



Enabling Grids for E-scienceE

ARDA/LHCb rerun

of the actual demo in Rio

D. Liko / CERN

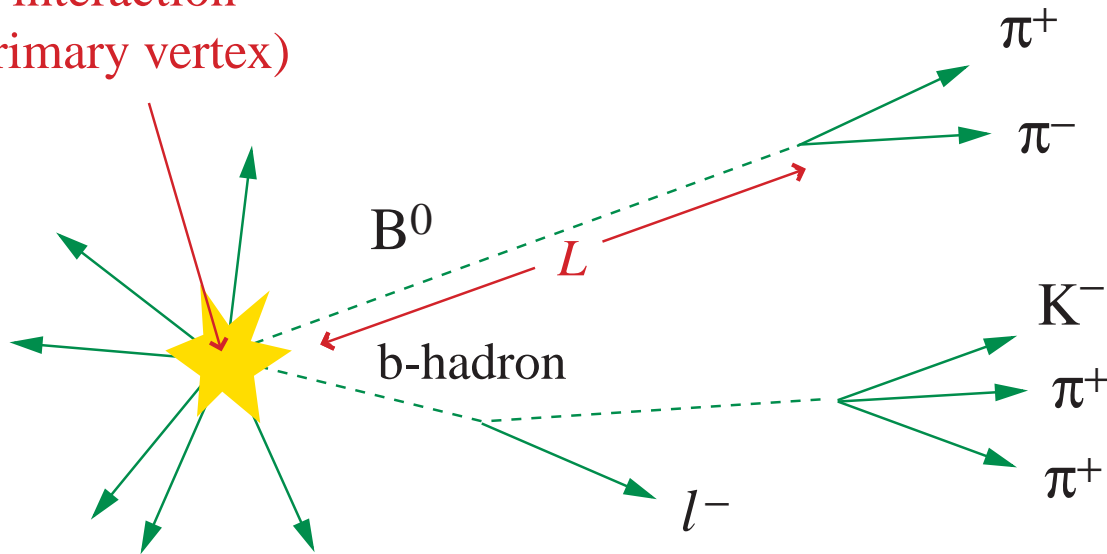
www.eu-egee.org



- **What is LHCb ?**
- **Creating a Job**
- **Submitting a Job**
- **Monitoring of the Job status**
- **Retrieval of results**
- **Final analysis of job data with ROOT**

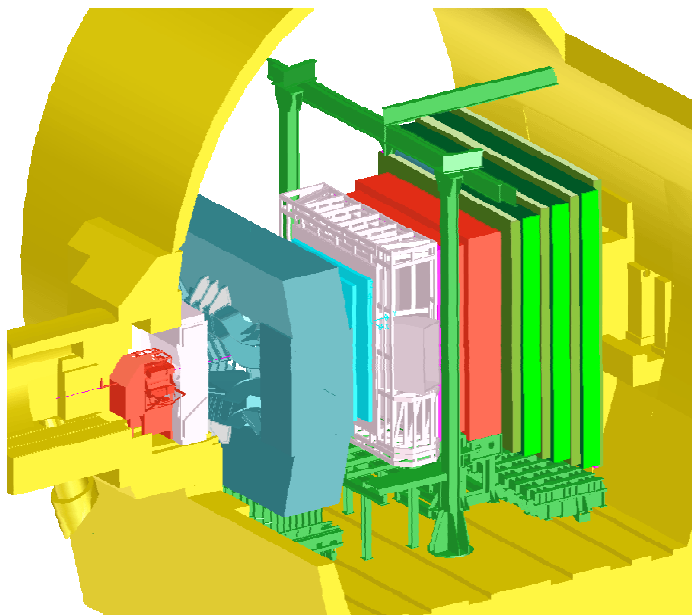
- A dedicated B physics experiment @ LHC

pp interaction
(primary vertex)

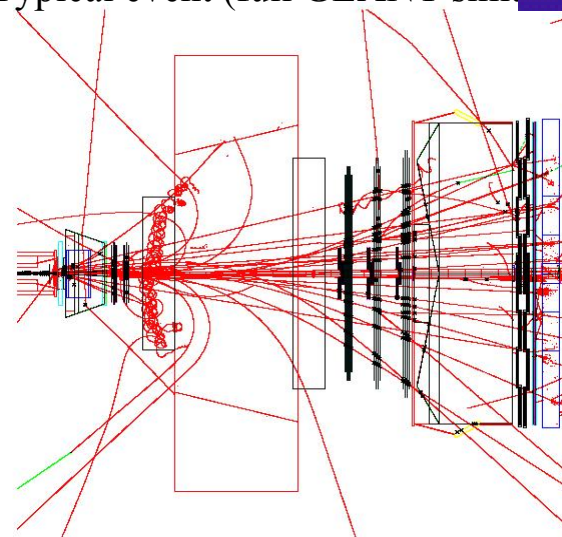


B hadrons are mostly produced in the forward direction (along the beam)

