



Enabling Grids for E-scienceE

GENIUS services based on gLite

Alberto Falzone

NICE srl

www.nice-italy.com

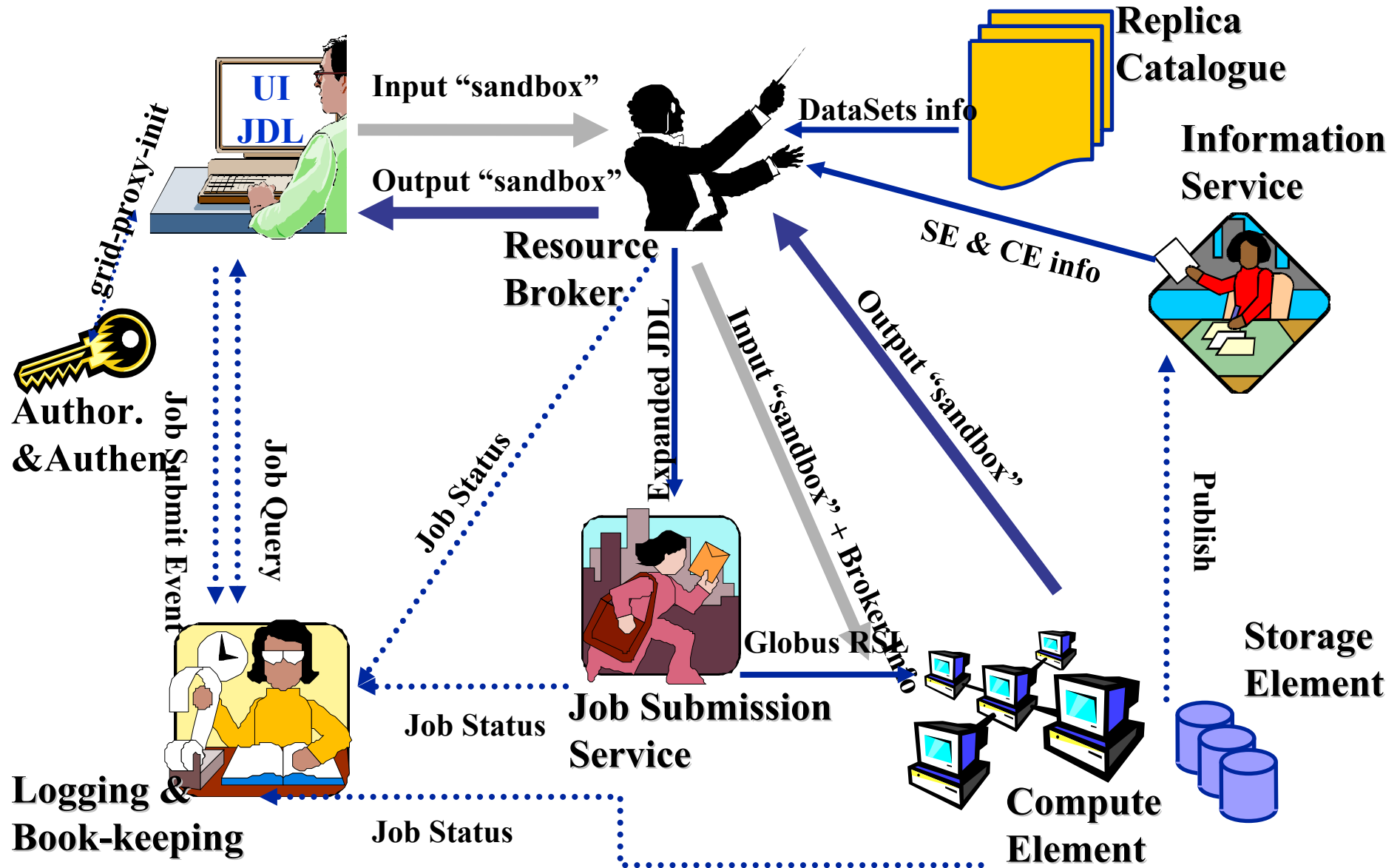
First gLite tutorial on GILDA, Catania, 13-15.06.2005

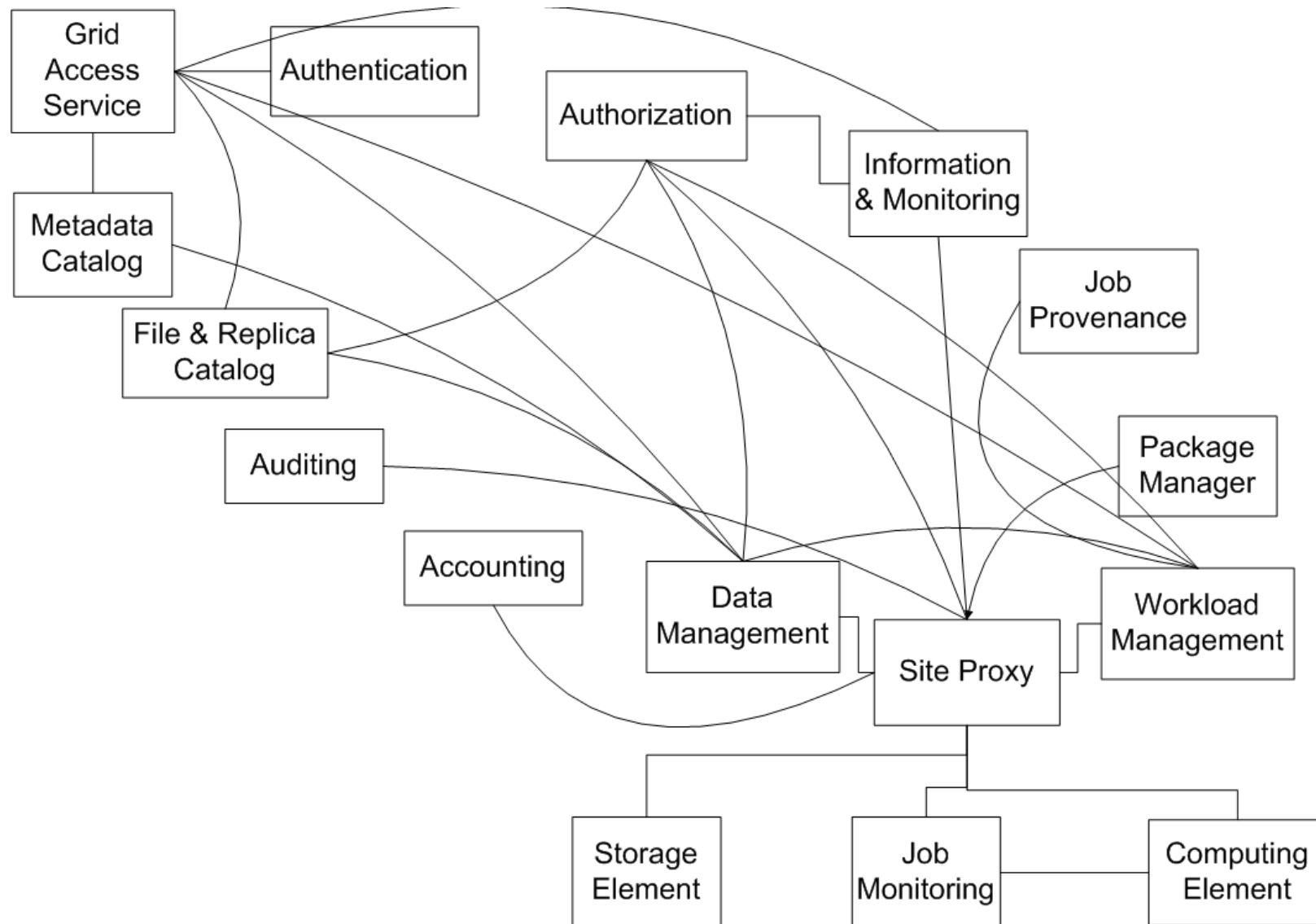
www.eu-egee.org

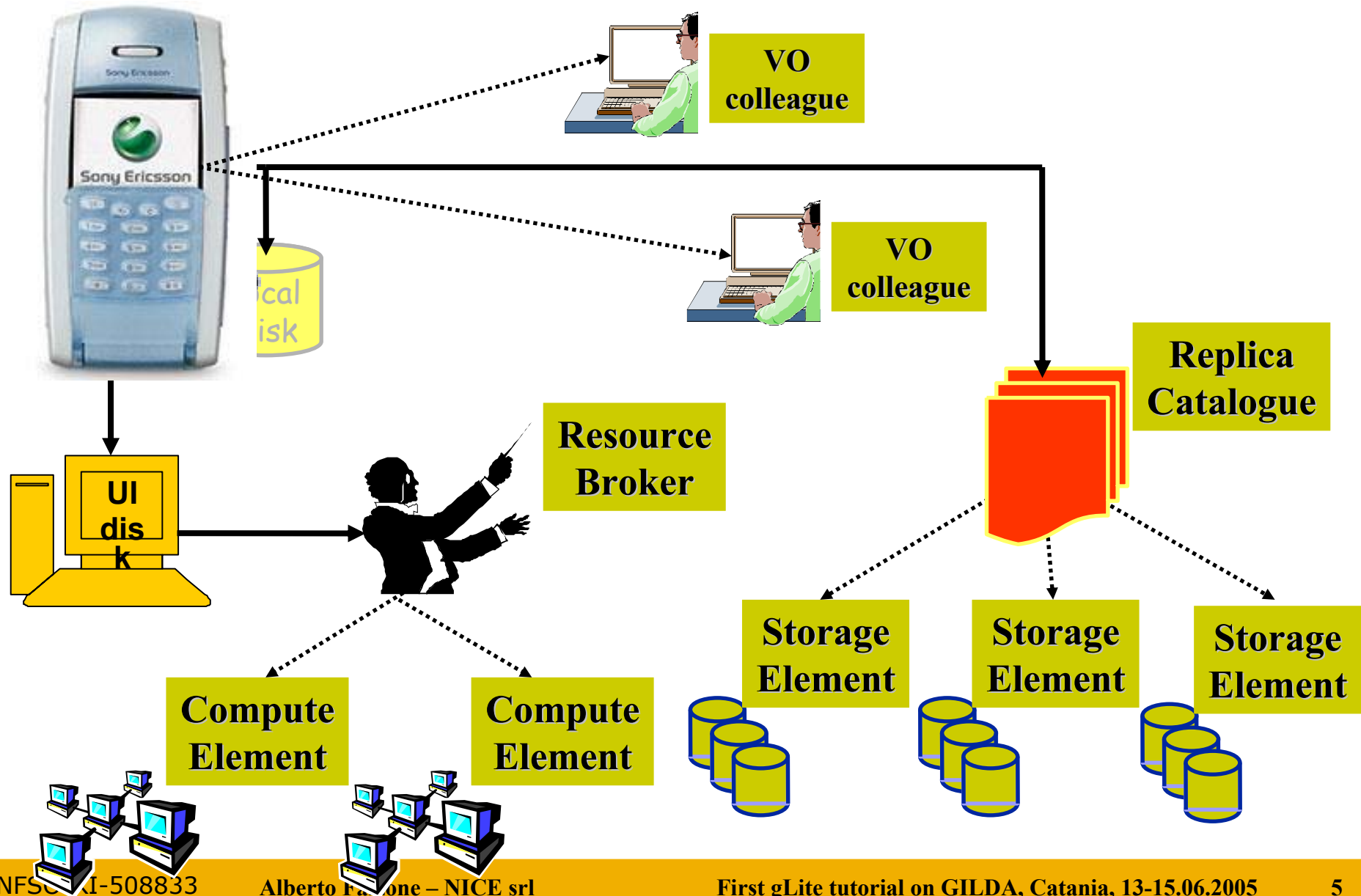


- **From complexity toward the Web centric Vision**
- **GENIUS hourglass model**
- **GENIUS on gLite UI: structure & services**
- **GENIUS Present status**
- **Enginframe Evolution**
- **Key architectural benefits**

A typical job workflow





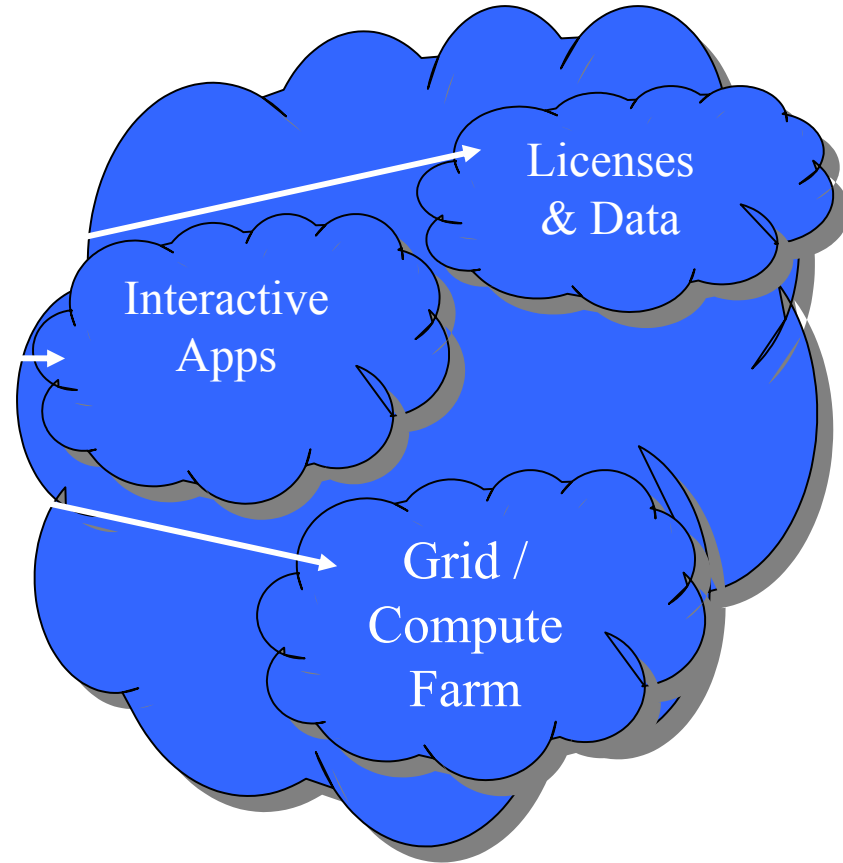
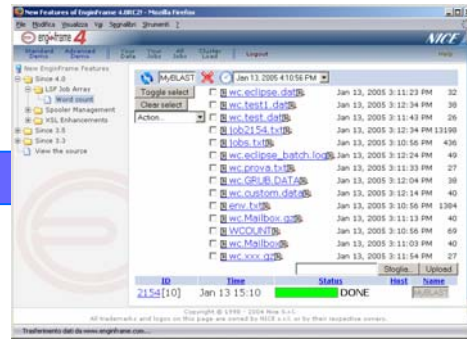


- It can be accessed from everywhere and by “everything” (desktop, laptop, PDA, cell phone).
- It can keep the same user interface to several back-ends.
- It must be redundantly “secure” at all levels: 1) secure for web transactions, 2) secure for user credentials, 3) secure for user authentication, 4) secure at VO/VOMS level.
- All available grid services must be incorporated in a logic way, just “one mouse click away”.
- Its layout must be easily understandable and user friendly.



Clients

**Standard
Web
Browser**



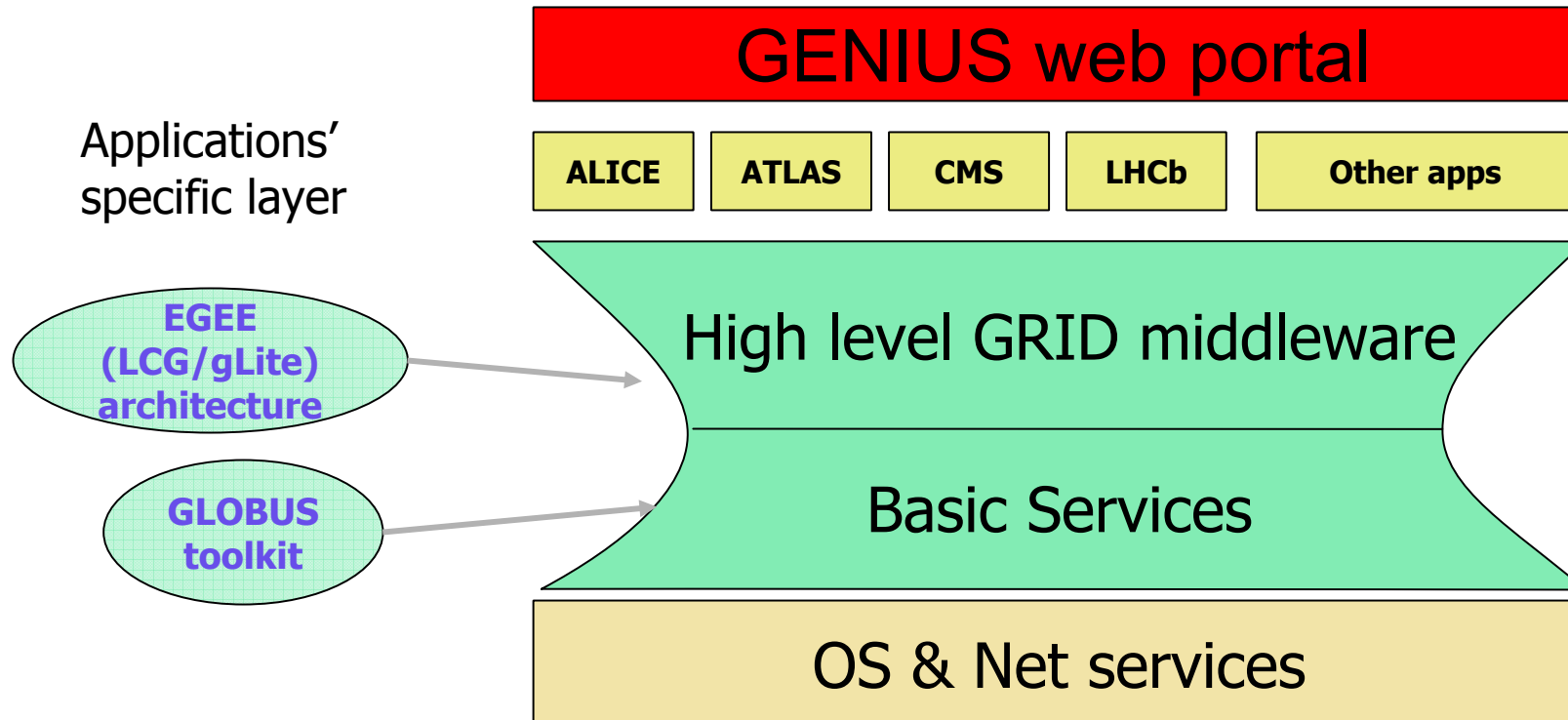


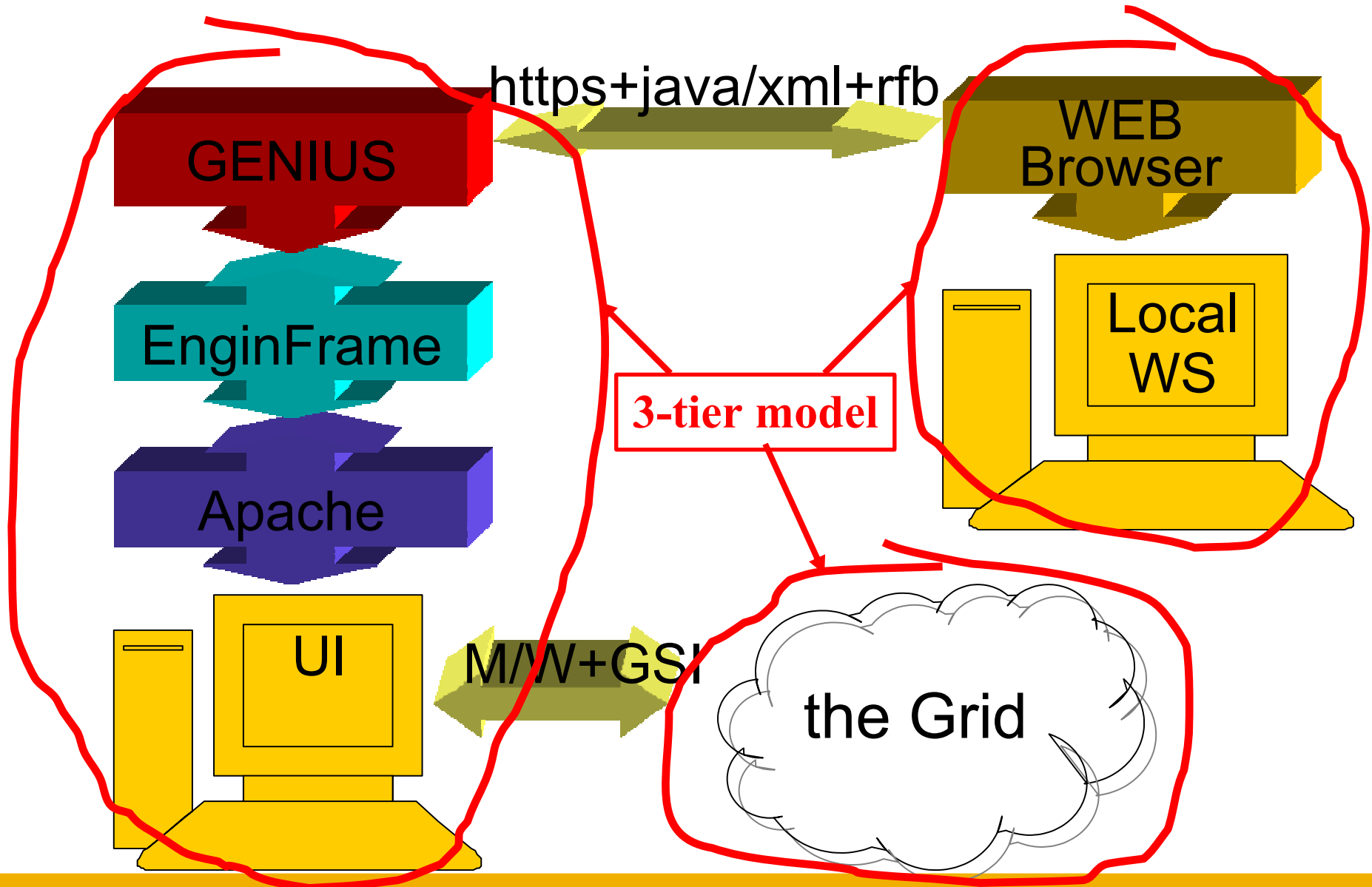
GENIUS®

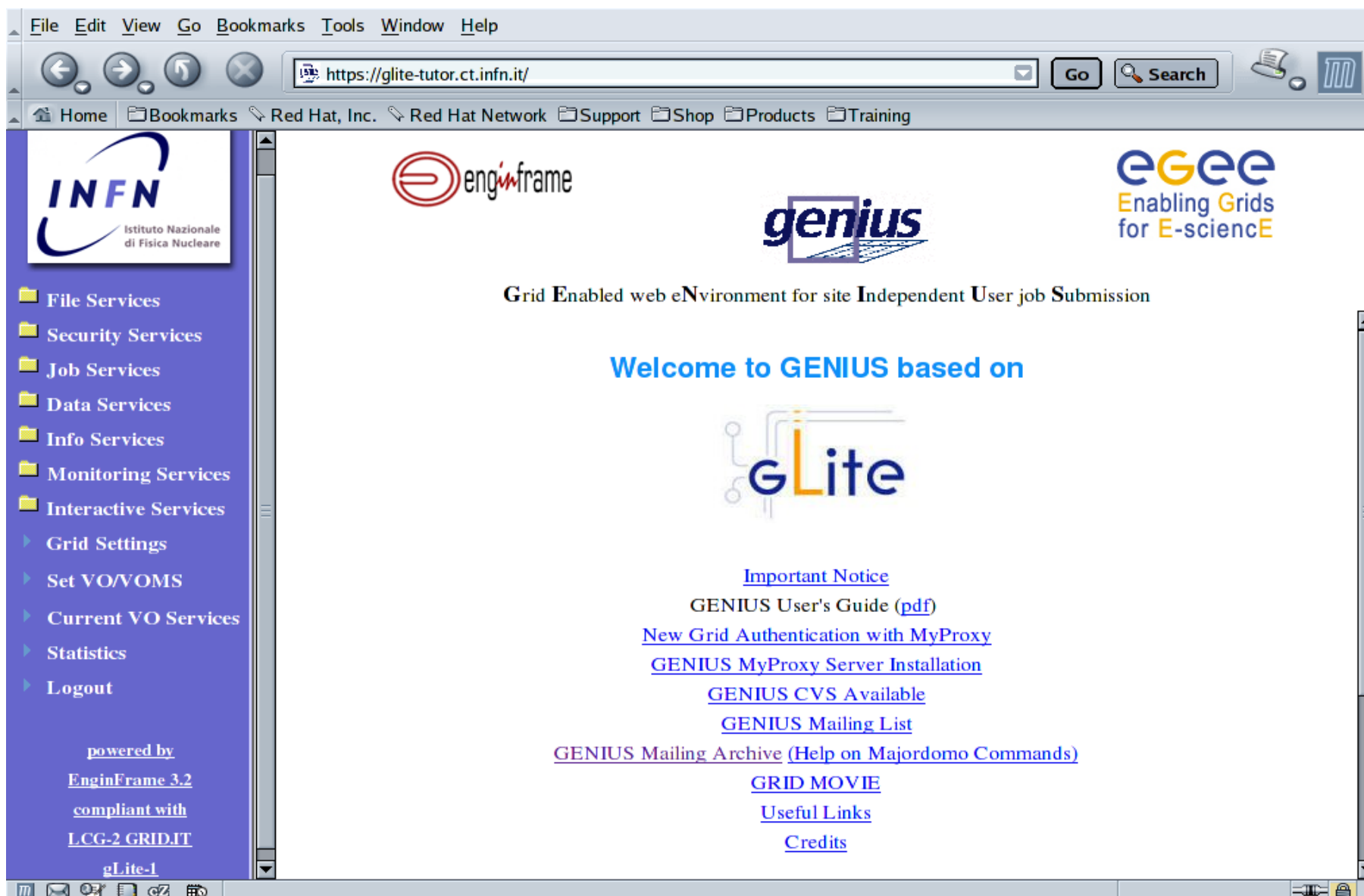
(Grid Enabled web eNvironment for site Independent User job Submission)

<https://genius.ct.infn.it>

INFN/NICE collaboration







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genius

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for E-science

Grid Enabled web eNvironment for site Independent User job Submission

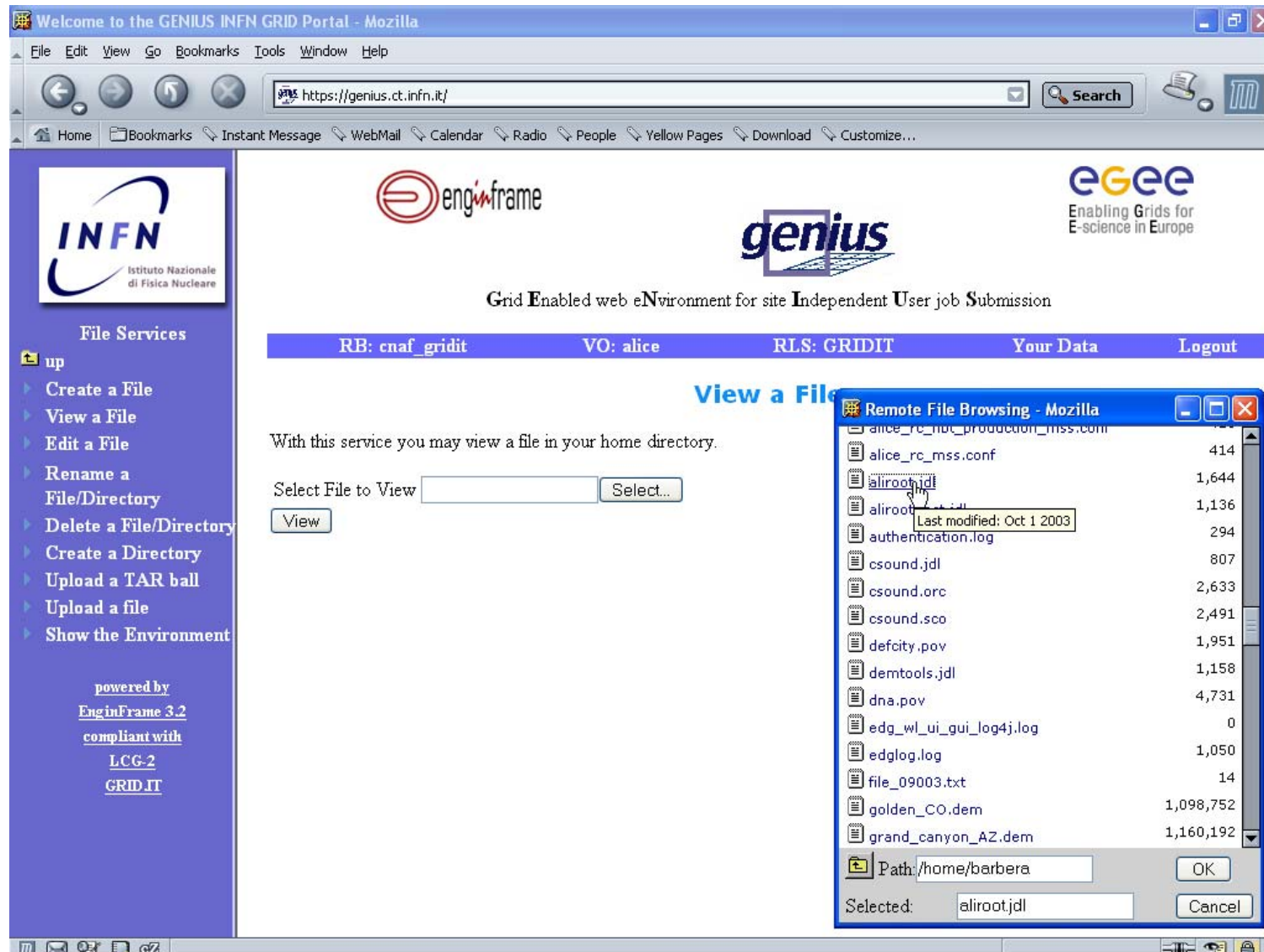
Welcome to GENIUS based on

gLite

[Important Notice](#)
[GENIUS User's Guide \(pdf\)](#)
[New Grid Authentication with MyProxy](#)
[GENIUS MyProxy Server Installation](#)
[GENIUS CVS Available](#)
[GENIUS Mailing List](#)
[GENIUS Mailing Archive \(Help on Majordomo Commands\)](#)
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[Useful Links](#)
[Credits](#)

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File Services
Security Services
Job Services
Data Services
Info Services
Monitoring Services
Interactive Services
Grid Settings
Set VO/VOMS
Current VO Services
Statistics
Logout



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RB: cnaf_gridit VO: alice RLS: GRIDIT Your Data Logout

View a File

With this service you may view a file in your home directory.

Select File to View

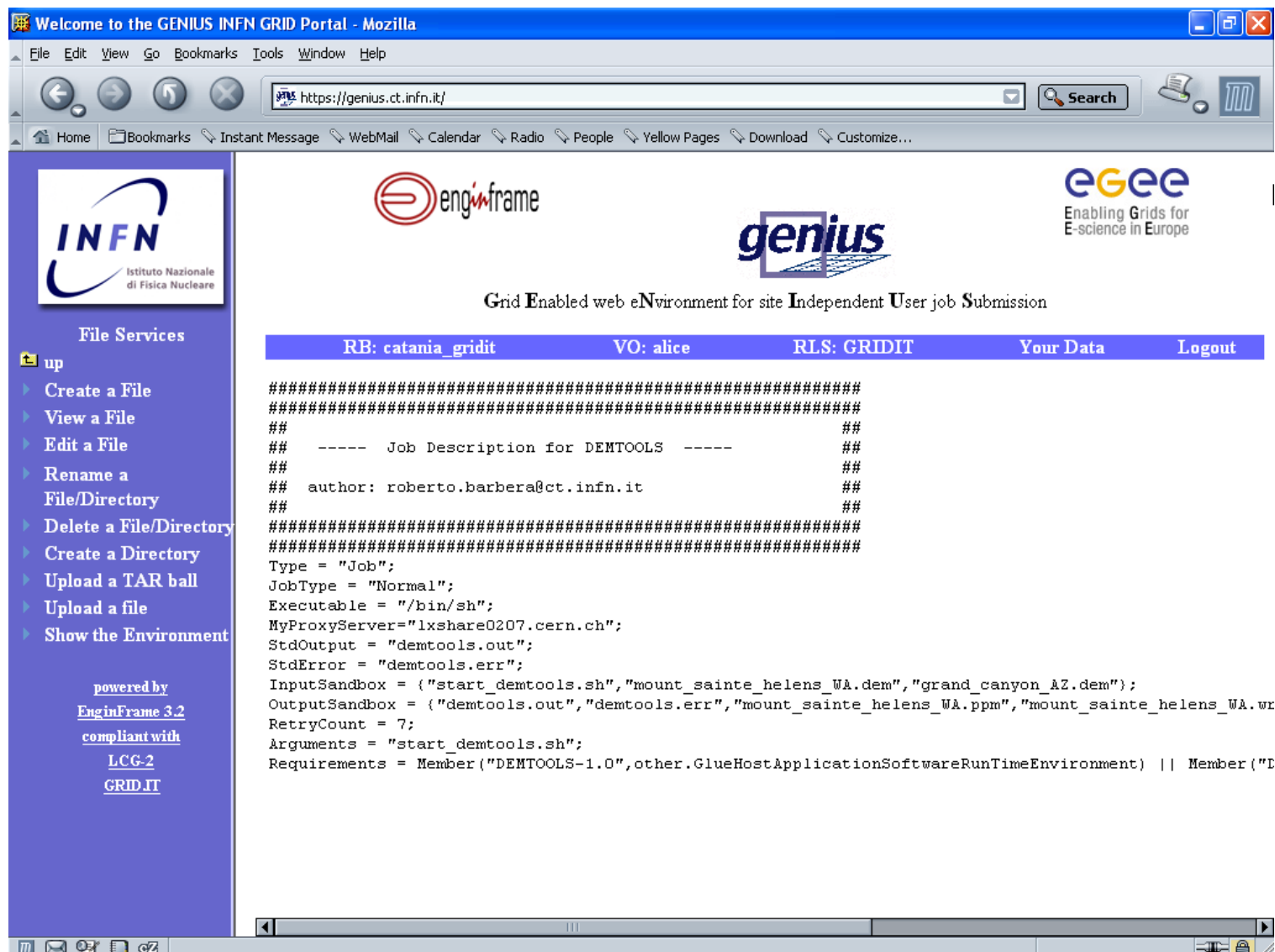
Remote File Browsing - Mozilla

alice_rc_mss.conf	414
aliroot.jdl	1,644
aliroot	1,136
authentication.log	294
csound.jdl	807
csound.orc	2,633
csound.sco	2,491
defcity.pov	1,951
demtools.jdl	1,158
dna.pov	4,731
edg_wl_ui_gui_log4j.log	0
edglog.log	1,050
file_09003.txt	14
golden_CO.dem	1,098,752
grand_canyon_AZ.dem	1,160,192

Path: /home/barbera

Selected: aliroot.jdl

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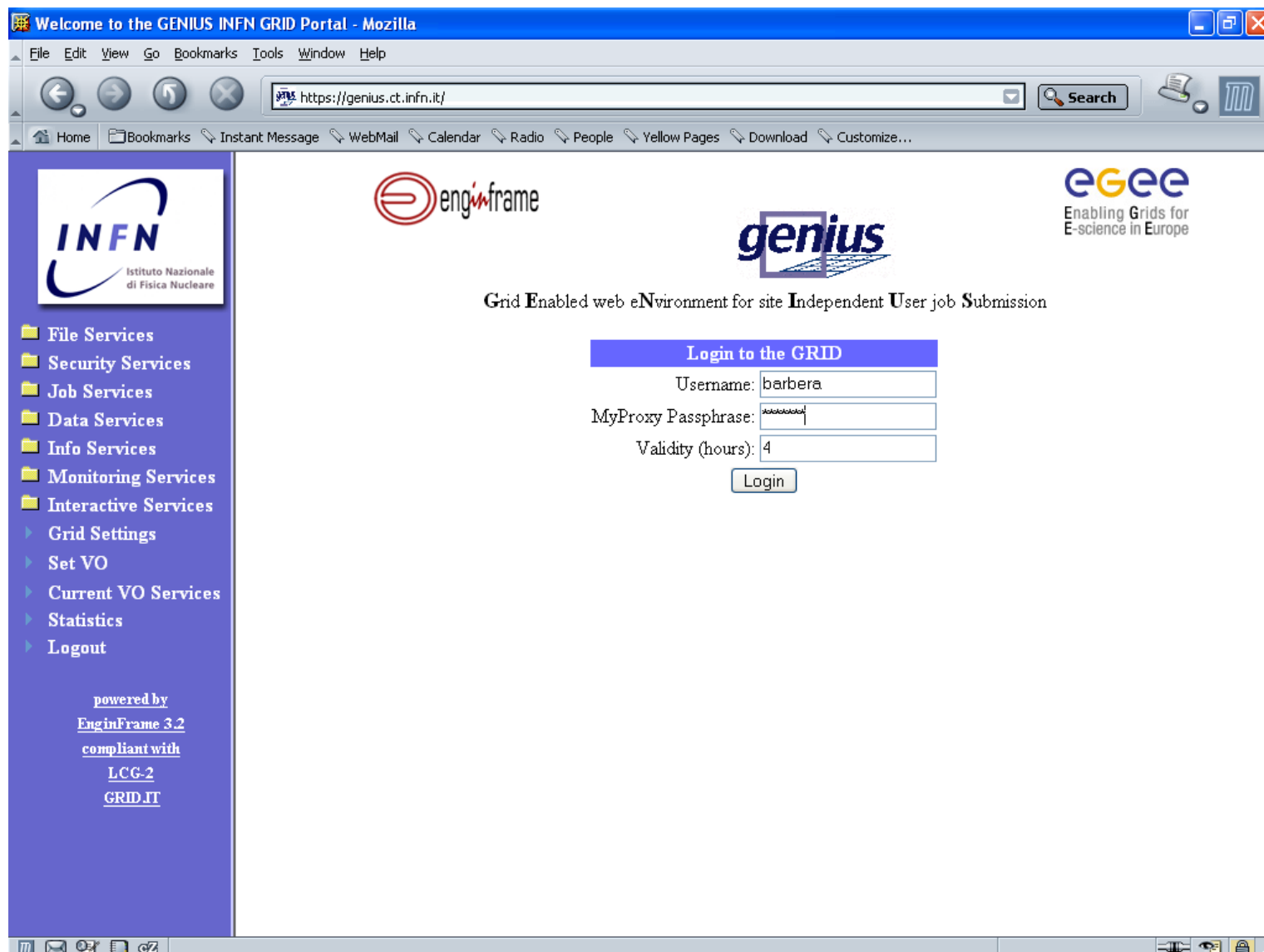
File Services

- up
- Create a File
- View a File
- Edit a File
- Rename a File/Directory
- Delete a File/Directory
- Create a Directory
- Upload a TAR ball
- Upload a file
- Show the Environment

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GRID.IT

RB: catania_gridit VO: alice RLS: GRIDIT Your Data Logout

```
#####
#####
##                               ##
## ----- Job Description for DEMTOOLS ----- ##
##                               ##
## author: roberto.barbera@ct.infn.it          ##
##                               ##
#####
#####
Type = "Job";
JobType = "Normal";
Executable = "/bin/sh";
MyProxyServer="lxshare0207.cern.ch";
StdOutput = "demtools.out";
StdError = "demtools.err";
InputSandbox = ("start_demtools.sh","mount_sainte_helens_WA.dem","grand_canyon_AZ.dem");
OutputSandbox = ("demtools.out","demtools.err","mount_sainte_helens_WA.ppm","mount_sainte_helens_WA.wr
RetryCount = 7;
Arguments = "start_demtools.sh";
Requirements = Member("DEMTTOOLS-1.0",other.GlueHostApplicationSoftwareRunTimeEnvironment) || Member("D
```

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Login to the GRID

Username:

MyProxy Passphrase:

Validity (hours):

Login

File Services

Security Services

Job Services

Data Services

Info Services

Monitoring Services

Interactive Services

Grid Settings

Set VO

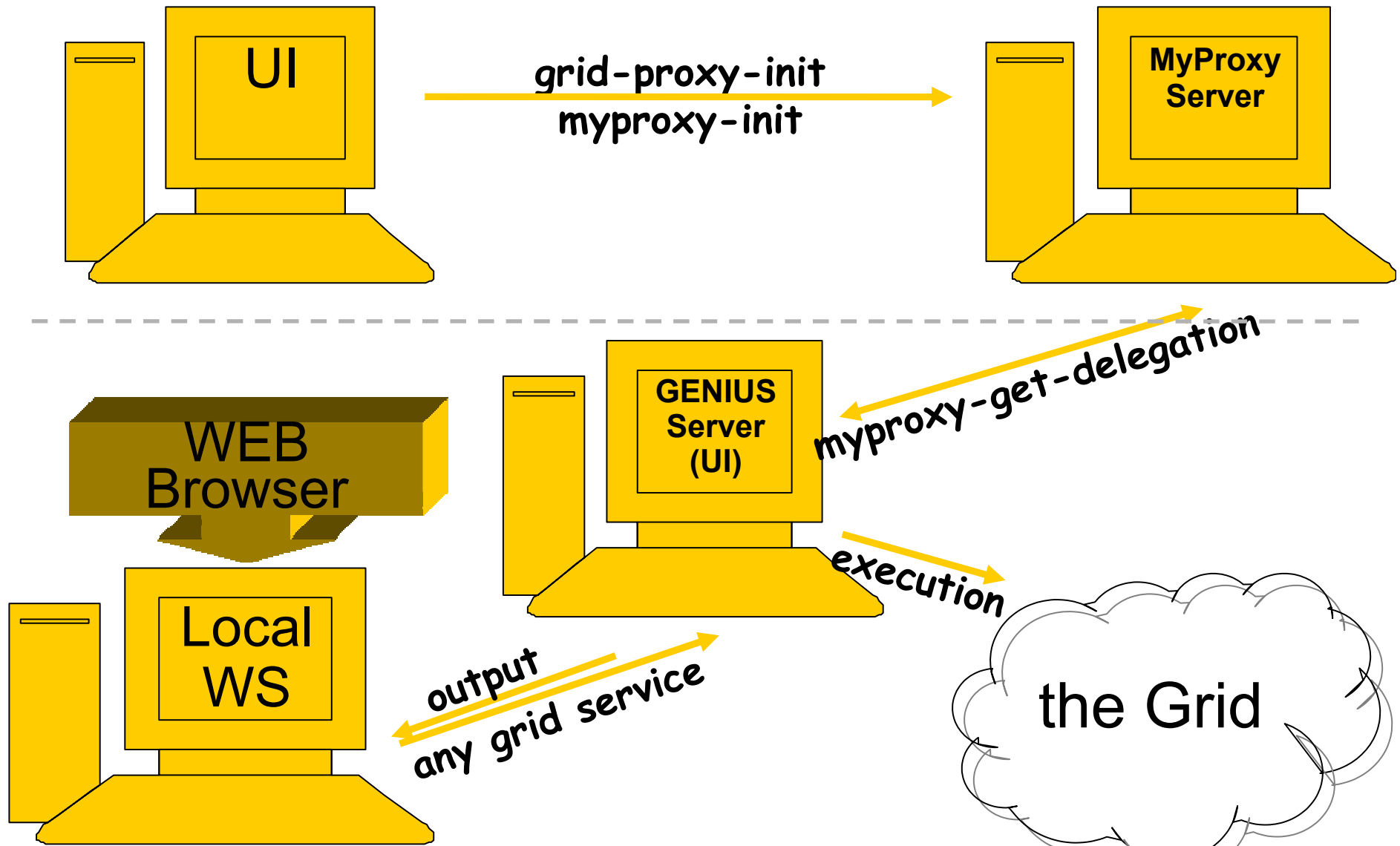
Current VO Services

Statistics

Logout

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RB: cnaf_gridit VO: alice RLS: GRIDIT Your Data Logout

Grid Settings

With this service you can select the Resource Broker and the Replica Location Server you want to use.

