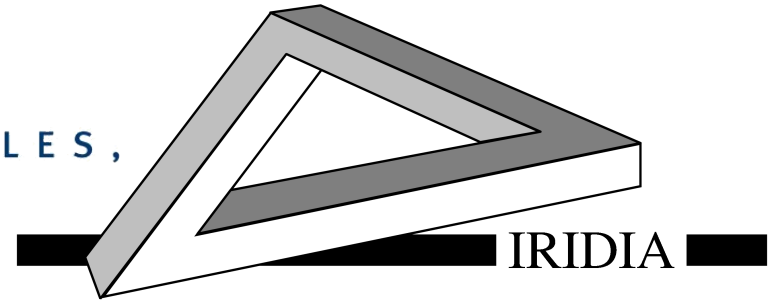
IRIDIA Infrastructure Meeting

October 6, 2011

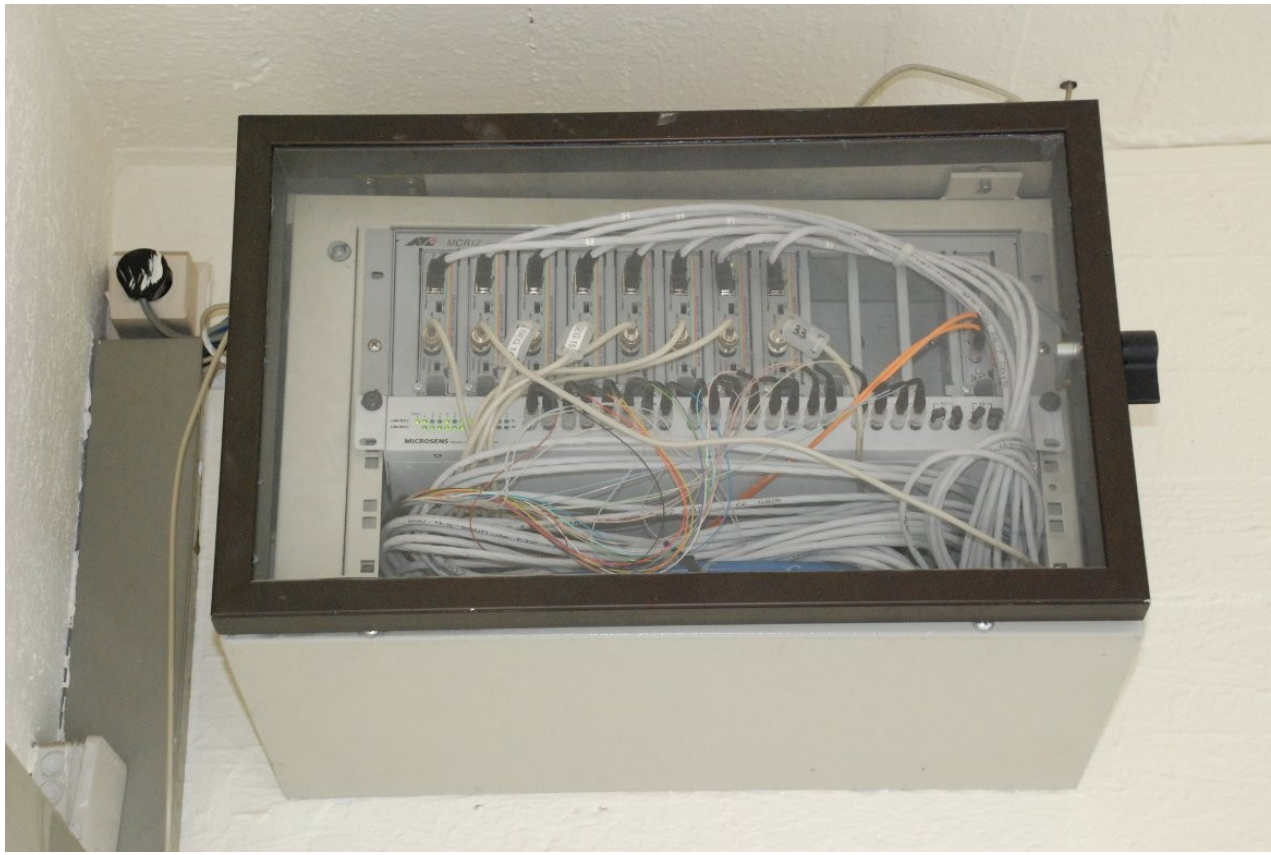
UNIVERSITÉ LIBRE DE BRUXELLES,
UNIVERSITÉ D'EUROPE

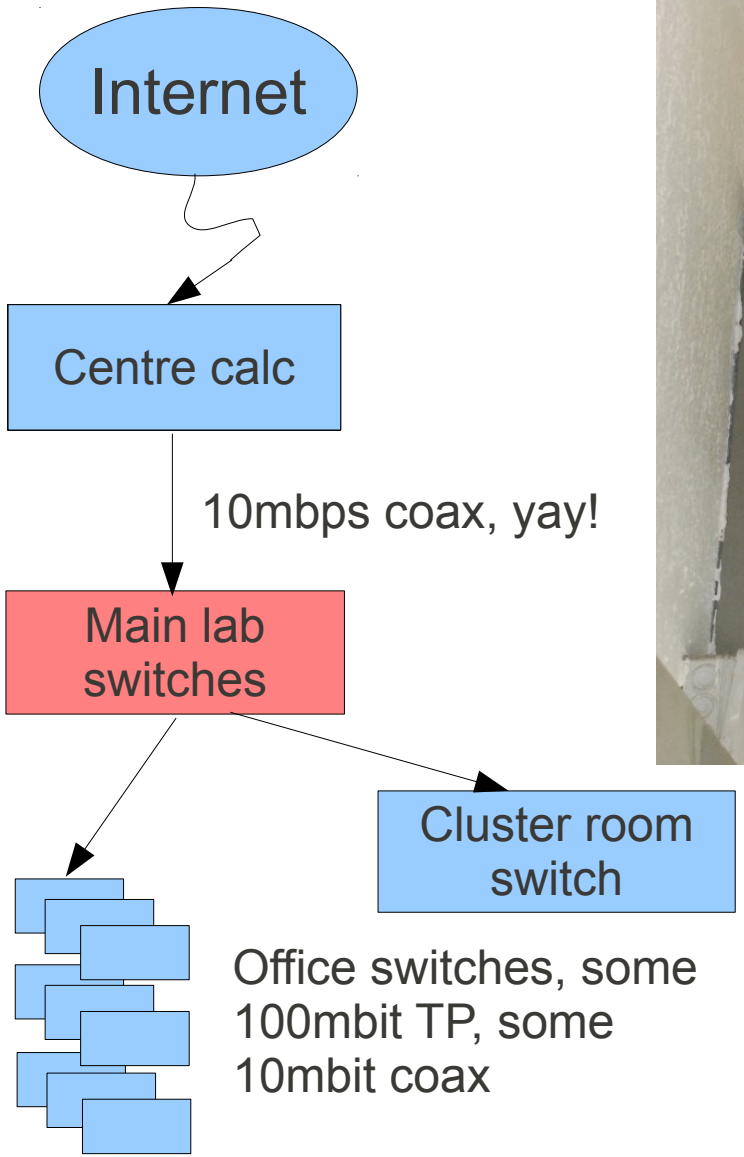


