

“Interconnecting Grid, Desktop Grid and Network”

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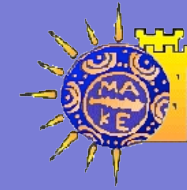
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Open Grid Forum, Barcelona

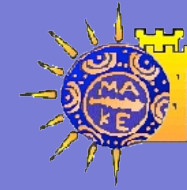
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UoM's past activities



- Administered an EGEE production site.
- Administering an EGEE pre-production site (still ongoing).
- Conducted a research for grid e-government applications for the national HellasGrid project.
- Conducted a study on incorporating national computing resources to the HellasGrid infrastructure.
- Research and testing on grid projects that use scattered resources (Condor, B.O.I.N.C, LiveWN)

Recent work: Condor & Grid



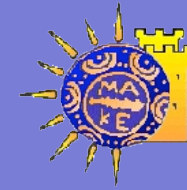
- Grids are usually organized using a strict, hierarchical and bureaucratic model.
- Resources are dedicated and controlled by full-time administrators.
- Adding resources to the Grid is not a straight-forward (or cheap!) procedure.
- Expansion of the Grid is slow.

Possibilities →

Involve users and academic communities

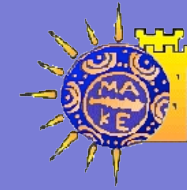
Exploit idle computing power

Recent work: Condor & Grid



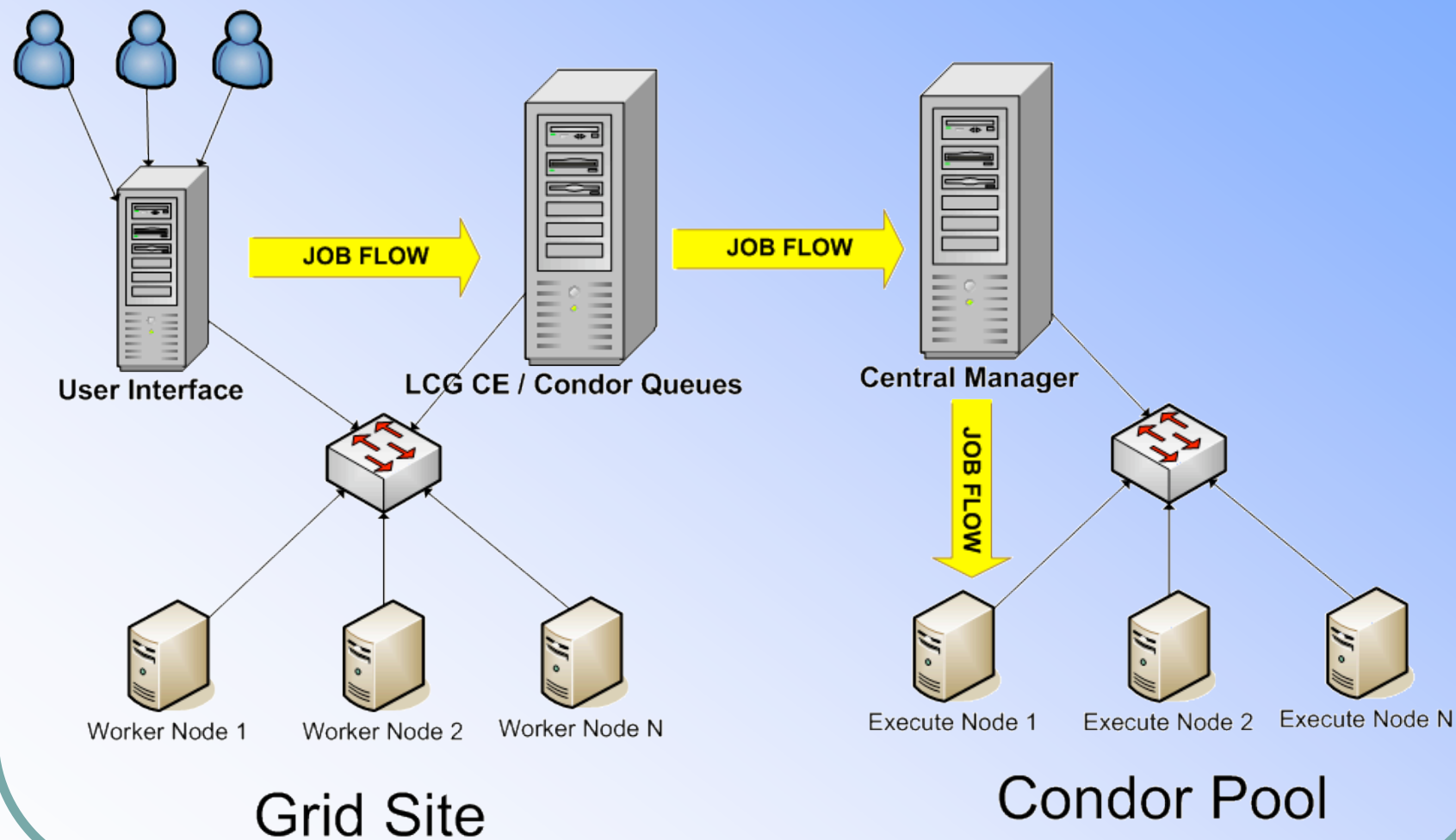
- Add scattered computing resources to the Grid. This includes university labs, school labs, faculty pc's etc. These resources remain idle for the most part of the day.
- Inexpensive computing power. Countries can exploit and better utilize their public computing infrastructures. Public expenditure can be reduced.
- Scientific research can be advanced in a academic level with institution involvement.
- Grid technologies and research subjects are brought closer to the public and the academic community.