Design of experiment in the underground cavern

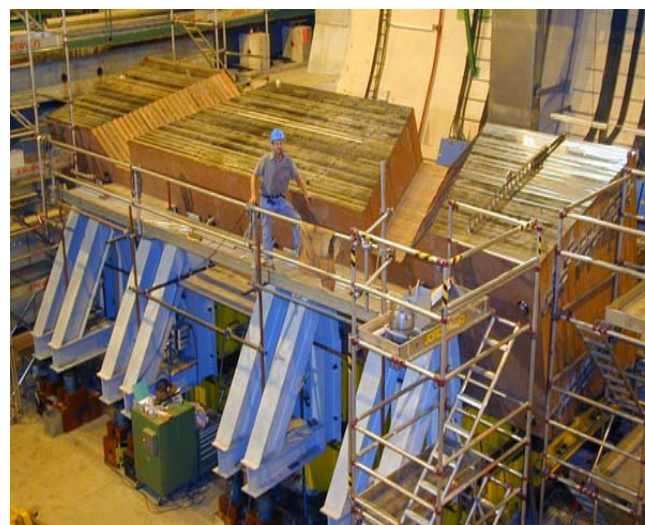


Typical event (full GEANT simulation)



Current status of magnet construction:

Subdetectors also under construction
 Experiment will be completed ready for first LHC beam in 2007



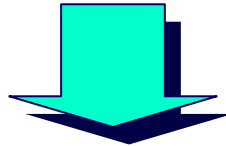
- **Event Data is**
 - recorded at the experiment
 - simulated on the GRID
- **Event Data is preprocessed on the GRID**
- **The physicist create his special analysis job for final processing on the GRID**

- **Analysis group in the experiment are developing algorithms to look for interesting events**
 - Typically an analysis of the kinematics of the decay
 - Our physicist are experts on writing such algorithms
- **But not all our physicist are grid experts**
- **We have developed a tool that allows them to send their algorithm to gLite**





- ATLAS and LHCb develop applications within a common framework: Gaudi/Athena
- Both collaborations aim to exploit potential of Grid for large-scale, data-intensive distributed computing



- Simplify management of analysis and production jobs for end-user physicists by developing tools for accessing Grid and other services
- Built-in knowledge of how Gaudi/Athena works:
Gaudi/Athena and Grid Alliance (Ganga)

- **Actual Demo was presented by my LHCb colleague in Rio**
- **He did not return yet**



- **There is no technical difficulty in running the demo**
 - But I am not member of LHCb
- **In the following ...**

Screenshots from the training sessions before he left

Ganga

File View Job Actions Data Management Help

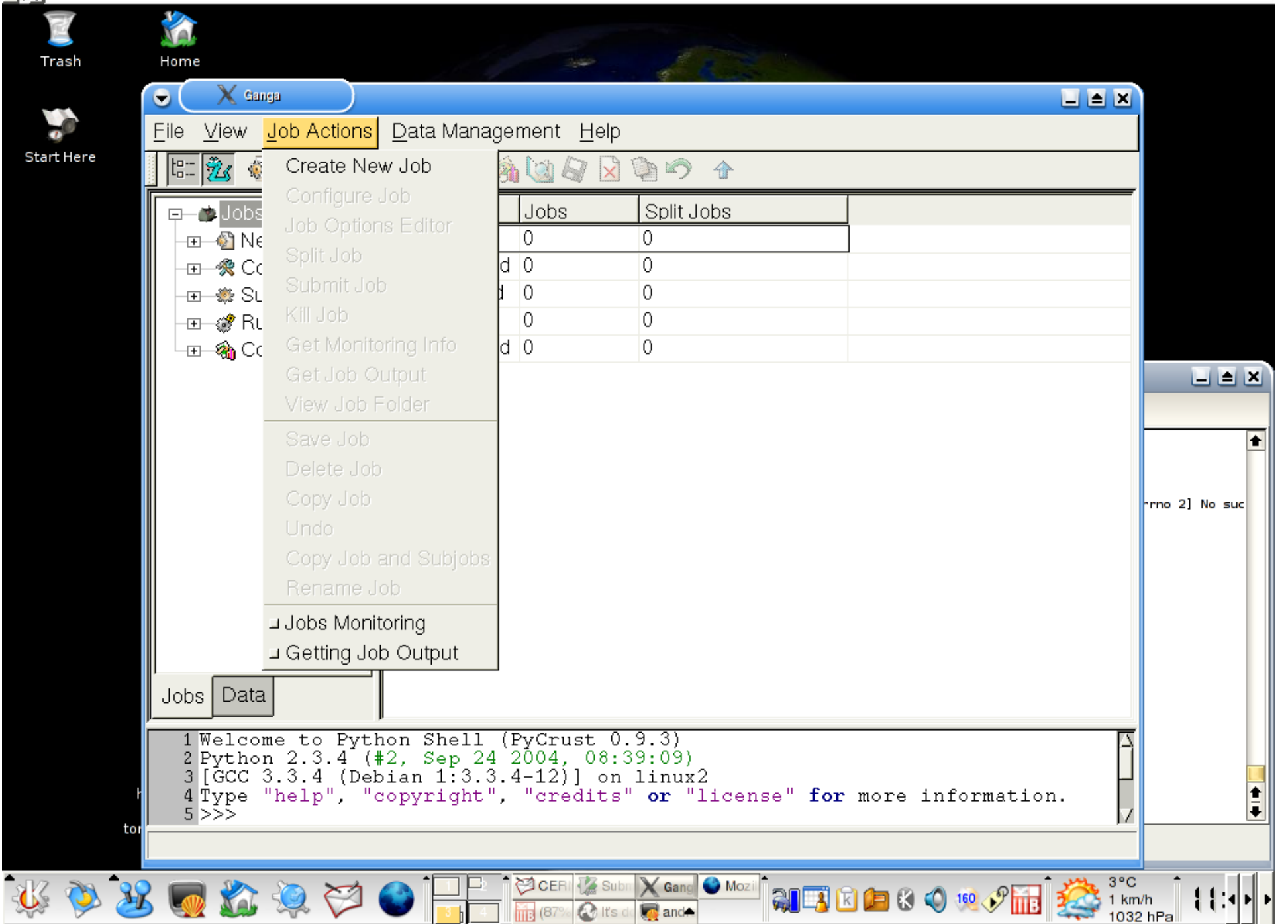
The GUI displays a tree view on the left with the following structure:

