MeshLab (WiSe 2009/2010)

Lecture 0: Organization

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http://www.net.t-labs.tu-berlin.de/teaching/ws0910/ML_labcourse

Winter Semester 2009
General information (1)

- Module: MINF-KT-NA/ML.W09

- Structure
  - Tutorials (Recommended)
    - Thursday: 16:00 – 18:00 English TEL 1118/19
  - Assignments (Compulsory)
  - Debriefings (Compulsory)
    - TBA – based on constraints

- For registration, news and discussion forums, submissions:
  - https://www.isis.tu-berlin.de/course/view.php?id=2475
General information (2)

❑ Prerequisites:
  ❑ Basic studies/Grundstudium on
    • Network Protocols and Architectures (by Prof. Feldmann)
    • Telekommunikationsnetze (by Prof. Wolisz)
  ❑ Basic knowledge of Linux

❑ Highly desirable:
  ❑ Good knowledge of Linux 😊
  ❑ English language
  ❑ Programming experience
General information (3)

- Who are we?
  - BOWL group

- Tutors
  - CügDEM ŞENGÜL
  - Ruben Merz

- Other supervisors
  - Mustafa Al-Bado
  - Thomas Hühn
  - Harald Schiöberg

BOWL - http://bowl.net.t-labs.tu-berlin.de/

- A reconfigurable wireless outdoor testbed with 50 nodes
- The network can be configured both as an infrastructure and a mesh network
- Indoor network for smaller or not-ready-to-be-tested-outside experiments ← you will be using this 😊
Goals of the course

❖ Learn the unique challenges of wireless networking
❖ Understand wireless protocols at different layers of the network stack
   ❖ Focus is on wireless physical layer concepts, MAC and routing
❖ Hands-on experience in BOWL indoor wireless network
   ❖ Implementing algorithms
   ❖ Measurements
Course Structure

- Tutorials - Recommended
  - Around 7 lectures spread out throughout the semester
  - Assignments are handed out
  - Information necessary to complete the assignments is given

- Assignments - Compulsory
  - Teams of 2
  - Duration of 1-3 weeks

- Debriefings – Compulsory
  - Selected teams describe their solutions
Assignments/Examples

- Experiments to understand wireless concepts

- Examples:
  - Can you recreate a hidden terminal scenario?
  - What is RTS/CTS? Do we need it or not?
  - How are transmission rate and transmit power related?

- Assignments will use BOWL indoor network
  - Some assignments on ns2 and ns-click simulator
Tentative Outline

- Tools of the trade (Weeks 1-2)
- Measurements (Week 3)
- IEEE 802.11 protocol (Weeks 4-5)
- Ns2 – nscliek (Weeks 6-7)
- Transmit rate adaptation algorithms (Weeks 8-9)
- Wireless routing algorithms (Weeks 10-11)
Collaboration

- Each team must complete the assignments **independently** of other groups
- You **must** collaborate with your team partner
Reading

- Tutorial hand-outs and reading list in assignments
- **Schiller:**
  Mobile Communications. Addison-Wesley, 2003
- **Rappaport:**
  Wireless Communications: Principles and Practice. Prentice Hall, 2002
- **Kurose and Ross:**
- ... see Web
After you leave this room

- If we called out your code name after the test, register for the course
  - 12 people – 6 teams in total will be selected to register

- During registration
  - Check your available times for debriefings
  - Put down the name of your team partner
  - If you could not find anybody we will pair you with someone
Job announcement

- Development of management tools for the BOWL test-bed

**Responsibilities**
- Enhancing our Ruby/Postgresql based management tool suite
- Rewriting legacy Perl applications in Ruby
- Building a Ruby on Rails based web front-end

**Requirements**
- Good programming skills
- Good understanding of relational databases
- Solid understanding of Linux and basic administrative tools
- Basic web technologies
- Good English skills

**Contract**
- 80h/month, limited to June 2010 (may be extended)
- Flexible working hours

**Contact**
- Harald Schiöberg – harald@net.t-labs.tu-berlin.de