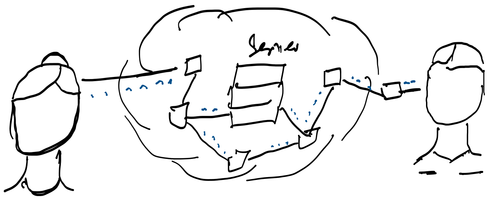
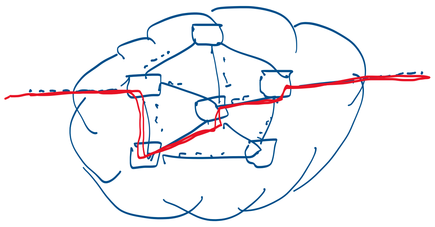
Packet & Circuit Switching

Sunday, 4 April 2021 2:21 PM

Packet Switching: It transmits data across digital networks by breaking it into packets of same size for efficient transfer using various network devices.





Packet Switched Network: It follows networking protocols that divide messages into packets before sending them. Packet-switching technologies are part of the basis for most modern wide area networks. Eg: TCP/IP.

Delay is acceptable...

Circuit Switching Networks: We use these mostly for phone calls while PSTN (Land) Lines. While packet-switching networks used for data. Circuit switch networks reserve a dedicated channel for the entire communication and reserve a line.

Real time

Advantages of Packet switching over Circuit switching:

1. Efficiency: less bandwidth wastage.
2. Speed: Optimal transmission speed, minimal latency.
3. Improved fault tolerance: During the transmission partial outages of devices may cause packets to change route but reach.
4. Budget: Cost effective and simple to acquire.
5. Digital: Works well for data communication, transmitting digital data. Digital networks employs checks for error detection.

Disadvantages of Packet switching over circuit switching:

Reliability: Circuit switched networks deliver the packets in order along the same route and are therefore less likely to experience missing packets in first place.

Complexity: Packet switching networks are complex as switching nodes require more processing and memory.

File Size: When the file size/data is large, multiple re-routing delays occur, the risk of multiple lost packets, and other issues might occur.