

ATLAS & PPDG

Ed May

Based on Summary of
ATLAS-GriPhyN Testbed Workshop June 15, 2000

- Clear need for distributed computing and data access within the US ATLAS collaborators
- Early participation in PPDG has convinced us that GRID technology is the correct environment
- Discussions within US ATLAS have led to an interest and commitment to broader participation in PPDG and GriPhyN

General considerations leading to a multi-site ATLAS US testbed

- Need for a large proto-T2 regional data center?
No: more sites test better grid concepts
- We've identified 6 sites (3 labs, 3 universities) to participate in the initial development.
- Each site must provide some shared resources, personnel, and computer accounts for atlas collaborators, etc.
- We will identify which facilities need upgrades to make a useful testbed

ATLAS-GriPhyN Testbed 2000

ATLAS-GriPhyN Testbed Workshop

June 15, 2000

- Issues to be addressed by ATLAS Grid Testbed
 - platform for testing grid concepts, computing models
 - provide input back to grid developers
 - expose weaknesses to better plan for infrastructure upgrades
 - identify and specify application-grid services interfaces
 - developers, administrators, users need grid experience
 - perform realistic test cases and make available as a test-suite
 - prepare infrastructure for mock data challenges
 - distributed monte carlo production for TDRs

Components of a typical ATLAS testbed node

- Computing environment:
 - current version of ATLAS software
 - globus software (initially); griphyn toolkits as they become available
 - objectivity on multiple nodes
- Storage:
 - disk cache (temp & persistent), Testbed controlled
 - tape at least one site
- Network connectivity: OC3
- Grid-enabled ATLAS applications
- Must supply significant personnel

Participants

- BNL
- ANL/UChicago
- LBL
- BostonU
- IndianaU
- UMichigan

Storage (Now)

- BNL: HPSS
- ANL: betaGrid node
- LBL:HPSS
- BU:
- IU: 40 GB and betaGrid node
- UM: Linux: 2x9GB, [72GB SAN](#)

Network

- BNL: OC3 to ESnet
- ANL: OC12 to Esnet (Abilene direct too)?
- LBL: OC12
- BU: OC3 to Abilene and VBNs
- IU: 100Mbs (Linux) 3 DS3 (Sun+HPSS)
OC3 (test HPSS)
- UM:OC3/100Mbs

Database Grid Specifics

- **First, core database infrastructure has to be designed and built to work in a Grid environment**
- Grid-enabled data distribution to downstream federations
 - Object dependencies must be understood
 - export
 - move (ftp) ...ie exploit Grid file replication and cache mechanism
 - fast + secure
 - attach
- Need for R&D on advanced technology for object and collection access, transport and management in a Grid environment

Athena APIs

- Architecture group is working on identifying grid related APIs for Athena
- Some obvious services need to be grid aware:
 - I/O interface
 - Metadata services
 - messages
- Craig Tull and Stu are identifying correspondences between Athena and Grid services

ATLAS Grid Applications

- Tile Calorimeter testbeam data
- TRT System Test Data (Production)
- Monte Carlo Production (existing ATLAS software)
- Evaluation of Data Distribution Models
- Data Cataloging, Metadata, Bookkeeping

Status

- US ATLAS has reached an agreed plan
- Have established an initial set of goals and “Work Plan”
- Next are planning issues and integration with CERN/ATLAS and EU-GRID activities.