

## S-38.180 Exercise 3: IntServ/CAC

Exercise lecture 2.10.2002 8.15-> & 12.15 ->

Exercise (hard) deadline: 23.10.2002 at 4pm

Suggested deadline: 9.10.2002

## Files & materials

- <http://www.tct.hut.fi/opetus/s38180/s02/exercises/H3/>
  - Exercise document (also circulated via Edita)
  - scripts (zipped)
  - Two supporting articles on measurement based CAC

## Accessing and using ns2

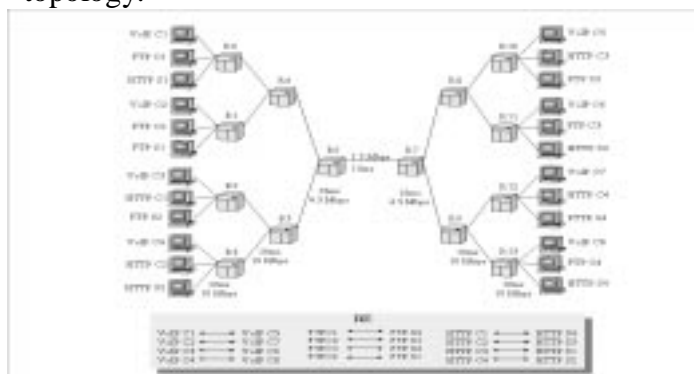
- log in to a ee-department SUN-computer
  - `source /p/gen/courses/S38/S38.180/Exercise3/usens2.csh`
- Use lynx or netscape to get the necessary files
  - Run the simulations: `ns intservnet[BE,HB,MS].tcl`

## Notes and tips

- The trace file is *gzip*'ed, use *gzcat* instead of *cat* to catenate the tracefile.
- Use /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

- The amount of VoIP-clients has been doubled
  - 1<sup>st</sup> set of clients start at 20 second intervals and send 200 byte packets
    - In IntServ-network these clients also ask for a permission from the CAC to send packets
  - 2nd set of clients 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?

- Present a comparison on the use of (bottleneck) bandwidth with BE and different CAC-algorithms
- Present data on the packet drops with BE and different CAC-algorithms
  - Total packet drops, dropped packets/application, dropped packets/application/total packets
  - Note also the rejected VoIP-sessions
- Study the delay behavior of the different VoIP-clients