Institut de Recherches Interdisciplinaires
et de Développements en Intelligence Artificielle

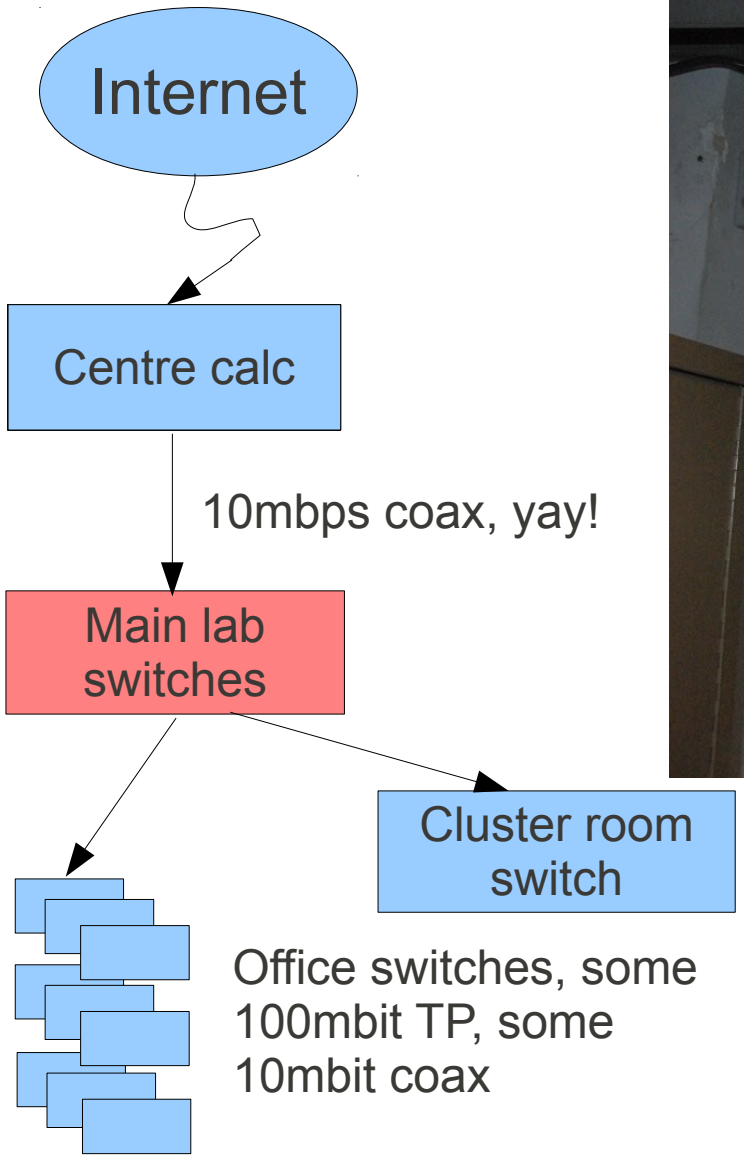
General comments about server infrastructure – Arne Brutschy

