RECENT ATLAS ACTIVITIES
Focus on CC-IN2P3 participation

cc-atlas

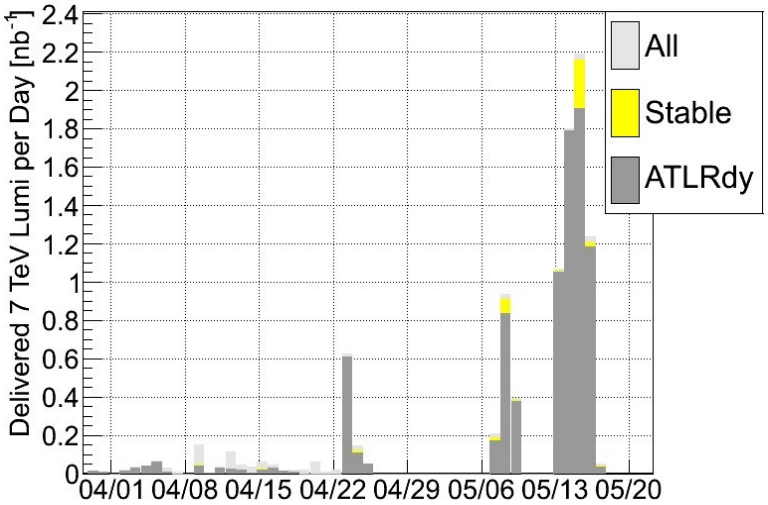
LCG-FR T1&AF meeting, CC-IN2P3
May, 27th 2010

INTRODUCTION

7 TeV era ("ère de découverte"):

- First collision on March, 30th 2010
- 8.85 nb^{-1} delivered (stable beams)
- 94% data taking efficiency (8.30 nb^{-1} recorded)
- Not much "heavy" particles yet (~ 30 well-known W particles; >7 million at DØ/Tevatron)

M.Aleksa and B.Gorini, ATLAS Open Executive Board meeting, 05/18/2010

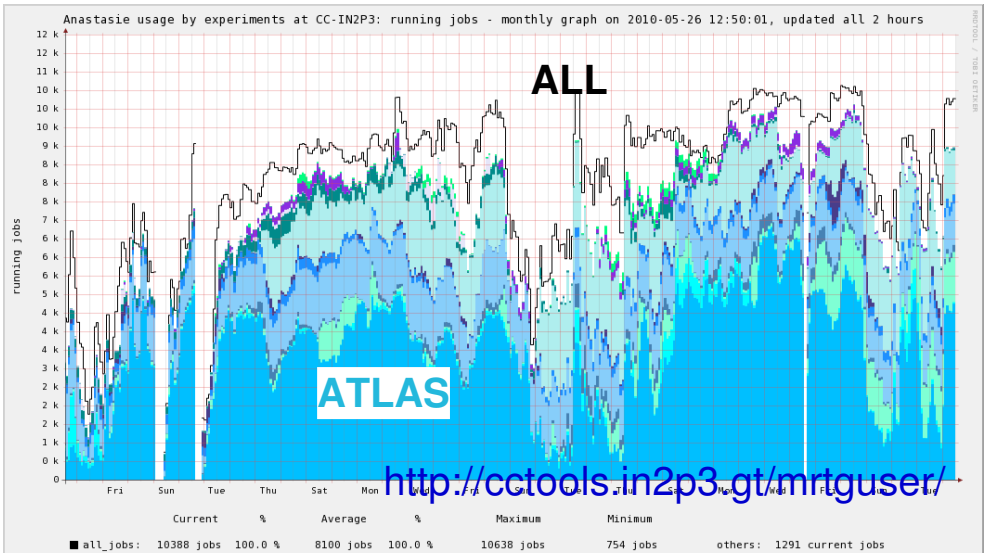


Computing activities ("la totale"):

- MC production (new energy)
- Reprocessing campaigns (major HEP conference dead-lines)
  - Physics group production (just starting)
- User analysis
- Data transfers

