Contribution ID: **136** Type: **poster**

Large scale, grid-enabled, distributed disk storage systems at the Brookhaven National Lab RHIC/ATLAS Computing Facility

Monday 13 February 2006 11:00 (20 minutes)

The Brookhaven RHIC/ATLAS Computing Facility serves as both the tier-0 computing center for RHIC and the tier-1 computing center for ATLAS in the United States. The increasing challenge of providing local and grid-based access to very large datasets in a reliable, cost-efficient and high-performance manner, is being addressed by a large-scale deployment of dCache, the distributed disk caching system developed by DESY/FNAL.

Currently in production for the PHENIX and ATLAS experiments, dCache is employing the same worker nodes utilized by the RHIC and ATLAS analysis clusters, making use of the large amount of low-cost, locally-mounted disk space available on the computing farm. Within the hybrid storage/computing model, the worker nodes function simultaneously as file servers and compute elements, providing for a cost-effective, high throughput data storage system. dCache also serves as a caching front-end to the HPSS Mass Storage System, where access to the data on tape is provided through an integrated optimizing layer that was developed at BNL.

BNL's dCache functions as SRM-based Storage Element in the context of OSG and LCG. It has been serving on a production scale at BNL since November 2004, exhibiting quality performance through a number of Service Challenges and US ATLAS production runs.

This presentation will cover the design and usage of this system, including performance metrics and scalability considerations as the facility expands toward an expected petabyte scale deployment in 2007.

Primary authors: Dr GIBBARD, Bruce (Brookhaven National Laboratory); Dr YU, Dantong (Brookhaven National Laboratory); Dr RIND, Ofer (Brookhaven National Laboratory); Dr POPESCU, Razvan (Brookhaven National Laboratory); Dr ZHAO, Xin (Brookhaven National Laboratory); Ms WU, Yingzi (Brookhaven National Laboratory); Ms LIU, Zhenping (Brookhaven National Laboratory)

Presenters: Dr RIND, Ofer (Brookhaven National Laboratory); Ms LIU, Zhenping (Brookhaven National Laboratory)

Session Classification: Poster

Track Classification: Grid middleware and e-Infrastructure operation