It is possible also to set the MyProxy Server on which you stored your temporary proxy to get from GRID Authentication.

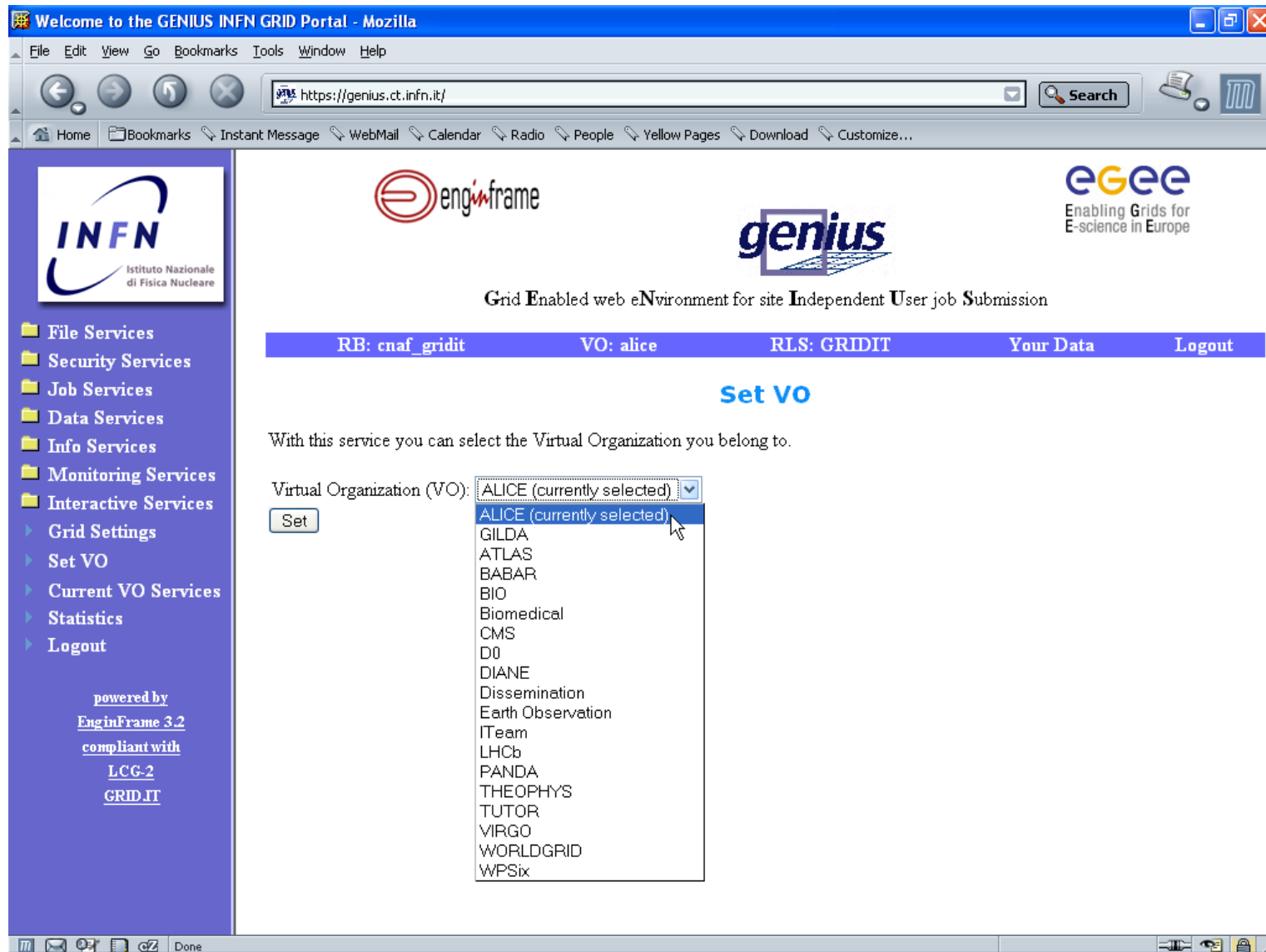
Resource Broker (RB): CNAF GRIDIT (currently selected) ▼

Replica Location Server (RLS): GRIDIT (currently selected) ▼


MyProxy Server: grid001.ct.infn.it (currently selected) ▼

Update


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RB: cnaf_gridit
VO: alice
RLS: GRIDIT
Your Data
Logout

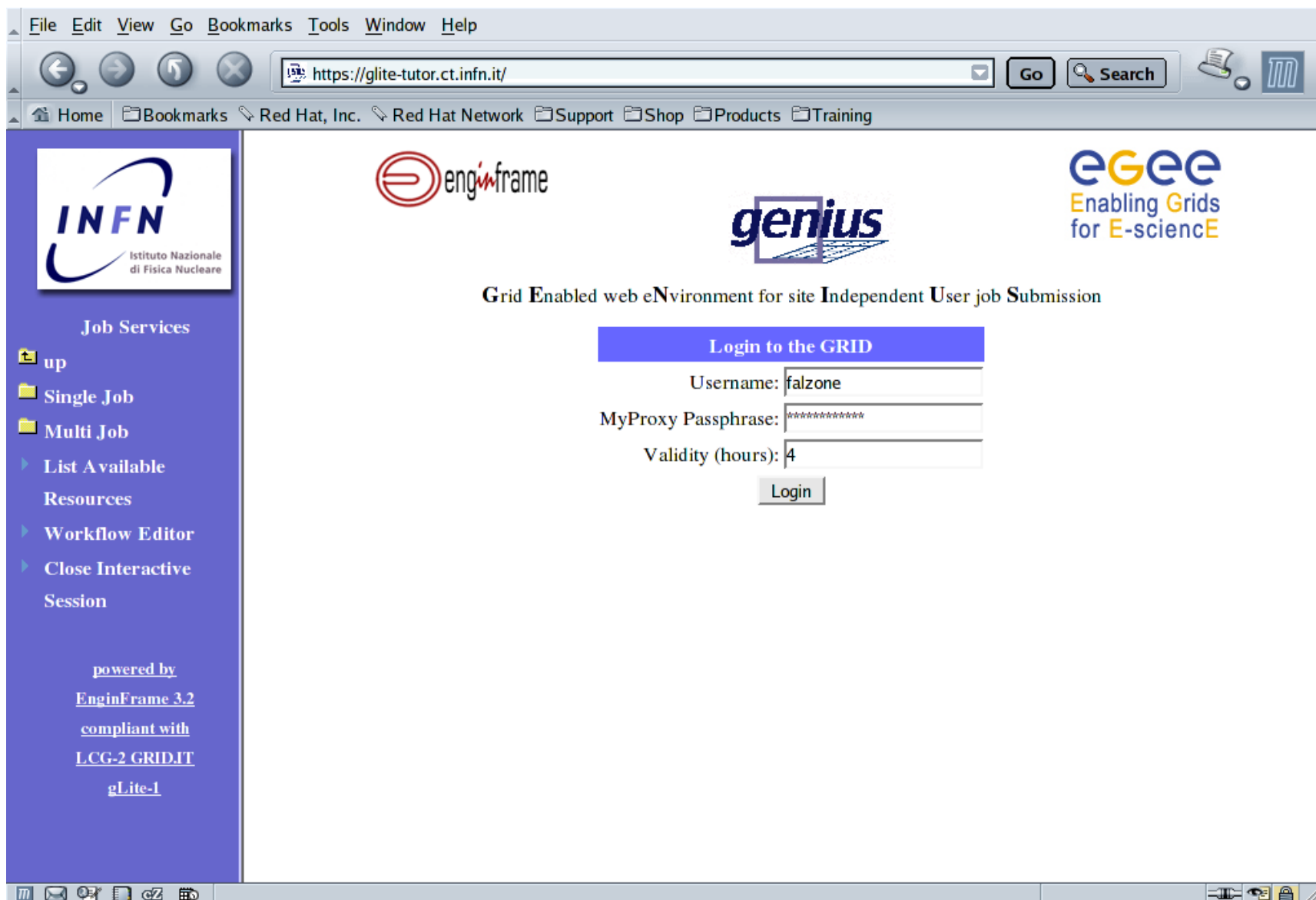
Set VO

With this service you can select the Virtual Organization you belong to.

Virtual Organization (VO): ALICE (currently selected) ▾

ALICE (currently selected)
 GILDA
 ATLAS
 BABAR
 BIO
 Biomedical
 CMS
 D0
 DIANE
 Dissemination
 Earth Observation
 ITeam
 LHCb
 PANDA
 THEOPHYS
 TUTOR
 VIRGO
 WORLDGRID
 WPSix

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Login to the GRID

Username: falzone

MyProxy Passphrase: *****

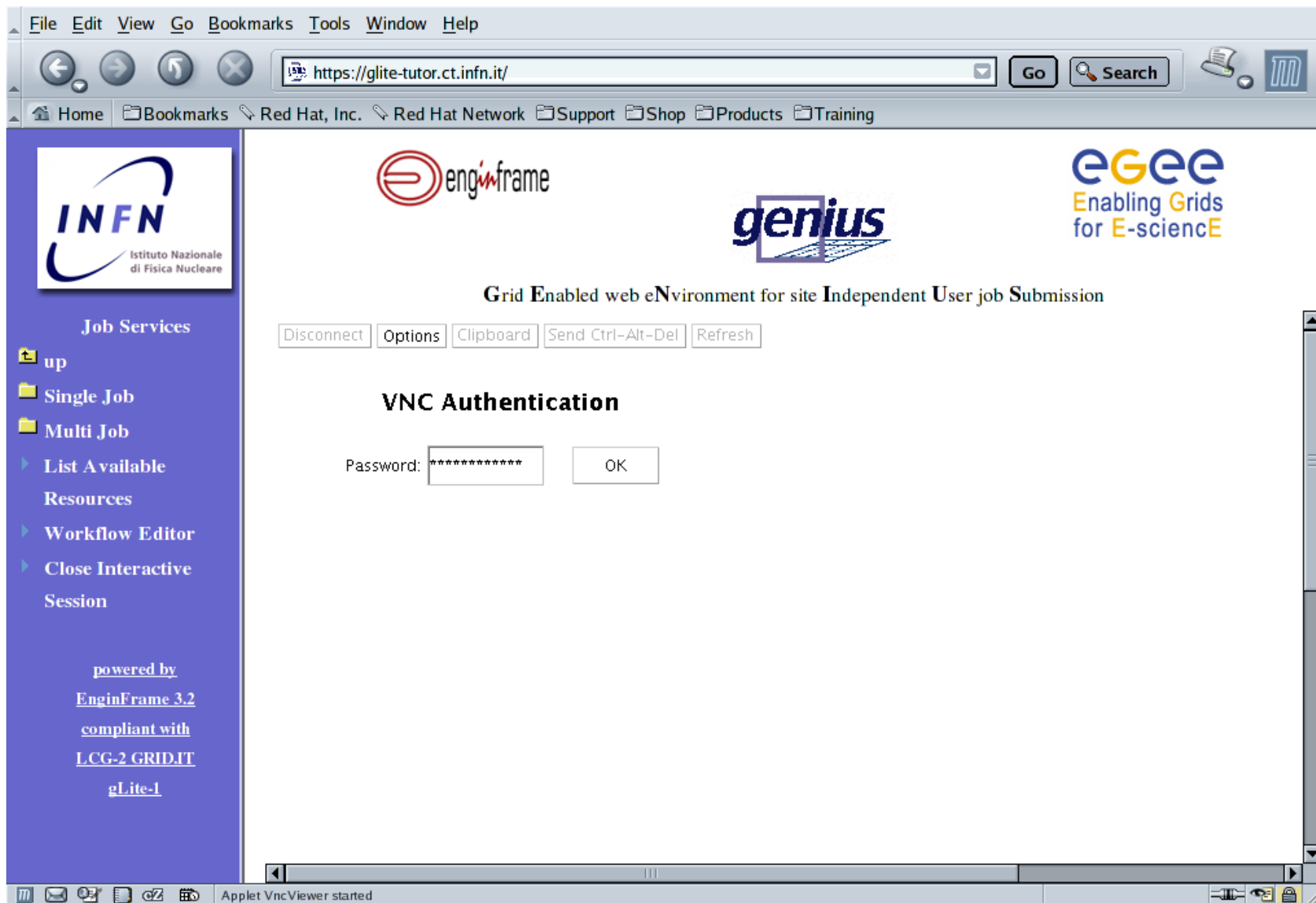
Validity (hours): 4

Login

Job Services

- up
- Single Job
- Multi Job
- List Available Resources
- Workflow Editor
- Close Interactive Session

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Disconnect Options Clipboard Send Ctrl-Alt-Del Refresh

VNC Authentication

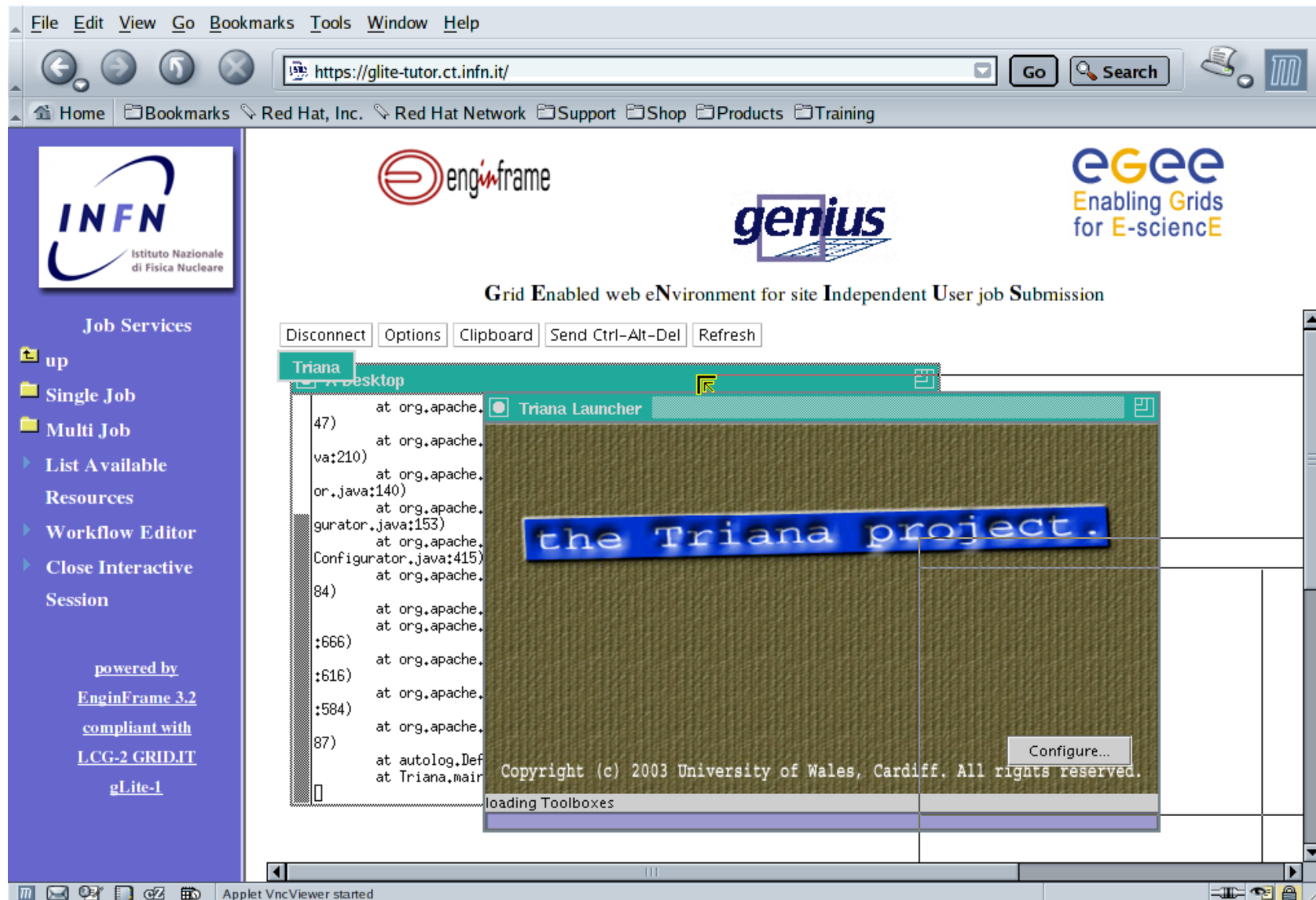
Password: OK

Job Services

- up
- Single Job
- Multi Job
- List Available Resources
- Workflow Editor
- Close Interactive Session

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Applet VncViewer started



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Disconnect Options Clipboard Send Ctrl-Alt-Del Refresh

Triana Launcher

```

47) at org.apache.
va:210) at org.apache.
or.java:140) at org.apache.
gurator.java:153) at org.apache.
Configurator.java:415) at org.apache.
84) at org.apache.
at org.apache.
:666) at org.apache.
:616) at org.apache.
:584) at org.apache.
87) at autolog.Def
at Triana.mair

```

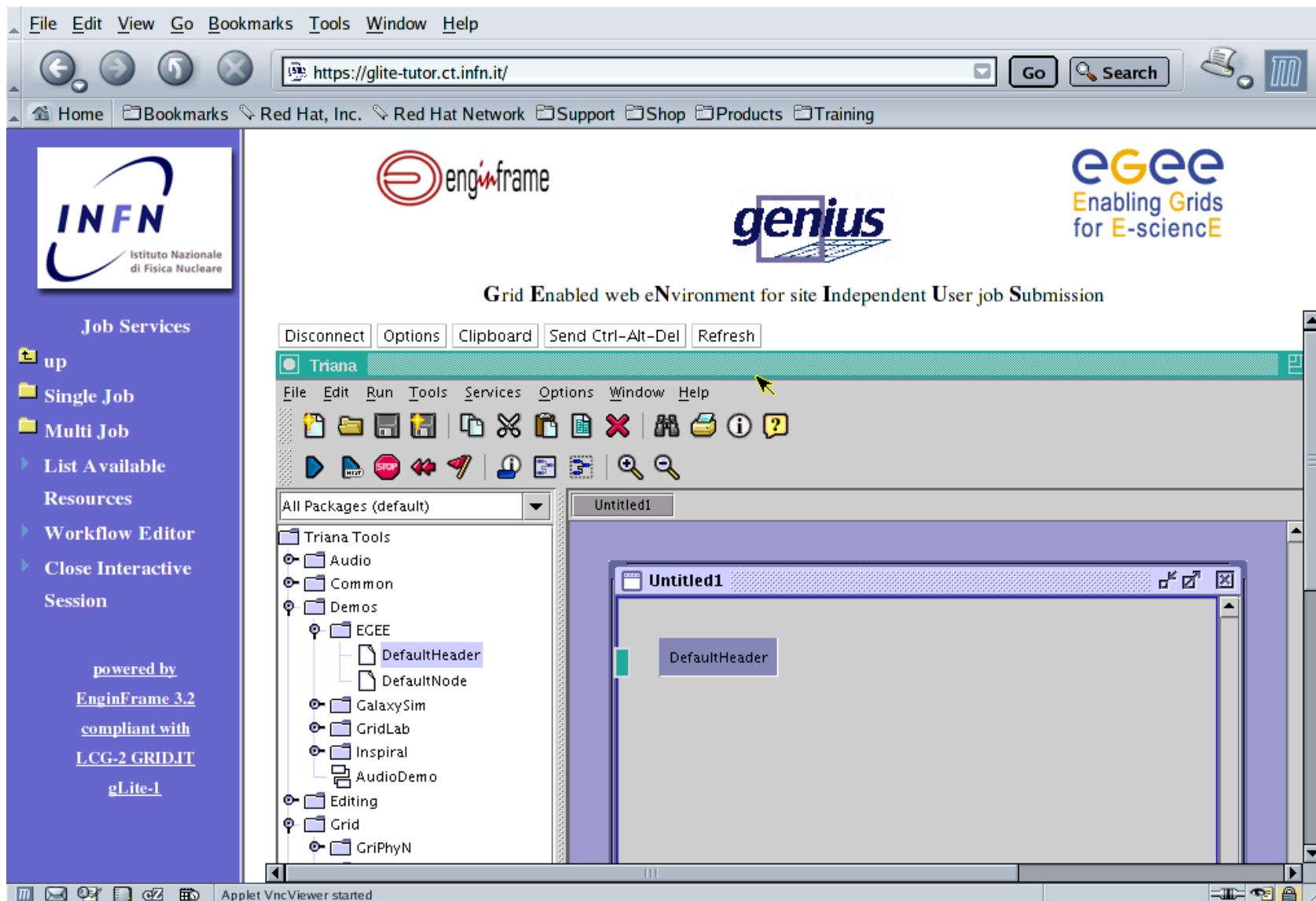
the Triana project.

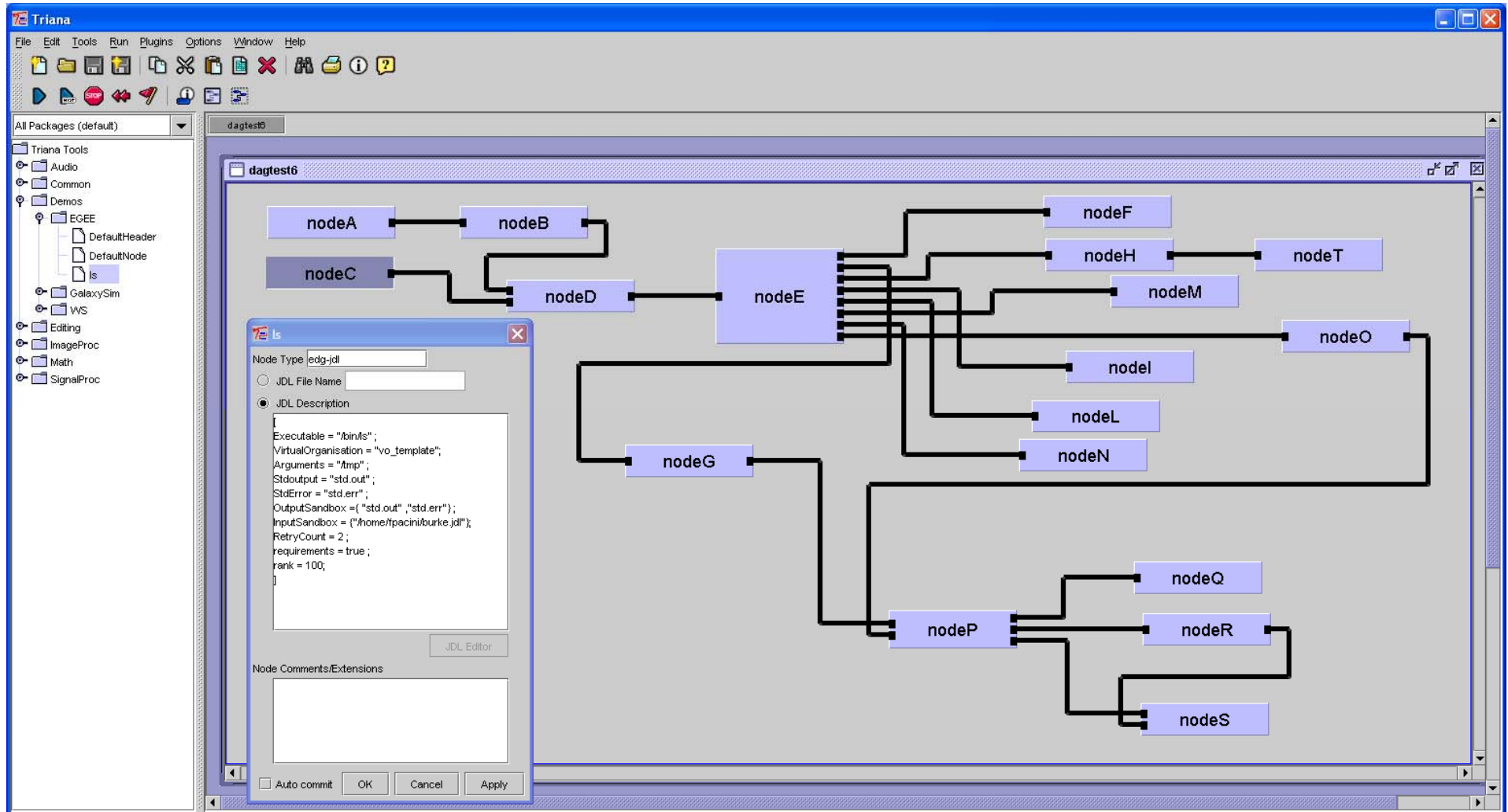
Configure...

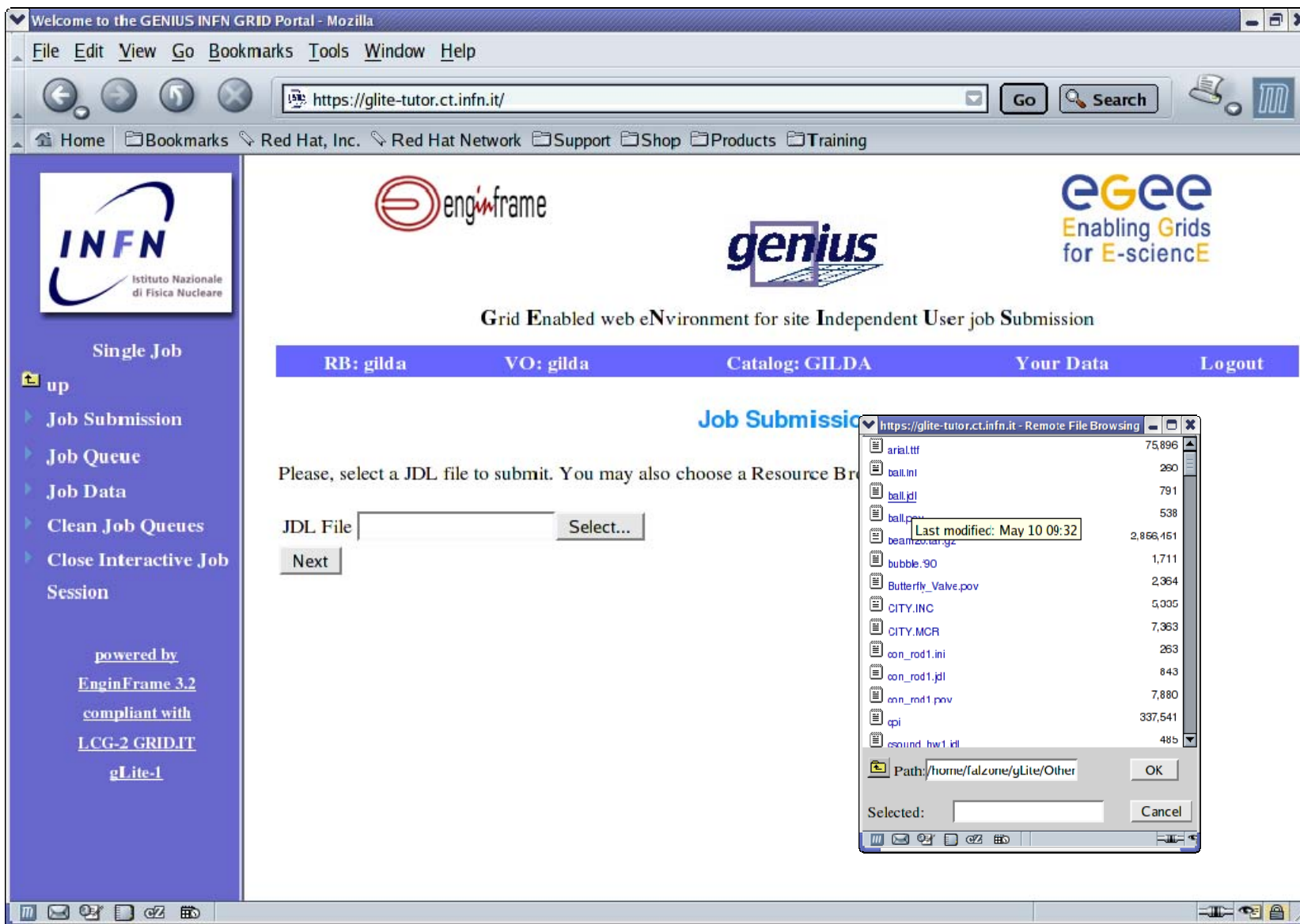
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loading Toolboxes

Applet VncViewer started











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Grid Enabled web eNvironment for site Independent User job Submission

RB: gilda VO: gilda Catalog: GILDA Your Data Logout

Job Submission

Please, select a JDL file to submit. You may also choose a Resource Broker

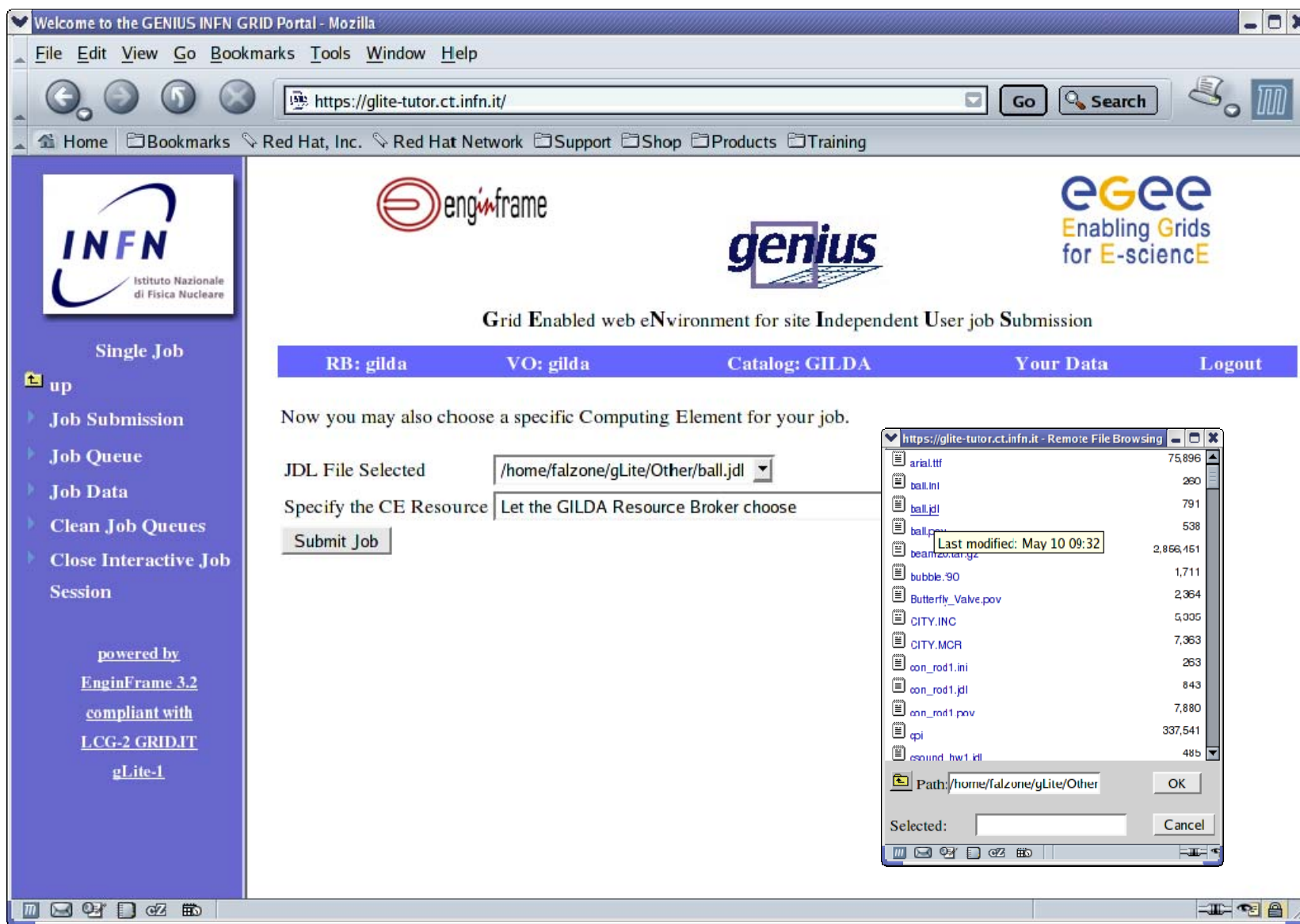
JDL File

arial.ttf 75,896
 bail.ini 260
 bail.jdl 791
 bail.pov 538
 Last modified: May 10 09:32
 bearfoam.gz 2,866,451
 bubble_90 1,711
 Butterfly_Valve.pov 2,364
 CITY.INC 5,035
 CITY.MCR 7,363
 con_rod1.ini 263
 con_rod1.jdl 843
 con_rod1.pov 7,880
 cpi 337,541
 csound_hw1.kit 485

Path:/home/falzone/gLite/Other

Selected:

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Grid Enabled web eNvironment for site Independent User job Submission

RB: gilda VO: gilda Catalog: GILDA Your Data Logout

Now you may also choose a specific Computing Element for your job.

