



GridPP
UK Computing for Particle Physics

T2K LCG Portal

<https://gridportal.hep.ph.ic.ac.uk/>

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- What is a Portal?
- Design
- Security
- Prototype
- T2K
- Other Small Experiments
- Real Time Monitor
- Conclusions



What is a Portal?

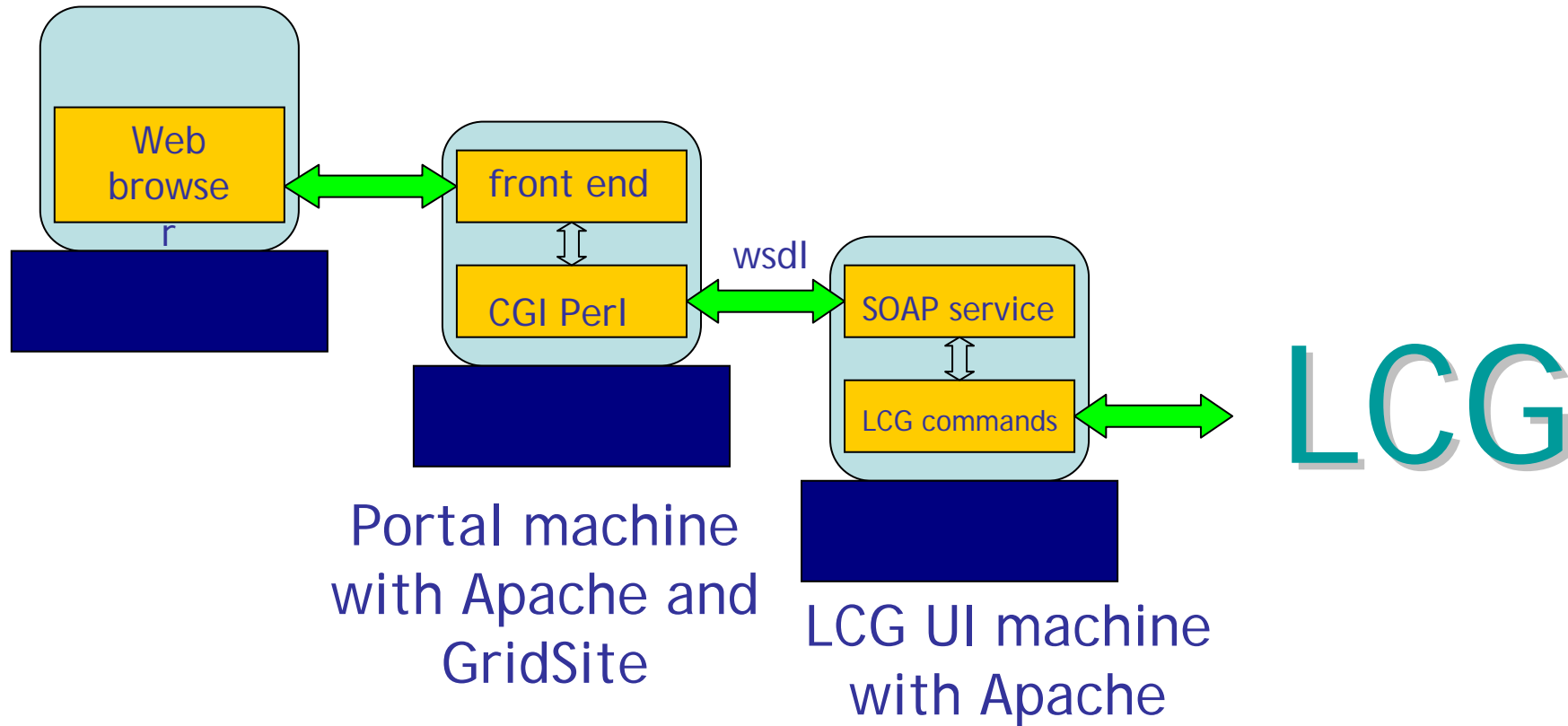
- In a non-Grid environment we understand it to mean an access point such as
 - Google - web pages and usenet postings
 - BIDS / SPIRES / Medline - journals and citations data
- In a Grid environment it should mean something that provides at least one of
 - Access to computational resources
 - Access to distributed storage - both read and write
- It may also mean something that
 - Integrates with other external services
 - Provides a distributed work environment (calendars, document archive)



- Currently, to use the LCG, a User Interface is required
- The UI is split from the Portal by implementing a SOAP services layer to the LCG commands, described by a wsdl file
- The “front end” of the Portal is currently on a GridSite enhanced Apache web server. It uses CGI/Perl to provide the user with forms that then access the LCG SOAP services described above
- In the future, a Java application could do the same, as the SOAP services are described by a wsdl file
- Future middleware is expected to provide alternatives to using a UI, as LCG services would be directly accessible via their own web services interfaces