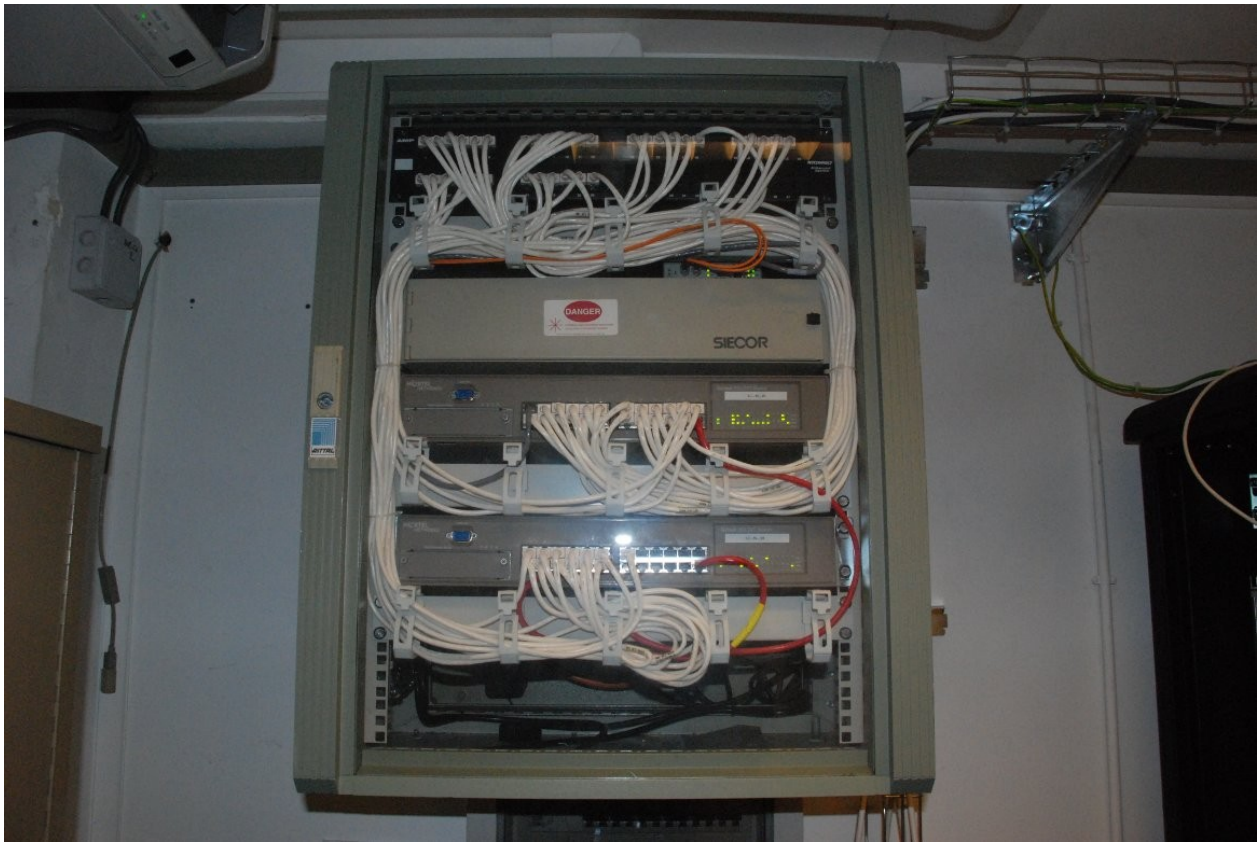
IRIDIA network structure





IRIDIA network structure





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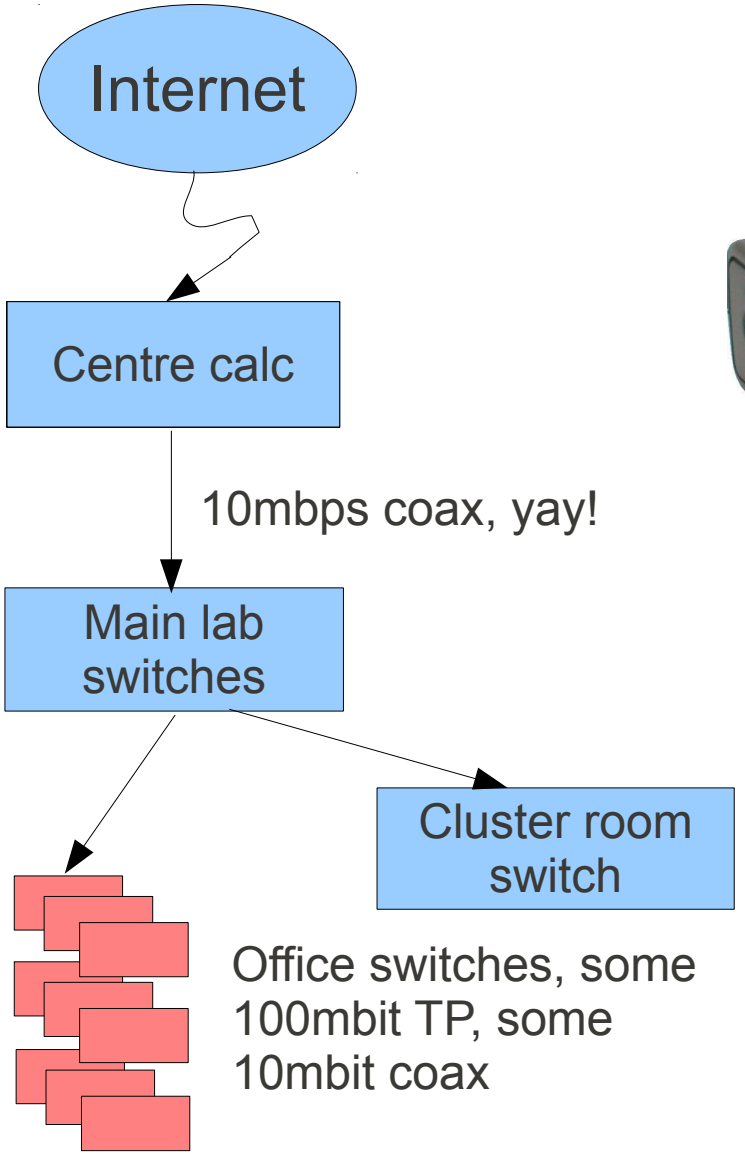

