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
  - Çiğdem Şengül
  - Ruben Merz
- Other supervisors
  - Mustafa Al-Bado
  - Thomas Hühn
  - Harald Schöberg

BOWL - [http://bowl.net.t-labs.tu-berlin.de/](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 – nsclick (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