



NETWORK PROTOCOLS & SECURITY 23EC2210 R/A/E

Topic:

TRANSPORT LAYER: SERVICES & PROCESS-TO-PROCESS DELIVERY

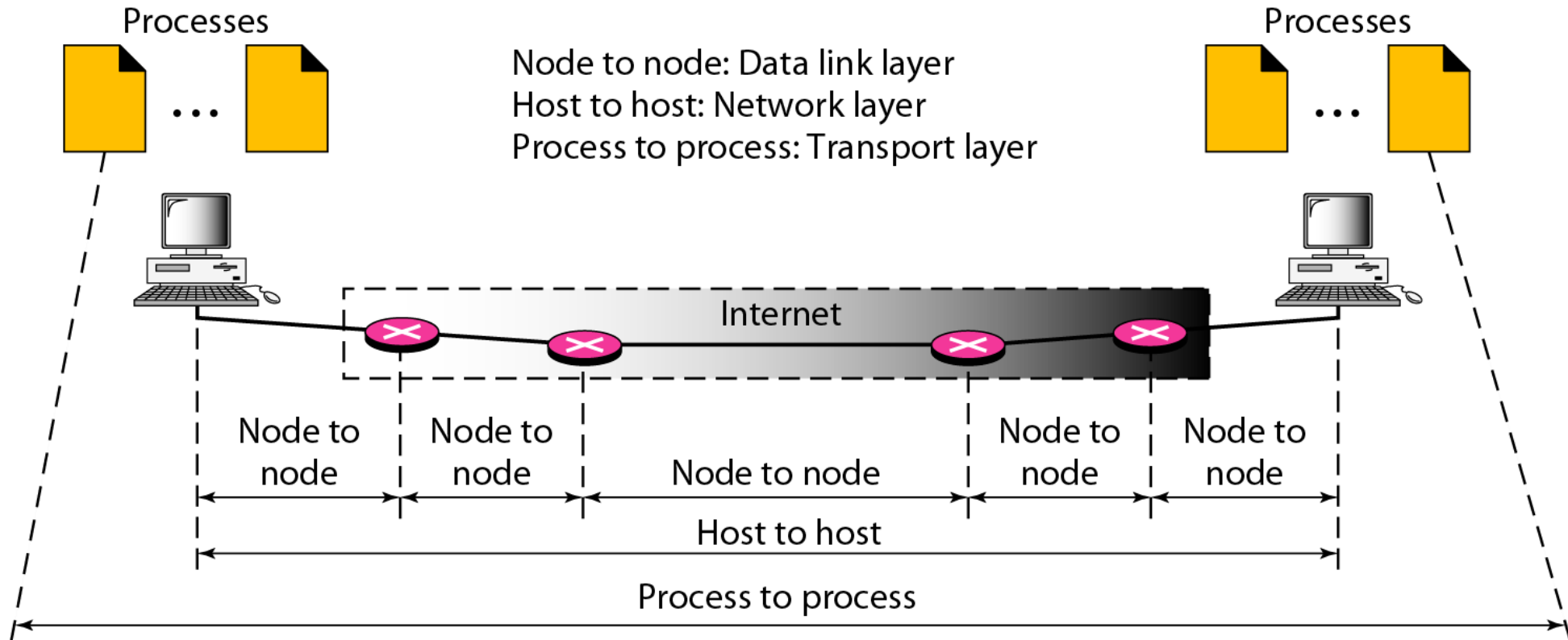
Session - 24

Process to Process Delivery:

- The data link layer is responsible for delivery of frames between two neighbouring nodes over a link. This is called **Node-to-Node delivery**.
- The network layer is responsible for delivery of datagrams between two hosts. This is called **Host-to-Host delivery**.
- Real communication takes place between two processes (application programs). We need Process-to-Process delivery.
- The **transport layer is responsible for Process-to-Process delivery**-the delivery of a packet, part of a message, from one process to another.

