# UNIT-4

## The Transport Layer

# Introduction to UDP

Internet has two main protocol in the transport layer:

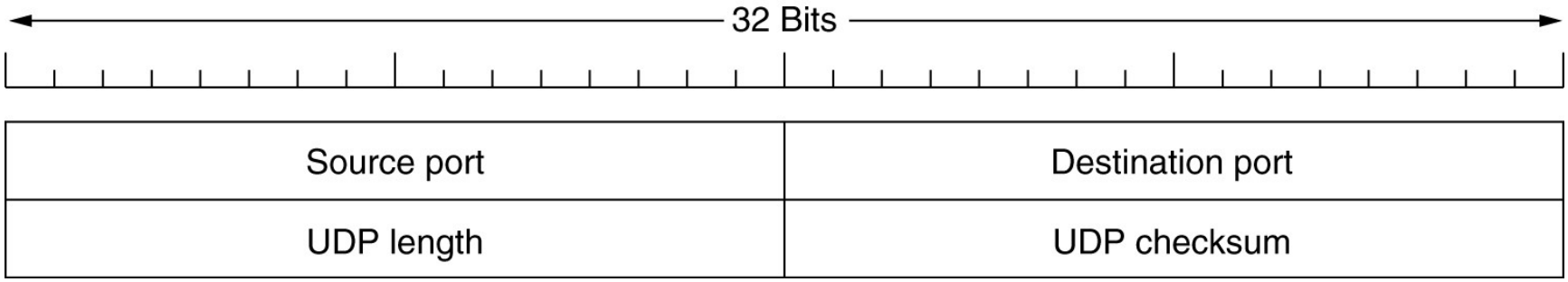
Connectionless protocol (UDP-user datagram protocol)

Connection oriented protocol (TCP-Transmission control protocol)

# Introduction to UDP

- UDP provides a way for applications to send encapsulated IP datagrams.
- UDP transmits segments consisting of an 8 byte header followed by the payload.
- It does not do flow control, error control ,or retransmission upon receipt of a bad segment . All this upto user processor.
- It only provide an interface to the IP protocol with the added feature of demultiplexing multiple process using the ports.

