# Getting started

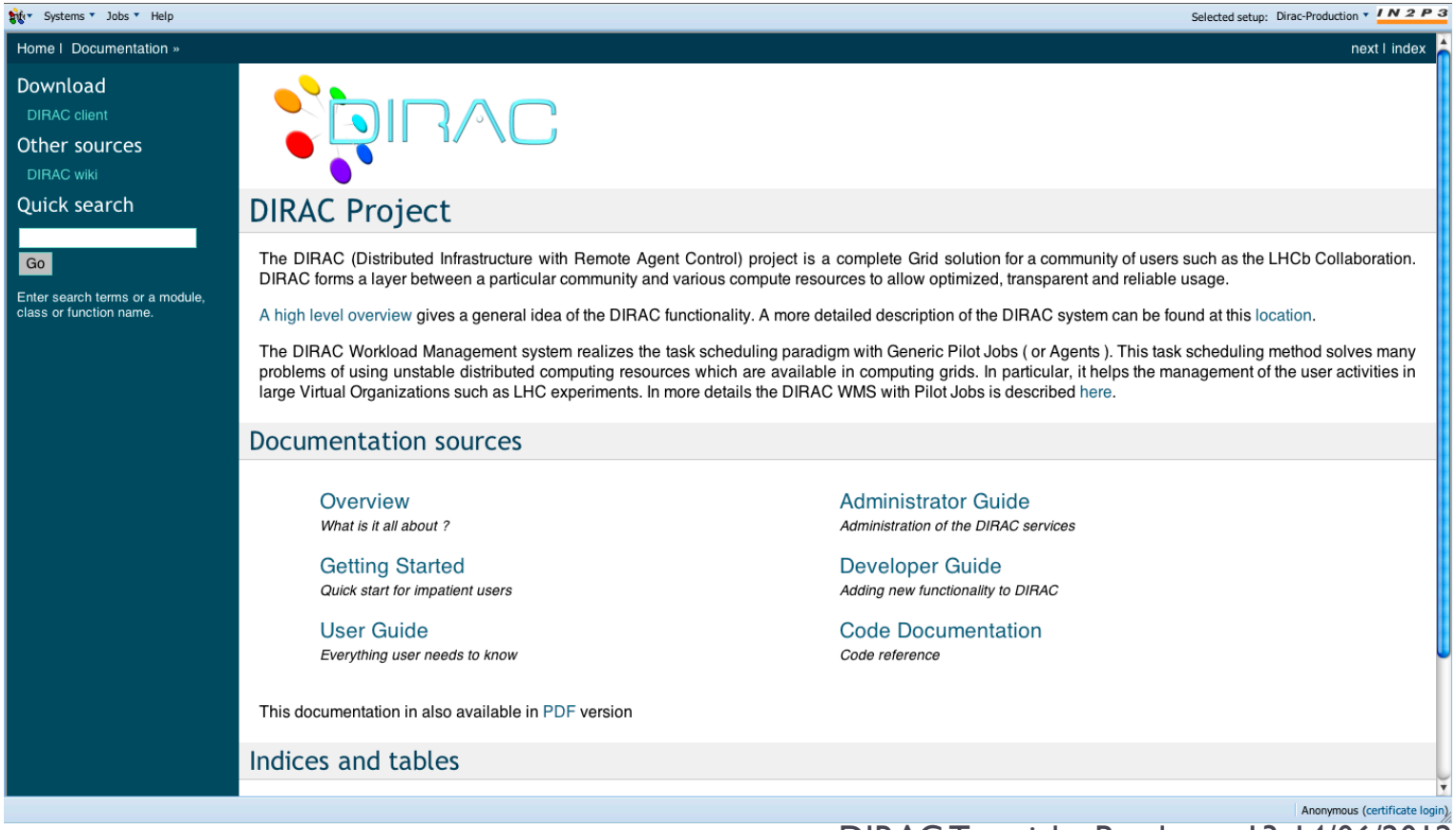
DIRAC Project

# Outline

- DIRAC information system
  - Documentation sources
- DIRAC users and groups
  - Registration with DIRAC
- Getting DIRAC credentials
  - Getting the certificates right
  - Registering user proxies
- Web portal interface
- Hello world! job

