



BioinfoGRID

Bioinformatics Grid Application for life science



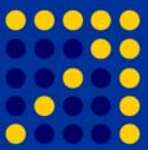
Coordination of technical aspects and relations with Grid Infrastructure Projects, user training, applications support and resources integration

INFN





- The Biomed Summer School 2007
- Authentication
- The Genius Portal
- Job Submitting Tool (JST)
- Grid Database Access tools evaluation
- Studying PRIDEH and GEMMS
- User support
- Conclusions



The Biomed Summer School 2007

BioinfoGRID

- Organized in conjunction with CNR-ITB + others
- INFN is providing:
 - 15 portable computers
 - Connection to the network 8 Mbps

	14:00-18:30	The latest developments in GRID technology
	14:00-14:30	Overview of GRID prospective (Domenico Talia)
	14:30-15:00	gLite Introduction (David Fergusson, Mike Mineter)
	15:00-15:20	gLite technical aspect and installation (Giuseppe La Rocca)
	15:20-15:50	Data Management (Cristina Aiftimiei)
	15:50-16:00	Coffee break
	16:00-16:30	AMGA Metada Catalog (Diego Scardaci)
	16:30-17:00	Workload Management System (Giuseppe La Rocca)
	17:00-17:20	Authorisation, Authentication, Security (Diego Scardaci)
	17:20-17:40	Parrot (Giacinto Donvito)
	17:40-18:10	Secure Storage (Diego Scardaci)
	18:10-18:30	Overview on monitoring tools for Grid Systems (GridICE) (Antonio Pierro)



Username maggi

Password*****

Login Option1 Option2

Login

Note

Option1:

This is an Modified version of Genius Portal.

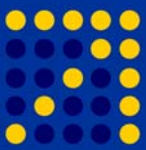
This option for users , who have no certificates.

certificates provides in this option are temporary and fix duration of 12 hours.

Option2:

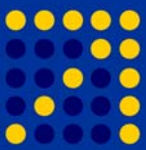
This option for user , who have certificates.

This is Standard Genius Portal.



Services Implemented so far

- BLAST (multiBLAST)**
- PATSEARCH**
- MrBAYES**
- OGSA-DAI**



- Useful for the submission of a large number of jobs
- Based on a task queue concept
- The central DB keeps track of the tasks executed, failed or running
 - Failed task (running by more then a fixed amount of time) get automatically re-submitted
 - Automatic bookkeeping: the status of the task is controlled at the “application level”
- It can run in an “almost” unattended way
- Really positive experience in several challenges: **FAF, CSTminer, ASPIC, MrBayes, PAML,.....**
- Investigating on the possibility to connect to a workflow



- We have started a comparative test of
- GReIC (UNILE)
 - Provides a WS-I based Data Access Service addressing extreme performance, interoperability and security.
 - Provides an uniform access interface to relational and not-relational (i.e., textual databases) data sources.
 - Offers a unique front-end to store, manage and retrieve data hiding all of the physical details such as database location, name, user login, etc.
- G-DSE (INAF + INFN)
 - It is based on the idea that also Data Source Engine can be a valid instance for a Grid resources in the Grid Information System and Data Model.
 - G-DSE behaves as a Grid element of the EGEE grid architecture, that enables the access to a Data Source Engine and a Data Source, totally integrated with the Grid Monitoring and Discovery System and Resource Broker.



- OGSA-DAI
 - is a middleware product that allows data resources of different types, such as relational or XML databases, to be accessed, i.e. queried, updated, transformed and delivered, via web services.
 - OGSA-DAI web services can be deployed within a Grid environment; thereby OGSA-DAI provides a means to Grid-enable data resources.



	GrelC	G-DSE	OGSA-DAI
BARI (INFN)	YES	Coming	YES
LECCE (UNILE)	YES	Coming	YES
TRIESTE (INAF)	YES	YES	YES
PADOVA (INFN)	YES		YES
CNAF			YES
CATANIA(GILDA)	YES		

