SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

19ECT301- COMMUNICATION NETWORKS

III YEAR/ V SEMESTER

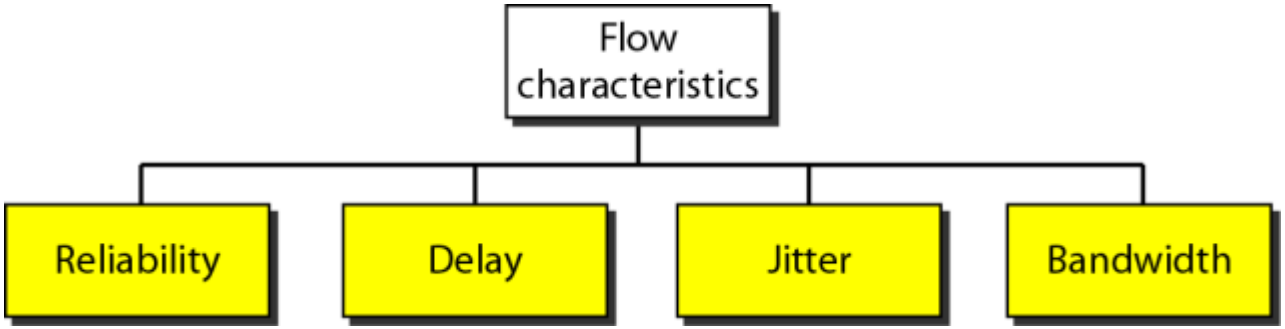
UNIT 2 –DATA-LINK LAYER & NETWORK LAYER

TOPIC – QUALITY OF SERVICE

QUALITY OF SERVICE

Quality of service (QoS) is an internetworking issue that has been discussed more than defined. We can informally define quality of service as something a flow seeks to attain.

Flow characteristics

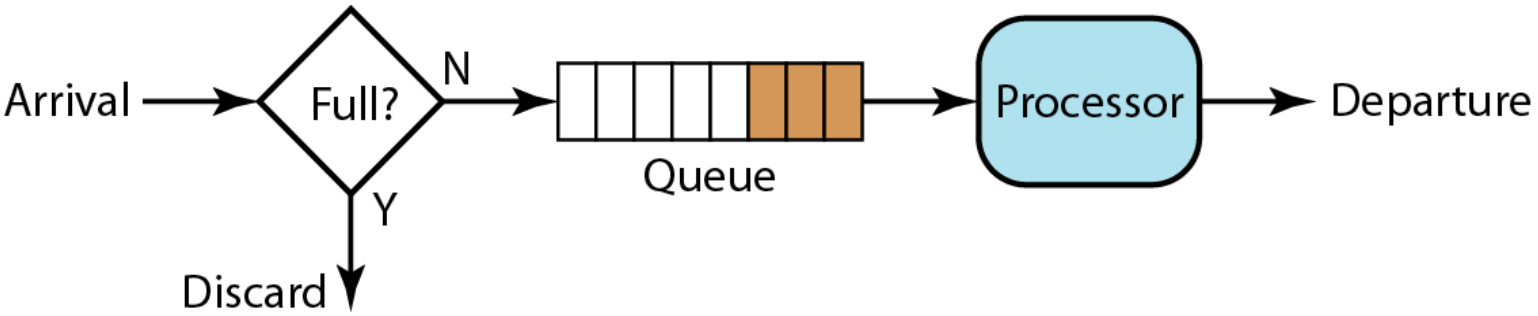


TECHNIQUES TO IMPROVE QoS

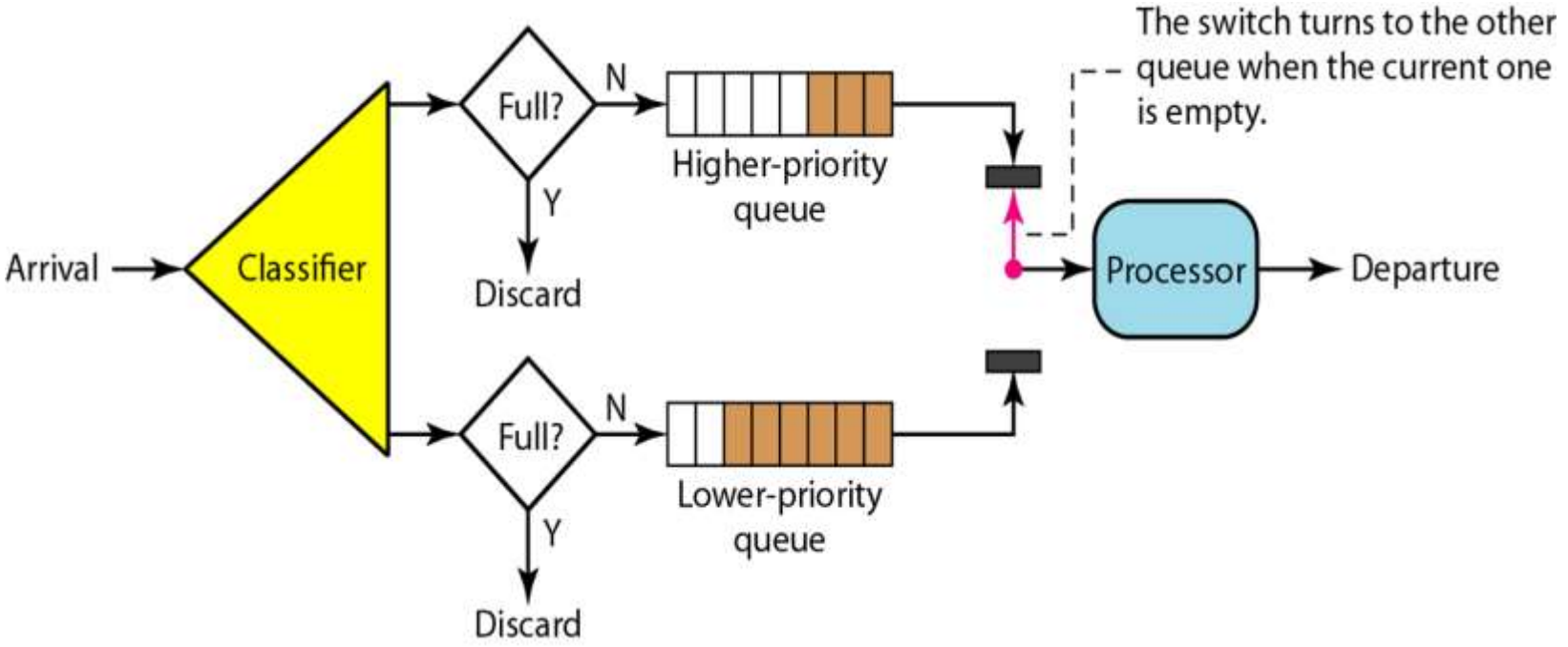
We briefly discuss four common methods:

