



SNS College of Technology
Department of Information Technology



19CSB302-COMPUTER NETWORKS

UNIT-4 TRANSPORT LAYER

TCP

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Introduction

TCP(transmission control protocol) and UDP(User Datagram protocol)works in transport layer of OSI model and are used for data transfer.

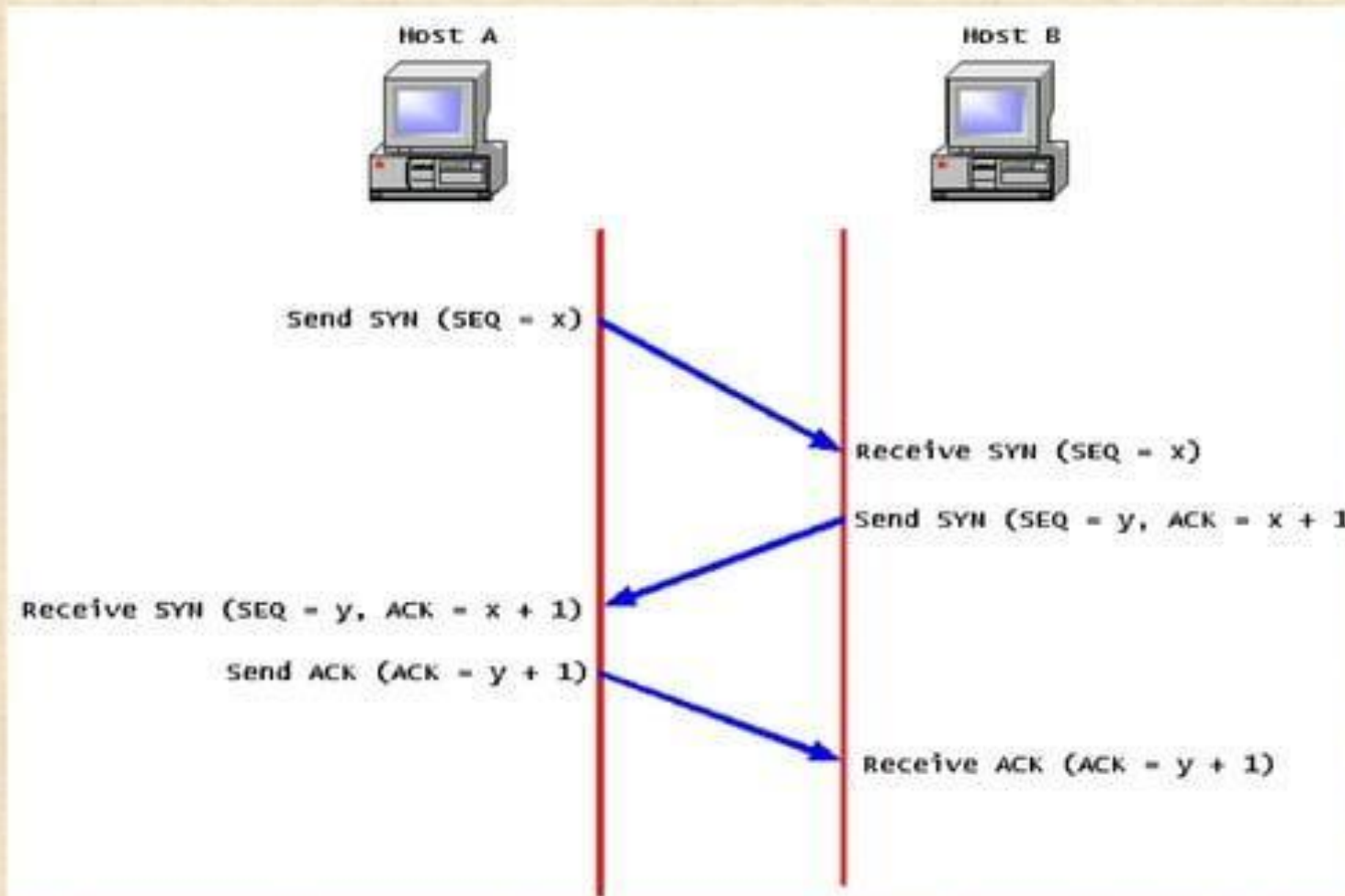


TCP

- > It is a connection-oriented protocol, which means a connection is established before transferring data.
- > Connection should be maintained until the application programs at each end have finished exchanging messages.
- > Used for confidential data transfer



