DIRAC Managing Resources and Services

DIRAC Project

Overview

- Installing a slave
- How to add computing resources
  - Adding gLite CEs
  - Adding Cream CEs
  - Adding Local Clusters
- How to add data resources
  - gLite Storage Element
  - Dirac Storage Element
- How to add file catalogs
  - Dirac File Catalog (DFC)
  - LCG File Catalog (LFC)
- How to add other Virtual Organization

Installing a Slave Configuration Server

- DIRAC services and agents can be installed in distributed environments, for example:
  - ccdirac01 -> Security
  - ccdirac02 -> WMS
  - ccdirac03 -> DMS
  - ccdirac04 -> DIRAC SE
  - ccdirac05 -> DIRAC Web Portal
- Minimal services must be installed in all the servers are:
  - **Configuration/Server**: to have a local copy of the configuration file and balance the service.
  - **Framework/SystemAdministrator**: to be able to connect remotely in the machine.

Installing a Slave Configuration Server

- Changes in the install configuration file:

```
# Flag to set up the Configuration Server as Master
ConfigurationMaster = no

# Configuration Server URL
ConfigurationServer = dips://ccdirac01.in2p3.fr:9135/Configuration/Server
```

- Follow the server installation steps, declaring services and agents as usual, and finally execute the install_site.sh script.

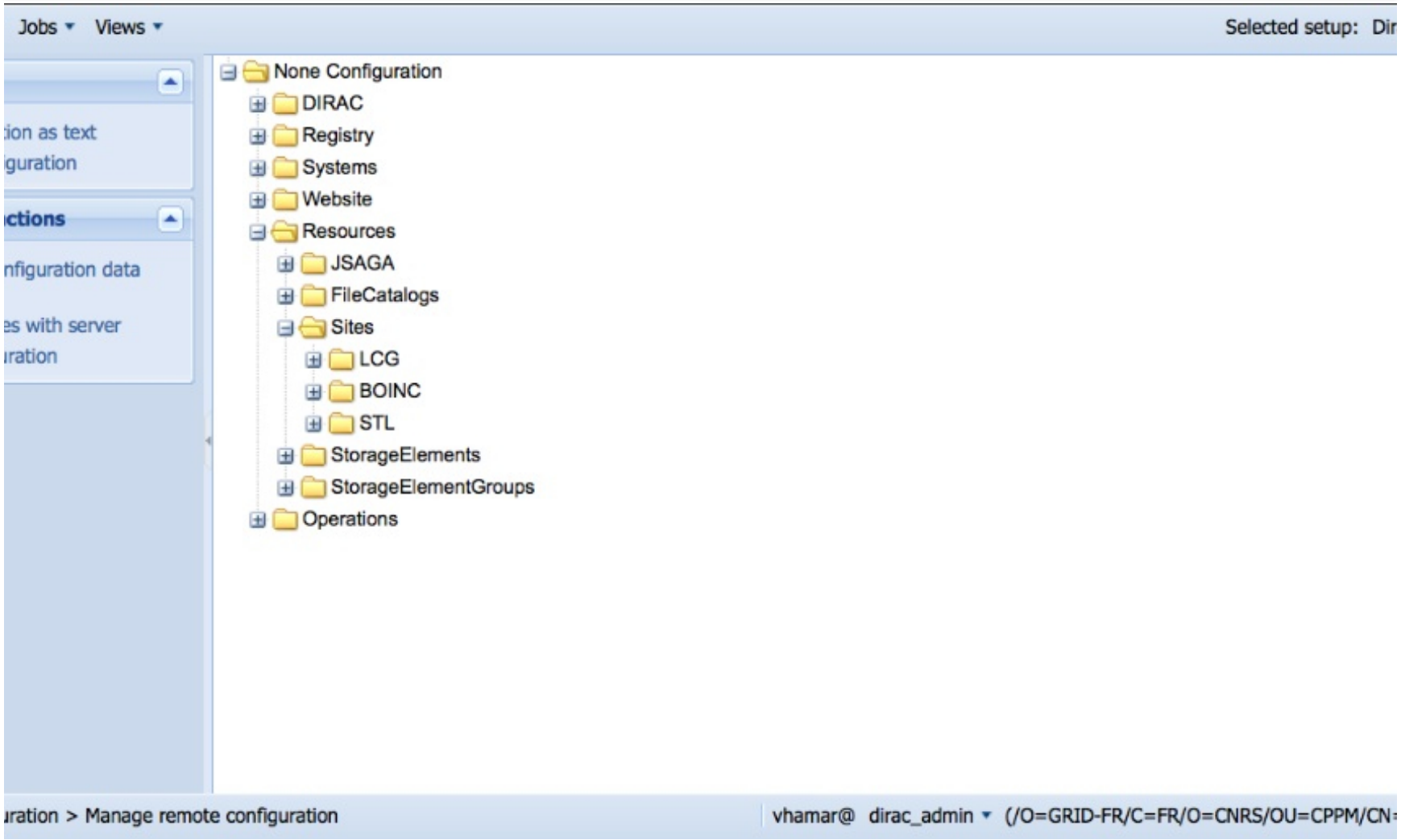
Resources in DIRAC

- DIRAC Resources refers to distributed storage, computing resources, file catalogs and any resource available at remote sites, beyond the control of any central administration.

- That means than DIRAC can incorporate:
  - Grid Resources.
  - Local Resources: conventional clusters or file servers.
  - Cloud Resources.

