

W13
(2^a)

Computer Networks II

Socket Programming

Amitangshu Pal

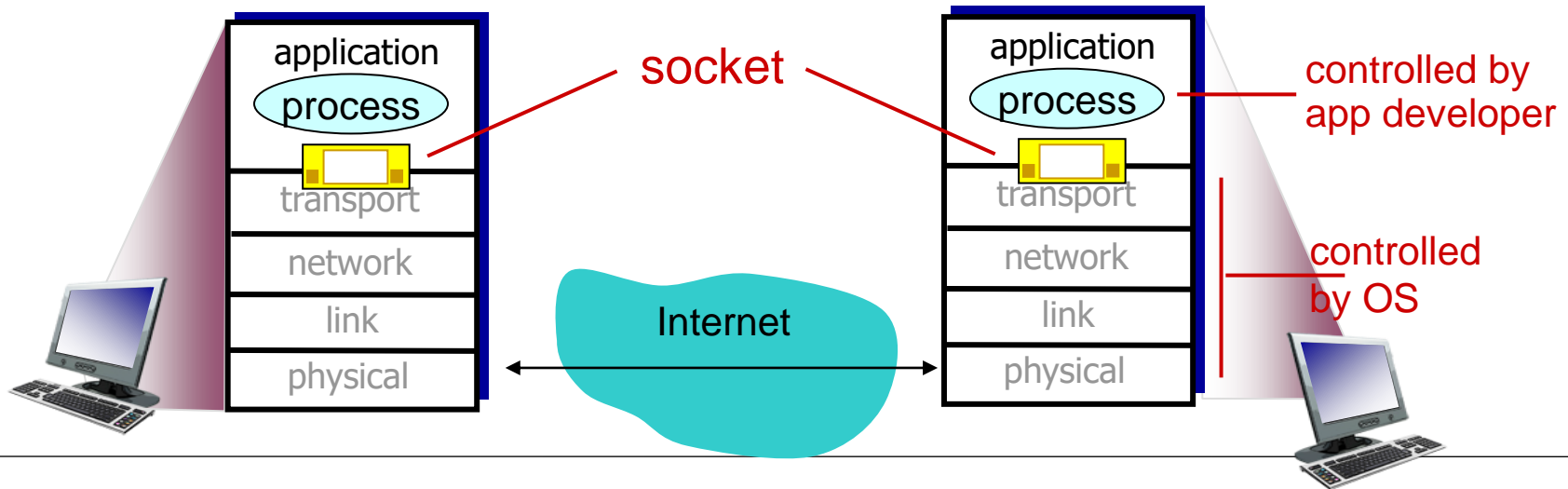
Computer Science and Engineering

IIT Kanpur

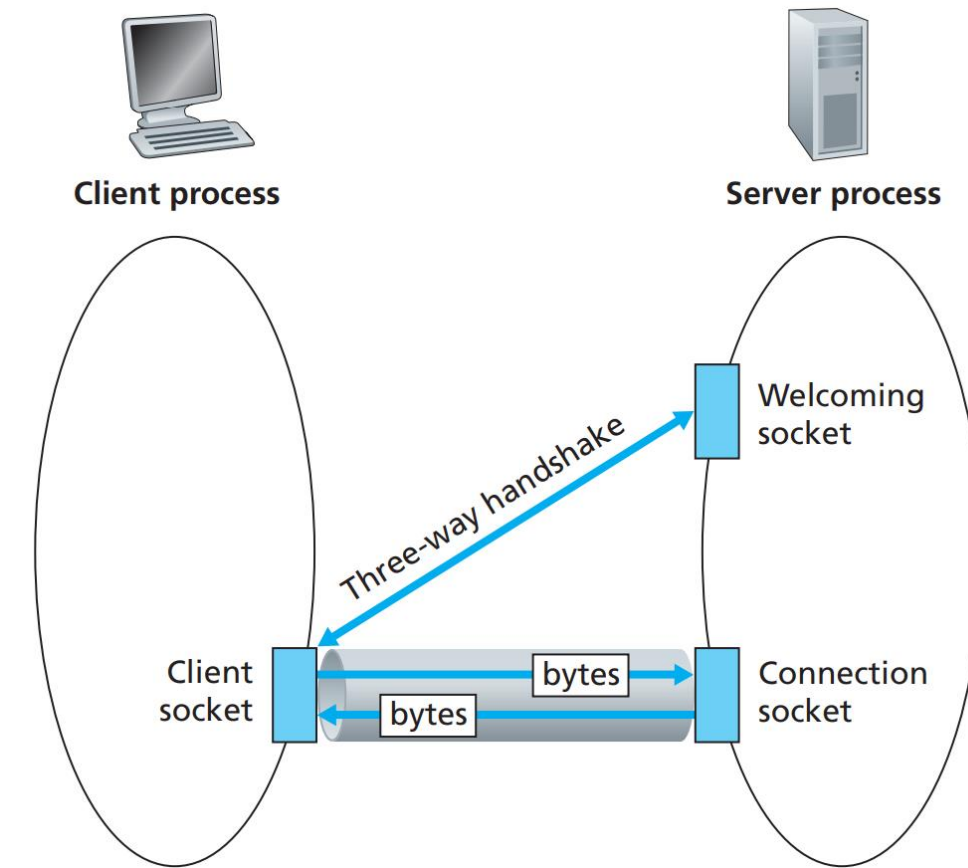
Socket programming

Goal: learn how to build client/server applications that communicate using sockets

Socket: door between application process and end-end-transport protocol



Client/server socket interaction: TCP



Client/server socket interaction: TCP

server (running on `hostid`)

client

create socket,
port=`x`, for incoming
request:
`serverSocket = socket()`

wait for incoming
connection request
`connectionSocket =`
`serverSocket.accept()`

read request from
`connectionSocket`

write reply to
`connectionSocket`

close
`connectionSocket`

TCP
connection setup

create socket,
connect to `hostid`, port=`x`
`clientSocket = socket()`

send request using
`clientSocket`

read reply from
`clientSocket`

close
`clientSocket`

Client/server socket interaction: UDP

server (running on *serverIP*)

create socket, port= x:
`serverSocket =
socket(AF_INET,SOCK_DGRAM)`

↓
read datagram from
`serverSocket`

↓
write reply to
`serverSocket`
specifying
client address,
port number

client

create socket:
`clientSocket =
socket(AF_INET,SOCK_DGRAM)`

↓
Create datagram with server IP and
port=x; send datagram via
`clientSocket`

↓
read datagram from
`clientSocket`

↓
close
`clientSocket`