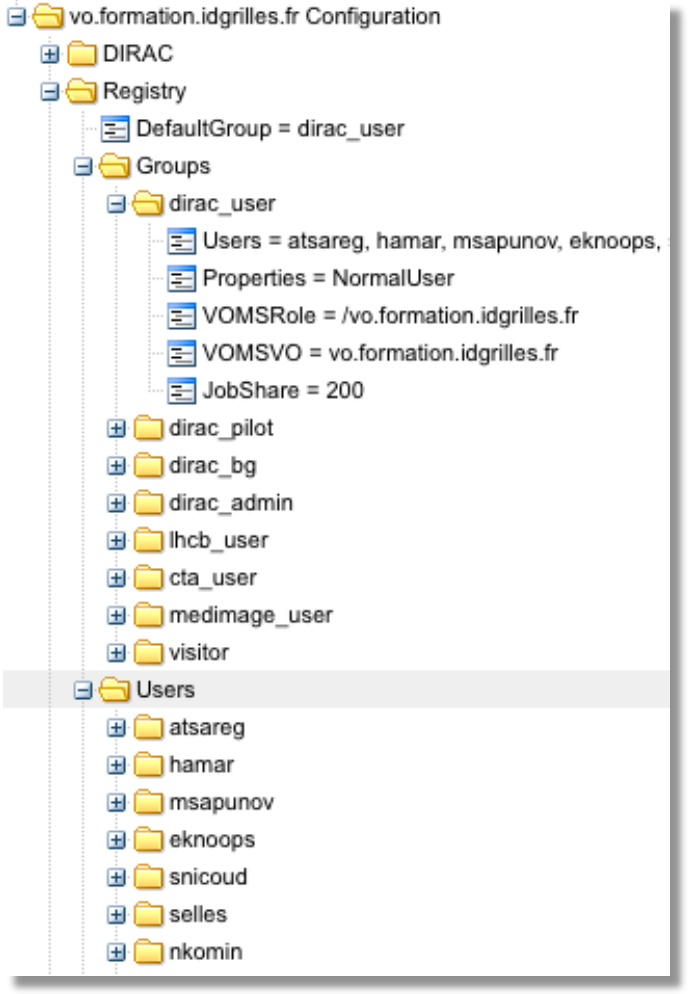
# http://diracgrid.org

- DIRAC Project Web site contains entry points to various docs
  - This is being rapidly developed now, more info to come



# DIRAC users and groups

- In order to work with DIRAC users should be registered
  - In one or several groups
  - For traceability, accounting, etc
- User's rights are determined by the ***Properties*** of the group
  - E.g. ***NormalUser*** can submit jobs but can not change the DIRAC Configuration data
- Each group has its share of jobs that it can run
  - Determines the group priority
- Groups are mapped onto VOMS VO groups/ roles



# User credentials

- Grid users are identified by their certificates
  - Individual certificates, X509 PKI infrastructure
- Obtaining the certificates is not part of the tutorial
  - Short living tutorial certificates will be used
  - The tutorial certificates are otherwise the same as real ones
- The tutorial certificates are available for the participants as .p12 files
  - Validity : till 15/06/12
  - Password : bordeaux130612

# Proxy Management

- DIRAC has a full featured Proxy Management system
  - Secure Proxy repository – ProxyManager service
    - Can be configured to use MyProxy server
  - Supply user proxies to various components
    - Automatic proxy renewal if necessary
- Before using DIRAC a long living proxy must be uploaded to the Proxy Repository
- In the Web Portal
  - Tools > Upload Proxy
  - Choose certificate file
  - Provide password