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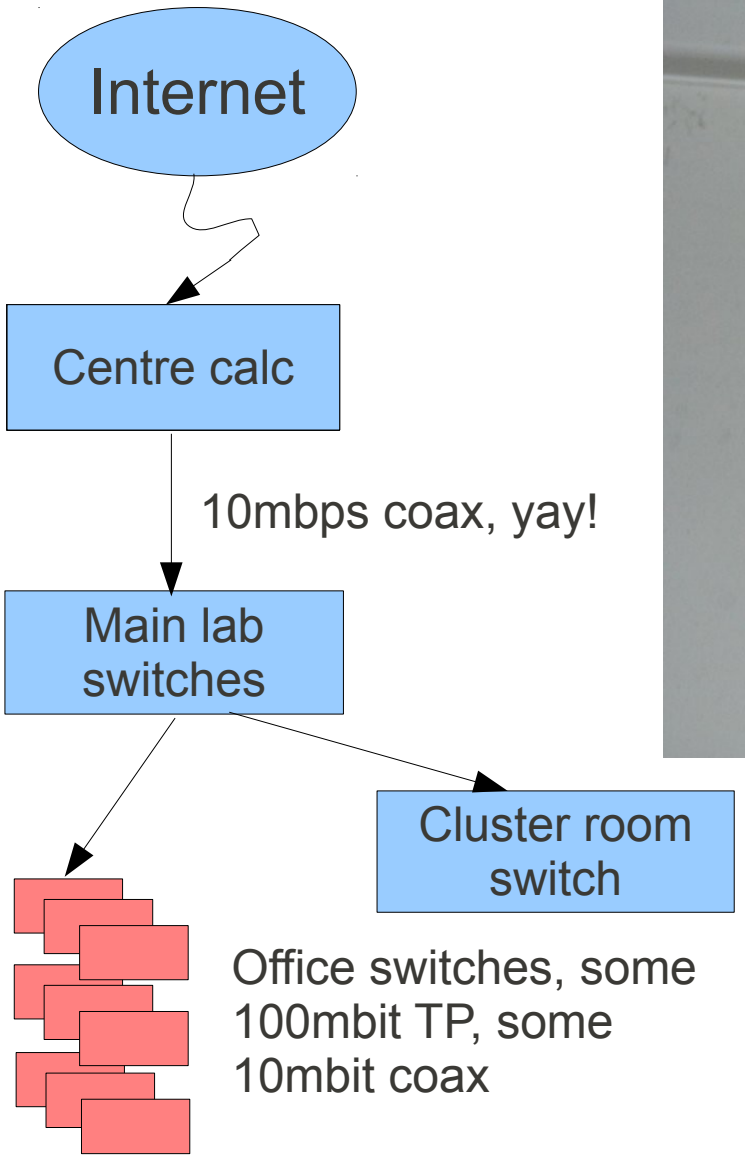


IRIDIA network structure

Internet

Centre calc

Main lab switches

Cluster room switch

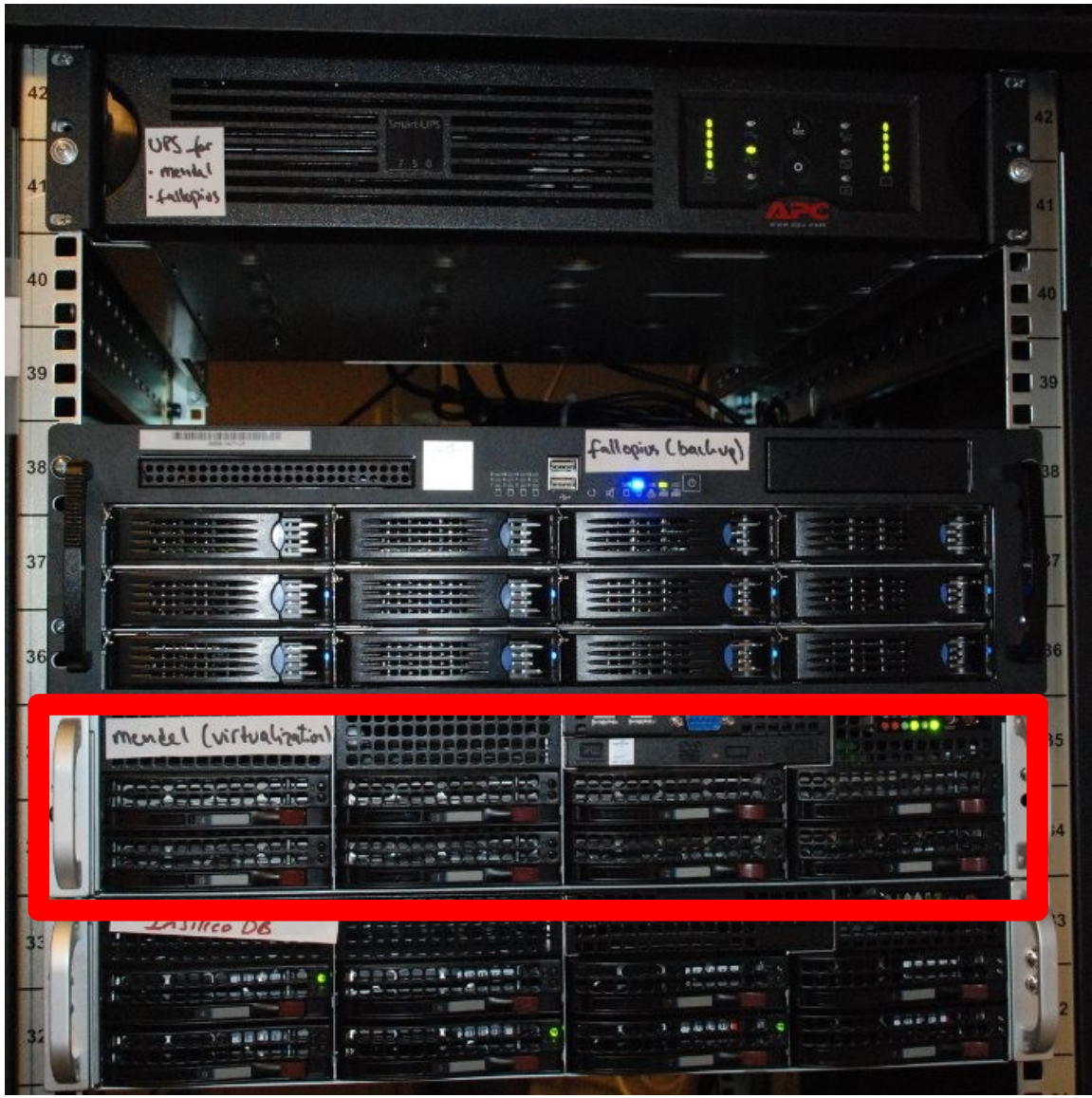
Office switches, some 100mbit TP, some 10mbit coax

