S-38.180 Exercise 4: IntServ/CAC

Exercise lecture 14.10.2003 12.15->,
15.10.2003 8-> and 12->

Exercise (hard) deadline: 29.10.2003 at noon

Suggested deadline: 22.10.2003

Admission control

- Admission control is a preventive traffic control which aims to admit an arriving new traffic source if and only if its quality of service as well as that of the already accepted sources is guaranteed.

  – The admission control procedure should also ensure a high utilisation of network resources through efficient statistical multiplexing

Files & materials

- http://www.netlab.hut.fi/home/lynx/HSS/
  - Exercise document
  - scripts (zipped)
  - Two supporting articles on measurement based CAC
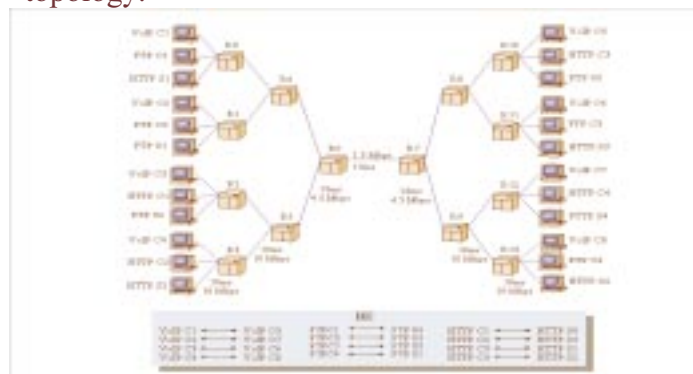
Accessing and using ns2

- log in to a ee-department SUN-computer
  - *source /p/gen/courses/S38/S38.180/Exercise3/usens2.csh*
- In Maarintalo
  - *source /p/edu/s-38.180/usens2.csh*
- Use lynx or netscape to get the necessary files
  - Run the simulations: *ns intservnet[BE,HB,MS].tcl*

Notes and tips

- The trace file is *gzip*'ed, use *gzcat* instead of *cat* to catenate the tracefile.
- Use matlab to plot figures.
- Use /tmp-space to temporarily store your trace-files, remove all unnecessary files before you log out
- Read carefully the exercise document and answer all questions.
- Remember the deadline, check out the course webpages for any changes in dates and/or materials.

Exercise setting

- Analyze measurement based admission control algorithms and a best effort –case in the given network topology.

Network status

- Some additional VoIP-clients present at the edges
  - In the bandwidth part of the exercise a set of clients start at 10 second intervals and send 200 byte packets
    - In IntServ-network these clients ask for a permission from the CAC to send packets
  - Both in the delay distribution and bandwidth part of the exercise there is a set of clients that start at the beginning of the simulation and send 201 byte packets.
    - These clients do not interact with the CAC.

What you have to do?

- Study the delay behavior of the VoIP-clients
  - Present the delay distribution for ALL VoIP-packets present
  - Present the delay distribution for one selected VoIP-client pair (of your choosing) and compare
  - Calculate the mean and the variance for all data
- Present a comparison on the use of (bottleneck) bandwidth with BE and different CAC-algorithms
  - Graphic presentation of the bw-usage, with average and rejected connections marked
  - Total packet drops, number of dropped packets/per application (and ratios), place (in the topology) where packet drops occur