# DIRAC: user interfaces

- Unix command line interface
  - Historically the first one
  - Suitable for unix addicts
    - Easy to use in shell scripts
  - Too many commands
    - Even more switches
- Python API
  - Originally for DIRAC developers
  - More users are starting to use it
  - The most versatile
    - Build your own DIRAC applications

# DIRAC: user interfaces

- Web interface – http://dirac.france-grilles.fr
  - User friendliness is the goal
    - That's why we start with this one
  - No security compromises
  - Less flexibility than with other interfaces
  - But still in rapid development
    - More exciting functionalities
    - More application specific extensions

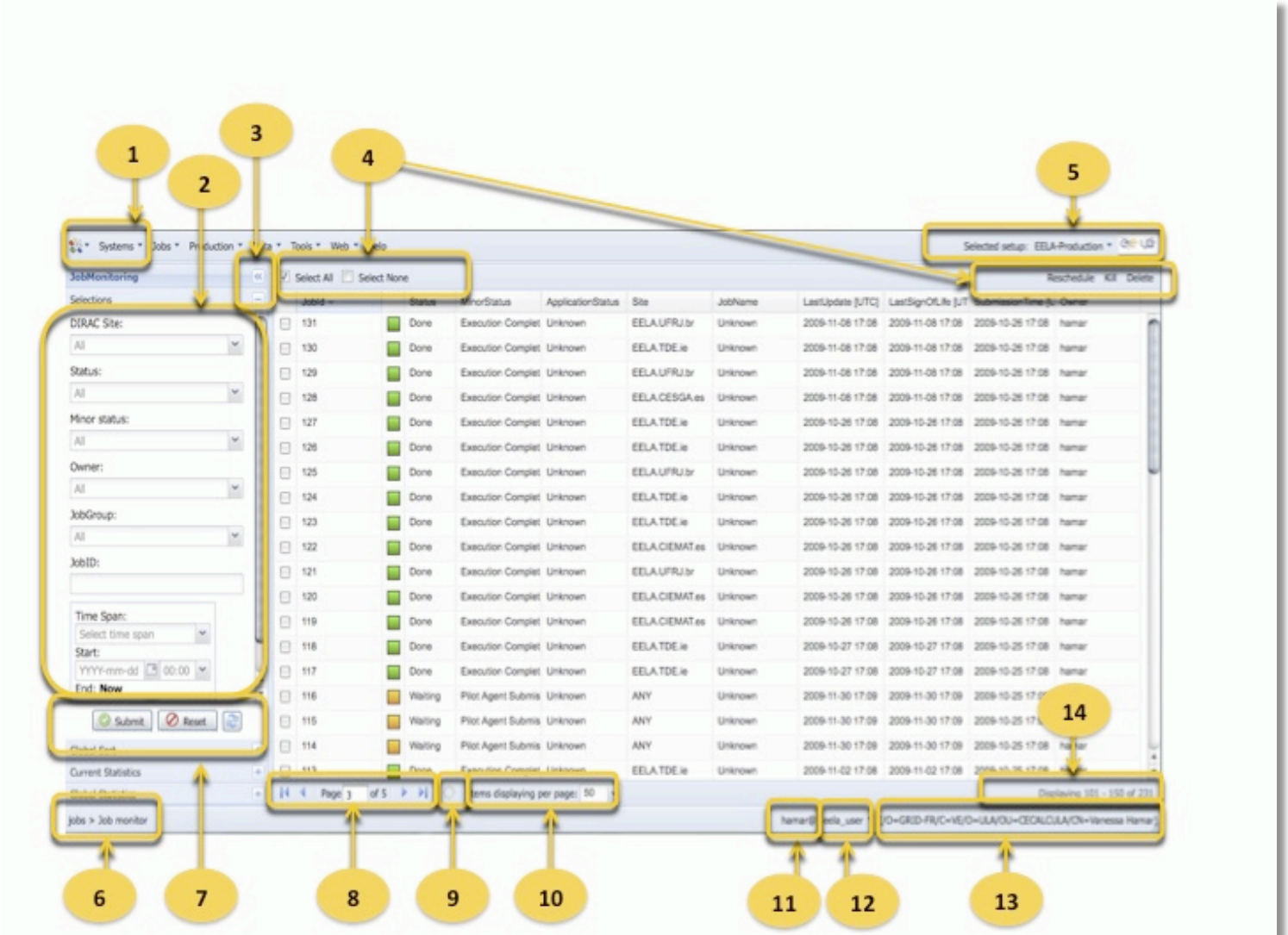
# Loading certificate into the browser

- Before using the Web portal the user grid certificate must be loaded into the browser
  - Used to authenticate the user to the DIRAC services
- Firefox
  - Preferences > Advanced > Encryption > View Certificates
  - Import certificate
    - From .p12 file
    - Password required
- Exporting certificate in Firefox
  - Preferences > Advanced > Encryption > View Certificates
  - Backup certificate

# Web Portal: user tasks

- Job submission
  - Demonstrator
- Job Monitoring
  - Job status, access to the results
- Data discovery
  - E.g. LHCb Bookkeeping database interface
  - Generic Catalog Browser to come
- Administrative tasks
  - Configuration management
  - Users and groups, community policies
  - Accounting, services monitoring
- Specific application Web Portals can be derived
  - Community Application Servers
    - All the grid computational tasks steered on the web
    - E.g. LHCb Production Management System

