

What the SAGA RG can do for GridPort

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Presented at GGF11, Hawaii, June 2004



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GridPort Overview

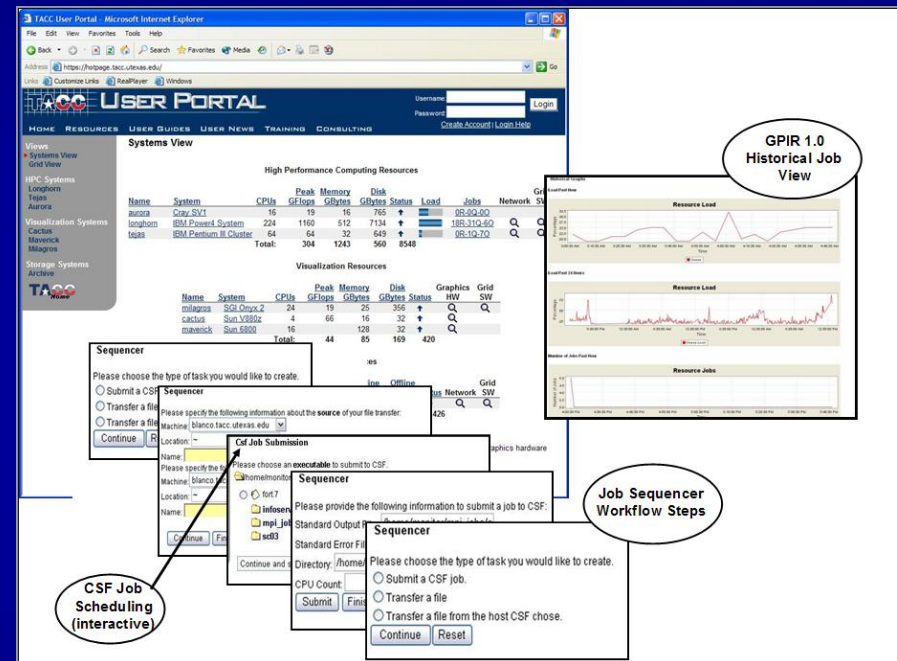
- **Empirical API:**
 - Evolved out of experiences gained in building several application portals and HotPages.
 - Solution needed to simplify portal (*and* application) development
 - Reduce redundancy of effort
- **Single API** to diverse set of services and toolkits:
 - GT 2, 3
 - SRB, NWS, CSF, others
 - Integrate with support services (eg authentication)
 - Note that these services have no standard interfaces either!
- Implemented in Java (originally in Perl):
 - support components
 - Move to distributed services (Web) model
 - GP act as client for remote services
 - **expose internal services as external web service**
 - Move to component approach to support composition
 - Move to framework that **supports applications and portals**

GridPort 3 Services

- GP3 Core: the usual suspects
 - Authentication/MyProxy/Repository
 - Job Submission, command execution
 - File Management
 - Information Services (persistence)
 - Data Access (SRB in progress)
- Advanced: composed of GP3 Core
 - GPIR (information web service)
 - Job Sequencer (basic workflow)
 - CSF Interface

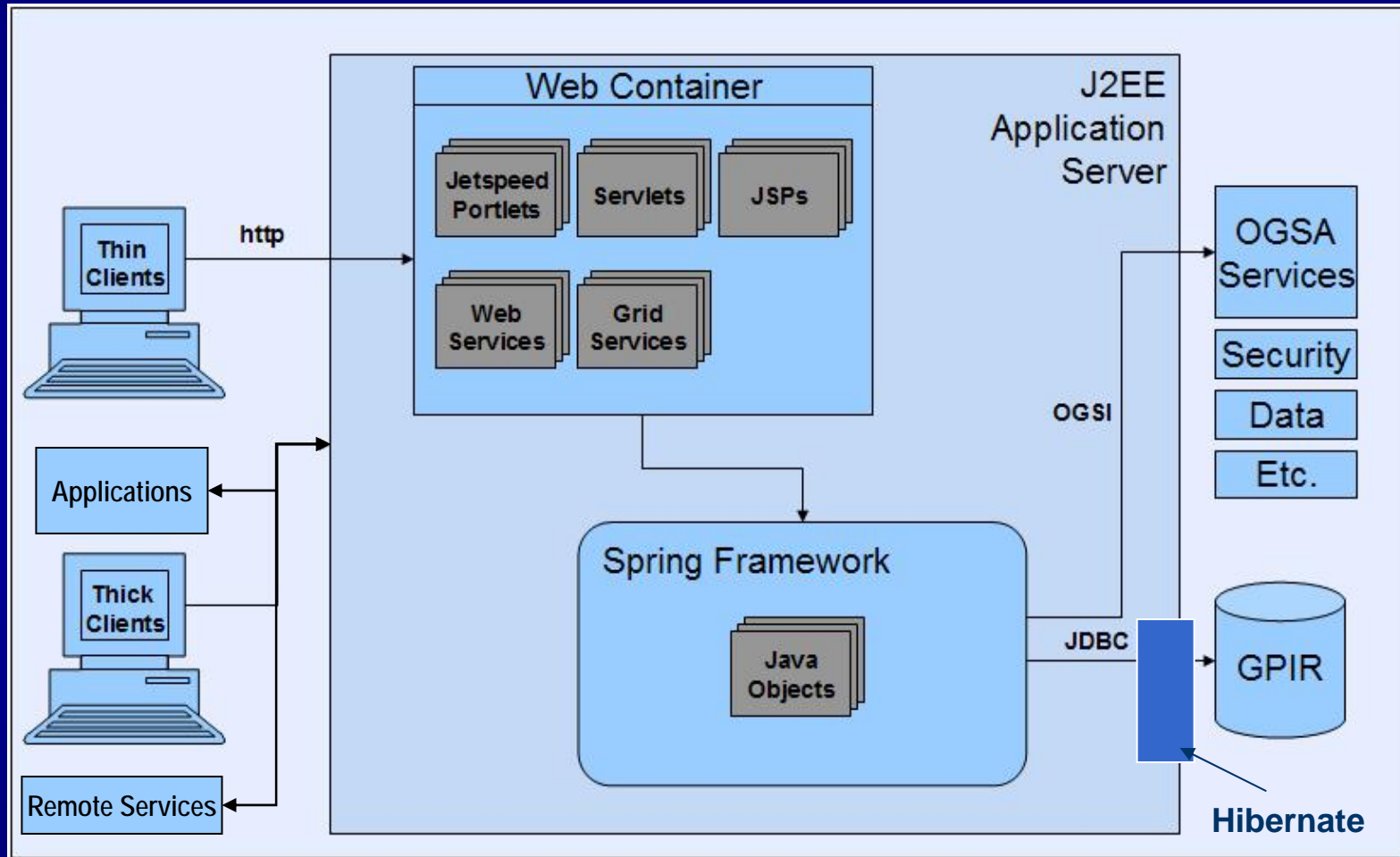
New approach allows us to do more...