- Jcbs
 - New
 - Configured
 - Submitted
 - Running
 - Completed

Name	Jobs	Split Jobs
New	0	0
Configured	0	0
Submitted	0	0
Running	0	0
Completed	0	0

Jobs Data

```
1 Welcome to Python Shell (PyCrust 0.9.3)
2 Python 2.3.4 (#2, Sep 24 2004, 08:39:09)
3 [GCC 3.3.4 (Debian 1:3.3.4-12!) on linux2
4 Type "help", "copyright", "credits" or "license" for more information.
5 >>>
```



The screenshot displays a Linux desktop with a Ganga job management application window. The desktop background features a globe and icons for 'Trash', 'Home', and 'Start Here'. The Ganga window has a menu bar (File, View, Job Actions, Data Management, Help) and a toolbar. On the left, a tree view shows job categories: Jobs, New, Configured, Submitted, Running, and Completed. The main area contains a table with columns 'Name', 'Jobs', and 'Split Jobs'. A 'New Job' dialog box is overlaid, prompting for a job name (input: 'glite job') and a batch system (dropdown menu with 'Glite' selected). The bottom of the Ganga window shows a Python shell terminal with the following text:

```
1 Welcome to Python Shell (PyCrust 0.9.3)
2 Python 2.3.4 (#2, Sep 24 2004, 08:39:09)
3 [GCC 3.3.4 (Debian 1:3.3.4-12)] on linux2
4 Type "help", "copyright", "credits" or "license" for more information.
5 >>>
```

The system tray at the bottom shows various icons including network, volume, and system status (3°C, 1 km/h, 1032 hPa).



