
Several application protocols

Several transport protocols

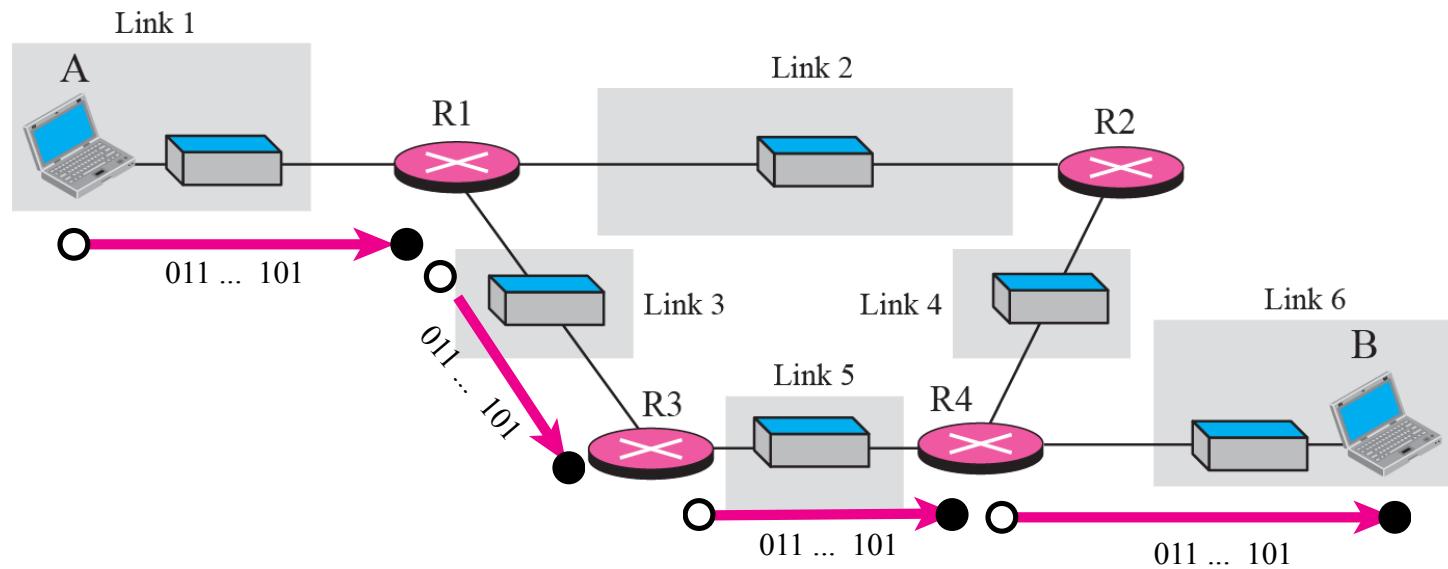
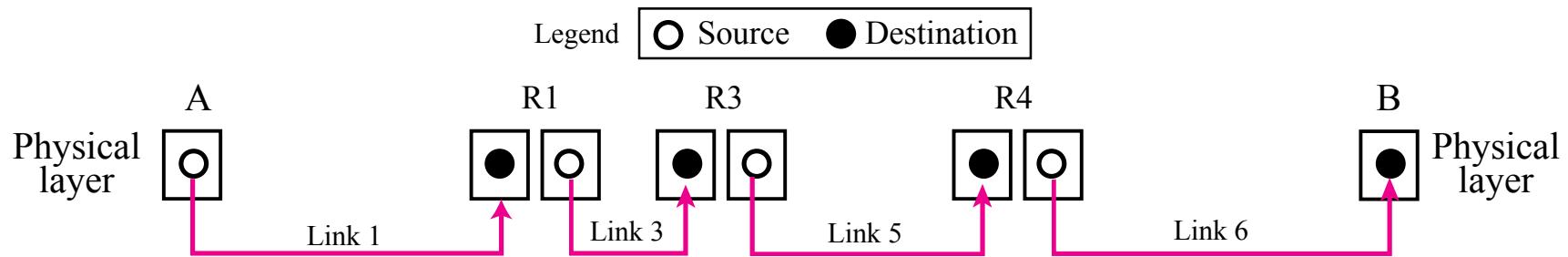
Internet Protocol
and some helping
protocols

