

Designing Campus Networks

LINGI2142 - Group project

Administrivia

- Groups of 5 students
- Group meetings of 15 min during course slots
- 6 weeks duration before presentation (until Mar. 18)
- Inter-group reviews by Easter break

Designing Campus Networks

- Multiple geographical sites
- Multiple types of users
- Multiple services provided

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Presentation of the UCL network by Quentin Hunin
next Friday (Feb. 10) 8.30

Designing Campus Networks

- Configuration files
- Documentation
- Extensibility

Project goals

- Surviving failure of **any** network element
- Justify **every** configuration knob
- Written report as a `How-to` design a campus network

Environment

- Emulated network in virtual machines
 - CLI access to a remote group instance
 - Instance for your own machine
- Open source routing daemons and tools
- IPv6-only

Design Tasks

- Define addressing plan
- Define testing strategy
- Assign individual design tasks

Individual Design tasks

- Routing (Quagga/BIRD)
- Security (ip6tables)
- End-user management (DNS, DHCP/SLAAC)
- Services (www, load balancer, ssh)
- QoS (tc)
- *Monitoring, reporting* (snmp, syslog, netflow)*

This week

- Register groups on Moodle
- Build and run the sample network in the VM
(both on your machine and remotely)
- Attend Friday's presentation!

Tips

- **Use a VCS!**
- Automate (script) everything
- Leverage IPv6 features/Do not try to emulate IPv4