# UDP header

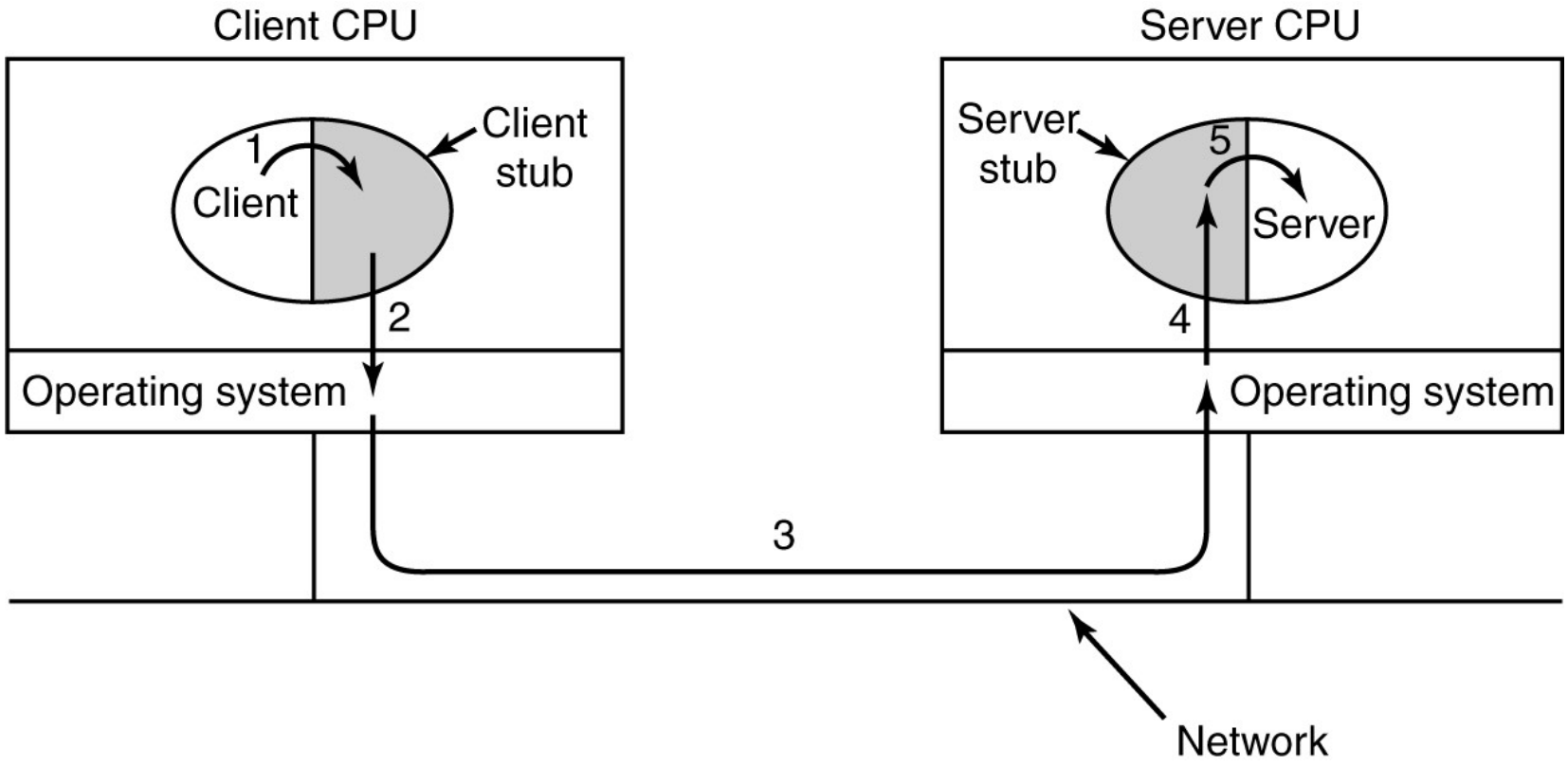



The UDP header.

# Application of UDP

- Remote  Procedure Call.
- Real Time Transport Protocol

# Remote Procedure Call

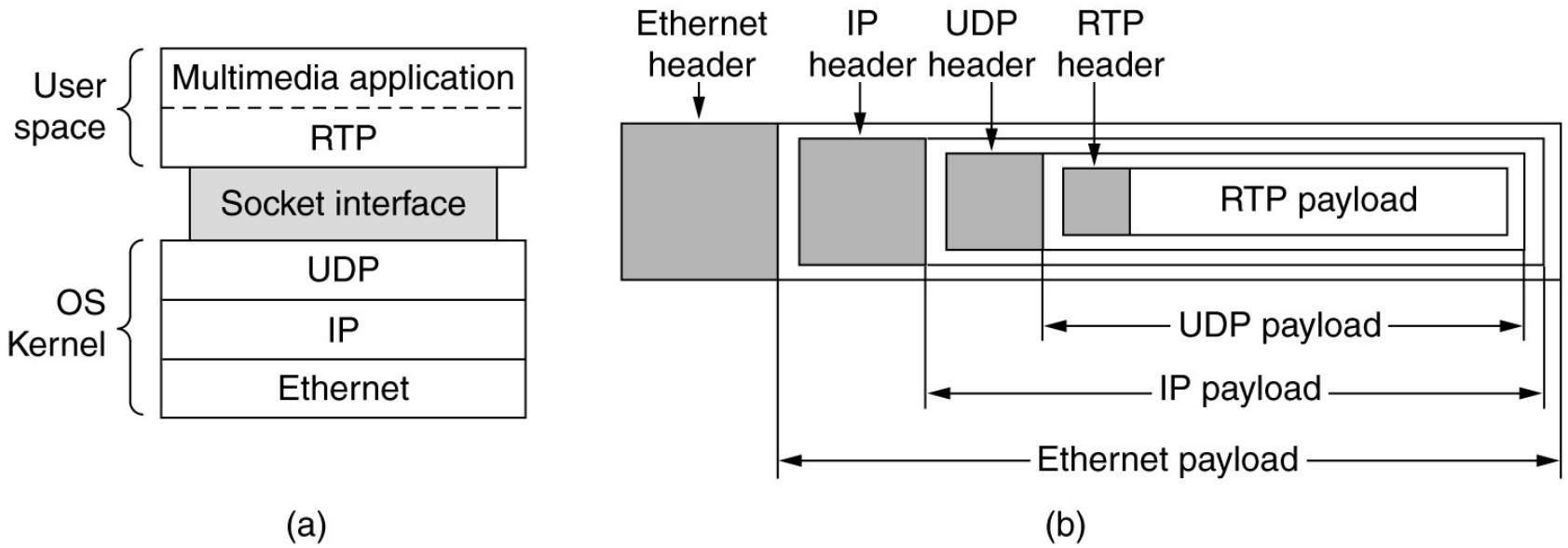



Steps in making a remote procedure call. The stubs are shaded.

