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.
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”

Web app

DB
Service
Client
Agent
Script

Handler
View.js
DIRAC architecture “bricks”

- **DB**
- **Service**
- **Client**
- **Web app**
  - Controller
  - View
    - Handler
    - View.js
- **Agent**
- **Script**

- Data Access Object
- Listener
- Connector

Periodically running code
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
Update, Select, Delete

Service

Client
Set result of test

Web apps
Client side
Handler

Server side
View.js

Test Job
Submit test job
Check test job
Delete test job

Agent
How monitoring works?