- Jobs
 - New
 - glite job
 - Configured
 - Submitted
 - Running
 - Completed

Jobs Data

Job

Batch System Job Status

Created Modified

Submitted Finished

Comments

Batch System

Job Id Batch Queue

Batch Job Status

Application

Application Type Name

Version

Executable file

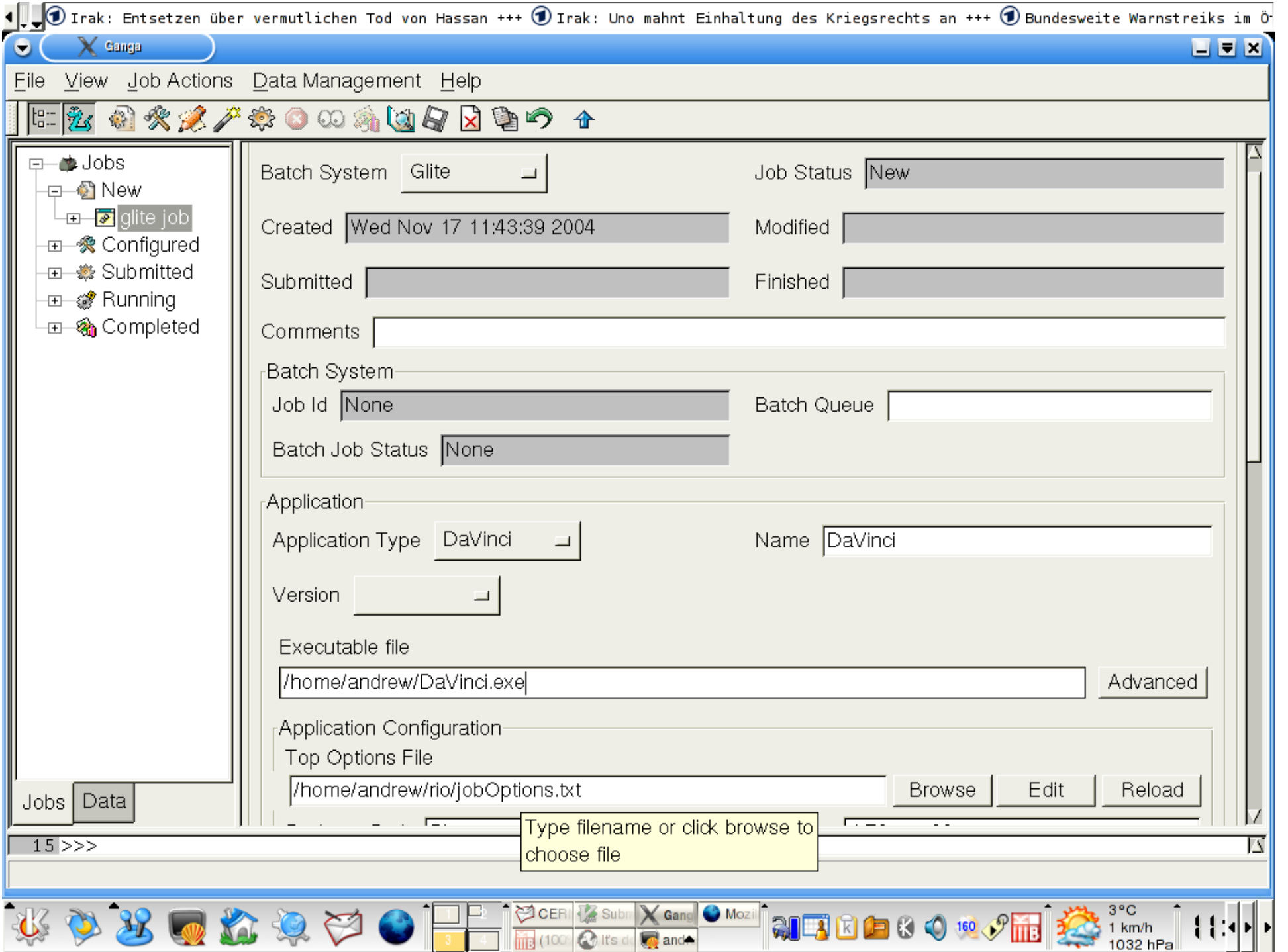
Application Configuration

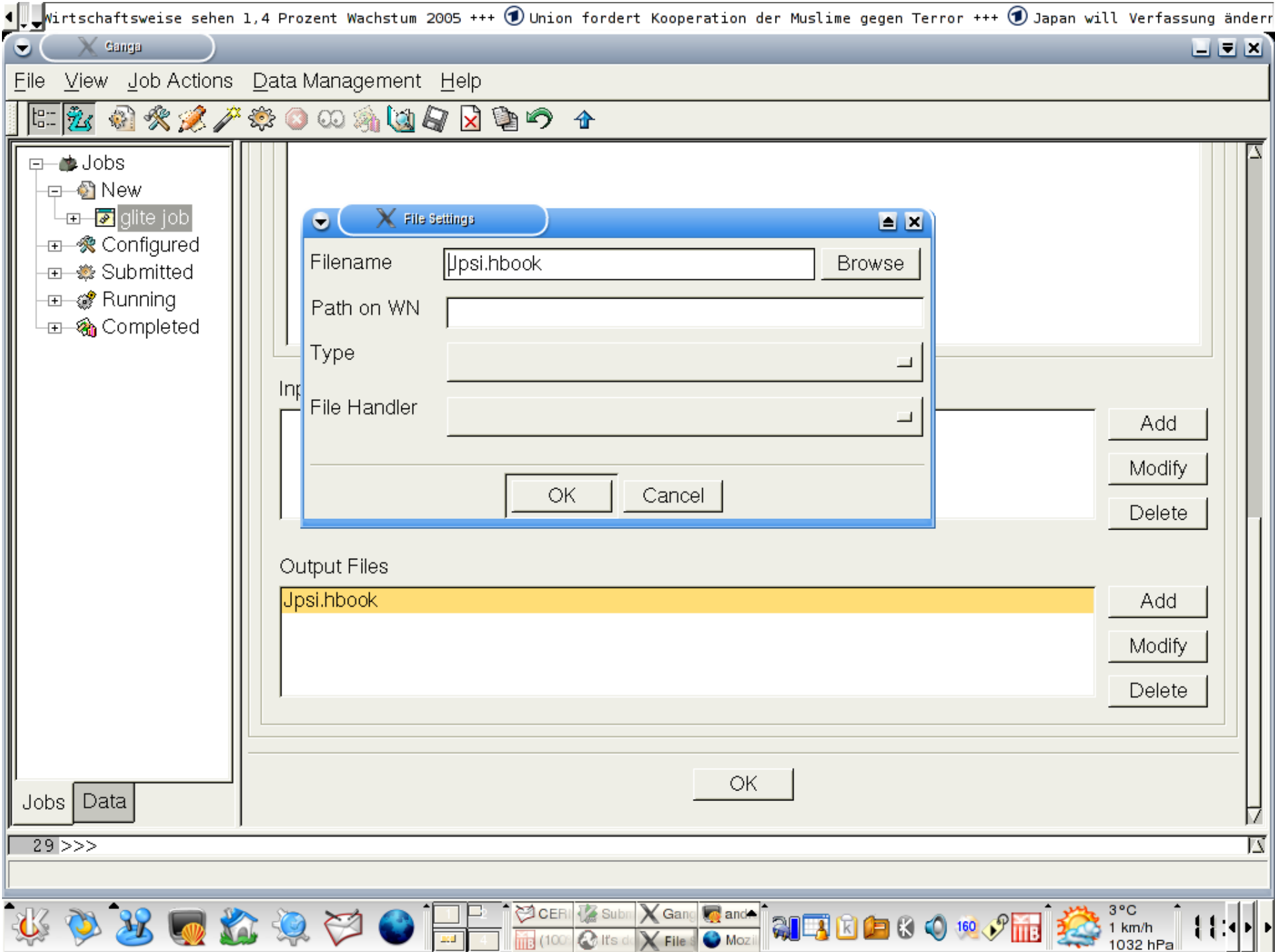
Top Options File

```

3 [GCC 3.3.4 (Debian 1:3.3.4-12)] on linux2
4 Type "help", "copyright", "credits" or "license" for more information.
5 >>>

