

Contribution of Condor and GLOW to LHC Computing

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The University of Wisconsin campus research computing grid is an offshoot of Condor project, which is providing middle ware for many world-wide computing grids. The Grid Laboratory of Wisconsin (GLOW) and other UW based computing facilities exploit Condor technologies to provide research computing for a variety of fields including high energy physics projects on the UW campus. The Condor/GLOW project provided the largest amount of opportunistic resources to the LHC Monte Carlo simulations, becoming the leading provider of computing cycles to both CMS and ATLAS experiments. Together they have provided over 300 years of CPU in 2005 alone, enabling full simulation of over 20 million events each for CMS, and ATLAS experiments at LHC. The CMS Tier-2 center in the physics department is being built up to exploit the UW campus grid to further enhance the use of opportunistic resources for CMS computing. GLOW also serves chemists, chemical engineers, biologists, medical physicists and astro-physicists. In addition to building and using the UW campus grid, we have also developed inter-campus grid job flocking technologies, which we are using to rapidly aggregate large resources to handle larger than normal peak loads. We have tested these technologies with our connection to the Open Science Grid (OSG) and Harvard University facility called the Crimson-grid. In this paper we will describe the UW campus grid model, the facilities, and its performance. We also discuss the role of CMS Tier-2 computing center at UW.

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