Traffic control and Quality of Service

Reading: Chapter 18

Some basic concepts

- Traffic policing
  - Incompliant packets dropped
- Traffic shaping
  - Incompliant packets held till satisfied
- Queueing discipline
  - Packet departure order (time)
- Classes
  - Packet holders
- Filters
  - Packet classifiers

Traffic control in Linux kernel

Traffic control
Basic queue discipline interface

- enqueue()
  - Put a packet into queue
- dequeue()
  - Get a packet from the queue
- drop()
  - Remove a packet
- requeue(), reset(), init(), destroy(), change(), dump()

struct Qdisc

Struct Qdisc {
  int (*enqueue)();
  struct sk_buff (*dequeue)();
  struct Qdisc_ops *ops;
  *next;
  struct sk_buff_head q;
  struct net_device *dev;
  ...
}
Implementing a discipline

• Concepts of token bucket filter
  – Rate R
  – Depth B

• Functions
  – tbf_init()
  – tbf_enqueue()
  – tbf_dequeue()