Servers

Cluster

IRIDIA Servers

- virt. server
  - iridia
  - iridia-dev
- backup server
- Insilico stuff
- hot-mirror



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- backup server
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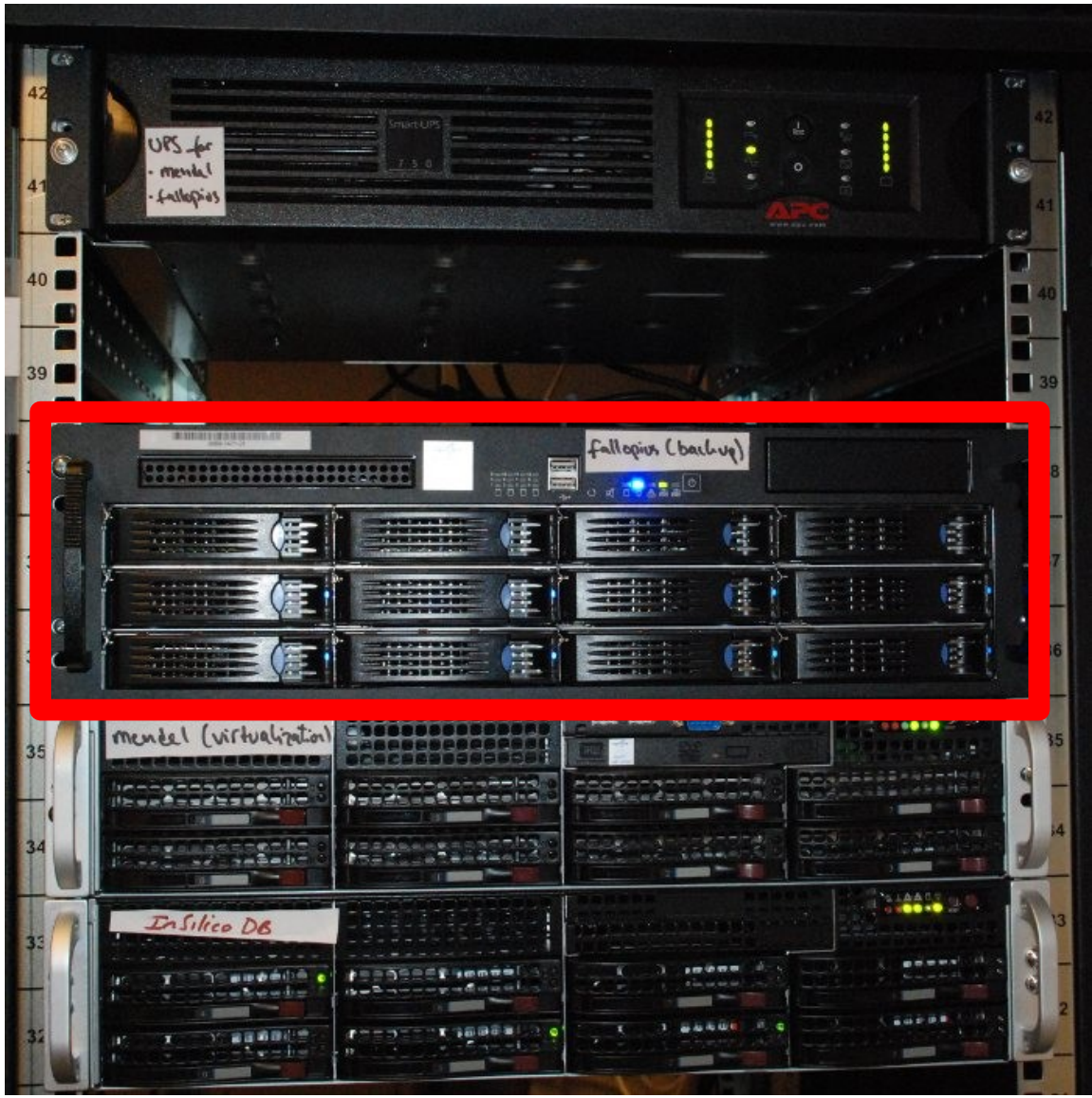

