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## DG@PUTRA : AN EXPERIENCE IN INTEGRATING DESKTOP AND SERVICE GRID AT UNIVERSITI PUTRA MALAYSIA

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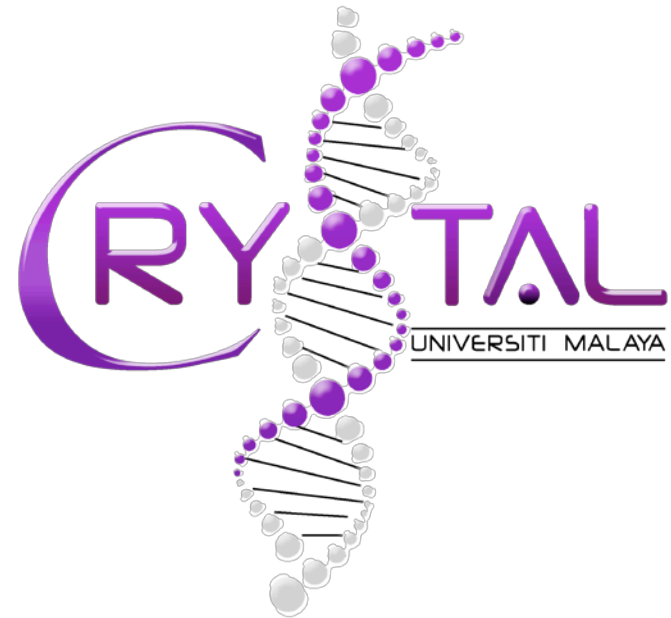
# Motivation

- For past few years Universiti Putra Malaysia (UPM) has been actively promoting Grid Computing (i.e. Service Grid) as the foundation for e-science research to another universities/institutes in Malaysia under AcademicGrid Malaysia.
- The action is very important to harmonize all (computing and storage) infrastructure for research by using **right** platform to avoid problem in the future.

# Academic Grid Malaysia



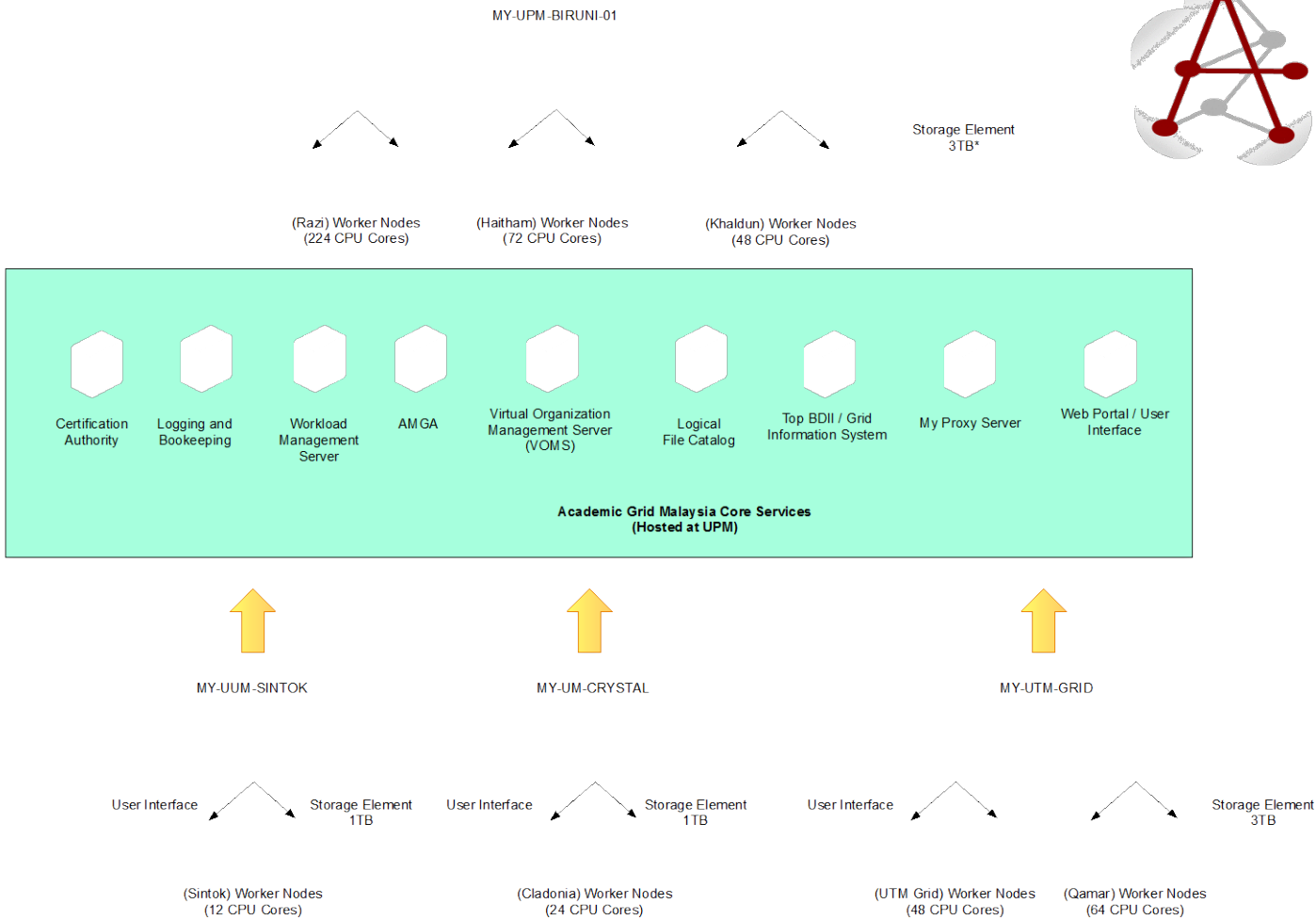
**UPM**  
UNIVERSITI PUTRA MALAYSIA  
BERILMU BERBAKTI



