



Network Architectures and Services, Georg Carle
Faculty of Informatics
Technische Universität München, Germany

Advanced computer networking (IN2097)

Project proposal

Advisors: Lukas Schwaighofer, Florian Wohlfart
schwaigh@in.tum.de, wohlfart@net.in.tum.de

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Technische Universität München



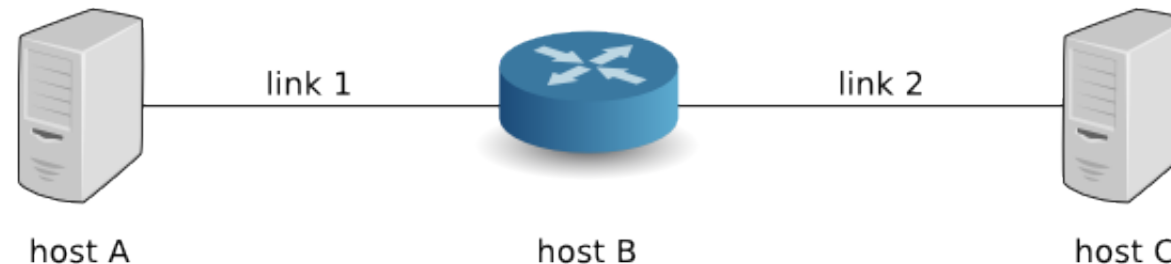
MiniNet Project

MEASURING TCP TAIL LOSS PROBE



□ 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** [1 point]
 - Describe your schedule and milestones
 - Anticipate challenges and problems

2. **A MiniNet Topology** [2 points]
 - 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** [2 points]
 - Use Netfilter Queues to process TCP streams in user space
 - Create an application introducing tail loss (configurable)

4. **Evaluate Tail Loss Probe** [3 points]
 - Evaluate the effect of TLP

5. **Final Assessment** [2 points]
 - 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
 - [Nov 26, 2013] MiniNet Topology
 - [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



VITRUAL MACHINES

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