

Packet switching vs. circuit switching

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Packet switched vs. Circuit Switch Usually two methods are used for transmitting the information between the two ends, the receiver and the sender. Each of them has its own use and specialty and used for various purposes.

The overall telecommunication exchange constitutes either the data streams or the traffic in form of voice and signals being transmitted. Circuit switching technique was predominately used for the purpose of transmitting signals and streams across the network. Circuit switch technique has been in use since long, ever since the times when the simple telephone sets were in practice and there was no concept of digital transmission nor bits, and packet switch was predominately introduced as soon as the digital interface of transmission became common.

Circuit switches imply permanent connection which mostly result in wastage of resources(bandwidth) while the other provide service only on demand.

While packet switching technique specializes in the transmission of bits and data. Packet switches finds it application mostly in the exchange conducted through the computer or other modern digital devices that make use of bits and packets of data. P. S. T. N enabled transmission is an example of circuit switch technology while VOIP and IP network is an example of Packet switched network(Rahman, Ellis, & Pursell, 2003).

The major difference between the two is in the manner in which the information is sent. Circuit switched network has a pre defined and dedicated path for signal transmission. This dedicated transmission takes place in multiple phases starting with establishing of the call, followed by the transfer and finally the termination of link at the end of the call. While packet switch

deals with node to node and does not work on the basis of pre allocated path for traffic transmission.

Circuit switching relies mostly on T. D. M or F. D. M or at best on C. D. M for channel transmission, while Packet switch uses dynamic I. P network which is far more effective and can accommodate more options compared to its predecessor. Chances of contention are relatively higher in case of circuit switching mode.

Routing processes in Packet switching are more concrete and hop to hop basis routing is performed which makes it easy for overall packet transmission and packets are exchanged and extended in form of store and forward mechanism(Kurose, 2005).

Packet switching technique makes use of bandwidth more effectively and can accommodate more users at the same time.

Most of the modern day transmissions are being carried out through I. P enabled networks, circuit switched networks are limited to only landline telephone systems.

Line efficiency of packet switched system is far better than the predecessor. In case of traffic congestion, the prioritization process can be adopted this makes the network working unlike circuit switch which is highly prone to congestion and saturation. Packets are handled either through the virtual circuits or through the data gram. Amongst these two, datagram is more flexible.

Other major differences between the two include the propagation delay, the time taken to transmit the signals and overall performance clients.

Though relatively slow and limited in options, circuit switches are considered

more reliable than the packet switch as the overall transmission is handled from one end to other unlike the packet switching technique where only chunks are handled.

Works cited:

Kurose. (2005). *Computer Networking: A Top-Down Approach Featuring the Internet*, 3/e. Pearson Education.

Rahman, J., Ellis, J., & Pursell, C. (2003). *Voice, Video, and Data Network Convergence: Architecture and Design, from VoIP to Wireless*. Academic Press.