DB's Bari

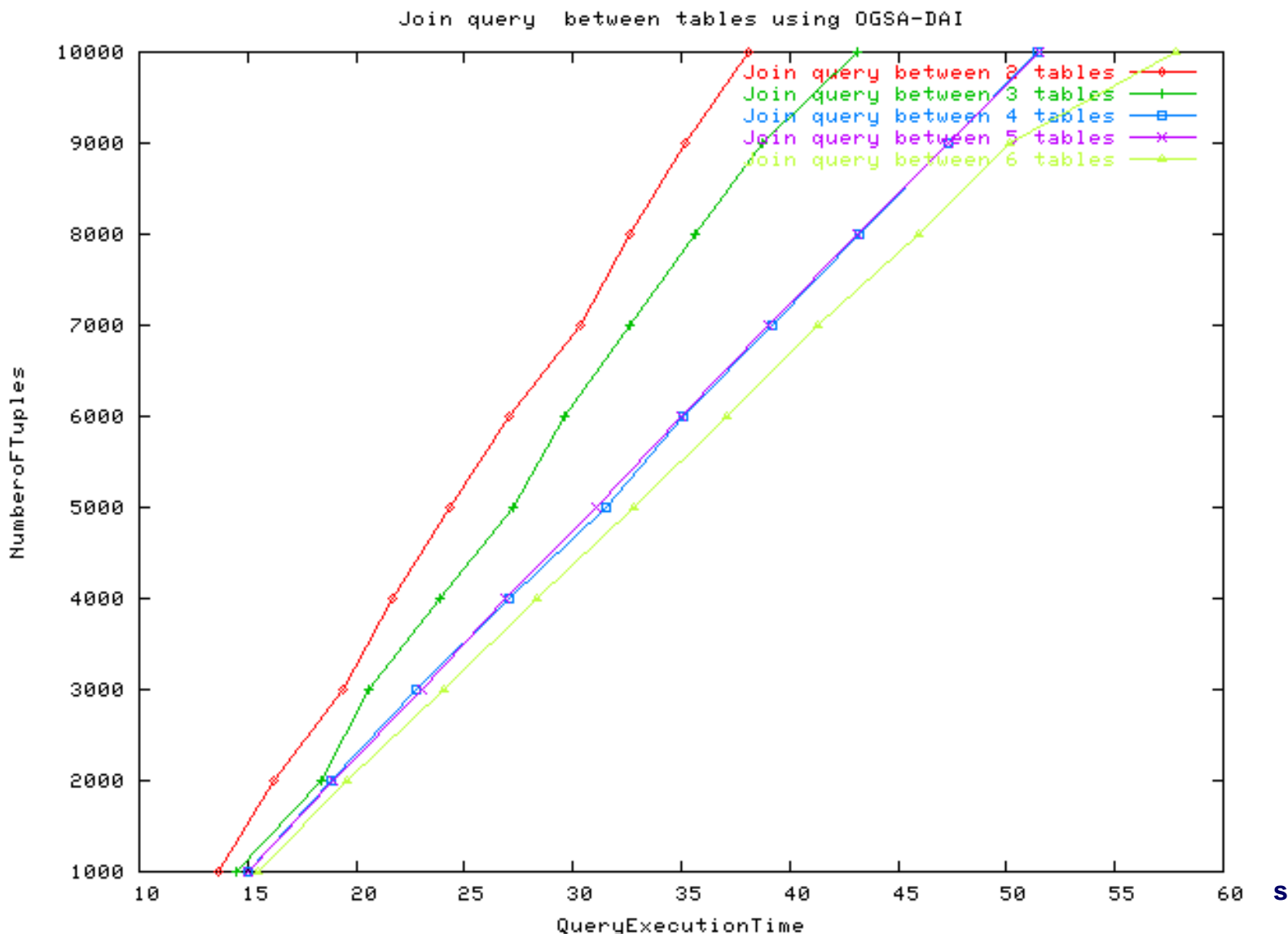
DAS	NAME	DBMS	FONT	#Tables
OGSA-DAI	homo_sapiens	mysql(5.0.37)		74
GREL-C-DAS	dell2store	postgresql (8.0.4-2PGDG)		8
G-DSE	go_5_06	mysql		18
	world	mysql		6
	sakila	mysql		23

DB's Lecce

DAS	NAME	DBMS	FONT	#Tables
GRelC	sakila	MYSQL	www.mysql.com	23
GRelC	world	MYSQL	www.mysql.com	6
GRelC	dellstore	POSTGRESQL	pgfoundry.org/projects/dbsamples	8
GRelC	uniutrdb_test	MYSQL	UNILE	35

