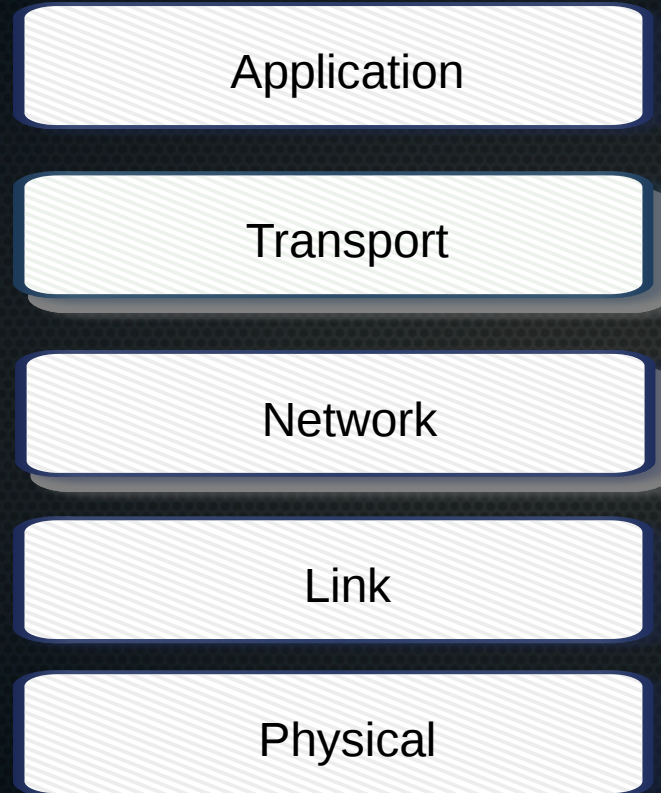


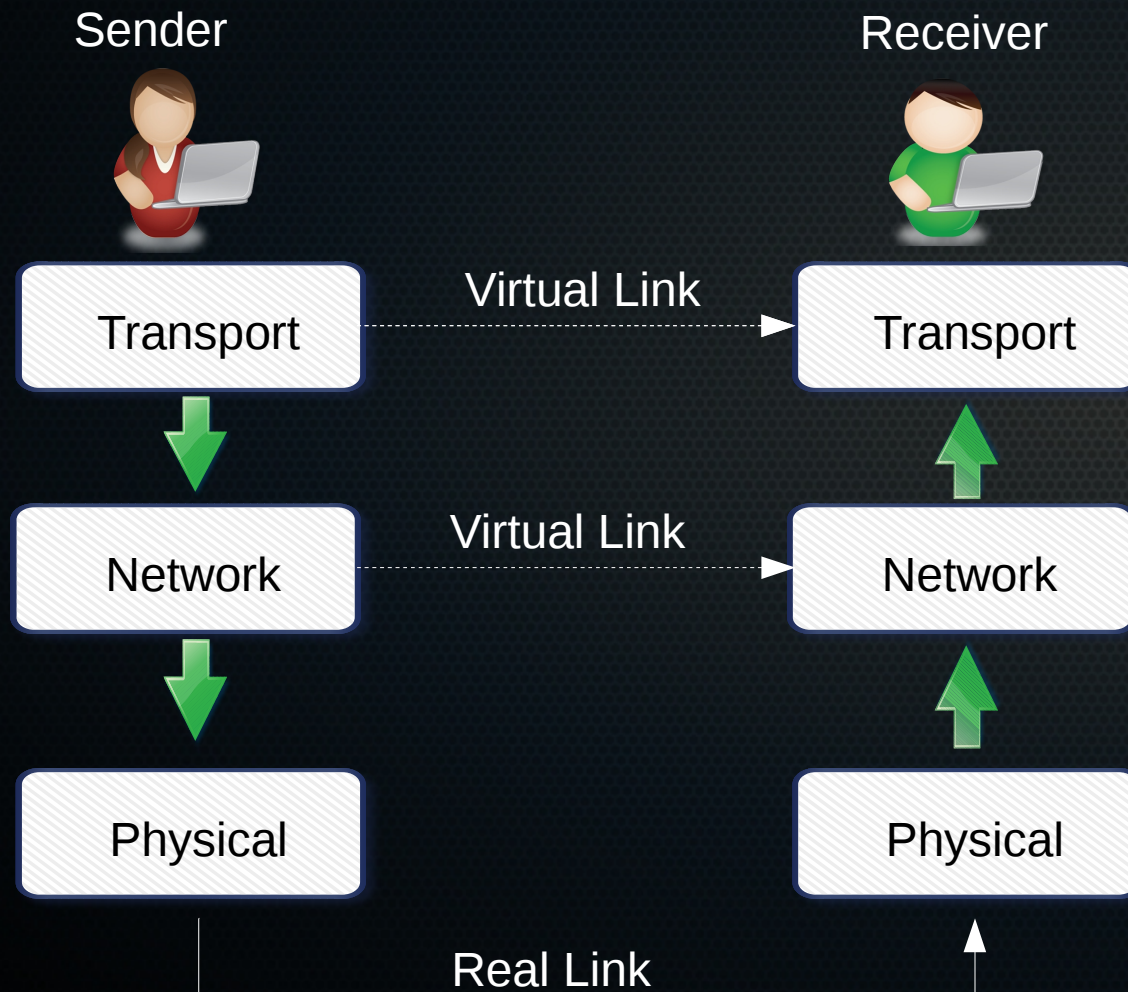


Transport Layer Vs. Network Layer

By: Sagar Giri

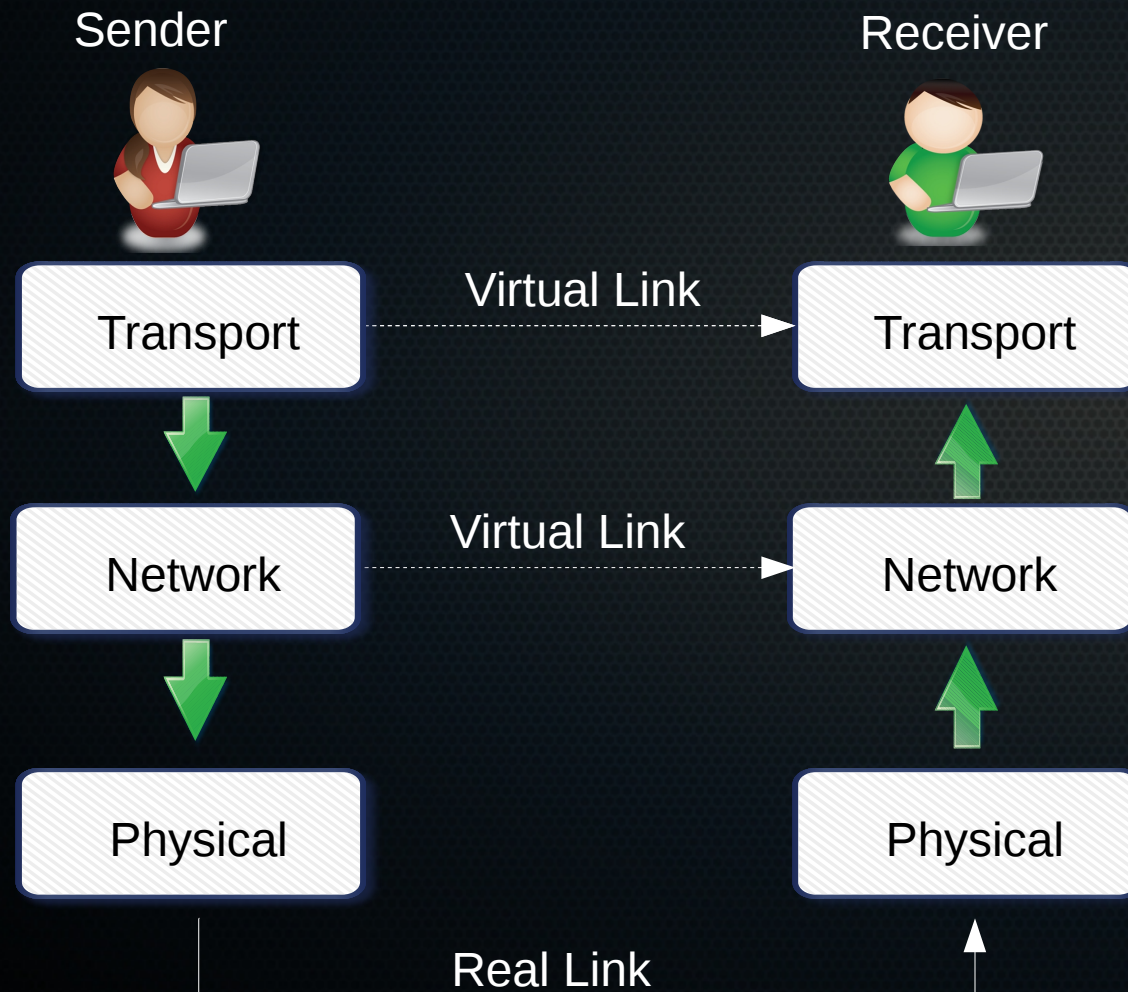
Five-layer Internet protocol stack





- Transport Layer is where the decision to use TCP/UDP is made.
- TCP is reliable, UDP isn't.
- Depending upon the choice made, the respective headers are attached to the packet.