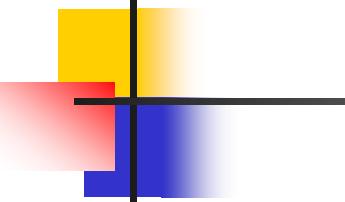
Underlying
LAN and WAN
technology

A private internet



Communication at the physical layer

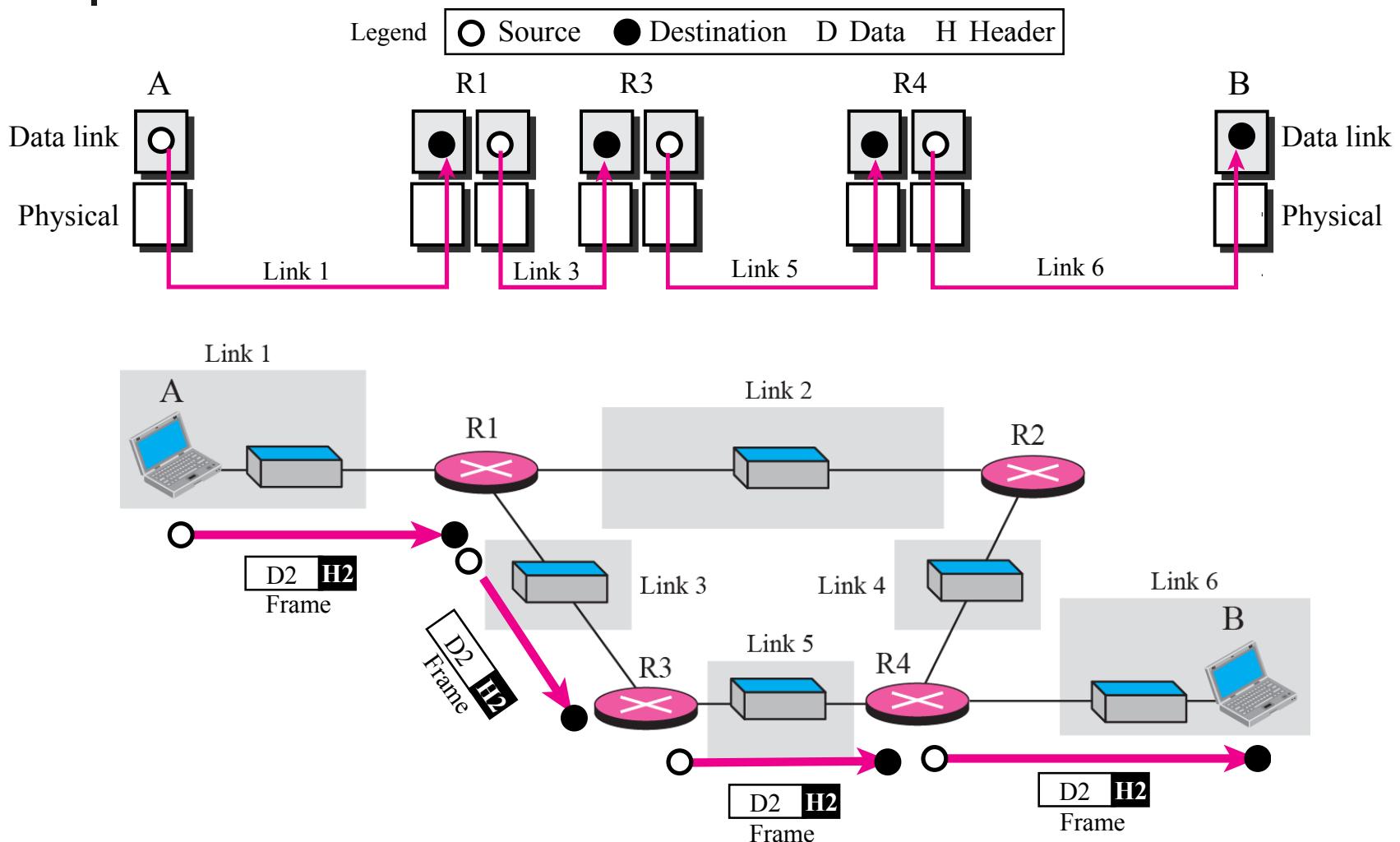


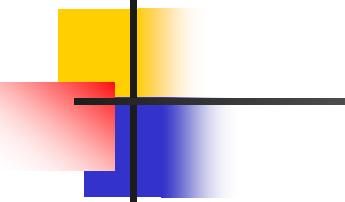