CPU at CC-IN2P3

Number of jobs at CC-IN2P3, last month,
ATLAS contributes to 42.4% on average



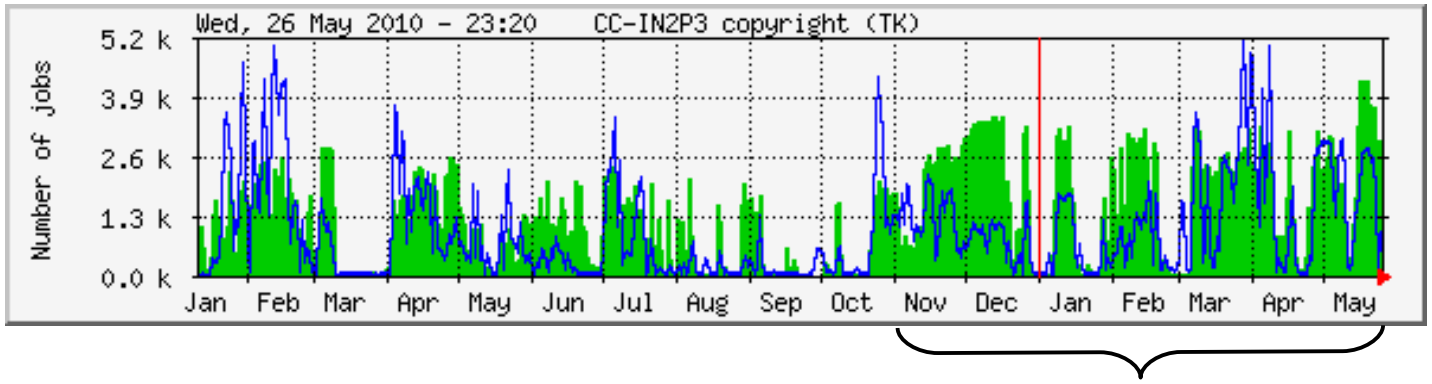
SIMULATION MC

ATLAS wide:

- Most established activity
- 400 millions Geant4 events simulated in April
- Represents ~50% of T1 activity nowadays (shared with reprocessing)

At CC-IN2P3:

- Continuous, smooth production (tasks defined by bunches by ATLAS → peaks)
- Significant **increase of the number of jobs**



First coll. Data (nov. 2009)

http://cctools.in2p3.gt/mrtguser/mrtguser/atlas/atlasprod.html
Number of jobs running on the T1 since January 1st 2009

RELATED AFS HICCUP: RELEASE INSTALLATION

ATLAS wide:

- Automatic system for deployment of the release on the Grid sites
- One installation per ATLAS CE, independently

At CC-IN2P3:

- Releases on AFS; five CEs used for software tag publication
- Several thousand jobs running simultaneously
- **No more overload** (other sites experience overload)
- Problem: still **manual interventions** to finalize installations
- On going improvements:
  - Single NFS tag file shared by all CEs → five times less installations
  - Asynchronous replication (main failures) → other jobs can proceed without waiting replication

REPROCESSING

ESD: Event Summary Data (detailed data format)
AOD: Analysis Object Data (reduced physics quantities)
dESD: derived ESD (for given physics groups/studies)

