

Getting started

DIRAC Tutorial



- ▶ DIRAC information system

 - Documentation sources

- DIRAC users and groups

 - Registration with DIRAC

- Getting DIRAC credentials

 - Getting the certificates right

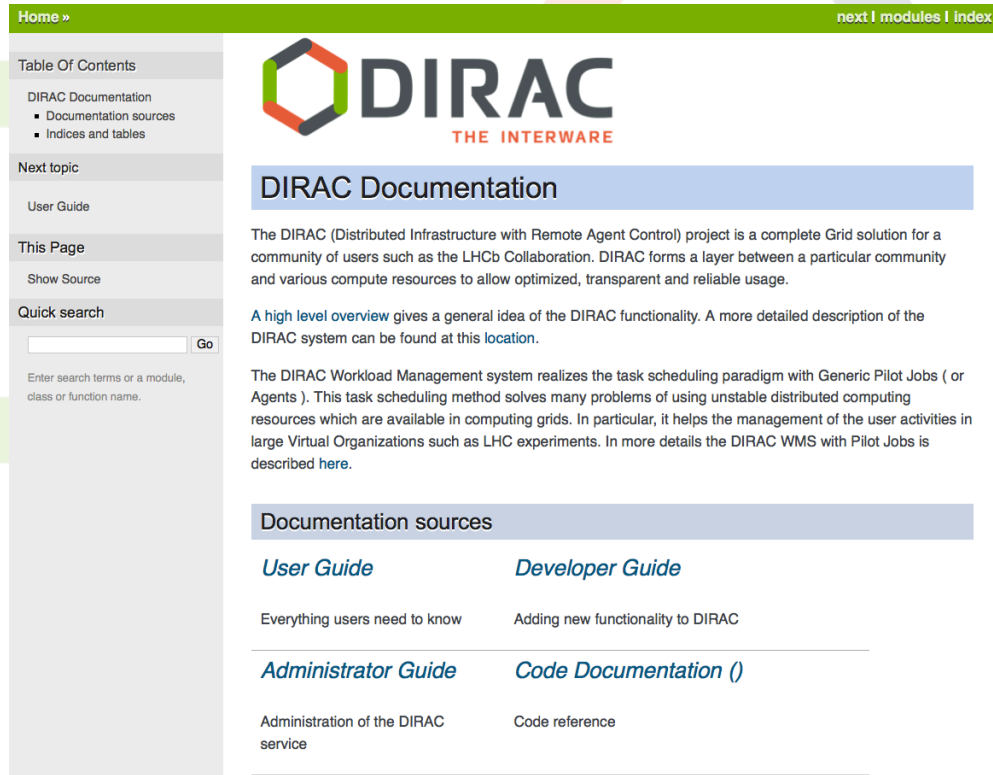
 - Registering user proxies

- ▶ Web portal interface

- ▶ Hello world! job

- ▶ DIRAC Project Web site contains entry points to various docs

This is being rapidly developed now, more info to come



The screenshot shows the DIRAC Documentation website. The header is green with 'Home »' on the left and 'next | modules | index' on the right. The main content area has a blue header 'DIRAC Documentation'. Below this, there is a paragraph about the DIRAC project, followed by a link to a high level overview. A search bar is on the left. Below the search bar, there is a table of documentation sources.

Documentation sources	
User Guide	Developer Guide
Everything users need to know	Adding new functionality to DIRAC
Administrator Guide	Code Documentation ()
Administration of the DIRAC service	Code reference