JDL File Selected

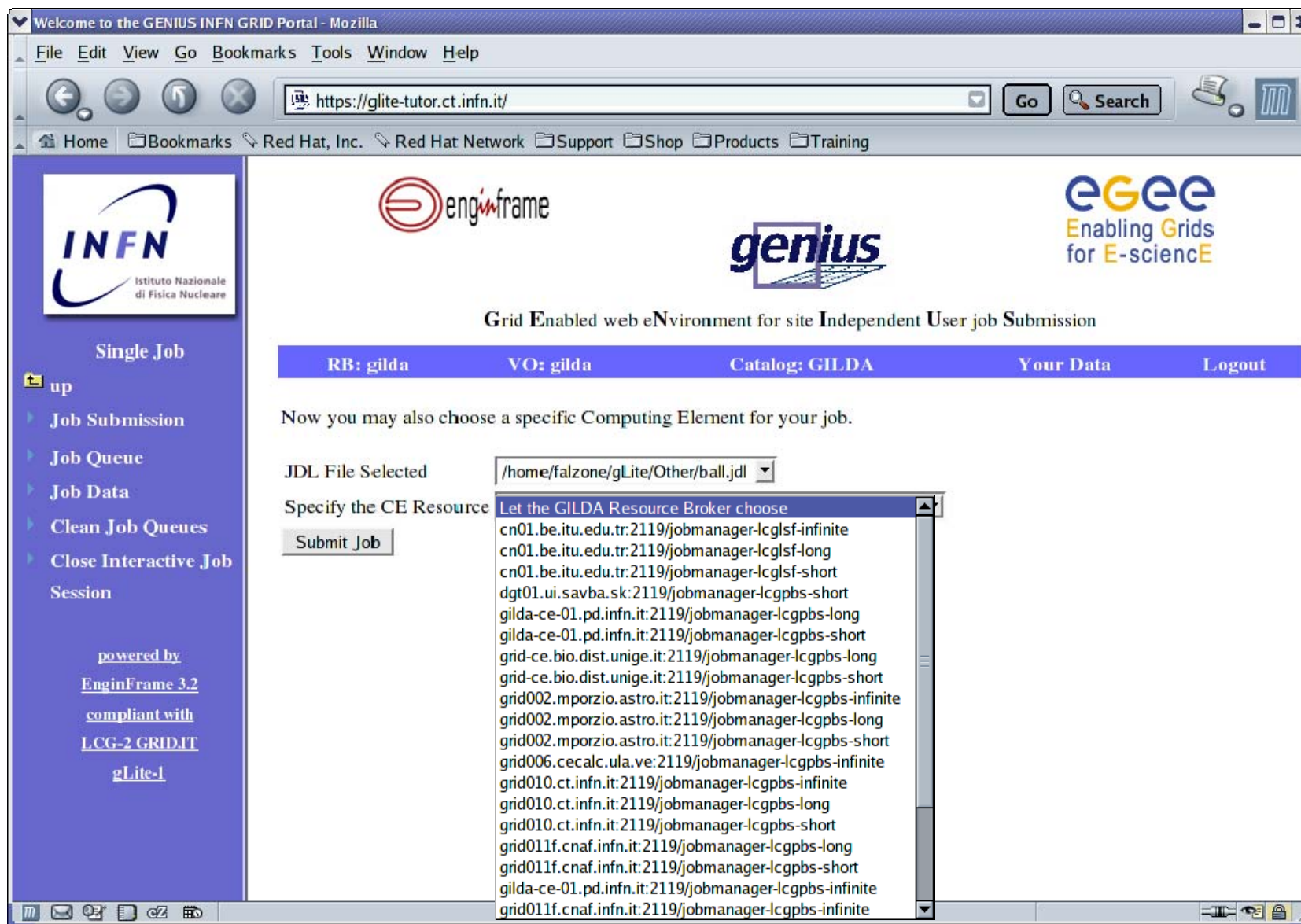
Specify the CE Resource

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 compliant with
 LCG-2 GRID.IT
 gLite-1

Remote File Browsing
 arial.ttf 75,896
 ball.ini 260
 ball.jdl 791
 ball.pov 538
 Last modified: May 10 09:32
 beathzoo.tar.gz 2,866,451
 bubble_90 1,711
 Butterfly_Valve.pov 2,364
 CITY.INC 5,005
 CITY.MCR 7,363
 con_rod1.ini 263
 con_rod1.jdl 843
 con_rod1.pov 7,880
 cpi 337,541
 csound_hw1.kit 485

Path: /home/falzone/gLite/Other

Selected:

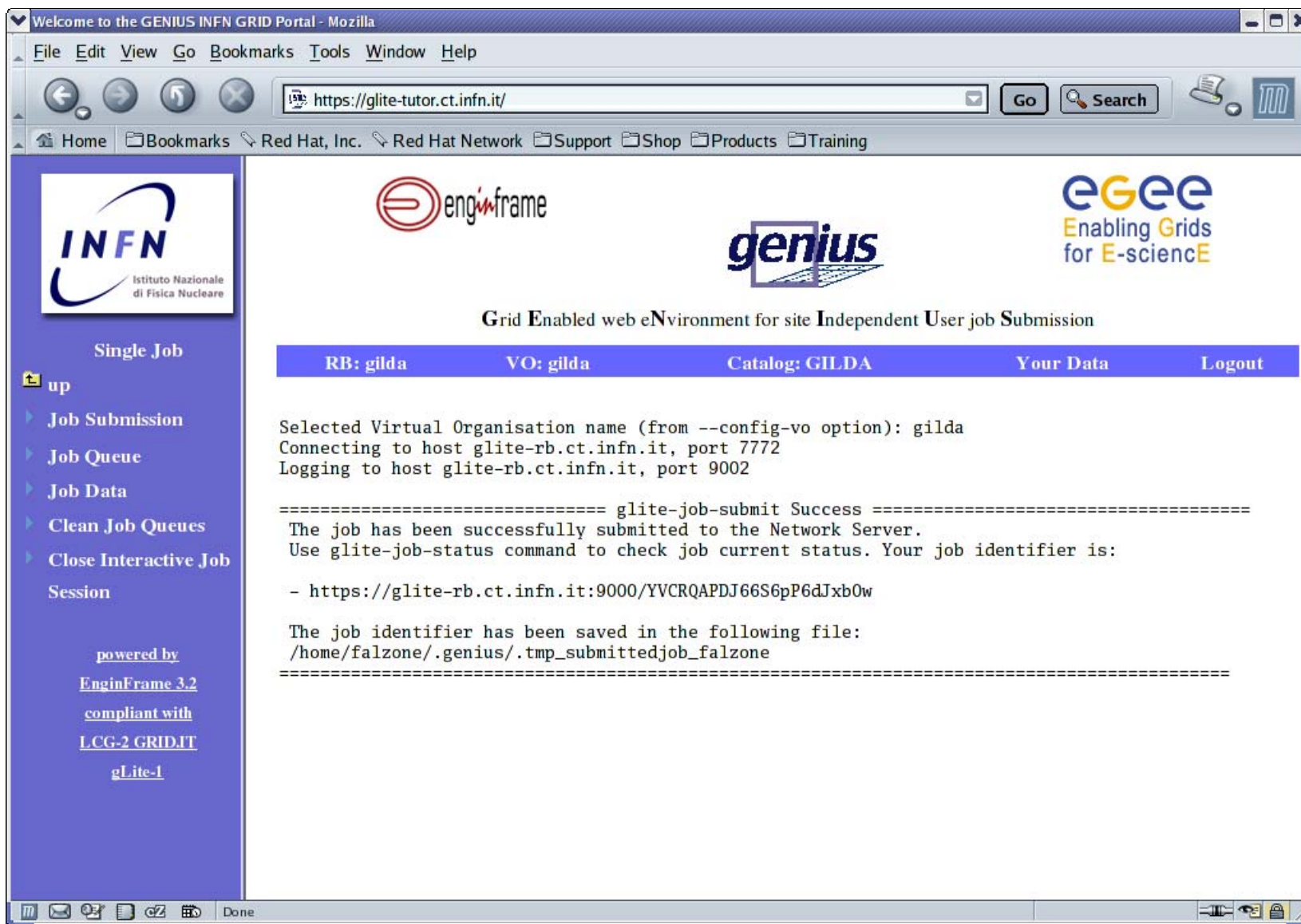


The screenshot shows a Mozilla browser window titled "Welcome to the GENIUS INFN GRID Portal - Mozilla". The address bar contains "https://glite-tutor.ct.infn.it/". The browser's bookmark bar shows "Home", "Bookmarks", "Red Hat, Inc.", "Red Hat Network", "Support", "Shop", "Products", and "Training".

The main content area features the logos for "enginframe", "genius", and "eGEE Enabling Grids for E-science". Below the logos, the text reads "Grid Enabled web eNvironment for site Independent User job Submission". A navigation bar contains links for "RB: gilda", "VO: gilda", "Catalog: GILDA", "Your Data", and "Logout".

The left sidebar, titled "Single Job", contains a "up" icon and a list of links: "Job Submission", "Job Queue", "Job Data", "Clean Job Queues", and "Close Interactive Job Session". At the bottom of the sidebar, it states "powered by EnginFrame 3.2 compliant with LCG-2 GRIDIT gLite-1".

The main content area includes the text "Now you may also choose a specific Computing Element for your job." Below this, there is a form with a "JDL File Selected" field containing "/home/falzone/gLite/Other/ball.jdl" and a "Specify the CE Resource" dropdown menu. The dropdown menu is open, showing a list of computing element resources such as "cn01.be.itu.edu.tr:2119/jobmanager-lcglsf-infinite" and "gilda-ce-01.pd.infn.it:2119/jobmanager-lcgpbs-long". A "Submit Job" button is located below the dropdown menu.



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Grid Enabled web eNvironment for site Independent User job Submission

RB: gilda VO: gilda Catalog: GILDA Your Data Logout

Selected Virtual Organisation name (from --config-vo option): gilda
Connecting to host glite-rb.ct.infn.it, port 7772
Logging to host glite-rb.ct.infn.it, port 9002

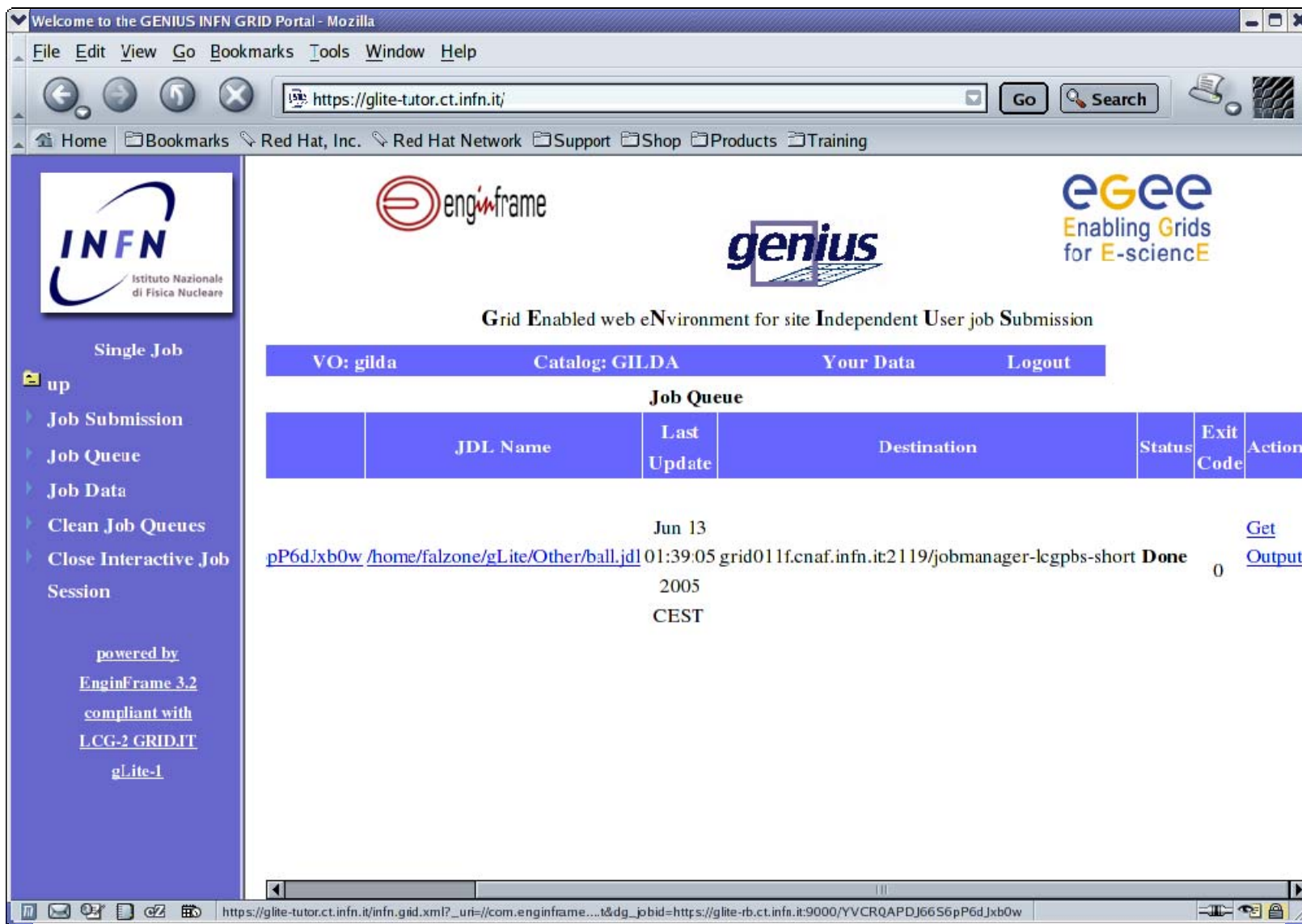
===== glite-job-submit Success =====
The job has been successfully submitted to the Network Server.
Use glite-job-status command to check job current status. Your job identifier is:

- https://glite-rb.ct.infn.it:9000/YVCRQAPDJ66S6pP6dJxb0w

The job identifier has been saved in the following file:
/home/falzone/.genius/.tmp_submittedjob_falzone
=====

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Done




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Single Job

- up
- ▶ Job Submission
- ▶ Job Queue
- ▶ Job Data
- ▶ Clean Job Queues
- ▶ Close Interactive Job Session

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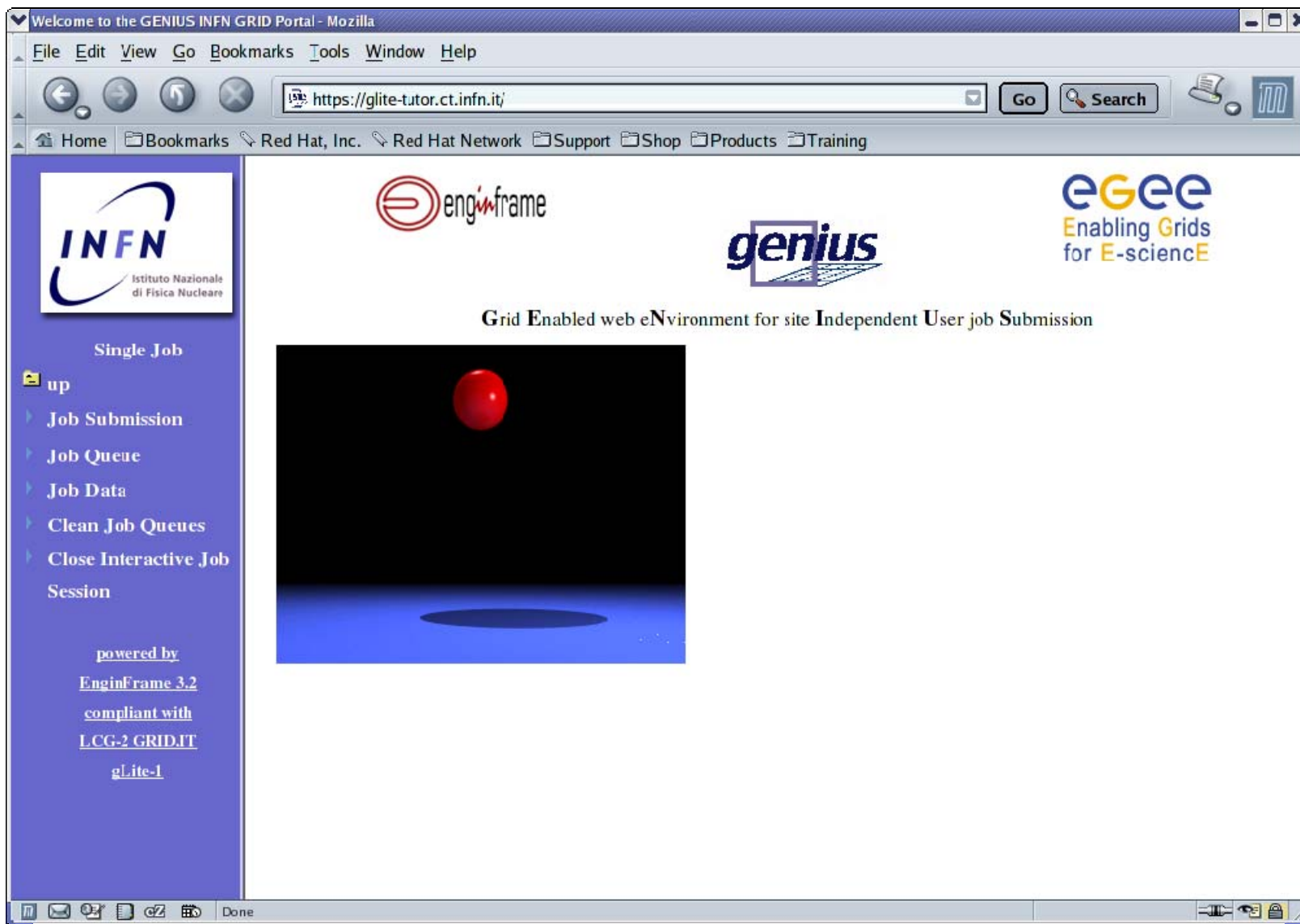
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VO: gilda
Catalog: GILDA
Your Data
Logout

Job Queue

JDL Name	Last Update	Destination	Status	Exit Code	Action
pP6dJxb0w /home/falzone/gLite/Other/ball.jdl	Jun 13 01:39:05 2005 CEST	grid011f.cnaf.infn.it:2119/jobmanager-lcgpbs-short	Done	0	Get Output

https://glite-tutor.ct.infn.it/inf/gid.xml?_uri=/com.enginframe...&dg_jobid=https://glite-ib.ct.infn.it:9000/YVCRQAPDJ66S6pP6dJxb0w





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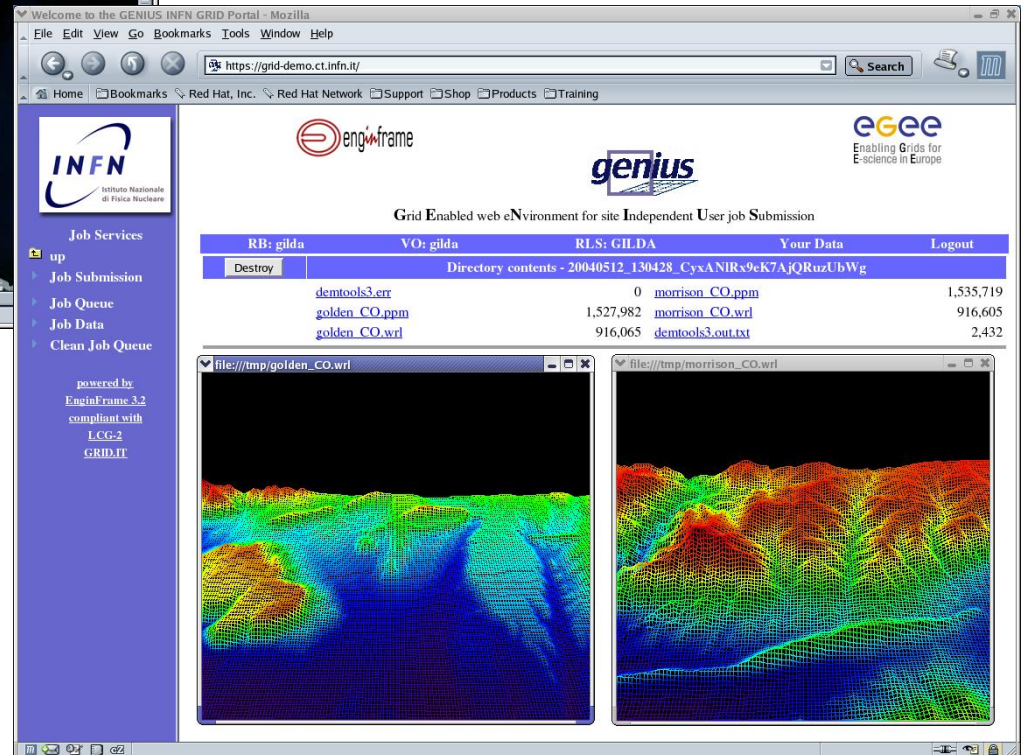
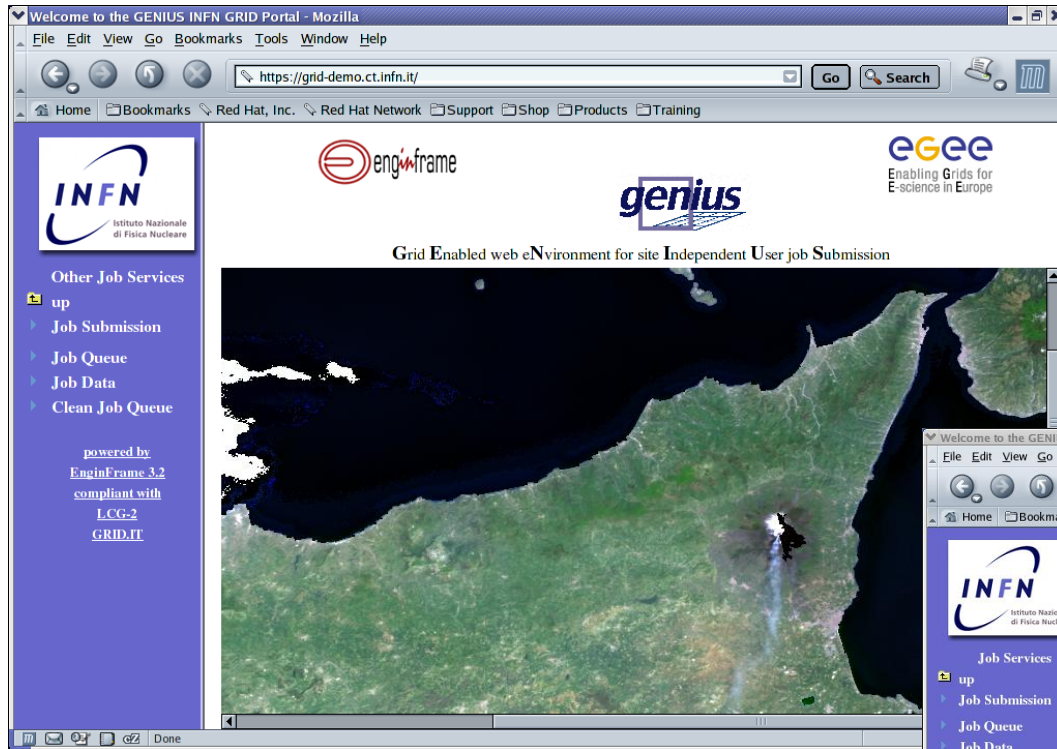
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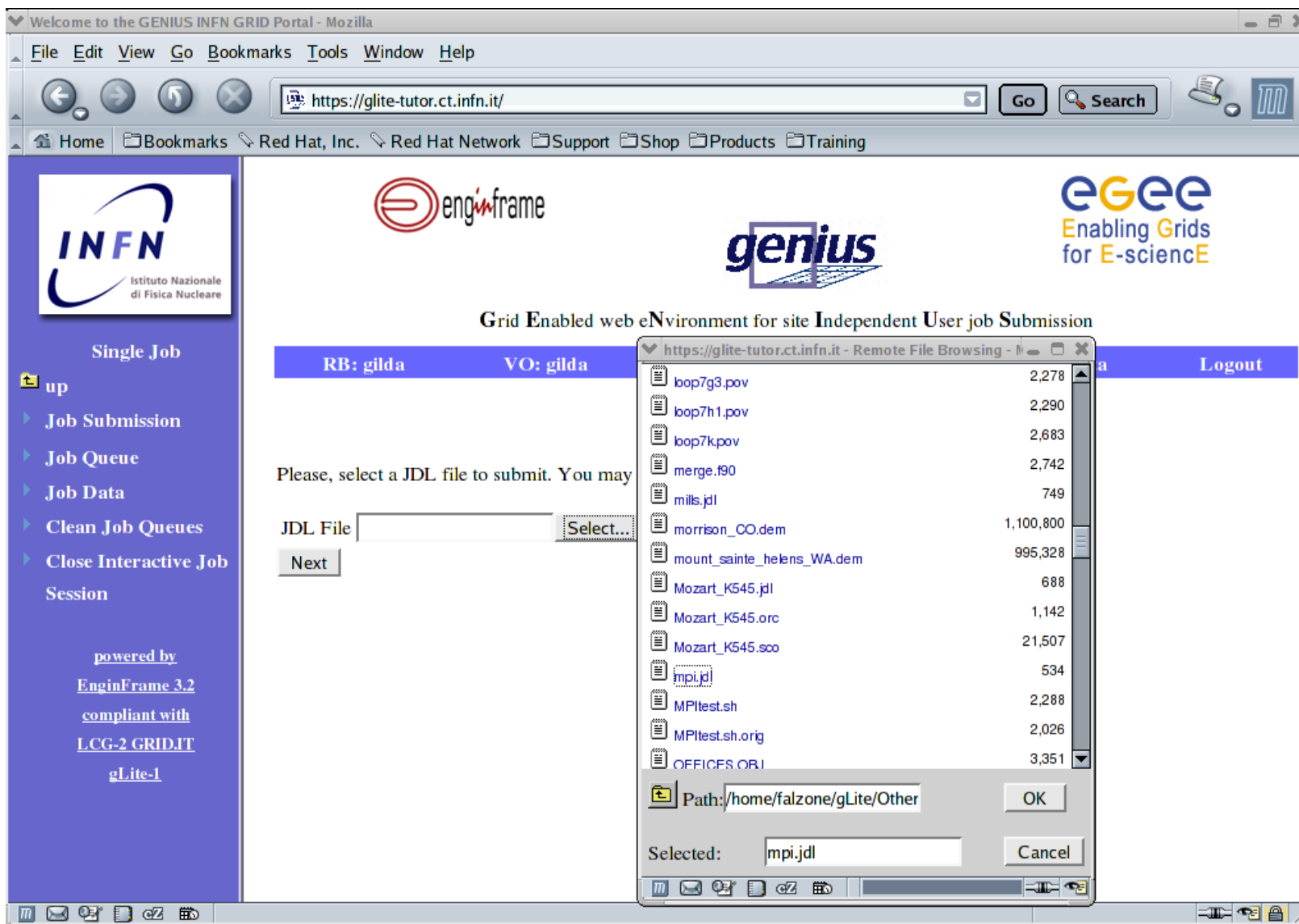
Grid Enabled web eNvironment for site Independent User job Submission

RB: gilda	VO: gilda	RLS: GILDA	Logout
<input type="button" value="Destroy"/>	Directory contents - 20040707_120711_93mr3tpgEaXumBp-JdZwvA		
ENVISAT_Product_courtesy_of_European_Space_Agency	0	pds2jpg.err.txt	66
MER_FR_2PNUPA20030504_092534_000000502016_00079_06145_0033.jpg	125,431	pds2jpg.out.txt	634

Other Job Services
 up
 Job Submission
 Job Queue
 Job Data
 Clean Job Queue

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Grid Enabled web eNvironment for site Independent User job Submission

RB: gilda VO: gilda

Please, select a JDL file to submit. You may

JDL File

Logout

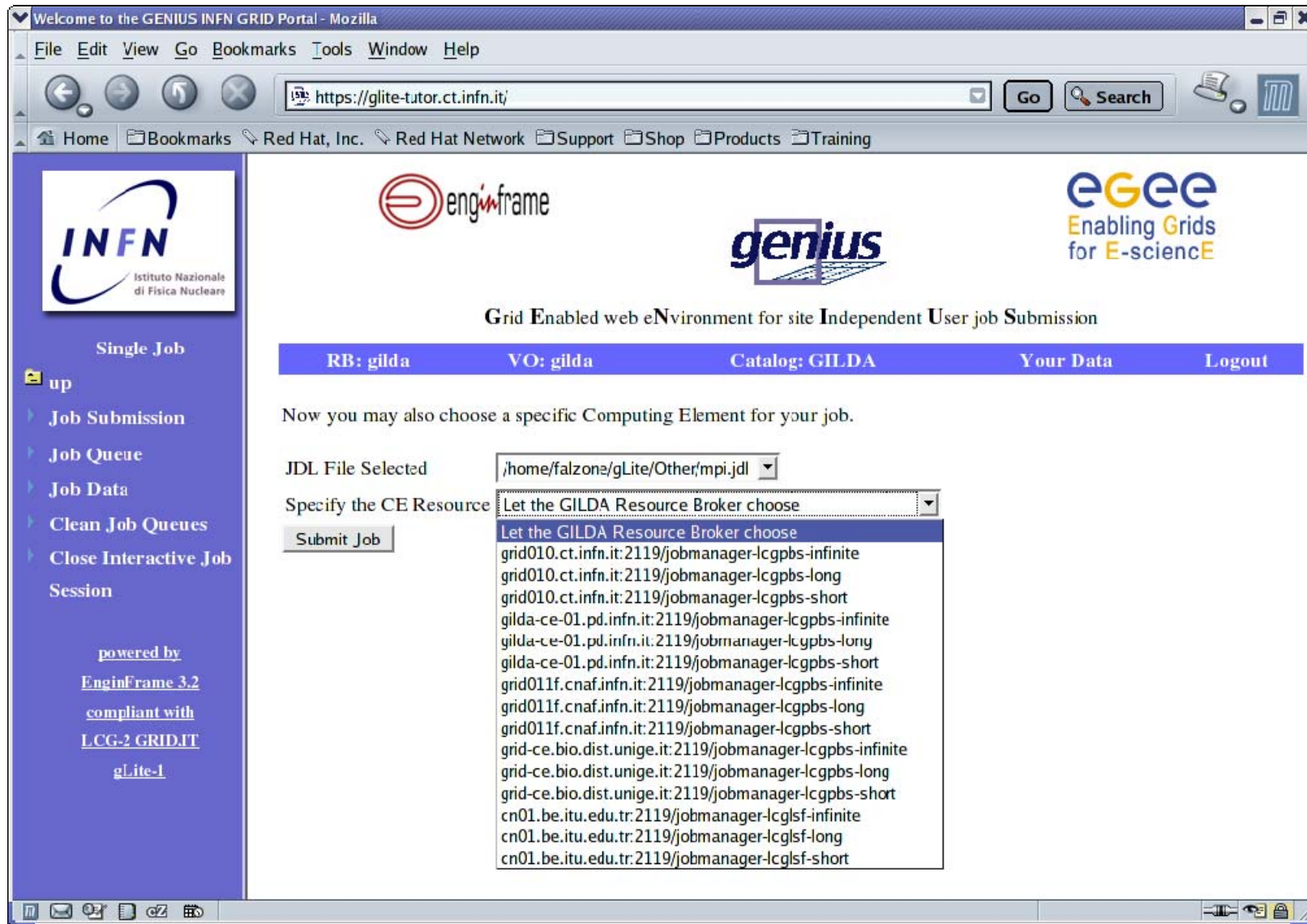
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gLite-1

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loop7g3.pov	2,278
loop7h1.pov	2,290
loop7k.pov	2,683
merge.f90	2,742
mills.jdl	749
morrison_CO.dem	1,100,800
mount_sainte_helens_WA.dem	995,328
Mozart_K545.jdl	688
Mozart_K545.orc	1,142
Mozart_K545.sco	21,507
mpi.jdl	534
MPItest.sh	2,288
MPItest.sh.orig	2,026
OFFICES.ORI	3,351

Path: /home/falzone/gLite/Other

Selected: mpi.jdl



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RB: gilda VO: gilda Catalog: GILDA Your Data Logout

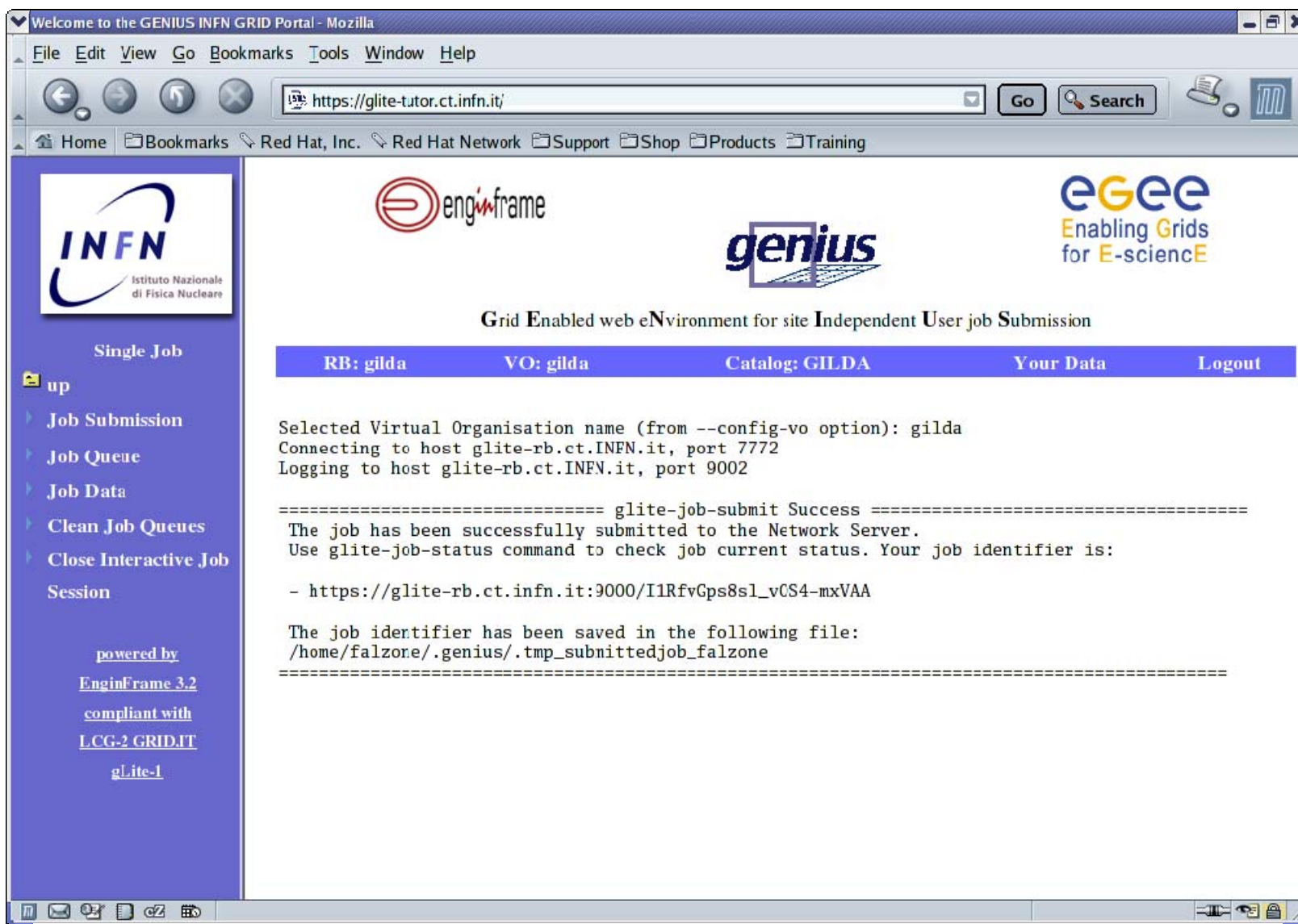
Now you may also choose a specific Computing Element for your job.