Today

Resources Configuration File

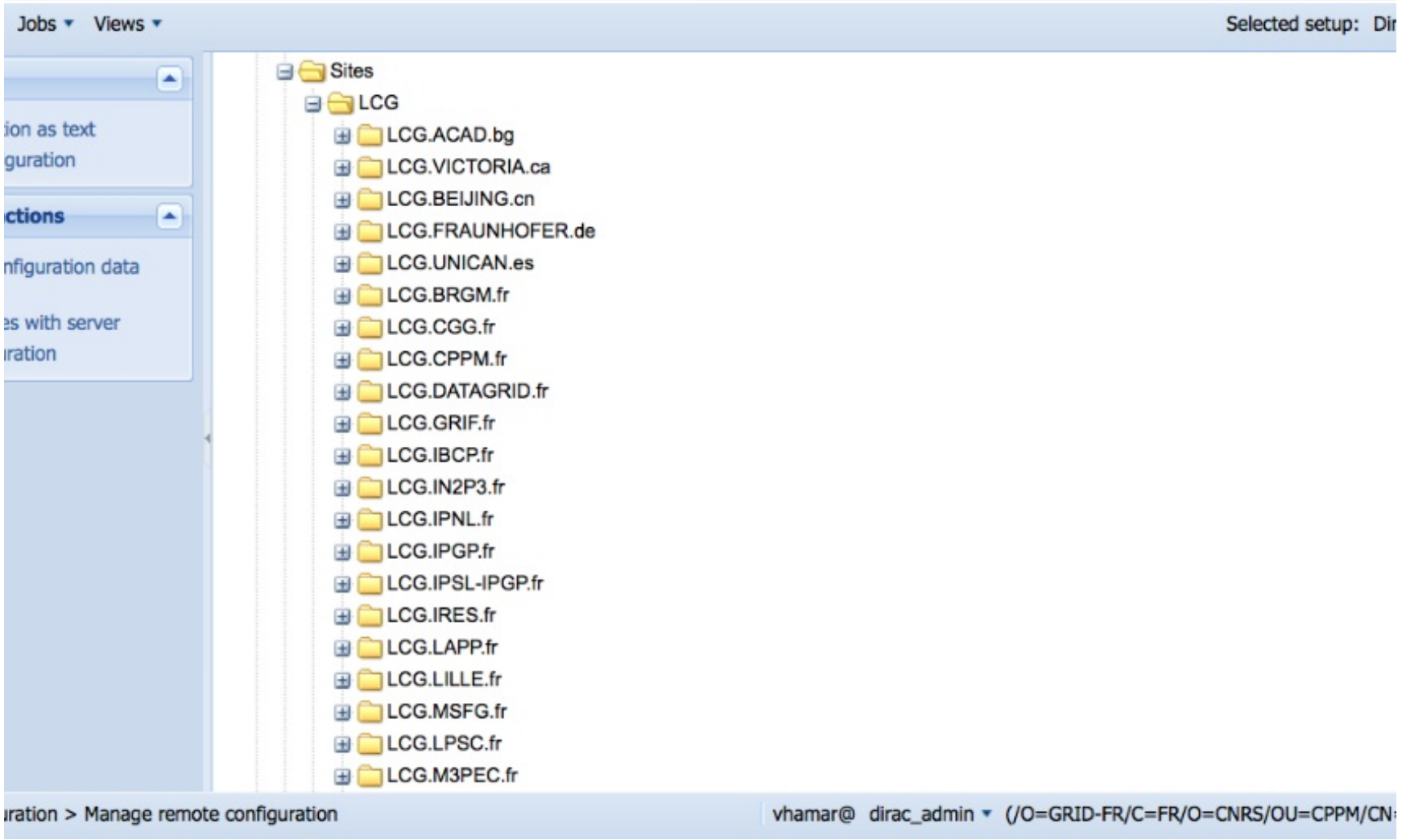


Sites

- In DIRAC the convention for sites names consist of 3 strings:
  - Grid site name, expressed in uppercase, for example: **LCG, EELA**
  - Institution acronym in uppercase, for example: **CPPM**
  - Country: country where the site is located, expressed in lowercase, for example **fr**
- Site name example:

LCG.CPPM.fr

Sites
Configuration File



Adding a site

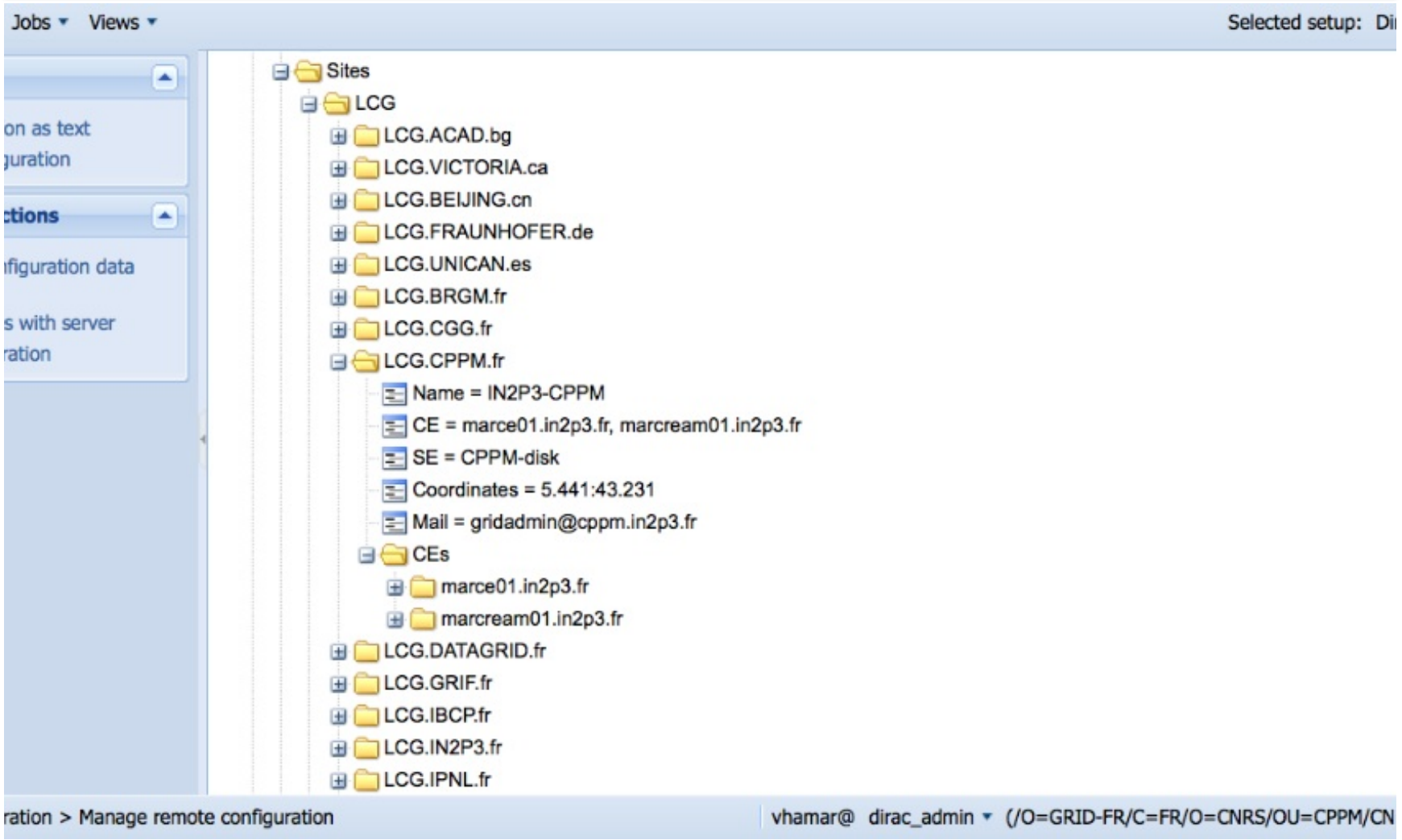
- To add a site can be done using command line or using DIRAC web portal.
- By command line:
  - Create a proxy in the DIRAC client using dirac_admin as group.
  - Execute:

dirac-admin-add-site [option|cfgfile] ... DIRACSiteName GridSiteName CE [CE] ...

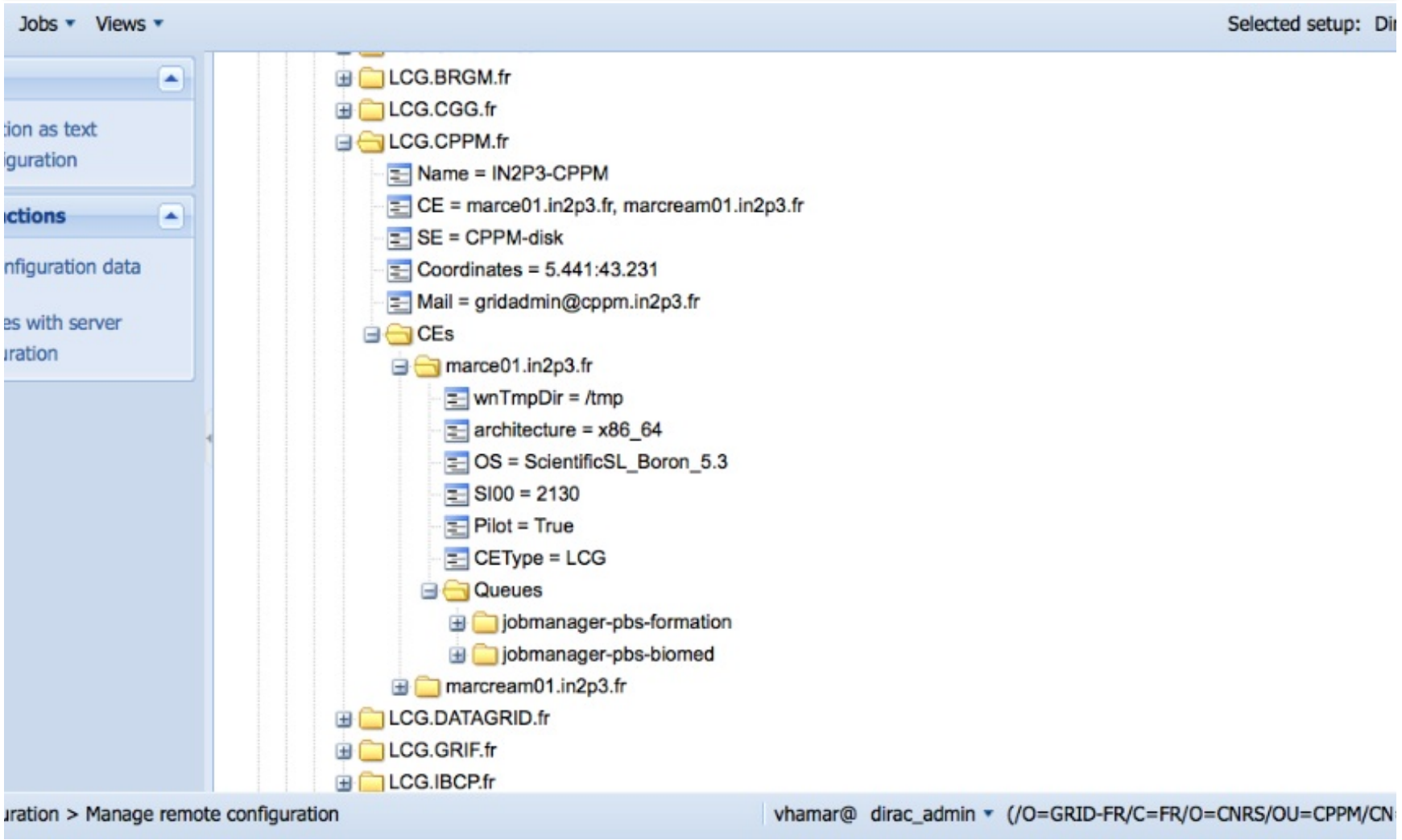
- For example:

$ dirac-admin-add-site LCG.CPPM.fr IN2P3-CPPM marce01.in2p3.fr marcream01.in2p3.fr