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

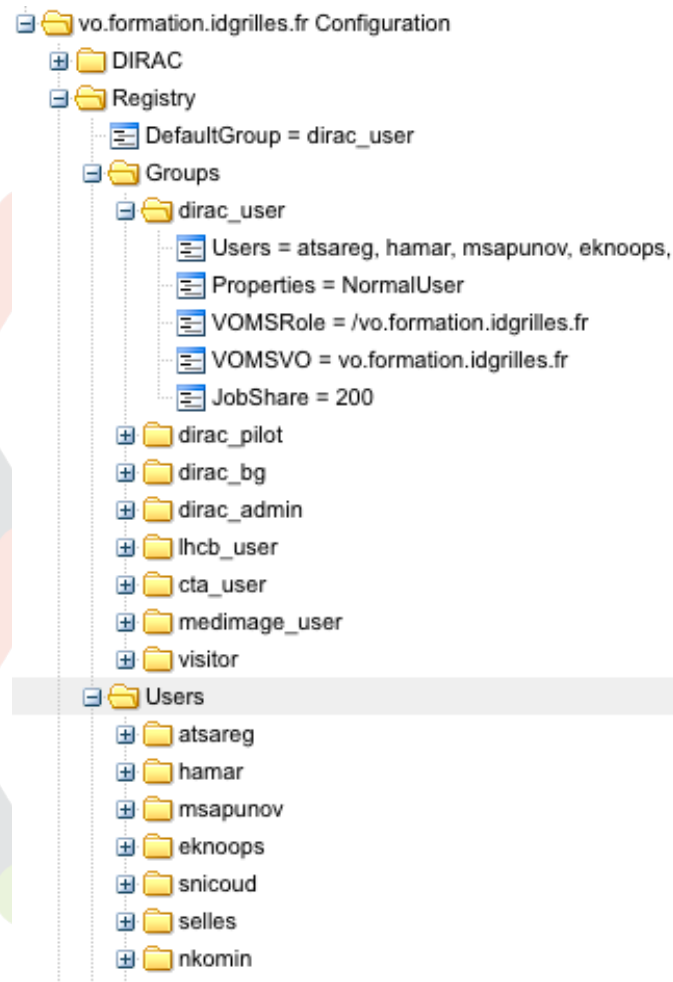
E.g. **NormalUser** can submit jobs

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



Grid users are identified by their certificates

Individual certificates, X509 PKI infrastructure

Obtaining the certificates is not part of the tutorial

All the students have a generic tutorial certificate

Individual certificates can be used if any

▶ Please, check your case

- ▶ 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:

<https://dirac.france-grilles.fr/DIRAC>

Tools > Upload Proxy

Choose certificate file

Provide password



The screenshot shows a web browser window with the title 'Proxy upload'. The form contains the following fields and elements:

- Certificate:** A text input field with a 'Browse...' button to its right.
- Input password for:** A section header for the password fields.
- p12 certificate:** A text input field with a password strength indicator bar below it.
- personal key:** A text input field with a password strength indicator bar below it.
- Disclaimer:** A paragraph of text stating: 'We are not keeping neither your private key nor password for certificate or private key on our service. While we try to make this process as secure as possible by using SSL to encrypt the key when it is sent to the server, for maximum security, we recommend that you manually convert and upload the proxy using DIRAC client commands:'. Below this are two lines of code: `dirac-cert-convert.sh CERT_FILE_NAME.p12` and `dirac-proxy-init -UP`.
- Buttons:** At the bottom, there are three buttons: 'Submit' (with a green checkmark icon), 'Reset' (with a red 'X' icon), and 'Close' (with a red 'X' icon).