Types of Data Deliveries

Node-to-Node , Host-to-Host, Process-to-Process

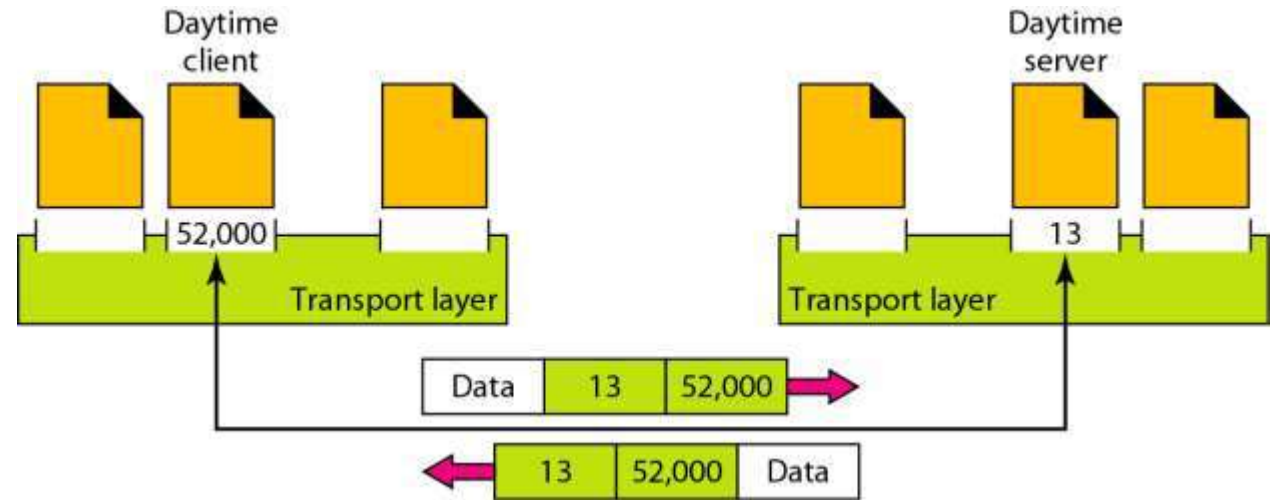


Client/Server Paradigm

- Although there are several ways to achieve process-to-process communication, the most common one is through the **client/server** paradigm.
- A process on the local host, called a client, needs services from a process usually on the remote host, called a server.
 1. **Local host**
 2. **Local process**
 3. **Remote host**
 4. **Remote process**

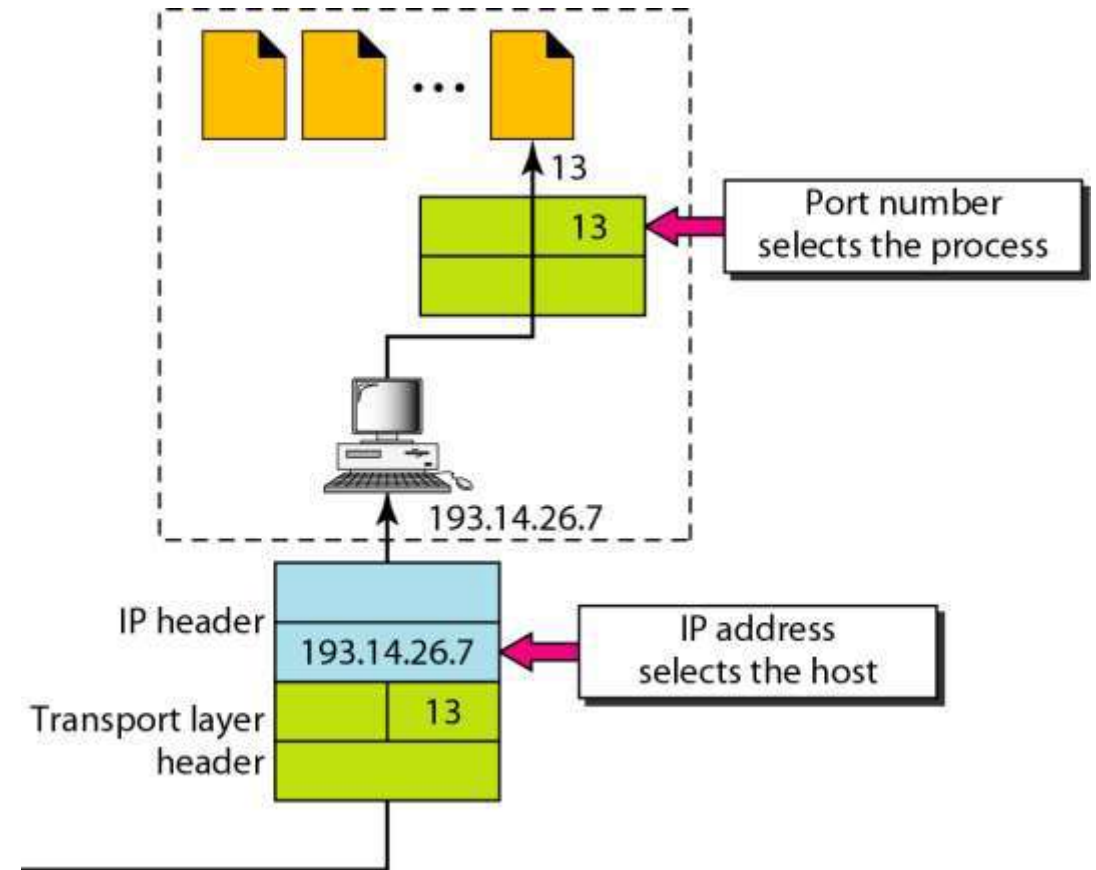
Addressing

In transport layer, the source and destination processes are identified by a **port number**.



