Lecture-8

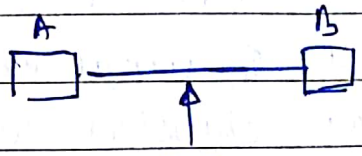
SSK
06/02/18

TCP/IP ref. model (Internet model)

App. layer of person layer ← presentation layer

Application
Transport
Network
Data link
Physical

There must be some comm^{n} & for comm^{n} there must be some software & when we think of software, there must be some protocol



IP ← • operates at network layer
• responsible for addressing
• responsible for routing.

TCP → Transmission control protocol
• establishes point to point link using which 2 devices can communicate via internet
• makes the connection.
• maintains it and when the comm^{n} is over, terminates it.

MTU - Max. transferable unit
• Diff for diff. networks. (eg. 5KB, 500B etc.)

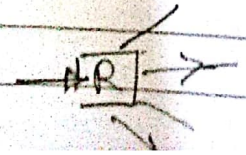
• How to maintain correctness of forwarding of msg? - Segmentation
- Suppose if a message of 2000B comes on a network of MTU size 600B then it is segmented into blocks

600B	600B	600B	200B

And this segmented message is reassembled at the destination.

Application layer -
- Only layer with user interaction.
- Generates the msg that is to be transmitted.
- File transfer access management (FTAM).
- Uploading email attachments and downloading msgs.
- SMTP: simple mail transfer protocol → just for sending
  POP3 : Post office protocol
  IMAP4: Internet mail access protocol } just for receiving
  FTP : file transfer protocol (for FTAM)
  - just for downloading & uploading files.
  HTTP: Hyper text transfer protocol → for www
  text that is not local
  TelNet: Terminal network. For remote-logins.
  NNTP: NewsNet articles transfer protocol
  - used by news networks

Transport layer -
- Error control
- Flow control
- Connection control
- Segmentation & assembly
- UDP: User datagram protocol.
  ~~connection oriented~~ connection-less service
- Services provided -
  - Connection oriented service - Need to make connection.
  - Connection-less service - (like VISHNU)
    - No need of making connection. works on existing one.
    - Faster connection (speed is priority).
    - Non-dedicated connection.
      Whichever line is free, router will forward that way.
    - Different line can transfer diff parts. So no guarantee of reliability.



Network layer -

- Logical addressing
- Routing
- Protocol : IP

Data-link layer -

- HDLC - High level data link control
- Keeps transfer in synchronization (by inserting markers).

Physical layer -

- Bothered only about ~~if~~ transferring the message bit in bit-by-bit fashion.