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

Web interface – <https://dirac.france-grilles.fr/DIRAC>

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

- ▶ 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

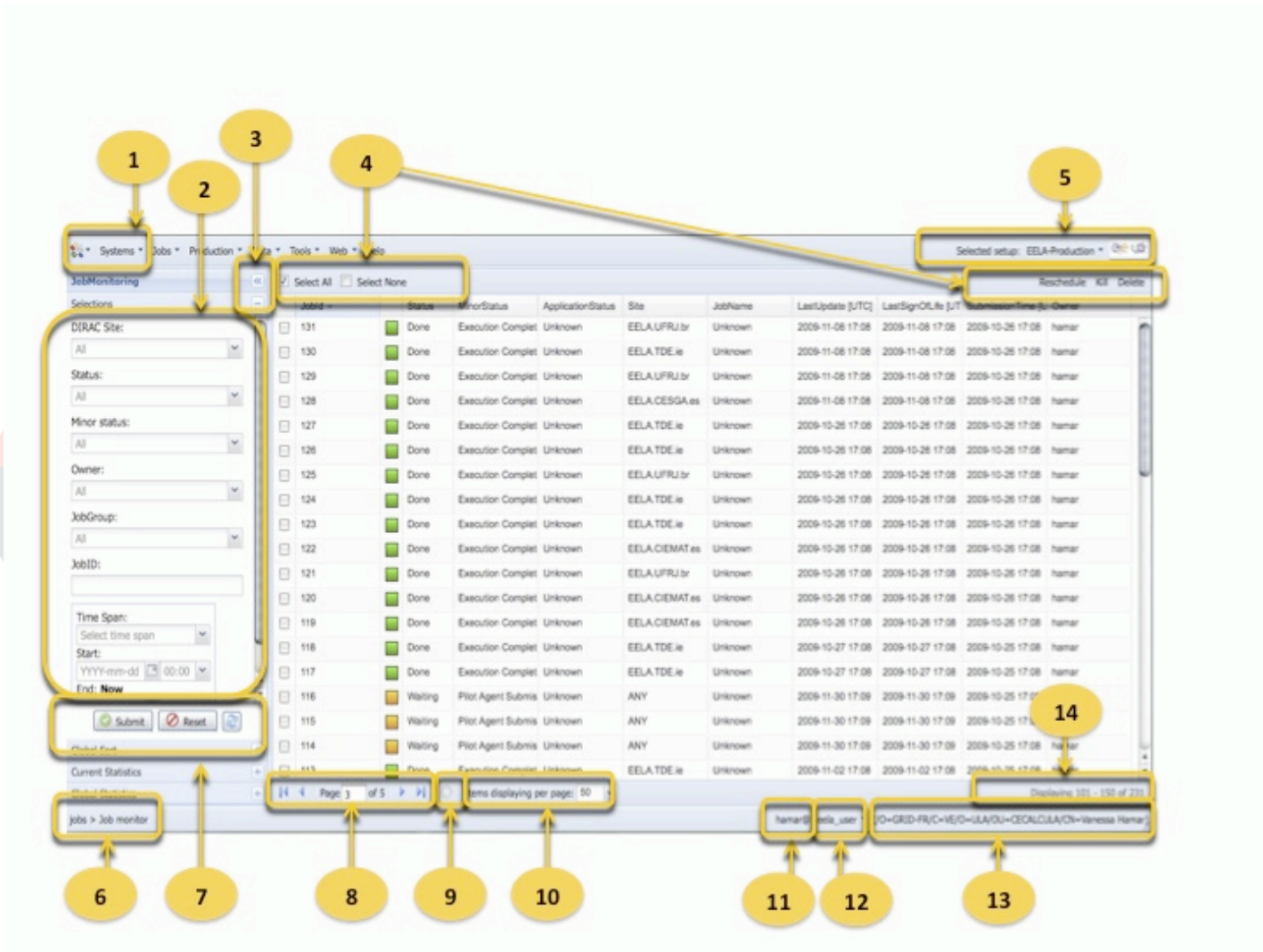
Password required

Exporting certificate in Firefox

Preferences > Advanced > Encryption > View Certificates

Backup certificate

Web Portal: general layout



The screenshot displays the DIRAC Web Portal's Job Monitoring interface. The layout includes a top navigation bar, a left sidebar for filters, a central table of job details, and a bottom section for statistics and user information. Numbered callouts (1-14) identify specific components:

- 1**: Top navigation menu (Systems, Jobs, Production, etc.).
- 2**: Job Monitoring title and selection controls (Select All, Select None).
- 3**: Filter sidebar (DIRAC Site, Status, Minor status, Owner, JobGroup, JobID, Time Span).
- 4**: Job table header (JobID, Status, MinorStatus, ApplicationStatus, Site, JobName, LastUpdate [UTC], LastSignOffLife [UTC], SubmissionTime [UTC], Owner).
- 5**: Action buttons for a selected job (Reschedule, Kill, Delete).
- 6**: Submit and Reset buttons.
- 7**: Current Statistics section.
- 8**: Page navigation (Page 3 of 5).
- 9**: Items displaying per page (50).
- 10**: Jobs > Job monitor link.
- 11**: User name (hamar).
- 12**: User role (eela_user).
- 13**: User email (O=GRID-FR/C=IN2P3/Ou=CEA/CN=Vivianne Hamar).
- 14**: Displaying 101 - 150 of 230 jobs.

