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# L-GRID - A Light portal to access Grid via web

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## ■ Introduction

- Is there the need for a Web portal to access Grid?

## ■ L-GRID

- Architecture
- Access Grid via Web
- Job management: submission, check, output retrieval
- Features
- Performances and Security

## ■ References

- Sourceforge, Screen movie demo

## ■ Conclusions

- Who uses L-GRID?





# Introduction



**Is there the need for a Web portal to access Grid?**

**This is the old way to submit a job, check its status, retrieve the output. Too complex for a newbie!**

- Create a JDL
- Get the WMS list
  - `lcg-infosites --vo VO wms`
- Search for a compliant Computing Element
  - `glite-wms-job-list-match -a -e https://<WMS>:7443/glite_wms_wmproxy_server JDL`
- Submit the job
  - `glite-wms-job-submit -a -e https://<WMS>:7443/glite_wms_wmproxy_server -o ID JDL`
- Save the job identifier
- Check the job status
  - `glite-wms-job-info --jdl jobID`
- Retrieve the output
  - `glite-wms-job-output jobID`



## L-GRID is a portal based on a client-server architecture

### ■ Client side

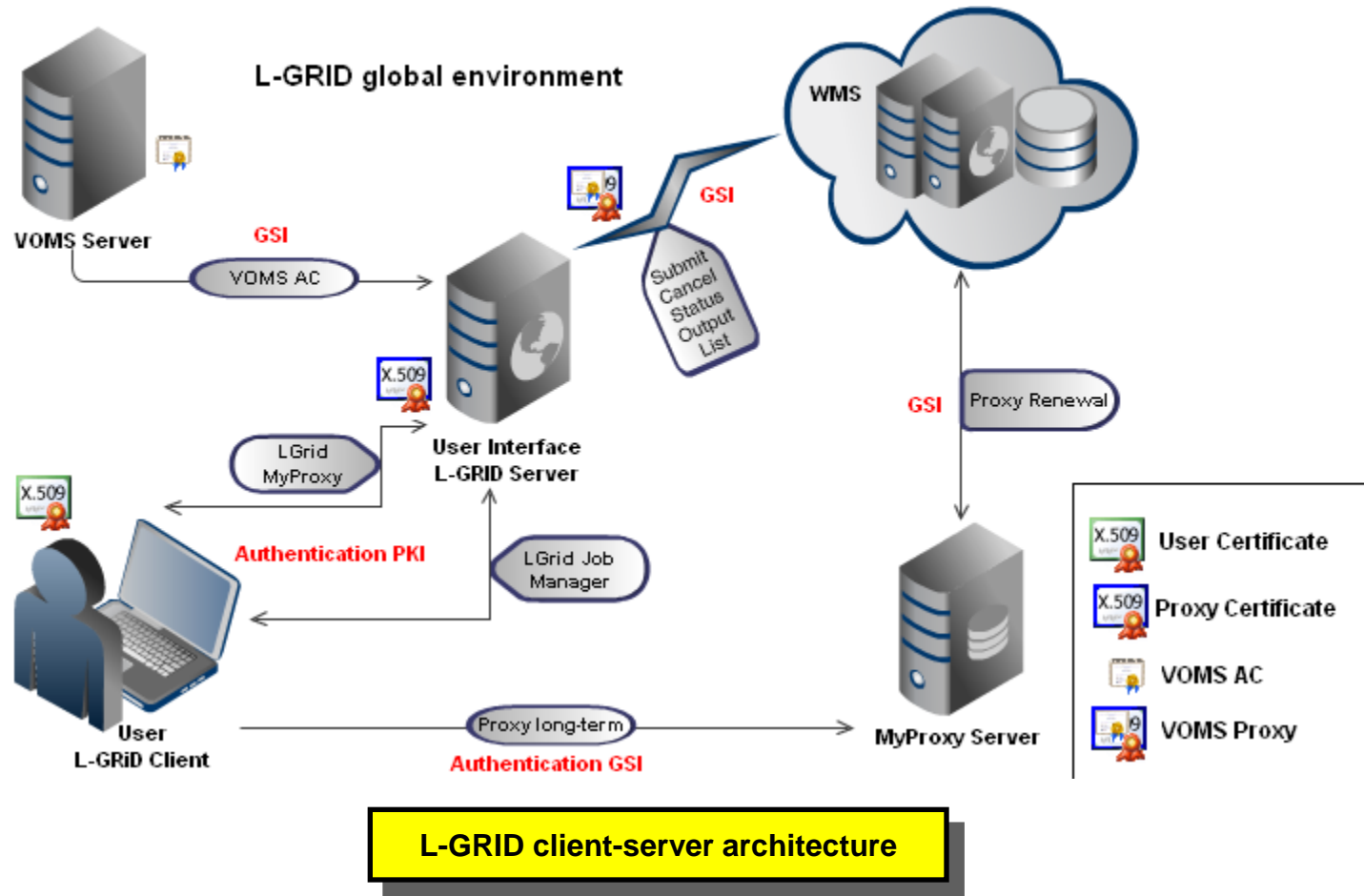
- Java applet (< 5 MB) working on Web browser
- Certificate management, secure communications
- JDL editor
- Job submission, check status, output retrieval

