ATLAS GridKa T1/T2 Status

GridKa TAB, FZK, 19 Oct 2007

Günter Duckeck, LMU München

• GridKa T1/T2 status
• Production and data management operations
• Computing team & cloud organization
• T1/T2 meeting summary
• Site monitoring/GangaRobot
• Tier-3/NAF
**GridKa Tier-1/Tier-2 overview**

- 6 Tier-2 for ATLAS-GridKa (>=11 Centres) in D, PL, CZ, CH, A

**Resources:** “un-official best guess Oct 07”

<table>
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<tr>
<th>Site</th>
<th>CPU(kSI2k) ('08)</th>
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<th>Prod</th>
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- Tier-2 mostly in operation and used for ATLAS prod and DDM ops
  - German T2 Funding by HGF-Alliance until 2012,
    addtl. resources from 'D-Grid Sonderinvestitionen' in 2007

- Massive jump resources 2007 --> 2008
Production in GridKa cloud - 2007

Walltime

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Distributed data management in ATLAS

MC AOD and NTUP Replication Status (Tier-1s)

- **MC data replication period Feb-Aug 2007**
- **Total data volume: 4600+ datasets, 800+K files, 30.5+TB**

![Graph showing data replication status]
Distributed data management in GridKa cloud

- Continuous MC-data replication in GridKa cloud:

Summary of disk occupancy and number of files for the DE cloud.

WARNING: Only datasets whose project name (character chain before the first point) includes one of the following list are treated in this page:
- csc11 mc11 mc12 calib0 calib1 testIdeal testMisal mcMisal stream valid1

This report was generated: 13 September 2007 - 04:00

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Number of files per site and per type
Distributed data management – dataset monitoring


- Weitere Cosmic runs bis LHC startup
- Re-prozessieren an Tier-2s
- Kalibration/Analyse an dedizierten Tier-2

TAB, FZK, 19 Oct 07

Günter Duckeck, LMU
GridKa cloud computing team
- organization of main tasks -

- **MC production team:**
  - participate in ATLAS prod on EGEE resources
  - J. Kennedy (M), M. Schroers (W), K. Reeves (W), M. Jahoda (CZ), J. Guenther

- **Distributed data management:**
  - data replication, clean-up and integrity checks
  - C. Serfon (M), K. Leffhalm (Desy), A. Olszewski (PL), J. Chudoba (CZ)

- **GridKa ATLAS technical contact:**
  - help sort out T1 problems, provide direct link to T1 admins
  - D. Meder (W) (bis Juli), S. Nderitu (BN) (seit Mai)

- **Cloud coordination**
  - knowledgeable in all fields & active in ATLAS Computing meetings
  - John Kennedy (M)

- **Monthly phone meetings + Mailing list + Wiki**
Manpower Status

- **Substantial Improvement in last 6 months:**
  - GridKa ATLAS contact, FR & MPPM support persons

- **Still missing manpower for central tasks:**
  - DDM, Production, User support,

- **Hard / impossible to find people with solid Grid-computing background**
  - mostly new person-power with professional experience from non-computing fields
  - extended start-up phase

- **ATLAS GridKa cloud organization and distribution of tasks in progress**
ATLAS T1/T2 meeting - yesterday

- ~15 people from 8 sites: Site&problem reports, common operations, discussions

Issues

- Site usage in ATLAS production
  - more direct involvement in central production
- data management & distribution:
  - big trouble with incomplete datasets:
    - data analysis mess and huge manual effort to accomplish completion
    - ATLAS wide issue, GridKa cloud ~best for completion
  - monitoring, integrity checks, ...
    - garbage pile-up in grey zone between DDM, LFC, FTS/SRM, dCache
- more manpower and refined distribution of tasks
- data distribution policies & coordination

- User support within GridKa cloud:
  Wiki: https://twiki.cern.ch/twiki/bin/view/Atlas/GridKaCloudUsers
ATLAS site availability monitoring

- not yet standard suit of ATLAS SAM tests (cf CMS/LHCb)
  - under development/discussion
- indirect monitoring via production system ...
- recently started GangaRobot:
  - site functionality for ATLAS distributed analysis
  - complementary requirements wrt production
    - direct access to data on close SE (dcap, xrootd, rfiod)
    - compile&link user-code on Wns
  - 1st prototype implemented to test availability/functionality of EGEE sites
## GangaRobot Summary

This report was generated: 17 October 2007 - 15:53

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### FR

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Tier-3 for ATLAS and User Support

- ATLAS-D internal meeting in Bonn last May
  - ATLAS Computing Model, GridKa cloud, Distributed analysis needs,
  - Tier-3 options
  - plans/status of ATLAS-D groups
- Tier-3 Grid Installations Workshop in Wuppertal (Juli 07)
  - ca 20 participants
    - BN, DD, DO, GÖ, MZ, SI
  - gLite/dCache installation and configuration, networking requirements, ...
  - ATLAS software Installation, ...
Helmholtz Alliance-NAF Setup

- Requirements draft prepared:
  - interactive login & storage space
  - AOD & ntuple (batch-) analysis
  - Proof/ntuple (interactive-) analysis
  - dedicated RAWD/ESD samples for calibration & development
  - TAG database

- Discussion/feedback w/ Desy in progress

- Further iterations needed:
  - role of Proof for ATLAS analysis
  - startup scenarios
  - ...
Issues for GridKa

- Mostly smooth running of production
- decent performance of dCache disk pools
  - production, data replication, T0 tests, ...
    - but no systematic longer-term performance/crash test
- Some hickups/failures for other services: LFC, RB, BDII, ..
- Need for further systematic tests of FTS configuration for individual T2s
  and coordinated effort to debug transfer failures to T2s
- Biggest current worry is availability and performance of tape system:
  - mass staging input rate <<10 MB/s
  - lack of monitoring & transparency
  - admittedly we've used it mainly write-only so far
Conclusions

- Manpower for Computing Team substantially improved but still critical gaps to fill
  - Organization & distribution of tasks within GridKa cloud in progress
    - need more people for central services
- Massive CPU&Storage Increase next year at T1 & T2s
  - potentially scaling problems in various areas.
- In ATLAS computing data management most critical
  - baseline performance meets specs
  - continuous struggle with dataset completion despite manpower effort in DDM ops
- At GridKa, tape I/O usage, performance and optimization is most critical current issue