JDL File Selected

Specify the CE Resource

- Let the GILDA Resource Broker choose
- grid010.ct.infn.it:2119/jobmanager-lcgpbs-infinite
- grid010.ct.infn.it:2119/jobmanager-lcgpbs-long
- grid010.ct.infn.it:2119/jobmanager-lcgpbs-short
- gilda-ce-01.pd.infn.it:2119/jobmanager-lcgpbs-infinite
- gilda-ce-01.pd.infn.it:2119/jobmanager-lcgpbs-long
- gilda-ce-01.pd.infn.it:2119/jobmanager-lcgpbs-short
- grid011f.cnaf.infn.it:2119/jobmanager-lcgpbs-infinite
- grid011f.cnaf.infn.it:2119/jobmanager-lcgpbs-long
- grid011f.cnaf.infn.it:2119/jobmanager-lcgpbs-short
- grid-ce.bio.dist.unige.it:2119/jobmanager-lcgpbs-infinite
- grid-ce.bio.dist.unige.it:2119/jobmanager-lcgpbs-long
- grid-ce.bio.dist.unige.it:2119/jobmanager-lcgpbs-short
- cn01.be.itu.edu.tr:2119/jobmanager-lcglsf-infinite
- cn01.be.itu.edu.tr:2119/jobmanager-lcglsf-long
- cn01.be.itu.edu.tr:2119/jobmanager-lcglsf-short

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Grid Enabled web eNvironment for site Independent User job Submission

RB: gilda VO: gilda Catalog: GILDA Your Data Logout

Selected Virtual Organisation name (from --config-vo option): gilda
Connecting to host glite-rb.ct.INFN.it, port 7772
Logging to host glite-rb.ct.INFN.it, port 9002

===== glite-job-submit Success =====
The job has been successfully submitted to the Network Server.
Use glite-job-status command to check job current status. Your job identifier is:

- https://glite-rb.ct.infn.it:9000/I1RfvGps8s1_vCS4-mxVAA

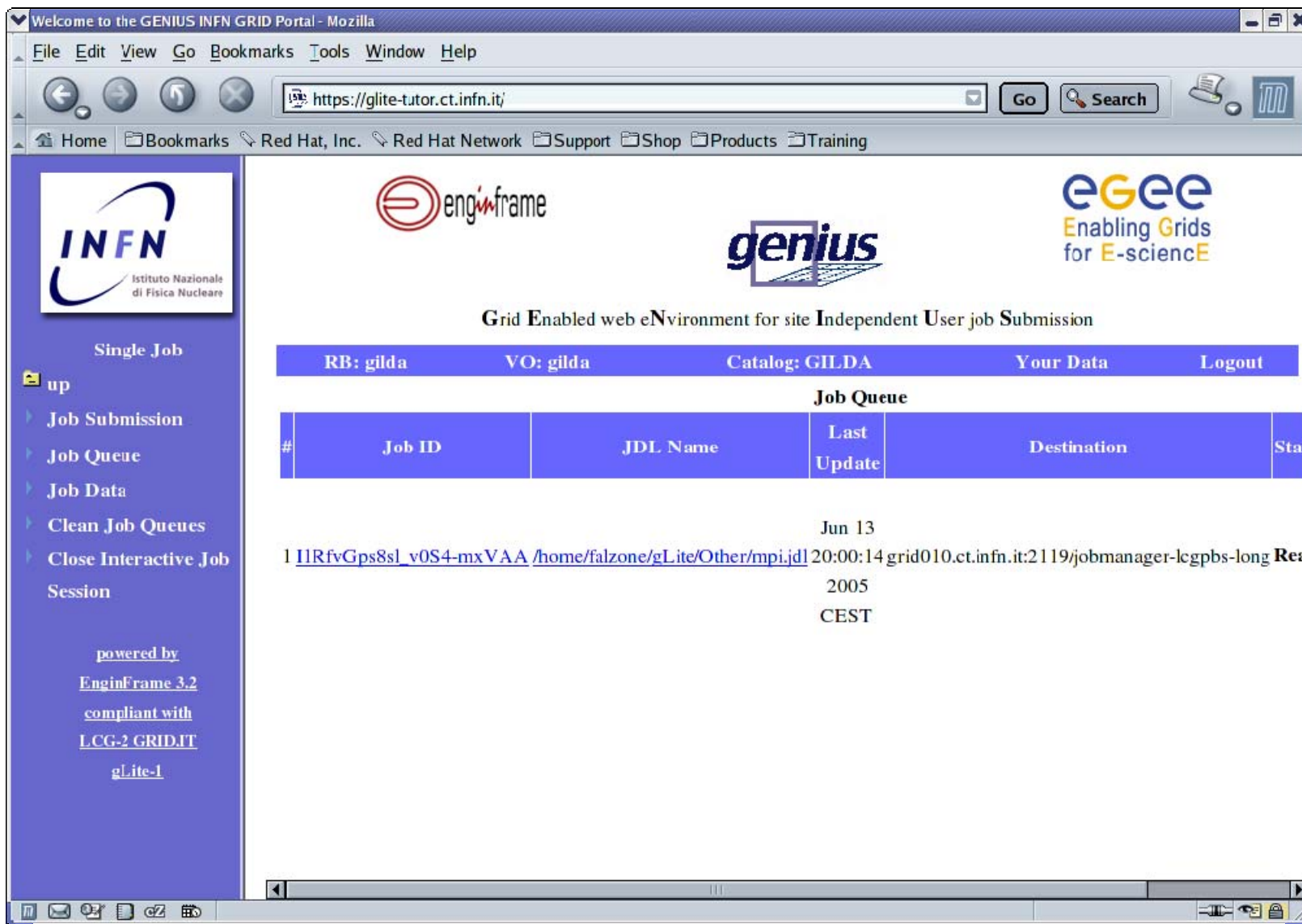
The job identifier has been saved in the following file:
/home/falzone/.genius/.tmp_subnittedjob_falzone
=====

Single Job

up

- Job Submission
- Job Queue
- Job Data
- Clean Job Queues
- Close Interactive Job Session

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RB: gilda VO: gilda Catalog: GILDA Your Data Logout

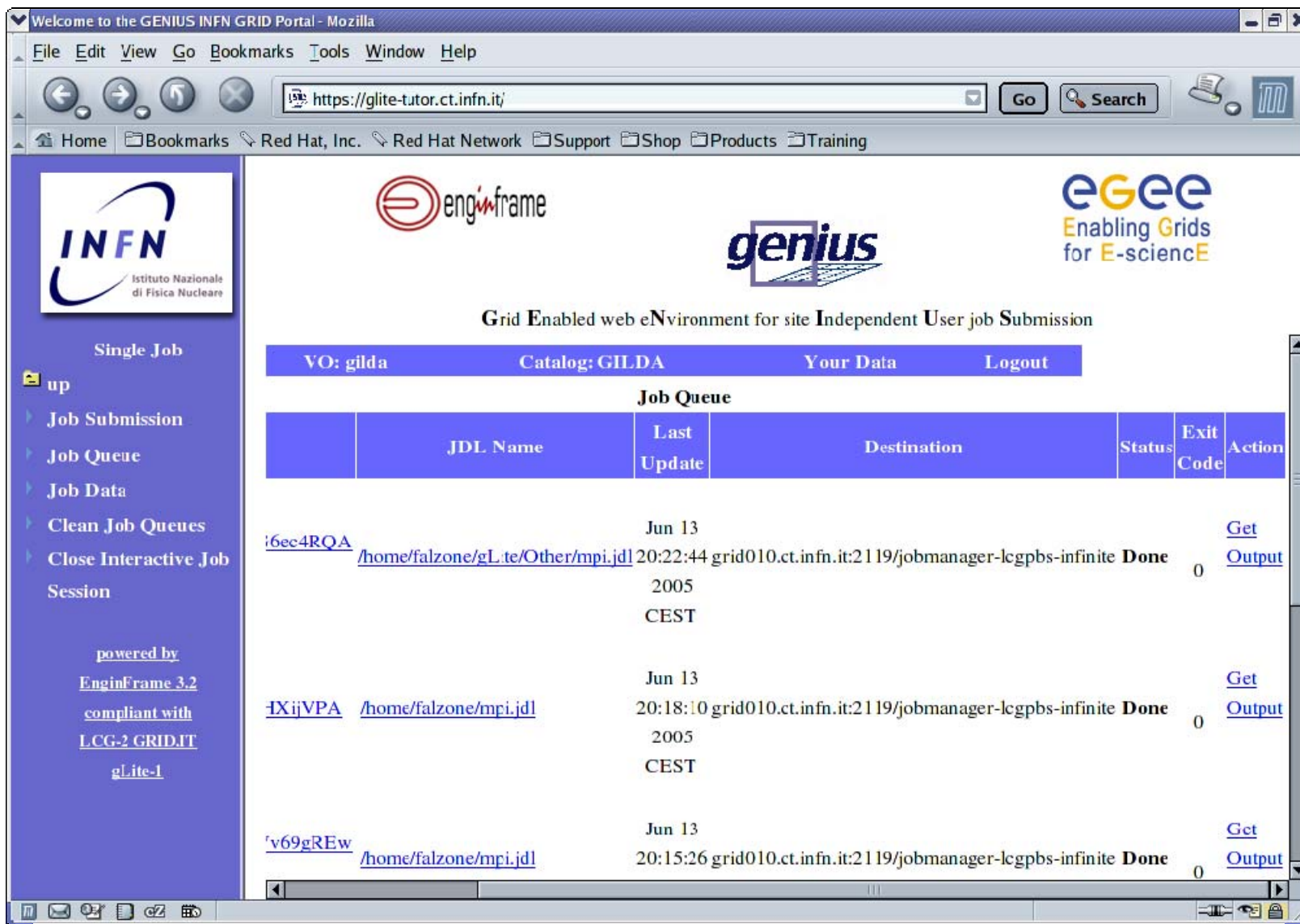
Single Job

- up
- Job Submission
- Job Queue
- Job Data
- Clean Job Queues
- Close Interactive Job Session

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Job Queue

#	Job ID	JDL Name	Last Update	Destination	Status
1	IIRfvGps8sl_v0S4-mxVAA	/home/falzone/gLite/Other/mpi.jdl	20:00:14 2005 CEST	grid010.ct.infn.it:2119/jobmanager-lcgpbs-long	Rea







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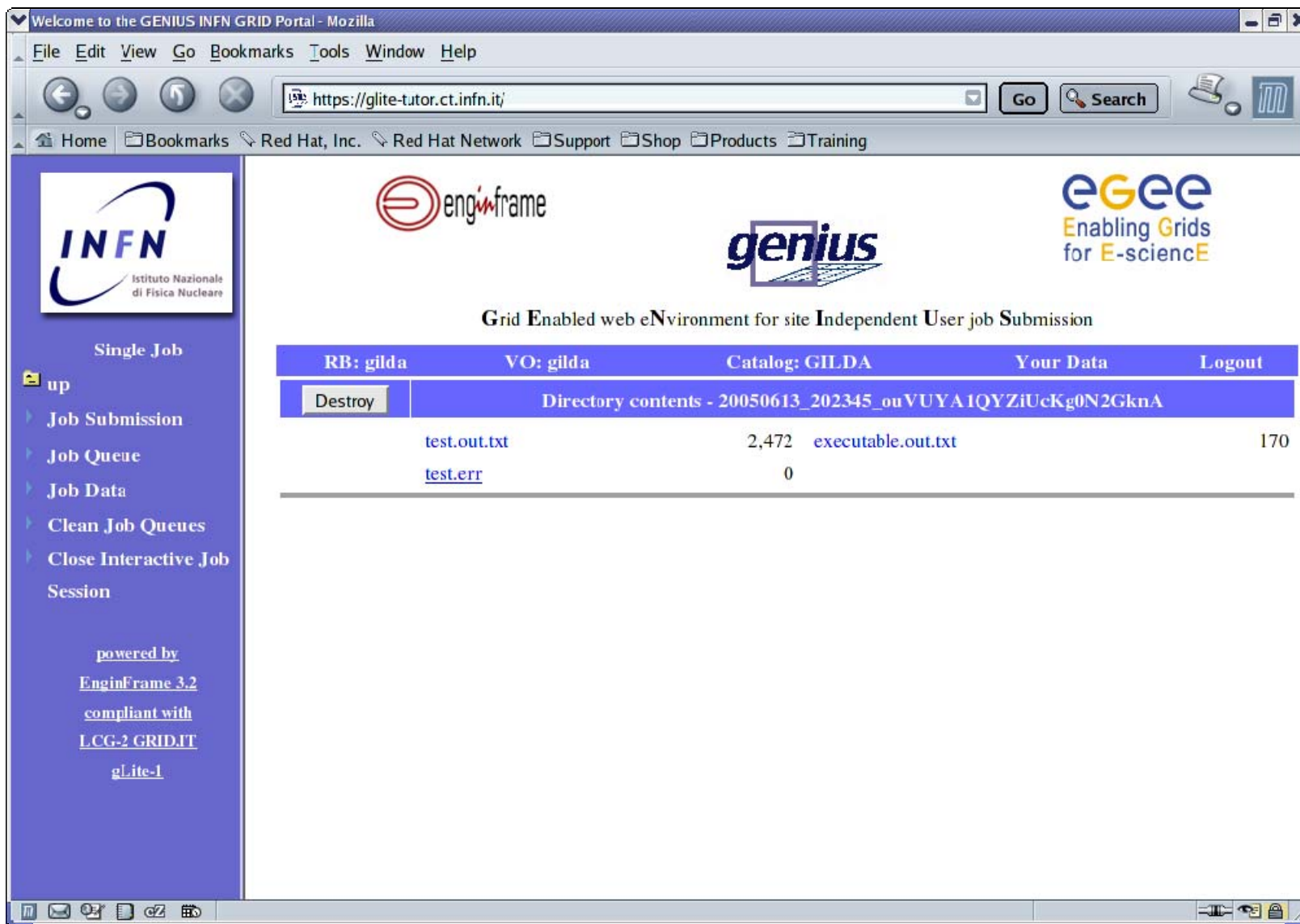
Grid Enabled web eNvironment for site Independent User job Submission

VO: gilda Catalog: GILDA Your Data Logout

Job Queue

JDL Name	Last Update	Destination	Status	Exit Code	Action
i6ec4RQA /home/falzone/gLite/Other/mpi.jdl	Jun 13 20:22:44	grid010.ct.infn.it:2119/jobmanager-lcgpbs-infinite	Done	0	Get Output
IXijVPA /home/falzone/mpi.jdl	Jun 13 20:18:10	grid010.ct.infn.it:2119/jobmanager-lcgpbs-infinite	Done	0	Get Output
v69gREw /home/falzone/mpi.jdl	Jun 13 20:15:26	grid010.ct.infn.it:2119/jobmanager-lcgpbs-infinite	Done	0	Get Output

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RB: gilda VO: gilda Catalog: GILDA Your Data Logout

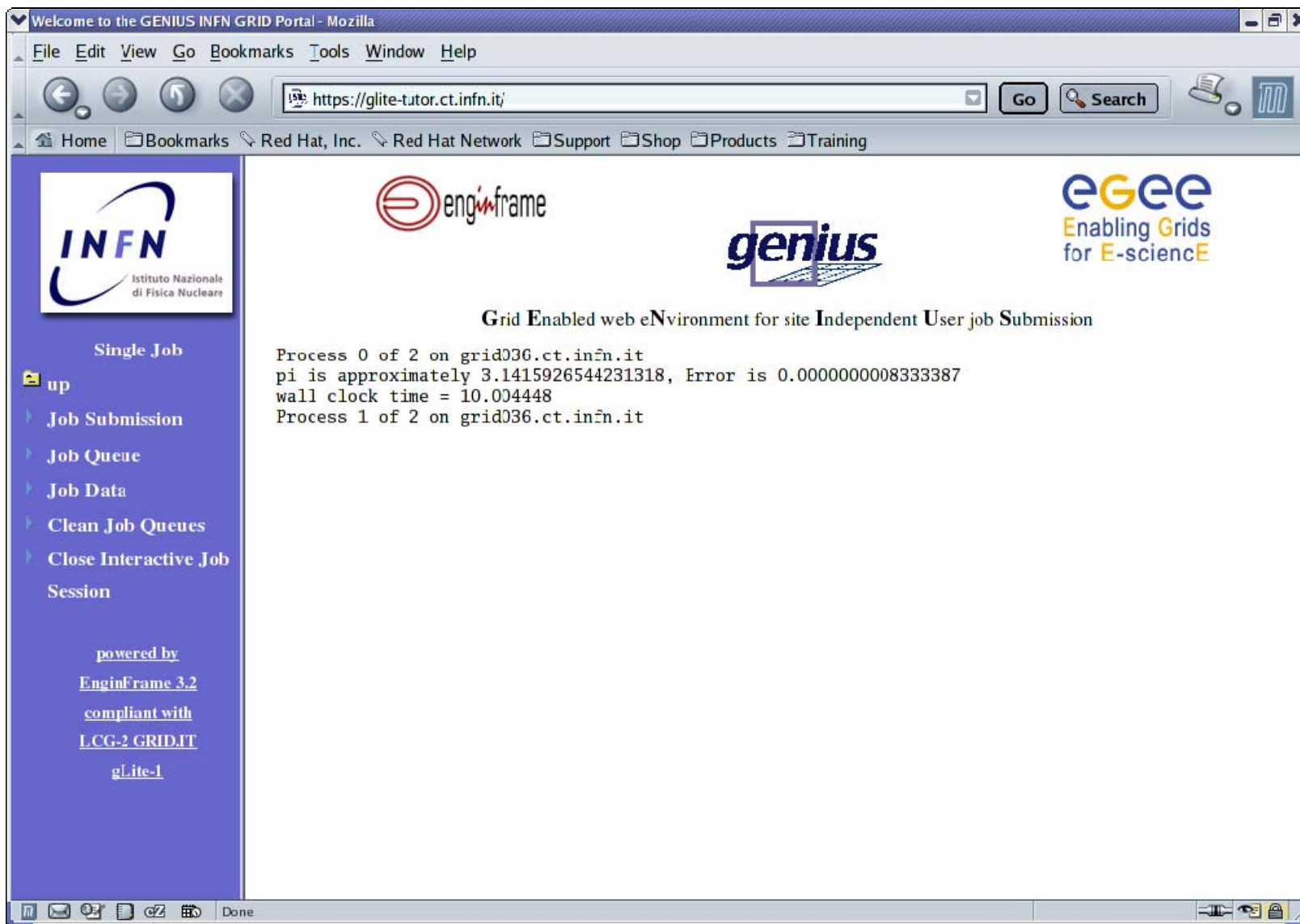
Destroy Directory contents - 20050613_202345_ouVUYA1QYZiUcKg0N2GknA

test.out.txt	2,472	executable.out.txt	170
test.err	0		

Single Job

- up
- Job Submission
- Job Queue
- Job Data
- Clean Job Queues
- Close Interactive Job Session

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Process 0 of 2 on grid036.ct.infn.it
pi is approximately 3.1415926544231318, Error is 0.0000000008333387
wall clock time = 10.004448
Process 1 of 2 on grid036.ct.infn.it

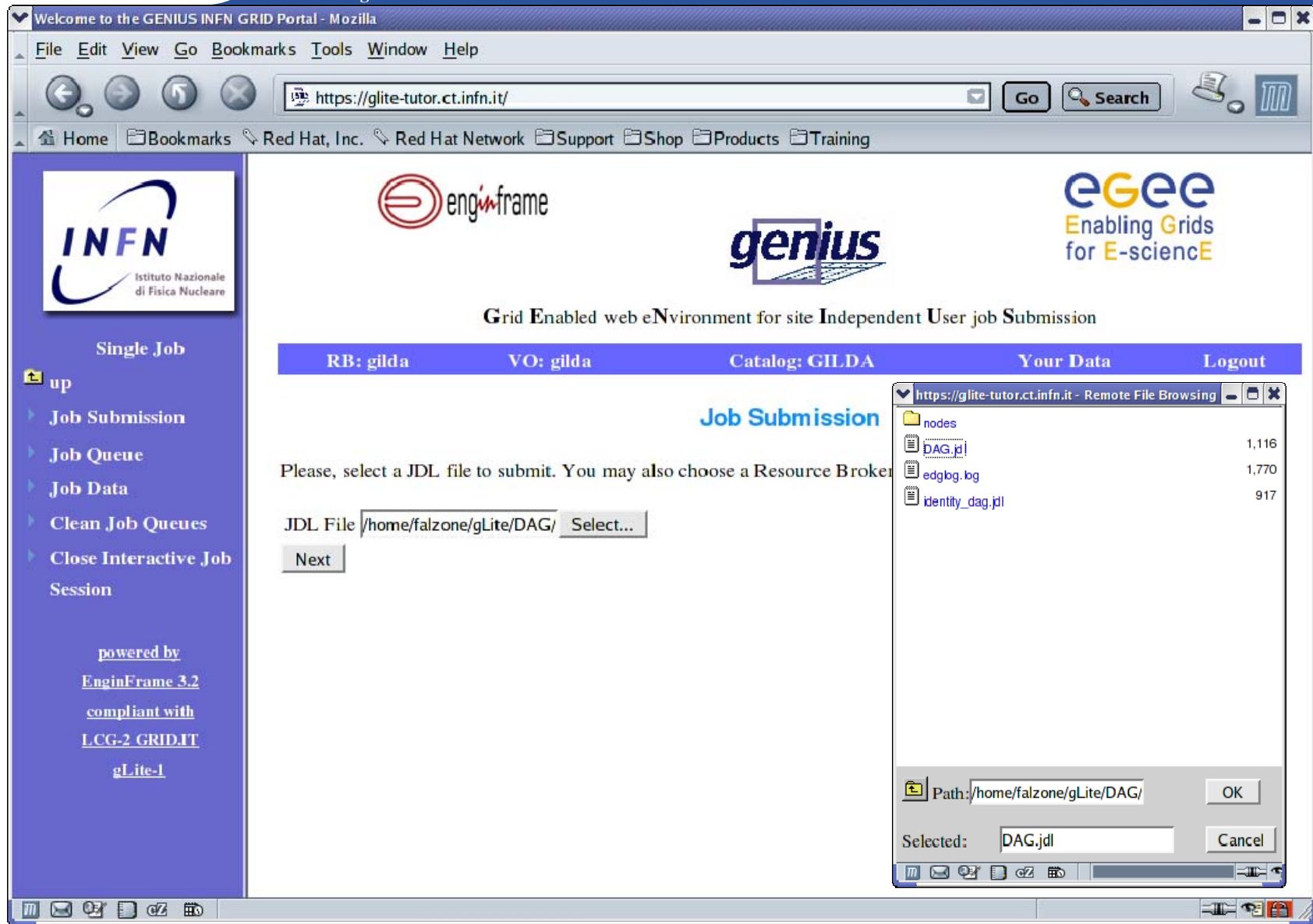
Single Job

up

- Job Submission
- Job Queue
- Job Data
- Clean Job Queues
- Close Interactive Job Session

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Done



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RB: gilda VO: gilda Catalog: GILDA Your Data Logout

Job Submission

Please, select a JDL file to submit. You may also choose a Resource Broker

JDL File

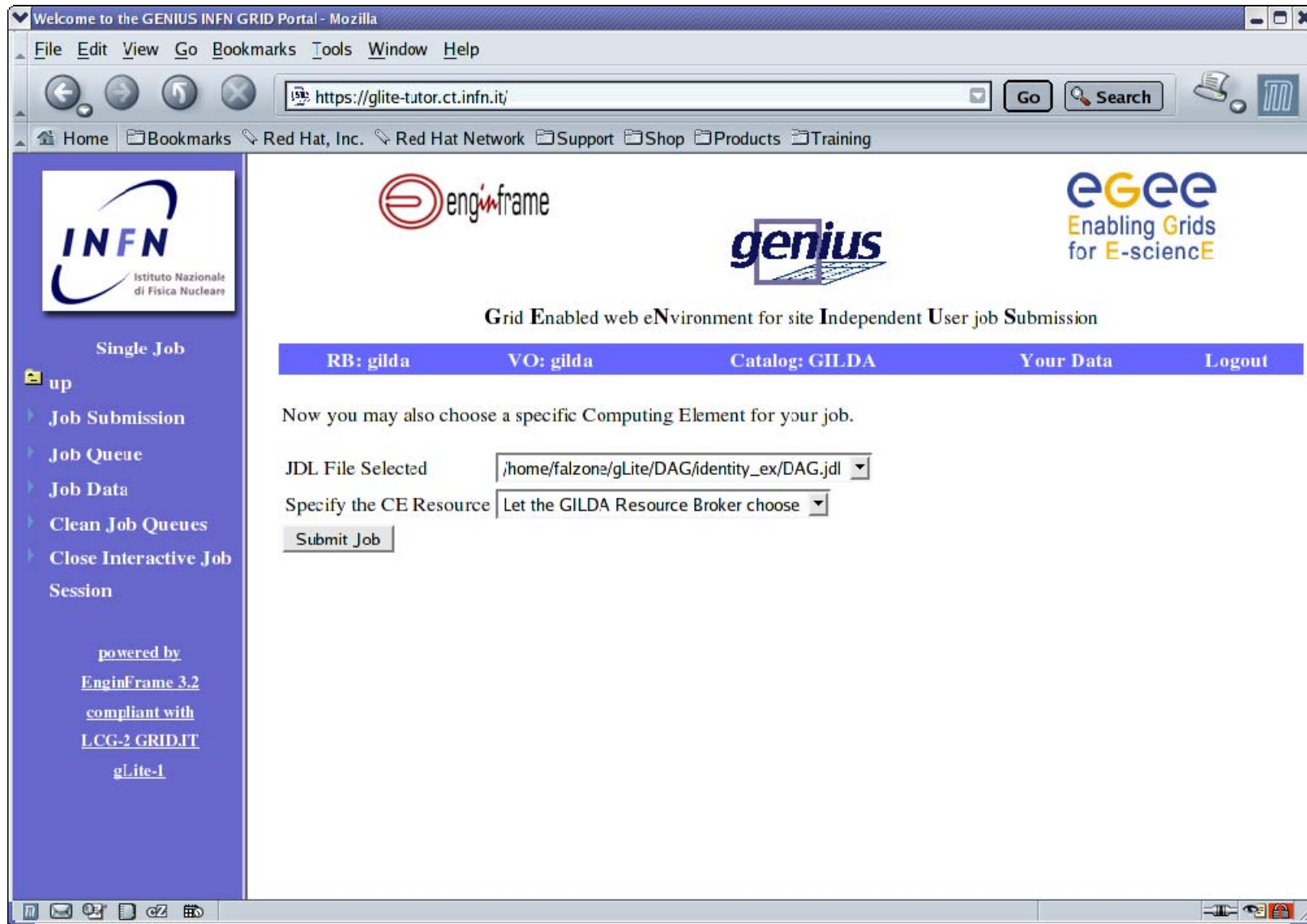
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nodes	
DAG.jdl	1,116
edglog.bg	1,770
identity_dag.jdl	917

Path: /home/falzone/gLite/DAG/

Selected: DAG.jdl




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Single Job

up

- ▶ Job Submission
- ▶ Job Queue
- ▶ Job Data
- ▶ Clean Job Queues
- ▶ Close Interactive Job Session

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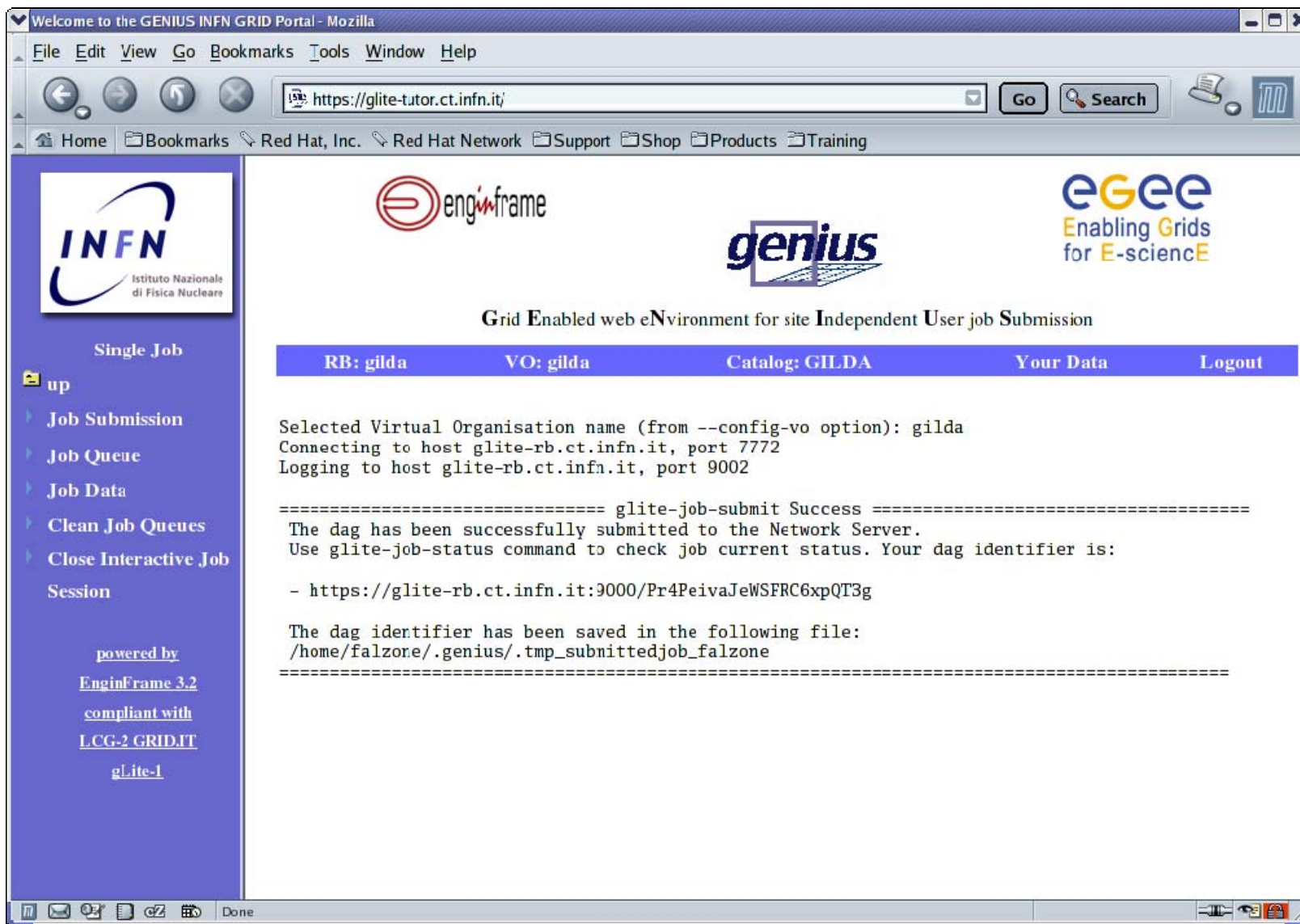
Grid Enabled web eNvironment for site Independent User job Submission

RB: gilda
VO: gilda
Catalog: GILDA
Your Data
Logout

Now you may also choose a specific Computing Element for your job.

JDL File Selected

Specify the CE Resource



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RB: gilda VO: gilda Catalog: GILDA Your Data Logout

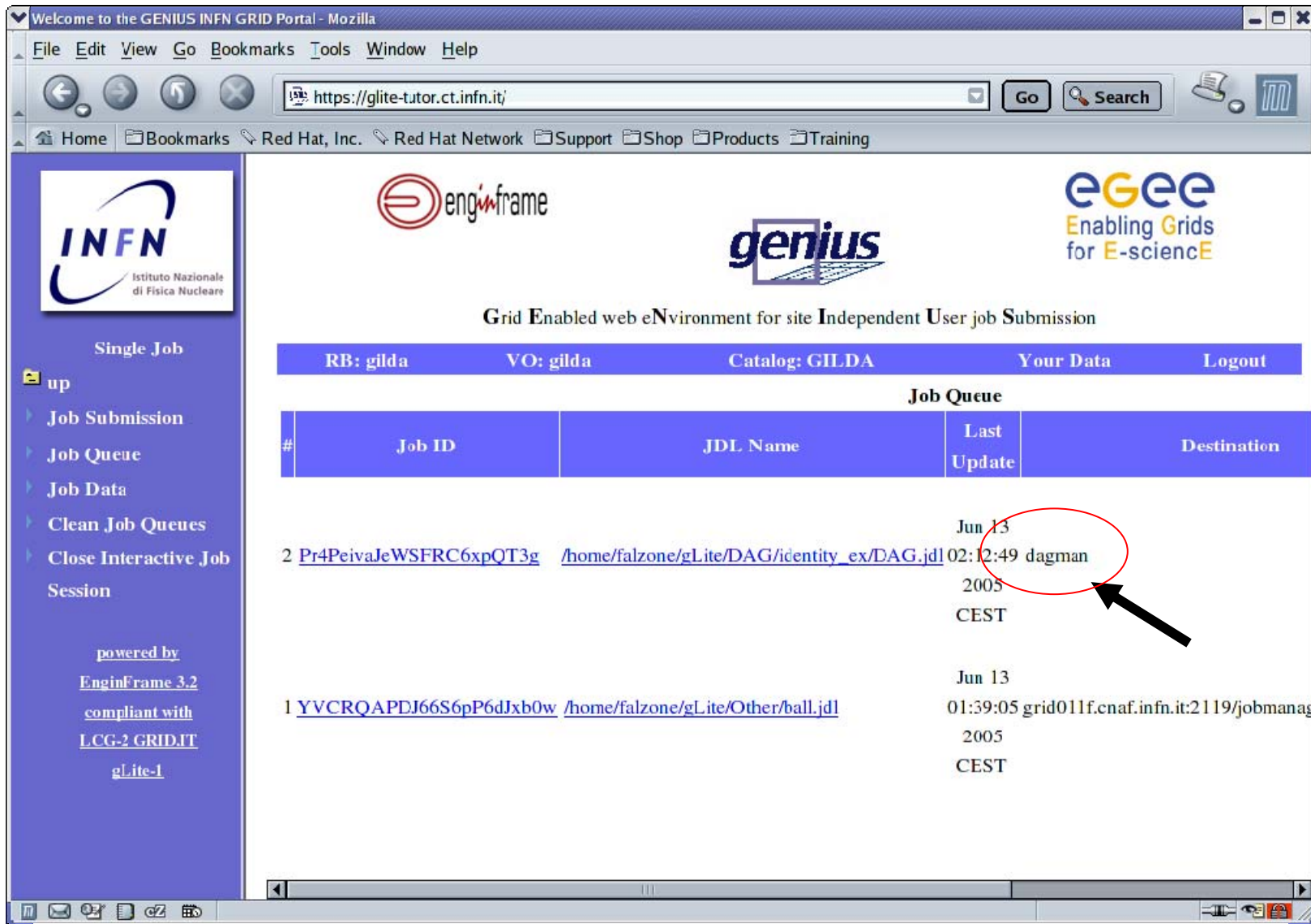
Selected Virtual Organisation name (from --config-vo option): gilda
 Connecting to host glite-rb.ct.infn.it, port 7772
 Logging to host glite-rb.ct.infn.it, port 9002

===== glite-job-submit Success =====
 The dag has been successfully submitted to the Network Server.
 Use glite-job-status command to check job current status. Your dag identifier is:

- https://glite-rb.ct.infn.it:9000/Pr4PeivaJeWSFRC6xpQT3g

The dag identifier has been saved in the following file:
 /home/falzone/.genius/.tmp_submittedjob_falzone
 =====

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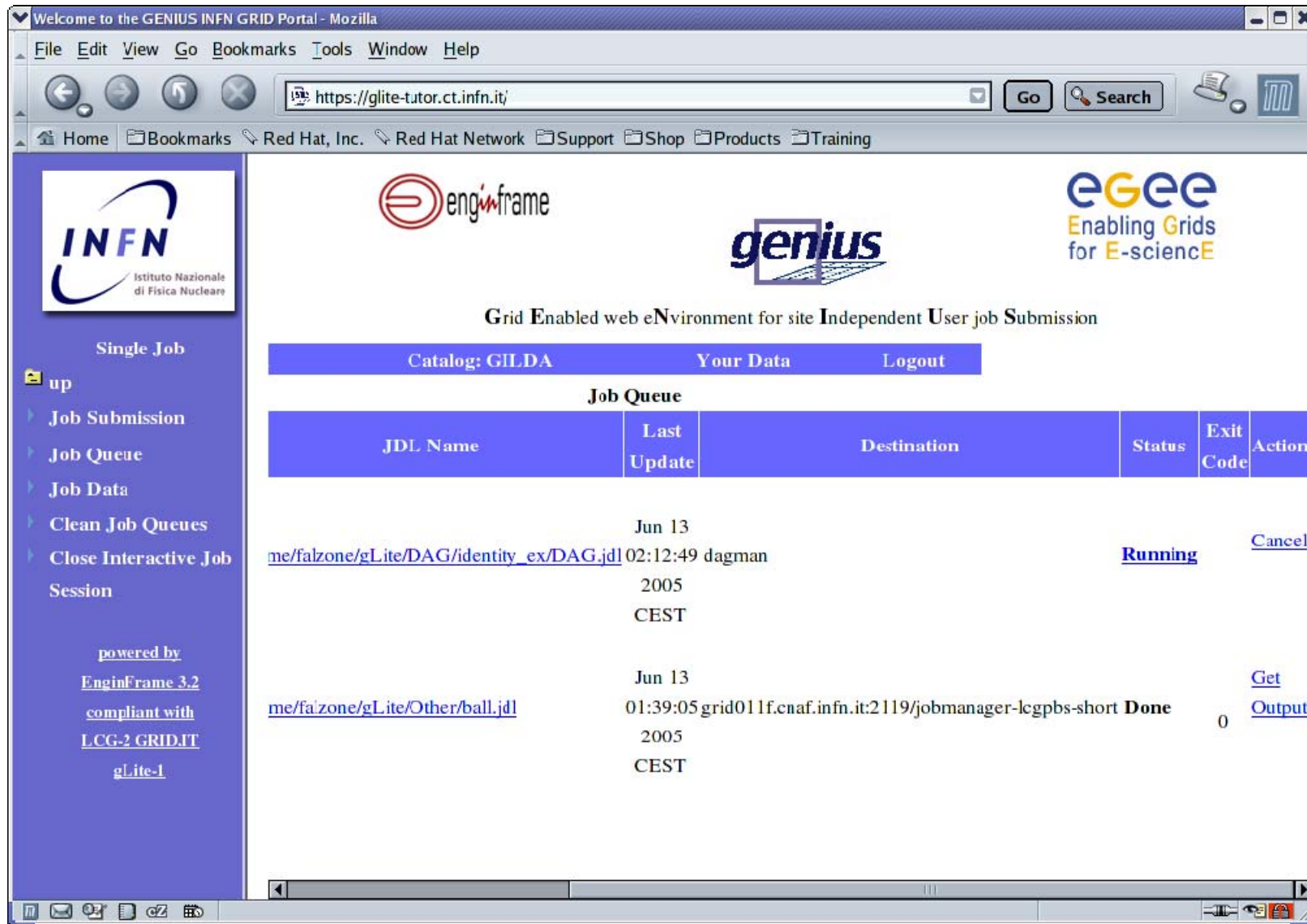
Grid Enabled web eNvironment for site Independent User job Submission

RB: gilda VO: gilda Catalog: GILDA Your Data Logout

Job Queue

#	Job ID	JDL Name	Last Update	Destination
2	Pr4PeivaJeWSFRC6xpQT3g	/home/falzone/gLite/DAG/identity_ex/DAG.jdl	Jun 13 02:12:49	dagman
1	YVCRQAPDJ66S6pP6dJxb0w	/home/falzone/gLite/Other/ball.jdl	Jun 13 01:39:05	grid011f.cnaf.infn.it:2119/jobmanag

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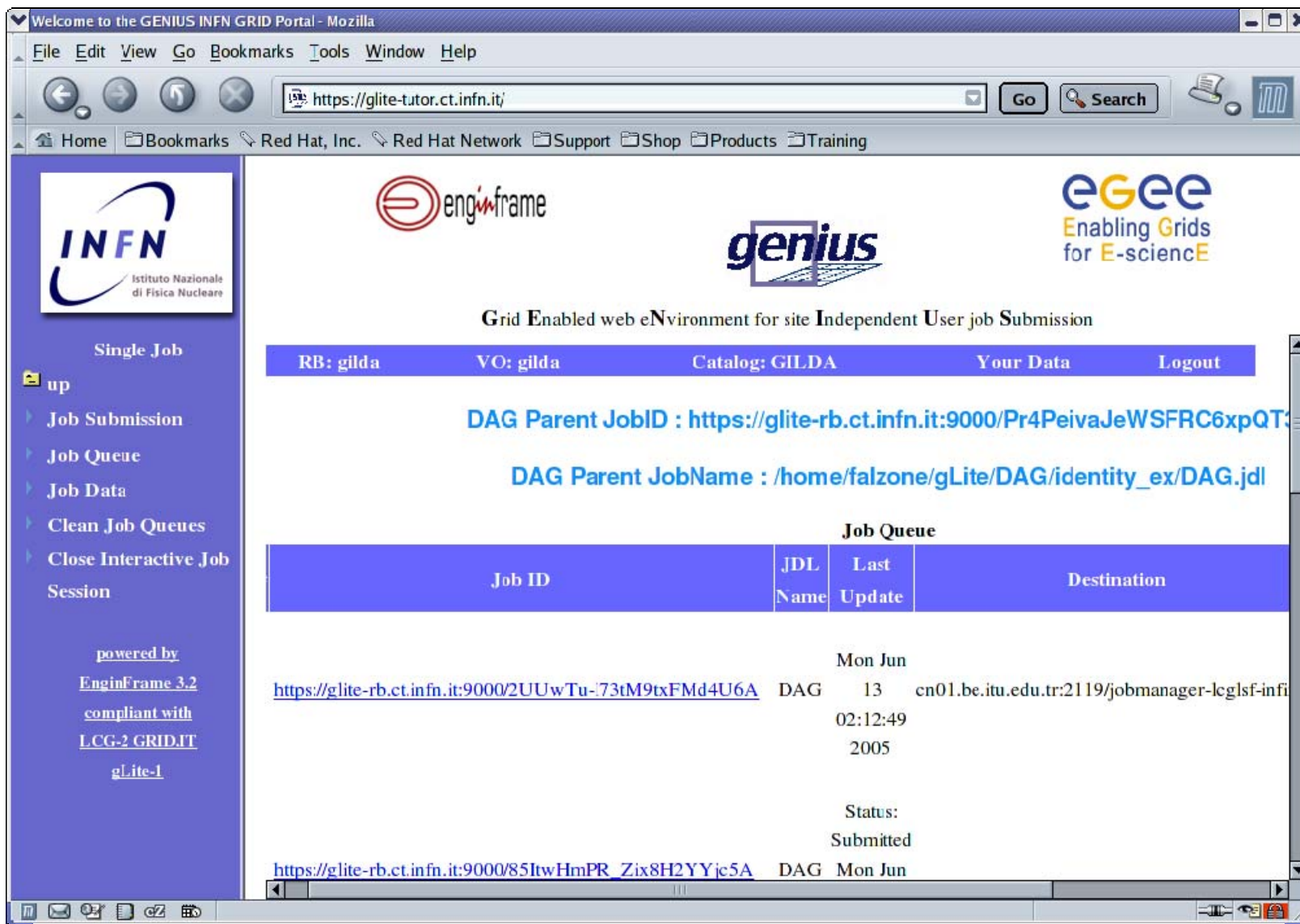
Grid Enabled web eNvironment for site Independent User job Submission