### ■ Server side

- Relies on a gLite User Interface, exposing an Apache / Tomcat server
- A minimal set of MyProxy server library has been included in the UI in order to manage the proxy delegation locally



# L-GRID Architecture



L-GRID: A Light portal to access Grid via Web



# L-GRID: access Grid via Web



## A new way to access EGEE/EGI Grid resources

L-GRID: A Light portal to access Grid via Web

Submit My Jobs Editor JDL

Paths must be relative with respect to job root directory

VirtualOrganization: cms

JobType: Parametric

Select Working Directory: Choose Parameters Set

Executable: fac

Arguments: \_P

InputSandbox: fac

OutputSandbox: sto

StdInput:

StdOutput: sto

StdError: sto

Requirements: (other.GlueCEInfoTotalCPUs >= 1)

Rank: other.GlueCEStateFreeCPUs

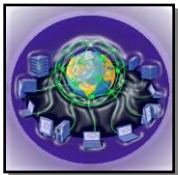
MyProxyServer: RetryCount View

Parameters: 2020

ParameterStart: 2000

ParameterStep: 5

OK



JDL editor

Submit My Jobs Editor JDL

Submit Job

Select working directory: tttings\Debby\globusfactor Choose ?

Select file .jdl: bby\globus\factor\factor.jdl Choose ?

Password: Password Submit ?

VO: cms

Other VO:

Proxy Time Life: 24 hours Automatic Proxy Renew

MyProxy server: myproxy.cnaf.inf...

Connecting to the service https://wms201.cern.ch:7443/glite\_wms\_wmproxy\_server

===== glite-wms-job-submit Success =====

The job has been successfully submitted to the WMPoxy  
Your job identifier is:  
https://wms201.cern.ch:9000/UmaHaytgrA09G-juCGcZFQ

The job identifier has been saved in the following file:  
/lgrid/IT\_INFN\_Personal\_Certificate\_Sns\_Federico\_Calzolari\_/submit/./job.id

Job submission



# L-GRID: Job monitoring



L-GRID: A Light portal to access Grid via Web

IDs	STATUS	SAVE	CANCEL
https://wms201.cern.ch:9000/CpbBmuSZ0lrZ1cqgyt...	Cleared	SAVE	CANCEL
https://wms201.cern.ch:9000/MZ23aP07NfhWk9DXA...	Done (Suc...	SAVE	CANCEL
https://wms201.cern.ch:9000/iRiNViktdJoxJ55FBZBK...	Done (Suc...	SAVE	CANCEL
https://wms201.cern.ch:9000/37hqj0PHf143B6FLkN...	Done (Suc...	SAVE	CANCEL
https://wms201.cern.ch:9000/WfSg1HqN10wxPrGkIG...	Done (Suc...	SAVE	CANCEL
https://wms201.cern.ch:9000/REMEuTEGIJhU61AOV...	Cleared	SAVE	CANCEL
https://wms201.cern.ch:9000/PsglK1PHmYnrUNnn...	Done (Suc...	SAVE	CANCEL
https://wms201.cern.ch:9000/tnl7uTk-EZ7NfCGKeS3...	Done (Suc...	SAVE	CANCEL
https://wms201.cern.ch:9000/AnwJ-SJm60E8usPII47...	Cleared	SAVE	CANCEL
https://wms201.cern.ch:9000/d-g01FBV4BUB-yLx8TI...	Done (Suc...	SAVE	CANCEL
https://wms201.cern.ch:9000/Z4WDLGk4AqB5mT0ylz...	Done (Suc...	SAVE	CANCEL
https://wms201.cern.ch:9000/seze2lfrME-IUqcUeCNd...	Done (Suc...	SAVE	CANCEL
https://wms201.cern.ch:9000/deekZ4mERRj4vHssP...	Done (Suc...	SAVE	CANCEL
https://wms201.cern.ch:9000/nbPCv25TKGaQvOUT...	Done (Suc...	SAVE	CANCEL
https://wms201.cern.ch:9000/Q1wJVVuuSMXxGtSLQ...	Done (Suc...	SAVE	CANCEL
https://wms201.cern.ch:9000/LVE7R_rDKg69Vp1d_L...	Running	SAVE	CANCEL
https://wms201.cern.ch:9000/TENy5G5dQg9TriQOM...	Done (Suc...	SAVE	CANCEL
https://wms201.cern.ch:9000/W-Gt9phfEjzS886bkOX...	Scheduled	SAVE	CANCEL