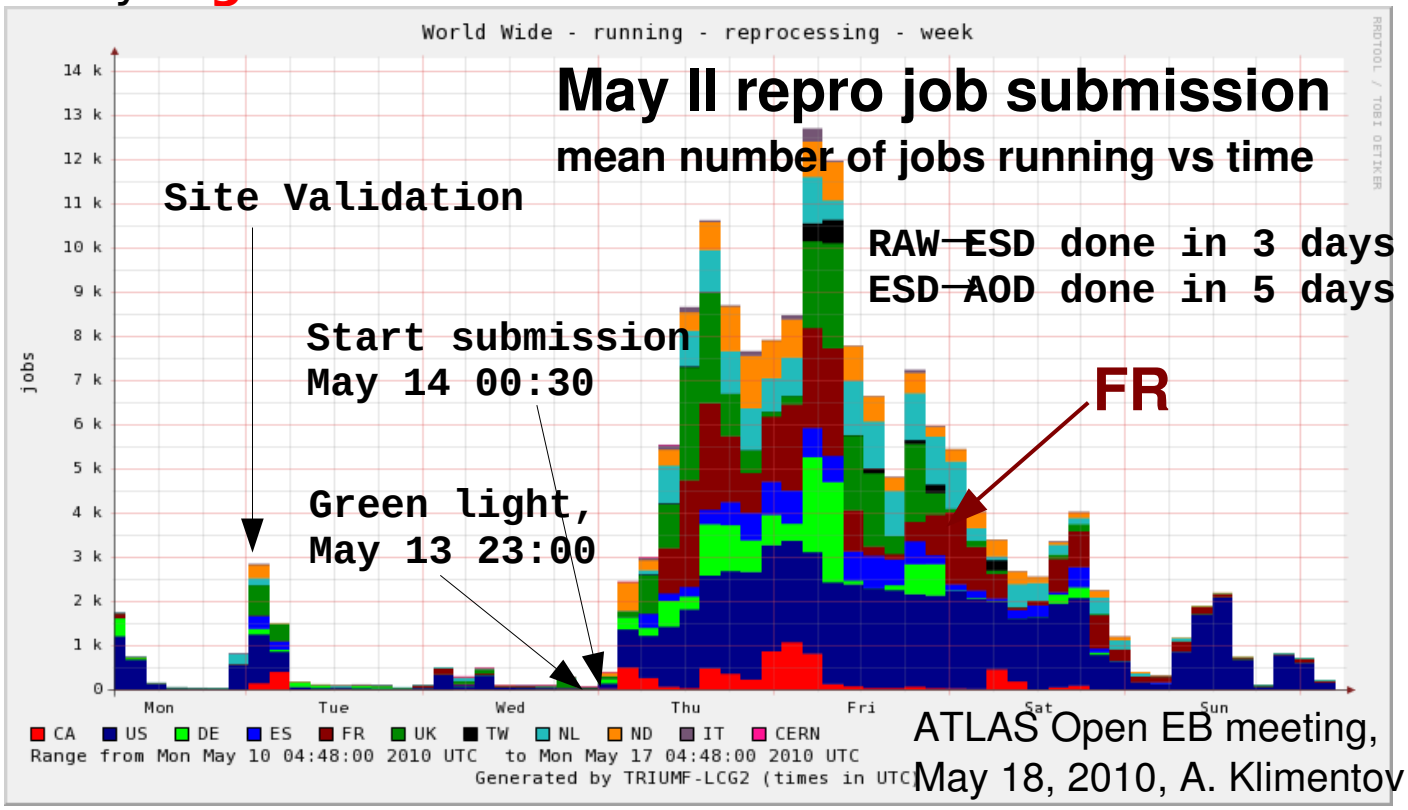
ATLAS wide:

- Since 7 TeV collisions: two reprocessing campaigns
- Standard dataflow:
  - RAW→ESD, other small files + ESD merging
  - n ESDs→AOD, dESD, other small files
- Means **CPU needs** and very **high data distribution transfers**

repro	RAW at CC-IN2P3
April	17 TBs, 13 kFiles
May I	26 TBs, 20 kFiles
May II	15 TBs, 12 kFiles

At CC-IN2P3:

- Disk resident files
- May II RAW→ESD: ~6k jobs (~20%)
- CC-IN2P3 provides a high memory and scratch space queue ("rescuing" queue)
- Great success
- Errors at CC related to ATLAS software

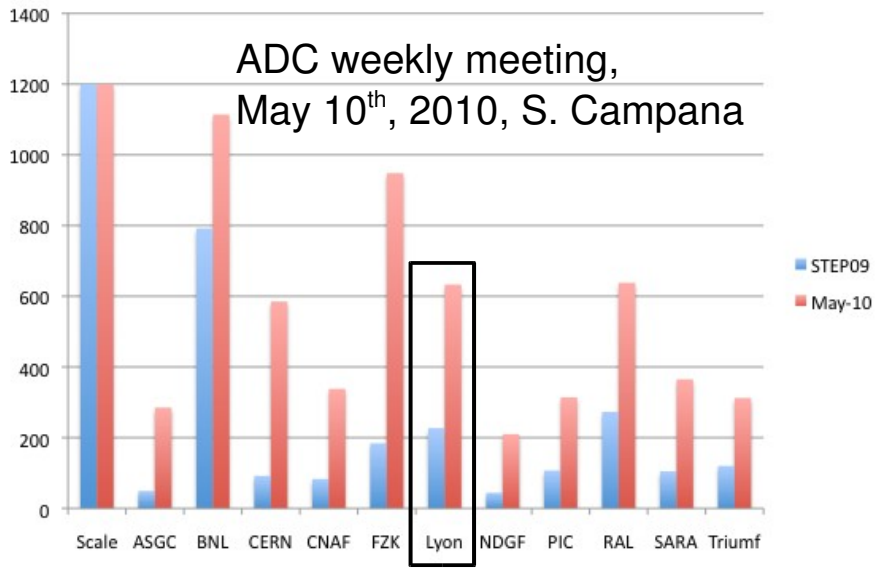


ATLAS Open EB meeting, May 18, 2010, A. Klimentov

DATA TRANSFERS

ATLAS wide:

- High numbers of files to transfer (T1↔T1+T1→T2), all activities
- May 2010: ATLAS is moving on the GRID **three times more files** than during STEP09 (already 1.5 the computing model)
  - This is too much data to handle.
- Data distribution finished in ~10 days, **four times faster** than the Computing Model.

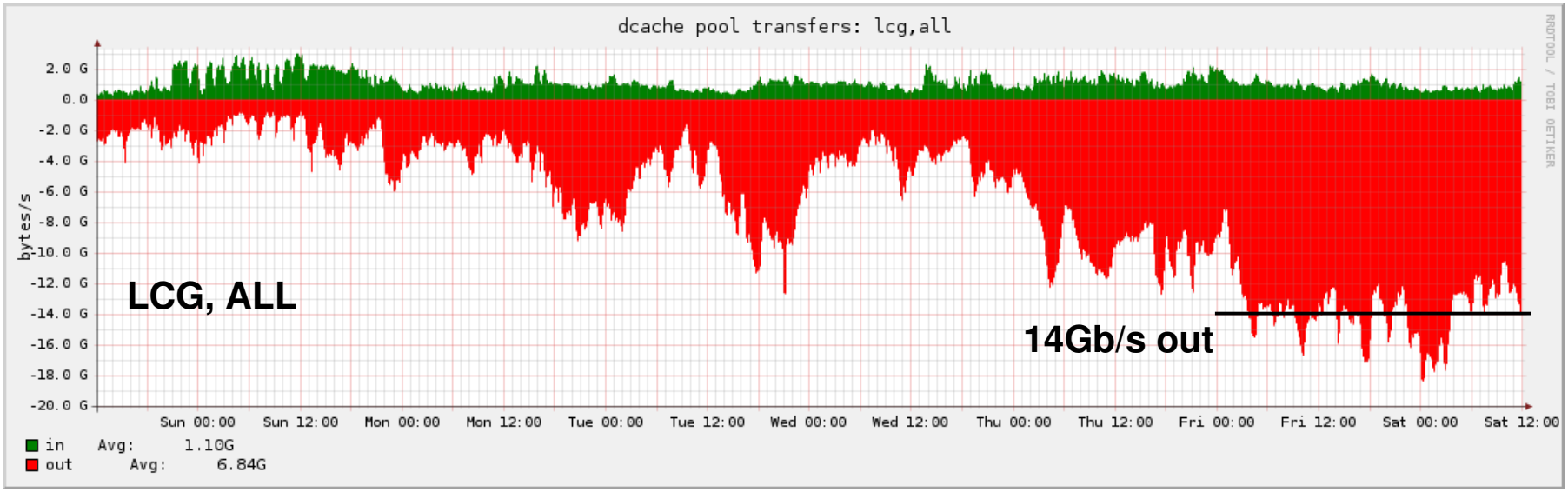


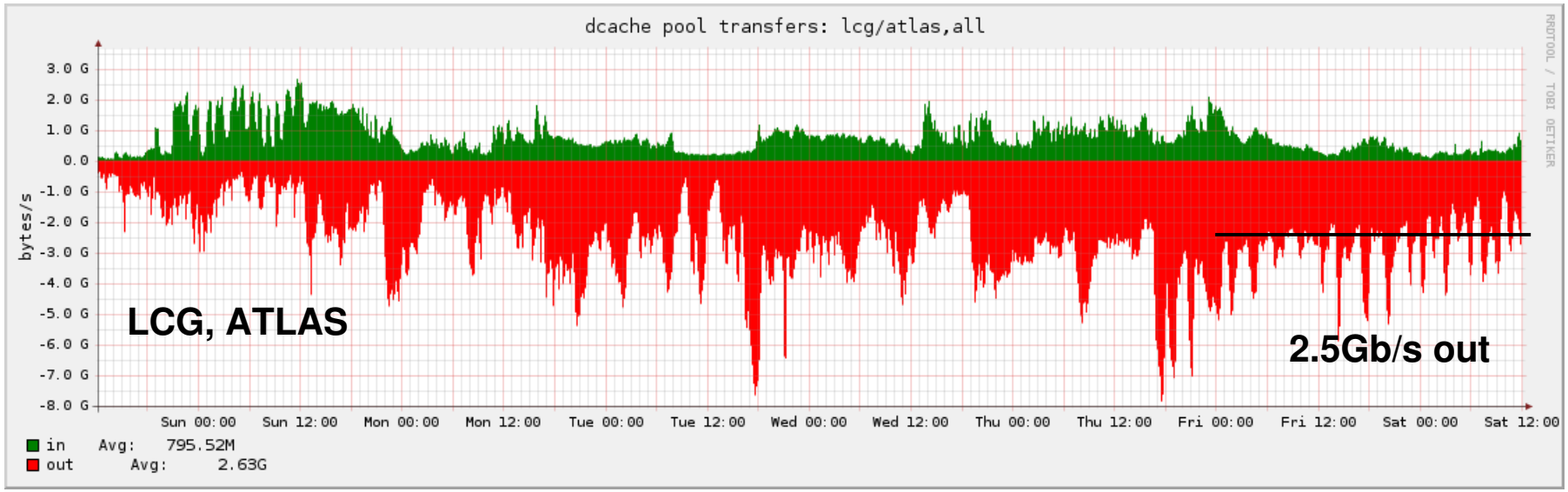
At CC-IN2P3:

- High dCache activity observed (transfers+jobs), some SRM errors
  - Also true for other sites, specifically sites with an unbalance association
  - Errors traced back to faulty pool
  - Otherwise **very stable dcache** behavior since months
- FTS transfers:
  - CC ↔ T1: no problem
  - CC → T2: slow transfer rate

(cont'd)