- *scheduling*
- *traffic shaping*
- *admission control*
- *and resource reservation.*

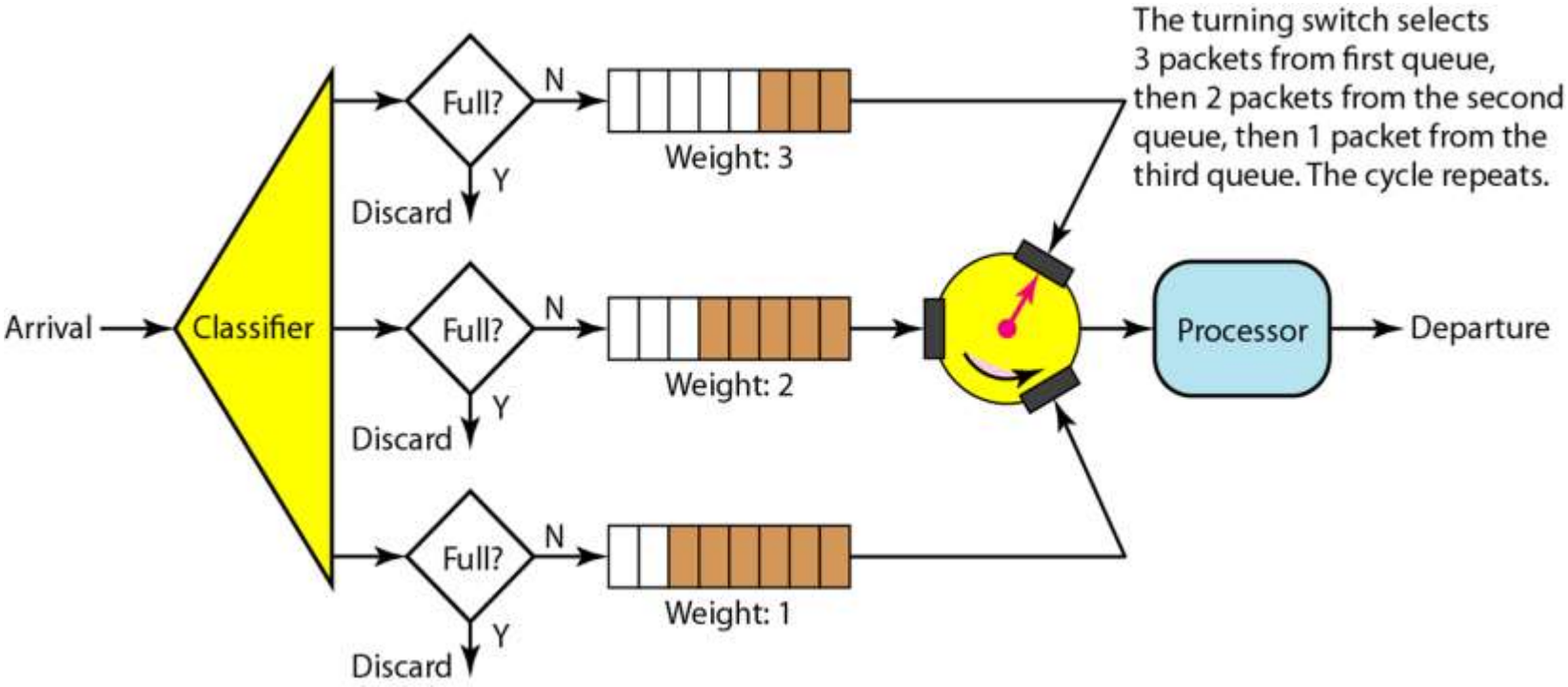
FIFO queue



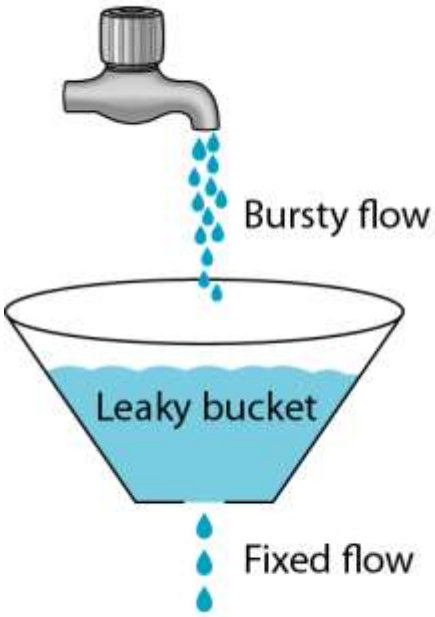
Priority queuing

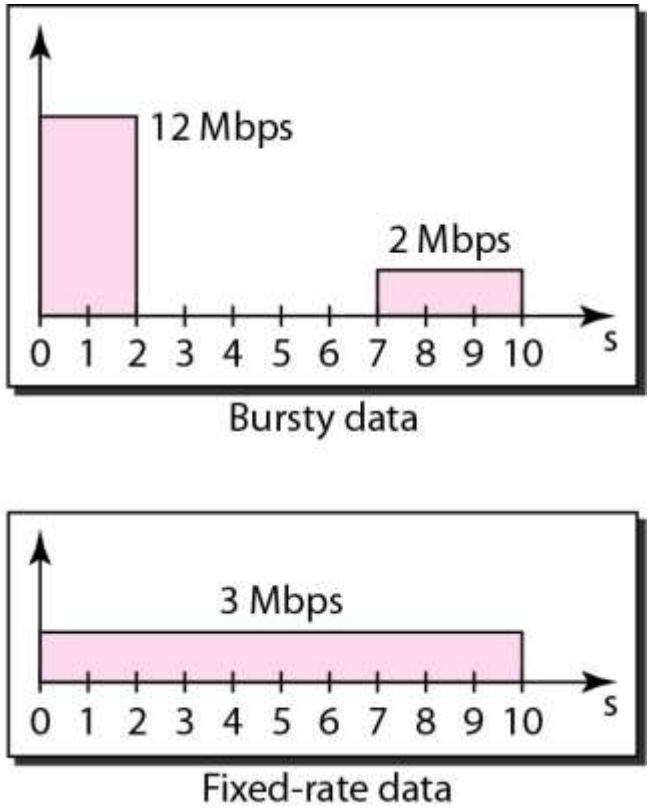


Weighted fair queuing