```







Jobs Monitoring

- Create New Job
- Configure Job
- Job Options Editor
- Split Job
- Submit Job**
- Kill Job
- Get Monitoring Info
- Get Job Output
- View Job Folder
- Save Job
- Delete Job
- Copy Job
- Undo
- Copy Job and Subjobs
- Rename Job

Jobs Data

System: Glite Job Status: New

Created: Wed Nov 17 11:43:39 2004 Modified:

Finished:

Batch Queue:

Status: None

Name: DaVinci

Executable file: /home/andrew/DaVinci.exe Advanced

Application Configuration

Top Options File: /home/andrew/rio/jobOptions.txt Browse Edit Reload

29 >>>

Perform Submit Job



Jobs

- New
- Configured
- Submitted
 - glite job
- Running
- Completed

Job

Batch System Job Status

Created Modified

Submitted Finished

Comments

Batch System

Job Id Batch Queue

Batch Job Status

Application

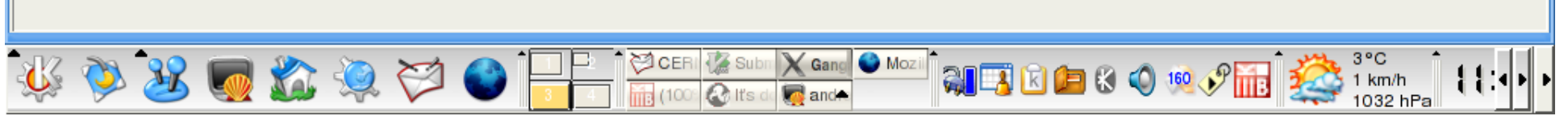
Application Type Name

Version

Executable file

Application Configuration

Top Options File



Ganga

File View Job Actions Data Management Help

Jobs
+ New
+ Configured
+ Submitted
+ Running
+ **glite job**
+ Completed

Get Monitoring Info

Batch System	Glite	Job Status	Running
Created	Wed Nov 17 11:43:39 2004	Modified	Wed Nov 17 11:47:19 2004
Submitted	Wed Nov 17 11:47:43 2004	Finished	

Comments

Batch System

Job Id	11123	Batch Queue	glite_queue
Batch Job Status	STARTED		

Application

Application Type	DaVinci	Name	DaVinci
Version			

Executable file

runDV-v12r3.csh Advanced

Application Configuration

Top Options File

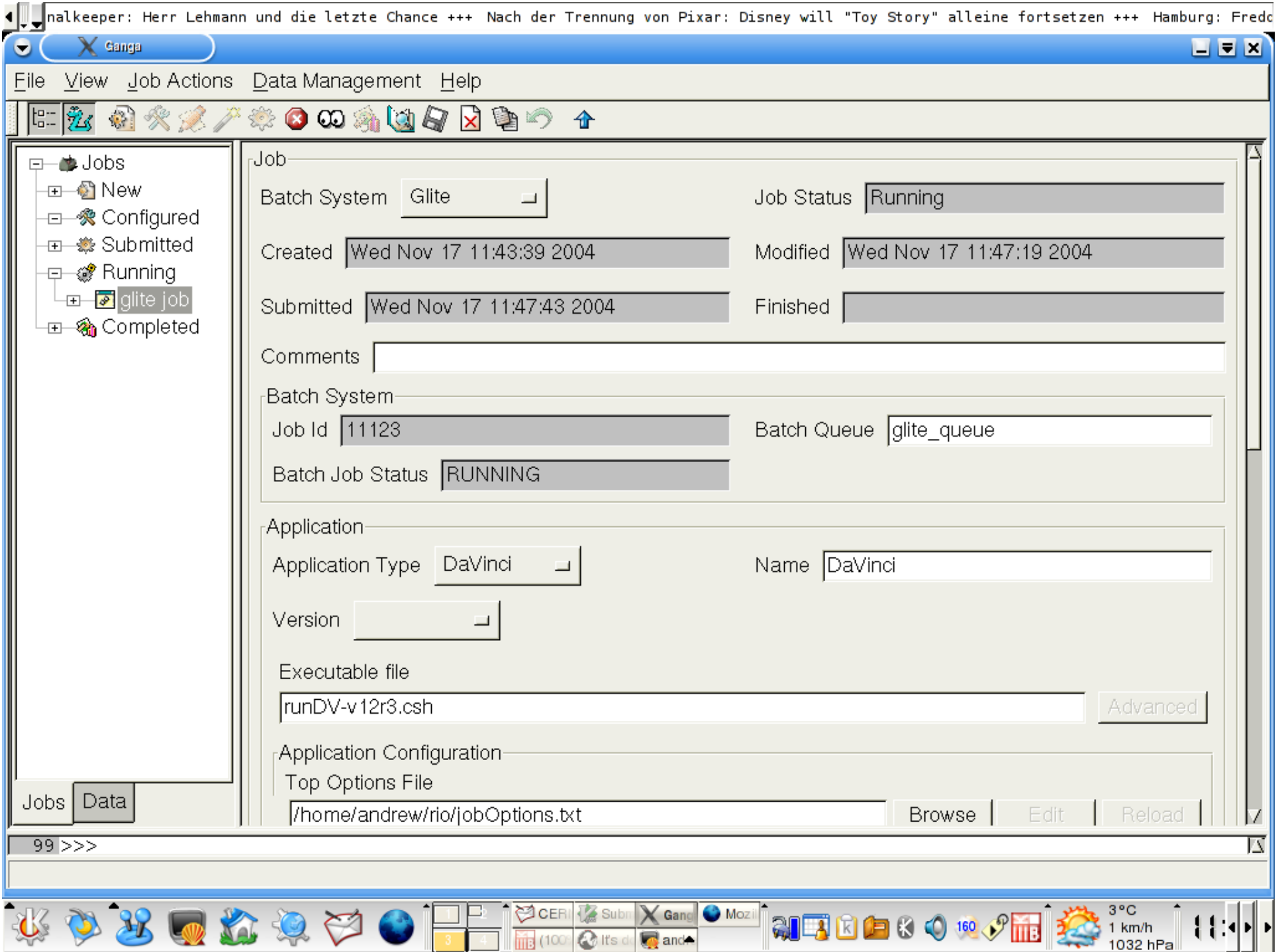
/home/andrew/rio/jobOptions.txt Browse Edit Reload