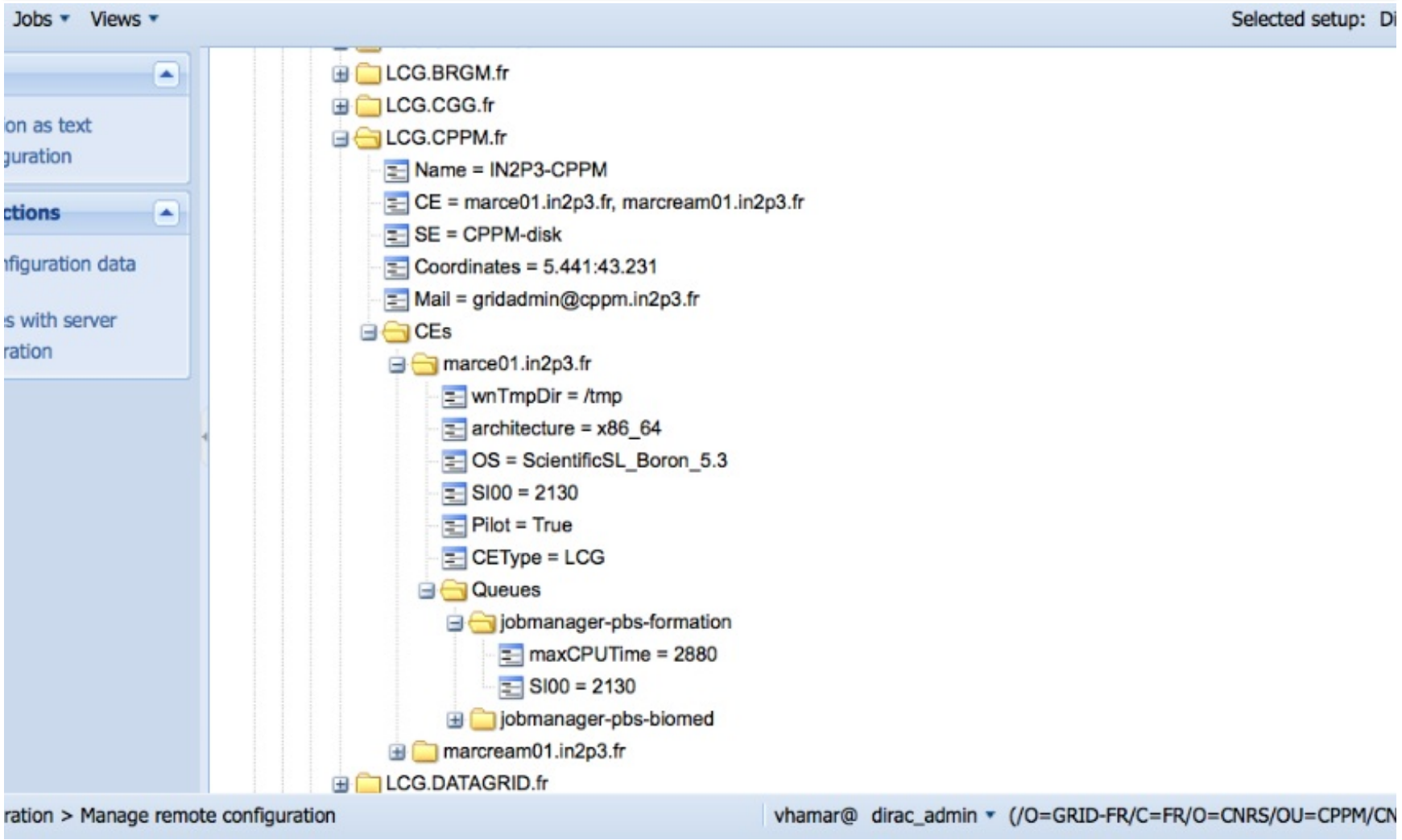
Adding a site



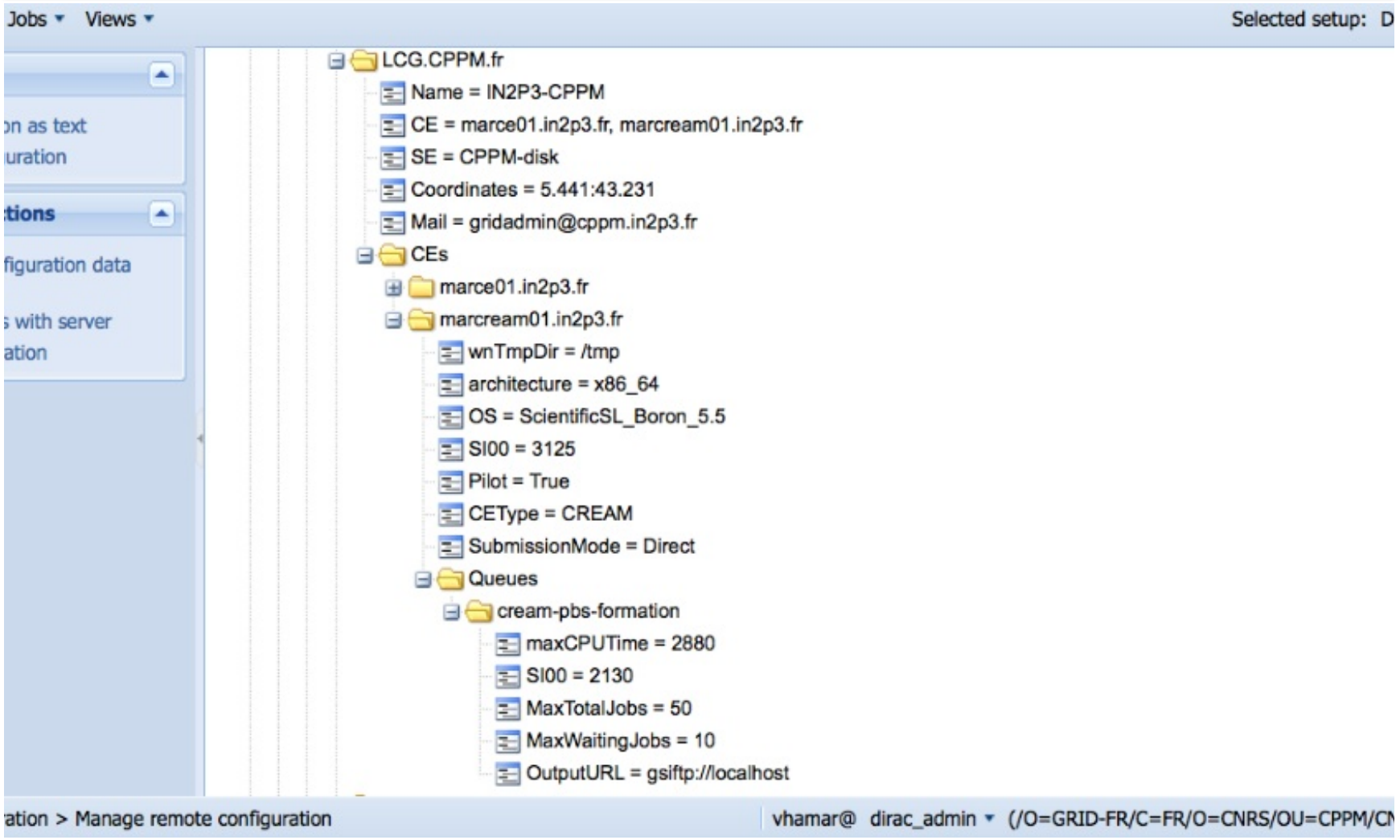
Adding a site
gLite CE attributes



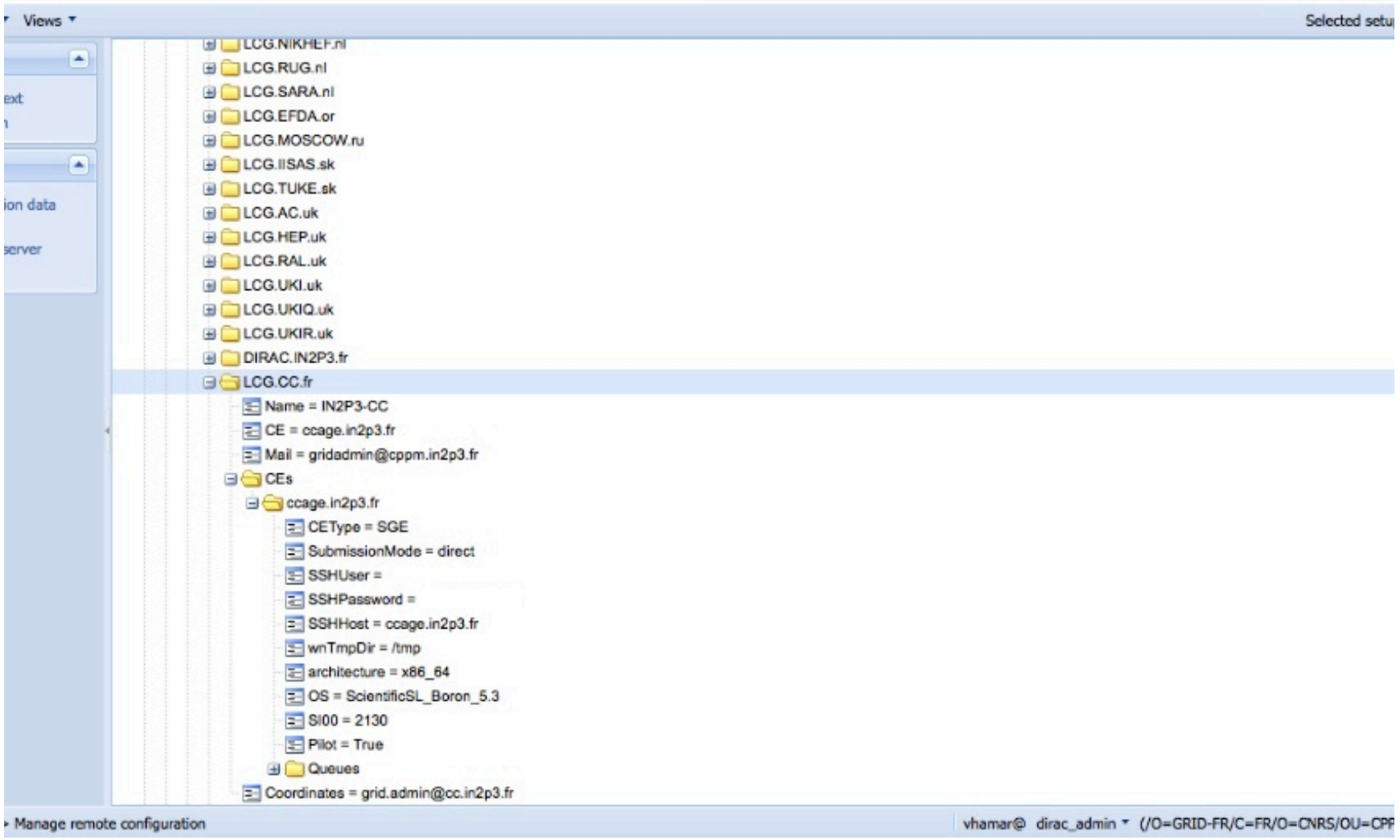
Adding a site
gLite CE attributes



Adding a site
CREAM CE attributes



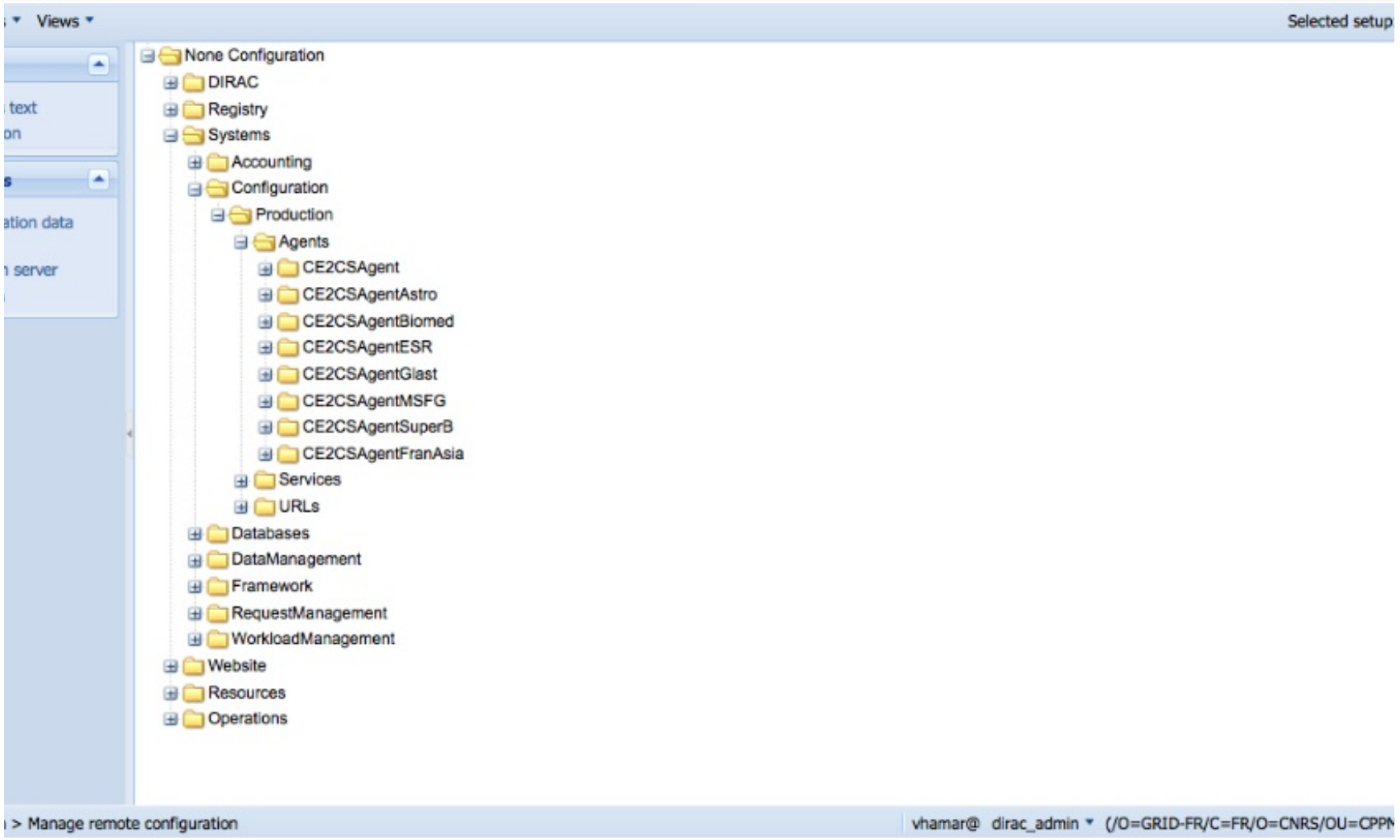
Adding a site
SSHTorque CE Attributes



CE2CSAgent

- Use CE2CS Agent to maintain gLite resources available updated.
- One agent must be configured by each VO supported in the system.
- This agent will sent an e-mail each time a new site is found.

CE2CSAgent


Views
Selected setup