GREEN	Done
RED	Aborted
YELLOW	Cleared
BLUE	Submitted
ORANGE	Ready
MAGENTA	Running

..... VO cms

myproxy.cna... Other VO

**Job status check**

Save your job

Salva in: Output

- Nj-iMXIDIiRKU-JRUs9AEg
  - bJOFwtbhJtZ8EdeJ9AUAFQ.zip
  - DtXkb7GzDTwSDUWnPI4zOg.zip

Nome file: 7Kg0UD6zjSCmClaQ\_sqXhg.zip

Tipo file: Archive Zip

Save Annulla

Password: .... VO cms List Jobs

Other VO Get All Details

**Output retrieval**

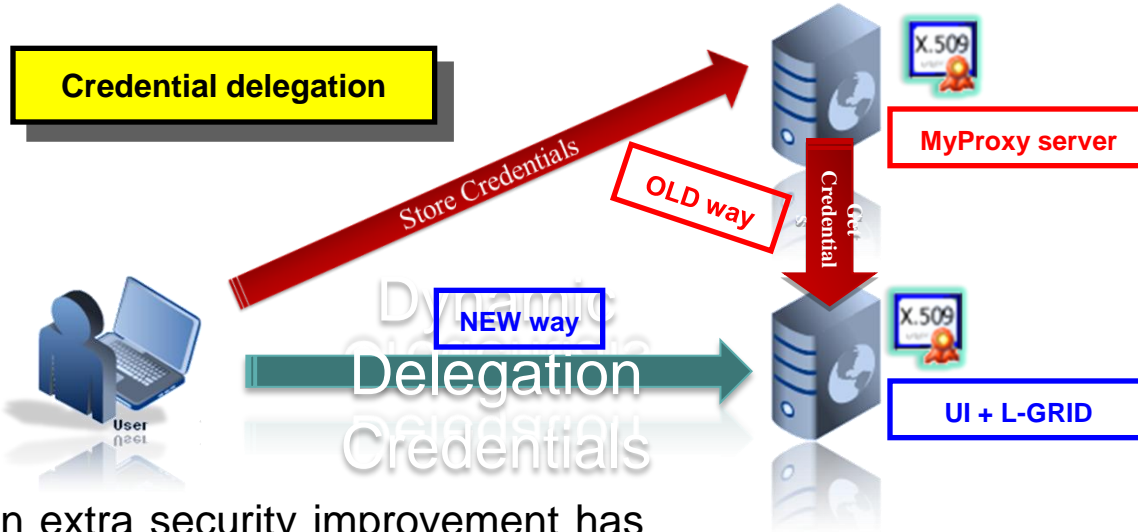


# L-GRID Features



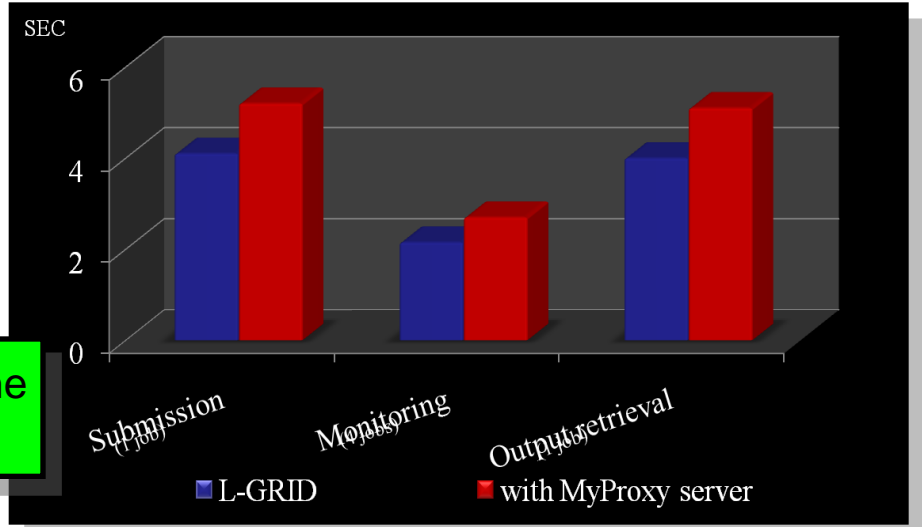
- Java code and Opensource server [Apache2 licensed]
- Compliant to the EGI and CA certificate policies
  - The X.509 personal certificate does not get out from the local machine
- User needs only his own X.509 personal certificate
  - The portal can be surely used from an Internet point
- No-need of user registration on the server (UI, portal)
  - The user is trusted via X.509 certificate and VOMS credentials
- Highly customizable





