

Computer Science Department
M1 : RTIC, Module: QOS
PW2: Implementation of a traffic control under IP

Traffic control consists in setting the behavior of a router so that it manages differently the flow of packets that it must route according to their "content". The content of a packet is characterized by everything that is accessible in the IP header to qualify it. It can be network addresses, host addresses, TOS (Type of Service) bits for example. The IP Route package allows you to set up queue management strategies based on the possibility of directing packets to one queue (at the router's output) rather than another and to choose an appropriate queue management.

Discover IP Route

IP Route allows doing in a distinct way what was done by ifconfig and route in the classical versions of the network packages on Linux. We distinguish:

```
// to configure the network links on a machine
ip link ...
// to configure IP addresses on a machine
ip addr 172.16.11.1/24 broadcast 172.16.11.255 dev eth0
// to configure routing tables on a machine
ip route add ...
```

Discover the traffic control commands : tc

These commands allow you to create a hierarchy of queues to differentiate flows, to associate classes to these queues which will represent generic treatments, and to associate filters to direct packets to this or that queue of this or that class.

```
tc qdisc.. // to create queuing disciplines
tc class .. // to associate a class with a queuing discipline
tc filter ... // describe the filtering method to classify packets
```

Work to do

1. Familiarize yourself with the IP Route commands by creating a simple network (no router).
2. Set up a queue manager on a simple link. A "source" machine sends a flow to a "sink" machine.
3. Make variations of the queue manager configuration and show the effects on the flows.

Report of the TP: It is a question of documenting all that you make by scripts of configuration with the comments of each command and a synthesis at the end of the script explaining what you could observe and how.

NB: TP2 will be done in pairs as for TP1.