3-Way Handshaking





Pros OF TCP

- It guarantees three things –
 - > Your data reaches its destination,
 - > It reaches there in time.
 - > It reaches there without duplication.
- In TCP, since all the work is done by the operating system, so you just need to sit back and watch the show

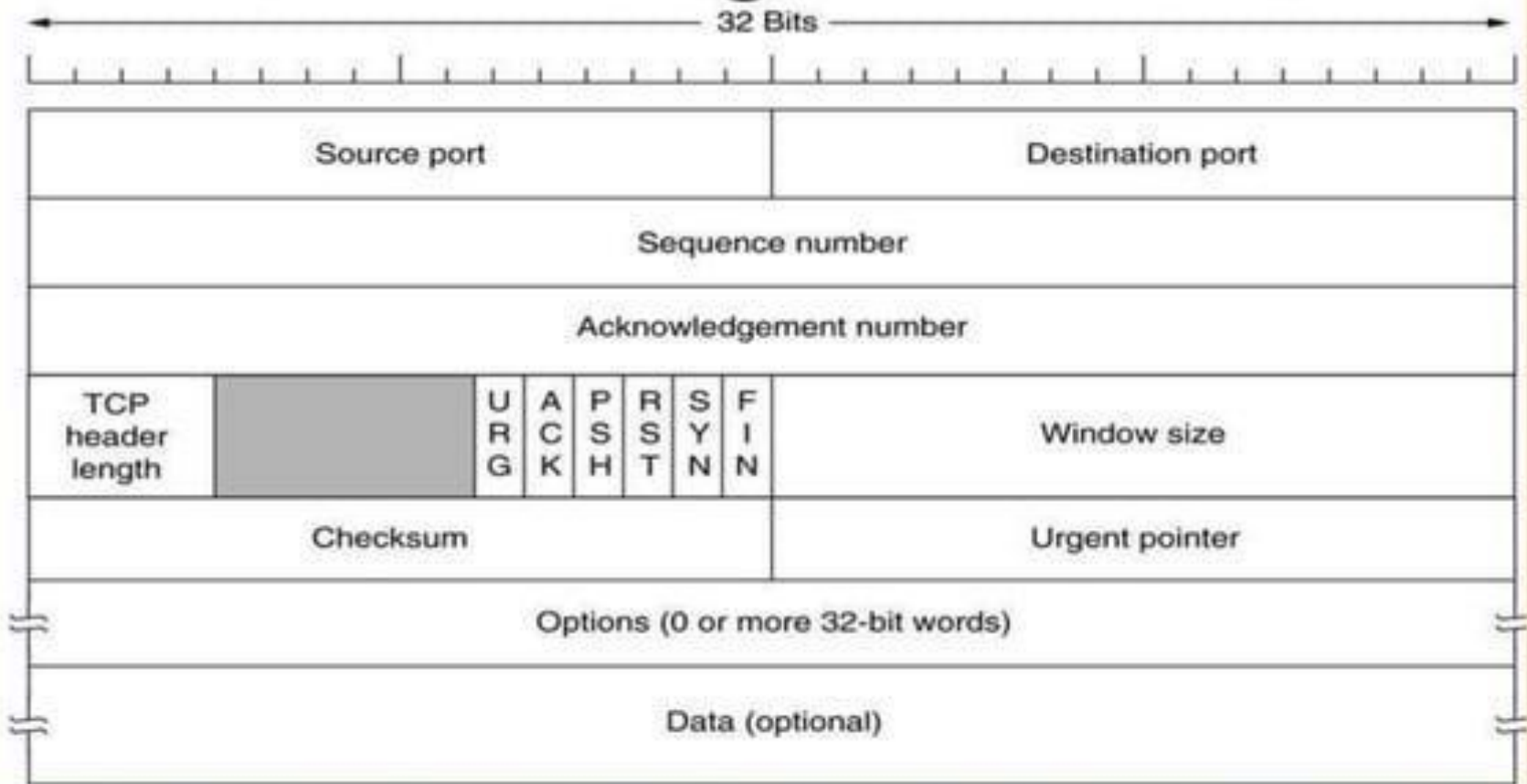


Cons OF TCP

- If there are bugs in your OS, then you will face many problems like problems in surfing and downloading contents from the net.
- TCP cannot be used for broadcast and multicast connections.
- It is slower in functioning than UDP