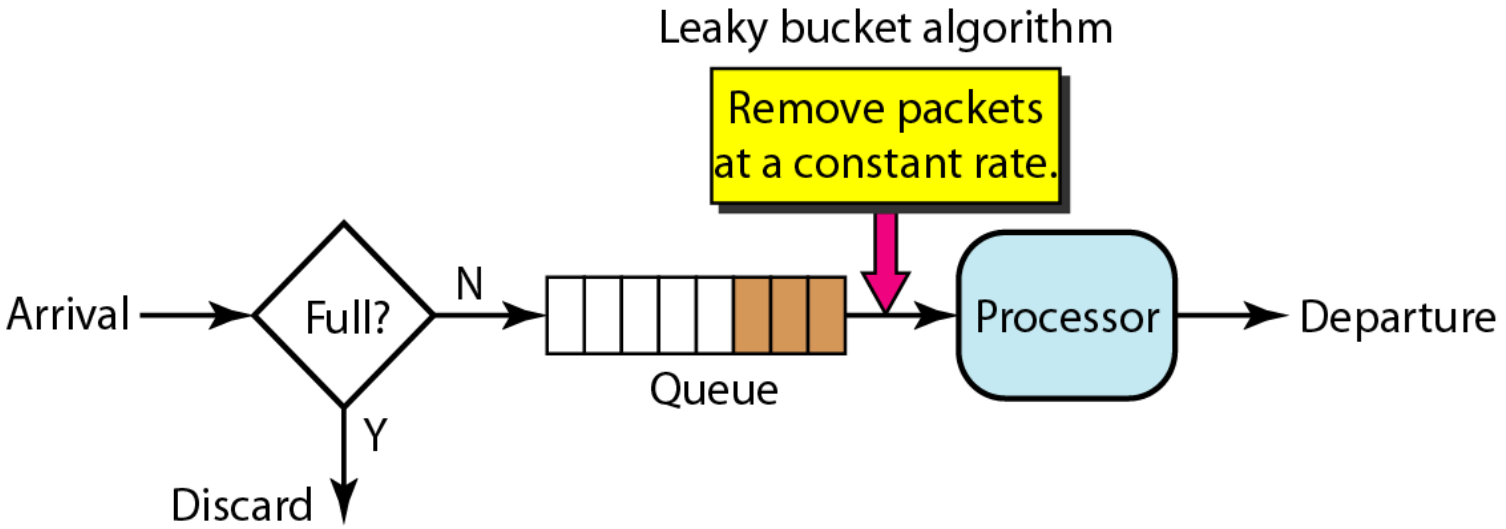


Leaky bucket





Leaky bucket implementation



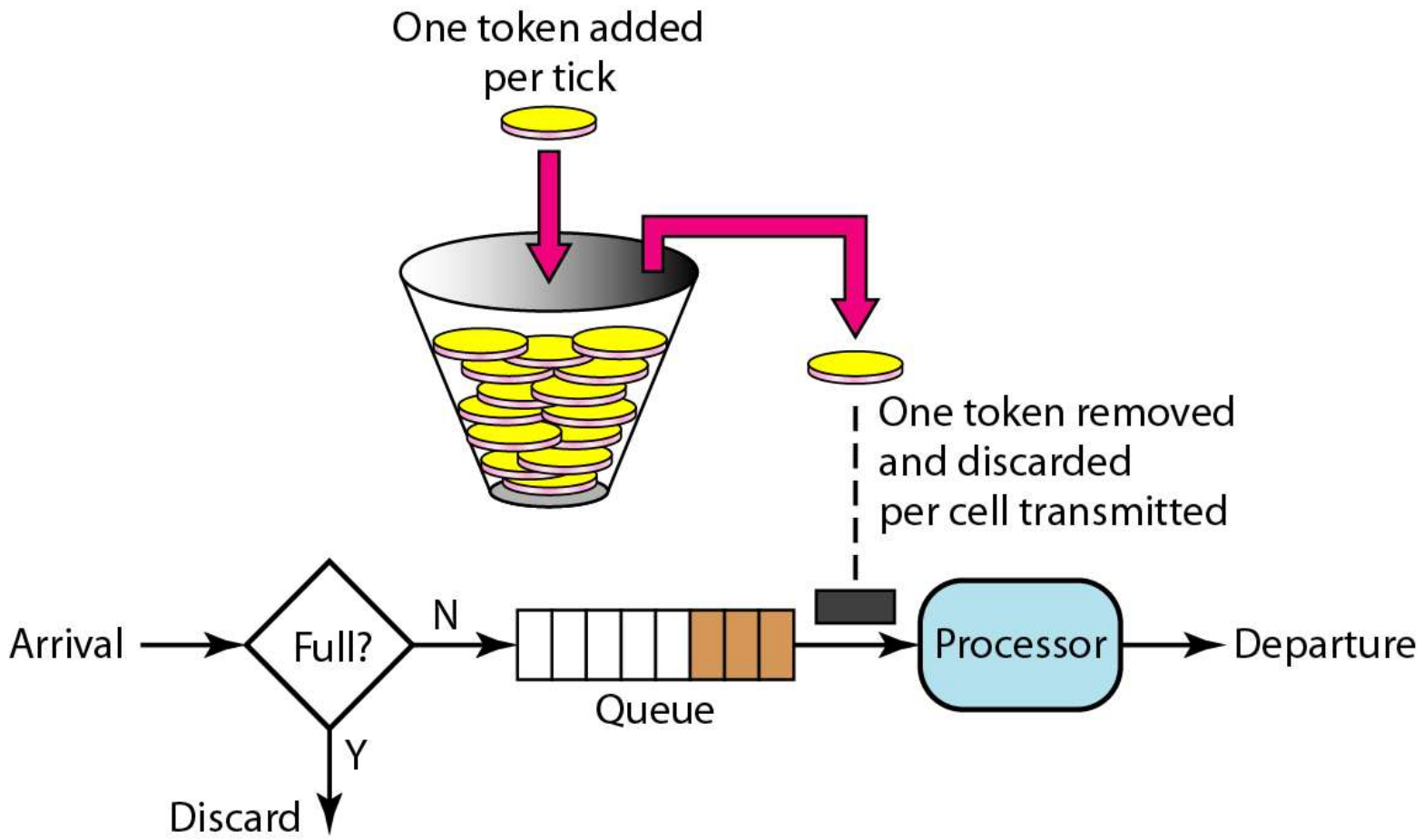
Note

A leaky bucket algorithm shapes bursty traffic into fixed-rate traffic by averaging the data rate. It may drop the packets if the bucket is full.