**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA

Centre for  
Information and  
Communication  
Technology

# Academic Grid Malaysia



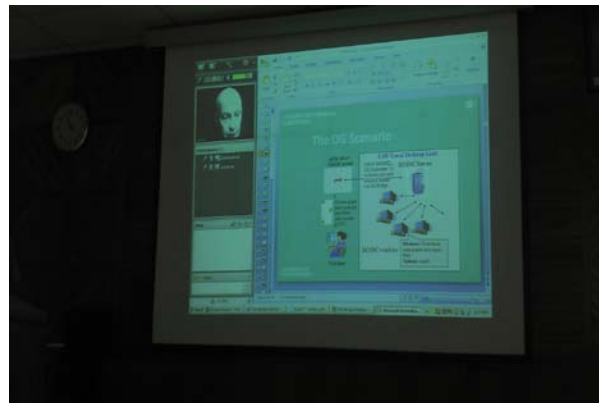
# Why Desktop Grid?

- Existing configuration only support Linux-based application.
- Service Grid maintenance cost is relatively high.
- As complement to Service Grids, HPC centers, supercomputers in case of bag of tasks, parameter sweep, monte-carlo type applications.
- As a low-cost and green computing alternative.

# Road to Desktop Grid...

- One of DesktopGrid VO resource contributor
- Workshop and Seminar on Desktop Grid Computing
  - In collaboration with DEGISCO - IDGF
  - 27-30 September 2011
  - Hosted at Universiti Putra Malaysia
  - Participant from Academic Institution and Government Agency
  - Focus on setup a Desktop Grid based on SZDG-Boinc release and application porting with Genwrapper

