Basics of Port Addressing

CSE320 – Data Communications

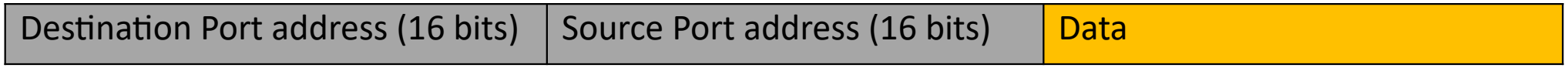
Department of Computer Science and Engineering
School of Data & Science

Port Addressing

- What does port number mean?
- How this port number is assigned?
- Port number ranges
- Port number in real devices

Port Addressing

- A port address identifies a specific application or process running on a host(computer/server).



- At the software level, within an operating system, a port is a logical construct that identifies a specific process or a type of network service.

How to assign port number?

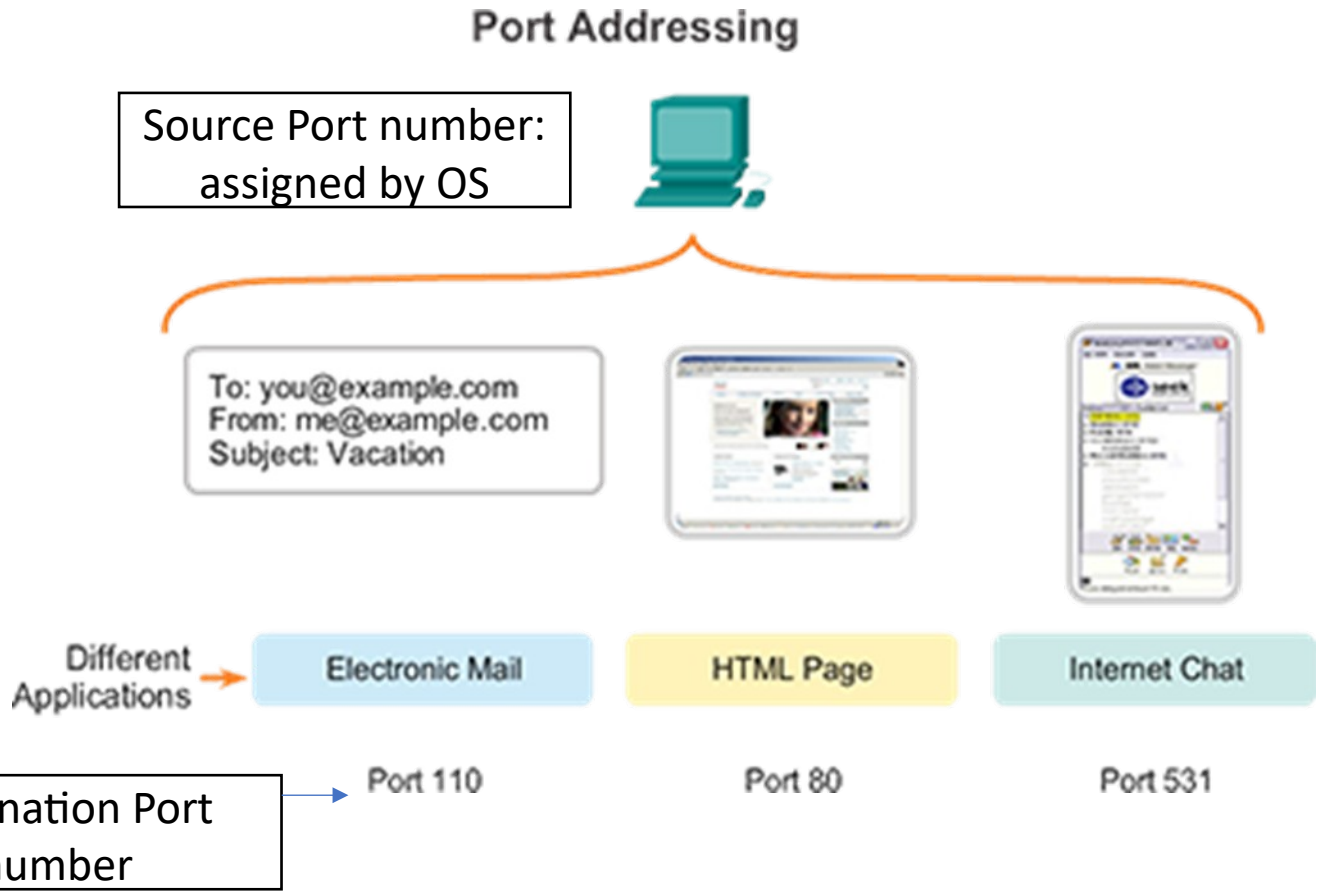
- To differentiate the data for each application, Transport layer uses port numbers.

From Computer to Server

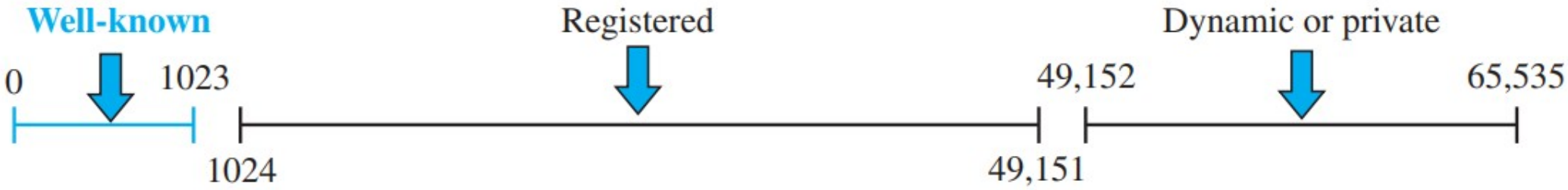
Dest. Port: 110	Source port:49155	Email Data
Dest. Port: 80	Source port: 49156	HTML Page
Dest. Port: 531	Source port: 49157	Chat Data

From Server to Computer

Dest. Port: 49155	Source port:110	Email Data
Dest. Port: 49156	Source port: 80	HTML Page
Dest. Port: 49157	Source port: 531	Chat Data



Port Number Ranges



- Well-known ports: The ports ranging from 0 to 1023 are assigned and controlled by ICANN. These are the well-known ports used by the servers.
- Registered ports: The ports ranging from 1024 to 49,151 are not assigned or controlled by ICANN. They can only be registered with ICANN to prevent duplication.
- Dynamic or private ports: The ports ranging from 49,152 to 65,535 are neither controlled nor registered. They can be used as temporary or private port numbers.

Clients can use any private port number, servers can't. Because clients won't be able to identify server process otherwise.

Port number in real devices

- Type resmon in cmd

Some Notable well-known port numbers

Number	Assignment
20	File Transfer Protocol (FTP) Data Transfer
23	Telnet remote login service
25	Simple Mail Transfer Protocol (SMTP) email delivery
80	Hypertext Transfer Protocol (HTTP) used in the World Wide Web
443	HTTP Secure (HTTPS) HTTP over TLS/SSL