Illustration of dcache activity: pool transfers



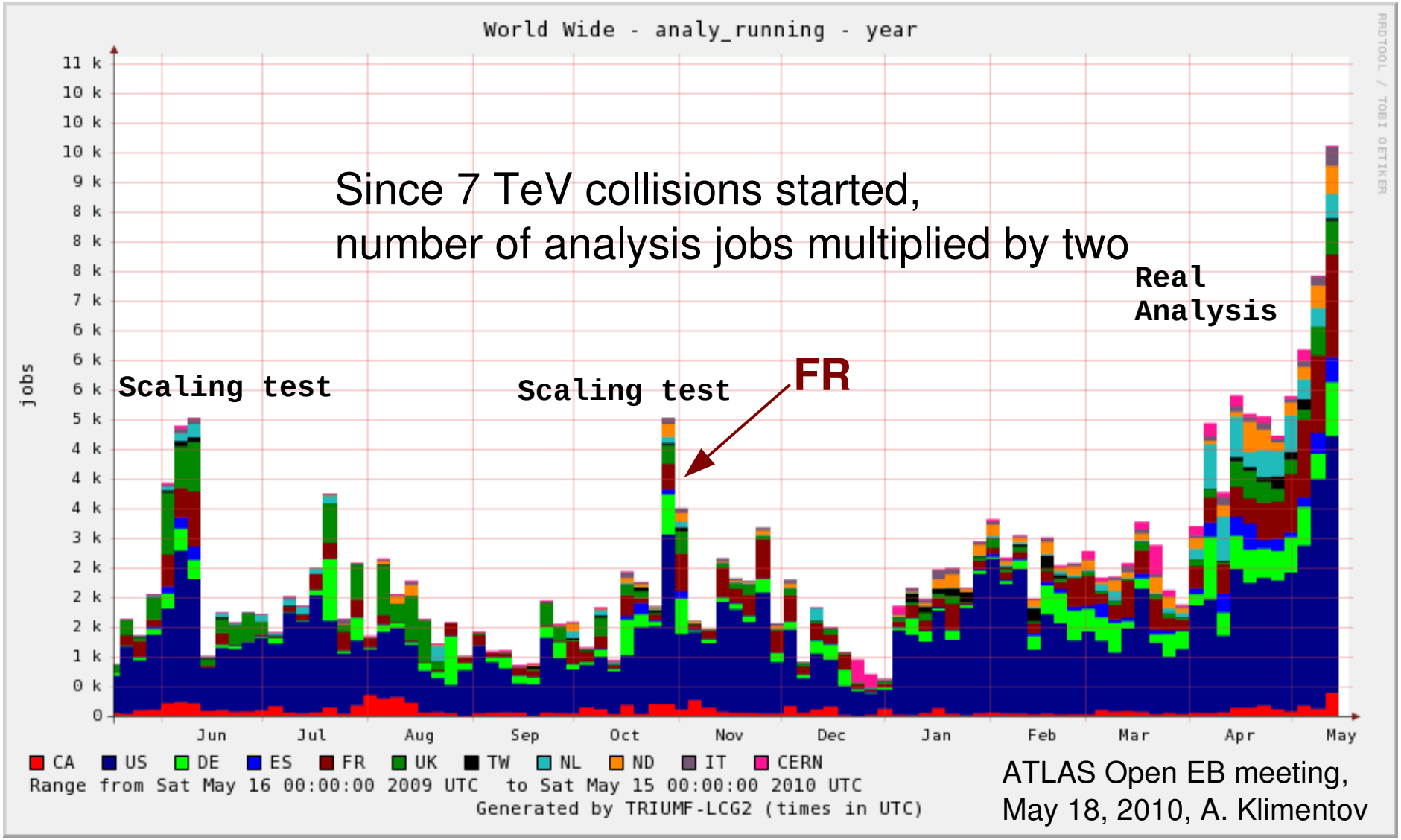


USER ANALYSIS

ATLAS wide:

May 2009 - May 2010

mean number of analysis jobs running vs time



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USER ANALYSIS (CONT'D)

At CC-IN2P3:

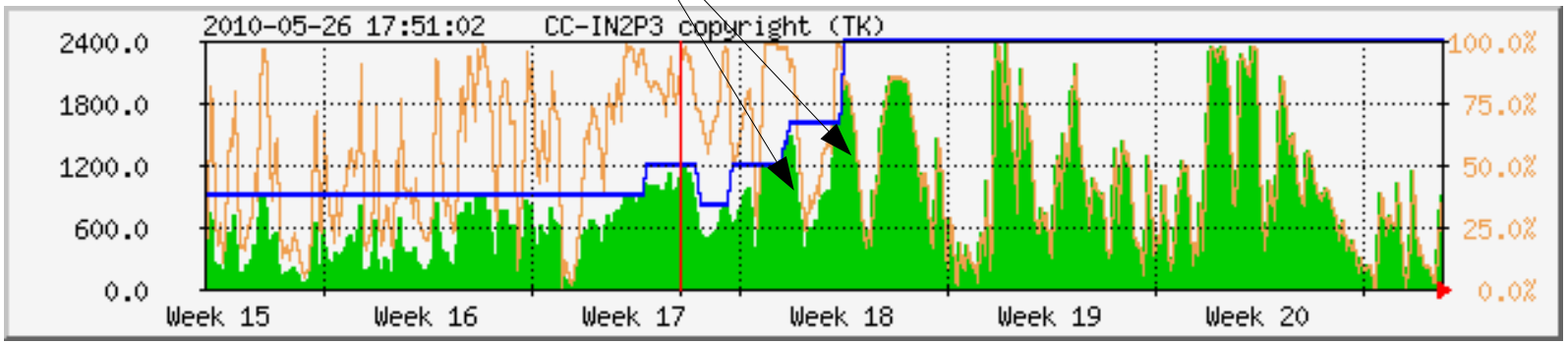
- **Very fast growth** of the number of analysis job demand
- Problem: analysis jobs accumulating in the “queued” state
- Reason #1: production has higher privileges than analysis

  → increase the share of the analysis activity (compared to the production)

  → limit the number of running jobs for T2 MC production
- Reason #2: xrootd queue processes jobs ~10 times slower than dCache

  → close the xrootd queue

- Applying those changes: **queued jobs rapidly entering in running state**



http://cctools2.in2p3.fr/mrtguser/mrtguser/ccin2p3/res_u_xrootd_atlas.htm

SITE IMPROVEMENTS FOR ATLAS

- Frontier server + squid cache:
  - Installed at CC-IN2P3
  - Under validation
  - Available officially for the collaboration