# Web Portal: general layout

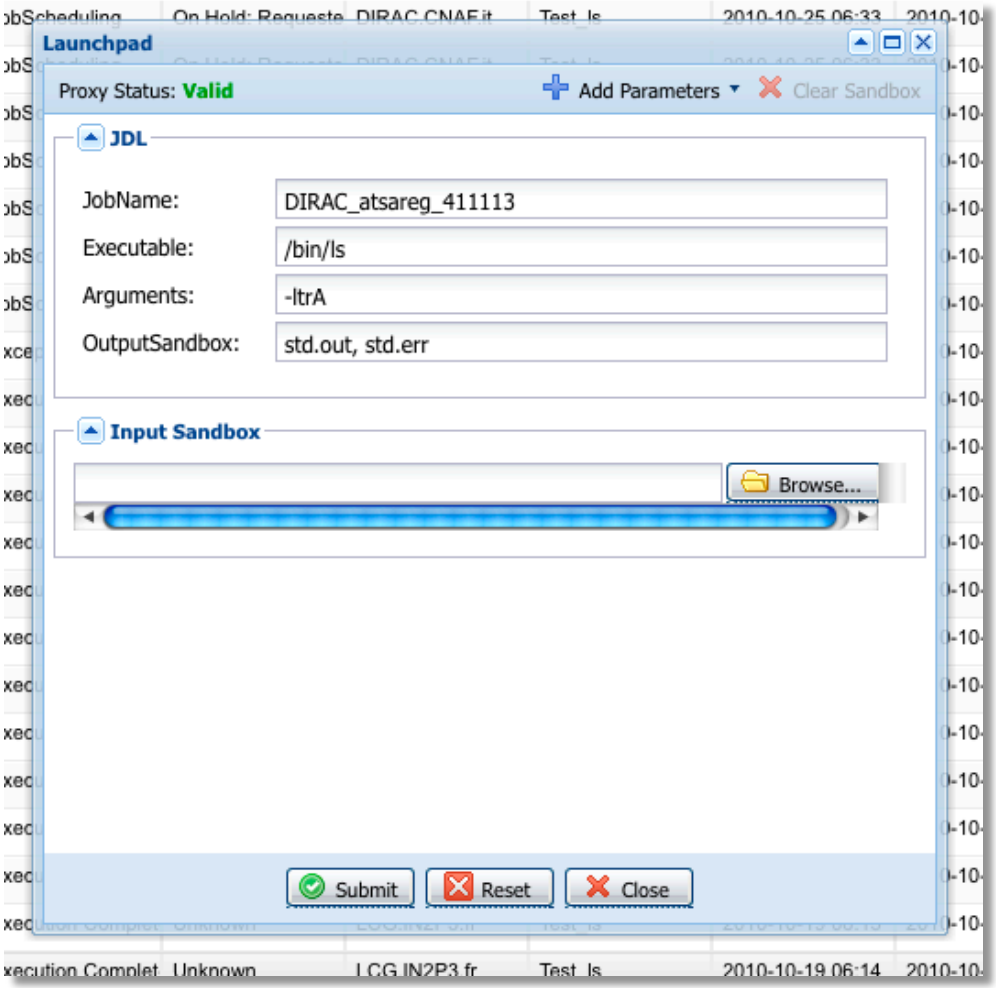


# Web Portal: general layout

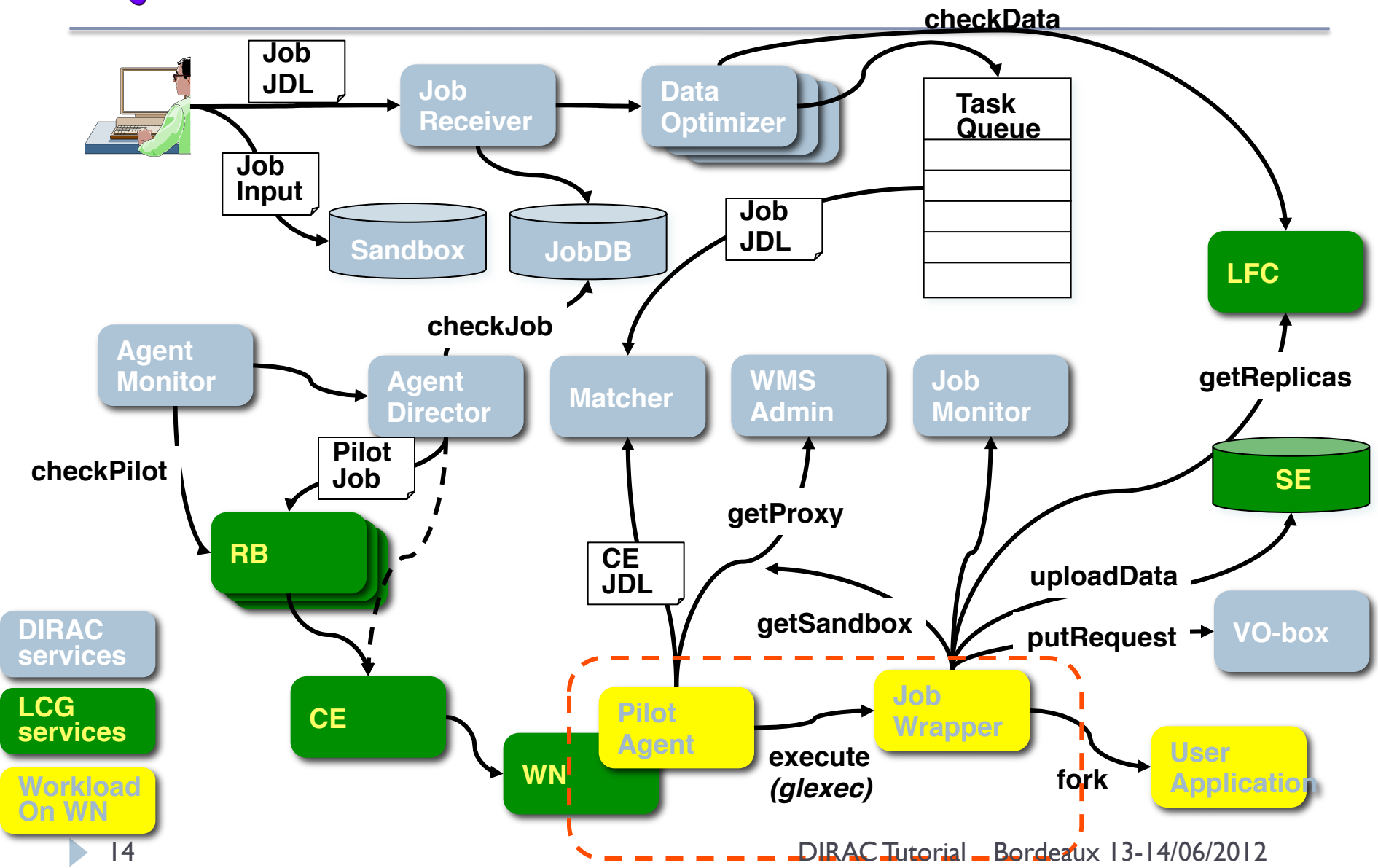
1. **Main Menu**: This menu offers options for systems, jobs, tools and help.
2. **Selections**: Shows a set of selectors than permits generate customs selections.
3. **Buttons to open/collapse panels**: Permit open or collapse left menu.
4. **Actions to perform for job(s)**: These actions permits select all, select none, reset, kill or submit
5. **Menu to change DIRAC setup**: Users can change between different setups.
6. **Current location**: Indicates where the user is located inside the portal.
7. **Buttons to submit or reset the form**: After options are selected its possible to submit and execute the selection or reset the selectors.
8. **Pagination controls**: Permits navigate between the pages, and also show in which page the user is navigating.
9. **Refresh table**: Reload the page without loose the previous selection and show the new status.
10. **Items per page**: This option allow the users to specify how many items are going to be displayed by page.
11. **User DIRAC login**: Login assigned to the user connected to DIRAC web portal.
12. **DIRAC Group**: The user could belong to different groups and perform actions depending of the group previously selected.
13. **Certificate DN**: Web portal shows the distinguish name of user certificate what is being used to realize the connection.
14. **Index items displayed**: Display the range of items displayed in the page.