User's machine

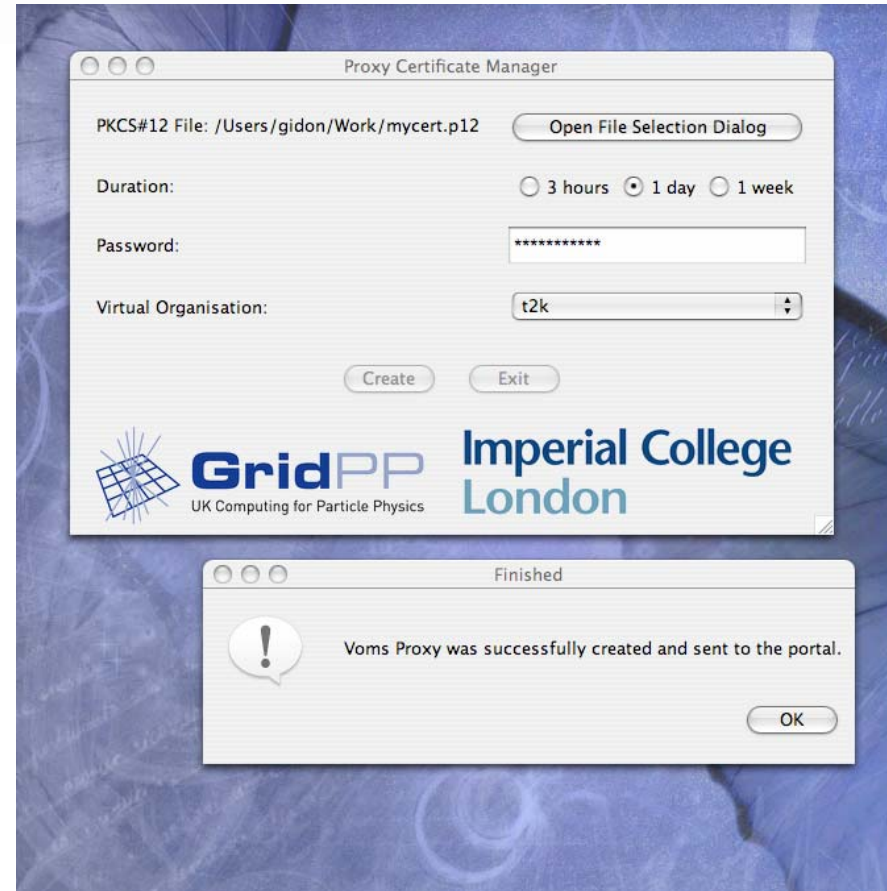




- We want to provide secure “one click” login to the Portal
- The Portal uses GridSite to limit access to users with a Certificate Authority signed Certificate in their browser
- To use any Grid resource, a user needs to have a limited lifetime proxy certificate that identifies them
- The Portal provides a Java Web Start application to generate a VOMS proxy - a proxy that defines which Virtual Organisation the user is a member of - without the need for a UI. This proxy is then moved securely to the Portal
- The proxy is used by the Portal on behalf of the user
- The portal can handle a user having multiple proxies for different VOs



- Requires Java 1.5 with unlimited cryptography policy files that allow for unlimited key lengths (2 jar files)
- Portal provides one-click installer of above for XP
- Has been tested on XP, Mac OS X and Linux
- Pure GUI selection of pkcs12 certificate file, duration, and VO





- First Prototype was finished in April 2005
 - Was not VOMS enabled
 - Was still quite low level
 - Tested by MICE experiment
- VOMS enabled prototype finished Jan 2006
 - Shows an example Computing Element Test system
 - Uses Real Time Monitor for job statuses
 - Automatically retrieves job outputs on completion
 - Can handle multiple proxies for different VOs



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Prototype Screenshots

The screenshot shows a web browser window titled "Prototype Portal" with the URL <https://gridportal.hep.ph.ic.ac.uk/voms-prototype/>. The page features the GridPP logo and the title "Prototype Portal". A navigation menu includes links for [Main | Grid : Send - Statuses | Documents | Users | Info].

Status
Welcome gidon moont !

proxies loaded...
dteam => 02:48h
gridpp => expired
calice => 00:32h
t2k => 00:33h

My Directory
Reload

Main

- Public Pages
- Documents
- Users
- Proxy Manager
- Grid
- Information

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26 April 2006

T2K LCG Portal


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The screenshot shows a web browser window titled "Prototype Portal" with the URL `https://gridportal.hep.ph.ic.ac.uk/voms-prototype/grid.html`. The page features the GridPP logo and the title "Prototype Portal". A navigation menu includes links for [Main | Grid : Send - Statuses | Documents | Users | Info].

Status
Welcome gidon moont !

proxies loaded...
dteam => 02:50h
gridpp => expired
calice => 00:35h
t2k => 00:35h


My Directory

Grid Functions

Below is an example of how a specific Virtual Organisation can tailor the portal to their needs. Here we show a system of sending jobs to a specific a CE to find out information about its current state.