An extra security improvement has been achieved by the **inclusion** of the **MyProxy server**, responsible for the dynamic delegation, on the server side portal (UI + L-GRID)

**Job submission time**



**Time saving for the job submission**



# References



- **L-GRID Portal:** <https://gridui.sns.it> [hosted @SNS-PISA]
  
- **Sourceforge:** <http://sourceforge.net/projects/l-grid/>
  
- **Screenmovie demo:** <http://www.youtube.com/watch?v=uGnmMiLqJ0s>
  
- **Wiki page:** <http://wiki.sns.it/wiki/L-GRID>
  
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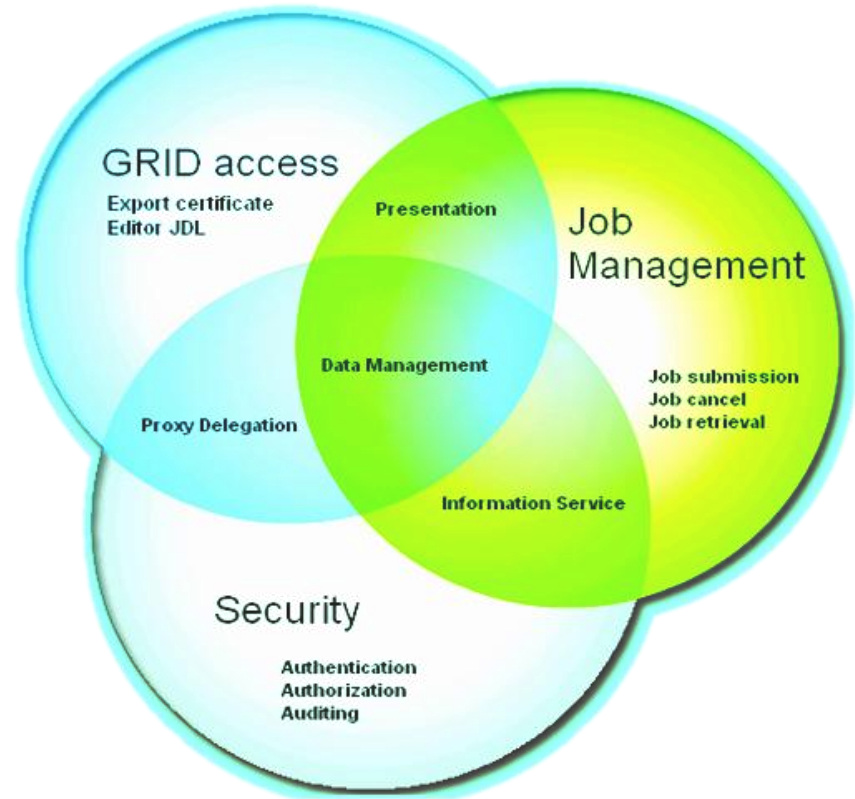


# Conclusions



- It works!
- Chosen by the Theophys VO to access parallel cluster via Grid  
[1024 core, hosted @ INFN-PISA]

A 3 minutes pre-recorded screen movie demo will be shown





# Acknowledgments and Questions

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**Thanks for your attention  
and  
many thanks to Andrea**

**Please feel free to send questions, [critics], suggestions  
to the authors**