Monitoring in DIRAC environment for the BES-III experiment

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What is BES-III?

The BES-III experiment in Beijing is a world best facility to test Standard Model and QCD with high precision in taucharm domain. The current maximum data rate is about 40 MB/s. Total amount of data: ~400TB. Around 400 000 jobs executed since 2013.
What is DIRAC?

DIRAC provides all the necessary components to build ad-hoc distributed computing infrastructures interconnecting resources of different types, allowing interoperability and simplifying interfaces.

Languages: Python, JavaScript
It supports:

- gLite: EGI, GISELA, etc
- VDT: OSG
- ARC: NDGF sites, RAL, ...
- Clouds: OpenStack, OpenNebula, CloudStack, EC2, OCCI
- Volunteer resources: BOINC, European Desktop Grid Initiative (EDGI)

Other support could be requested by users
DIRAC architecture “bricks”
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- **DB**
- **Service**
- **Client**
- **Web app**
  - **Controller**
  - **View**
    - **Handler**
    - **View.js**
- **Agent**
  - Periodically running code
- **Script**

Data Access Object
Listener
Connector
The DIRAC weaknesses

- It is easy to install but configuration could be complex
- The default Data Management system is not good enough to cover BES-III requirements
- The capability of monitoring remote sites and grid functionality are scarce.
Monitoring system

Sources of information:
  Periodical functional tests and their logs
  Workload Management System database
Both have strengths and weaknesses.

Things to show:
  ● Status/Availability
  ● Functional tests
  ● “General health”
Web - ExtJS 4.2.1
Features

Monitoring system are able to:
Detect new resources and test it
Stop testing of deleted resources

Show information in comprehensive form on the web page
Be visible only for authorized users (admins)
Be extended and improved
Conclusions

The core of monitoring system is done from scratch for BES-III DIRAC installation

It is not difficult to add new functionality in DIRAC itself

Still receiving new requirements from BES-III
Thank you for your attention
Monitoring System for BES-III

DB
Service
Client

Web apps
Handler
View.js

Client side
Server side

Update, Select, Delete
Set result of test

Test Job
Agent

Submit test job
Check test job
Delete test job
How monitoring works?