



Enabling Grids for E-scienceE

Summary of Day 1

www.eu-egEE.org



- **Grids are:**
 - heterogenous, distributed, wide area infrastructures primarily used for
 - high-performance
 - high-throughput
 - collaborative computing.
- **Two significantly different concepts:**
 - Desktop Grids
 - Utility Grids → In the focus of this school
- **What is a Virtual Organisation?**
 - People in different organisations seeking to cooperate and share resources across their organisational boundaries
 - E.g. A research collaboration
 - Each grid is an infrastructure enabling one or more “virtual organisations” to share and access resources
- **Largest utility Grids:**
 - EGEE → 200+ VOs
 - US Open Science Grid (OSG)
 - UK National Grid Service (NGS),
 - Nordugrid,
 - US Teragrid
 - ...

- **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**
 - Links with and build on national, regional and international initiatives → SEE-GRID
 - **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
 - 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

- **Obtain a certificate from a recognized CA:**
 - GridPMA.org
 - GILDA CA – two weeks, accepted only in GILDA VO
- **Find and register at a VO**
 - EGEE CIC Operations portal
 - GILDA VO – training
- **Use command line clients on the User Interface**
- **Use graphical clients**
 - Portals → later this week
- **(Develop custom services and clients)**
 - Service APIs → Tuesday, wednesday

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

- **What is running on EGEE?**
- **Data services**
- **Connecting data and job management**
 - More realistic examples!
- **R-GMA to monitor applications**
- **A higher level job manager tool: GANGA**