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

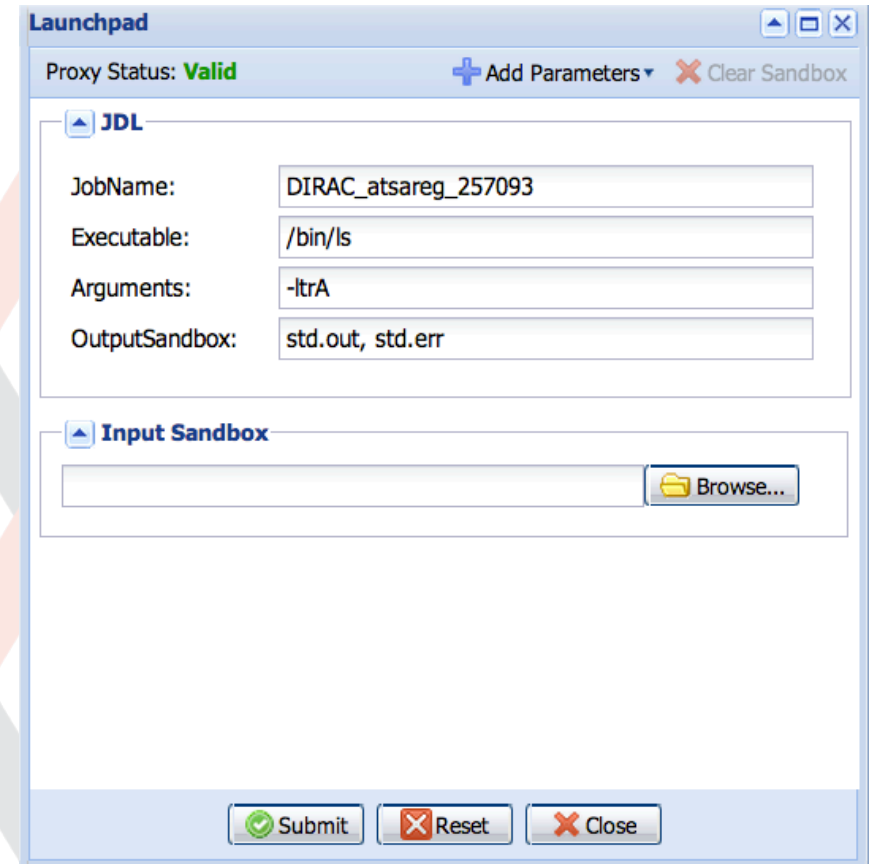
Input Sandbox

Upload local files

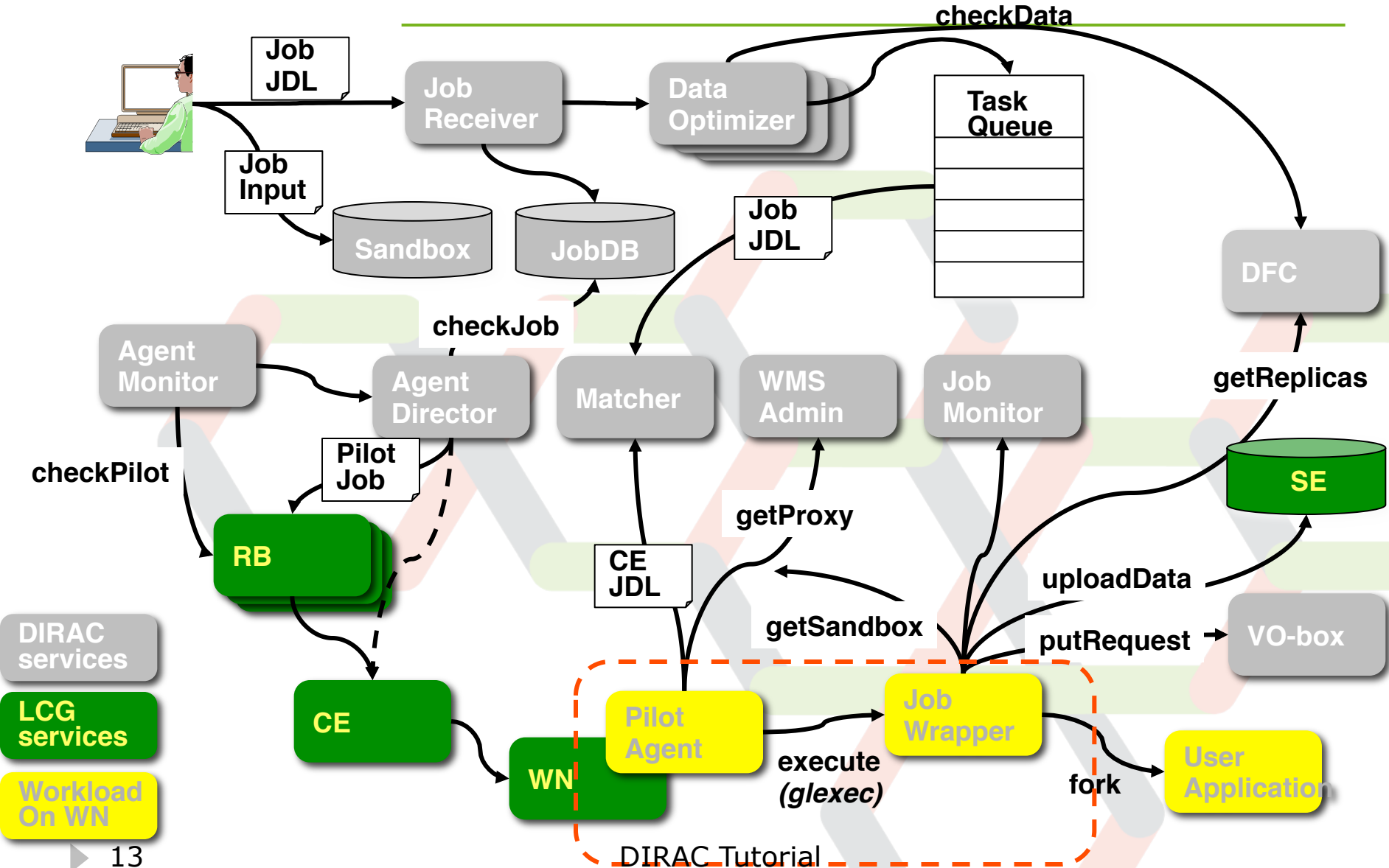
Simple application

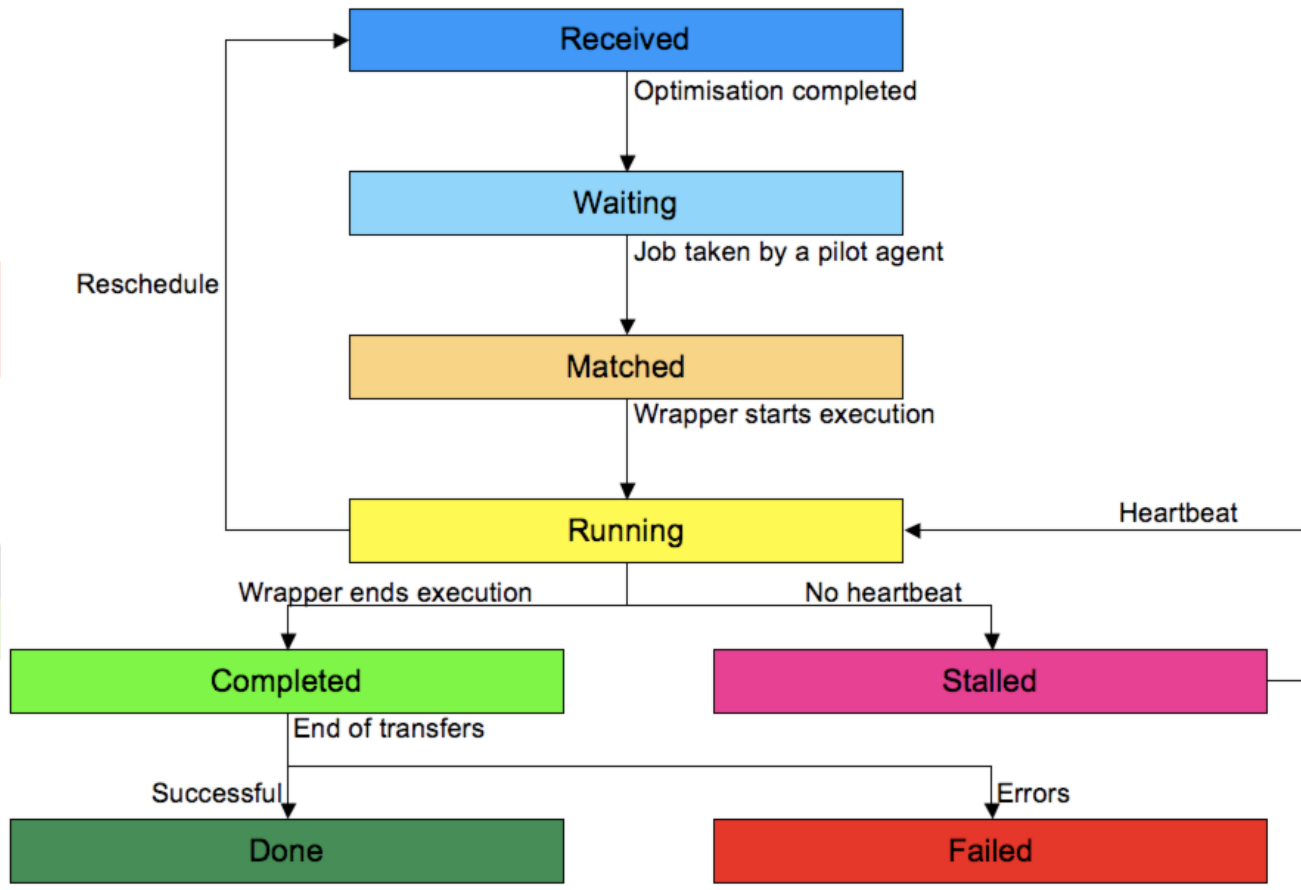
Mostly for demonstration purposes

Evolving into a more versatile tool



The screenshot shows the 'Launchpad' web portal interface. At the top, it displays 'Proxy Status: Valid' and buttons for '+ Add