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- virt. server
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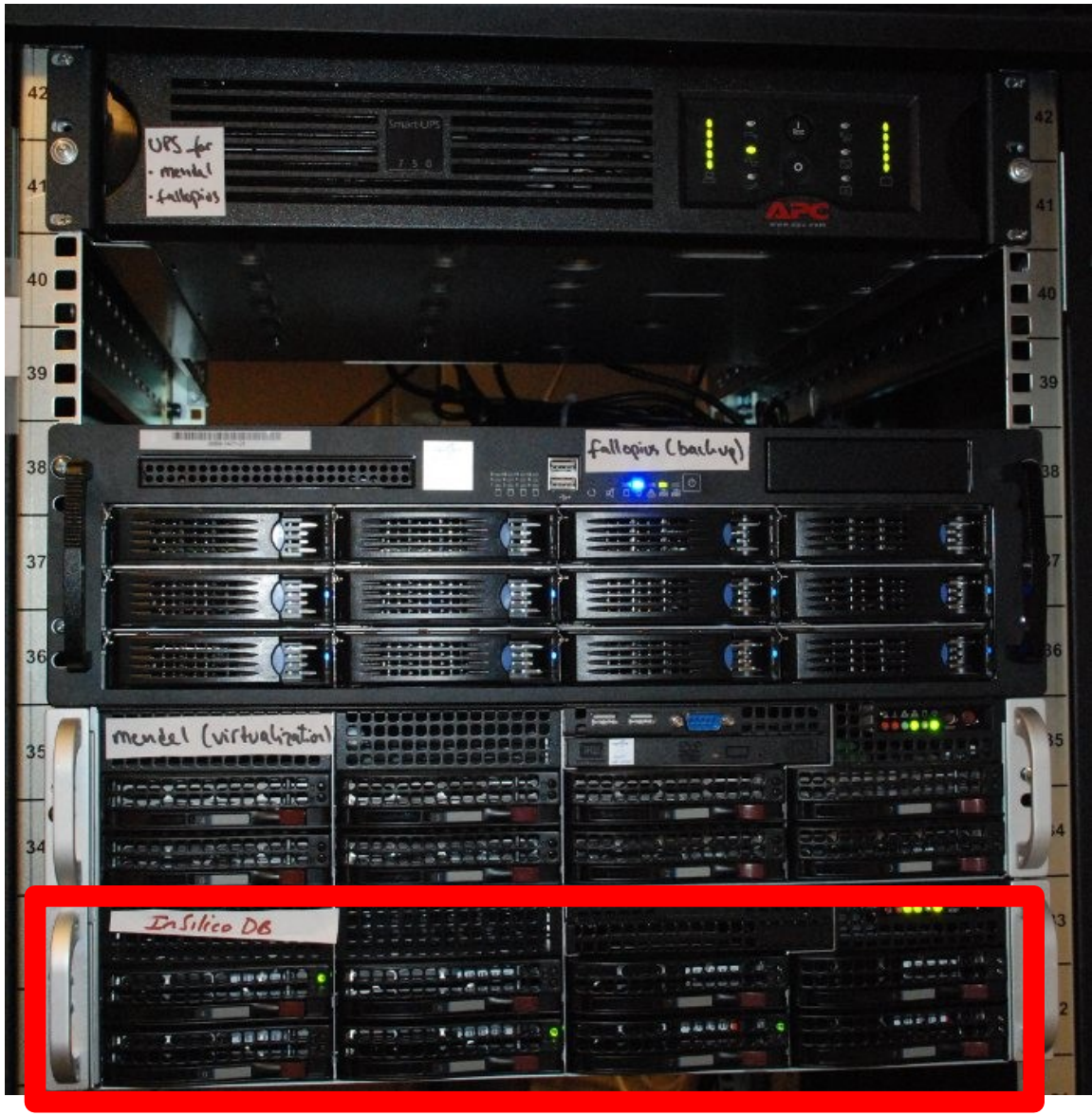

IRIDIA Servers

- virt. server
  - iridia
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- backup server
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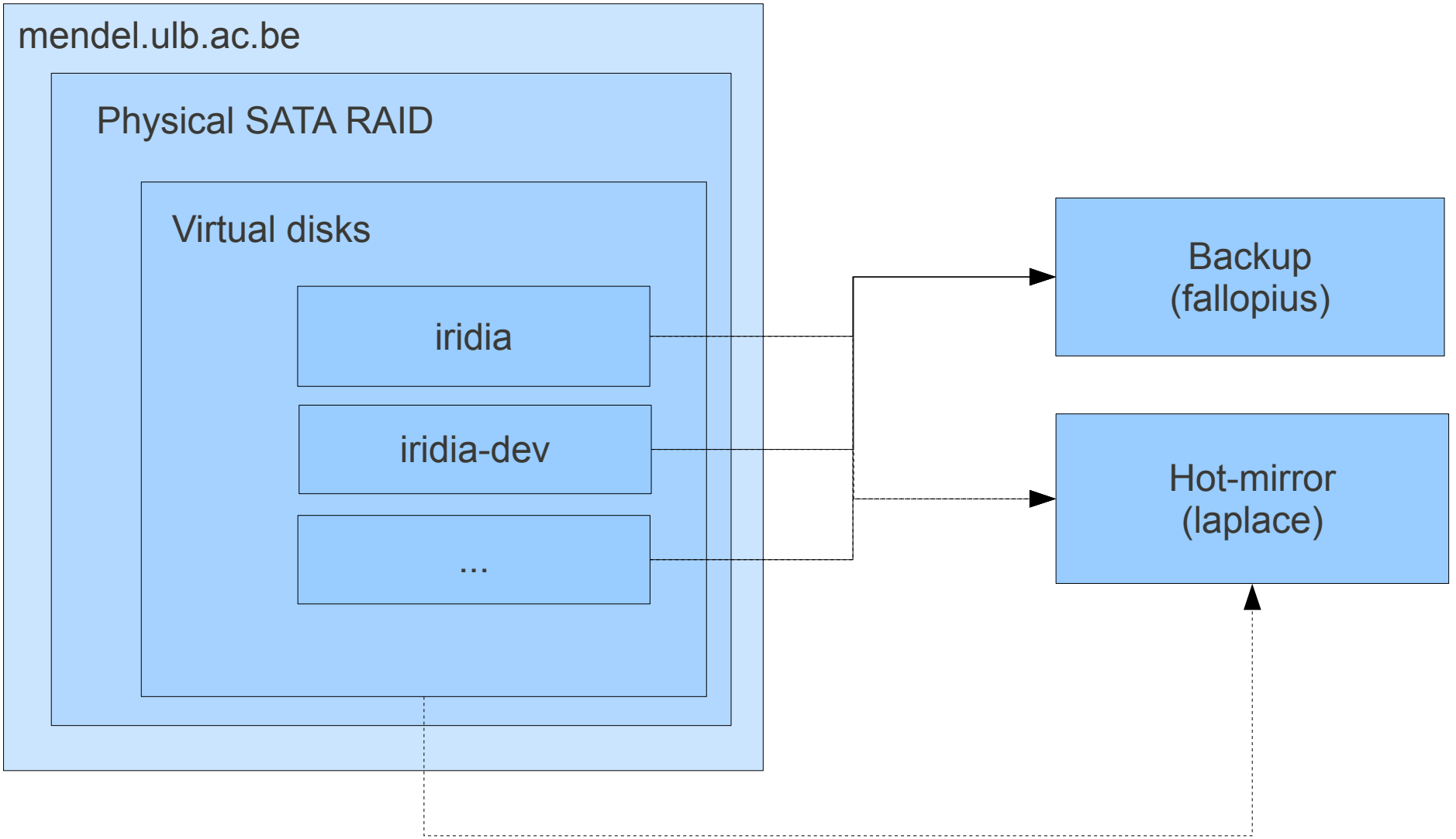
- hot-mirror

