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BaBar MC Production on the Canadian Grid using a Web Services Approach

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The present paper highlights the approach used to design and implement a web services based BaBar Monte Carlo (MC) production grid using Globus Toolkit version 4. The grid integrates the resources of two clusters at the University of Victoria, using the ClassAd mechanism provided by the Condor-G metасcheduler. Each cluster uses the Portable Batch System (PBS) as its local resource management system (LRMS). Resource brokering is provided by the Condor matchmaking process, whereby the job and resource attributes are expressed as ClassAds. The important features of the grid are automatic registering of resource ClassAds to the central registry, ClassAds extraction from the registry to the metасcheduler for matchmaking, and the incorporation of input/output file staging. Web-based monitoring is employed to track the status of grid resources and the jobs for an efficient operation of the grid. The performance of this new grid for BaBar jobs, and a comparison with the existing Canadian computational grid (Gridx1) based on Globus Toolkit version 2 is presented.

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