- Automatic survey and fixes for:
  - AFS consistency checks (RW/RO)
  - Release installation
  - Release customisation
  - Error rate on site
  - Automatic restart of Vobox services

CONCLUSION

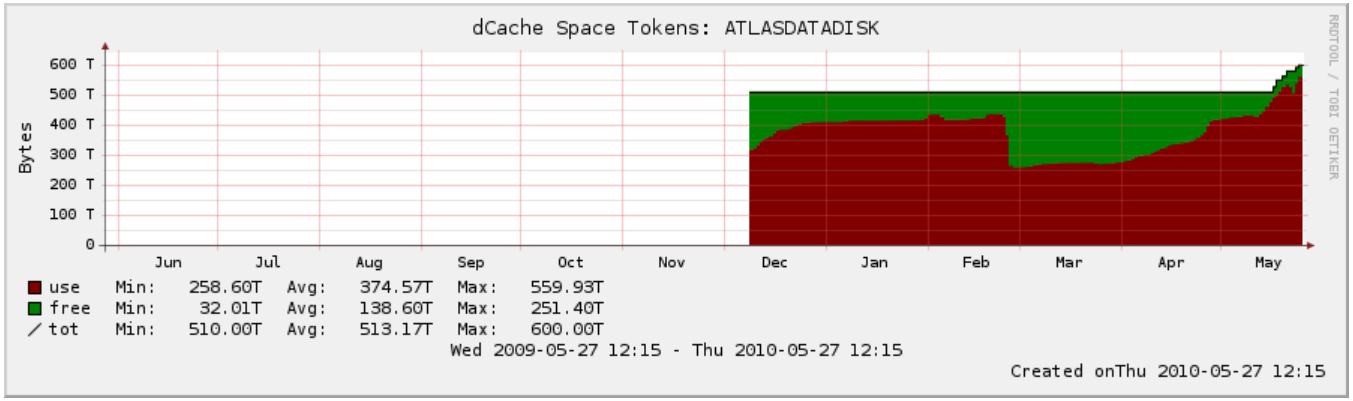
- The CC-IN2P3 participated to all the ATLAS computing activities and the **CC-IN2P3 came up to the expectations**

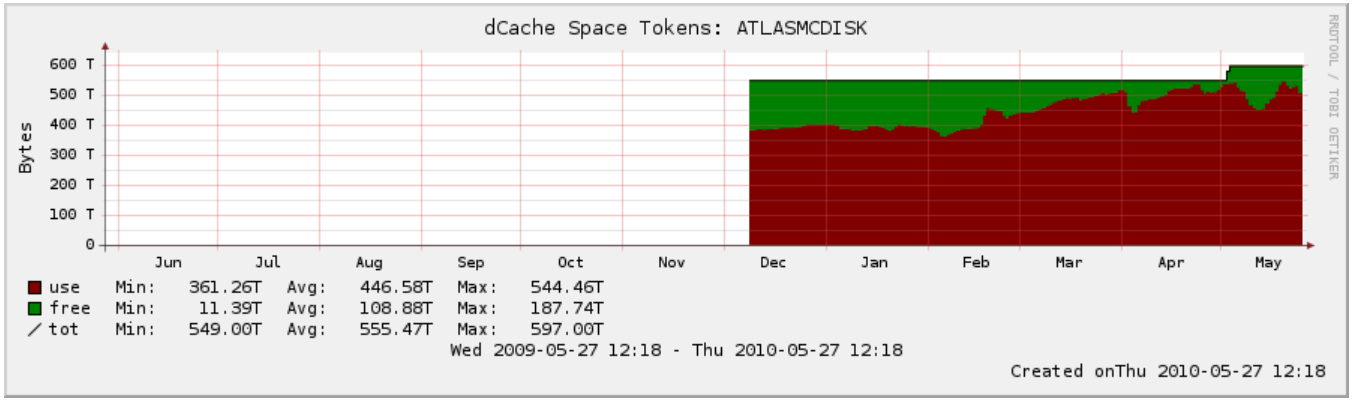
- Projects still on the work:
  - Stabilize the **release installation** mechanism
  - Tune of the local batch system to allow a fast **analysis turn-around**