# Road to Desktop Grid...



# Implementation Recipe..

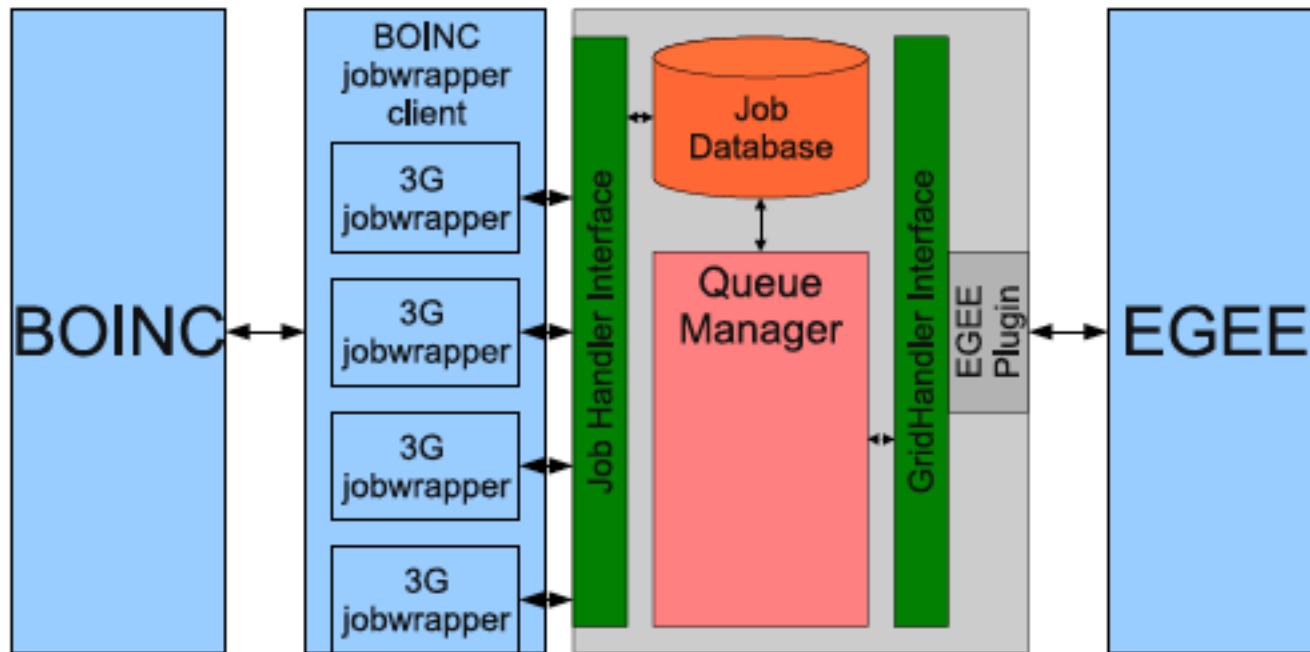
- One-way job flow direction (Desktop Grid (DG) -> Service Grid (SG) )
- SZDG-BOINC release
- 3G-Bridge version 1.6 (with some modification)
- gLite-UI 3.2
- BLAST application (ported to BOINC with GenWrapper) for testing



