Open Source

Research and Development

at

IME / USP

University of São Paulo (USP)

- Brazil's largest University
  - 5000 professors
  - 40,000 undergrads
  - 21,300 graduate students
  - > 25% of Brazilian scientific production

Computing at USP

- Institute of Mathematics and Statistics
  - Department of Computer Science

- Polytechnic School
  - Department of Computer Engeneering and Digital Systems

Computer Science Department

- 36 full-time professors (+ 4 active retired)
- 279 undergrads
- ~200 graduate students
- graduating per year
  - 50 bachelors (stable)
  - 30 masters (growing)
  - 5 PhD (growing)
- Research Areas
  - Computer Theory
  - Artificial Intelligence
  - Software Engeneering
  - Parallel Computing
  - Optimization
  - Databases
  - Software Systems
  - Bioinformatics

Main Projects

- Practice:
  - InteGrade
  - Eclipse
  - AcMus
  - JBoss
  - Agile Methods for Software Development
    - eXtreme Programming (XP)

- Theoretical Approach
  - Evolutionary Graphs in Mobile Computing
  - Formal Methods for Software Engeneering

arca.ime.usp.br

- Free Software Developers group
  - founded by undergrad students
  - currently has both grads and undergrads (~30)
- They develop
  - frameworks (e.g. Web development infrastructure)
  - systems
    - course management
    - library management
    - etc.

Linux research @ IME

- First machine installed in 1992
- First master thesis that touched the kernel:
  - Distributed File System (1994)
- Recent research works
  - Compressed Caching (Rodrigo Castro, MS 2003)
    - http://linuxcompressed.sourceforge.net
  - K42 Filesystem for the Linux Kernel (Livio Soares, MS 2004)
    - http://www.research.ibm.com/K42

Linux at IME

- Most of the servers (a few sparcs)
- Desktops of most professors (~30 out of 36)
- Laptops of many professors
- Instructional Labs
  - aprox. 80 machines (50%)
- Research Labs
  - aprox. 60 machines (95%)

Linux Education @ IME

- All the undergrad and grad courses are based on Linux and free software tools:
    - Programming Labs, Operating Systems, Databases, Distributed Systems, etc.
- Community courses
    - Linux as user
    - Linux system administrator
    - SW development with Eclipse and open source tools

Our Dream!

- Open Source Software Institute
  - R&D laboratories
  - post-docs, students, and professional programmers developing software

- What we need to make the dream come true
  - USD 350,000

Collaborations

- Brazil
  - PUC-Rio, UFRJ, UERJ, UFMS, UFMA, UFG
- United States
  - U. Illinois at Urbana-Champaign
- Canada
  - U. Toronto
- France
  - Imag - Grenoble
- England
  - Lancaster University
- Participation in Program Committes and Journal Editorial boards: ACM, IEEE, SBC.