Virtualization server “mendel”



Iridia Server – Giovanni Pini

IRIDIA server - *http://iridia.ulb.ac.be*

Giovanni Pini

Basic services:

- Web sites
- Databases
- Wiki pages
- Mail
- Dhcp

My duties:

- Responsible basic services run
- Provide access to cabled network
- Give temporary sudo rights to people

How does it work - *www*

- Misc web sites (projects/conferences):
  - ad-hoc responsible (i.e., not me). Access through “websites” group.
- Personal web site:
  - Ask me to create a new user
    - ssh access
    - USERNAME@iridia.ulb.ac.be email
  - http://iridia.ulb.ac.be/~USERNAME → your website
    - files in /home/USERNAME/public_html

How does it work - *mail*

- Same password as for the ssh login
- Configuration -> wiki page “Workstation_configuration”
- Mailing lists: http://iridia.ulb.ac.be/cgi-bin/mailman/listinfo
- https://iridia.ulb.ac.be/squirrelmail
- project/conference mail aliases -> ask me
- forward: create .forward file in the home directory, with the mail address to forward to

Remarks

What the server is for:

- Personal website
- Links to published papers
- Plots/videos of your experiments

What it is **NOT** for:

- Experiments data → on the backup server
- 6.4G of your holiday pictures to Greece, Spain etc.

Cluster - Jérémie Dubois-Lacoste

608 computing cores

Last month usage: ~18 years of CPU time

If you are not familiar...

How to **submit a job**, how to **get your results properly**...
http://majorana.ulb.ac.be

→ Check there **first**, **then ask** admins if any further questions

Familiar or not... what you should NOT DO:

- **Run a job directly** on the login/submit node

- **Write continously some data** (screen output to!) while the job is running

  Your jobs should use the /tmp directory as the working directory while running

  Transfer your results into your home directory at the end, clean up /tmp!

  → Use regularly ./clean_temp_dirs.sh to ensure clean-up

- **Transfer** large amounts of data / large number of files **without compression**
- **Transfer** large amounts of data / large number of files when you **do not actually need them**

Questions - new accounts - special requests:

Jeremie or Manuele!

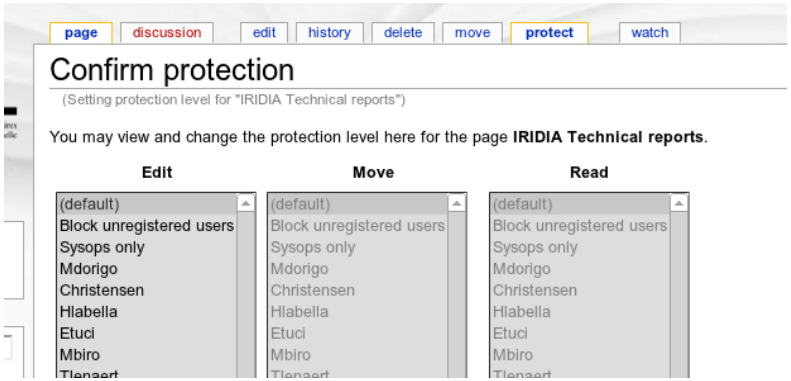
IRIDIA Wiki / Development server – Alessandro Stranieri

Development server

- Creation of new account accounts
- Host for projects
- Versioning:
  - Git
  - SVN

Iridia Wiki

- Mediawiki installation on iridia host
- Creation of new accounts
- Plugins:
  - Short URLs
  - Image upload restriction
  - Security control



Workshop – Manuele Brambilla

A few other things – Manuel López-Ibáñez

Proceedings repository

- When you come back from a conference, put the proceedings there, send an email to all. PLEASE!
- HOWTO? See the IRIDIA Wiki
- Currently stored in the backup server!

IRIDIA BibTeX Repository (optbib)

https://iridia-dev.ulb.ac.be/projects/optbib/svn

- Shared *.bib files. Currently 613 entries.
- Currently, only 4 users: Manuel, Jérémie, Thomas and Steffan.
- Jérémie and Manuel use it for all their papers.
- Why? Avoid duplicated work, avoid repeating mistakes, follow some standard.
- HOWTO? See the README

Optimization source code repository (optsrc)

https://iridia-dev.ulb.ac.be/projects/optsrc/svn

Main idea: **A place to keep whatever code we are sharing**

Optimization source code repository (optsrc)

Contents of IRIDIA Source Repository.
==========

algorithms/

ACOTSP/ The current development version of the ACOTSP software.
Patches MUST be approved by Thomas Stützle.

problems/

qap/ Quadratic Assignment Problem

benchmarks/ Benchmark files for various problems.

tsp/ Travelling Salesman Problem

generator/ DIMACS TSP challenge generator.
Scripts to generate multi-objective instances.

RUE/ Random Uniform Euclidean instances.

RCE/ Random Clustered Euclidean instances.

tsplib/ TSPLIB instances.

Optimization source code repository (optsrc)

Contents of IRIDIA Source Repository.
==========

libmisc/ Collection of miscellaneous utilities. Including:

timer.c, timer.h : Real/virtual timing code

parameter.c, parameter.h : Portable handling of parameters.

student_projects/

Collection of past student projects that may be usefull

Optimization source code repository (optsrc)

Contents of IRIDIA Source Repository.