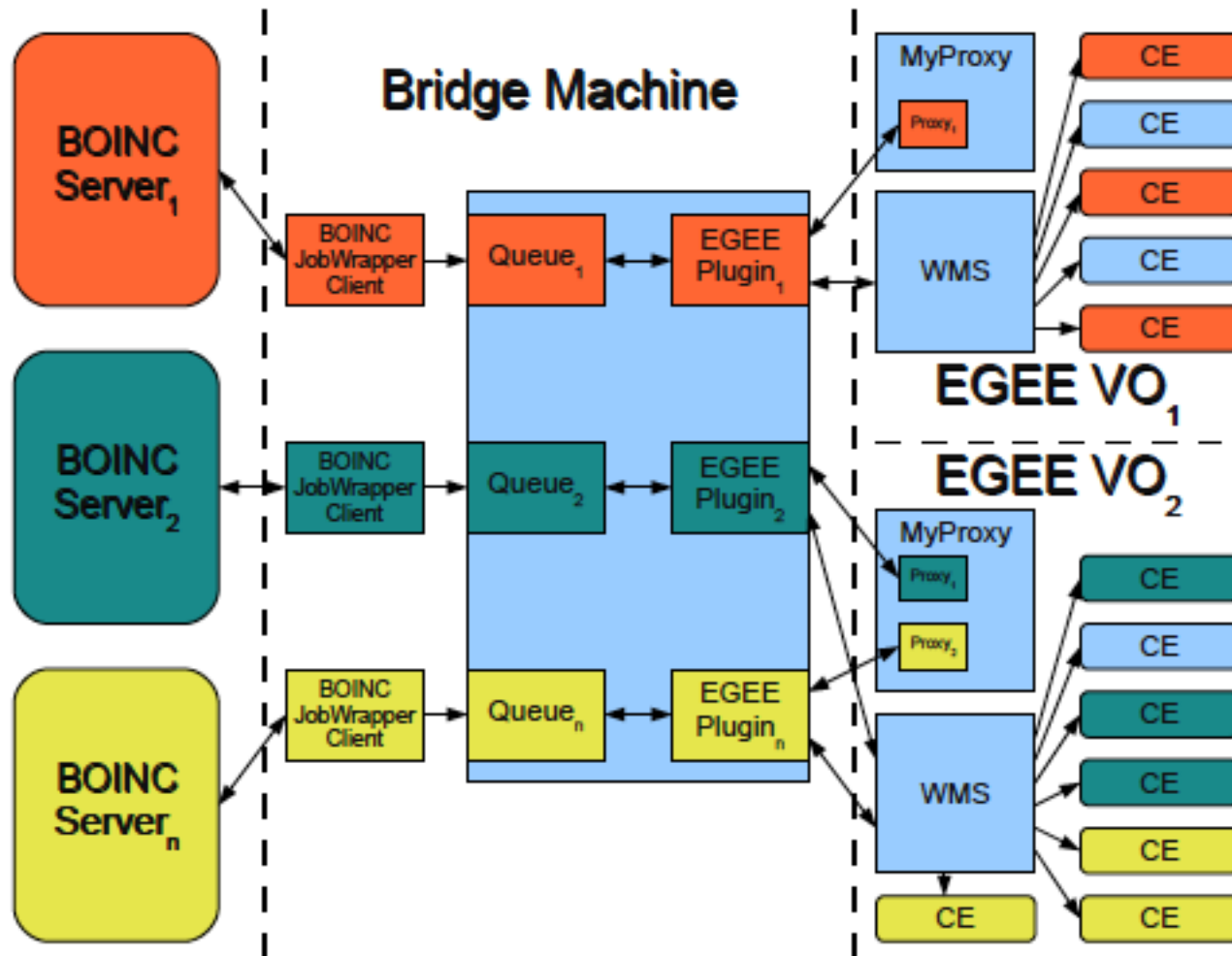
# About EDGeS 3G Bridge

- EDGeS 3G Bridge is a grid bridge innovation from Enabling Desktop Grid for E-Science (EDGeS) that enable Desktop Grid and Service Grid connection.
- There are two ways of connections:
  - Desktop Grid to Service Grid (DG->SG)
  - Service Grid to Desktop Grid (SD->DG)
- For DG->SG, the EDGeS 3G Bridge shall be installed with EMI-UI
- For SG->DG, the EDGeS 3G Bridge shall be installed as BOINC project

