ATM Networks: Basic Ideas and Health

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INTRODUCTION

Telephone companies are finding themselves confronted with a very basic problem: multiple networks. The solution that was devised is a unique new network for the future that will replace the entire telephone system and all the specialized networks with a unique completed network for all types of transport of information. This new network will support enormous rhythm of data compared to all the existing networks and services, and will render possible the offer of a large variety of new services.

The new service network for a wide region is called Digital Network of Completed Services of Wide Area broadband integrated services digital network (B-ISDN). The technological infrastructure that renders it feasible is called asynchronous way of transport: asynchronous transfer mode (ATM) because the transmission is not modern; that is, attached in a being first clock.

The ATM was materialized initially in order to be used in the WANs, however, its value quickly appeared for the LANs. The topology that is used is that of aster. The stations are connected via an ATM Switch. Each Switch can now be connected, with his line in some other hierarchically superior Switch that plays the role of backbone. It should be noted that these appliances allow the transfer of data of concrete breadth of area; however, capacities today reach 10Gbps.

The flexibility of ATM springs from the segmentation of parcels in smaller departments that are named cells. Each cell has a length of 53 bytes from the five constituting the heading (header).

The ATM Switch undertakes the promotion cells to the recipient after decoding the address of the destination from the heading of each cell.

BASIC IDEA

The basic idea behind the ATM is the transport of all information in small determined length parcels that are named cells.

The reasons for cell choice are many. Some of them selectively are:

- The cell transfer is exceptionally flexible and it can easily handle the movement of constant rhythm (e.g., sound, video) and the movement of variable rhythm (data).
- In the very high speeds that are expected, the digital cell transfer is easier than the use of traditional multiplex techniques.
- With regard to television distribution, the possibility of emission is essential. The cell transfer can support it, while the transfer of circuit cannot.

The ATM is based on protocols of virtual connection (e.g., virtual paths, virtual circuits). The user of the ATM has the possibility of accessing in entirety the breadth of area of channel whenever he or she wants for as long as he or she wants. The ATM ensures that services such as voice and moving pictures are transmit-