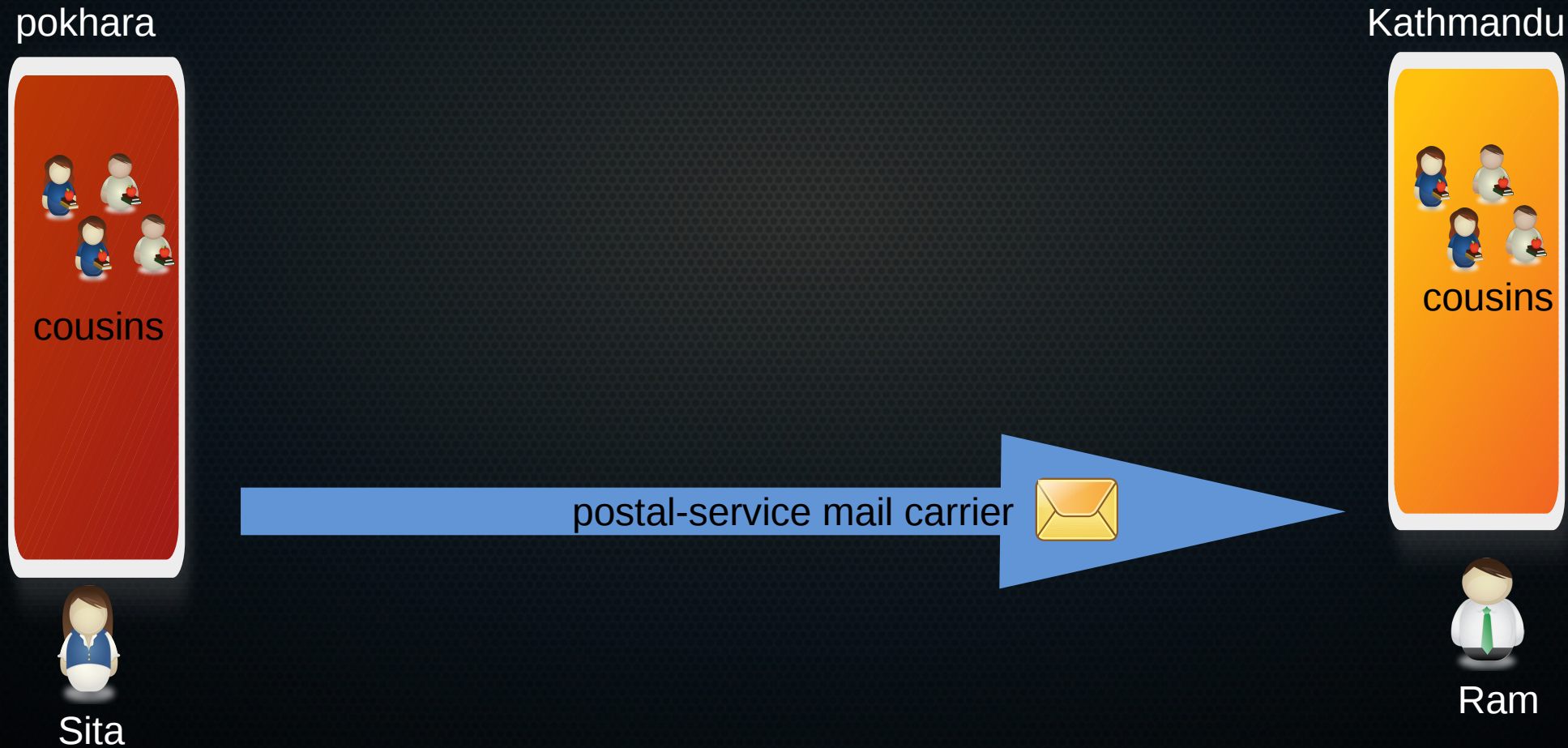
- Now, after TCP/UDP header being appended, it moves on to the Network Layer.
- It is at this step that the Source & Destination IP addresses are added to the packet.
- This layer actually knows the remote-endpoint.



- The sender's Transport Layer data, is the exact data received by the receiver's transport layer.
- As the packet travels down the sender, each layer is adding its own header information, but all of that is removed by the corresponding layer on the receiver.
- The advantage is that a **virtual link** is established, like the one shown above, whereas the real link is only in the **physical layer**.

Example:

Letter delivery from one house to another from different part of country.



Example:

From previous example:

- application messages = letters in envelopes
- processes = cousins
- hosts (also called end systems) = houses
- transport-layer protocol = Sita and Ram
- network-layer protocol = postal service (including mail carriers)

Differences

Transport layer

- Logical communication between processes.
- Responsible for checking that data available in session layer are error free.

Network Layer

- Logical communication between hosts.
- Responsible for logical addressing and translating logical addresses (ex. amazon.com) into physical addresses (ex. 180.215.206.136)

Differences

Transport layer

- This layer ensures that the protocols operated at this layer provide reliable end-to-end flow and error control.

Network Layer

- This layer controls routing of data from source to destination plus the building and dismantling data packets.

Differences in protocols used

Transport layer

Protocols used at this layer are :

- TCP(Transmission Control Protocol)
- UDP(User Datagram Protocol)
- SCTP(Stream Control Transmission Protocol)

Network Layer

Protocols used at this layer are :

- IP(Internet Protocol)
- ICMP(Internet Control Message Protocol)
- IGMP(Internet Group Message Protocol)
- RARP(Reverse Address Resolution Protocol)
- ARP(Address Resolution Protocol)

Thank You

Sources:

<http://stackoverflow.com/questions/13333794/networking-difference-between-transport-layer-and-networking-layer>

Computer Networking- A Top down Approach Featuring the Internet (Third Edition)