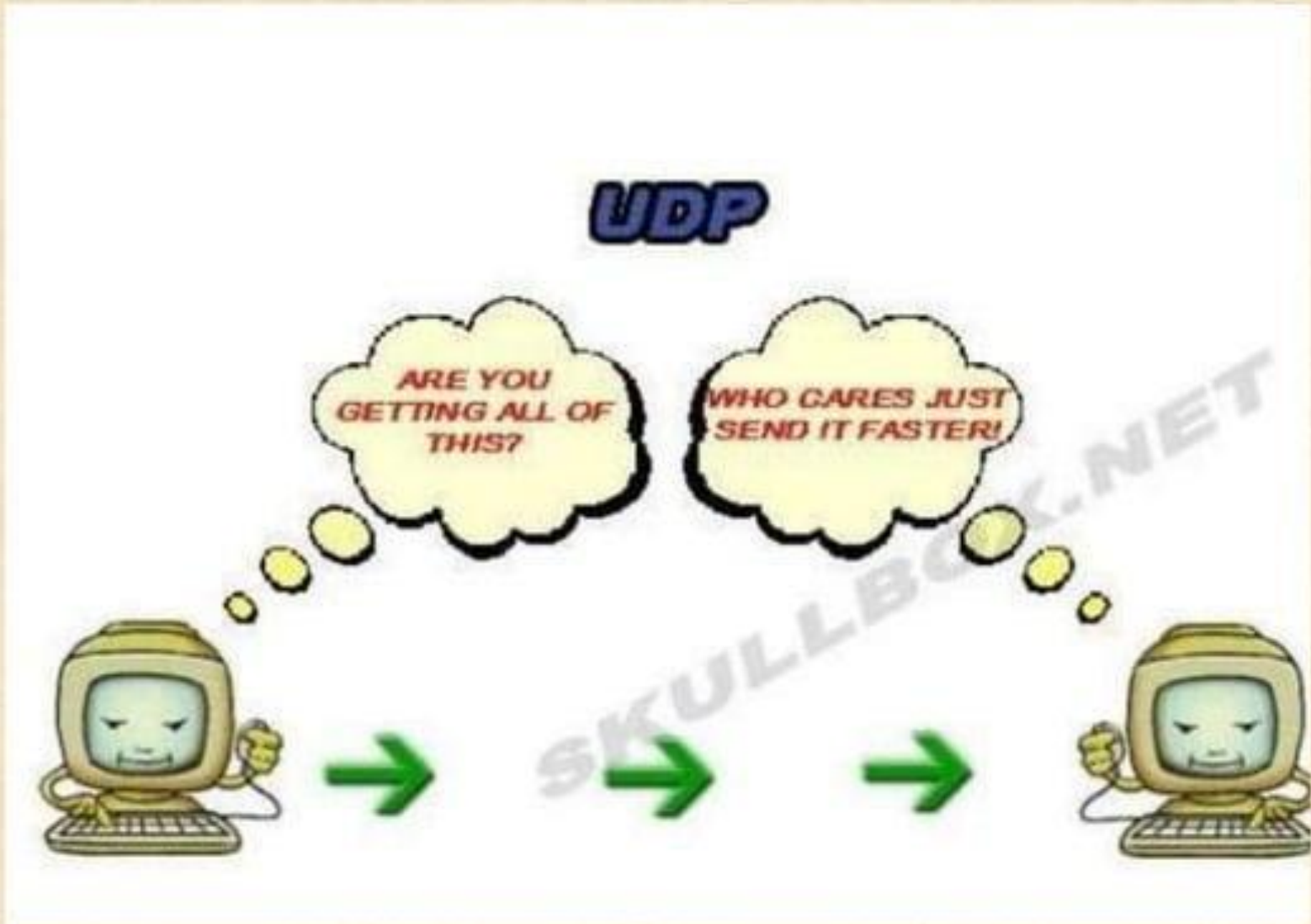
The TCP Segment Header





UDP

- UDP is not connection-oriented, So no connection needed to transfer data.
- Mostly suitable for applications that needs fast and efficient transmission
- Used in Video conferencing, Streaming and Voice call.





