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A web interface to Job Submitting Tool (JST)

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The use of JST in the LIBI bioinformatics regional project has been strongly simplified with the adoption of a new web interface. Users can now launch by themselves their own applications on the Grid and require the grid expert support only in case of problems. The web interface exploits the features of the robot certificates: an occasional bioinformatics user is not required to hold a personal certificate in order to submit portals supported applications to the grid.

Impact

With the new JST web interface, to execute a full production on the grid, the user has just to upload, via the web interface, the input files, properly prepared, and the criteria to determine if a job was correctly executed. JST takes care of all the rest, in particular of the submission of the jobs using a robot certificate and even of the resubmission of those jobs that may fail. When all the elementary tasks get executed, JST collects the output files produced and send a mail to the user saying from where he can collect the results.

The JST web interface provides a list of grid-enabled applications. When a user selects a particular application, the tool will fill all the required fields, present on the web form, with the appropriate defaults. In this way the amount of information required from the user is reduced to a minimum. Clearly expert users can modify all the default settings if necessary. In this way JST masks completely all the complexity of the use of the grid.

URL for further information

<http://webcms.ba.infn.it/cms-software/index.html/index.php/Main/JobSubmissionTool>

Conclusions and Future Work

The JST can also be used in conjunction with other portals providing only the back-end functionalities (submit, monitor and collect the results).

In the present implementation a limit to the size and complexity of the application is set by the time needed to upload, with the http protocol, the application input files. For occasional users this is not real limitation. For regular users, holding their own personal certificate, a faster upload mechanism will be provided in the future.

Keywords

GRID, EGEE, High level tools, WEB portal, Job Submission

Detailed analysis

A large fraction of the LIBI bioinformatics applications can be subdivided into small independent tasks, which can be executed in parallel on the EGEE infrastructure. The JST tool is used for the creation of the elementary tasks, their submission to the grid, monitoring and bookkeeping and output files retrieval.

The JST Web Interface allows the user to upload the application input files. By properly organising these input files, the user can drive the way JST creates the elementary task. For example, one of the input files can correspond to a zipped directory that contains a certain number of files. JST assumes that it has to execute one job for each file in the directory, and each job has to read its input data from the corresponding file in that

directory.

The web interface also allows the user to enter a criterion that will be used to decide if a job was executed successfully, which is a key parameter for the monitoring and bookkeeping of the production.

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