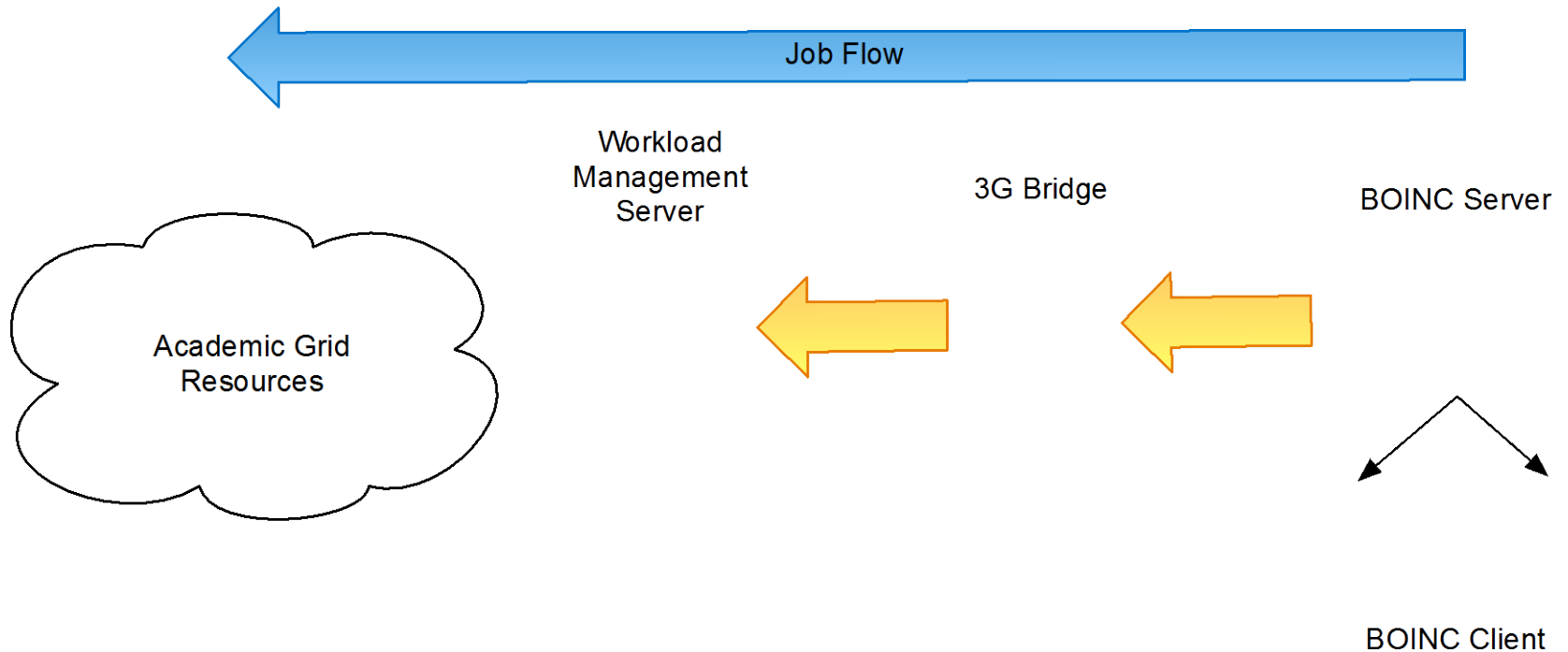
# EDGeS 3G Bridge Architecture



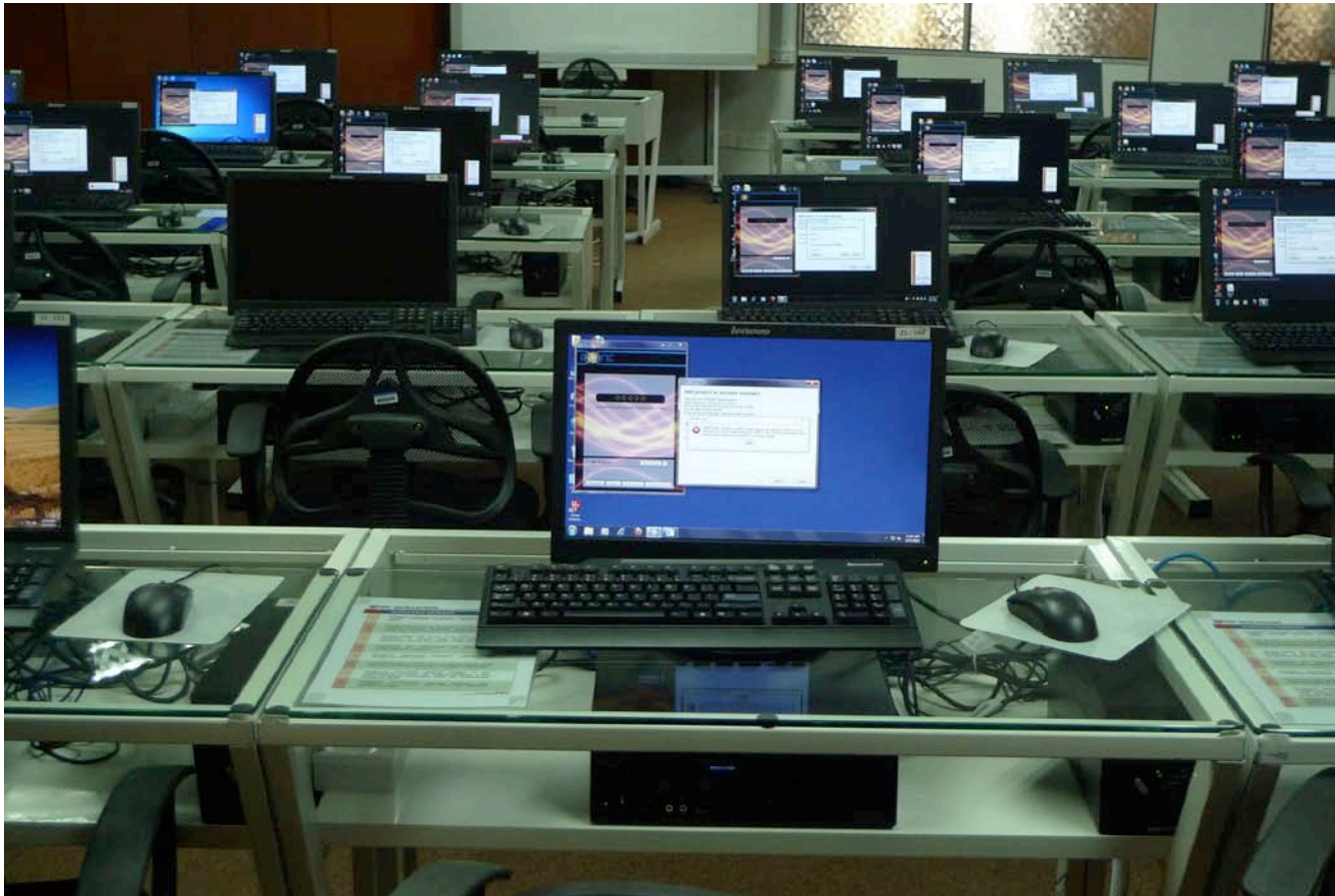
# EDGeS 3G Bridge Architecture



# Implementation



# Implementation



# Result



## About DG@Putra

Putra Desktop Grid is UPM implementation of DesktopGrid network, consist of computers at lab and local volunteer. The project is fully supported by the International Desktop Grid Federation (IDGF).

## Join DG@Putra

- [Read our rules and policies](#)
- This project uses BOINC. If you're already running BOINC, select Attach to Project. If not, [download BOINC](#).
- When prompted, enter **<http://boinc.biruni.upm.my/putra/>**
- If you're running a command-line or pre-5.0 version of BOINC, [create an account](#) first.
- If you have any problems, [get help here](#).

## Returning participants


- [Your account](#) - view stats, modify preferences
- [Teams](#) - create or join a team

