

## Testing against DAG RB

*Wednesday, 15 February 2006 09:00 (20 minutes)*

A Directed Acyclic Graph (DAG) can be used to represent a set of programs where the input, output or execution of one or more programs is dependent on one or more other programs. We developed a basic test suite for DAG jobs. It consists of 2 main parts:

a) functionality tests are using of CLI (in Perl). The generation of the DAG with arbitrary structure and different JDL-attributes for the DAG sub-jobs. It was developed the tools that allows to realize the following:

- create the DAG with regular structure like tree, based on the template that defines the Executable and JDL-attributes for three parts of DAG (pre-jobs, main part and post-jobs) with given number of the levels and nodes
- modify the created main JDL file: add new dependencies or delete the existed ones, based on the appropriate template
- add new JDL attributes for the DAG at whole or for one level or for the definite set of nodes according to another template

b) stress tests (reliability and stability) are using of API (in Java). The numbers of nodes is varying from 1st to 4nd level layers. Test contains a job chains of real CMS tasks, including OSCAR simulation jobs, ORCA reconstruction jobs and special analysis jobs to analyse the final data produced through this system. This test system has been implemented as a standalone kit to check the LCG environment and queue management system. CMS software framework should be pre-installed to be able to run this test system in a most efficient way.

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**Session Classification:** Poster

**Track Classification:** Grid middleware and e-Infrastructure operation