Condor & Grid – The bridge



- For testing purposes we used our Pre-Production site , PreGR-01-UoM.
- Configured the LCG-CE to use Condor as a batch system. Created the appropriate queues for dteam and ops.
- The latest Condor software was installed on the LCG-CE. The system was configured as a Submit node for the Condor pool.
- Some tweaking and experimenting was necessary with some configuration files of the information system.

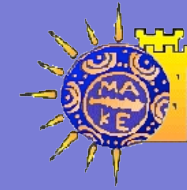
Condor & Grid – The bridge



Interconnecting Grid, Desktop Grid and Network
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Condor & Grid – Issues



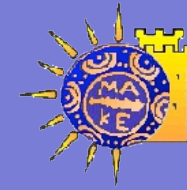
- Static job translation :Grid users cannot potentially use all of the power of Condor's ClassAd mechanism since the translation between Grid and Condor jobs is static.
- Security issues: Involving desktop pc's as a part of the Grid inherits the danger of malicious pc owners that are not controlled or monitored by anyone. Jobs and job data are at risk.
- Condor doesn't work easily behind NAT connections. This is a drawback for incorporating school computer labs.

ISDG – technical aspects



- Reliability: Service Grids require 24/7 availability. How can we bring that to the Service Grid - Desktop Grid interconnection?
- Security: How do we protect jobs and job data?
- Efficiency: How well does this interconnection will perform? Are there any possible bottlenecks?
- Deployment: Procedures for ease of deployment must be established.
- Standardization: Do we propose just one Desktop Grid platform or do we work towards the Interoperability between various Desktop Grid technologies?

ISDG – social aspects



- How do we convince governments to incorporate national computing infrastructures? Successful paradigms must be established.
- Applications that produce results beneficial for the public domain must be ported/created to these new infrastructures.
- How can we involve any individual on volunteering to this infrastructure? We must open the infrastructure to the public by making it widely known.
- The impact will be even larger by creating transnational Desktop Grid infrastructures.

UoM's current work



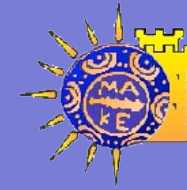
To this end:

- Joint proposal with SZTAKI for the creation of a transnational Desktop Grid infrastructure in South East Europe.

Activities will include:

- Infrastructure establishment/maintenance
 - Application creation/porting
 - Developing interoperability components
 - Training and dissemination
 - Establish a link with EDGeS and
 - Connect the DG infrastructure to the SEE service grid
-
- We have confirmed interest from 9 other parties in Greece, Hungary, Romania and Italy. Proposal is still under way

UoM's current work



We hope that:

- We can propose to countries/governments a new efficient oriented paradigm for grid computing.
- Bring computing grid closer to the academic community and end users.

UoM will:

- Provide infrastructure from schools in North Greece.
- Coordinate the infrastructure in North Greece.
- Application creation/porting.
- Interoperability component development.

End of presentation



Thank you for your attention!