CS & IT ENGINEERING

COMPUTER NETWORKS

TCP & UDP

Lecture No-18

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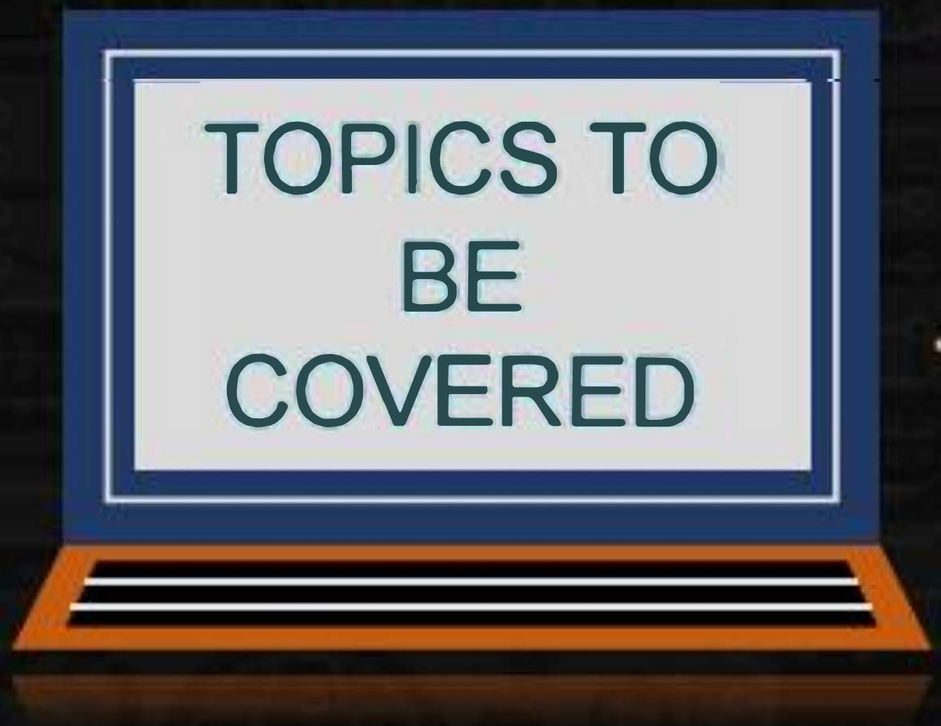

TCP vs UPD

Need of UDP

Why UDP ?

I. The application that required one request one reply. TCP is not suitable hence we use UDP. DNS, BOOTP & DHCP

II. Application that required constant dataflow TCP is not suitable hence we use UDP.

III. Application that required multimedia data transfer we can not use TCP hence we use UDP.

IV. Application that required fastness and then reliability TCP is not suitable hence we use UDP.

V. UDP used for management process such as SNMP (simple N/w management protocol)

Why UDP ?

VI. UDP is used for some route updating protocol such as RIP

VII. For broadcasting & multicasting application TCP is not suitable hence we use UDP

VIII. VIII. UDP is normally used for interactive real time applications

IX. IX. UDP is suitable for a process with internal flow –and error control mechanisms. For example, the Trivial File Transfer protocol(TFTP) process include flow and error control. It can easily use UDP

TCP

Vs

UDP

TCP	UDP
Dynamic Header(20-60 byte)	Fixed header(8 byte)
End to end Flow control	No flow control
Error control(Checksum mandatory)	No error control(Checksum is optional)

TCP	UDP
Connection-oriented	Connectionless
Reliability in delivery of msg	Not reliable
Sequence Number.	No sequence number.
Ack no.	No ack no.
Overhead is high (20-60 Byte)	overhead is less (8 Byte)
Keep track of order (sequence)	No order
Protocols: HTTP, FTP, SMTP, POP	Protocol: DNS, SNMP, TFTP, NFS, RIP, BOOTP, DHCP, All real time and multimedia protocols

Note:-

Client server application such as DNS uses the services of UDP because a client need to send a short request to server and to receive a quick response from it. The request and response can each fit in one user datagram. Since only one message is exchanged in each direction.

Note:-

A client-server application such as SMTP, which is used in electronic mail, cannot use the services of UDP because a user might send a long e-mail message, which could include multimedia (images, audio, or video). If the application uses UDP and the message does not fit in one user datagram, the message must be split by the application into different user datagrams. Here the connectionless service may create problems. The user datagrams may arrive and be delivered to the receiver application out of order. The receiver application may not be able to reorder the pieces.

THANK YOU!