Catalog: GILDA Your Data Logout

Job Queue

JDL Name	Last Update	Destination	Status	Exit Code	Action
me/falzone/gLite/DAG/identity_ex/DAG.jdl	Jun 13 02:12:49	dagman	Running		Cancel
me/falzone/gLite/Other/ball.jdl	Jun 13 01:39:05	grid011f.enaf.infn.it:2119/jobmanager-legpbs-short	Done	0	Get Output

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Single Job

- up
- Job Submission
- Job Queue
- Job Data
- Clean Job Queues
- Close Interactive Job Session

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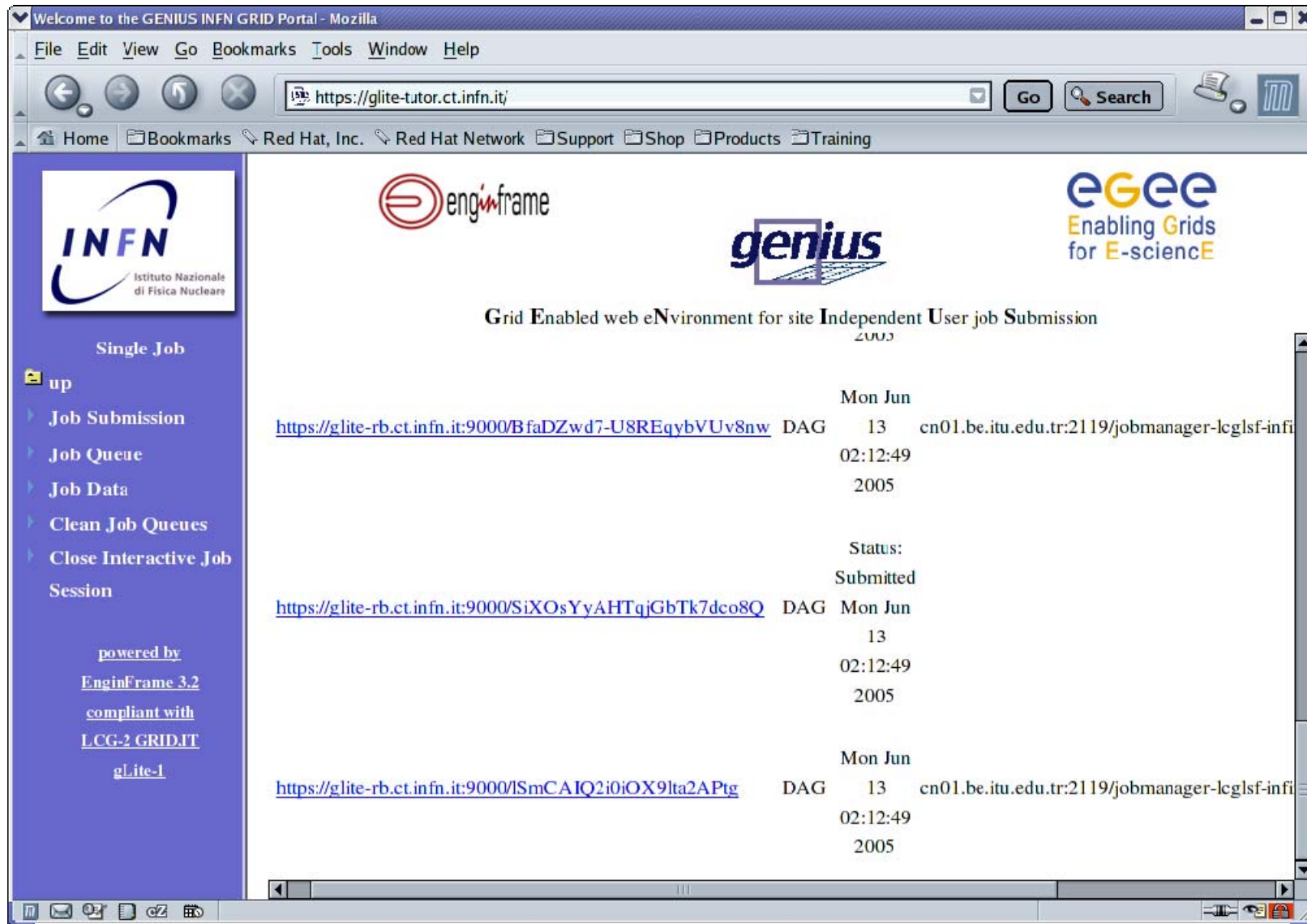
RB: gilda VO: gilda Catalog: GILDA Your Data Logout

DAG Parent JobID : <https://glite-rb.ct.infn.it:9000/Pr4PeivaJeWSFRC6xpQT>

DAG Parent JobName : /home/falzone/gLite/DAG/identity_ex/DAG.jdl

Job Queue

Job ID	JDL Name	Last Update	Destination
https://glite-rb.ct.infn.it:9000/2UUwTu-73tM9txFMd4U6A	DAG	Mon Jun 13 02:12:49 2005	cn01.be.itu.edu.tr:2119/jobmanager-lcglsf-infi
https://glite-rb.ct.infn.it:9000/85ltwHmPR_Zix8H2YYjc5A	DAG	Mon Jun	Status: Submitted







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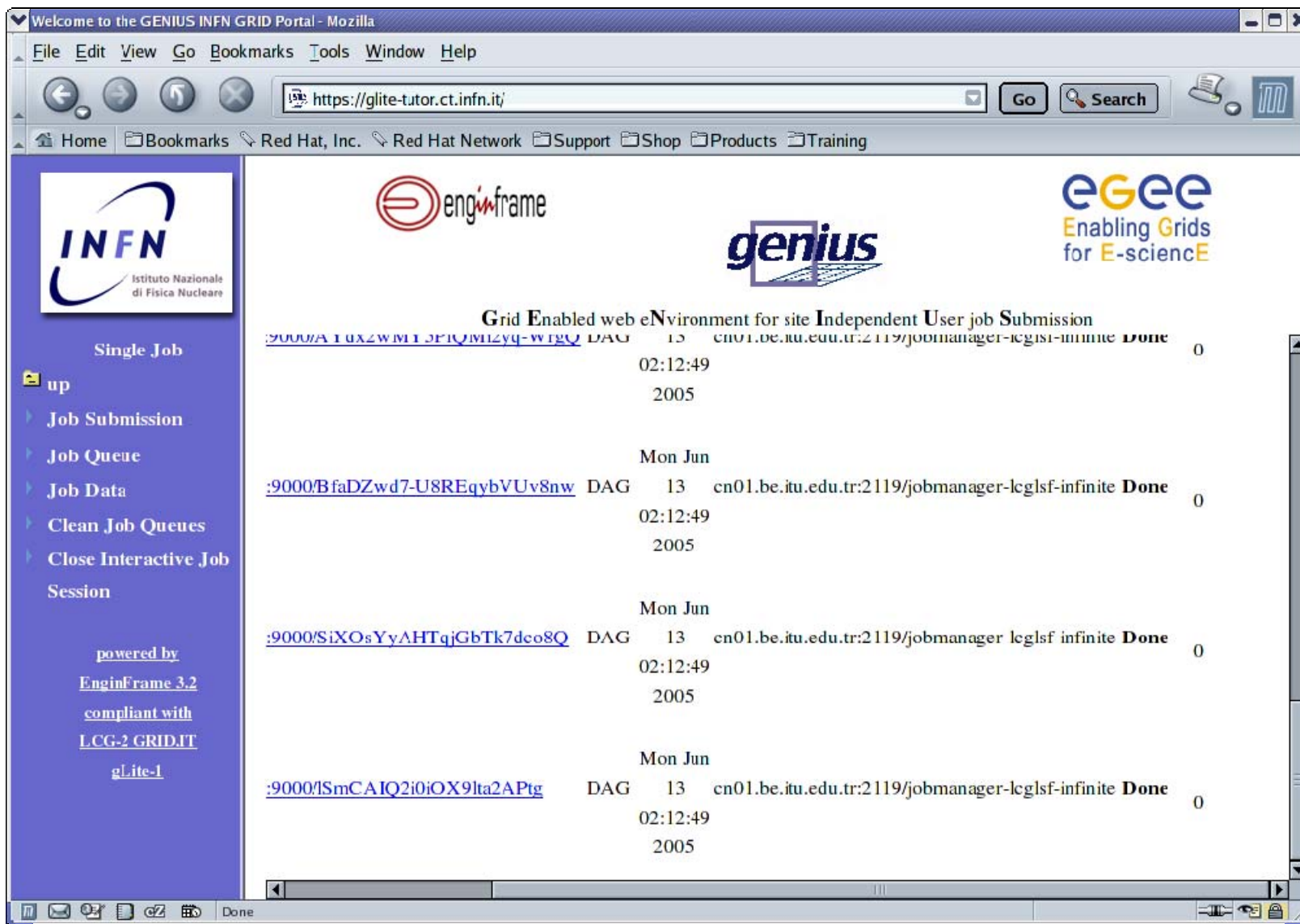
2005

Single Job

- up
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- Job Queue
- Job Data
- Clean Job Queues
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URL	Type	Mon	Jun	Time	Year	Status
https://glite-rb.ct.infn.it:9000/BfaDZwd7-U8REqybVUv8nw	DAG	13	cn01.be.itu.edu.tr:2119/jobmanager-lcglsf-infn	02:12:49	2005	Submitted
https://glite-rb.ct.infn.it:9000/SiXOsYyAHTqjGbTk7dco8Q	DAG	13	cn01.be.itu.edu.tr:2119/jobmanager-lcglsf-infn	02:12:49	2005	Submitted
https://glite-rb.ct.infn.it:9000/ISmCAIQ2i0iOX9lta2APtg	DAG	13	cn01.be.itu.edu.tr:2119/jobmanager-lcglsf-infn	02:12:49	2005	Submitted



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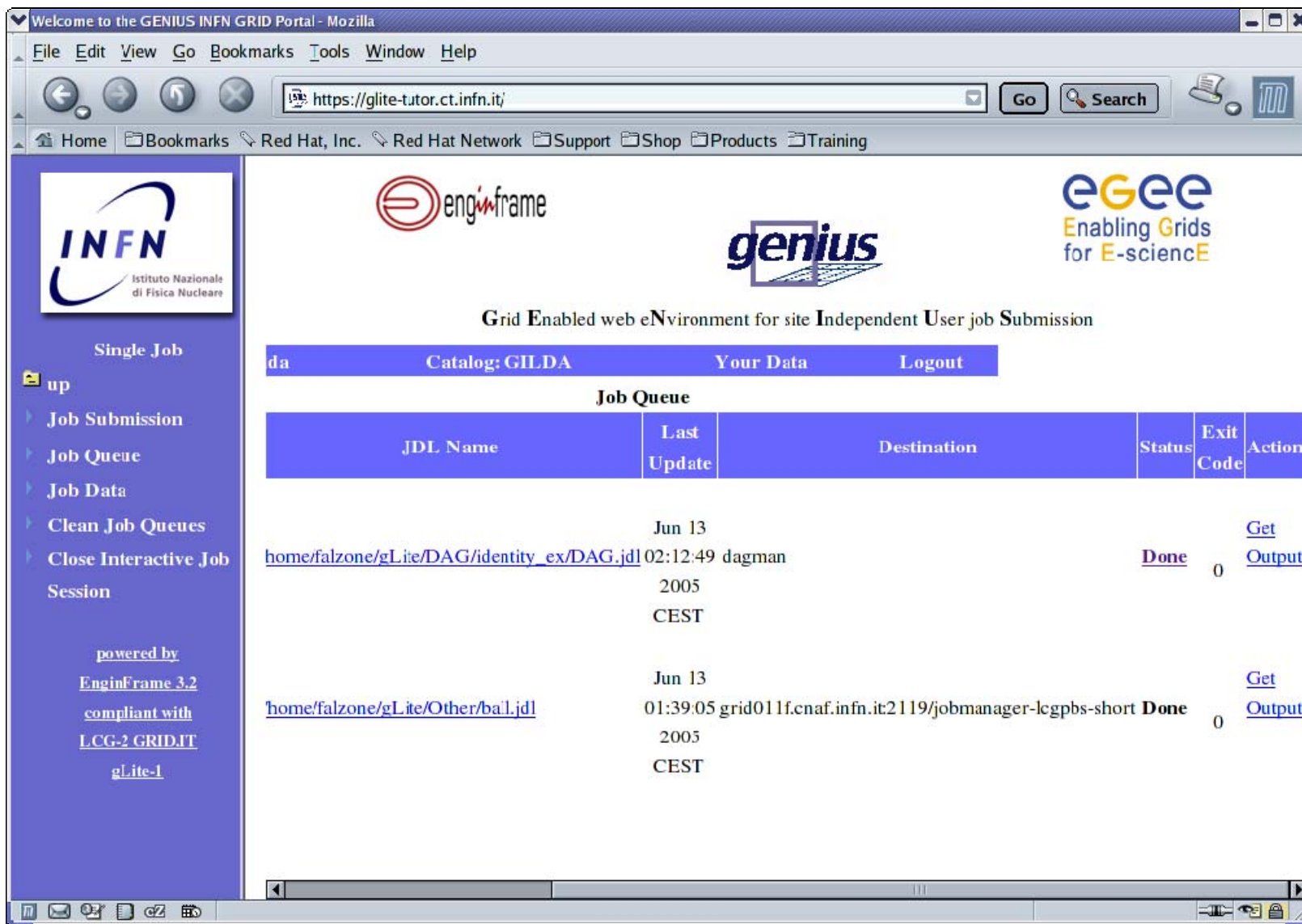
Grid Enabled web eNvironment for site Independent User job Submission

Job ID	Type	Status	Completion Time	Progress
:9000/A1UXZWM1JFTQMLZyq-wf2Q	DAG	13	cn01.be.itu.edu.tr:2119/jobmanager-lcgisf-infinite	Done 0
			02:12:49 2005	
			Mon Jun	
:9000/BfaDZwd7-U8REqybVUv8nw	DAG	13	cn01.be.itu.edu.tr:2119/jobmanager-lcglsf-infinite	Done 0
			02:12:49 2005	
			Mon Jun	
:9000/SiXOsYyAHTqjGbTk7deo8Q	DAG	13	cn01.be.itu.edu.tr:2119/jobmanager-lcglsf-infinite	Done 0
			02:12:49 2005	
			Mon Jun	
:9000/ISmCAIQ2i0iOX9lta2APtg	DAG	13	cn01.be.itu.edu.tr:2119/jobmanager-lcglsf-infinite	Done 0
			02:12:49 2005	

Single Job

- up
- Job Submission
- Job Queue
- Job Data
- Clean Job Queues
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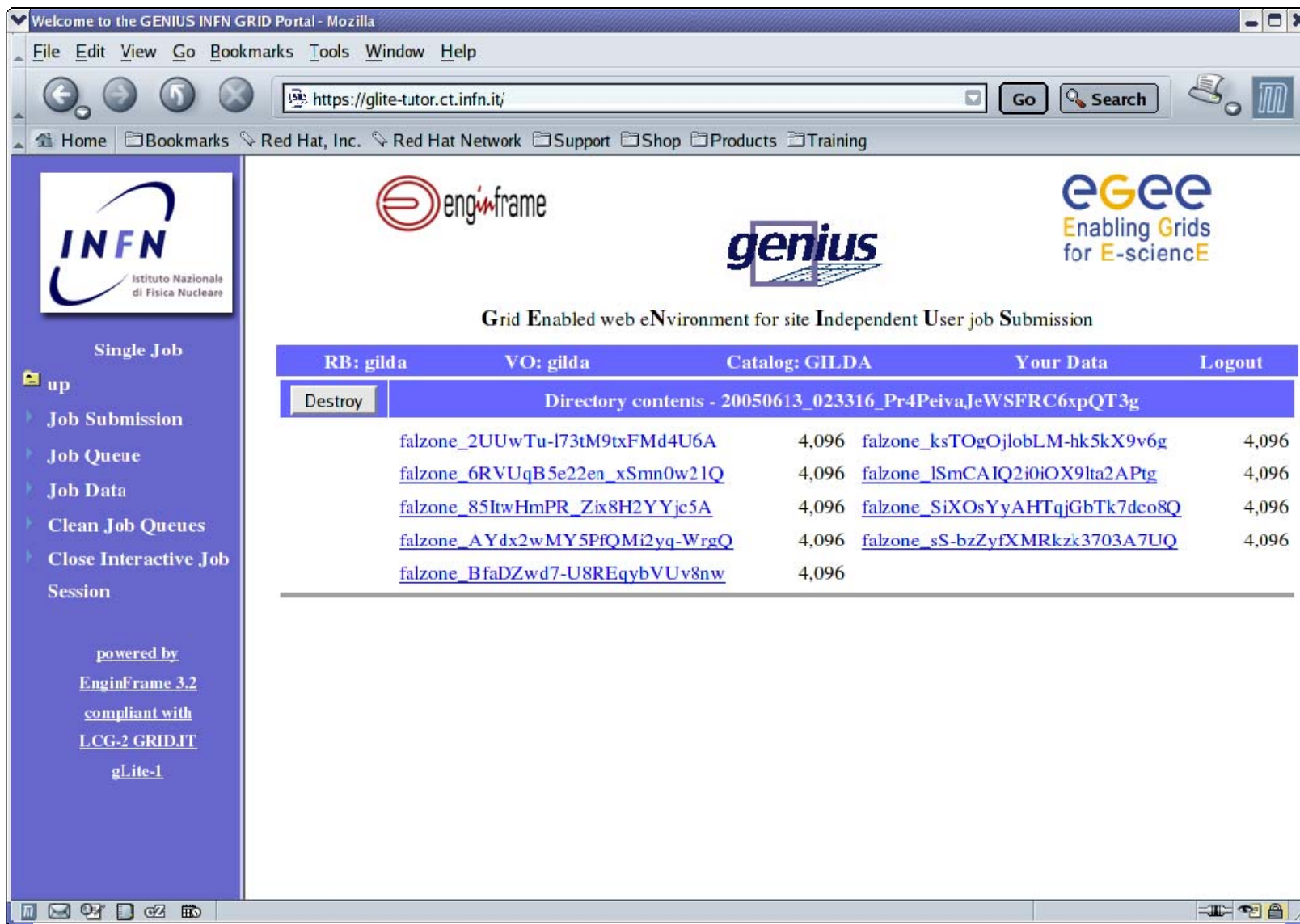
Grid Enabled web eNvironment for site Independent User job Submission

da Catalog: GILDA Your Data Logout

Job Queue

JDL Name	Last Update	Destination	Status	Exit Code	Action
home/falzone/gLite/DAG/identity_ex/DAG.jdl	Jun 13 02:12:49	dagman	Done	0	Get Output
home/falzone/gLite/Other/ba1.jdl	Jun 13 01:39:05	grid011f.cnaf.infn.it:2119/jobmanager-lcgpbs-short	Done	0	Get Output

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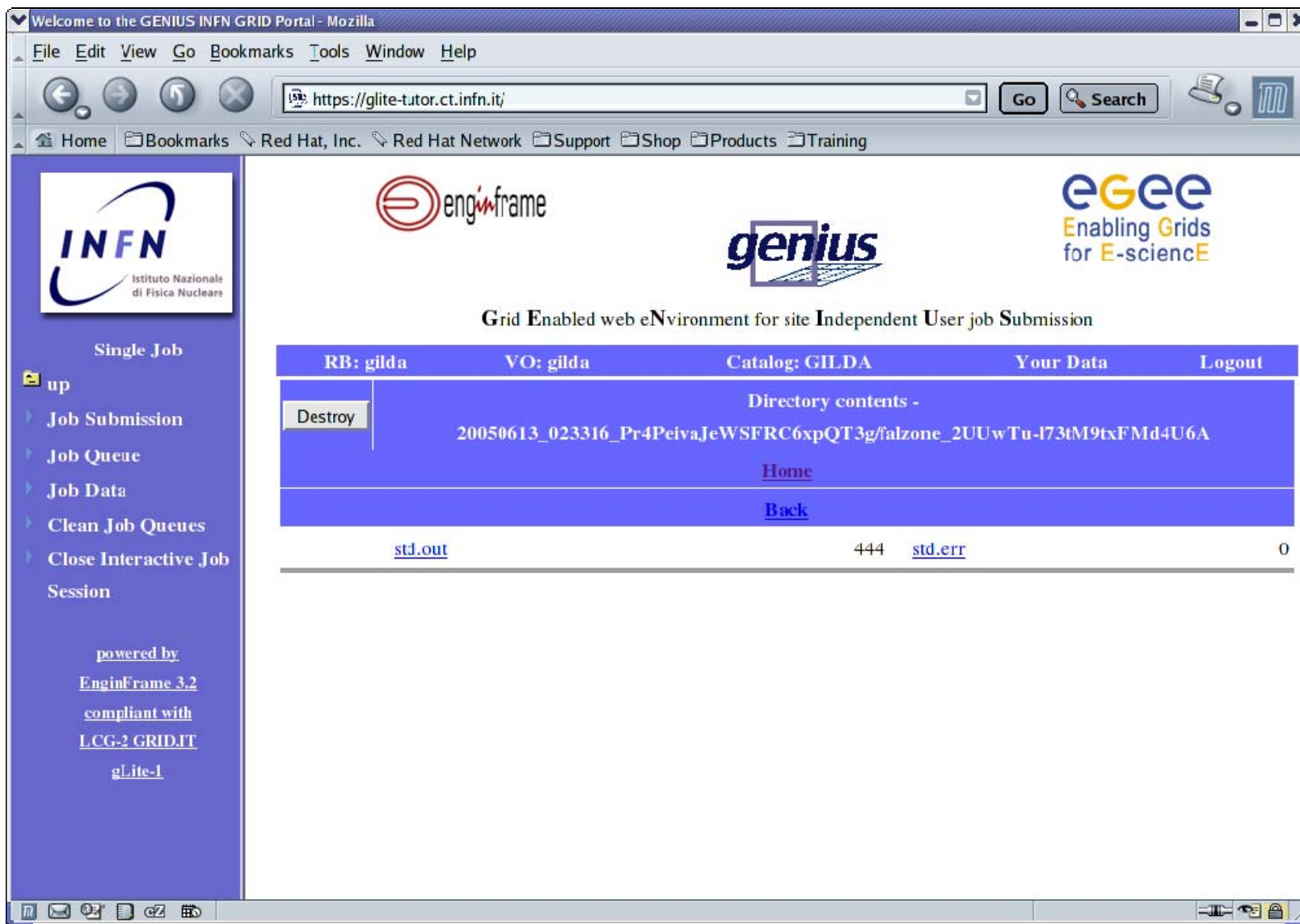
Grid Enabled web eNvironment for site Independent User job Submission

RB: gilda VO: gilda Catalog: GILDA Your Data Logout

Destroy Directory contents - 20050613_023316_Pr4PeivaJeWSFRC6xpQT3g

falzone_2UUwTu-l73tM9txFMd4U6A	4,096	falzone_ksTOgOjloLM-hk5kX9v6g	4,096
falzone_6RVUqB5e22en_xSrn0w21Q	4,096	falzone_lSmCAIQ2i0iOX9lta2APtg	4,096
falzone_85ltwHmPR_Zix8H2YYjc5A	4,096	falzone_SiXOsYyAHTqjGbTk7dco8Q	4,096
falzone_AYdx2wMY5PfQMi2yq-WrgQ	4,096	falzone_sS-bzZyfXMRkzk3703A7UIQ	4,096
falzone_BfaDZwd7-U8REqybVUv8nw	4,096		

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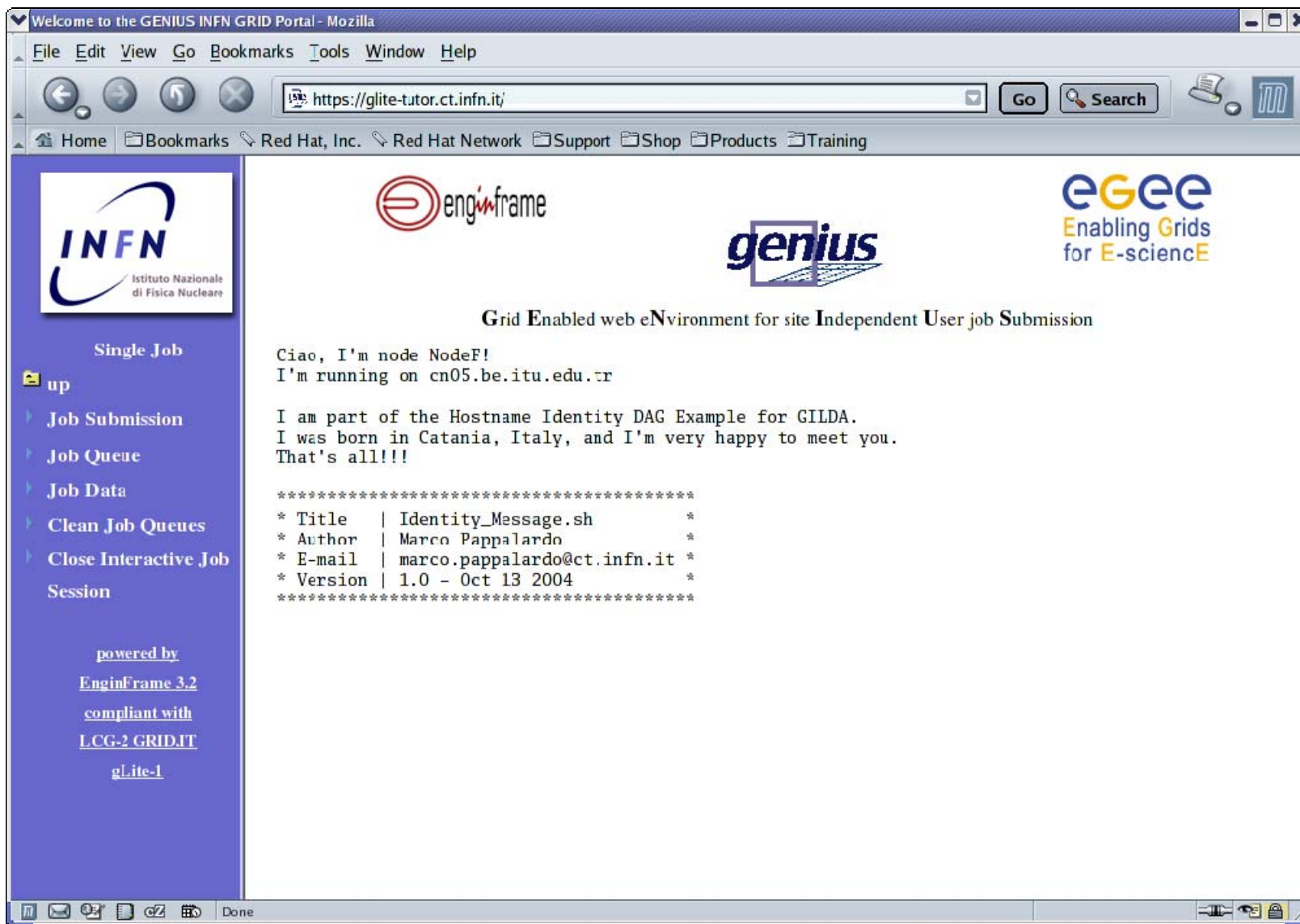





Grid Enabled web eNvironment for site Independent User job Submission

RB: gilda	VO: gilda	Catalog: GILDA	Your Data	Logout
Directory contents -				
Destroy 20050613_023316_Pr4Peiva,JeWSFRC6xpQT3g/falzone_2UUwTu-173tM9txFMd4U6A				
Home Back				
std.out		444	std.err	
			0	

Single Job
 up
 Job Submission
 Job Queue
 Job Data
 Clean Job Queues
 Close Interactive Job Session

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Ciao, I'm node NodeF!
I'm running on cn05.be.itu.edu.tr

I am part of the Hostname Identity DAG Example for GILDA.
I was born in Catania, Italy, and I'm very happy to meet you.
That's all!!!

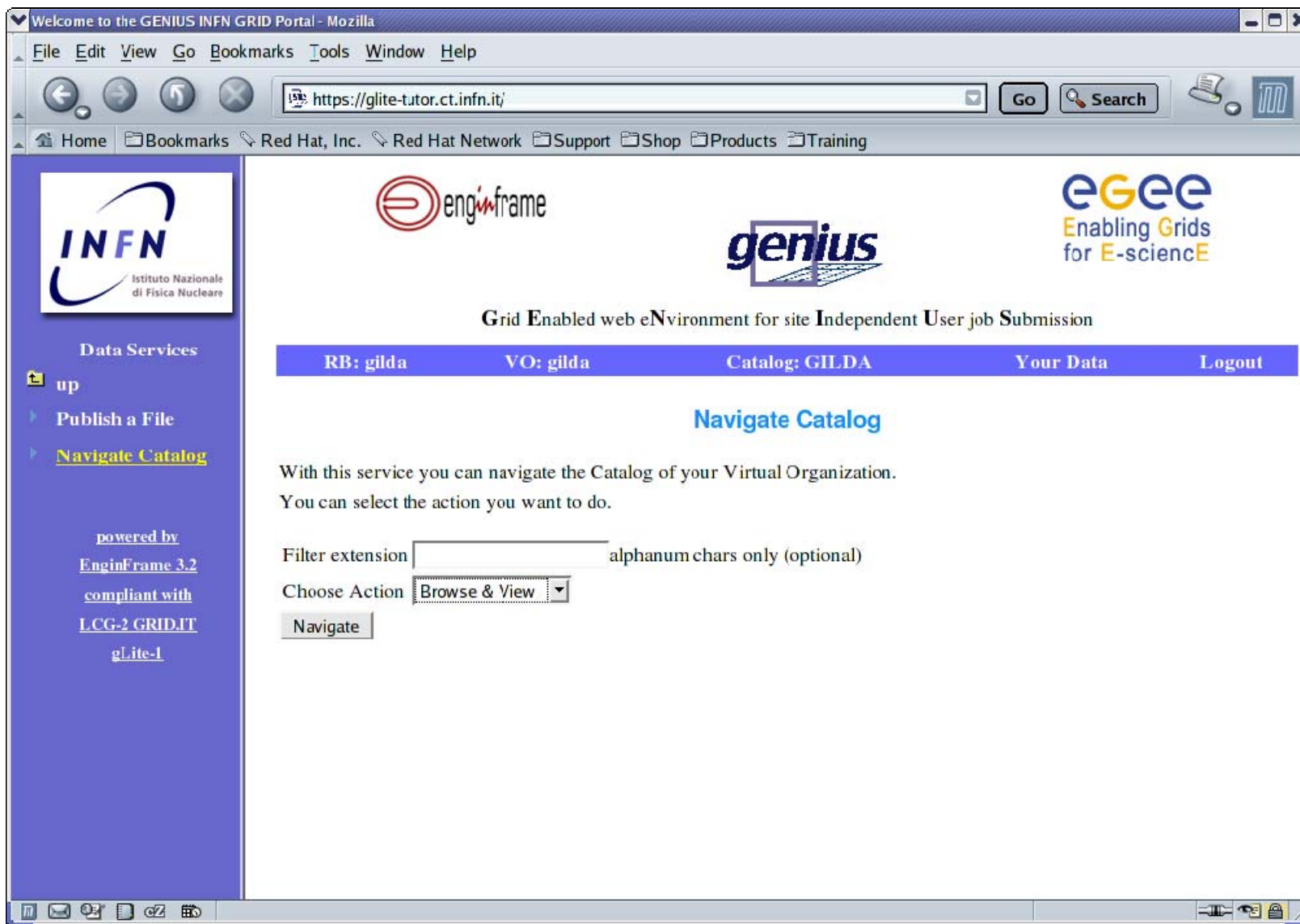
```

*****
* Title   | Identity_Message.sh      *
* Author  | Marco Pappalardo         *
* E-mail  | marco.pappalardo@ct.infn.it *
* Version | 1.0 - Oct 13 2004        *
*****

```

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RB: gilda VO: gilda Catalog: GILDA Your Data Logout

Navigate Catalog

With this service you can navigate the Catalog of your Virtual Organization.
You can select the action you want to do.

Filter extension alphanum chars only (optional)

Choose Action **Browse & View**

Navigate

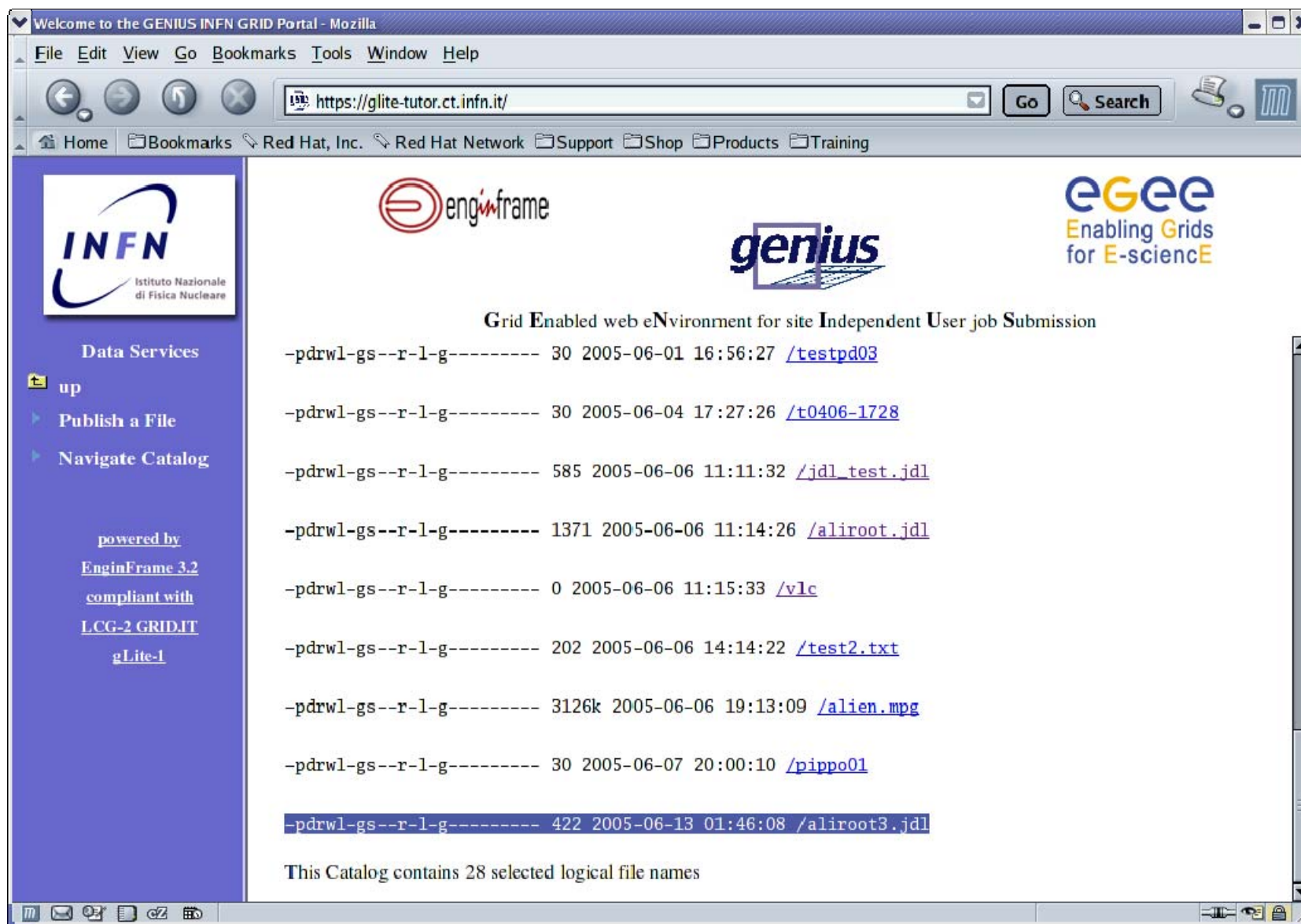
Data Services

up

Publish a File

[Navigate Catalog](#)

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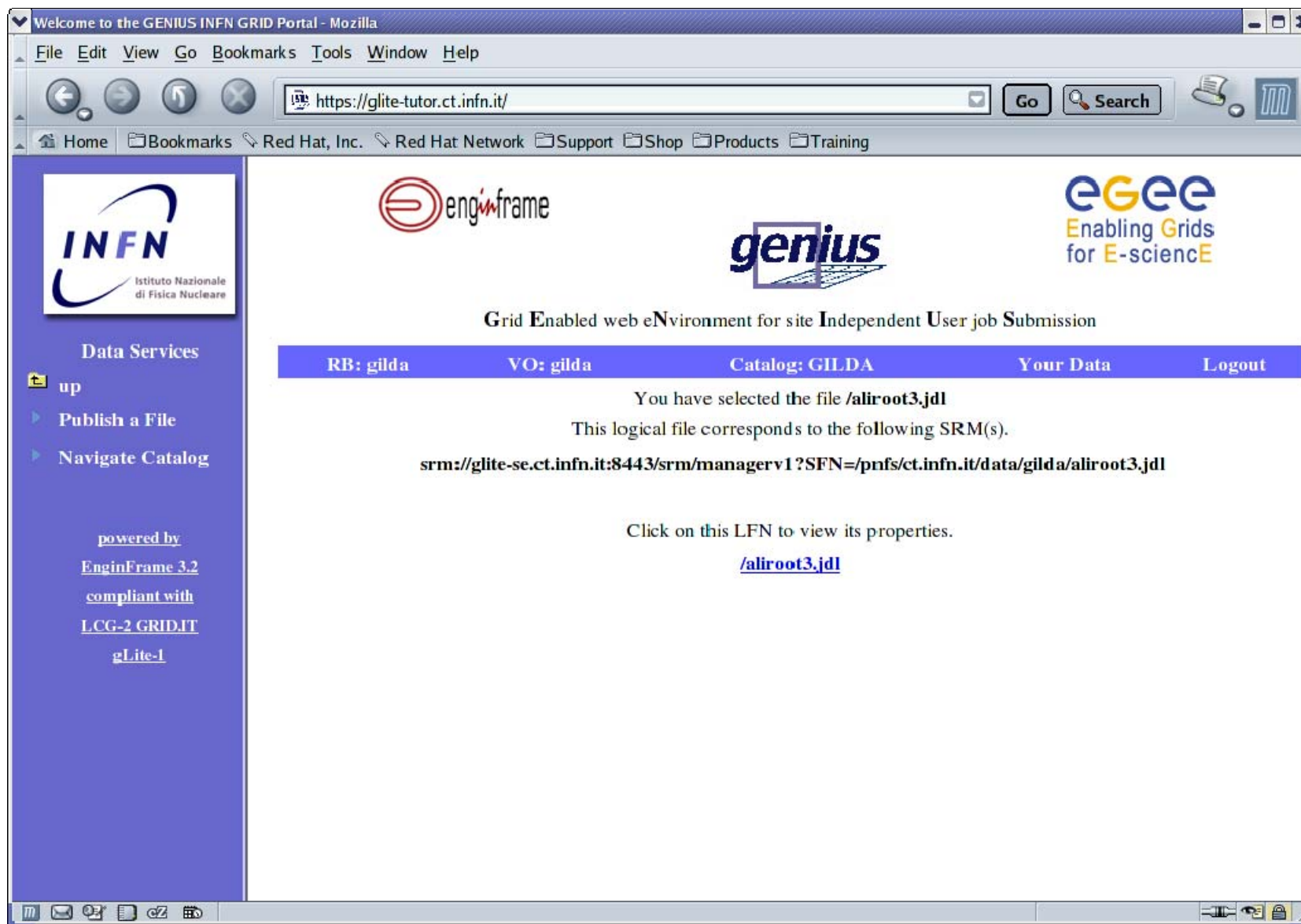
Data Services

- up
- Publish a File
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-pdrwl-gs--r-l-g-----	30	2005-06-01	16:56:27	/testpd03
-pdrwl-gs--r-l-g-----	30	2005-06-04	17:27:26	/t0406-1728
-pdrwl-gs--r-l-g-----	585	2005-06-06	11:11:32	/jdl_test.jdl
-pdrwl-gs--r-l-g-----	1371	2005-06-06	11:14:26	/alroot.jdl
-pdrwl-gs--r-l-g-----	0	2005-06-06	11:15:33	/vlc
-pdrwl-gs--r-l-g-----	202	2005-06-06	14:14:22	/test2.txt
-pdrwl-gs--r-l-g-----	3126k	2005-06-06	19:13:09	/alien.mpg
-pdrwl-gs--r-l-g-----	30	2005-06-07	20:00:10	/pippo01
-pdrwl-gs--r-l-g-----	422	2005-06-13	01:46:08	/alroot3.jdl

This Catalog contains 28 selected logical file names



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RB: gilda VO: gilda Catalog: GILDA Your Data Logout

You have selected the file **/alroot3.jdl**

This logical file corresponds to the following SRM(s).

srm://glite-se.ct.infn.it:8443/srm/managerv1?SFN=/pnfs/ct.infn.it/data/gilda/alroot3.jdl

Click on this LFN to view its properties.