Note

The unit of communication at the physical layer is a bit.

Communication at the data link layer



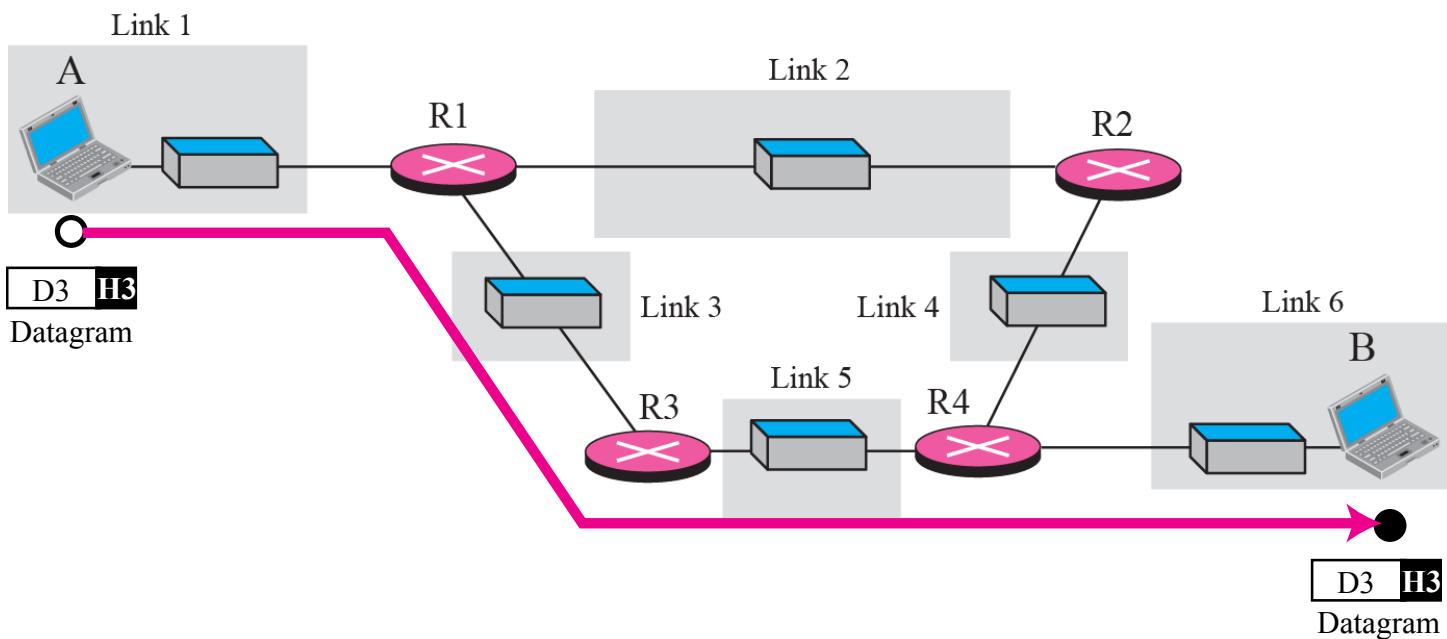
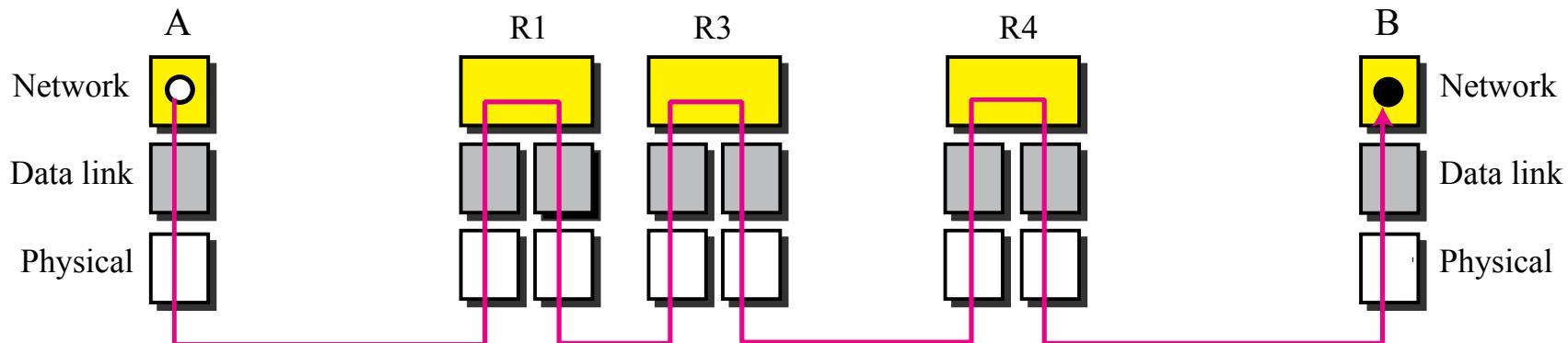