Addressing...

- The **IP addresses** and **port numbers** play different roles in selecting the final destination of data.
- The destination IP address defines the host among the different hosts in the world.
- After the host has been selected, the port number defines one of the processes on this particular host.



Socket Address

A socket address is the combination of **an IP address** (the location of the computer) **and a port number** (which is mapped to the application program process) **into a single identity**



FIG. SOCKET ADDRES

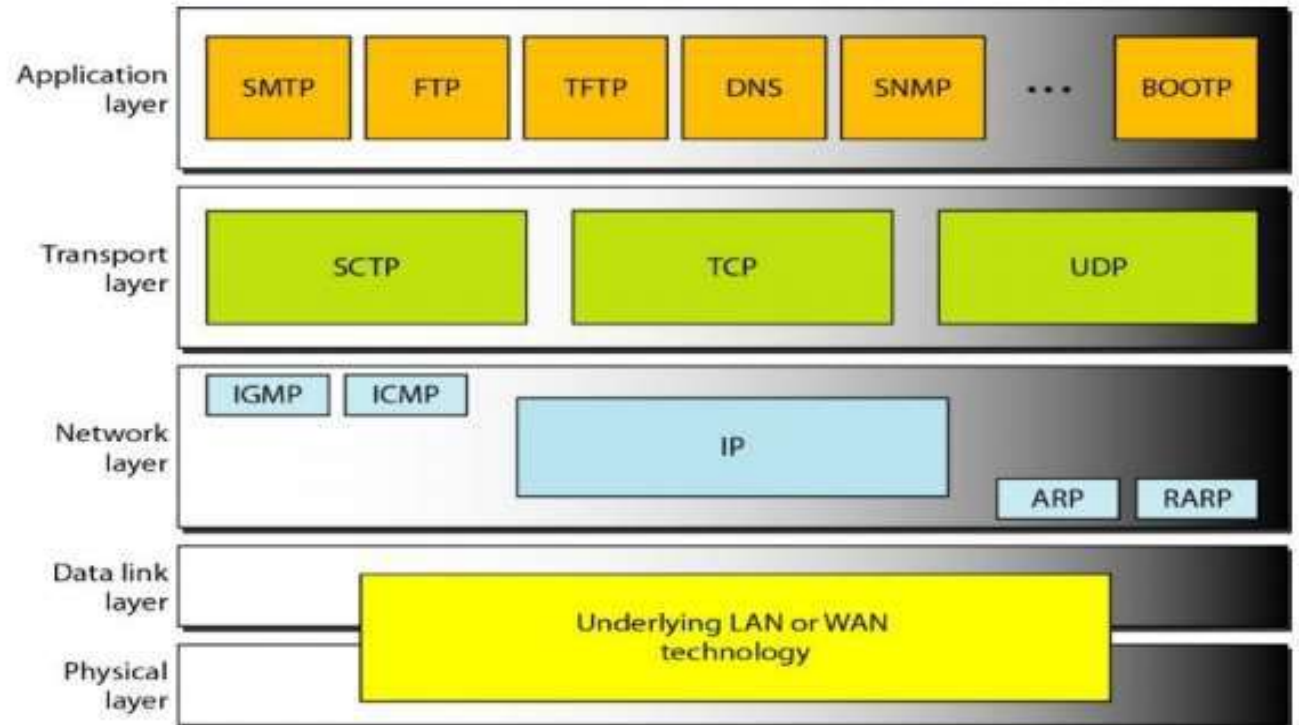
Transport Layer Services

A transport layer protocol can either be connectionless or connection-oriented.

Connection-oriented	Connectionless
Establishes a dedicated connection before sending data	Doesn't establish a dedicated connection before sending data
More reliable	Faster
Performs handshaking	Doesn't perform handshaking
Data is delivered in the same order the sender has sent them	No guarantee that the data is delivered in order
Performs flow control and error checking	Doesn't perform flow control or error checking

Transport layer Protocols

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



THANK YOU



Team –Network Protocols and Security