- Composition:
 - creates advanced tools
 - done with a *simple* API
- Job Sequencer: simple workflow, uses Job, File and remote GPIR
- GPIR (information, historical plots)
- Scheduling of Jobs via CSF grid service



GP3 based TACC User Portal (TUP)

GP3: J2EE Framework



GP3 Packages

- [edu.tacc.gridport.authentication](#)
- [edu.tacc.gridport.common](#)
- [edu.tacc.gridport.file](#)
- [edu.tacc.gridport.gpir](#)
- [edu.tacc.gridport.job](#)
- [edu.tacc.gridport.sequencer](#)
- [edu.tacc.gridport.validation](#)

GP3 Packages: Web Services

- With Spring Framework we can expose a GP3 service as a web service
- Current list:
 - edu.tacc.gridport.web
 - edu.tacc.gridport.web.services
 - edu.tacc.gridport.web.services.gpir
 - edu.tacc.gridport.web.services.sequencer

edu.tacc.gridport.file

- closeConnection()
Closes the GridFTPClient connection. java.lang.String
- getCurrentDir()
Gets the current directory maintained by this FileListing's GridFTPClient object. org.globus.ftp.FileInfo[]
- listAboveDir()
Lists the files in the directory above the FileListing object's current directory and changes the current directory of the listing to be the above directory. org.globus.ftp.FileInfo[]
- listFiles()
Lists the files in the FileListing object's current directory, on the resource specified upon instantiation. org.globus.ftp.FileInfo[]
- listFiles(java.lang.String dir)
Lists the files in a GridPort-client-specified directory on the resource specified upon instantiation of this FileListing object.

edu.tacc.gridport.file

- Get (java.lang.String fromHost, java.lang.String remoteFileFullName, java.lang.String localFileFullName, org.ietf.jgss.GSSCredential credential)
 - Transfers a file from the host that the user specifies to the server on which GridPort runs.
- Put (java.lang.String toHost, java.lang.String localFileFullName, java.lang.String remoteFileFullName, org.ietf.jgss.GSSCredential credential)
 - Transfers a file from the server on which GridPort runs to the host that the user specifies.static void
- thirdPartyTransfer (java.lang.String fromHost, java.lang.String fromFileFullName, java.lang.String toHost, java.lang.String toFileFullName, org.ietf.jgss.GSSCredential credential)
 - Transfers a file from a host that the user specifies to another host that the user specifies.

OGCE File Interface (proposed)

- put/get
- list files/directories
- move, mkdir, mv, cp (upload/download)
- mkdir
- touch
- third party transfer
- permissions
- exists
- queue mgt persistence
- open, read, write, close
- customized transfers/future
- type and transport mechanisms

What can SAGA provide?

- Ensure that projects like GridPort provide the core, minimal services needed by grid applications.
 - But, must be extensible → need for interfaces
 - Support multiple clients (portals, applications, other services)
- Promote interoperability among services that support these applications
 - E.g. portals may need specialized services or may want to expose internal servicesGridPort approach
- Mapping from other GGF WGs, starting with OGSA
- Function similarly to orgs such as the Fortran J3 standards committee:
 - Computational Science community
 - Last met in March 04
 - Yes, Virginia, there is a Fortran 2003

REFERENCES

- GridPort Project (and downloads):
 - <http://www.gridport.net>
 - Javadocs:
 - <http://gridport.net/releases/docs/gridport3.0-javadocs/index.html>
- Fortran J3 standards committee:
 - <http://www.j3-fortran.org>
- The Texas Advanced Computing Center:
 - <http://tacc.utexas.edu>
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