PRAGMA New Member Application

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PRAGMA-10

Townville, Australia

27th March 2006

Agenda

- MIMOS Berhad
- GCAB Objectives
- GCAB Experience
- Recent Collaborative Research among PRAGMA friends or others in Grid Computing
- Our Aspiration for Joining PRAGMA

A Brief History

MIMOS R&D started back in October 1984, when the GoM endorsed a key national initiative…

MIMOS Head Office
Jalan Kerja Air

circa 1986

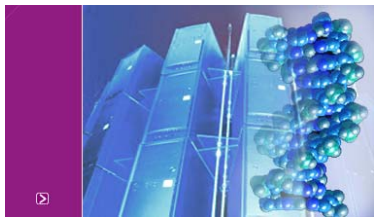
To orchestrate the various players into playing their respective roles in the National Microelectronics Program:

- To map out a 5 -10 year strategy for the structured growth of the microelectronics industry
- To identify niche product areas for penetration by Malaysian companies in local and foreign markets
- To investigate and propose the proper incentives for start-up companies
- To seek out and encourage established foreign companies for JV on new ventures
- To prepare appropriate policies to convert the labour-intensive industry to a more technology-, knowledge-, and capital-intensive industry

…which led to the formation of MIMOS to focus on R&D and to participate in these and other programs

5 Research Laboratories

Grid Computing and Bioinformatics

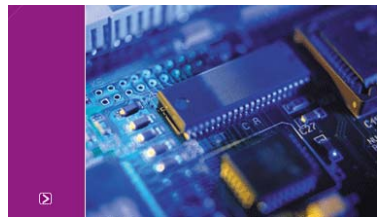


Pervasive Computing

Cyberspace Security

Semiconductor & Microelectronics

Nanoelectronics



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Objectives

- To become one of the nation's computation and data hub.
- To research and develop cost effective high performance computing platform using open source solutions and COTS.
- Development of a National Technology Roadmap for Grid Computing and Bioinformatics.
- Enhance research collaboration between MIMOS, local RIs and with premier institutions globally.
- To become Centre of Competency for High Performance Computing, Grid Computing and Bioinformatics R&D.
- To share the HPC platform though the use of Grid Computing technologies among other research institutes (RIs) both locally and globally for:
  - Supporting research in genomics, proteomics, etc.
  - R&D in bioinformatics applications
  - R&D in HPC and Grid Computing

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Our Prior Experience in Grid Computing and other Areas

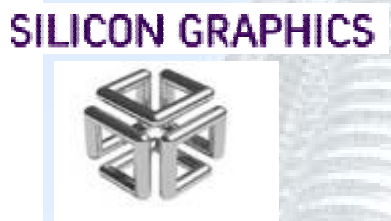
- Beowulf Clusters:
  - Our first 68 CPUs AMD Opteron Cluster was completed last year
  - A 5 CPUs Cluster was set up for PRAGMA early this year.
- Worked closely with 2 other local universities (Universiti Sains Malaysia and University Malaya) in setting up the National Grid testbed
  - Work in progress to get more onboard
  - Several challenges need to be sort out
- National Technology Roadmap for Grid Computing
  - A nation wide multi-party effort to set a documentation to chart out research in Grid for the next 5 year in Malaysia
  - A similar roadmap for bioinformatics was completed as well.
- Work in progress with other research institutes and local private sectors in bioinformatics.

Recent Research Collaboration

- Development and deployment on “a generic multi-query parser and dispatcher system for BLAST search engine” with local plantation company
- Supporting University of Malaya (UM) Chemistry Department and University Sains Malaysia's (Dr Habibah) Pharmaceutical Faculty for protein folding simulation using AMBER
- Developing a grid portal with supporting enablers connected to local research cluster

Other Collaborations

- ""A meta-scheduler" for Globus Grids (Phase I) with USM, Singpore's Scalable Systems and UM's Faculty of Computer Science and Information Technology
- Organizing "National Grid Computing and HPC Workshop Series" with:
  - SGI, HP, SUN



