



Parallel Session B5 - Responsive Grids

Short Jobs and Scheduling Policies Issues



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Responsive grids

- Seamless integration of grid resources with local tools and workflows
- One critical component is **interactive** access to computing power and (large) distributed data
- Possibly unplanned
- On a federation of low-level batch resources → batch system
- With production commitments



Responsive Grids Summary (1)

- What kind of benefits would be gained by the orientation towards a responsive grid?
- Need to have human decision in the loop
 - E.g. medical images processing (visual inspection needed)
 - More complex scenarios: sessions of interactive activity
- Maybe a continuous way to pass to/from interactive and heavy batch processing
- Critical even for many e-hardscience simulations. Existing applications or applications not joining the grid because of the current limitations
- Critical to support e-health, e-culture
- Gather information on needs & scenarios for responsive access to resources ?
 - Probably a good idea. Survey, Interview
 - ESFRI more adequate



Responsive Grids Summary (2)

- Do responsive grids need a shift in paradigm in scheduling?
- There is more in that than only SDJ scheduling. We are facing the same problem as
 - Mainframes in the 60's - the transition to multitasking
 - Network and Oses - coexistence of best-effort and QoS
- Experience in EGEE, CrossGrid, ... + existing prototypes + frameworks (e.g. glogin)
- Virtualisation is changing the scenario
 - Promising scenario to mix long-running batch applications and interactive access (application encapsulation on shared hardware). Interesting also for security reasons etc...
 - This can be seen as consolidating different applications on the same hardware (confinement)
- Ongoing work proves that interactive services is possible within the current model
- Address the middleware limitations (long time to go from the user to the CE)



Roadmap

- Is it possible now to define a roadmap for
 - The integration of existing technologies into production grid middleware
 - Enlarging the grid user community/application portofolio to the « interactive » world
- Stay on production grids
 - Production infrastructures do face these issues
 - We have already seen that an incremental approach is a good start
- The development/evolution of middleware for responsive grids requires some form of medium to long-term agenda and support
- Structure of the coordination needs further elaboration



Question 3:

- A lot of experience has been gathered: EGEE, Crossgrid and the starting int.eu.
- But the impact of virtualization technologies on grids is essentially unexplored
- Supporting the development/evolution of middleware for responsive grids requires a medium to long-term commitment
 - Responsiveness does not give immediate return in occupation time
 - Issues/solutions may trigger negative reactions
 - Prototypes and academic-only work is no more a sustainable development path