

Network Programming Part 1

MCIT 595

Operating System Key Components

System Call API

Process Management

Process/Thread
Management (2,3,6)

Scheduler (3)

Signal Handling (4)

Job Control (5)

Synchronization (7,8)

Memory Management

Memory Allocation (9)

Virtual Memory
Management (10)

I/O Component

Virtual File System

Character
Devices
Drivers

Network
Devices
Drivers
(11,12)

File
Systems
(13,14)

Block
Device
Drivers

Hardware Abstraction

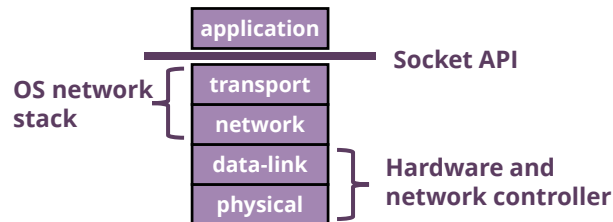
External Device and Controllers

Memory

CPU

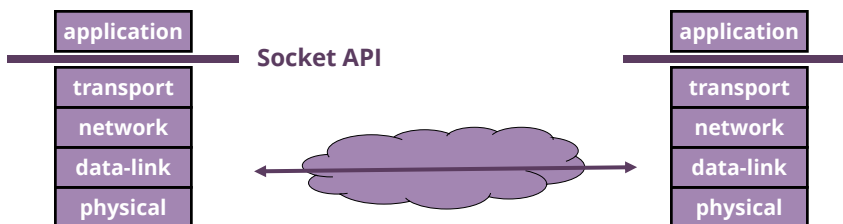
Socket API

- Applications use the Socket Application Programming Interface (API) to use the network



Sockets

- Well-known OS abstraction denoting an endpoint of a connection
- A socket is associated with each end-point (end-host) of a connection
- Identified by IP address and port number
- Berkeley sockets is the most popular network API
 - Runs on Linux, FreeBSD, OS X, Windows
 - Feed off popularity of TCP/IP



Linux I/O

