Summary of 2nd Rio Grid School

Grids

- **Grids are:**
  - heterogenous, dynamic, distributed, wide area infrastructures primarily used for
  - high-performance computing
  - high-throughput computing
  - collaborative computing
- **Two significantly different concepts:**
  - Desktop Grids (DG)
  - Utility Grids (UG) → In the focus of this school
- **Utility grids:**
  - UG resources provide 24/7 service
  - Most widespread middleware implementations:
    - *gLite* → In the focus of this school
    - *Globus*

We learnt about EGEE and gLite

- **An EU founded Grid project: 2004-2006 EGEE; 2006-2008 EGEE-II**
  - Build, deploy and operate a consistent, robust a large scale production grid service that
  - Improve and maintain the middleware in order to deliver a reliable service to users
  - Attract new users from research and industry and ensure training and support for them
- **Components**
  - User interface → access service for end users
  - Workload Management System → resource broker
  - Computing Element → computing service, a job queue
  - Storage Element → File storage
  - File catalog → File registry
  - Information System → resource database

  All built onto Grid Security Infrastructure (GSI)

If you want to become an EGEE user

- **Obtain a certificate from a recognized CA:**
  - www.gridpma.org → 1 year long, renewable certificates, accepted in every EGEE VO
  - GILDA CA – two weeks long, renewable certificate BUT accepted only in GILDA VO
- **Find and register at a VO**
  - EGEE NA4 - CIC Operations portal: http://cic.gridops.org/
  - GILDA VO – training and application prototyping: https://gilda.ct.infn.it/
- **Use command line clients installed on the User Interface** (UI – mainaned by the VO / your institute / you)
- **Use third party clients**
  - E.g. GANGA, GridWay
- **Use programming APIs to interact with gLite services**
  - E.g. GFAL data management API
- **Use graphical clients**
  - E.g. P-GRADE portal

How to port your application to the Grid?

- **Binary compatibility → recompile the binary on the UI machine**
- **Interaction with grid services**
  - Use grid programming APIs in your code
    (C, Java, Python – depends on what service you want to invoke)
  - Use command line tools and wrap your code with a shell script
- **Execute the code on the UI as a local job**
  - If it uses grid APIs or command line tools to invoke grid services
- **Execute the code on a CE as a grid job**
  - Write JDL *or*
  - Use higher level tools (e.g. P-GRADE, GridWay, GANGA)
- **If something need to be installed on a CE statically**
  - Contact the VO admin and ask for official support for your application in the VO
  - VO admin will instruct CE admins to install your files into a defined directory

Most important support services

- **GGUS (Global Grid User Support)**
  - http://ggus.org/
- **Grid Application Porting support**
  - www.lpds.sztaki.hu/gasuc
- **EGEE Application Identification and support (NA4)**
  - http://egeena4.lal.in2p3.fr/
- **EGEE User training and induction (NA3)**
  - http://www.egee.nesc.ac.uk/

Thank you!

…and do not forget to return your feedback form!