

Transmission over the Internet

Before we get into this topic we need to cover a couple of concepts:

1. Circuit switching
2. Packet switching

Circuit switching

The traditional PSTN (POTS) service uses a switching technology known as Circuit Switching, this is where the calling party (A Party) is connected directly to the called party (B Party) for the duration of the call.

Figure 1 shows a circuit connection between the A Party and the B Party for the duration of the call. The connection could either be by Analogue or Digital. If analogue it will be a channel in the frequency range 300 to 3,400 Hz if it is a digital it will be a 64Kbps channel.

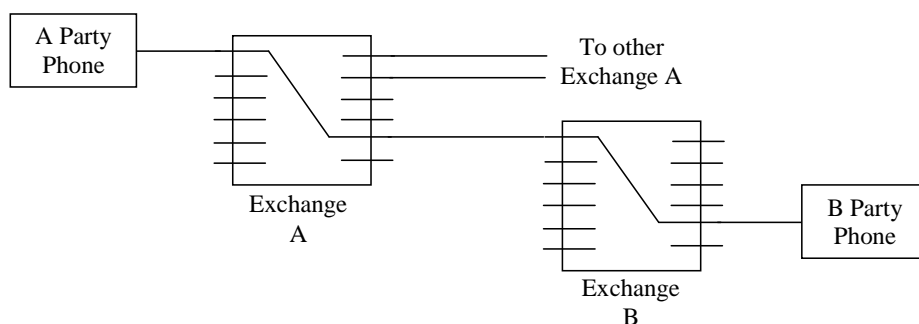


Figure 1 Circuit switching

Circuit switching was until the end of the 20th Century the main form of connecting telephones.

Packet switching

Packet switching was a system developed by the US armed force in the second half of the 20th Century to provide a robust communications system between all their computer systems. The system was therefore designed for data communications purposes.

In a simplistic way Packet Switching is very similar to the way mail goes through the post office. So let look at how we send mail via the post office.

1. we create a message “the letter”
2. we encapsulate the letter “the envelope”
3. we place the address the letter is being sent to on the front
4. we place the address of the sender on the back or front
5. We walk to the post office where a basic check is done and a stamp placed on it and based on the address it is going to the letter is placed on a vehicle to a higher level sorting centre or is placed into the mail to be delivered by a postman.
6. If the letter is required to go to a sorting centre it is placed on truck and driven at high speed to the sorting centre.
7. at the sorting centre the address where it is going to is read and placed on a high speed truck to the local post office
8. At the post office the address is checked and the letter is added to the run of the relevant postman.

In packet switching we use the concept of a message in an envelope with a destination and senders address and at each location where there is a choice of more than one destination the address is accessed to make the decision.



Figure 2 Basic packet format

To be continued....