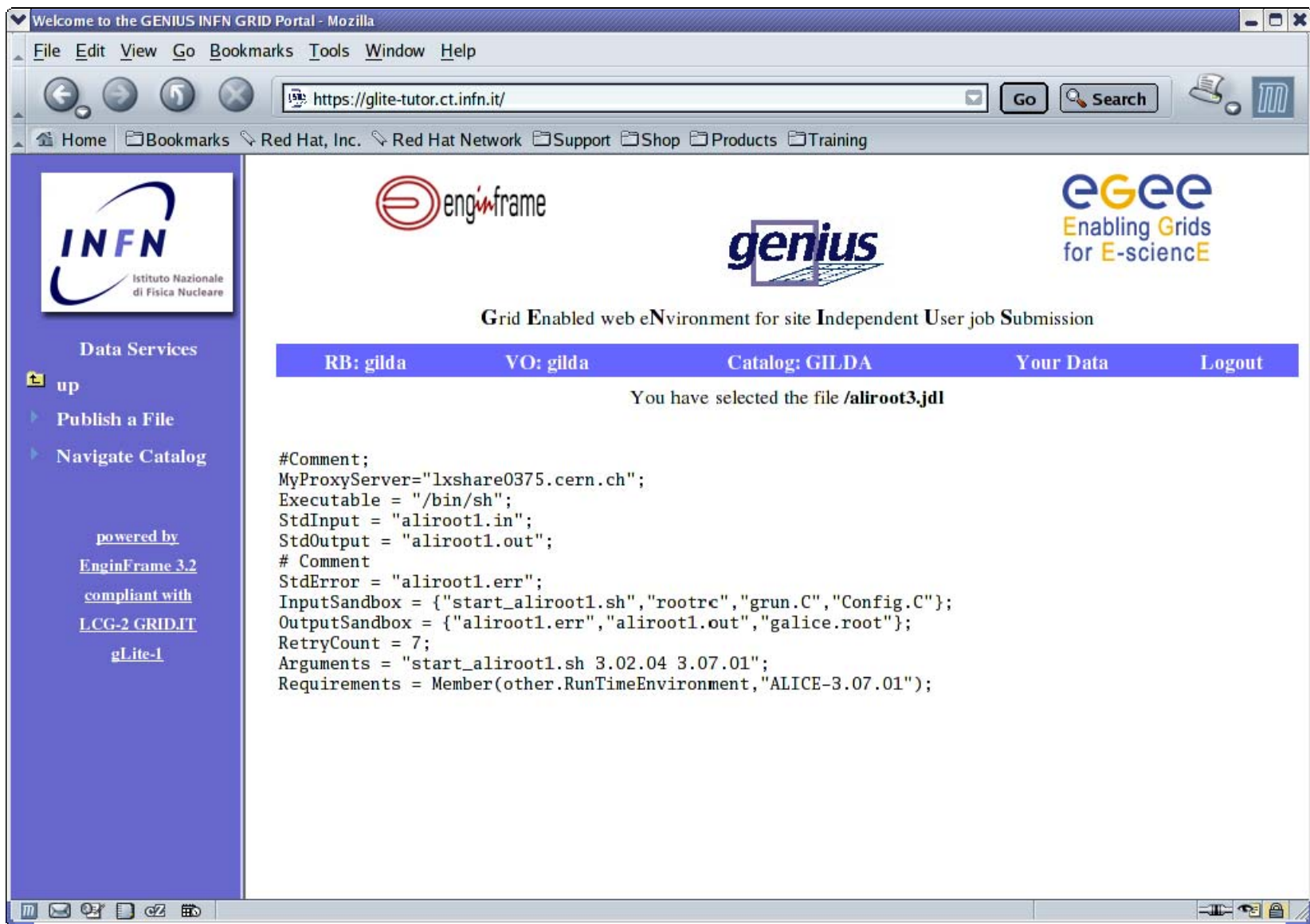
[/alroot3.jdl](#)

Data Services

up

- Publish a File
- Navigate Catalog

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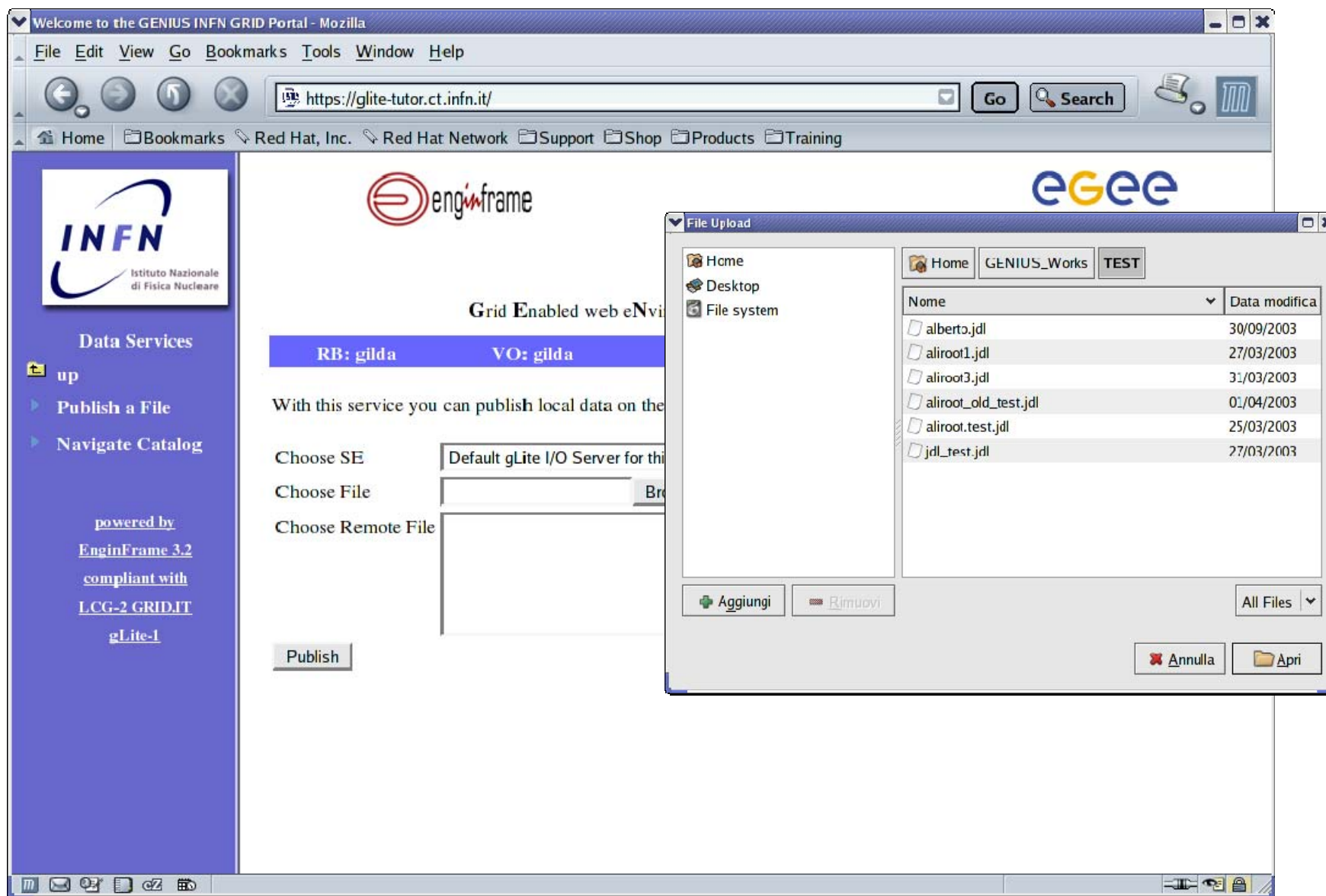
Grid Enabled web eNvironment for site Independent User job Submission

RB: gilda VO: gilda Catalog: GILDA Your Data Logout

You have selected the file **/alroot3.jdl**

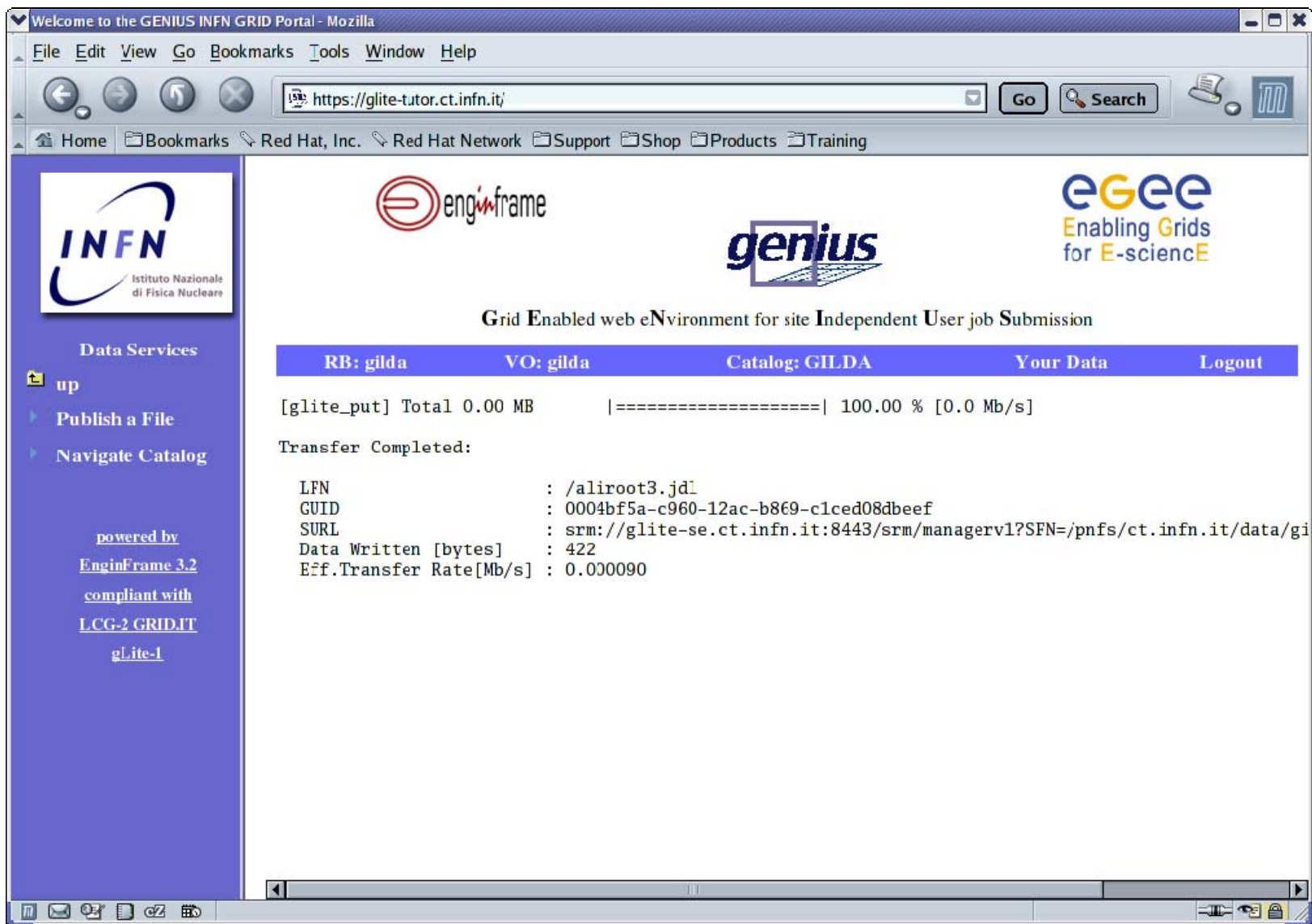
```
#Comment;
MyProxyServer="lxshare0375.cern.ch";
Executable = "/bin/sh";
StdInput = "alroot1.in";
StdOutput = "alroot1.out";
# Comment
StdError = "alroot1.err";
InputSandbox = {"start_alroot1.sh", "rootc", "grun.C", "Config.C"};
OutputSandbox = {"alroot1.err", "alroot1.out", "galice.root"};
RetryCount = 7;
Arguments = "start_alroot1.sh 3.02.04 3.07.01";
Requirements = Member(other.RunTimeEnvironment, "ALICE-3.07.01");
```

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File Upload

Nome	Data modifica
alberto.jdl	30/09/2003
aliroot1.jdl	27/03/2003
aliroot3.jdl	31/03/2003
aliroot_old_test.jdl	01/04/2003
aliroot.test.jdl	25/03/2003
jdl_test.jdl	27/03/2003



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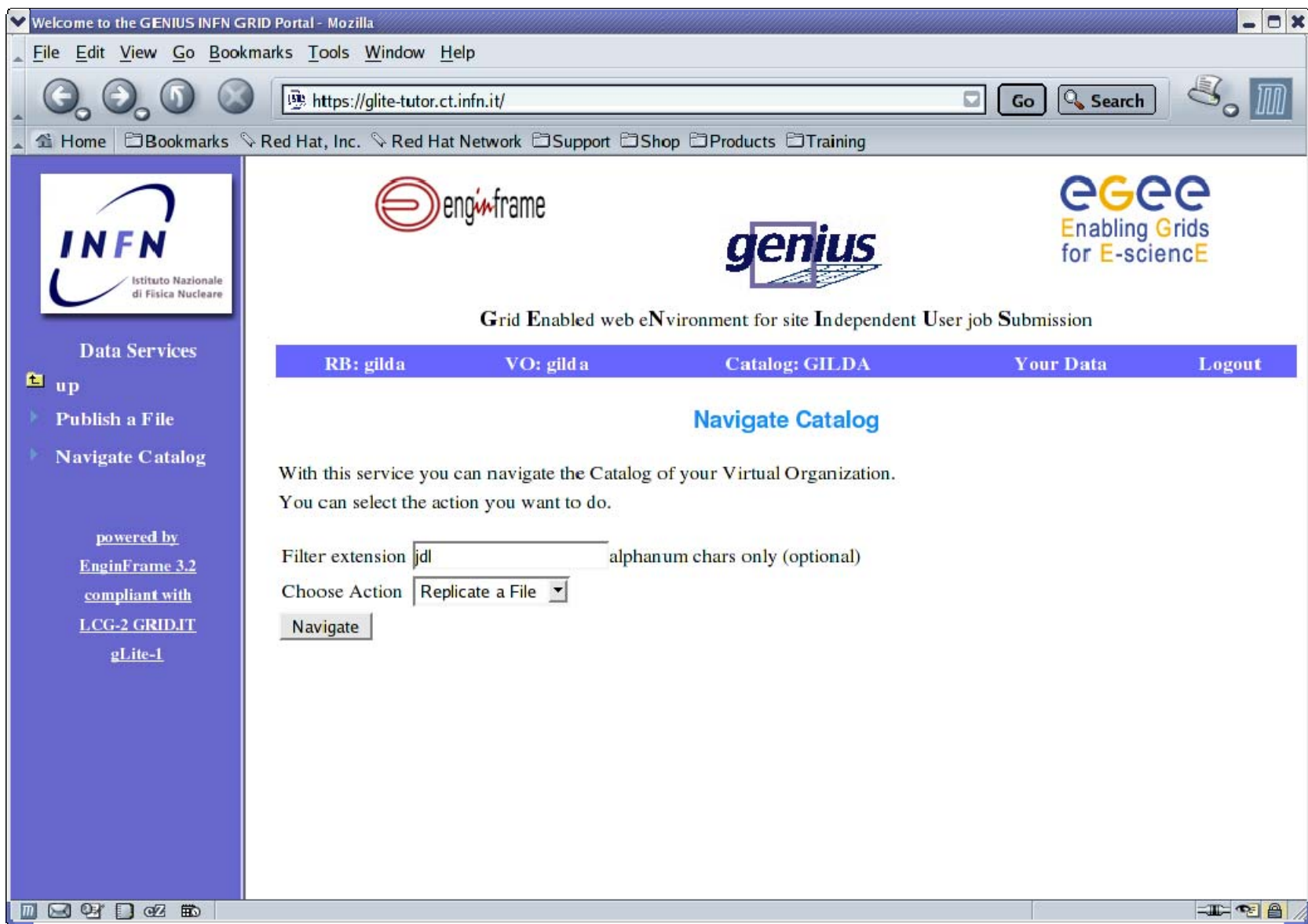
RB: gilda VO: gilda Catalog: GILDA Your Data Logout

[glite_put] Total 0.00 MB |=====| 100.00 % [0.0 Mb/s]

Transfer Completed:

LFN : /aliroot3.jdl
 GUID : 0004bf5a-c960-12ac-b869-c1ced08dbeef
 SURL : srm://glite-se.ct.infn.it:8443/srm/managerv1?SFN=/pnfs/ct.infn.it/data/gi
 Data Written [bytes] : 422
 Eff. Transfer Rate [Mb/s] : 0.000090

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RB: gilda VO: gild a Catalog: GILDA Your Data Logout

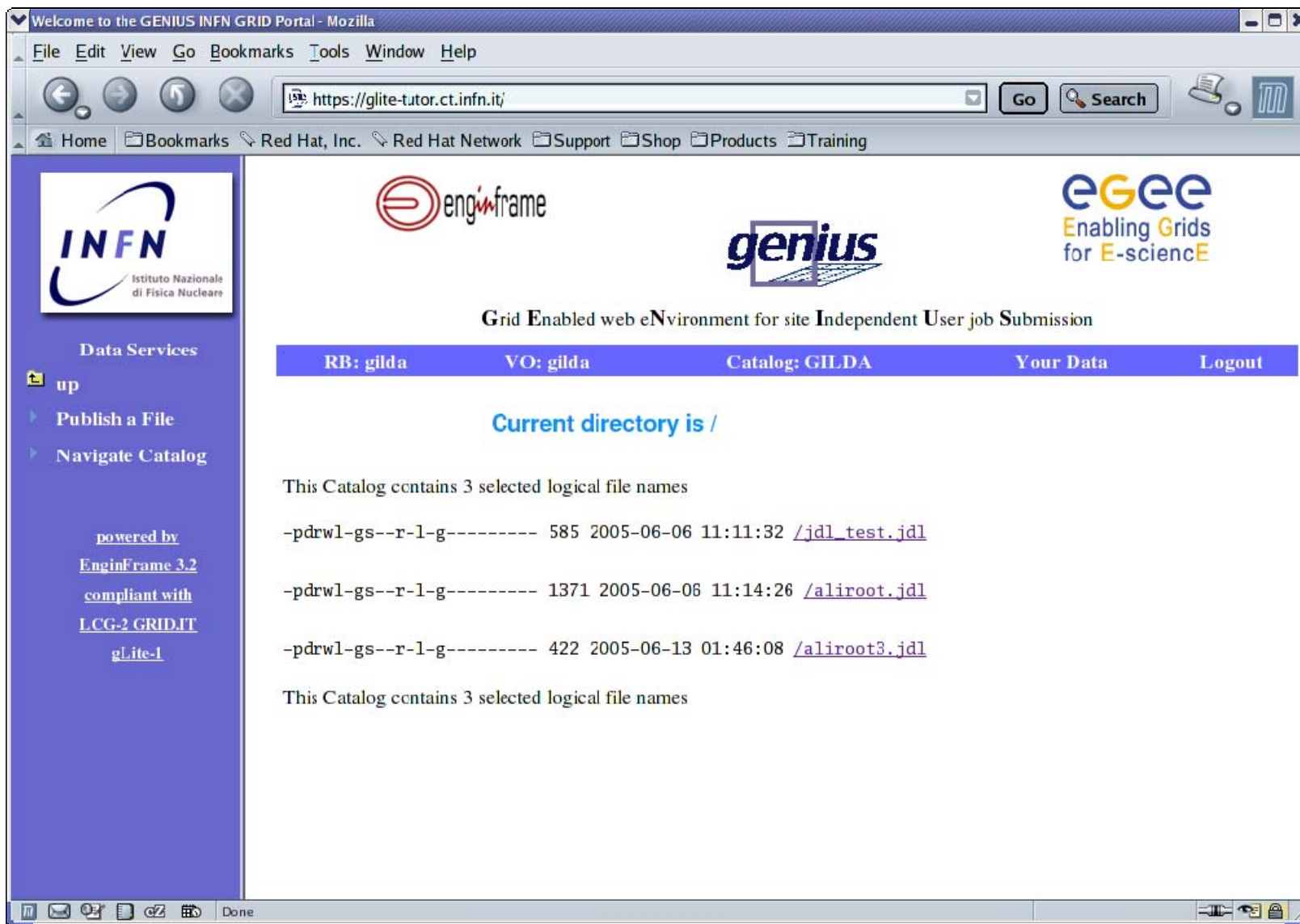
Navigate Catalog

With this service you can navigate the Catalog of your Virtual Organization.
You can select the action you want to do.

Filter extension alphanum chars only (optional)

Choose Action

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RB: gilda VO: gilda Catalog: GILDA Your Data Logout

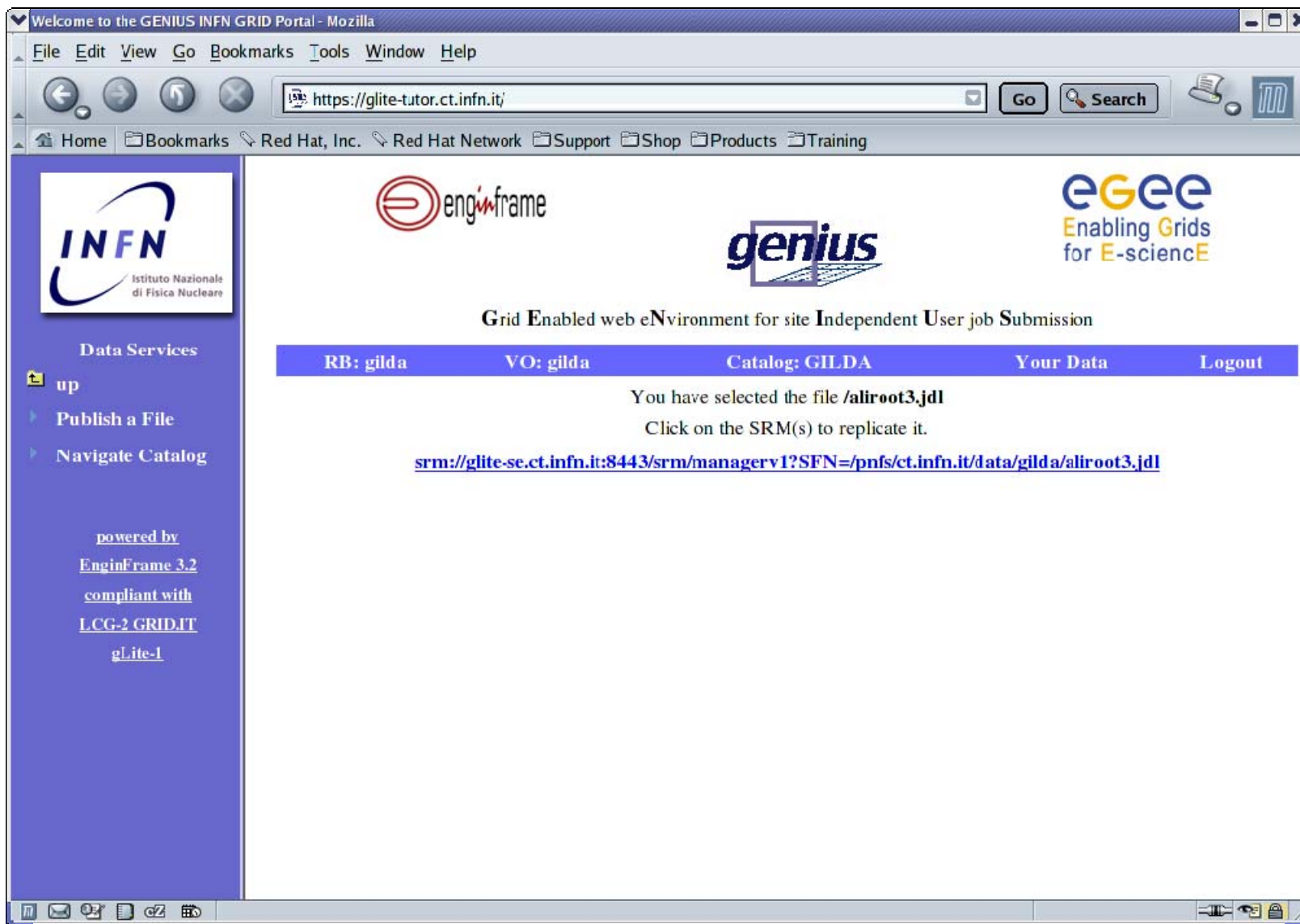
Current directory is /

This Catalog contains 3 selected logical file names

```
-pdrwl-gs--r-l-g----- 585 2005-06-06 11:11:32 /jdl_test.jdl
-pdrwl-gs--r-l-g----- 1371 2005-06-06 11:14:26 /aliroot.jdl
-pdrwl-gs--r-l-g----- 422 2005-06-13 01:46:08 /aliroot3.jdl
```

This Catalog contains 3 selected logical file names

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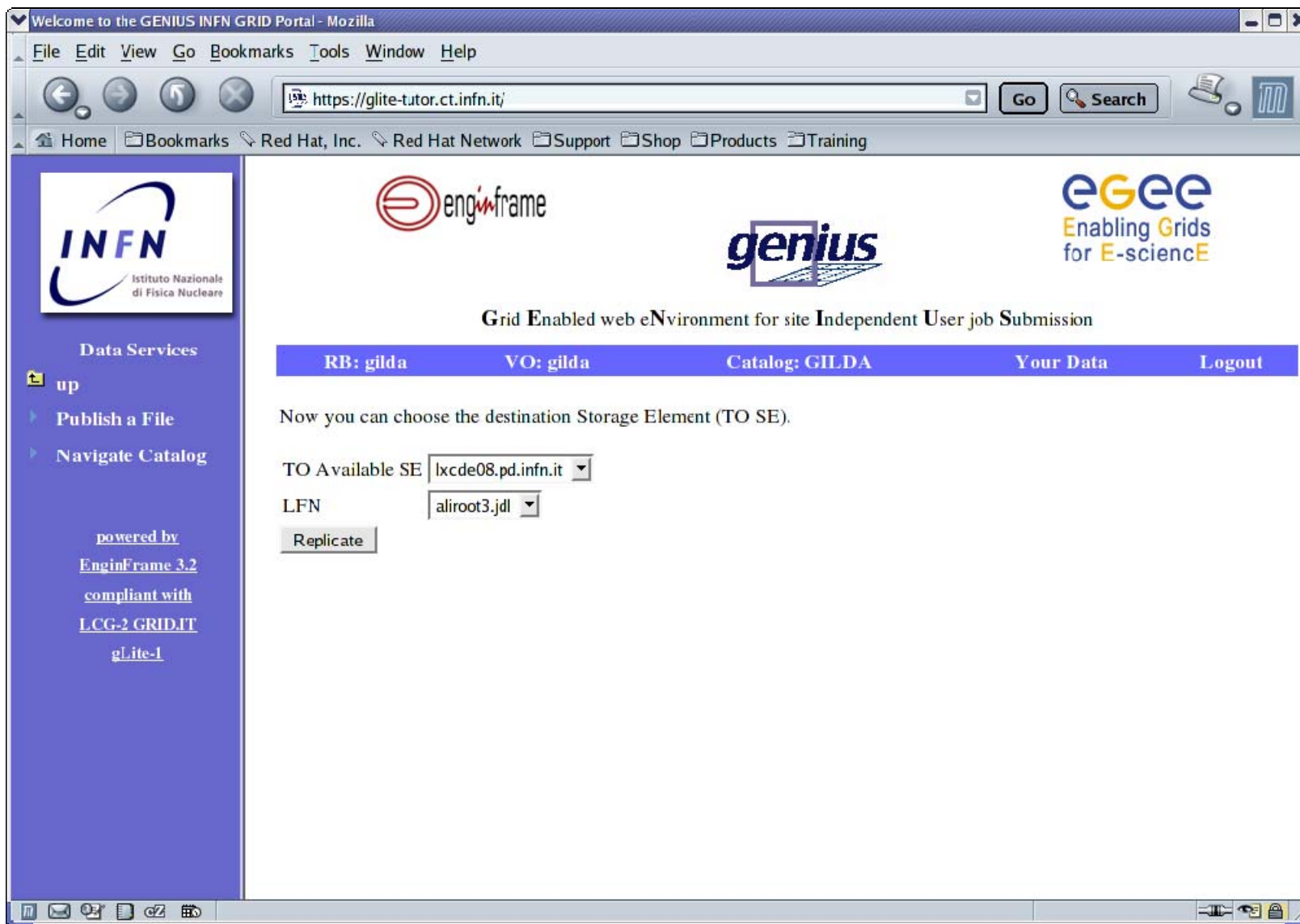
Grid Enabled web eNvironment for site Independent User job Submission

RB: gilda VO: gilda Catalog: GILDA Your Data Logout

You have selected the file **/aliroot3.jdl**
Click on the SRM(s) to replicate it.

<srm://glite-se.ct.infn.it:8443/srm/managerv1?SFN=/pnfs/ct.infn.it/data/gilda/aliroot3.jdl>

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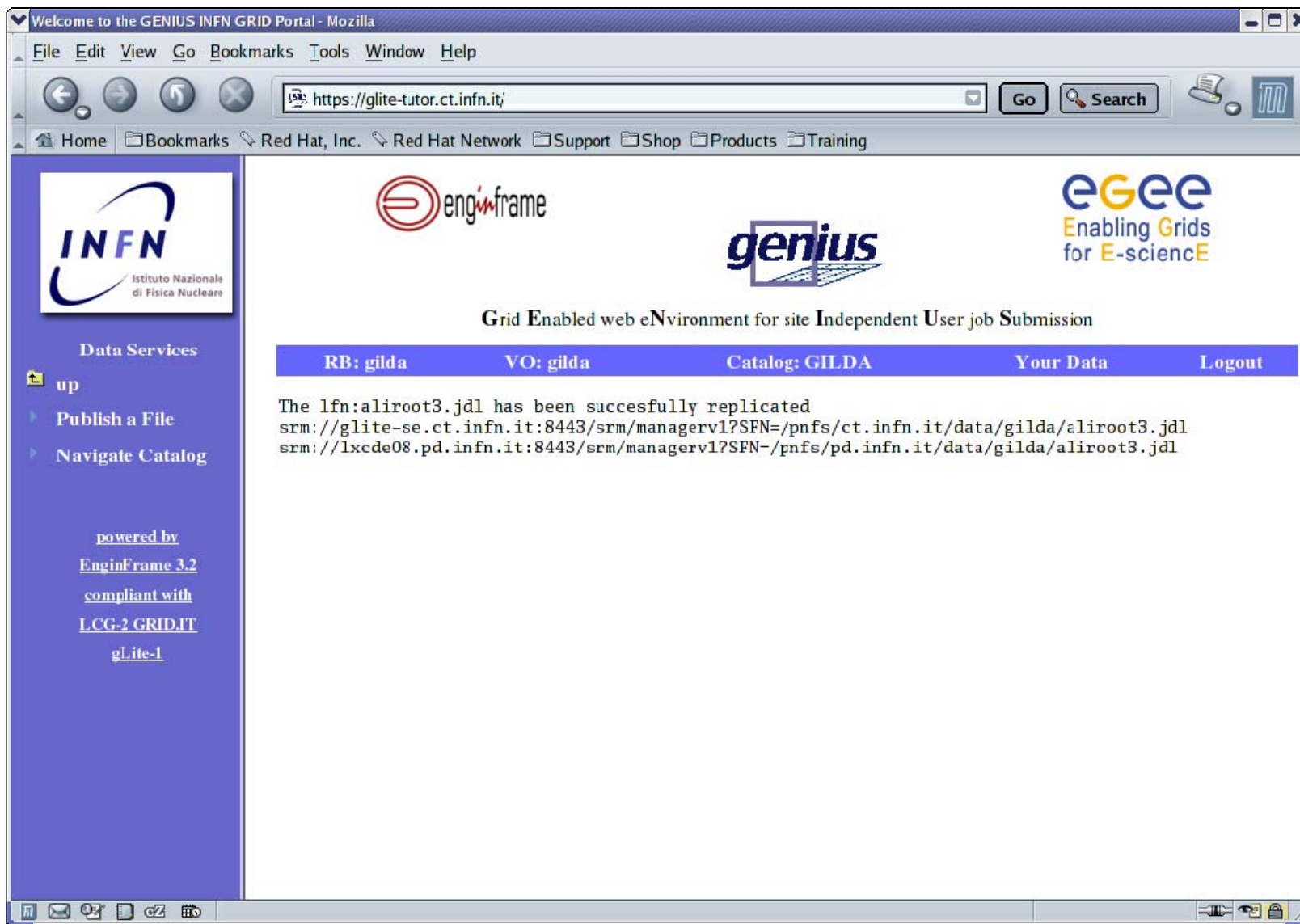
The screenshot shows a Mozilla browser window titled "Welcome to the GENIUS INFN GRID Portal - Mozilla". The address bar contains "https://glite-tutor.ct.infn.it/". The browser's bookmark bar shows "Home", "Bookmarks", "Red Hat, Inc.", "Red Hat Network", "Support", "Shop", "Products", and "Training".

The main content area features several logos: "enginframe" (a red circle with a white 'e'), "genius" (a blue square with a white 'g'), and "eGEE Enabling Grids for E-science" (the eGEE logo). Below the logos, the text reads "Grid Enabled web eNvironment for site Independent User job Submission".

A blue navigation bar contains the following links: "RB: gilda", "VO: gilda", "Catalog: GILDA", "Your Data", and "Logout".

The main content area contains the text: "Now you can choose the destination Storage Element (TO SE).". Below this text are two dropdown menus: "TO Available SE" with the value "lxcde08.pd.infn.it" and "LFN" with the value "alroot3.jdl". A "Replicate" button is located below the LFN dropdown.

A left sidebar is visible, containing the "INFN Istituto Nazionale di Fisica Nucleare" logo, a "Data Services" section with links for "up", "Publish a File", and "Navigate Catalog", and a "powered by" section listing "EnginFrame 3.2", "compliant with LCG-2 GRID.IT", and "gLite-1".