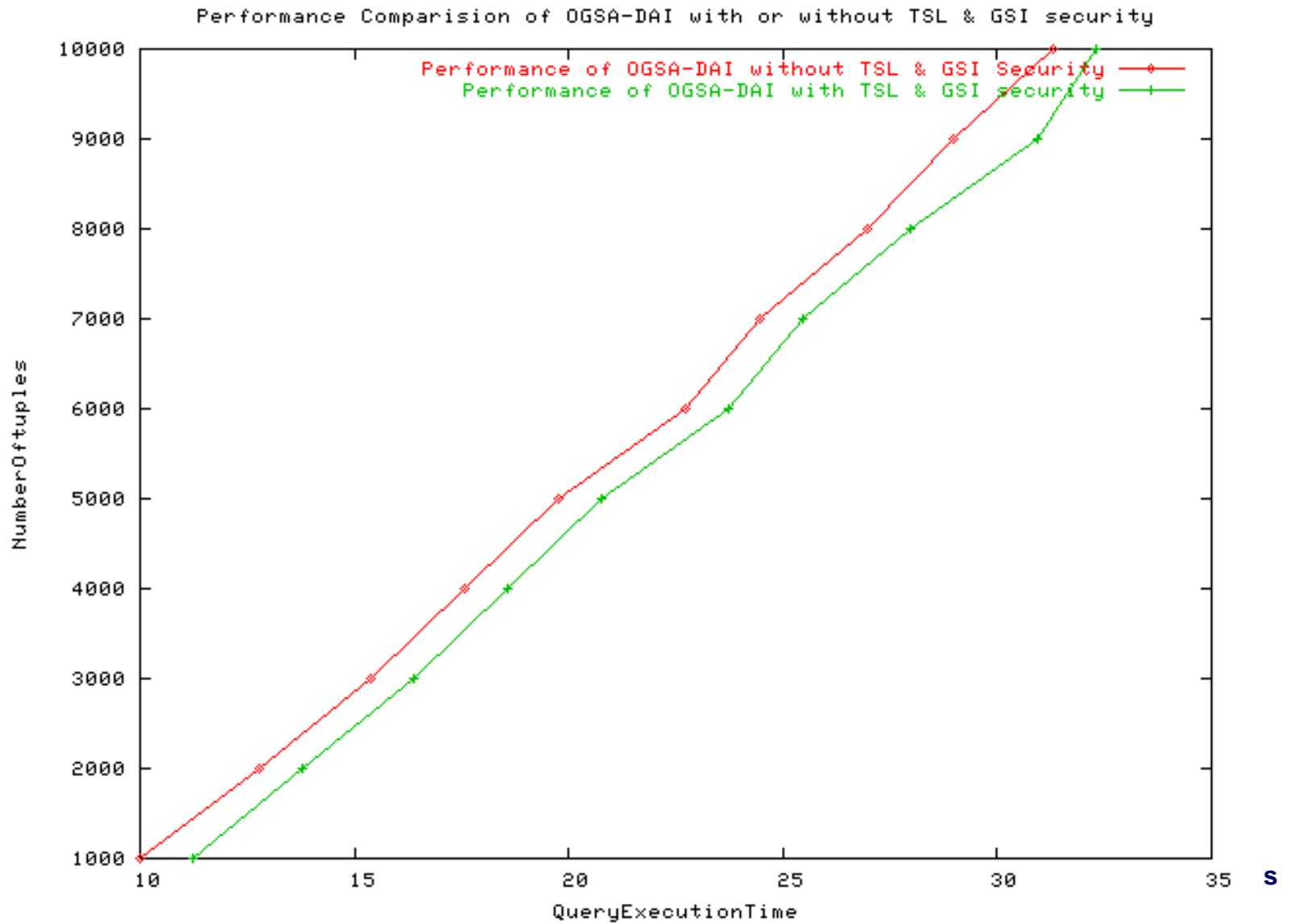


OGSA-DAI preliminary results



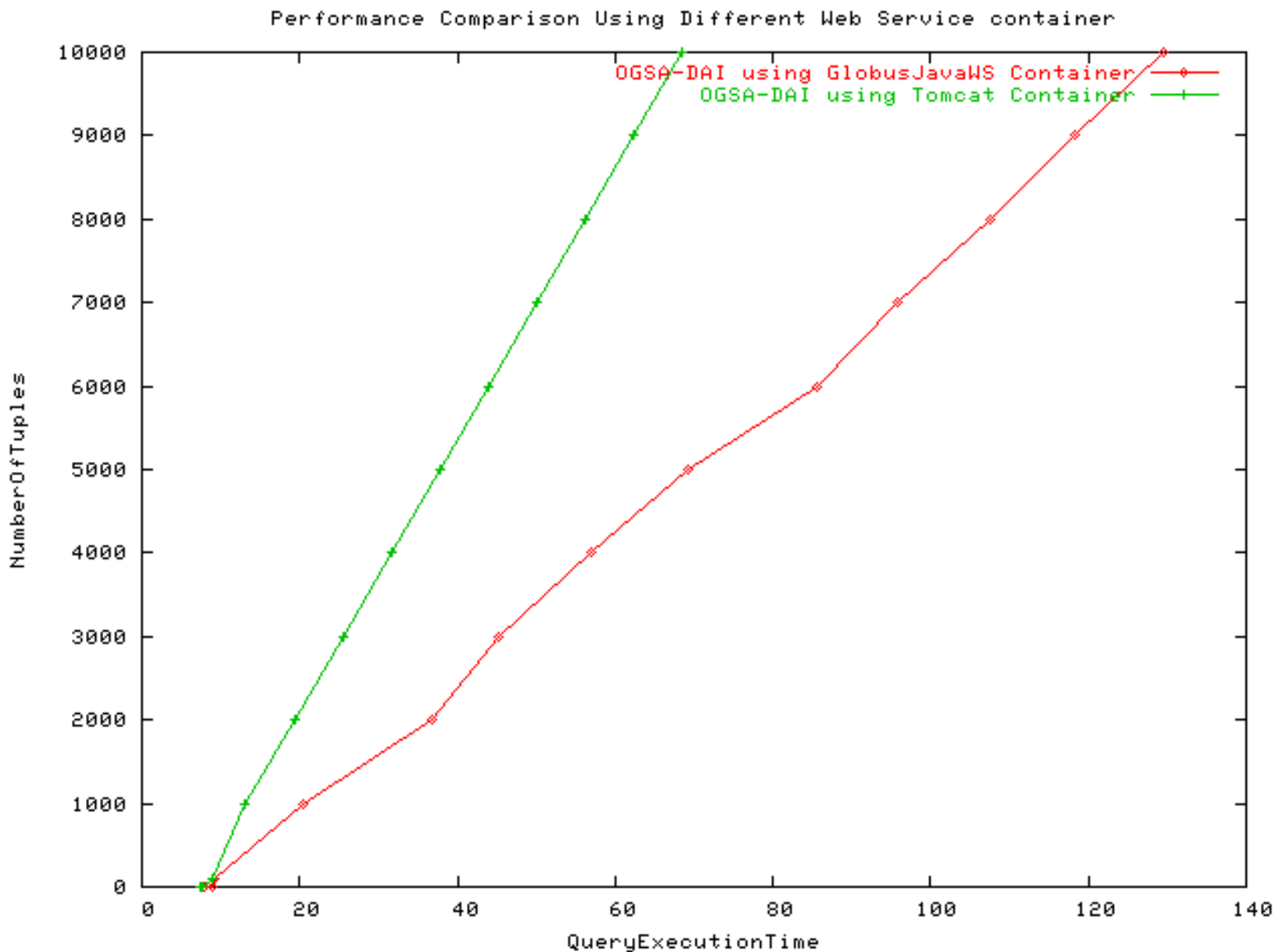


OGSA-DAI preliminary results



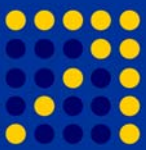


OGSA-DAI preliminary results

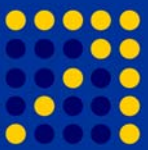




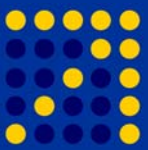
- Started looking to published results of the two projects
- Hard to find documentation on the results of such a projects
- G. La Rocca comments on GEMSS
 - The main goal of the Project GEMSS, started in September 2002, was to provide end-users from the medical community advanced tools through easy-to-use interfaces. Build on top of existing GRID and WEB technologies (like OGSA, Web services, Jini, Corba) in order to guarantee future extensibility and interoperability, the project has created a test-bed to evaluate & validate the GEMSS environment, including its integration into the end-users working environments.
 - *The authorisation level proposed within the GEMSS project by the WorkPackage 2 "Grid Services & Security" seems not to overlap perfectly with the requirements come out of the BIOINFOGRID community.*
 - *The GEMSS middleware is capable to provide a high degree of security for the processing of personal data. The security mechanisms of the GEMSS Grid ensure confidentiality and integrity of personal data as well as identification, authentication, and authorization of data processors.*
 - *The GEMSS middleware ensures also a degree of protection of patient's data. Preserve confidential data from unauthorized users is a key point especially when is requested manage with medical data.*
 - *An interesting module implemented within the GEMSS project is the Workflow Enactment, a component capable of parsing and running a soft-code workflow.*



- Strong interaction with DKFZ during the last month in order to the GRID node in DKFZ
- Cristina Aiftimiei is following daily the status of the DKFZ installation
- Solved certain number of problems
- But not finished yet
- I do not have any difficulty to send Cristina at DKFZ if this can speed-up thinks



- WP6 activity is going on very well
- The major part of the activity has been devoted to the comparison of tools to access relational databases on GRID
- Together with
 - Training
 - Genius portal
 - Monitoring
 - Job Submission Tool
 - Exploitation of previous projects results



- Cristina Aiftmiei,
- Giuseppe La Rocca,
- Antonio Pierro

- Jain Atul,
- Roberto Barbera,
- Giacinto Donvito,
- Vihang Dudhalkar,
- Giorgio Maggi,
- Mirco Mazzucato,
- Angelica Tulipano