Pros of UDP

- Multiple messages can be sent as packets in chunks.
- It does not restrict you to connection based communication model.
- Much faster than TCP



Cons of UDP

- There are no guarantees with UDP. It is possible that a packet may not be delivered, or delivered twice, or not delivered in time.
- Doesn't ensure that communication has reached receiver as acknowledge is not sent.
- Connectionless and unreliable

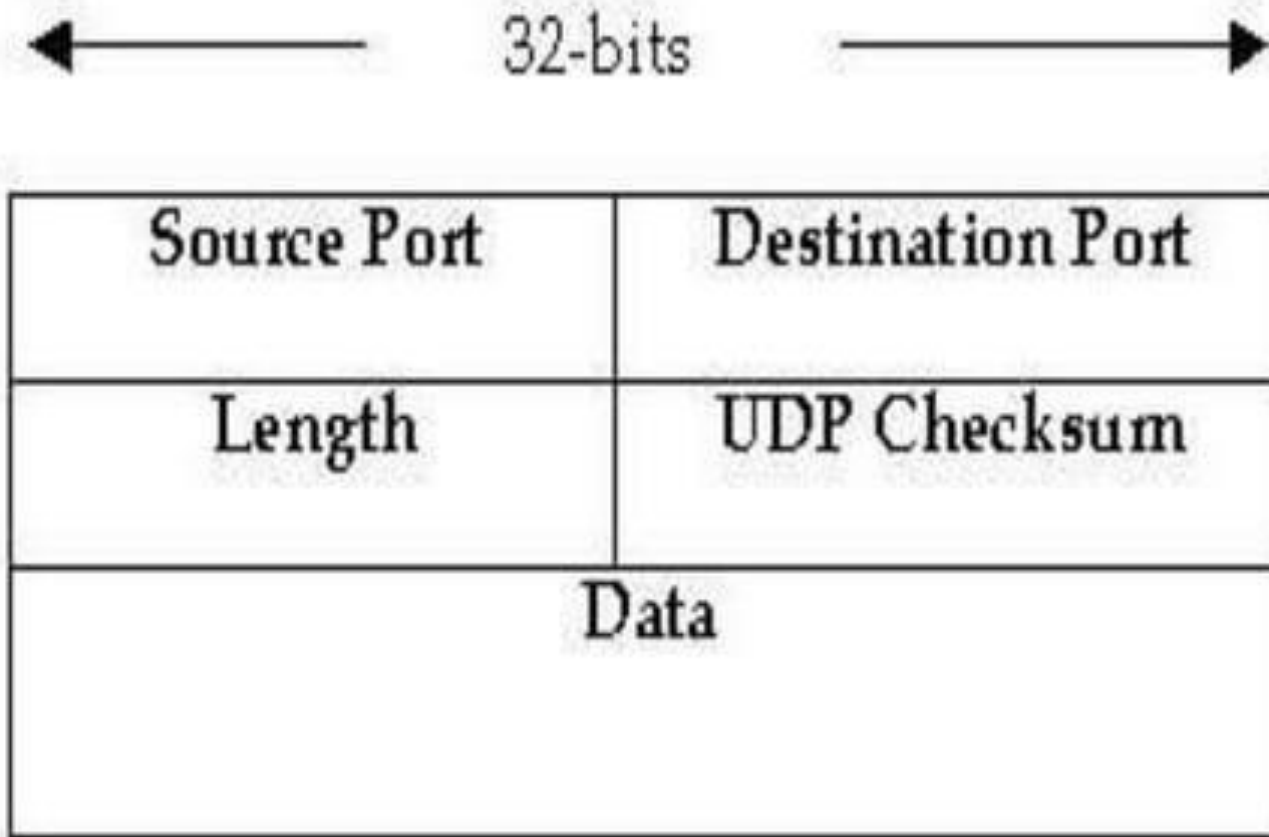


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- No way of predicting the order in which message is received.
- Cannot ensure the lost data or packet.



UDP Header





Conclusion

- Both TCP and UDP are protocols used for sending bits of data — known as packets.
- They both build on top of the Internet protocol.
- Either TCHP header or UDP header is sent as header while sending data.



THANK YOU

