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LHCb Demo at EGEE09 Barcelona 21-25 Sept.

This page is meant to share information about the preparation for the EGEE09 Demo

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A preliminary time table for the demos that will run on the WLCG booth is available here while the list of responsables for all WLCG demos is here. The WLCG booth will host simultaneously two demos and LHCb will have its slot the thursday 24th. The activity displayed via Google Earth will be part of the concurrent Dashboard Demo for which Adrian will provide a new CSV file to be feed into dashboard with started_jobs metrics also defined to show jobs submission. It seems acceptable to have a 15 minutes granularity instead of requested 10

Title

A challenge for the LHCb computing: how to produce, manage and analyse PetaBytes of data over the Grid

Abstract

LHCb is one of the four experiments which will be operative at the Large Hadron Collider (LHC) at CERN starting from next year. LHCb will produce a huge amount of data, of order of 1.5 PetaBytes of RAW data per year, in addition to the already ongoing Monte Carlo simulation.

The DIRAC project is the gateway to the Grid for the LHCb experiment to carry out massive Monte Carlo simulation, data processing on various distributed computing resources and data management. It also allows to monitor any computing activities of the experiment thanks to its accounting system.

In this demo a concrete example of how to submit a Monte Carlo production will be shown. The jobs will then be followed from the submission at CERN, to the worker nodes where they are distributed and processed at some site, through the DIRAC monitoring system.

The solution provided by the Ganga interface and the DIRAC backend has been designed to support the distributed analysis activity over a community of about 500 scientists in Europe, North and South America. The parallel demo of Ganga will show how physicists can access Grid resources to carry out their particular analysis on the data stored in some site around the world.

The demo will be complemented by an event display of a particle collision inside the detector, in order to show from where all these data come from.

The booth

Description of the booth, the equipment and time table of demos here

Posters

We have to select some posters to put on the booth. To be printed in A0:

LHCb: Monitoring the DIRAC Distribution System [↗](#)

LHCb: Pilot Framework and the DIRAC WMS [↗](#)

LHCb: DIRAC A community grid solution [↗](#)

DIRAC_Production_CHEP09.pdf: Dirac production poster

and maybe another one of LHCb (general about the detector), to be printed in A1

Sent to printing service. They will be ready by Friday 18th.

Main demo: submission of a production with DIRAC. (Elisa/Roberto)

The demo will show how to create a new "production" entity using the DIRAC web portal. This will happen with the help of this movie [↗](#). On top of this generated "ad hoc" production workflow the demo will also show how to extend it with additional events to be simulated, via command lines and at the same time how to motoring it.

Procedure of the demo:

A production has been started and is currently running (5257 and 5258). General documentation about the production system can be consult on this pdf

From time to time Roberto will expand it (so that we will have not bad surprises at the DEMO). We decided that it is better like this: to have a production already started and to expand it from time to time, instead of starting a completely new production. In this way we have the possibility to show results of previous running jobs by querying the BK for the output data.

So the demo it self will consist in:

- showing and explaining the video [↗](#)
- using the created (and approved) production to show how usually a production manager expands a production by adding more jobs (see below)
- show the production [↗](#) monitoring page emphasizing on the history ("show logs"), production status, production statistics, jobs status.?
- show some jobs running and also the output of others that managed to finished within the demo time slot (showing how to query the BK for example) .
- one can also show the production request page [↗](#) on the test system. This offers a snapshot of produced/requested events and also some command to duplicate, cancel or display the parameters of this production

In order to expand the EGEE'09 DEMO production the following commands have to be run.

```
[lxplus226] ~ > SetupProject Dirac  
[lxplus226] ~ > lhcb-proxy-init -g lhcb_prod  
[lxplus226] ~ > dirac-production-mc-extend 5257 100
```

In order to show the output produced so far by production 5257/5258 Elisa will briefly explain the BK and more in details the meaning of some parameters used to produce the output. Then she will run the command:

```
[lxplus226] ~ > dirac-bookkeeping-production-informations 5258
```

Please note that the production status has been (just once) already set to "automatic" so that DIRAC takes over the submission of the jobs w/o any intervention.

```
dirac-production-change-status -f automatic 5257 5258
```

The production 5258 is the merging of the MC DST created by production 5257. The jobs of this production are automatically created when data available becomes sufficient (35 output of 5257 --> 1 big output of 5258 up to 2GB file). So the extension is only needed for prod. 5257. In the same line Elisa will run - moving now to Andrew's terminal - a query to the BK using the Bookkeeping gui. The extracted list of LFNs will be then fed into the GANGA demo that becomes a follow up of the production demo and shows then the full chain.

Secondary demo: the event display (Ricardo/Ricardo's student)

As a secondary demo, we will keep an event display on the small screen of the desktop based on PANORAMIX software. Instructions here.

Distributed analysis demo: GANGA for LHCb (Andrew Maier)

The demo will show preparing and setting up and analysis job in Ganga, including splitting and merging of results. The analysis will be based on the Tutorial example of DaVinci. The data has been replicated to all sites, so that jobs should be able to run on a large number of sites.

I might also be showing the GangaRobot for recurring LHCb jobs, which would use the same data and jobs.

The video

By the 4th of September a video of the demo should be provided. It is not mandatory, but it is recommended. This means, those demos which send in advance the video will have more visibility and will be able to participate in the demo prizes.

-- RobertoSantinel - 2009-08-24

- DIRAC_Production_CHEP09.pdf: Dirac production poster

This topic: LHCb > EGEE09LHCb

Topic revision: r17 - 2009-09-23 - unknown



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