Parameters' and 'X Clear Sandbox'. Below this is a section titled 'JDL' (Job Description Language) with four input fields: 'JobName:' containing 'DIRAC_atsareg_257093', 'Executable:' containing '/bin/lis', 'Arguments:' containing '-ltrA', and 'OutputSandbox:' containing 'std.out, std.err'. Below the JDL section is an 'Input Sandbox' section with a text input field and a 'Browse...' button. At the bottom of the interface are three buttons: 'Submit' (with a green checkmark icon), 'Reset' (with a red X icon), and 'Close' (with a red X icon).





Job Monitoring page

Everything you need to know about your jobs

Use **Help** button for detailed explanations

Job Menu

Job info

Actions

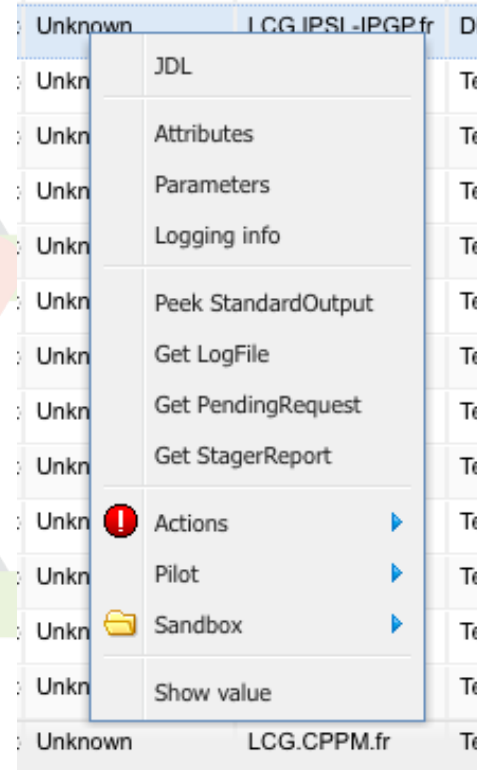
▶ Reschedule, delete, kill

Pilot output access

Useful for debugging

Sandbox download

Job selections



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