



Enabling Grids for E-scienceE

Summary of Day 1

www.eu-egEE.org



- **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
- **Main differences:**
 - Client-server model
 - DG Resource providers operate client software → Easy to maintain
 - UG Resource providers operate server software → Difficult to maintain
 - Access control
 - Few privileged users have access to DGs
 - Many users can get access to UGs
 - Operation
 - DG resources are volatile – cycle scavenging systems
 - UG resources provide 24/7 service

- **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
- **gLite middleware: Bag of services that address key distributed system issues:**
 - Security, Data management, Job management, Monitoring
- **Components**
 - User interface → access service for end users
 - Workload Management System → resource broker
 - Computing Element → computing service, a job queue
 - Storage Element → File storage – further details tomorrow
 - File catalog → File registry – further details tomorrow
 - 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 → Thursday
- **Use programming APIs to interact with gLite services**
 - E.g. data management API → tomorrow
- **Use graphical clients**
 - E.g. P-GRADE portal → tomorrow

- Login to the grid:
voms-proxy-init
- Describe your grid job in JDL
- `edg-job-submit / glite-wms-job-submit` → JobID
- `edg-job-status`
- `edg-job-get-output`
- `lcg-infosites ...`
- **voms-proxy-destroy**

edg-* for historical reasons

glite-* current production VOs

- **EGEE**
 - <http://www.eu-egee.org/>
- **gLite middleware**
 - <http://www.glite.org>
- **gLite manuals, documentation**
 - <http://glite.web.cern.ch/glite/documentation/>
(gLite user guide)
- **EGEE Application Identification and support (NA4)**
 - <http://egeena4.lal.in2p3.fr>
- **EGEE User training and induction (NA3)**
 - <http://www.egee.nesc.ac.uk/>

- **Data services: handling large data sets**
- **Connecting data and job management**
 - More realistic examples, reusable JDLs and scripts
- **A high level application developer and executor environment: P-GRADE Portal**
 - Concept of grid workflows
 - Workflow development and execution on GILDA



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**See you at 7pm.
Enjoy your cocktail'**



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