Welcome to the GENIUS INFN GRID Portal - Mozilla

File Edit View Go Bookmarks Tools Window Help

https://glite-tutor.ct.infn.it/

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RB: gilda VO: gilda Catalog: GILDA Your Data Logout

The lfn:alroot3.jdl has been successfully replicated
 srm://glite-se.ct.infn.it:8443/srm/managerv1?SFN=/pnfs/ct.infn.it/data/gilda/alroot3.jdl
 srm://lxcde08.pd.infn.it:8443/srm/managerv1?SFN=/pnfs/pd.infn.it/data/gilda/alroot3.jdl

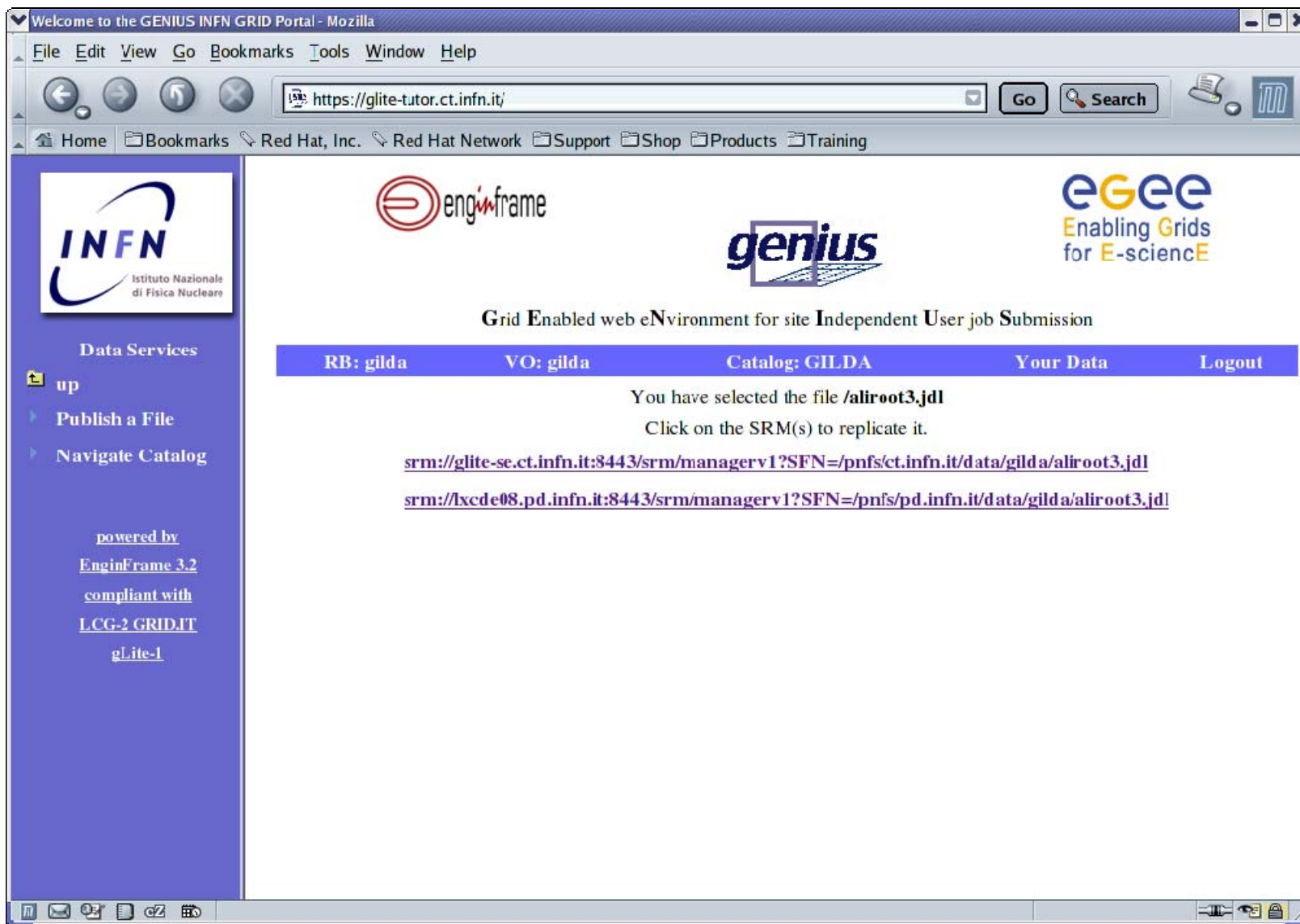
Data Services

up

Publish a File

Navigate Catalog

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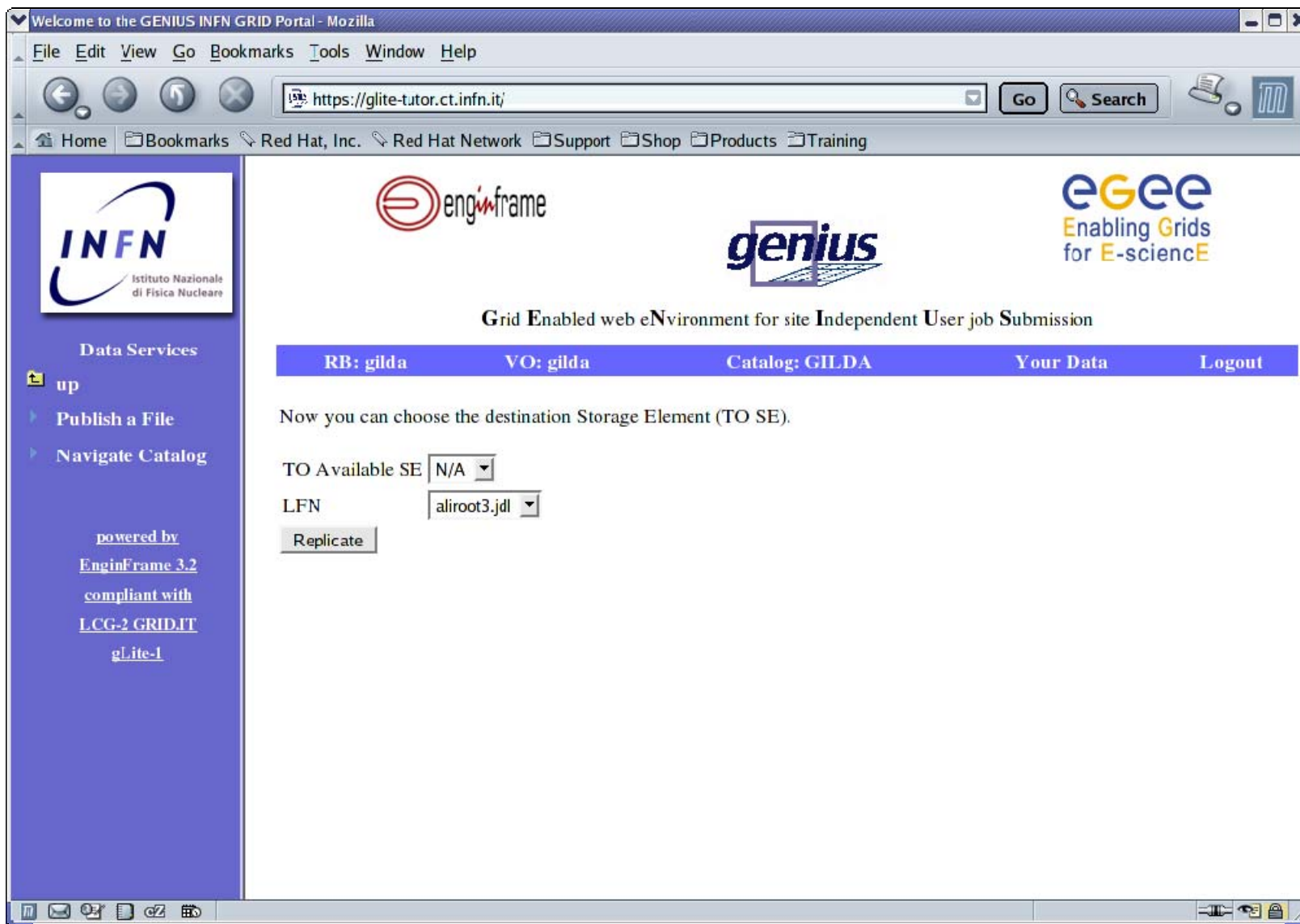
RB: gilda VO: gilda Catalog: GILDA Your Data Logout

You have selected the file **/alroot3.jdl**
Click on the SRM(s) to replicate it.

<srm://glite-se.ct.infn.it:8443/srm/managerv1?SFN=/pnfs/ct.infn.it/data/gilda/alroot3.jdl>

<srm://lxcde08.pd.infn.it:8443/srm/managerv1?SFN=/pnfs/pd.infn.it/data/gilda/alroot3.jdl>

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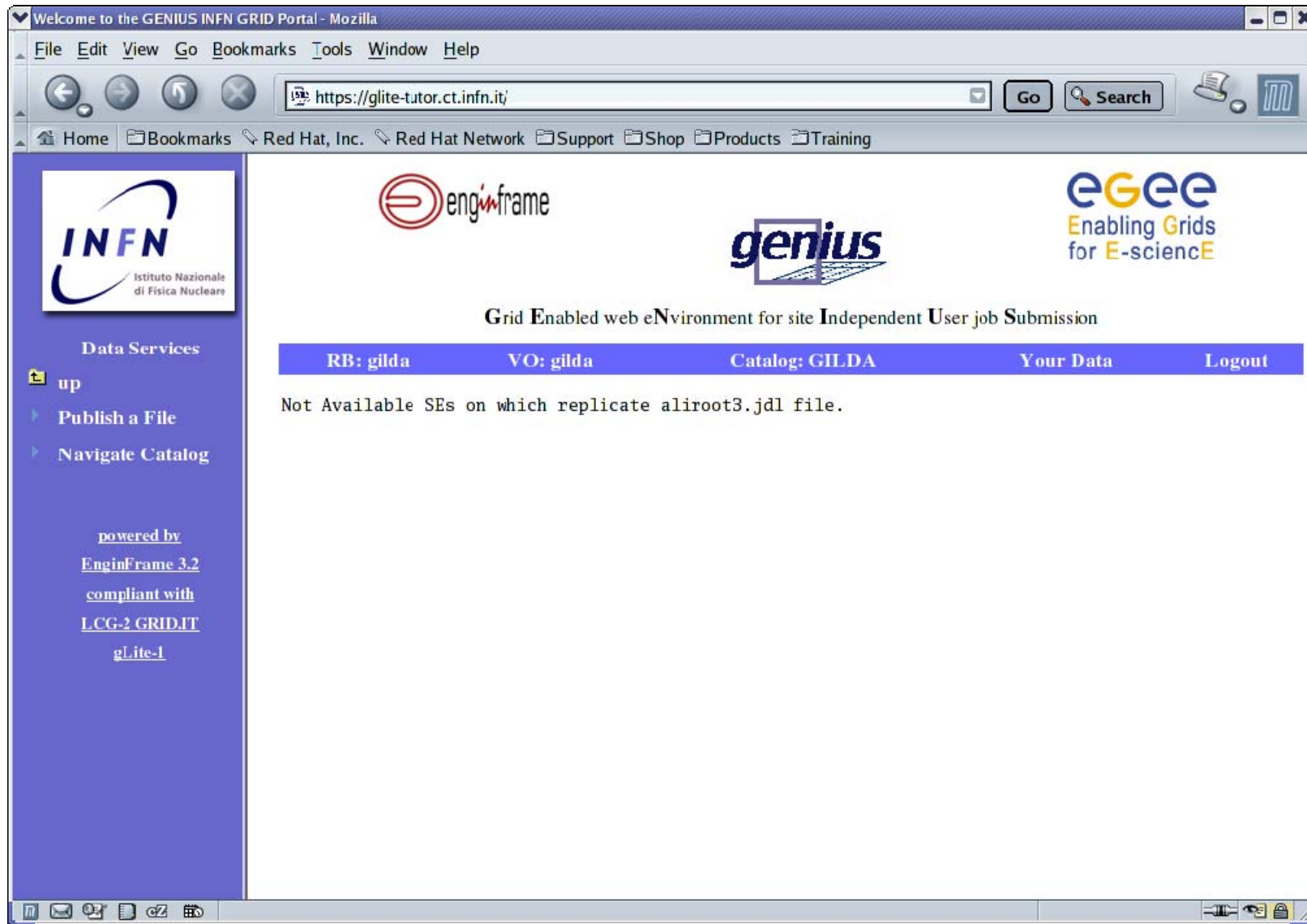
The screenshot shows a Mozilla browser window titled "Welcome to the GENIUS INFN GRID Portal - Mozilla". The address bar contains "https://glite-tutor.ct.infn.it/". The browser's bookmark bar shows "Home", "Bookmarks", "Red Hat, Inc.", "Red Hat Network", "Support", "Shop", "Products", and "Training".

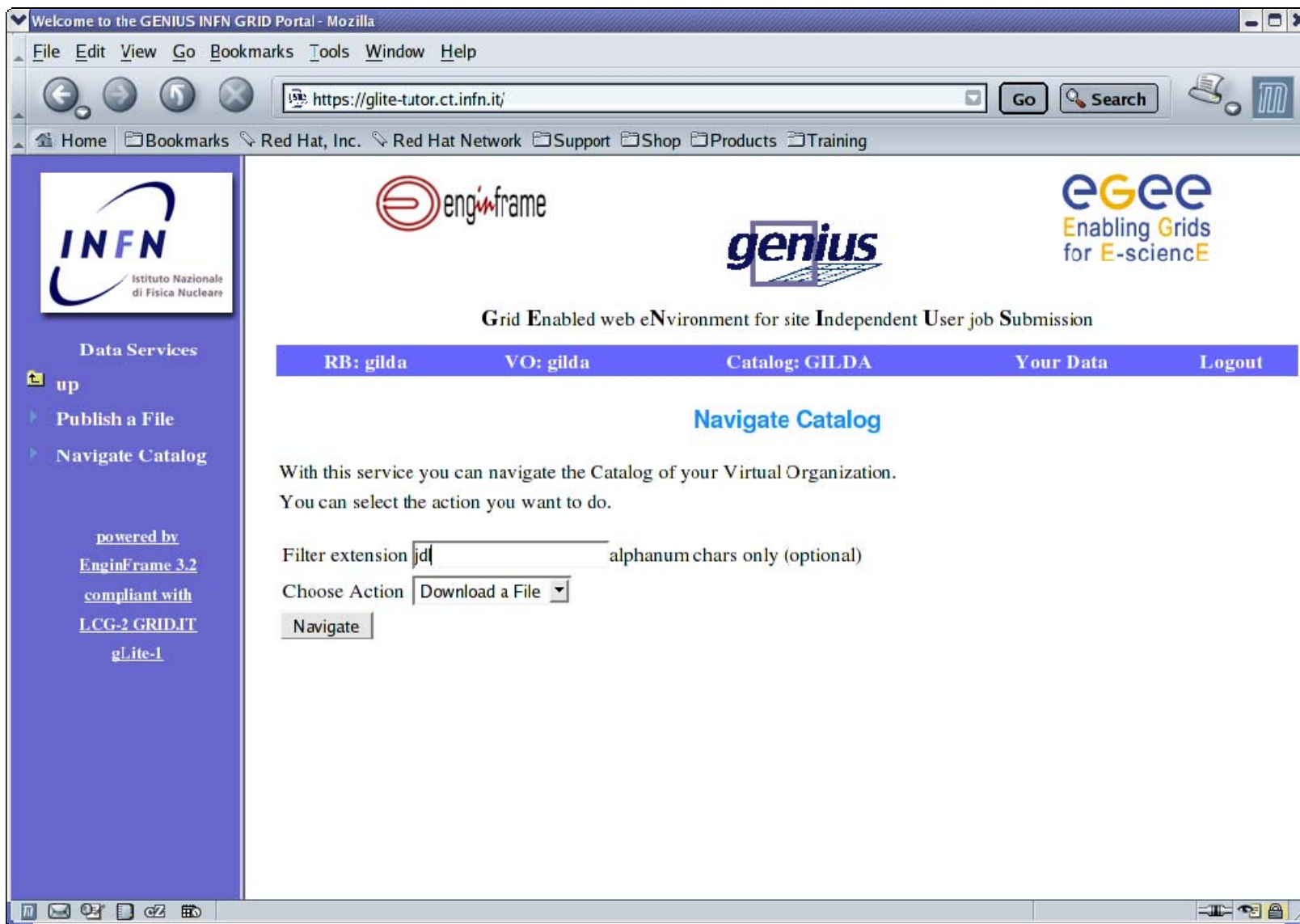
The main content area features several logos: "enginframe" (a red circle with a white 'e'), "genius" (a blue square with a white 'g'), and "eGEE Enabling Grids for E-science" (the eGEE logo). Below the logos, the text reads "Grid Enabled web eNvironment for site Independent User job Submission".

A navigation bar contains the following links: "RB: gilda", "VO: gilda", "Catalog: GILDA", "Your Data", and "Logout".

The main text says "Now you can choose the destination Storage Element (TO SE).". Below this, there are two dropdown menus: "TO Available SE" with the value "N/A" and "LFN" with the value "alroot3.jdl". A "Replicate" button is located below these dropdowns.

A sidebar on the left contains the "INFN Istituto Nazionale di Fisica Nucleare" logo and the following links: "Data Services", "up", "Publish a File", and "Navigate Catalog". At the bottom of the sidebar, it says "powered by EnginFrame 3.2 compliant with LCG-2 GRID.IT gLite-1".





Welcome to the GENIUS INFN GRID Portal - Mozilla

File Edit View Go Bookmarks Tools Window Help

https://glite-tutor.ct.infn.it/ Go Search

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RB: gilda VO: gilda Catalog: GILDA Your Data Logout

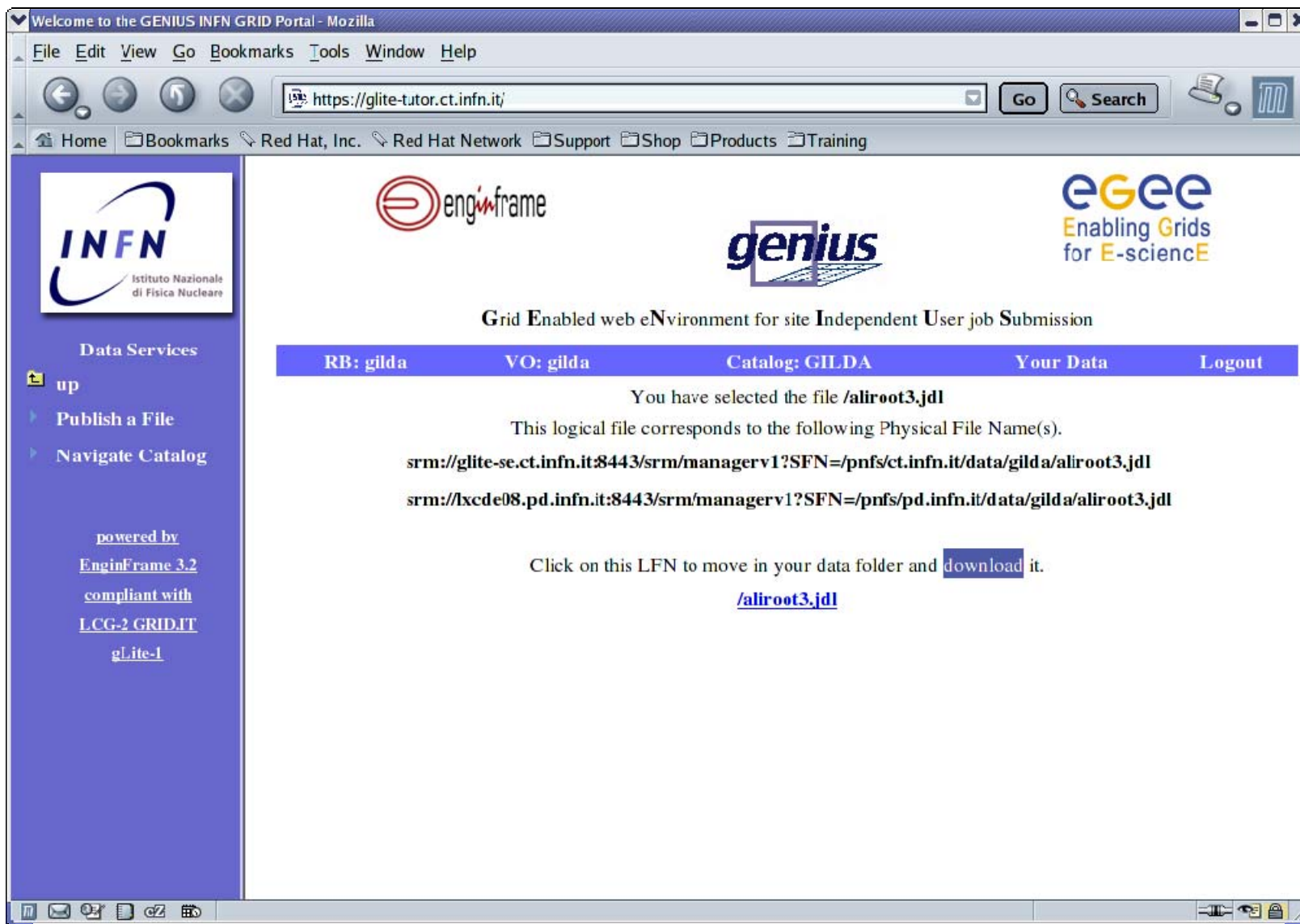
Navigate Catalog

With this service you can navigate the Catalog of your Virtual Organization.
You can select the action you want to do.

Filter extension alphanum chars only (optional)

Choose Action

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RB: gilda VO: gilda Catalog: GILDA Your Data Logout

You have selected the file **/alroot3.jdl**

This logical file corresponds to the following Physical File Name(s).

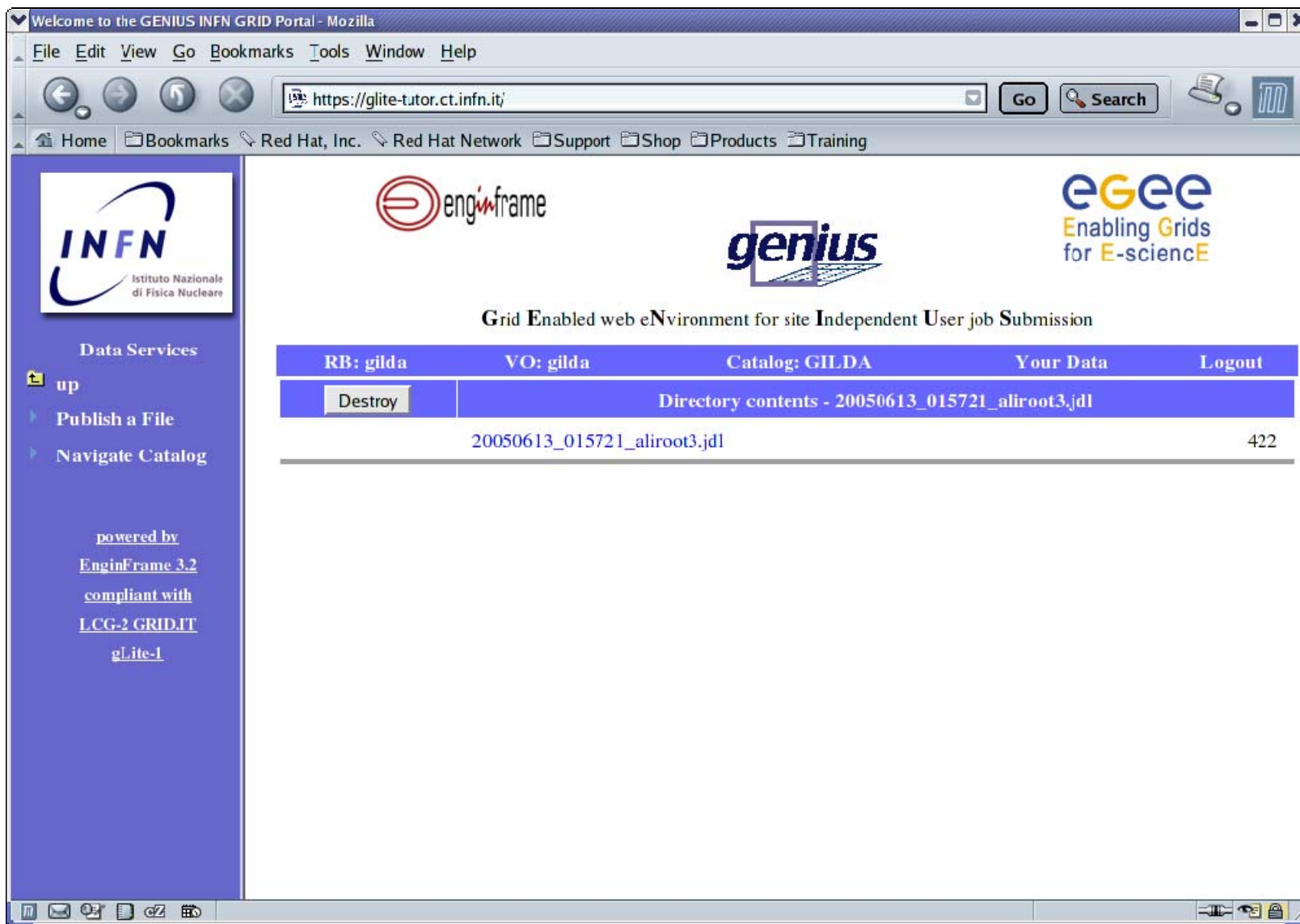
srm://glite-se.ct.infn.it:8443/srm/managerv1?SFN=/pnfs/ct.infn.it/data/gilda/alroot3.jdl

srm://lxcde08.pd.infn.it:8443/srm/managerv1?SFN=/pnfs/pd.infn.it/data/gilda/alroot3.jdl

Click on this LFN to move in your data folder and **download** it.

[/alroot3.jdl](#)

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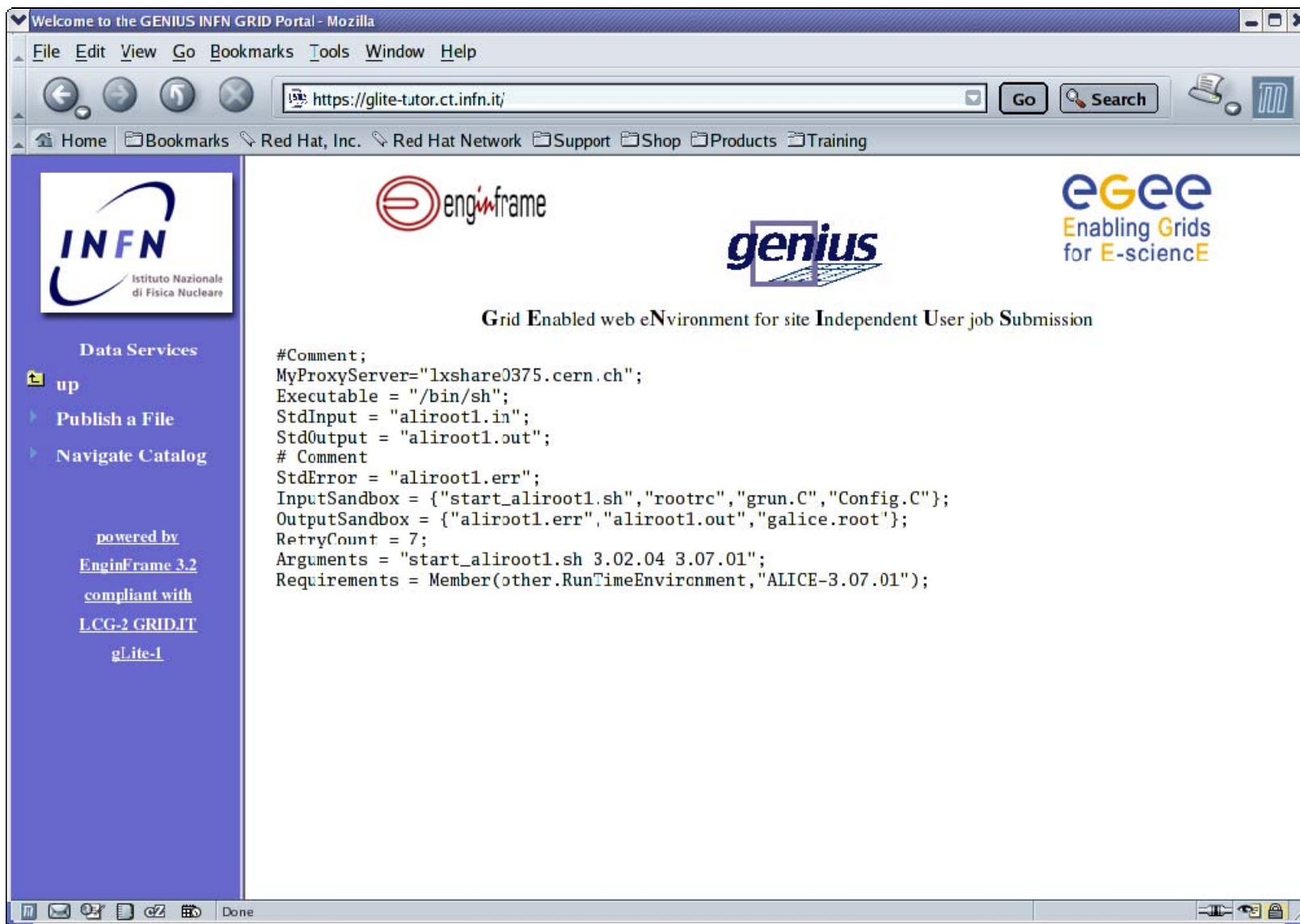
Grid Enabled web eNvironment for site Independent User job Submission

RB: gilda	VO: gilda	Catalog: GILDA	Your Data	Logout
<input type="button" value="Destroy"/>	Directory contents - 20050613_015721_aliroot3.jdl			
	20050613_015721_aliroot3.jdl			422

Data Services

- up
- Publish a File
- Navigate Catalog

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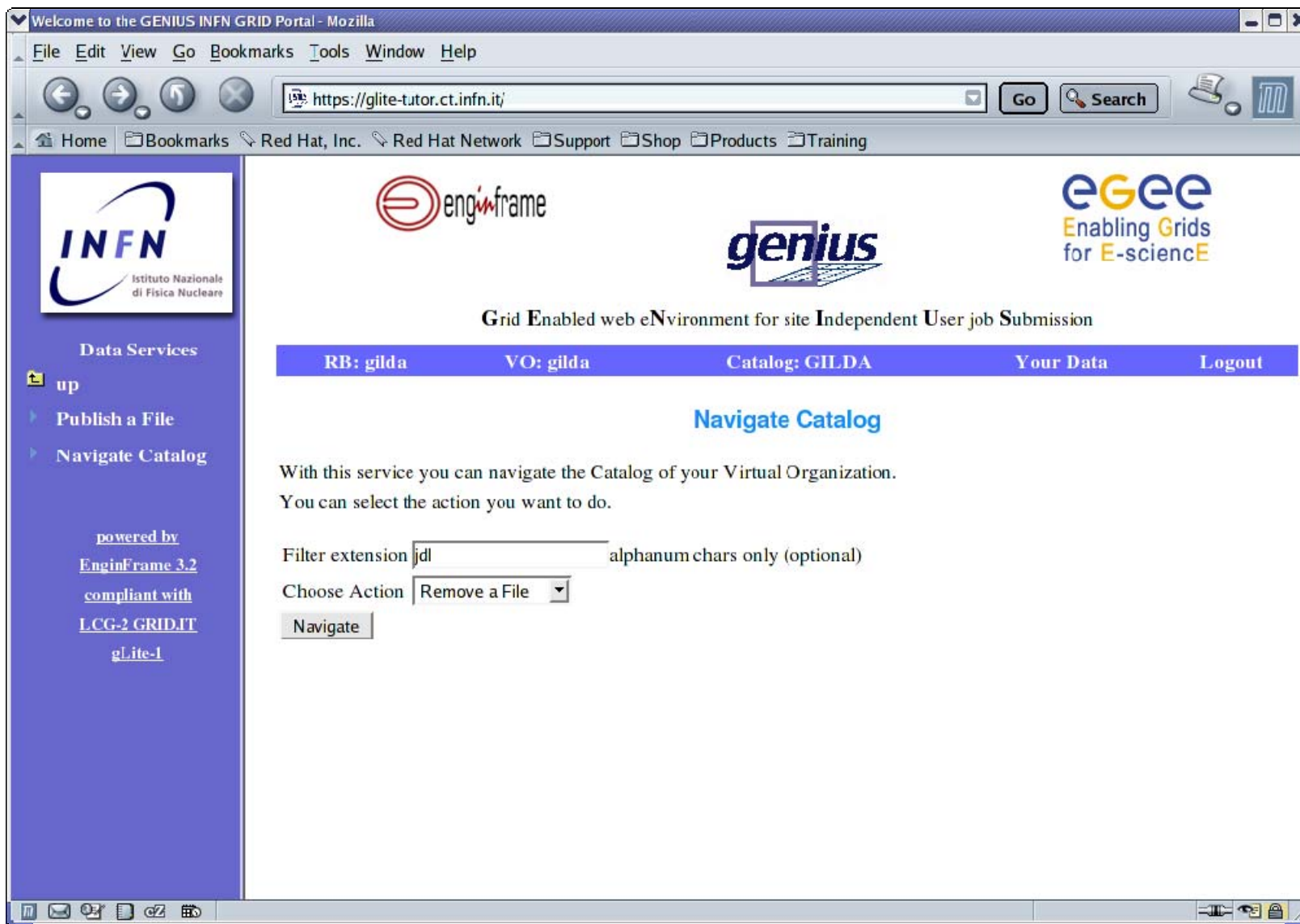
```
#Comment;
MyProxyServer="lxshare0375.cern.ch";
Executable = "/bin/sh";
StdInput = "aliroot1.in";
StdOutput = "aliroot1.out";
# Comment
StdError = "aliroot1.err";
InputSandbox = {"start_aliroot1.sh", "rootrc", "grun.C", "Config.C"};
OutputSandbox = {"aliroot1.err", "aliroot1.out", "galice.root"};
RetryCount = 7;
Arguments = "start_aliroot1.sh 3.02.04 3.07.01";
Requirements = Member(other.RunTimeEnvironment, "ALICE-3.07.01");
```

Data Services

- up
- Publish a File
- Navigate Catalog

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Done







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RB: gilda VO: gilda Catalog: GILDA Your Data Logout

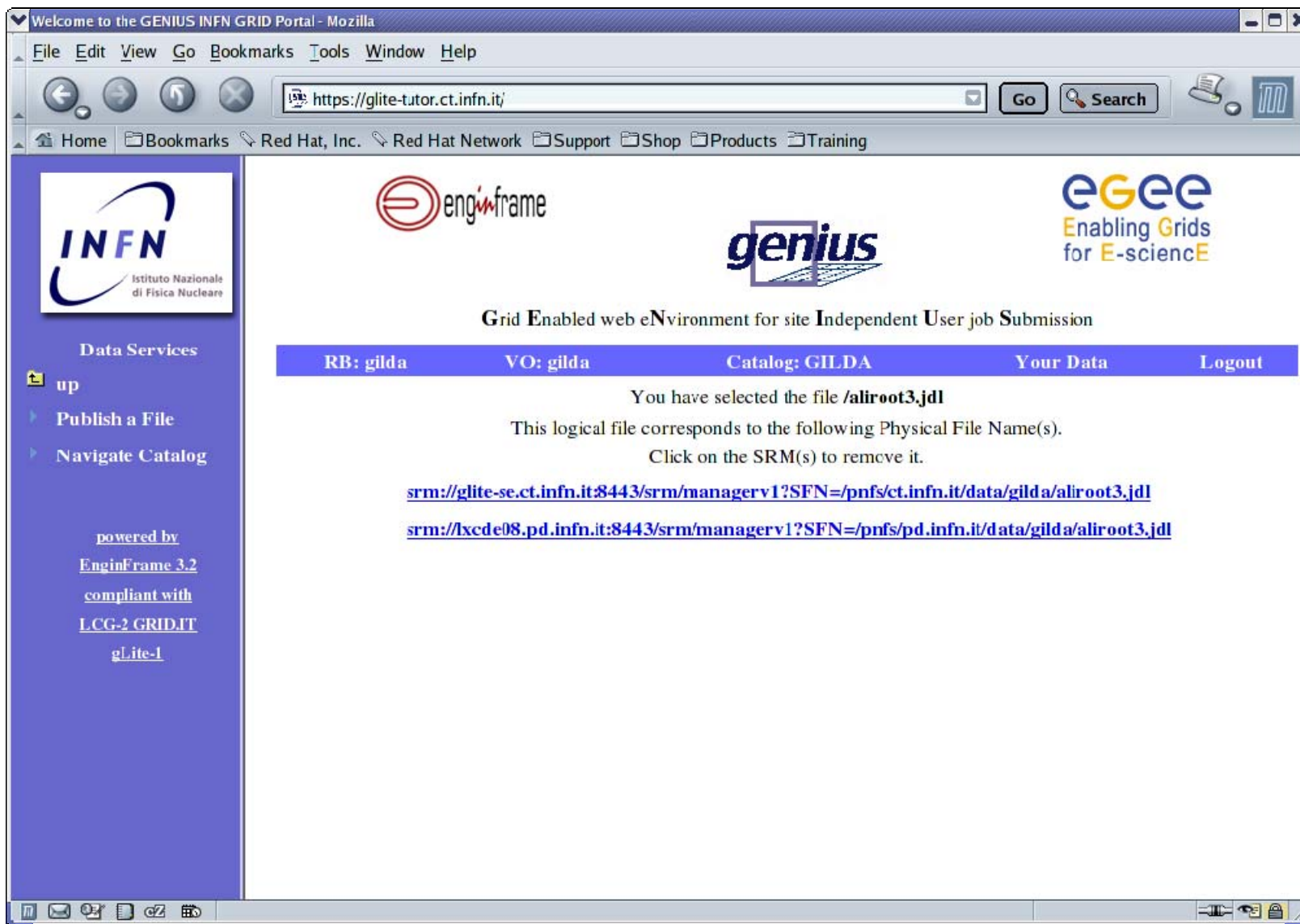
Navigate Catalog

With this service you can navigate the Catalog of your Virtual Organization.
You can select the action you want to do.

Filter extension alphanum chars only (optional)

Choose Action

Data Services
 up
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 Navigate Catalog
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 EnginFrame 3.2
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 LCG-2 GRID.IT
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RB: gilda VO: gilda Catalog: GILDA Your Data Logout

You have selected the file **/aliroot3.jdl**

This logical file corresponds to the following Physical File Name(s).
Click on the SRM(s) to remove it.