None Configuration
DIRAC
Registry
Systems
Accounting
Configuration
Production
Agents
CE2CSAgent
CE2CSAgentAstro
CE2CSAgentBiomed
CE2CSAgentESR
CE2CSAgentGlast
CE2CSAgentMSFG
CE2CSAgentSuperB
CE2CSAgentFranAsia
Services
URLs
Databases
DataManagement
Framework
RequestManagement
WorkloadManagement
Website
Resources
Operations
> Manage remote configuration
vhamar@ dirac_admin (/O=GRID-FR/C=FR/O=CNRS/OU=CPPM

CE2CSAgent

Allowing sites

- After a site is added, to be active must be allowed.
- dirac-admin-allow-site command add the site to the mask for the current setup.

dirac-admin-allow-site [option|cfgfile] ... Site Comment

- For example:

dirac-admin-allow-site LCG.IN2P3.fr 'France'

Banning sites

- To remove a site from active mask for current setup the following command can be used:

  dirac-admin-ban-site [option|cfgfile] ... Site Comment

  For example:

  $ dirac-admin-ban-site LCG.IN2P3.fr 'Pilot installation problems'

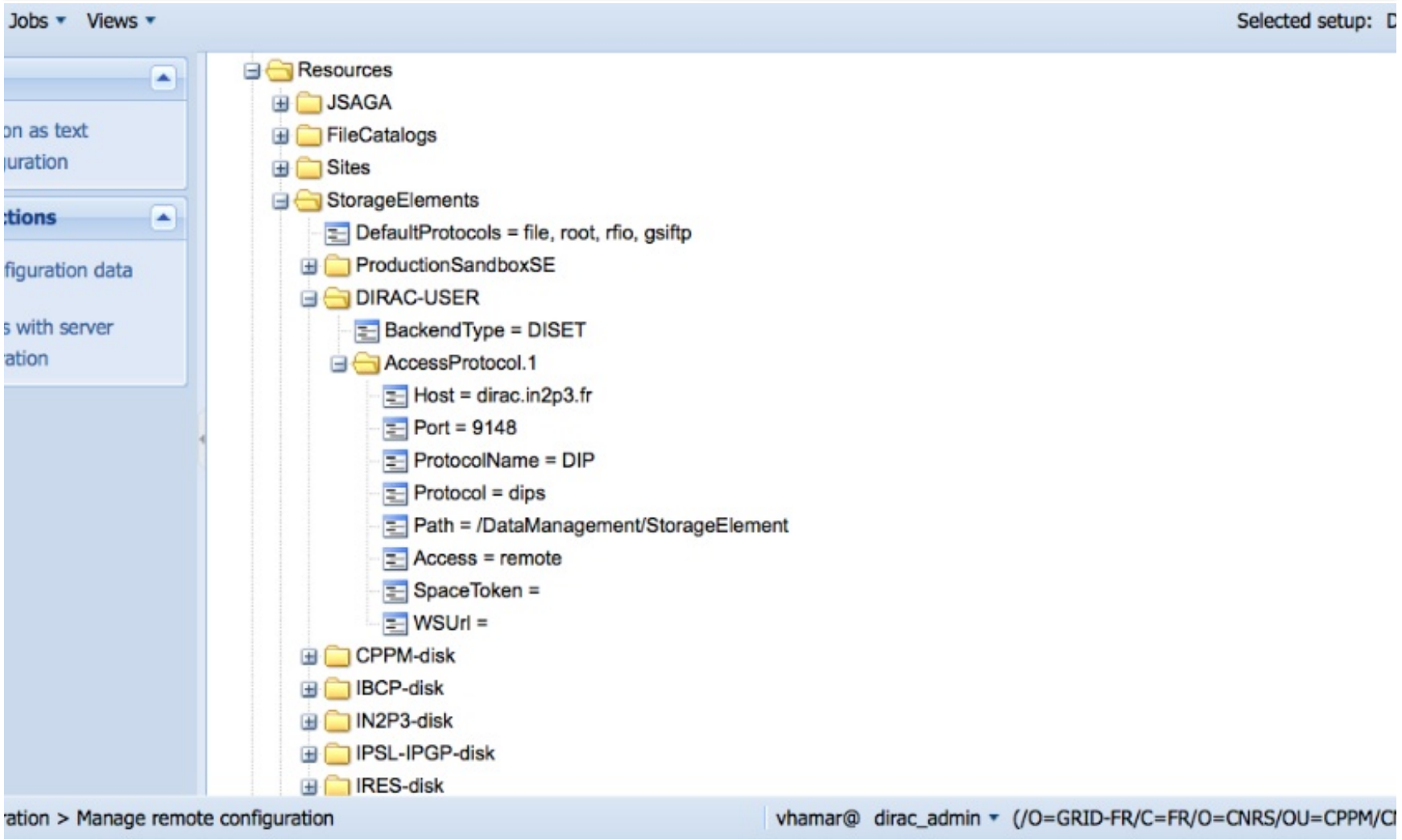
- dirac-admin-get-banned-sites.py (<options>|<cfgFile>)*
- Example:
- $dirac-admin-get-banned-sites.py LCG.IN2P3.fr Site not present in logging table