## News

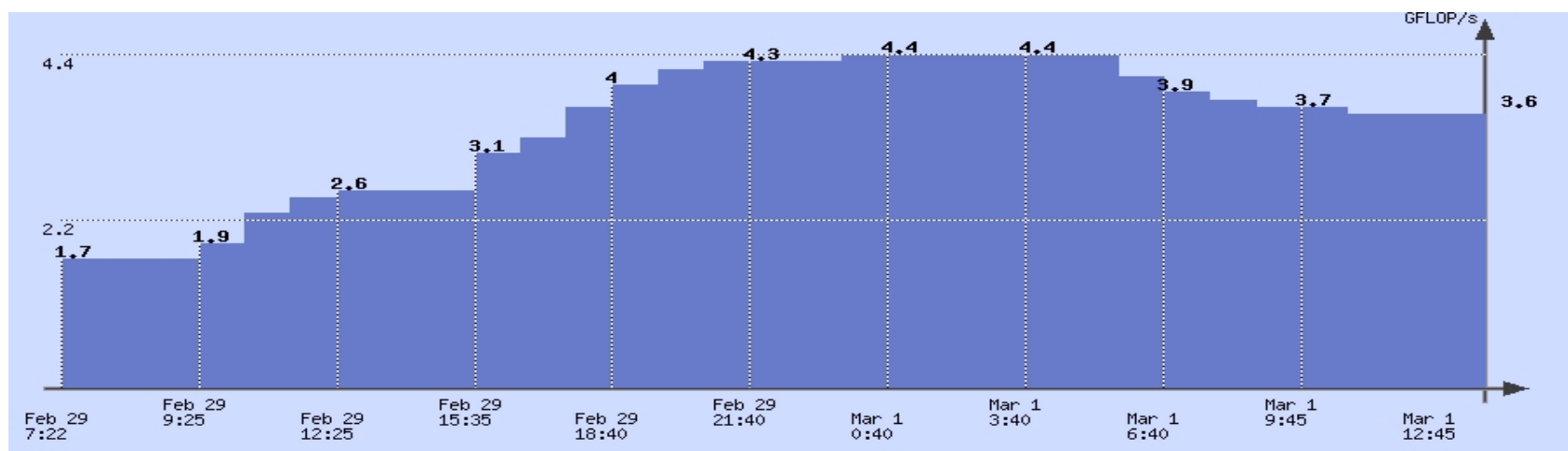
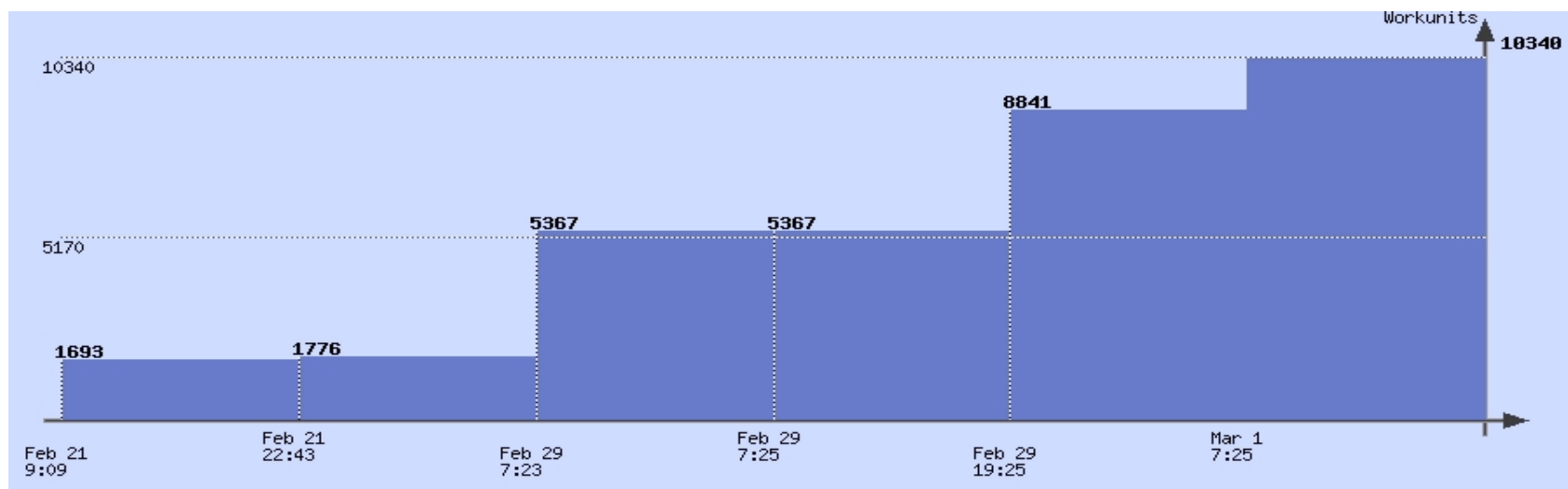
### DG@Putra is here!

February 23, 2012, 17:42 MYT

We are happy to announce that we have just launch DG@Putra, a Desktop Grid implementation in UPM. The workunits from the application will be available soon.

News is available as an [RSS feed](#)  [RSS](#).