Send a Job to Investigate a CE

Select a Computing Element ::

Select which VO to be ::

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You are /C=UK/O=eScience/OU=Imperial/L=Physics/CN=gidon moont
[Edit page](#) . [Manage directory](#) . [Switch to HTTP](#) . [Print View](#) . Built with [GridSite](#) 1.0.4

W3C CSS  W3C XHTML 1.0 



The screenshot shows a web browser window titled "Prototype Portal" with the URL <https://gridportal.hep.ph.ic.ac.uk/voms-prototype/grid-statuses.html>. The page features the GridPP logo and the title "Prototype Portal". A navigation menu includes links for [Main | Grid : Send - Statuses | Documents | Users | Info].

Status
Welcome gidon moont !

proxies loaded...
dteam => 02:51h
gridpp => expired
calice => 00:36h
t2k => 00:36h

Job Statuses

gaZMK6eEa5lv7xwHp2O5Zw	Cleared
7mwM73mHLE4dxjVv5fZSpq	Aborted
j3Sd98reRW8E4iCMeHU-4A	Cleared
X6L78xl5tFxmFOOx-VZH8g	Scheduled

This page will refresh in 31 seconds

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W3C CSS ✓ W3C XHTML 1.0 ✓



- Created Virtual Organisation for T2K. A handful of experimenters have Grid Certificates and are members of the VO
- A basic web portal exists with public pages and internal documentation / help
- The experiment software is currently undergoing changes from using
 - ROOT 4.00.08 -> 5.08.00
 - CLHEP 1.8.2 --> 2.0.2.2
 - GEANT 4.6.2 --> 4.8.x (newest at time of upgrade)
- This has caused delay in getting software ready to run on the Grid. However, the infrastructure is ready, so jobs will be running as soon as software is compiled



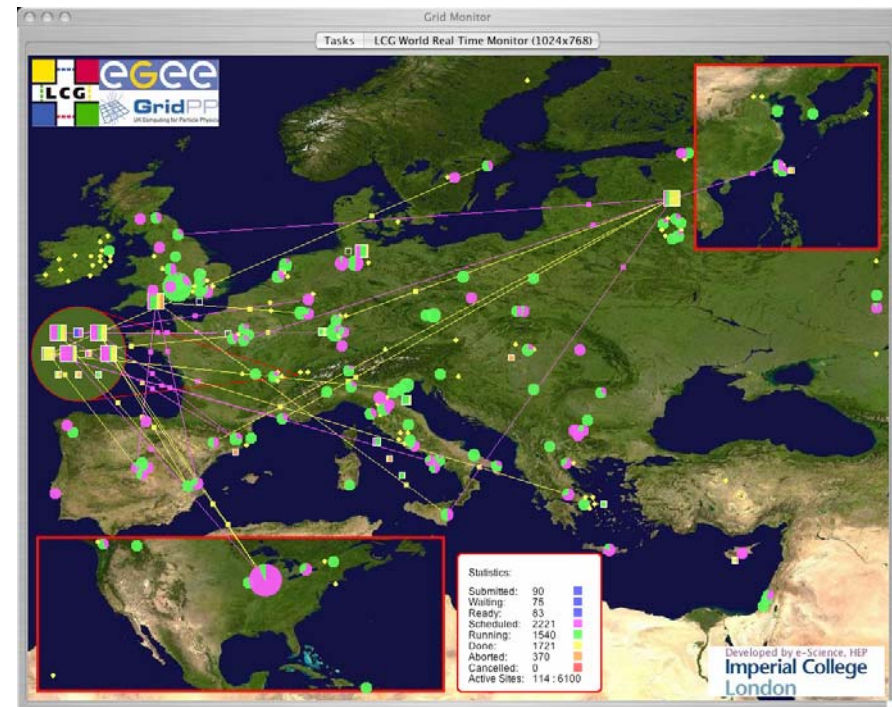
- An aim of the GridPP Portal Project is to encourage small HEP and non-HEP experiments to use the LCG
- We have worked with MICE (though this has stalled due to lack of manpower)
- We are currently working with CALICE. They have a VO with several experimenters in the UK as members. They are currently developing software to run on the Grid
- DESY has expressed interest in using the Portal for some of the VOs they support



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Real Time Monitor

- The Real Time Monitor has developed from a demo to show real time usage of the LCG by direct querying of the Resource Brokers
- ~30 Resource Brokers
- It is used by the portal to determine job statuses
- Provides daily summary reports (including per VO)
- Further development will provide real time triggers for problematic behaviour
- Real time XML files are publicly available





Conclusions

- A VOMS aware Portal with one-click sign in has been implemented
- The Portal has been used to run jobs by non Grid savvy experimenters from MICE, T2K and CALICE
- A moving target of underlying LCG middleware means no portal is going to work for long without maintenance
- Such a Portal is essential as the LCG becomes the dominant means small experiments can have access to large computing resources. System managers prefer to have only one entry point to their resource, and do not have to manage individual accounts



Conclusions cont.

- T2K software should be running on the LCG through the Portal very soon
- The current document archive of T2K may move to the Portal, once enough T2K experimenters have Grid Certificates
- Other small experiments, such as CALICE, should follow soon after



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URLS etc.

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