Jobs Data

85 >>>

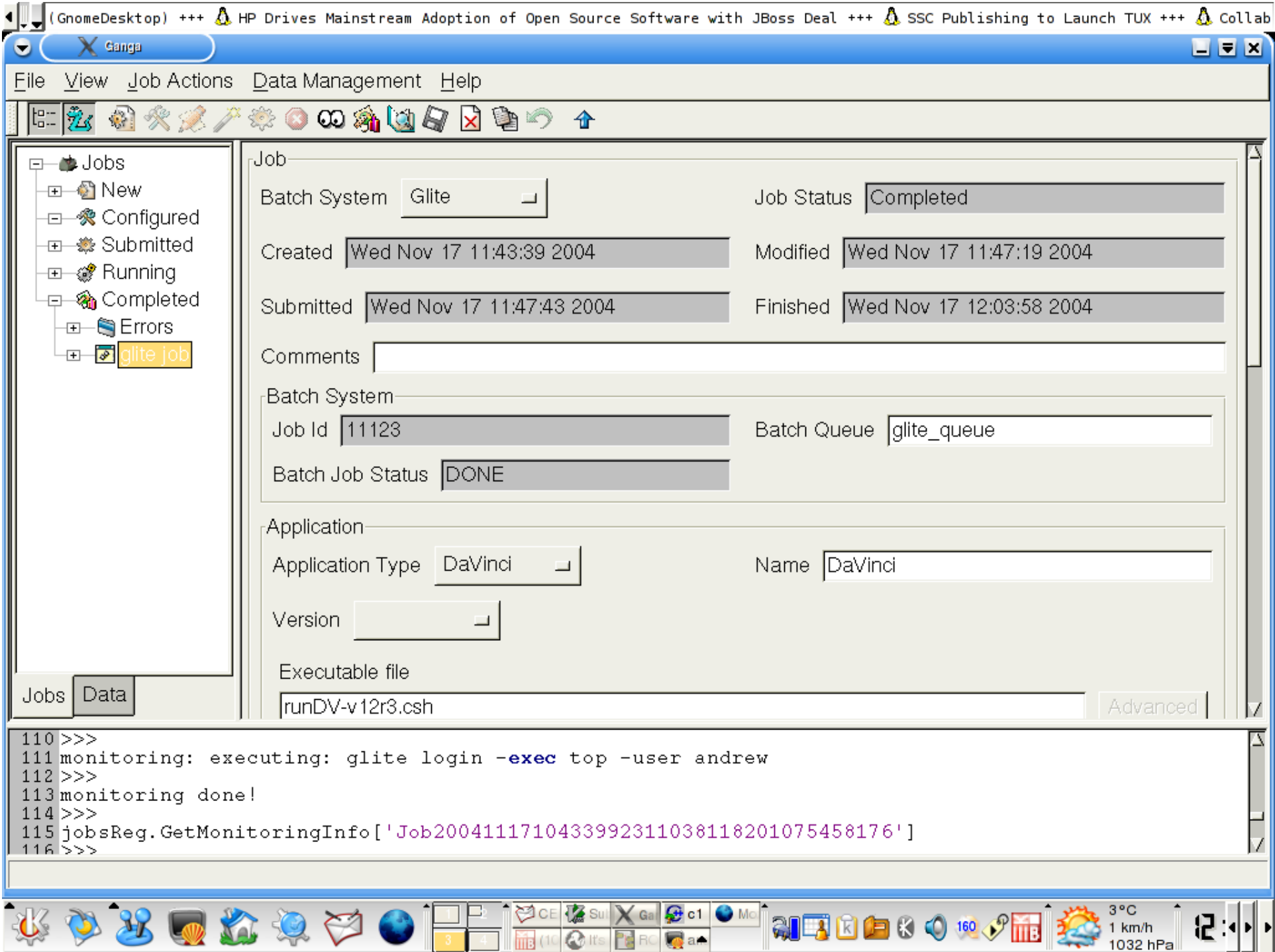
Perform Get Monitoring Info

Taskbar: Ganga, Mozilla, 3°C, 1 km/h, 1032 hPa



The screenshot displays the Ganga GUI interface. The window title is "Ganga". The menu bar includes "File", "View", "Job Actions", "Data Management", and "Help". The toolbar contains various icons for file operations and job management. On the left, a tree view shows the job hierarchy: "Jobs" (expanded) containing "New", "Configured", "Submitted", "Running" (expanded), and "Completed". Under "Running", a specific job named "glite job" is selected. The main panel shows the configuration for this job: "Batch System" is set to "Glite", "Job Status" is "Running", "Created" is "Wed Nov 17 11:43:39 2004", "Modified" is "Wed Nov 17 11:47:19 2004", "Submitted" is "Wed Nov 17 11:47:43 2004", and "Finished" is empty. The "Comments" field is also empty. Below the configuration, the "Batch System" section shows "Job Id" as "11123" and "Batch Queue" as "glite_queue". The bottom panel displays the execution log for the job, showing the submission process and the start of the command execution.

```
71 Result:
72 1 ["Nov 17 11:47:42 info\tSubmitting job '/egee/user/a/andrew/bin/runDV-v12r3.csh
/home/andrew/myGangaJobs/Job2004111710433992311038118201075458176/Application_DaVinci_/jobOptio
ns.opts '...\n", 'Nov 17 11:47:42 info\tInput Box: {jobOptions.opts lhcb-DV-v12r3.tar.gz}\n',
'Nov 17 11:47:43 info\tCommand submitted (job 11123)!!\n']
73 ***** JOBID= 11123
74 >>>
75 monitoring: executing: glite login -exec top -user andrew
76 >>>
77 monitoring done!
78 >>>
79 jobsReg.GetMonitoringInfo['Job2004111710433992311038118201075458176']
80 >>>
81 monitoring: executing: glite login -exec top -user andrew
82 monitoring done!
83 10590 DÖNE /egee/user/a/andrew/bin/args.sh
84 11123 STARTED /egee/user/a/andrew/bin/runDV-v12r3.csh gliteprod@lxn5210.cern.ch
85 >>>
86 jobsReg.GetMonitoringInfo['Job2004111710433992311038118201075458176']
87 >>>
88 monitoring: executing: glite login -exec top -user andrew
```





Jobs

- New
- Configured
- Submitted
- Running
- Completed
- Errors
- glite job

Jobs Data

Job

Batch System Glite Job Status Completed

Choose a file to view

/home/andrew/myGangaJobs/Job2004111710433992311038118201075458176

- ..
- Application_DaVinci_
- output
- workdir
- Job2004111710433992311038118201075458176.py
- jobPickle.job

