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DIRAC Job Prioritization and Fair Share in LHCb

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LHCb accesses Grid through DIRAC, its WorkLoad and Data Management system.

In DIRAC all the jobs are stored in central task queues and then pulled onto worker nodes via generic Grid jobs called Pilot Agents. These task queues are characterized by different requirements about CPUtime and destination.

Because the whole LHCb community is divided in sets of physicists, developers, production and software managers it is important to assign different priorities to different jobs. A special DIRAC agent is responsible for dynamic calculation of the job priorities. The goals of the job priority agent are to ensure that the whole LHCb community fairly uses and shares the Grid resources and to minimize the overall time spent by the high priority jobs in the DIRAC task queues. In the paper the possible technical approaches to define the job priority are evaluated. In particular, the use of the MAUI scheduler is studied. The results of the application of the proposed job prioritization procedure to real jobs are presented. The current limitations and future work are discussed.

Submitted on behalf of Collaboration (ex, BaBar, ATLAS)

LHCb

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