# Web Portal: job submission

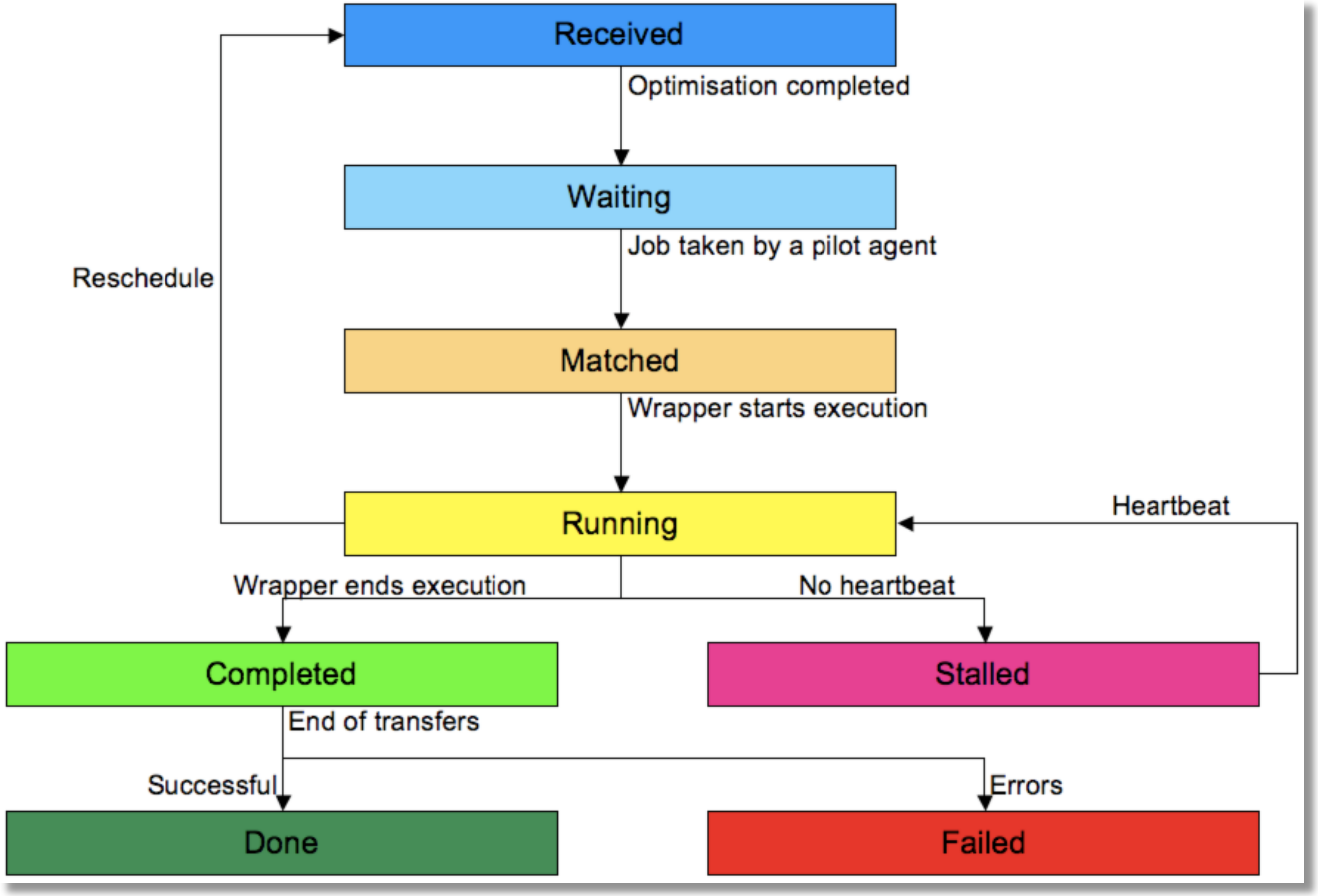
- Launchpad applet
  - Jobs > JobMonitoring > Tools
- Job submission with the real owner credentials
- Job description
  - Executable, arguments
  - Sandboxes
  - Input/Output data
  - Extra parameters
- Input Sandbox
  - Upload local files
- Simple application
  - Mostly for demonstration purposes