# The Real-Time Transport Protocol

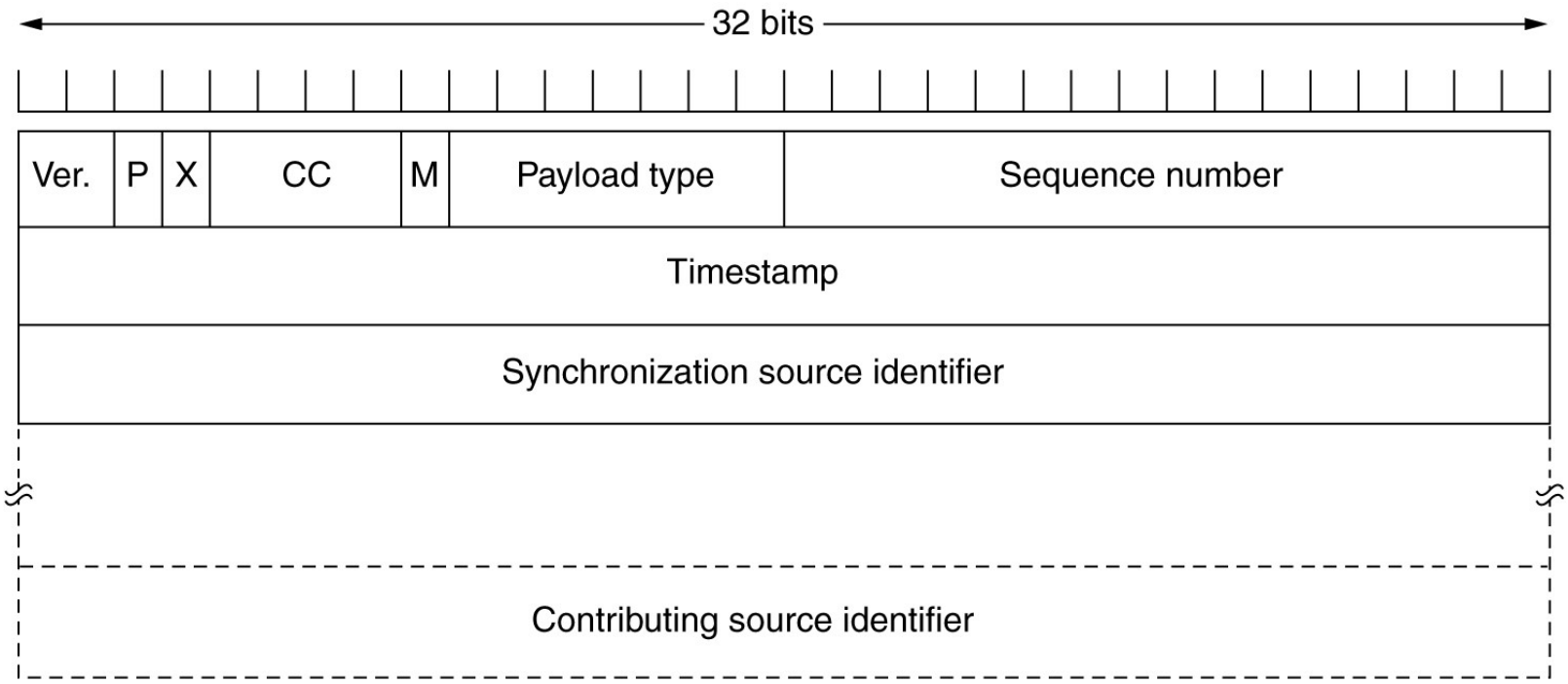
- Multimedia application stored in RTP library ,which is in user space along with the application.
- The library then multiplexes the stream and encodes them in RTP packet. i.e the basic function of RTP is to multiplex several real time data stream onto a single stream of UDP packet.
- Sequence no added with each packet.
- Any coding can be used.
- Timestamping is done.

# The Real-Time Transport Protocol




(a) The position of RTP in the protocol stack. (b) Packet nesting.

# The Real-Time Transport Protocol (2)




The RTP header.

ver: version

P : indicate that packet has been padded for multiple of 4 bytes.

The last byte of padding shows that how many byte padded.

X : shows that extension header present.

CC : sows how many contributing source present(0-15)

M : application specific marker bit.

payload type : tells encoding algo used.

serial no : counter incremented on each RTP packet sent.

time stamp : time of 1st packet sent.

Sync Source identifier : which stream packet belong to.

# Thank you