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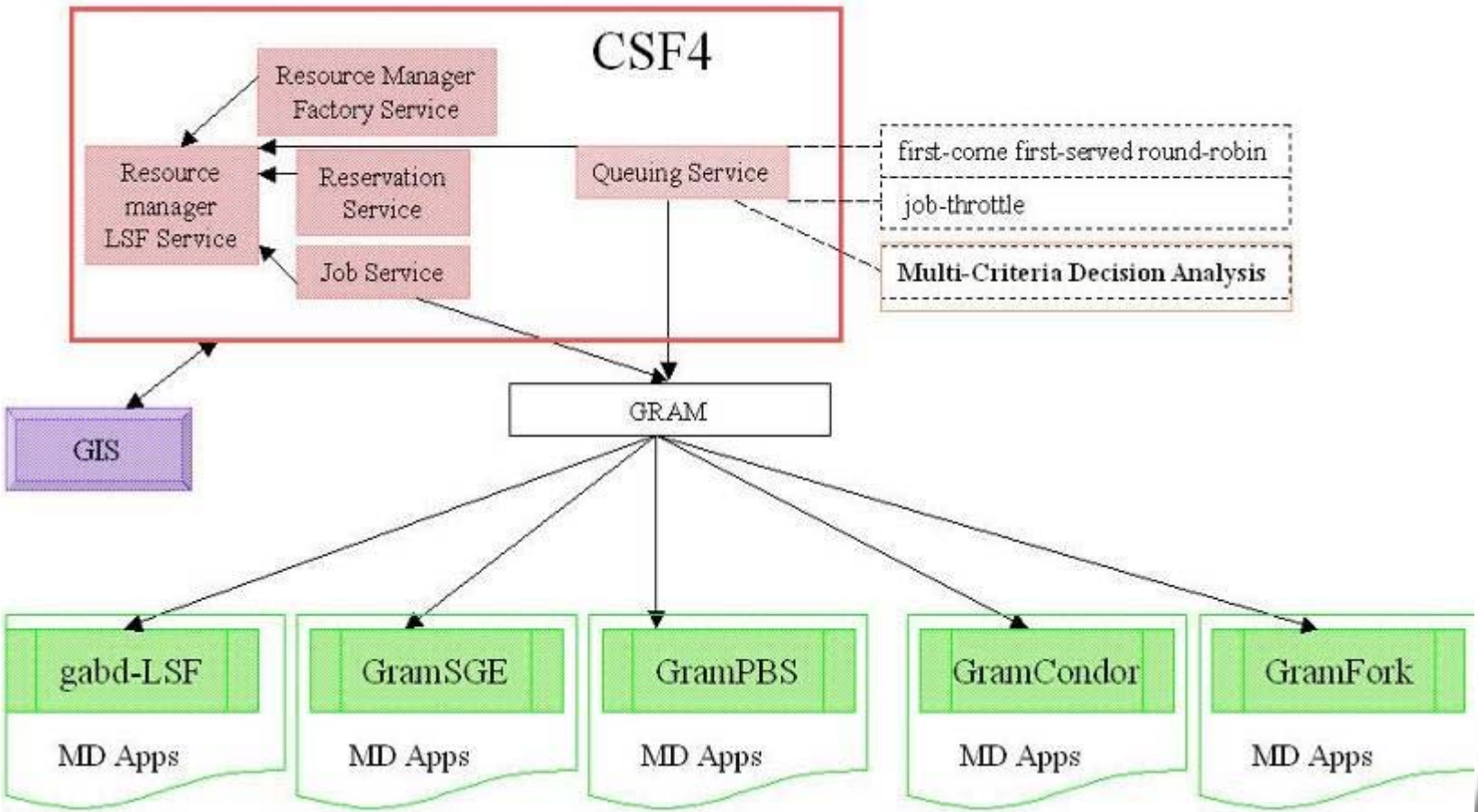
Apply PRAGMA Membership

- Leverage on R&D facilities (facilities, expertise, etc.) of members to complement internal strengths in Grid Computing.
- Opportunity to participate in collaborative research projects with the chance to join in large international projects with external funding (e.g. EU, Japan, etc.)
- Early-bird opportunity to access new tools and components developed by the community.
- Leverage on regional expertise to accelerate the development of grid computing middleware and applications through multi-lateral scientific collaboration on the grid in the Pacific Rim.
- Help promote open source paradigm through the sharing of tools and components.
- Opportunity to participate in regular knowledge sharing forums organised by PRAGMA (only by invitation).
- Exchange knowledge and culture within the research internship undergraduate PRIME project
- To host the future PRAGMA meeting and to improve the middleware's capabilities that has been developed by PRAGMA member

Our new PRAGMA Activities

- Participation in Resource Working Group
- Joining PRAGMA Testbed by contributing:
  - 1st Phase: nucleus.mygridusbio.net.my
    - 5 CPUs AMD Athlon 64
  - 2nd Phase: mybiogrid.mygridusbio.net.my
    - 68 CPUs AMD Opteron
- Participation in BioScience Working Group
- Proposing grid meta-scheduler project using CSF by integrating the performance and reliability index on the queuing services

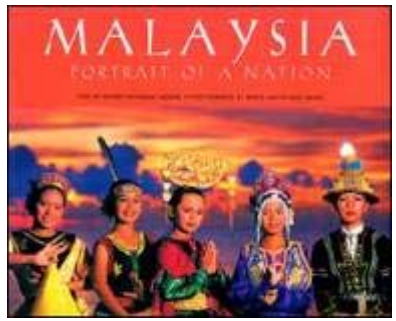
Proposed Multi-criteria grid meta-scheduler using CSF4 for Molecular Dynamics applications



Note : CSF – Community Scheduler Framework GRAM – Globus Resource Allocation Manager

Attractions in KUALA LUMPUR

More About Malaysia Culture



Foods and Fruits

Internship in MIMOS

And looking forward on the Exhange Students from PRIME …

Thank You