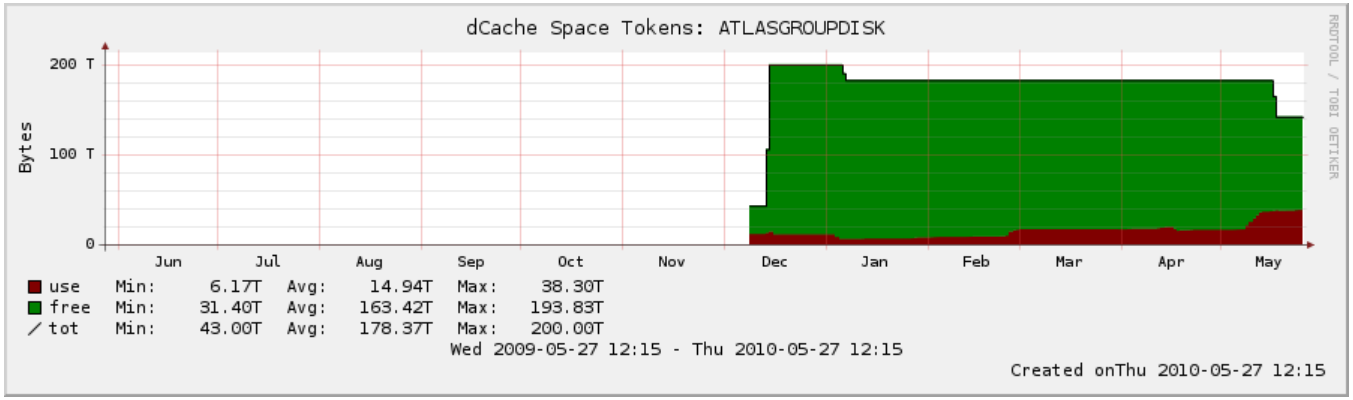
- Problems to be watched:
  - Slow **FTS transfers** to T2

BACKUP

DISK SPACE

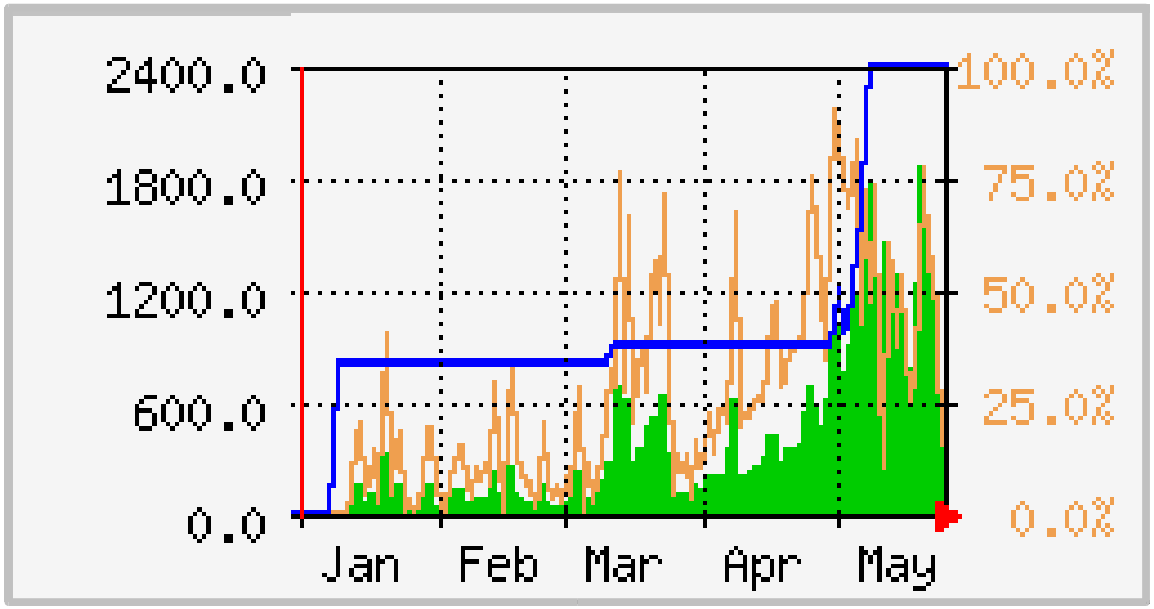






http://cctools.in2p3.gt/stockage/

AT CC-IN2P3



http://cctools2.in2p3.fr/mrtguser/mrtguser/ccin2p3/res_u_xrootd_atlas.htm