# DIRAC job life cycle

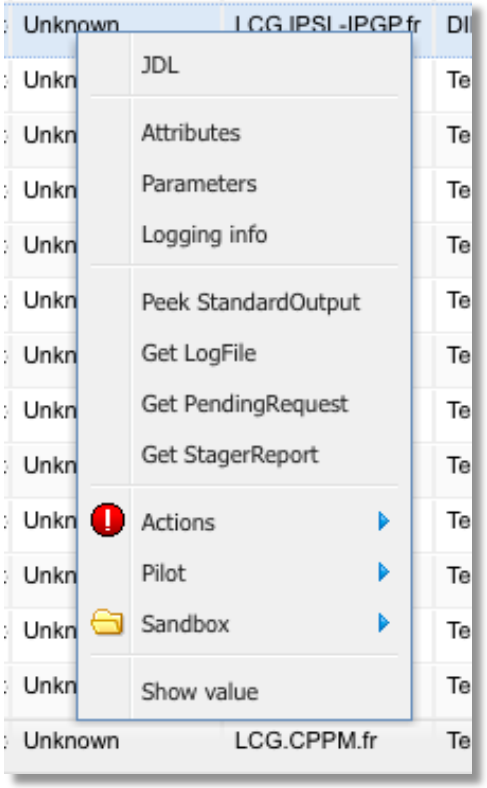


# Job state machine



# Job Monitoring

- Job Monitoring page
  - Everything you need to know about your jobs
  - Use ***Help*** button for detailed explanations
- Job Menu
  - Job info
  - Actions
    - Reschedule, delete, kill
  - Pilot output access
    - Useful for debugging
  - Sandbox download
- Job selections



# Tutorial

- Submit "Hello, world!" job with Web Launchpad
  - Basic job description
  - Monitor it
  - Get results
- Submit job with Input and Output Sandbox
  - Simple processing
  - Getting results
- Goals
  - Understand job description
  - Understanding job Web monitoring and manipulation tools