

TCP Ports (1/4)

1

- In order to keep the TCP connection running, sender and receiver must each set up endpoints for the communication, so-called **sockets**
- Assignment of sockets is restricted to the two communication partners and the duration of each TCP connection
- Each socket has reserved storage space for buffering of the data received or which is to be sent
- Each socket has a **socket number** made up of the
 - IP address of the computer and
 - a locally assigned 16 bit number that identifies the **port**
- Ports are **service access points** of the transport layer

TCP Ports (2/4)

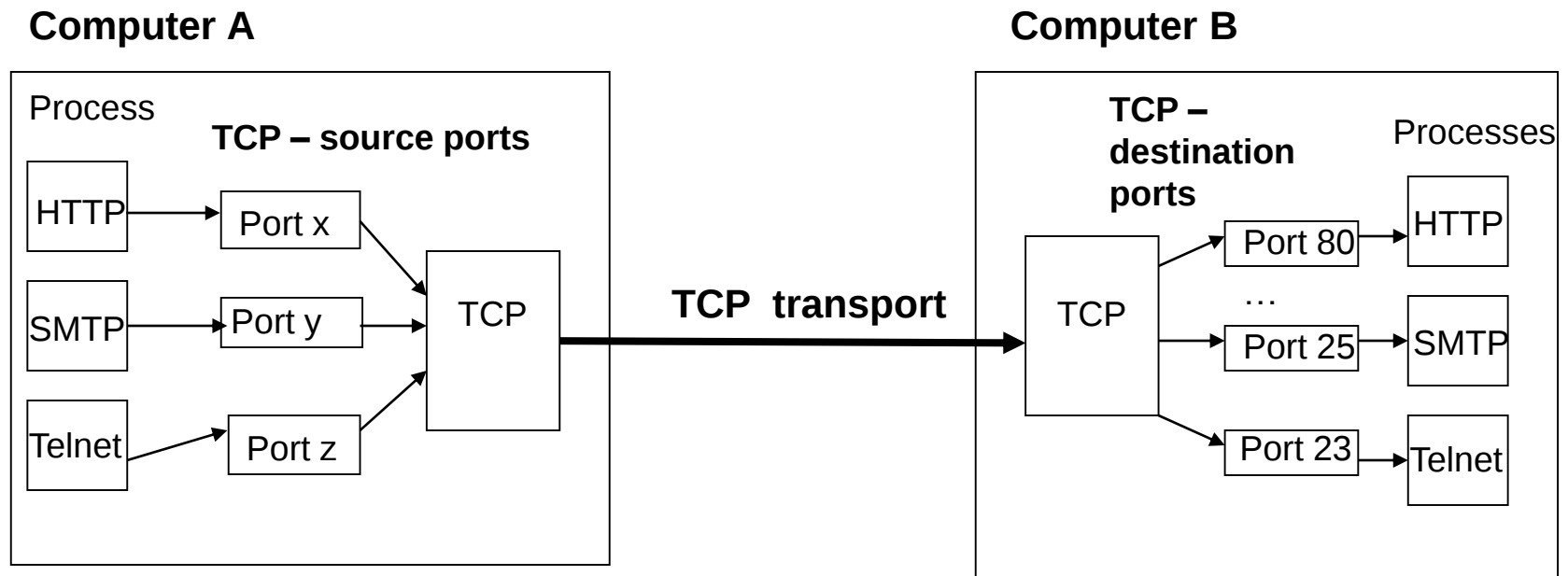
2

- Ports with numbers
 - 0 – 1.023 – **well-known ports** – are uniquely reserved for standard services worldwide,
 - e.g. 80 – HTTP, 23 – Telnet, 53 – DNS, ...
 - 1.024 – 65.535 can be assigned to any application program
- A distinction is made between:
 - **Reserved ports:**
 - 0 – 255 for TCP/IP applications,
 - 256-1.023 for specific UNIX applications
 - **Registered ports:**
 - 1.024 – 49.151 registered by IANA
 - **Private, dynamic ports:** all others

TCP Ports (3/4)

3

TCP connections between different applications running via TCP ports:



TCP Ports (4/4)

4

- Choice of port numbers when connection is established between two application programs:
 - **Destination port:** port number of the desired application
 - **Source port:** not reserved and a port number currently not used in another way
- TCP connection can be uniquely identified by the two socket numbers via the tuple (socket, sender, socket receiver)
- A socket can simultaneously serve multiple connections
- Application programs use transport service via so-called **TCP primitives**, e.g. request, response, confirm, read, write... which are implemented through the sockets