==========

scripts/

cluster/randomized_qsub/

Script to launch experiments in random order.

analysis/

anova/ R script for ANOVA

manyfiles2matrices/ Scripts to extract data from many single-run files

plots/

boxplots/ R script for compare different algorithms' performance with boxplots

quality-time/ Perl scripts for generating plots of solution quality over time / iterations

run-length-distribution/

Script for generating the Run Length Distribution

Optimization source code repository (optsrc)

Current idea: **A place to keep whatever code we are sharing**

- ✘ Don't just copy => Contribute!
- ✘ Don't just dump your code => Integrate it with existing code!

In my dreams:

- Large collection of small, tested and useful codes / scripts.
- Shared bugfixes and improvements.
- Make scripts/code flexible to help reutilization
- Documented!

Logos

http://iridia.ulb.ac.be/wiki/Logos

- Use the SVN to keep up-to-date
- Add new logos
- Contribute variants of existing logos

Repository of graphical material

https://iridia-dev.ulb.ac.be/projects/material/svn

Main idea:
Pictures, icons, animations, templates that can be reused for presentations, papers, courses, etc.

- With “source code” (SVG, LaTeX, R script)
- With clear origin and LIBRE/FREE license
- Categorized

Repository of graphical material

https://iridia-dev.ulb.ac.be/projects/material/svn

CONTENTS

==========

aco/ Material related to ant colony optimization

multi-objective/

eaf/ Visual explanation of the 2D EAF

tuning/

race/ Animation of racing

IridiaTrCover

https://iridia-dev.ulb.ac.be/projects/IridiaTrCover/svn

- **Use the latest version:**

  Works with pdflatex, smaller PDF, more robust, more flexible.

- Use SVN to keep up-to-date with the latest version

- TODO:

```
%%  * Use package kvoptions to have all options of \IridiaTrCover as
%%    package options, then make \IridiaTrCover not take any options and
%%    either \IridiaTrCover or \maketitle would print the cover.
%%
%%  * Detect overflow in the cover fields and either error out or
%%    adjust automagically. Example of packages that do this are
%%    svmult.cls.
```

IRIDIA Calendars (Liao Tianjun)

http://iridia.ulb.ac.be/Calendars

- WebCalendar software basically **unmaintained**. Alternative?
- Creating new calendars is tricky. Needs to edit SQL database.
- Not clear how to create events from a script.

Thomas Stützle

Experimental research

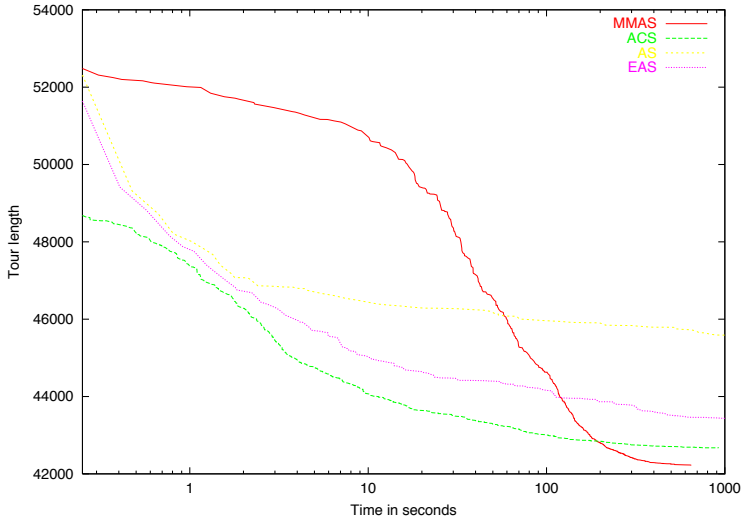
- we mostly do experimental research
- ensure reproducibility
  - store benchmark instances (or links to them), output files, algorithms versions, etc. together with the paper you are writing
- think first how to organize experiments / data etc. before running experiments
- maybe keep a list of "best practice" cases?

Writing

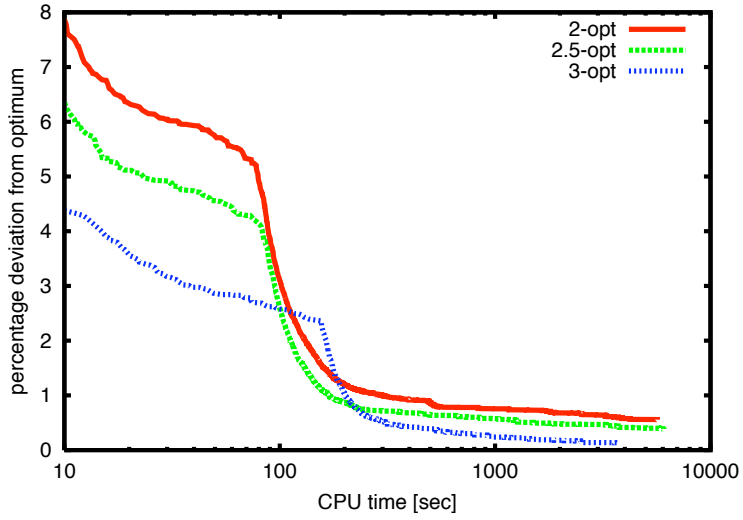
- English!
- try to improve writing skills by
  - taking courses (e.g. scientific English at ULB)
  - read something about good scientific writing (e.g. books at IRIDIA)
- maybe keep a list of recommended readings for writing (wiki)
- recall that communicating your results in a proper way is extremely important

Plots

not nice



nicer but maybe not perfect



Don't use defaults in the plotting programs (gnuplot, R, whatever else) but make sure that plots look fine for presentations **and** articles

Questions Time