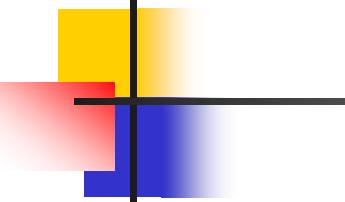
Note

The unit of communication at the data link layer is a frame.

Communication at the network layer

Legend  Source  Destination  Data  Header

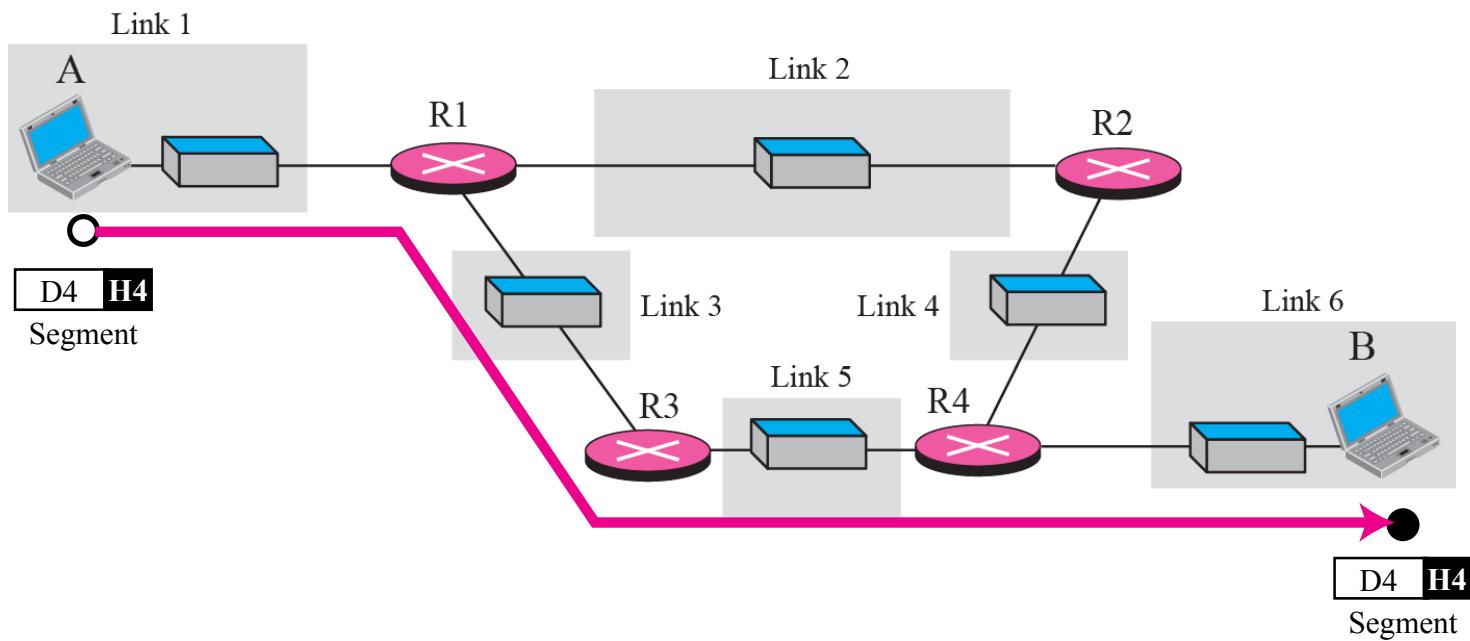
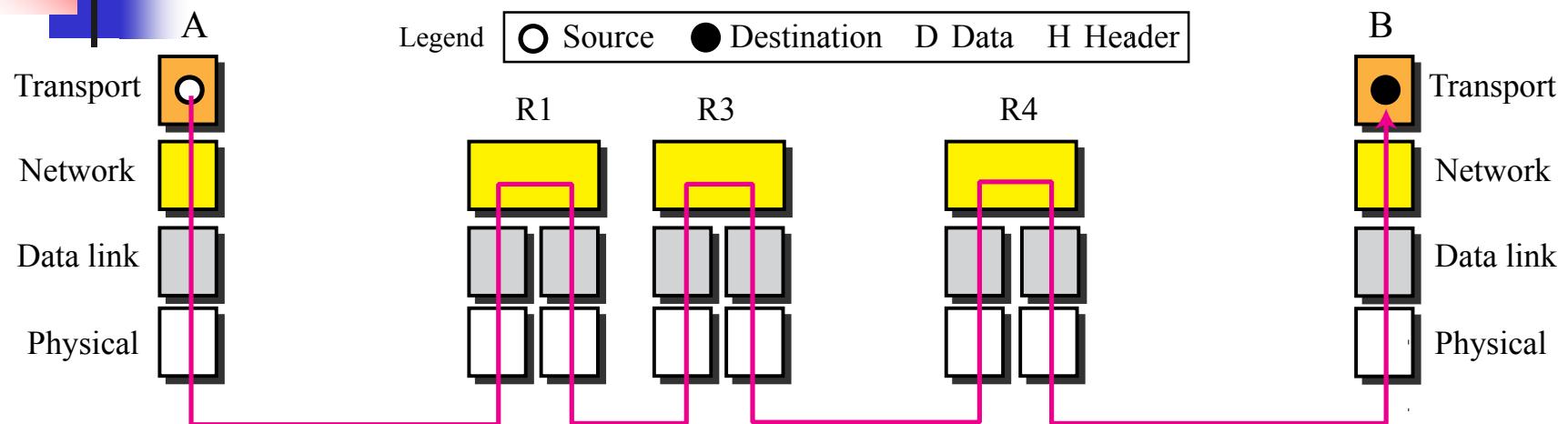


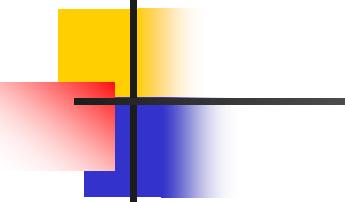


Note

The unit of communication at the network layer is a datagram.