Note

The token bucket allows bursty traffic at a regulated maximum rate.

Token bucket



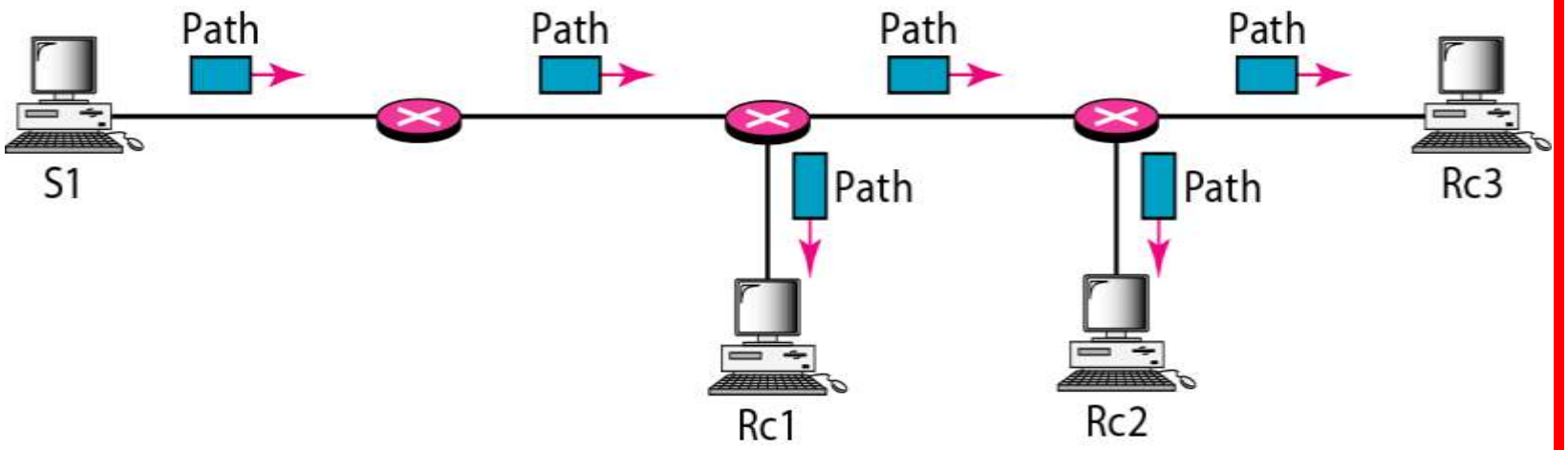
INTEGRATED SERVICES

Two models have been designed to provide quality of service in the Internet: Integrated Services and Differentiated Services.

