Advanced computer networking (IN2097)

Project proposal

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October 29, 2013
MiniNet Project

**MEASURING TCP TAIL LOSS PROBE**
OVERVIEW

- **MiniNet**
  - Lightweight network emulator
  - Developed in Stanford
    - paper results verification

- **Tail Loss Probe**
  - Internet Draft from February 2013
  - Improve TCP performance when connection “tail” (last packets) is lost
GOALS

- Learn more about
  - Reproducible measurements
  - Statistical analysis of data
  - Linux packet handling

- Tools
  - python2.7
    - dpkg, numpy, matplotlib, ...
  - tcpdump + wireshark
  - netcat
  - iptables + netfilter queues
## Your Tasks

1. **Project Plan**
   - Describe your schedule and milestones
   - Anticipate challenges and problems

2. **A MiniNet Topology**
   - Create a simple topology using the MiniNet network emulator
   - Generate and capture traffic
   - Write a tool for analyzing your packet captures

3. **Causing Tail Loss Probe**
   - Use Netfilter Queues to process TCP streams in user space
   - Create an application introducing tail loss (configurable)

4. **Evaluate Tail Loss Probe**
   - Evaluate the effect of TLP

5. **Final Assessment**
   - Write a detailed report about steps 1. – 4.
   - Reflect on the project (what was good/bad?)
IMPORTANT DEADLINES

- Project starts on
  - November 5, 2013

- Submissions Deadlines
  - [Nov 12, 2013] Project Plan
  - [Dec 17, 2013] Causing Tail Loss
  - [Jan 21, 2014] Evaluate Tail Loss Probe
  - [Feb 4, 2014] Final Assessment
Thanks.

INTERESTED?

QUESTIONS?
TEAMS AND PROJECT SELECTION

- mccnw13:/
  - s_ca42ffe
    - project.txt

- File contains two lines
  - LRZID_TEAMMATE
  - mdroid OR mininet

- Fill in by November 5th, 2013 (example)
  - bu43ddy
  - mdroid
VIRTUAL MACHINES

- One virtual machine per team
- Authentication
  - ssh-key generated by us
  - Will be put in your shared team folder
- Available after November 6th