Allowing sites

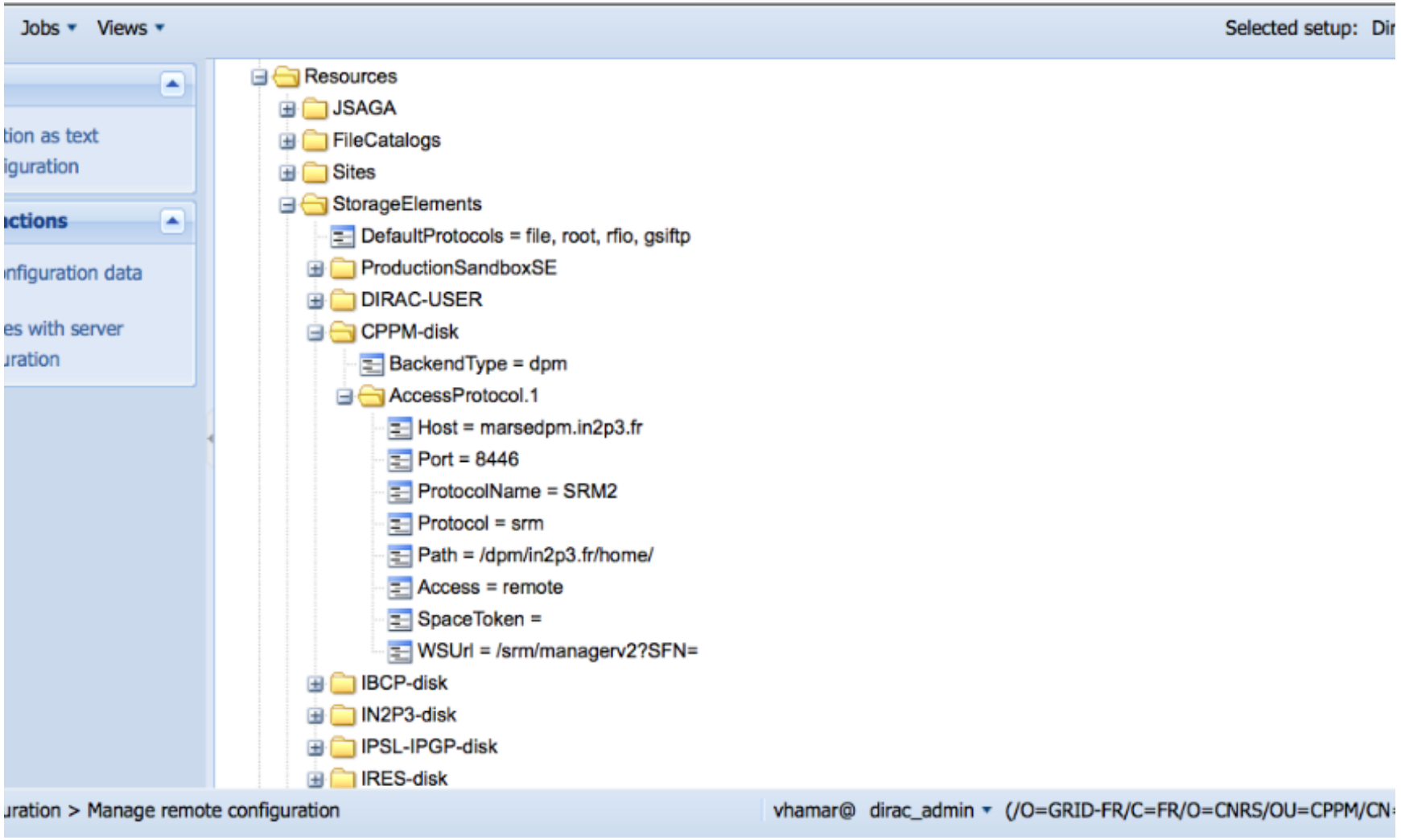
- dirac-admin-site-mask-logging [option|cfgfile] ... Site ...
- Arguments:
- Site: Name of the Site
- Example:
- $ dirac-admin-site-mask-logging LCG.IN2P3.fr Site Mask Logging Info for LCG.IN2P3.fr Active 2010-12-08 21:28:16 (atsareg) ""

- **dirac-admin-site-info**
- Print Configuration information for a given Site
- Usage:
- dirac-admin-site-info [option|cfgfile] ... Site ...
- Arguments:
- Site: Name of the Site
- Example:
- $ dirac-admin-site-info LCG.IN2P3.fr {'CE': 'cclcgceli01.in2p3.fr, cclcgceli03.in2p3.fr, sbgce1.in2p3.fr, clrlcgce01.in2p3.fr, clrlcgce02.in2p3.fr, clrlcgce03.in2p3.fr, grid10.lal.in2p3.fr, polgrid1.in2p3.fr', 'Coordinates': '4.8655:45.7825', 'Mail': 'grid.admin@cc.in2p3.fr', 'MoUTierLevel': '1', 'Name': 'IN2P3-CC', 'SE': 'IN2P3-disk, DIRAC-USER'}