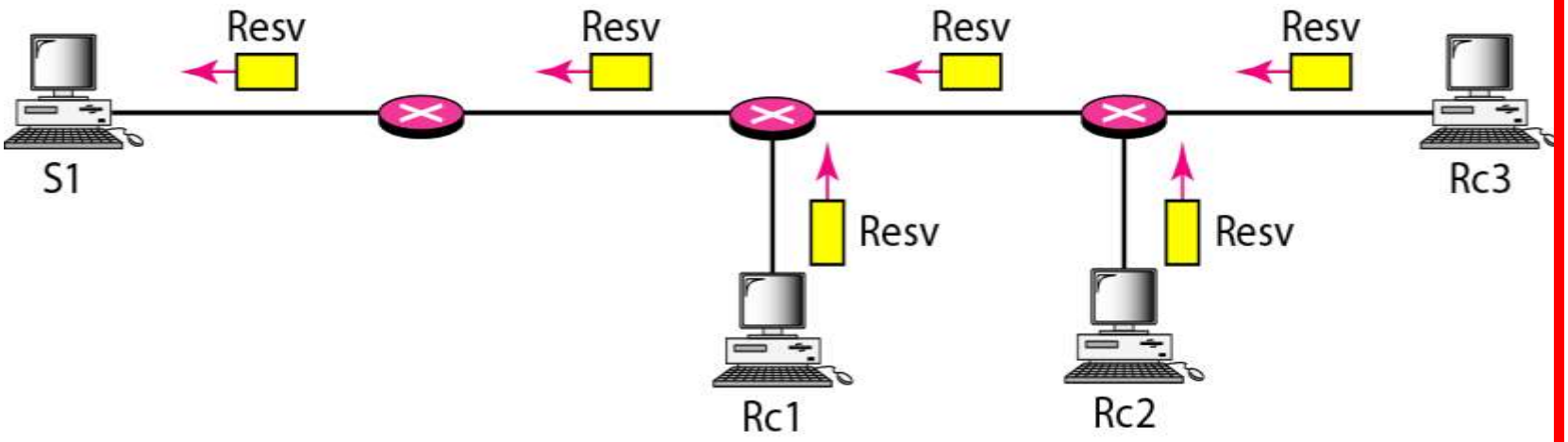
Note

Integrated Services is a flow-based QoS model designed for IP.