All files (*) Show hidden files

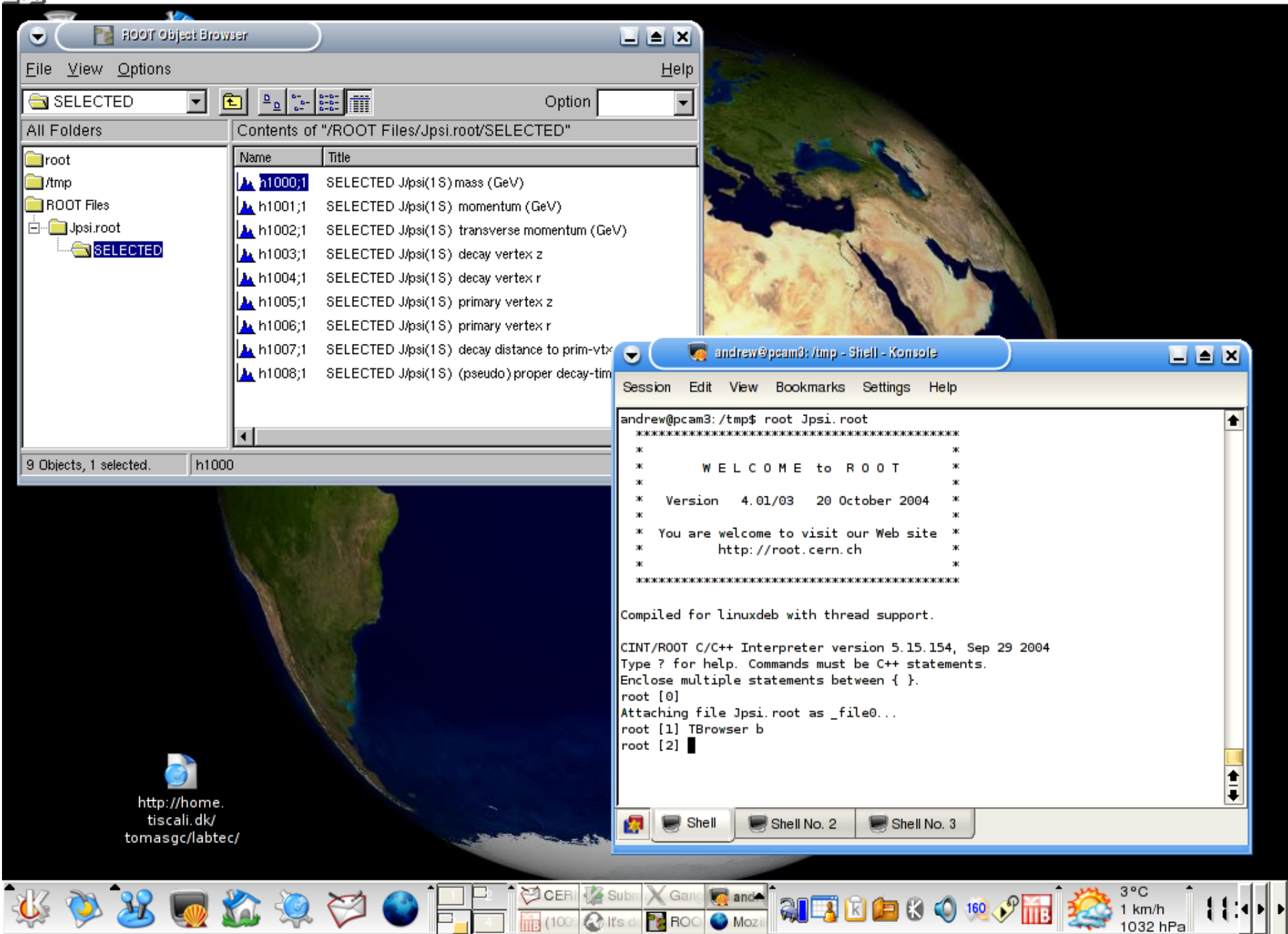
OK Cancel

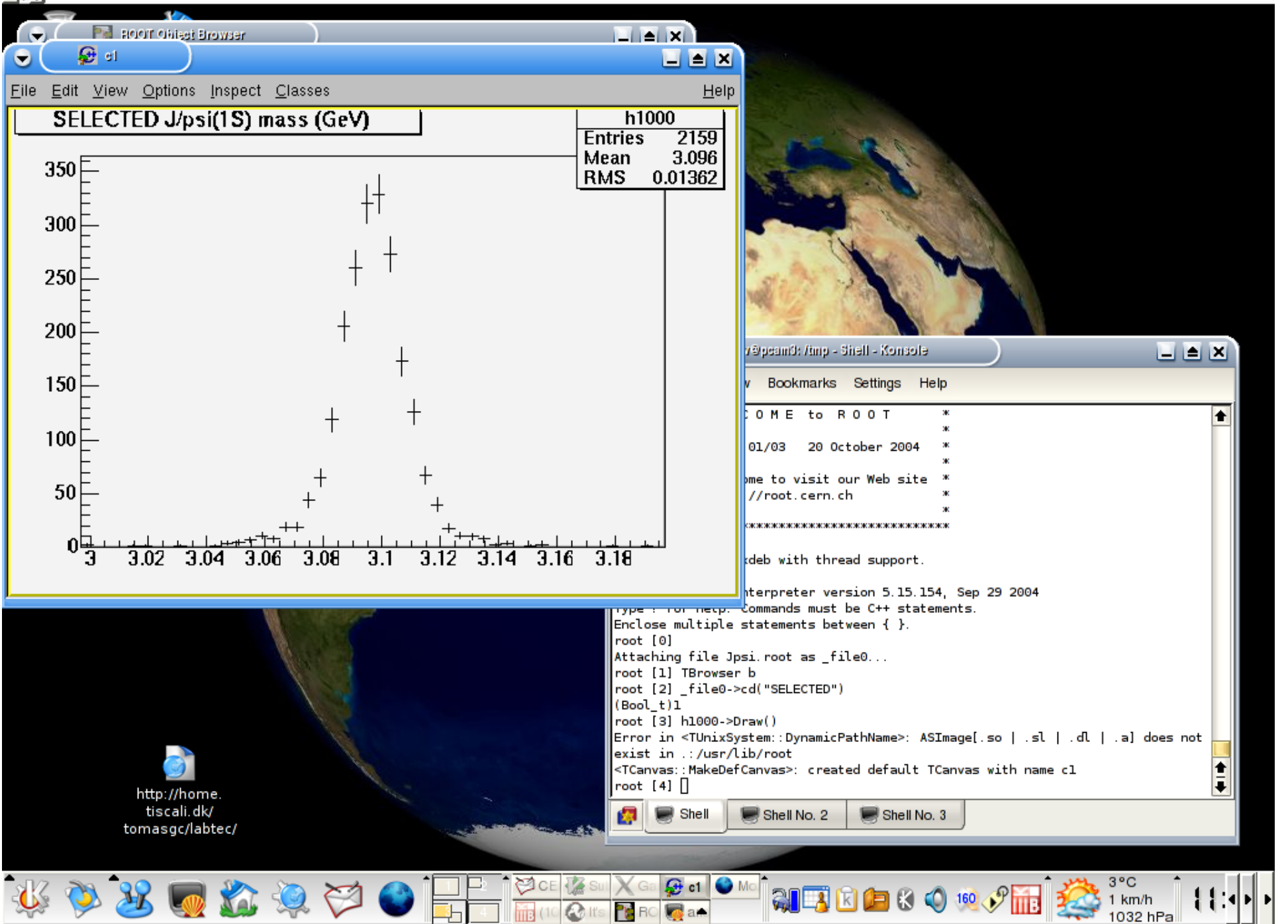
Advanced

```

110 >>>
111 monitoring: executing: glite login -exec top -user andrew
112 >>>
113 monitoring done!
114 >>>
115 jobsReg.GetMonitoringInfo['Job2004111710433992311038118201075458176']
116 >>>

```





<http://home.tiscali.dk/tomasgc/labtec/>