Adding Storage Elements
DIRAC SE attributes



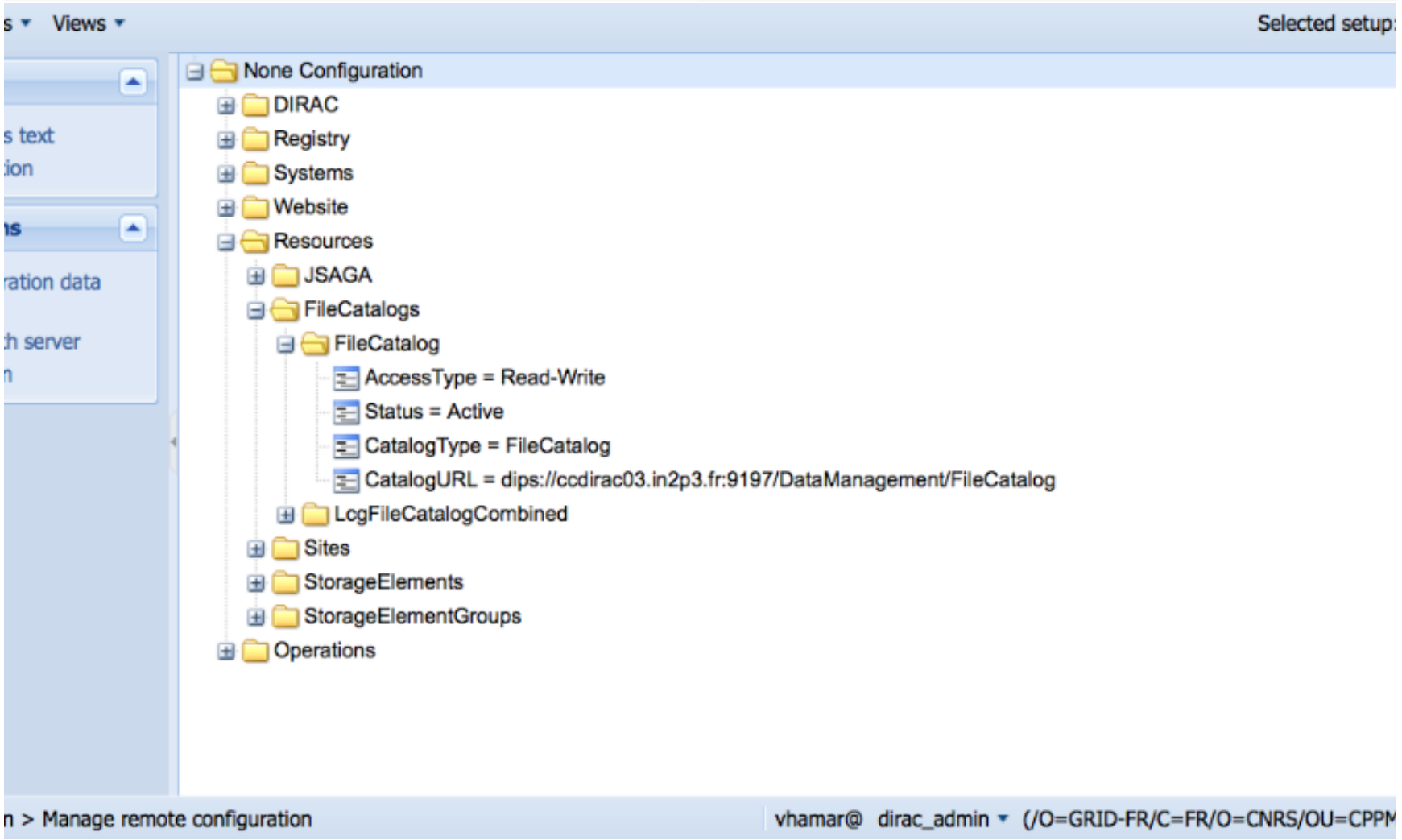
Adding Storage Elements
gLite SE attributes



- Enable using one or more Storage Elements
- Usage:
- dirac-admin-allow-se SE1 [SE2 ...]
- Options:
- -r --AllowRead : Allow only reading from the storage element -w --AllowWrite : Allow only writing to the storage element -S: --Site= : Allow all SEs associated to site
- Example:
- $ dirac-admin-allow-se M3PEC-disk $

- **dirac-admin-ban-se**
- Ban one or more Storage Elements for usage
- Usage:
- dirac-admin-ban-se SE1 [SE2 ...]
- Options:
- -r --BanRead : Ban only reading from the storage element -w --BanWrite : Ban writing to the storage element -S: --Site= : Ban all SEs associate to site
- Example:
- $ dirac-admin-ban-se M3PEC-disk

Adding File Catalogs DIRAC FC attributes



Adding File Catalogs
LFC Attributes

Site Director

- The *SiteDirector* is usually serving one or several sites and can run as part of the central service installation or as an on-site component. At the initialization phase it gets description of the site's capacity and then runs in a loop performing the following operations:
- Check if there are tasks in the DIRAC TaskQueue eligible for running on the site;
- If there are tasks to run, check the site current occupancy in terms of numbers of already running or waiting pilot jobs;
- If there is a spare capacity on the site, submit a number of pilot jobs corresponding to the number of user jobs in the TaskQueue and the number of slots in the site computing cluster;
- Monitor the status of submitted pilot jobs, update the PilotAgentsDB accordingly;
- Retrieve the standard output/error of the pilot jobs.
- *SiteDirector* is submitting pilot jobs with credentials of a user entitled to run *generic* pilots for the given user community. The *generic* pilots are called so as they are capable of executing jobs on behalf of community users.

- Configuring Site Director
  - The *SiteDirector* configuration is defined in the standard way as for any DIRAC agent. It belongs to the WorkloadManagement System and its configuration section is:

/Systems/WorkloadManagement/<instance>/Agents/SiteDirector

SubmitPools

Adding a new VO

What we have learnt?

Questions