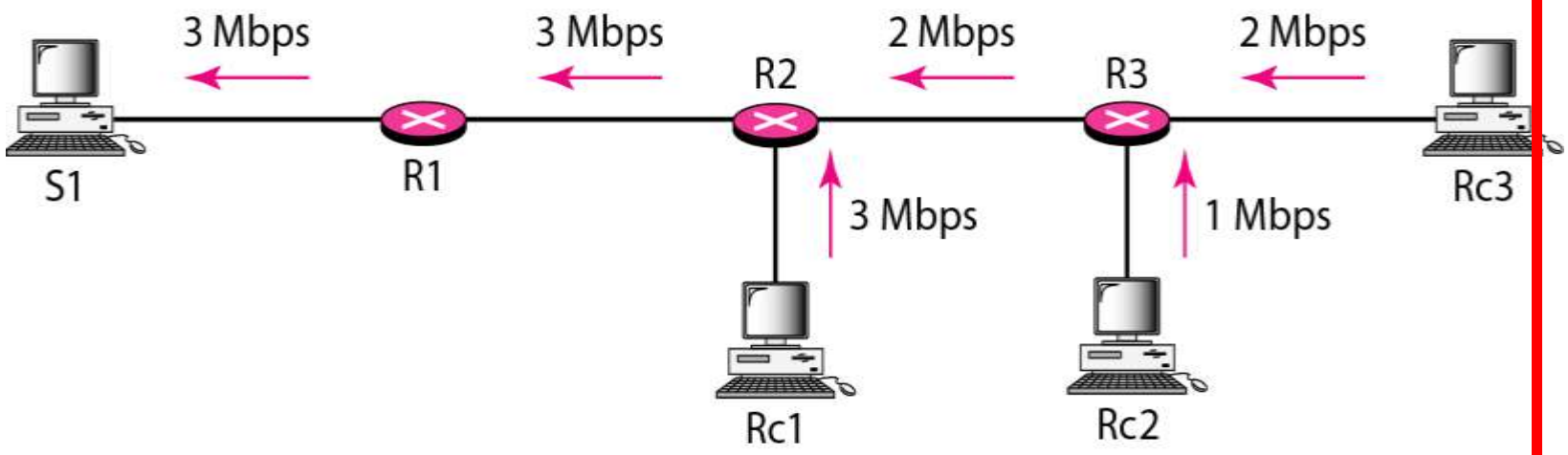
Path messages



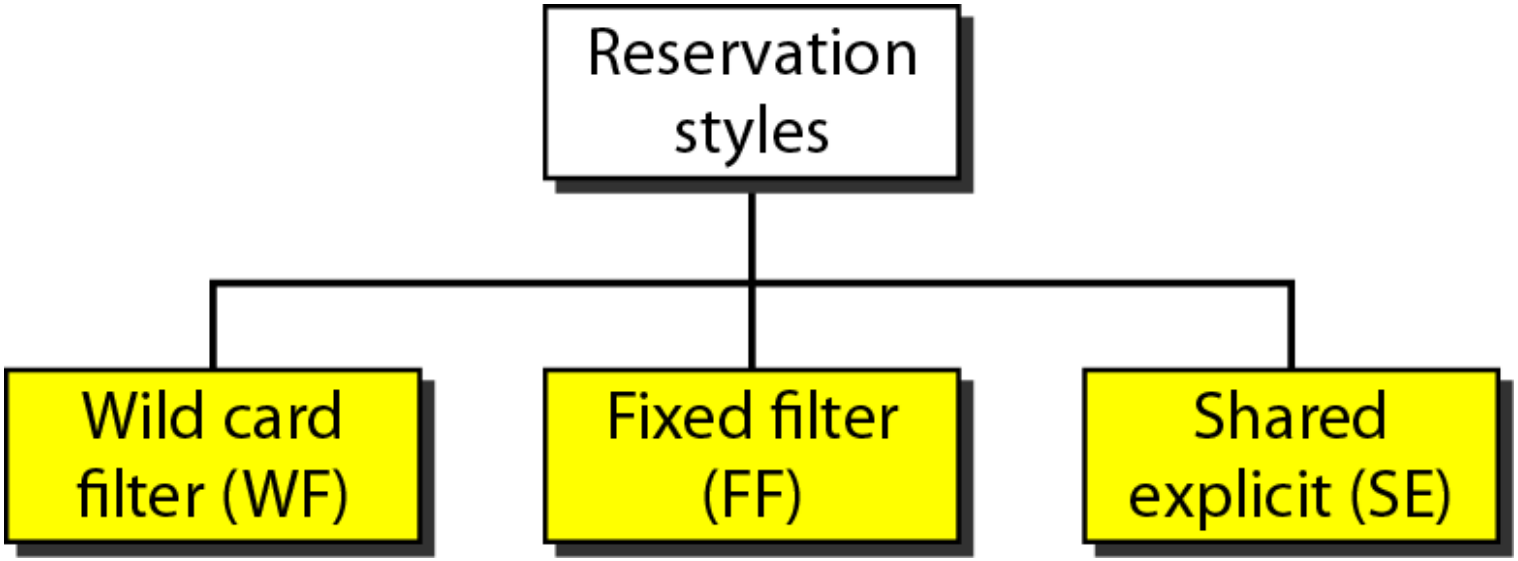
Resv messages



Reservation merging



Reservation styles



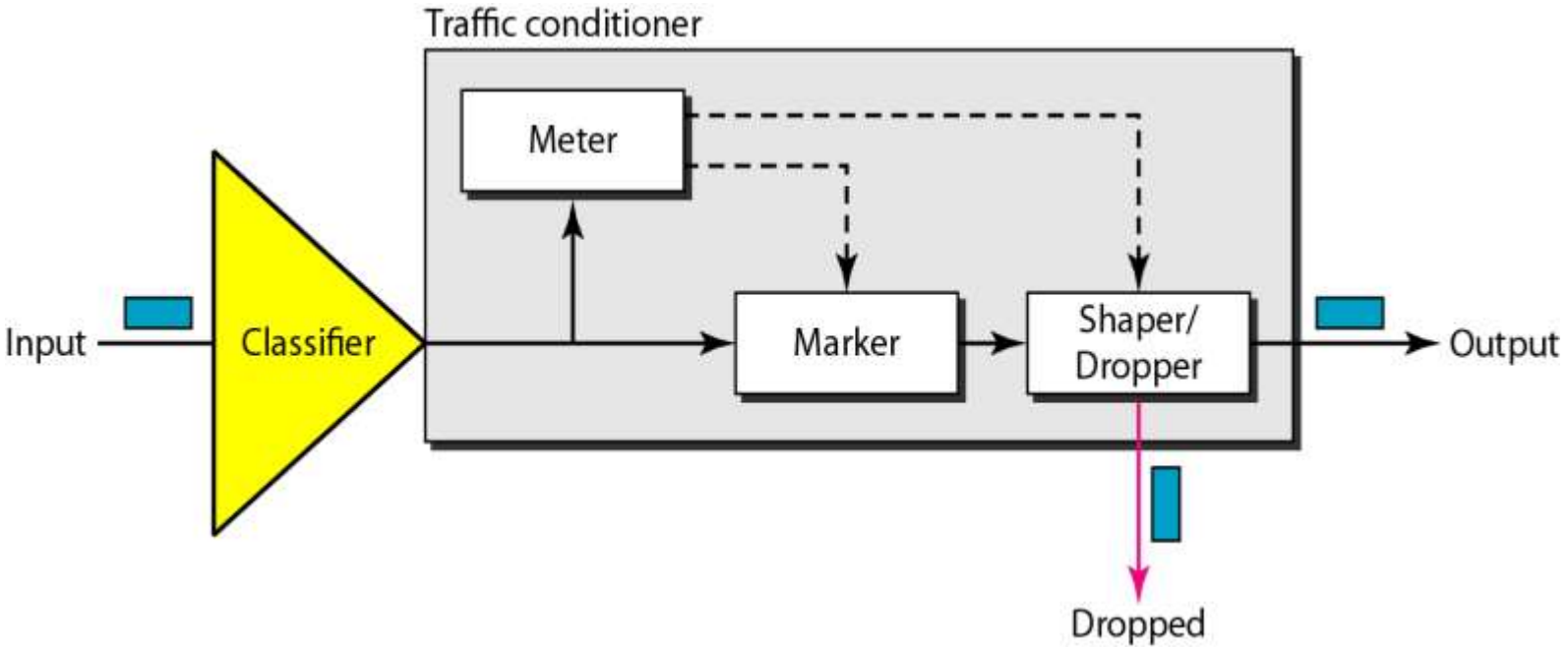
DIFFERENTIATED SERVICES

Differentiated Services (DS or Diffserv) was introduced by the IETF (Internet Engineering Task Force) to handle the shortcomings of Integrated Services.

Differentiated Services is a class-based QoS model designed for IP.