# Result

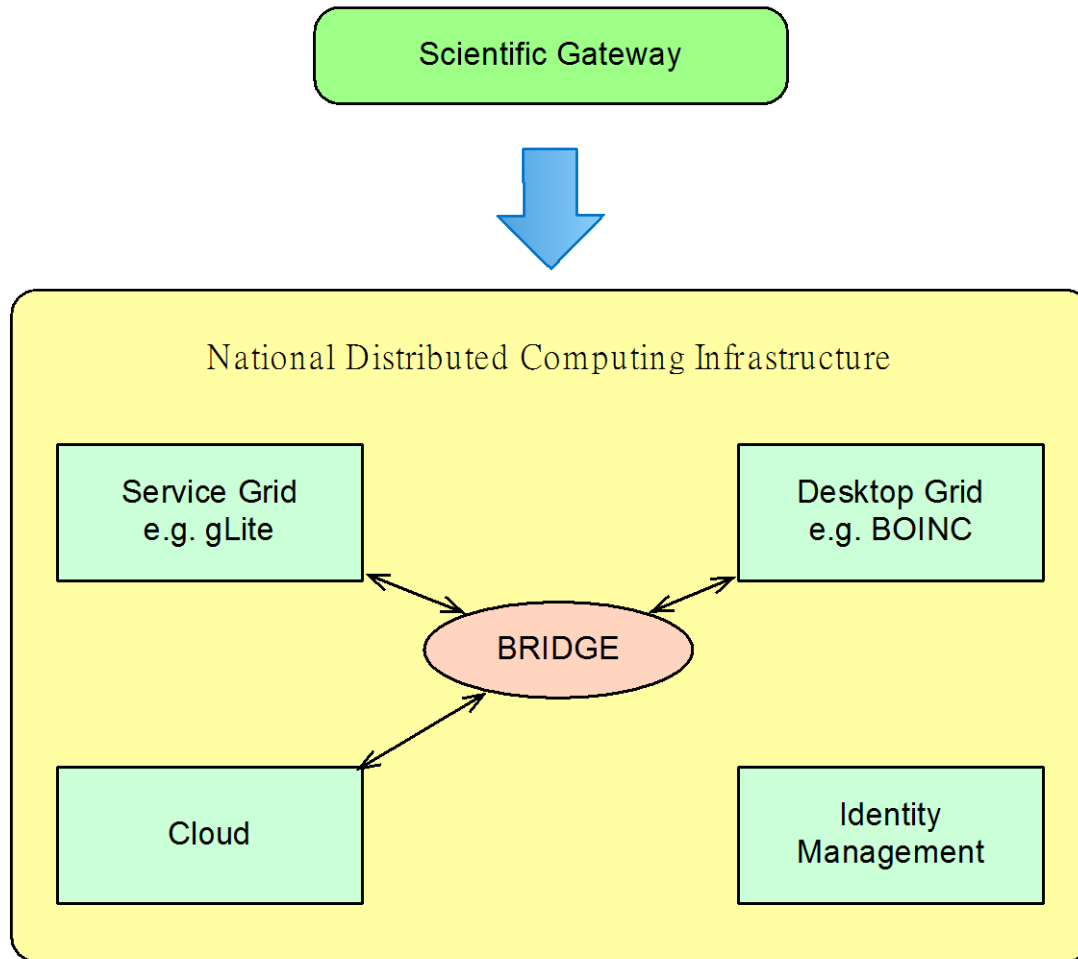


# What's Next?

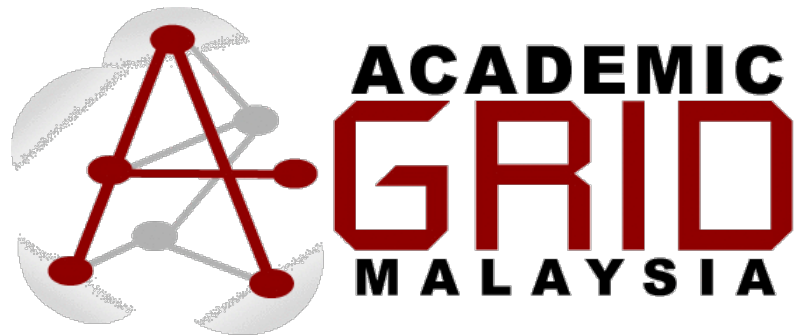
- Setup application repository as the “honey pot” to attract more people to use and implement Desktop Grid.
- Setup DG Job Submitter on existing Grid Portal
- To study in detail from University of Westminster about their green desktop grid implementation.
- Independent, Coordinated and Collaborative effort to achieve a common goal (i.e. National Distributed Computing Infrastructure)



# National DCI Roadmap



# Thank You



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<http://desktopgridfederation.org>

# References

- Workshop and Seminar on Desktop Grid Computing - <http://idec.upm.edu.my/DesktopGrid/>
- DG@Putra – <http://boinc.biruni.upm.my/putra>
- EDGES DJRA11 - [http://www.edges-grid.eu:8080/c/document\\_library/get\\_file?p\\_l\\_id=29093&folderId=27671&name=DLFE-1032.pdf](http://www.edges-grid.eu:8080/c/document_library/get_file?p_l_id=29093&folderId=27671&name=DLFE-1032.pdf)
- EDGES DSA21 - [http://www.edges-grid.eu:8080/c/document\\_library/get\\_file?p\\_l\\_id=29093&folderId=27671&name=DLFE-1044.pdf](http://www.edges-grid.eu:8080/c/document_library/get_file?p_l_id=29093&folderId=27671&name=DLFE-1044.pdf)