<srm://glite-se.ct.infn.it:8443/srm/managerv1?SFN=/pnfs/ct.infn.it/data/gilda/aliroot3.jdl>

<srm://xcde08.pd.infn.it:8443/srm/managerv1?SFN=/pnfs/pd.infn.it/data/gilda/aliroot3.jdl>

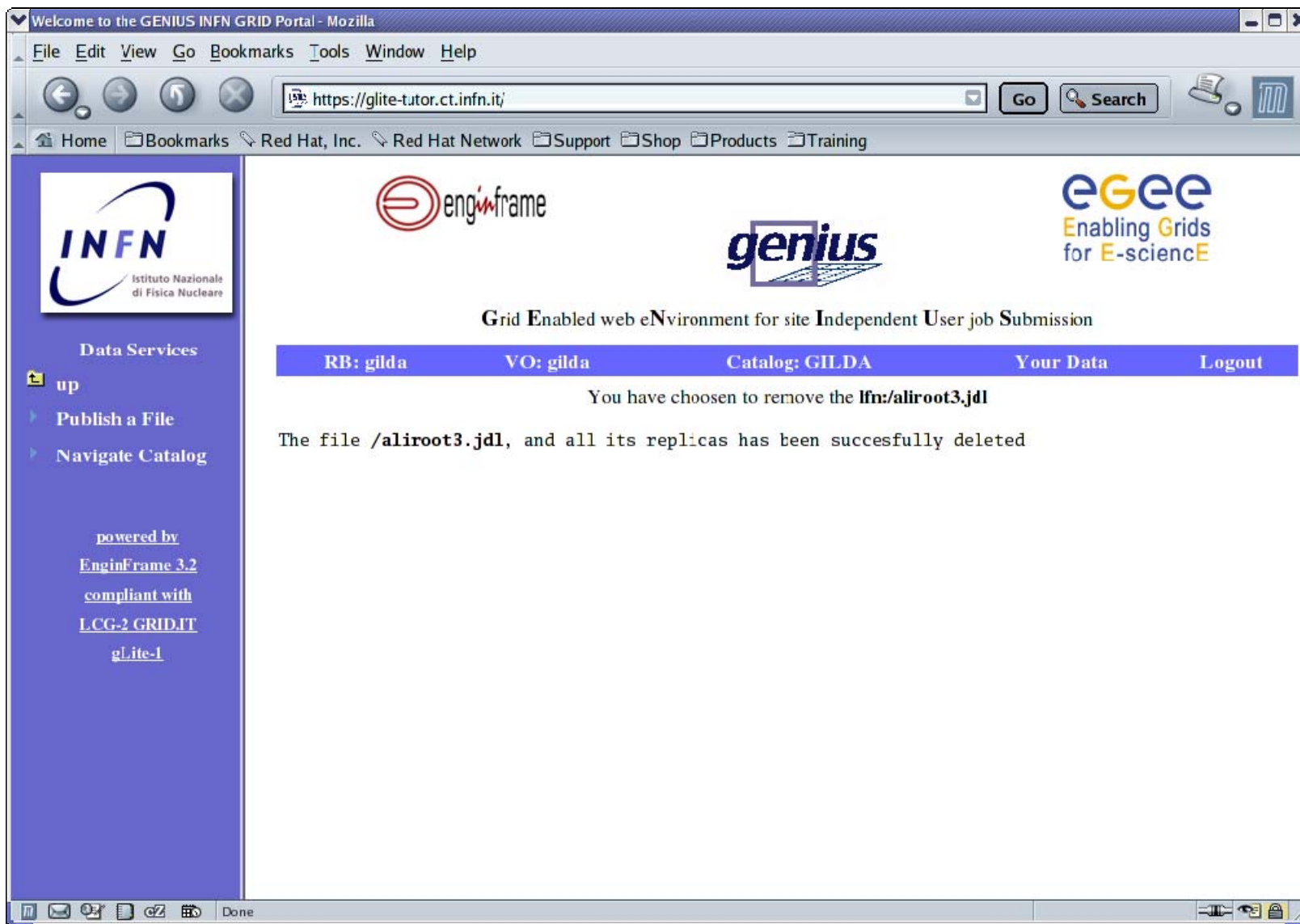
Data Services

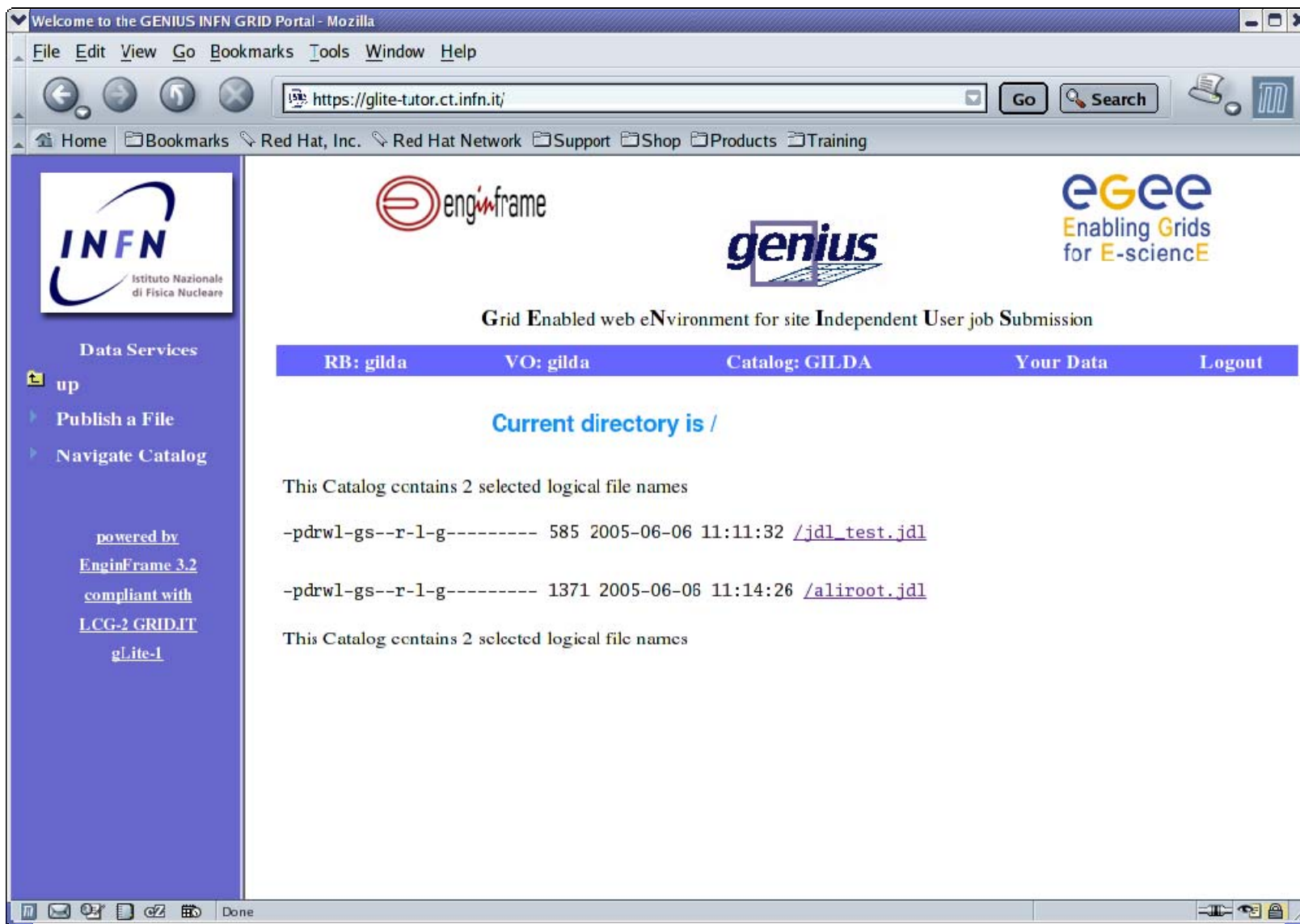
up

Publish a File

Navigate Catalog

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RB: gilda VO: gilda Catalog: GILDA Your Data Logout

Current directory is /

This Catalog contains 2 selected logical file names

-pdrwl-gs--r-l-g----- 585 2005-06-06 11:11:32 [/jdl_test.jdl](#)

-pdrwl-gs--r-l-g----- 1371 2005-06-06 11:14:26 [/aliroot.jdl](#)

This Catalog contains 2 selected logical file names

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Done

INFN - GridICE - Grid Monitoring Service - Mozilla

http://ed002.cnaf.infn.it:5000

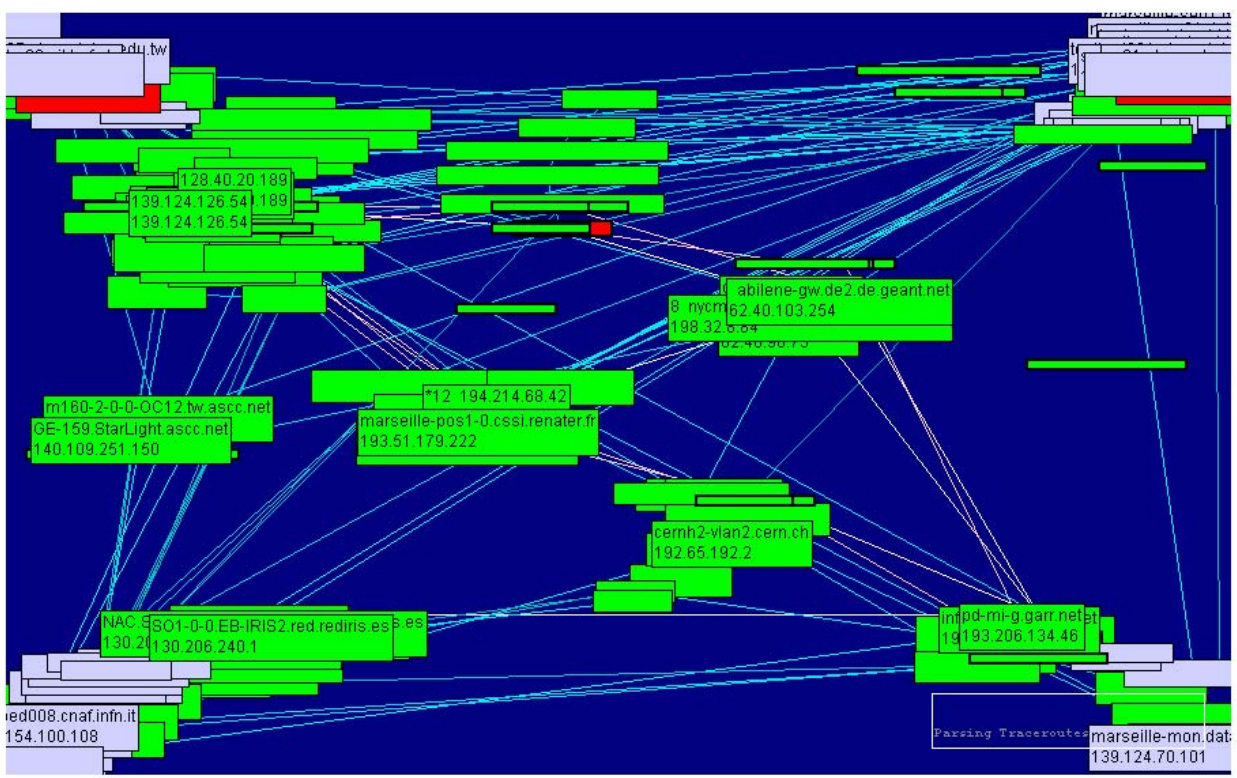
GridICE the eyes of the Grid

Site view VO view Geo view Grid

Select Site

Site	Slot#	SlotFree	SlotLoad
ba.infn.it	189	186	1%
bo.infn.it	30	30	0%
bo.ingv.it	24	24	0%
ca.infn.it	15	12	20%
cnaf.infn.it	-	-	-
cr.cnaf.infn.it	3162	2137	32%
ct.astro.it	0	0	-
ct.infn.it	336	300	10%
fe.infn.it	48	18	62%
le.infn.it	0	0	-
ln.infn.it	144	115	20%
mi.infn.it	126	126	0%
na.infn.it	72	72	0%
oat.ts.astro.it	6	6	0%
pd.infn.it	198	198	0%
pg.infn.it	12	6	50%
pi.infn.it	21	15	28%
pv.infn.it	18	18	0%
roma1.infn.it	90	87	3%
to.infn.it	104	24	76%
ts.infn.it	6	6	0%
TOTAL	4601	3380	17%

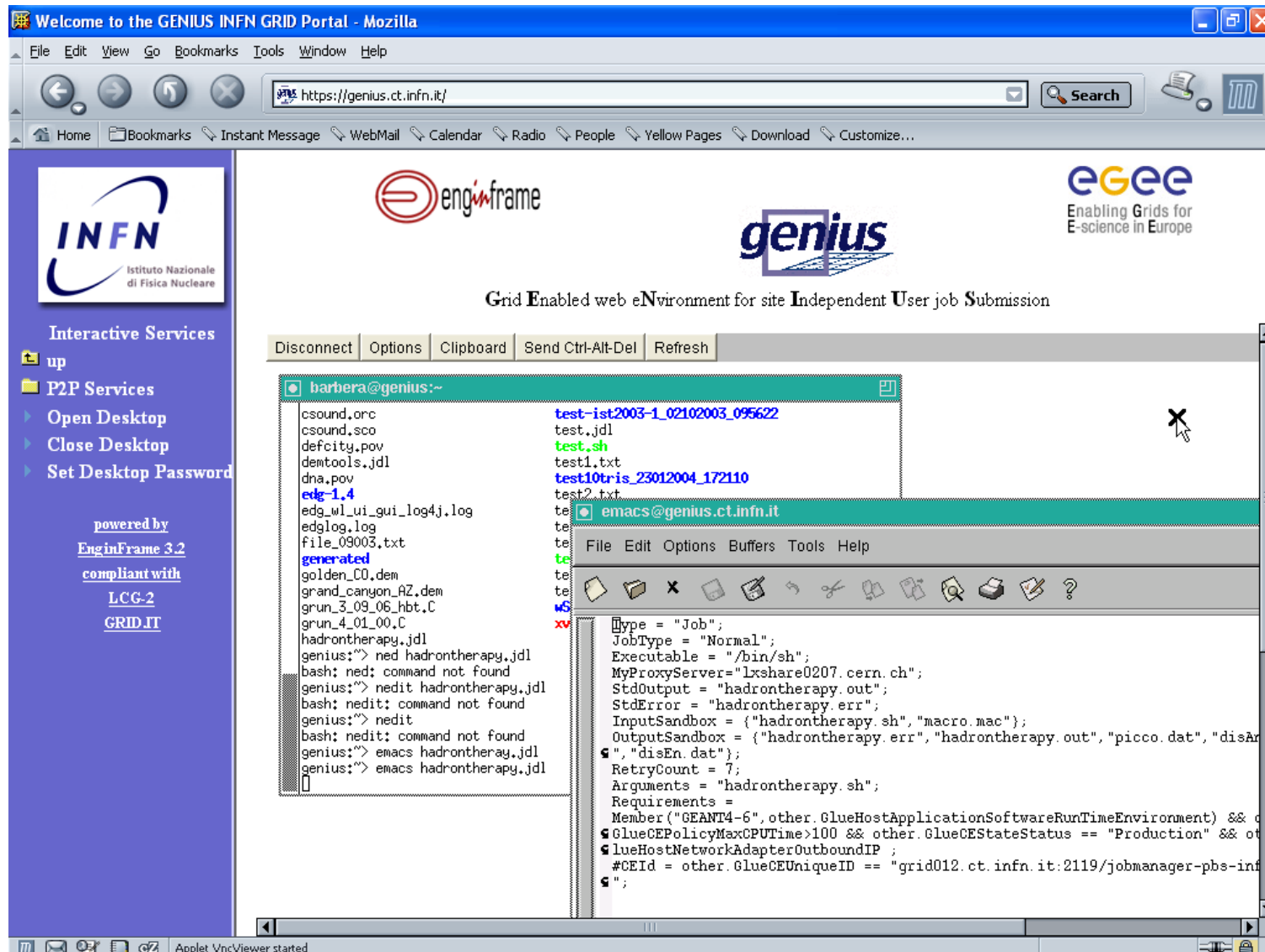
Network Topology (trace.txt.datagrid.pcp)



Nodes visible in the topology include:

- 128.40.20.189
- 139.124.126.54
- 139.124.126.54
- abilene-gw.de2.de.geant.net
- 8.nycr162.40.103.254
- 198.32.5.64
- 02.90.90.70
- *12.194.214.68.42
- m160-2-0-0-OC12.tw.ascc.net
- GE-159.StarLight.ascc.net
- 140.109.251.150
- marseille-pos1-0.cssi.renater.fr
- 193.51.179.222
- cernh2-vlan2.cern.ch
- 192.65.192.2
- NAC.BSO1-0-0.EB-IRIS2.red.rediris.es
- 130.241.130.206.240.1
- inf-p0-mi-g.garr.net
- 193.206.134.46
- red008.cnaf.infn.it
- 154.100.108
- marseille-mon.dat
- 139.124.70.101

Applet NetBird started



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eGEE
Enabling Grids for E-science in Europe

Grid Enabled web eNvironment for site Independent User job Submission

Disconnect Options Clipboard Send Ctrl-Alt-Del Refresh

barbera@genius:~

```
csound.orc
csound.sco
defcity.pov
dentools.jdl
dna.pov
edg-1.4
edg_wl_ui_gui_log4j.log
edglog.log
file_09003.txt
generated
golden_CO.dem
grand_canyon_AZ.dem
grun_3_09_06_hbt.C
grun_4_01_00.C
hadrontherapy.jdl
genius:> ned hadrontherapy.jdl
bash: ned: command not found
genius:> nedit hadrontherapy.jdl
bash: nedit: command not found
genius:> nedit
bash: nedit: command not found
genius:> emacs hadrontherapy.jdl
genius:> emacs hadrontherapy.jdl
```

test-ist2003-1_02102003_095622

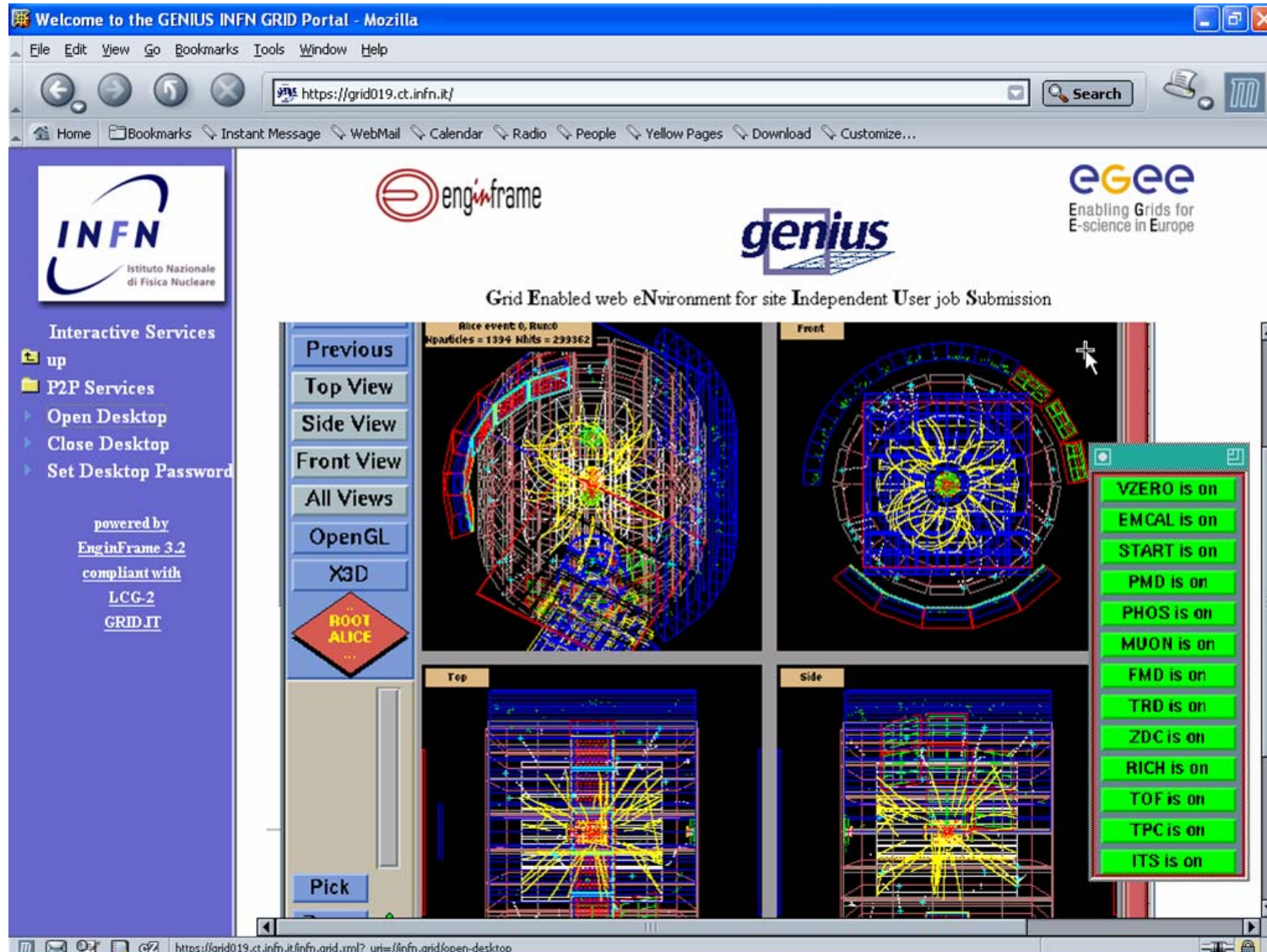
```
test.jdl
test.sh
test1.txt
test10tris_23012004_172110
test2.txt
```

emacs@genius.ct.infn.it

```
File Edit Options Buffers Tools Help
```

```
type = "Job";
JobType = "Normal";
Executable = "/bin/sh";
MyProxyServer="lxshare0207.cern.ch";
StdOutput = "hadrontherapy.out";
StdError = "hadrontherapy.err";
InputSandbox = {"hadrontherapy.sh", "macro.mac"};
OutputSandbox = {"hadrontherapy.err", "hadrontherapy.out", "picco.dat", "disA
", "disEn.dat"};
RetryCount = 7;
Arguments = "hadrontherapy.sh";
Requirements =
Member("GEANT4-6", other.GlueHostApplicationSoftwareRunTimeEnvironment) && c
GlueCEPolicyMaxCPUTime>100 && other.GlueCEStateStatus == "Production" && ot
lueHostNetworkAdapterOutboundIP ;
#CEId = other.GlueCEUniqueID == "grid012.ct.infn.it:2119/jobmanager-pbs-inf
";
```

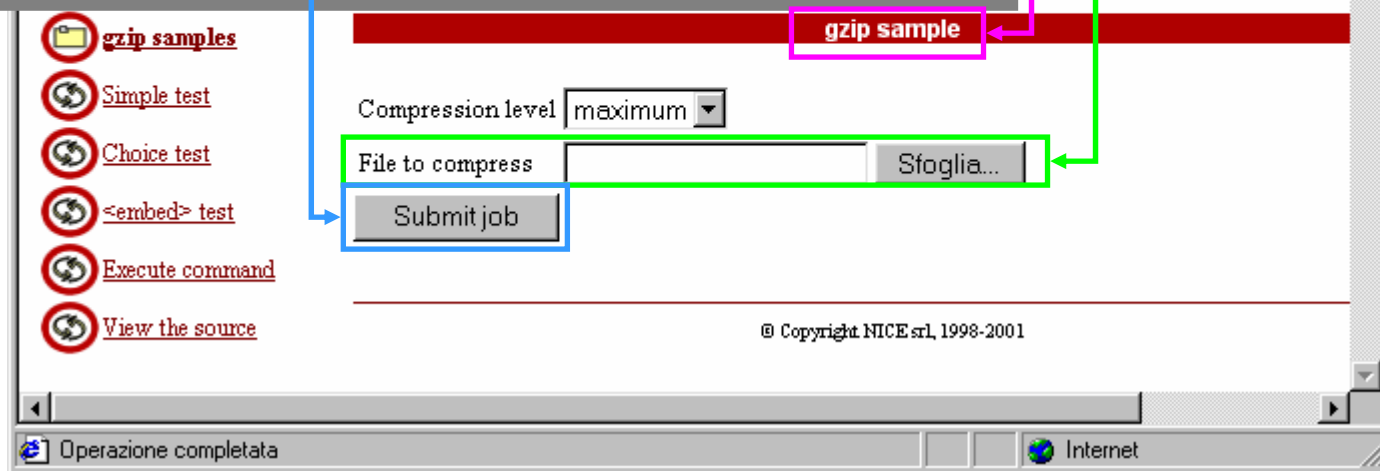
Applet VncViewer started



```

<ef:service id="gzip">
  <ef:name>gzip sample</ef:name>
  <ef:option id="level" label="Compression level" type="list">
    <ef:option id="9">maximum</ef:option>
    <ef:option id="4">medium</ef:option>
    <ef:option id="0">none</ef:option>
  </ef:option>
  <ef:option id="FILE" label="File to compress" type="file"/>
  <ef:action id="submit" label="Submit job">
    EF_SPOOLER_NAME="gzip $file"
    export EF_SPOOLER_NAME
    ${EF_ROOT}/plugins/lsf/bin/bsub -o output.txt gzip -$level \"$FILE\"
  </ef:action>
</ef:service>

```



- **Current implementation of GENIUS includes more than 100 services. Among them:**
 - **grid authentication with MyProxy !**
 - **several Resource Brokers, VO's and RLS/Catalog available;**
 - **full support for “interactive” and DAG jobs;**
 - **web guided job description, submission and monitoring (in collaboration with DATAMAT)**
 - **Web guided workflow description (in collaboration with GridLab)**
 - **P2P services available**
 - **PDA and cell phone versions available**
 - **Transparently compliant with EGEE-0 LCG2, Grid.it and gLite 1 middlewares/VO's**
 - **Interfaced to many generic applications**

1.x - LAN Integration (1998)

- Unix-Windows integration for simplified parallel and distributed computing

2.x - WAN MetaComputing interface (1999)

- Standards convergence, dynamic contents management

3.x - Computing Portal (2000-2003)

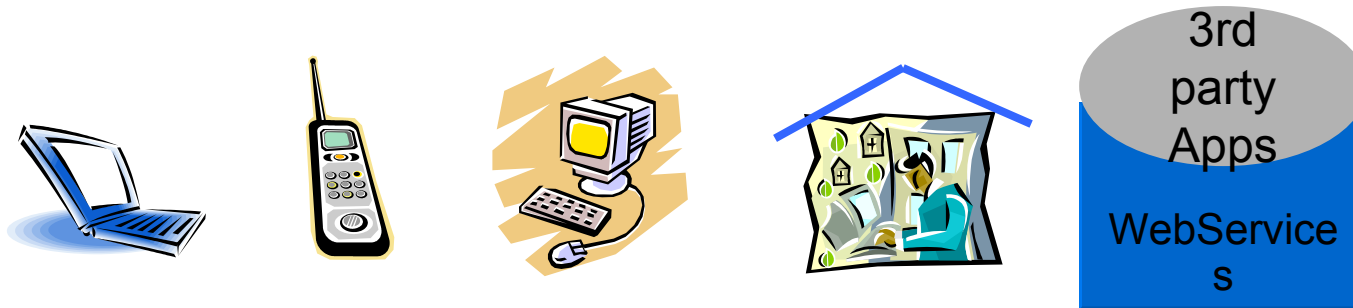
- Web architecture, JS independence, Globus integration

3.5 – Enterprise Grid Portal (2004)

- Fault tolerance, Auth delegation, Authorization, Enterprise Portal integration

4.0 – Enterprise Grid Gateway (2005)

- **WebServices compliance**, user mapping, enhanced Data management



ISV 1
Application Kit

Skin / Theme

(optional) GUI virtualization

Enterprise
Portals

ISV n
Application Kit

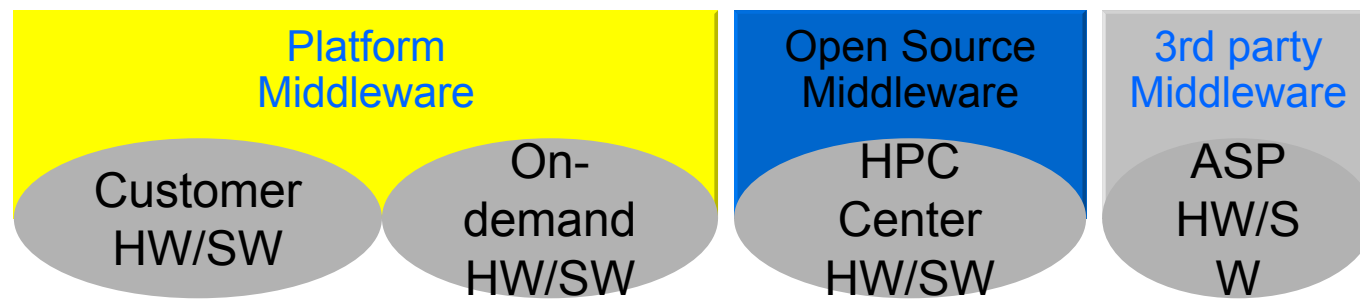


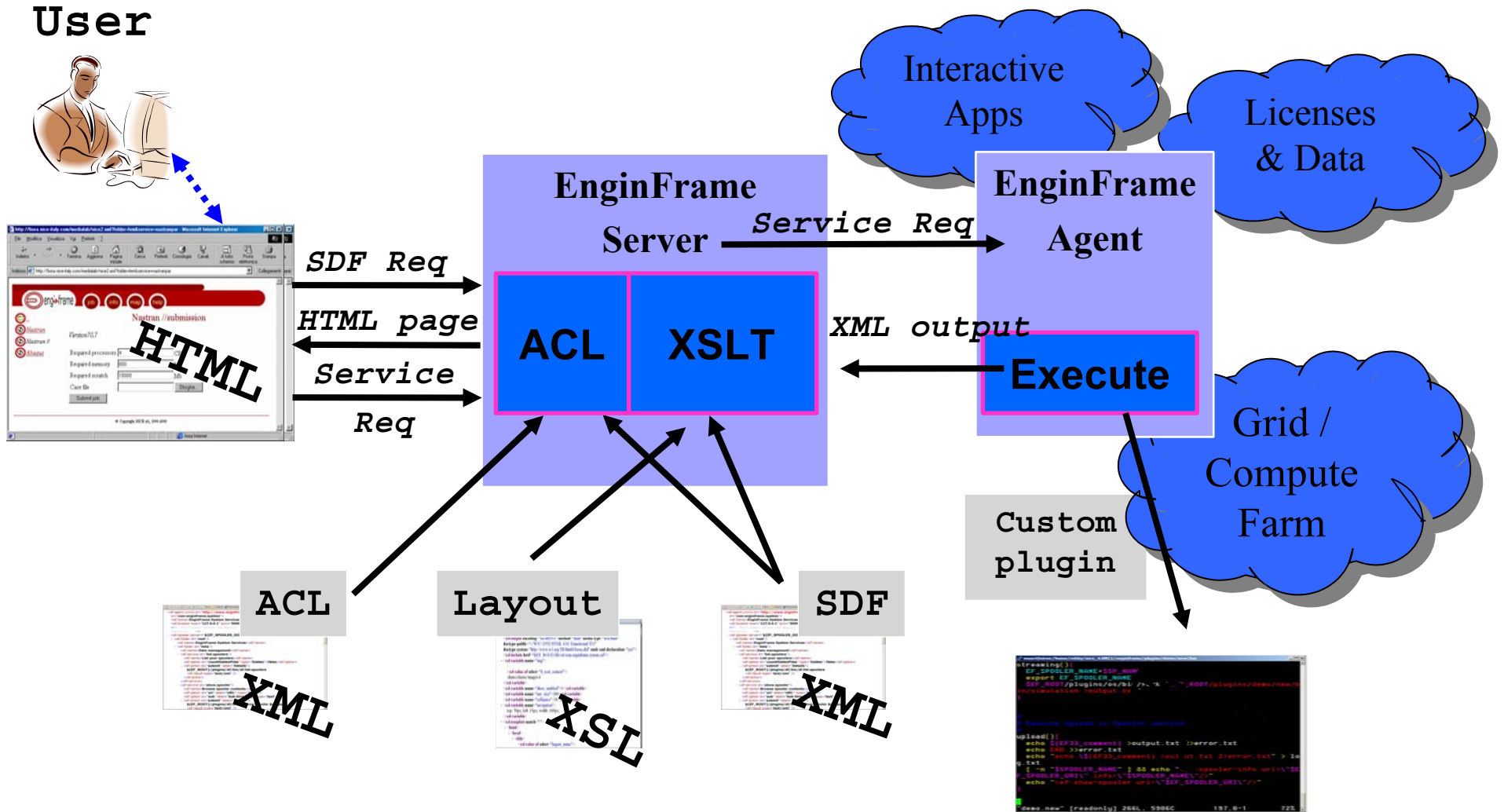
SingleSignOn

Custom
Application Kits

Data Virtualization

Accounting
/ Billing





- Security

Flexible authentication delegation (NIS, LDAP, AD, AFS, GSI, ...)

User mapping (one to many, many to many, many to one)

Fine grained authorization system (up to option level)

Session-level Token management

Support for HTTPS encryption

- Connectivity

- GridML abstraction to connect to the Grid (LSF, Globus, etc.)

- Portlet Integration kit for WebSphere and Oracle Portal

- SSO

- Portlet content publishing & rendering

- Integration with Citrix NFuse for application publishing

- Integration with VNC

- Data Management

Working directory is virtualized via the “**spooler**” concept

Select, add, remove, zip, tar actions on spooler data

Automatic, renewable time-to-live management for spoolers

- Usability

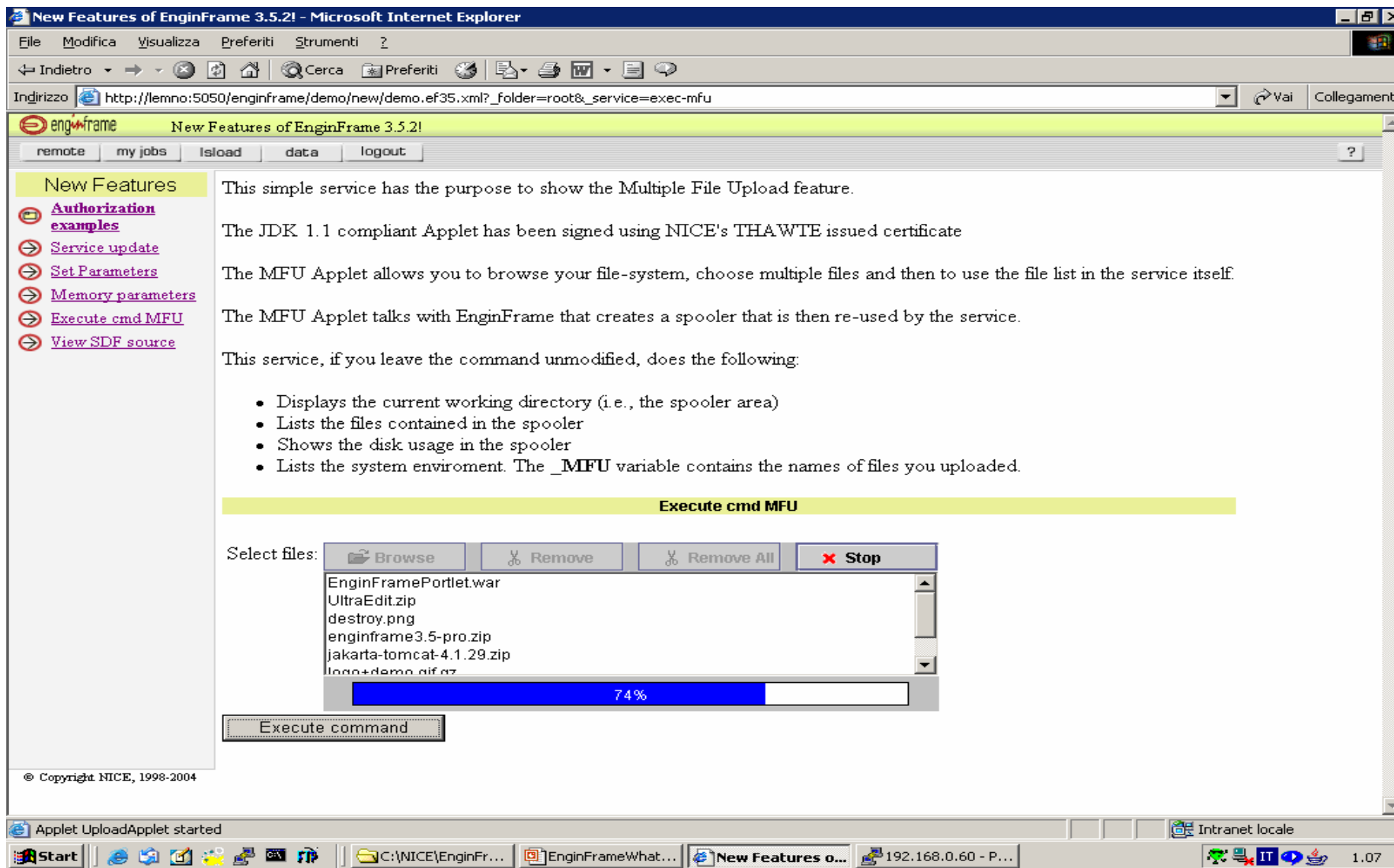
- Flexible remote file/item browsing

- Multiple file upload (required client-side Java 1.1 support)

- Context-based parameter expansion

- Xforms 1.0 support

- Correlation between job & data



New Features of EnginFrame 3.5.2!

remote my jobs Isload data logout

New Features

- Authorization examples
- Service update
- Set Parameters
- Memory parameters
- Execute cmd MFU
- View SDF source

This simple service has the purpose to show the Multiple File Upload feature.

The JDK 1.1 compliant Applet has been signed using NICE's THAWTE issued certificate

The MFU Applet allows you to browse your file-system, choose multiple files and then to use the file list in the service itself.

The MFU Applet talks with EnginFrame that creates a spooler that is then re-used by the service.

This service, if you leave the command unmodified, does the following:

- Displays the current working directory (i.e., the spooler area)
- Lists the files contained in the spooler
- Shows the disk usage in the spooler
- Lists the system environment. The `_MFU` variable contains the names of files you uploaded.

Execute cmd MFU

Select files:

EnginFramePortlet.war
 UltraEdit.zip
 destroy.png
 enginframe3.5-pro.zip
 jakarta-tomcat-4.1.29.zip
 log+demo.gif.gz

74%

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Applet UploadApplet started

Intranet locale

Start | C:\NICE\EnginFr... | EnginFrameWhat... | New Features o... | 192.168.0.60 - P... | 1.07

- Performance and scalability
 - Service output caching
 - Support for Web farms
 - Dynamic on-demand loading of spooler data

- **Job manager independence**
 - Grid interface virtualized via our flexible *GridML*
 - Drivers for most popular middleware
- **Enterprise class features**
 - Authentication delegation
 - Support for web farms
 - Integration in Enterprise Portals
- **Rapid evolutionary implementation**
 - Intuitive XML service description language
 - Many applications already integrated
 - Trivial integration of custom scripts & apps
 - Can integrate & leverage telnet/ssh approach
- **Web Services Compliance**

Thanks for your attention!