DS field

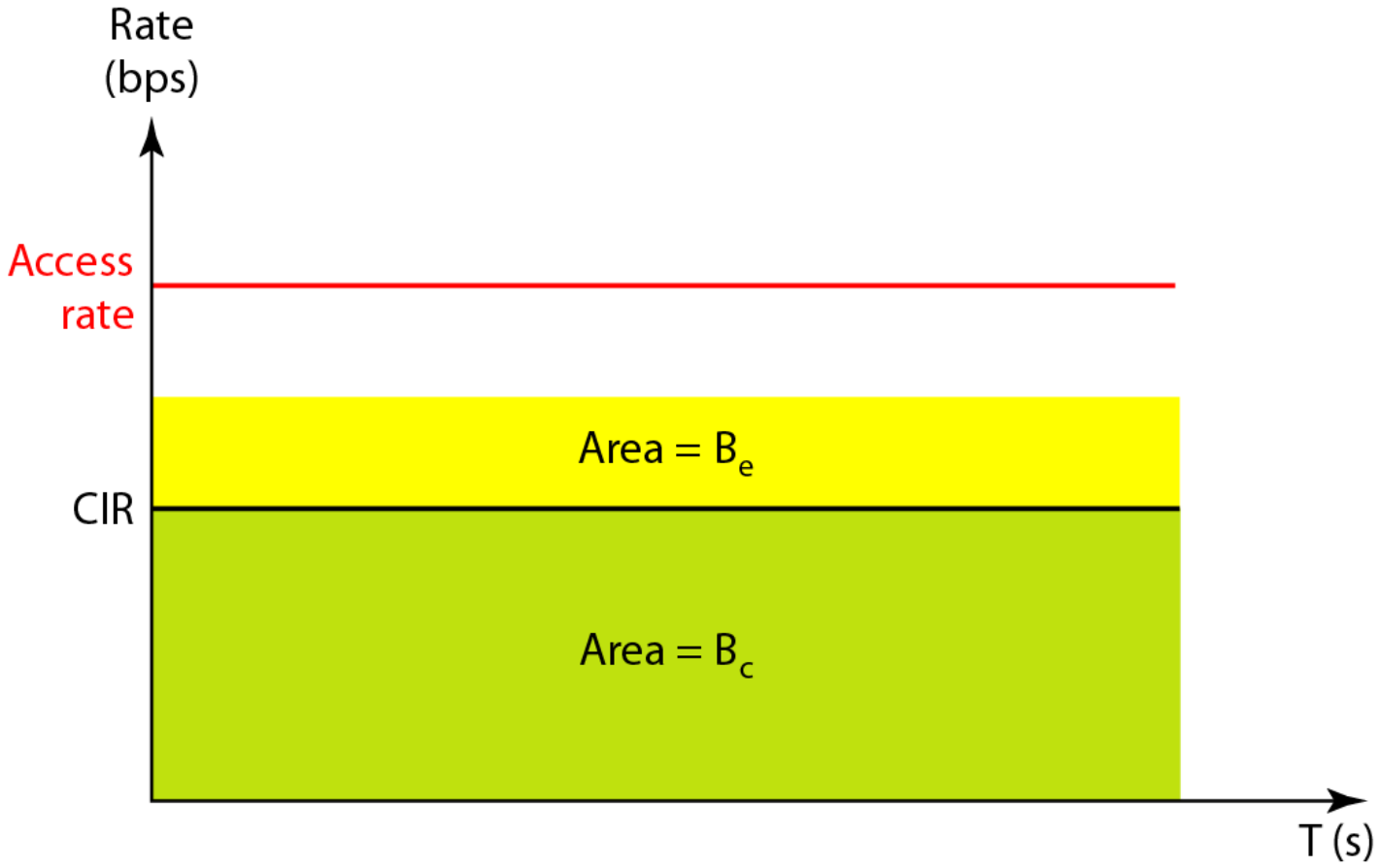
Traffic conditioner



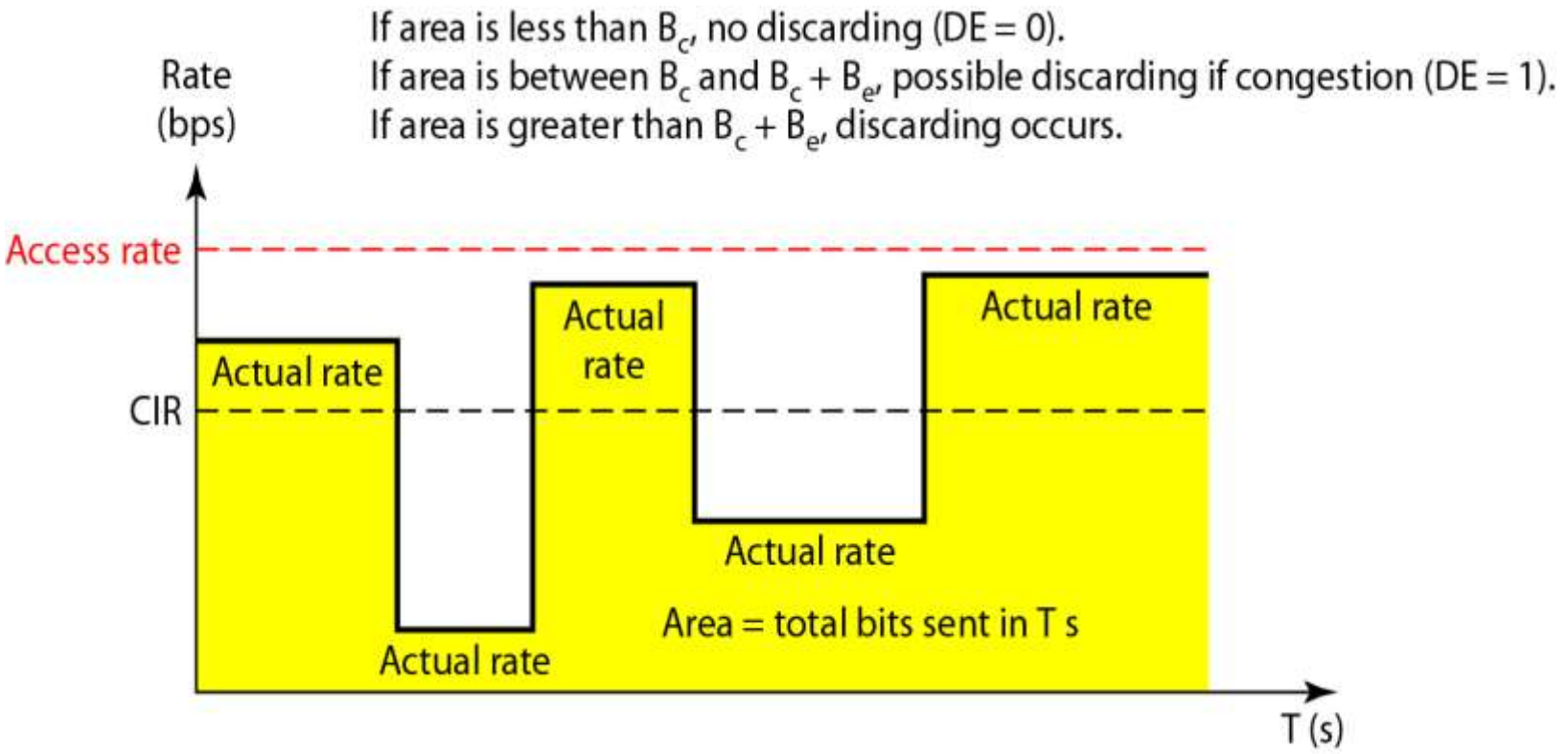
QoS IN SWITCHED NETWORKS

Let us now discuss QoS as used in two switched networks: Frame Relay and ATM. These two networks are virtual-circuit networks that need a signaling protocol such as RSVP.

