



Enabling Grids for E-science

Additional topics for induction courses

www.eu-egee.org



- **Basics of parallel programming**
 - Introduction to function vs. data parallelism
 - Implementing the concepts using gLite services
 - Parameter sweep jobs
 - Workflows
 - Parameter sweep workflows
 - Slides available (20-30')
 - Training at EGEE User Forum, Clermont-Ferrand, Feb/08
<http://conferences.healthgrid.org/conferenceDisplay.py?confId=3>
 - EGEE user and system admin training, Kuala Lumpur, Dec/07
<http://indico.cern.ch/conferenceDisplay.py?confId=23946>

- **Integrated exercises**

- “Building blocks” - Scripting that demonstrate integration of job and data management
- Scripting skills required
- Find exercises and description in ETF WIKI: (90-120’)

<http://wiki.nesc.ac.uk/read/egEE-na3-etf?BuildingBlocks>

1. Example - MAGIC code:
 - Send script to CE as job
 - Send real executable in sand-box. Script starts executable on CE
 - Executable generates output file on CE
 - Wrapper script writes result file to SE
1. Example - run a job “close” to SE with required input/output data
 - simple script to copy file from SE to Worker Node
2. Example - Script to run multiple jobs (simple paramter sweep)
 - Create JDL files in the script
 - Submit mulitple jobs to Resource Broker by the script
 - From pre-WMProxy time
 - now could be reimplemented as aparametric job (If you have time)
3. How to control access to files – so collaborators can share data

- **Application porting**
 - **Show the whole lifecycle of grid applications – including compilation of source code**
 - Download the source code from the given URL (C file)
 - Compile the source **on UI**, the binary is compatible with CEs
 - Write the JDL
 - Submit the job, observe it, download the result
 - Presentation to discuss typical problems
 - Material (~1h - lecture + practical):
 - *From joint EGEE – SEE-GRID Summer School: www.egee.hu/grid07*
 - P-GRADE Portal now has a compiler portlet – makes this easier.
 - **Dedicated application porting session:**
 - Event should be at least 3 days long
 - ~1 day spent on porting attendees applications to EGEE
 - Get EGEE NA4 Application Porting Support Team involved
 - www.lpds.sztaki.hu/gasuc

- **Data management**
 - **AMGA: metadata catalog**
 - If sophisticated data management is needed
 - To store data about data, typically data about files
 - Slideshow (20') + practicals ('30) are available
 - *ETF WIKI page*
 - *GILDA training repository*
 - *Past events in NA3 event database*
 - Programming skills required
 - **R-GMA: Relational Grid Monitoring Architecture**
 - Database that can be used for application monitoring or as storage for lightweight data
 - Lecture (20') + practicals (~25' – 25' command line and API)
 - Programming skills required