OSG and ATLAS

OSG Face-Face Council Meeting

Chicago/Ohare

10 August 2009

US ATLAS and OSG

- We have sung the praises of OSG in the past
  - All hands meeting at LIGO
  - Joint reviews in DC
- Those praises are still valid, but here I will concentrate on our worries for the next couple of years…

What is about to hit us (2010)

- Data!!!
  - This will change data access patterns
- Tier 3's
  - Stimulus money → ~30? New Tier3's
- Physics users analysis jobs
  - Expect ~1000 users submitting jobs continuously

Issues raised by these changes

- Strain on data distribution system
  - ATLAS Distributed Data Management
    - Custom software built on top of grid tools
      - LFC, SRM, dCache, gridftp, FTS, Lustre, GPFS, xrootd, …
    - ATLAS tool (DQ2) will handle 2010 raw data distribution
      - But worries about “chaotic” user analysis
- Strain on Workload Management System
  - PanDA will handle Monte Carlo Simulation, Data Reprocessing
    - But, again, worries about users analysis
    - Condor is crucial here!
- Strain on security system
  - We must satisfy site security requirements with user jobs (glexec)
    - Do we need a “next generation” glexec?

Issues continued..

- All these ATLAS systems are still too fragile and require way too much human intervention.
  - Site problems constantly
    - Storage configuration, Local File Catalog problems,…
  - PanDA brokering: constantly tweeking by developers to adapt to changing use patterns
  - Bringing filesystems to their knees with many users jobs
    - Problems uncovered in recent STEP09 exercise
- Can OSG help us with this?

Dealing with Multicore chips and limited memory

- Already a serious worry with ATLAS code
  - We are struggling to keep below 2 GB/core
  - No multithreading/shared memory
  - High luminosity simulation
    - 28 GB/job at 10^{35} !
- Joint CMS/ATLAS project started
  - Also a wLCG project
- Is there an OSG role?