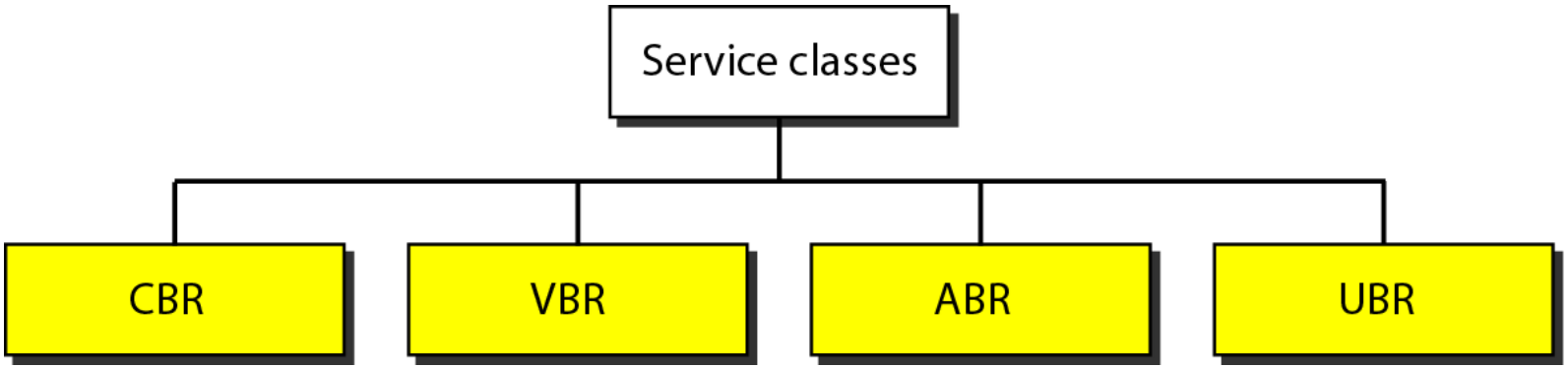
Relationship between traffic control attributes



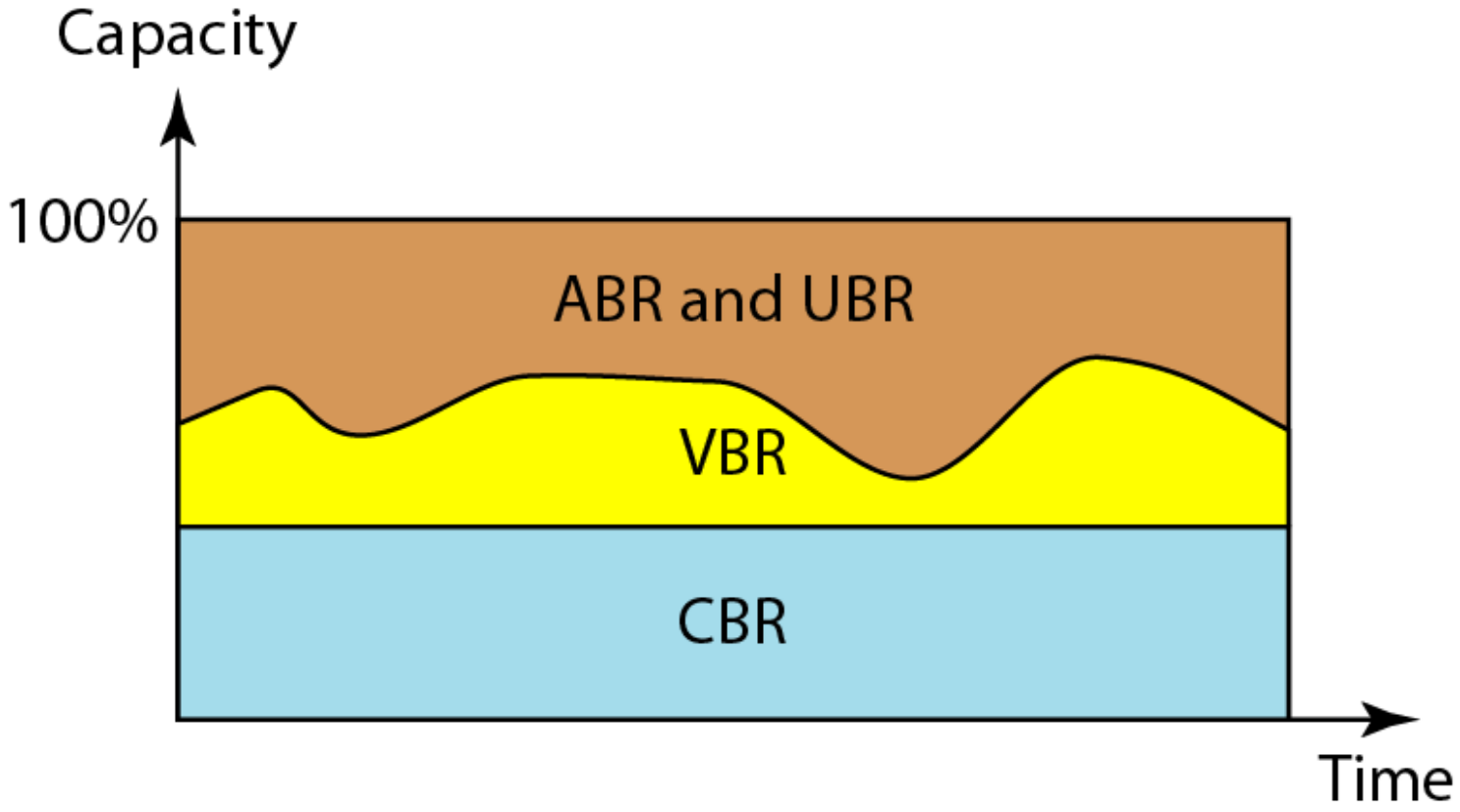
User rate in relation to Bc and Bc + Be



Service classes



Relationship of service classes to the total capacity of the network



THANK YOU