Communication at transport layer

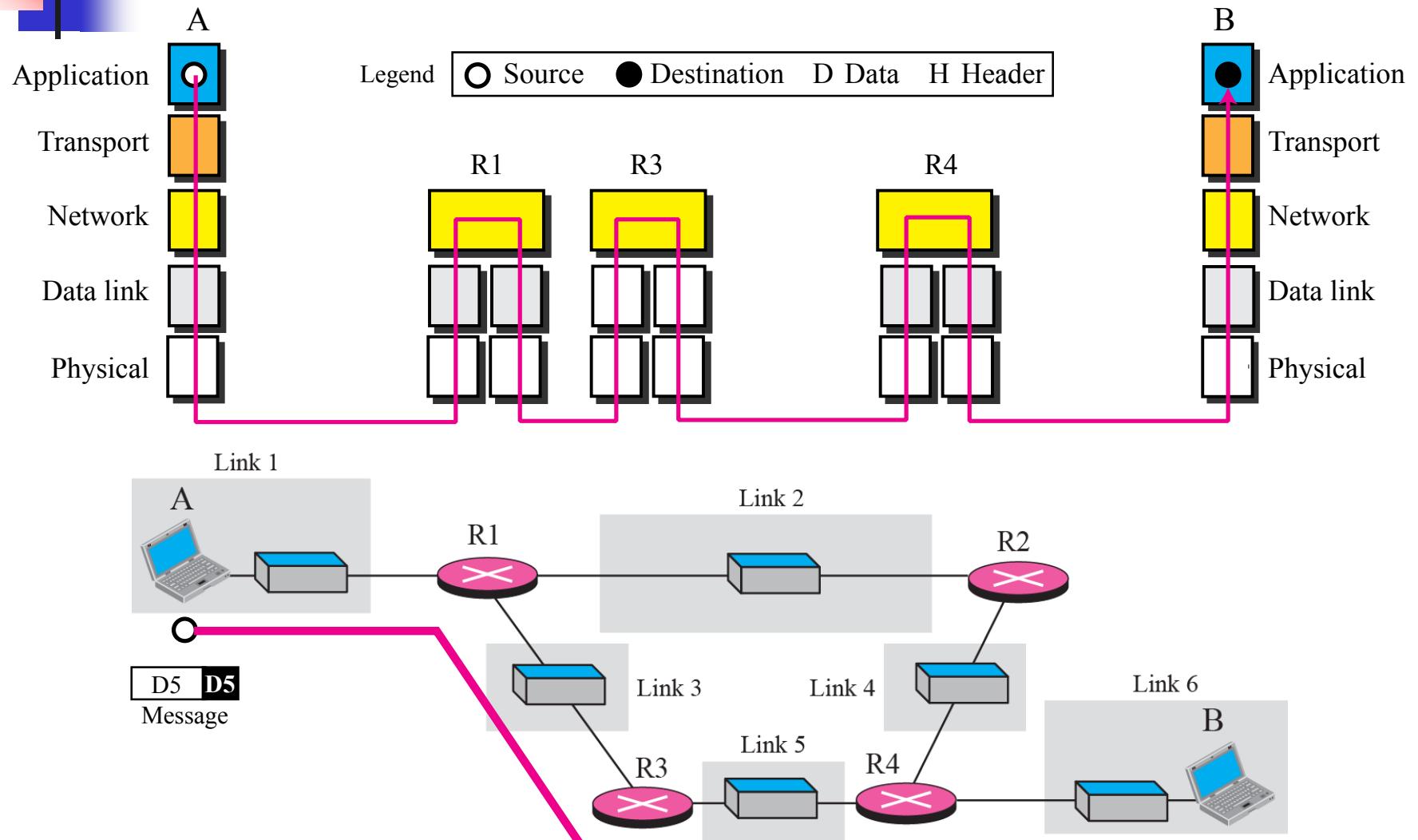


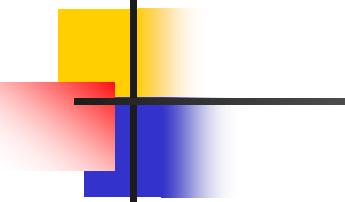


Note

The unit of communication at the transport layer is a segment, user datagram, or a packet, depending on the specific protocol used in this layer.

Communication at application layer





Note

The unit of communication at the application layer is a message.