

# Tier0 Status

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LCG-LHCC Review, 22<sup>nd</sup> September 2008

- Resource Ramp-up
- CASTOR status and performance
- Progress with new data centre project

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- CPU: 100% available since May
- Disk: 100% available in August
  - Delayed due to late delivery and minor technical problems with replacement hardware ordered after the Elonex bankruptcy in April
- Tape: 100% available since April

- CPU
  - First batch
    - Ordered out in late August
    - Delivery before November
    - Production in December or early 2009
  - Second batch
    - Received the tender answers
    - Target FC approval in December
    - Delivery before March 2009
    - Production in March - April 2009
- Disk
  - First batch
    - FC approval last week
    - Delivery in December
    - Production January 2009
  - Second batch
    - Received the tender answers
    - Target FC approval in December
    - Delivery before March 2009
    - Production in March - April 2009
- Tape
  - Media availability not a problem but exact procurement schedule depends on progress with new repack service between now and beginning of 2009

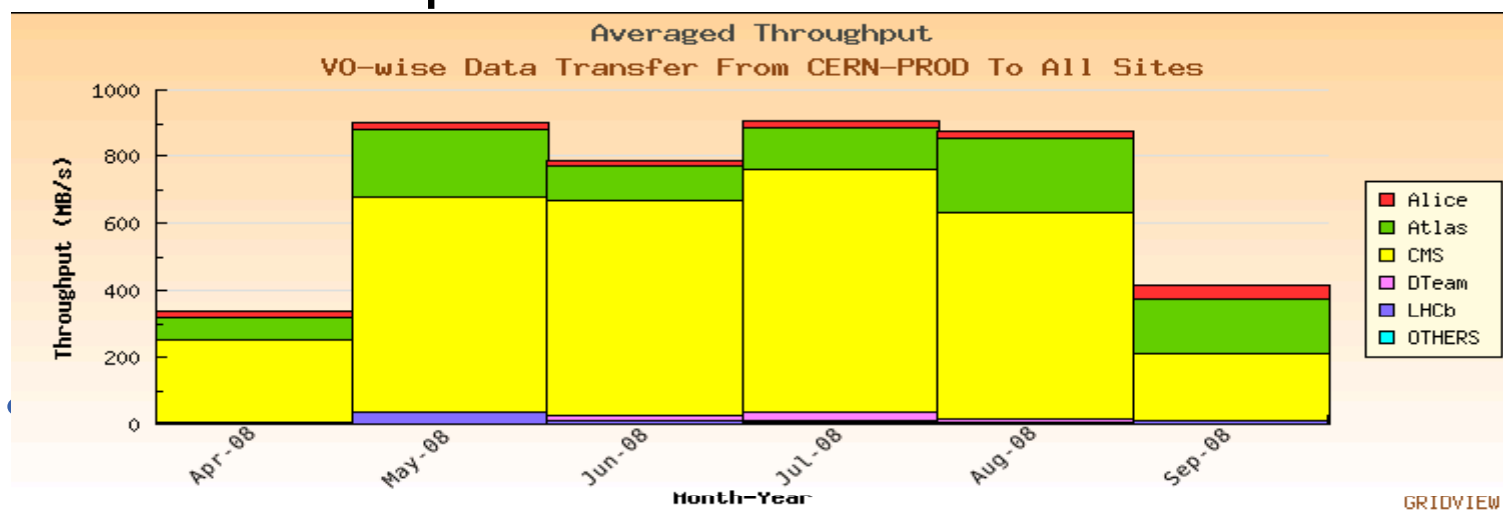
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- Resource Ramp-up
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  - Upstream services (SRM, FTS)
  - CASTOR service and first beam data
  - CASTOR for analysis
- Progress with new data centre project

- SRM 2.7 release is delayed
  - Originally foreseen in June but has still not yet passed testing/certification
  - Continue with 1.3 until LHC shutdown
    - SLC3 - hardware running out of warranty → retire/replace
    - Cannot be deployed in a fully redundant configuration
    - Built with an old castor client → constrains the stager deployment
- FTS 2.1 passed certification too close to LHC startup
  - Continue with 2.0 service (SLC3)
  - Setting up an independent 2.1 production service (SLC4) in parallel allowing VOs to move when convenient



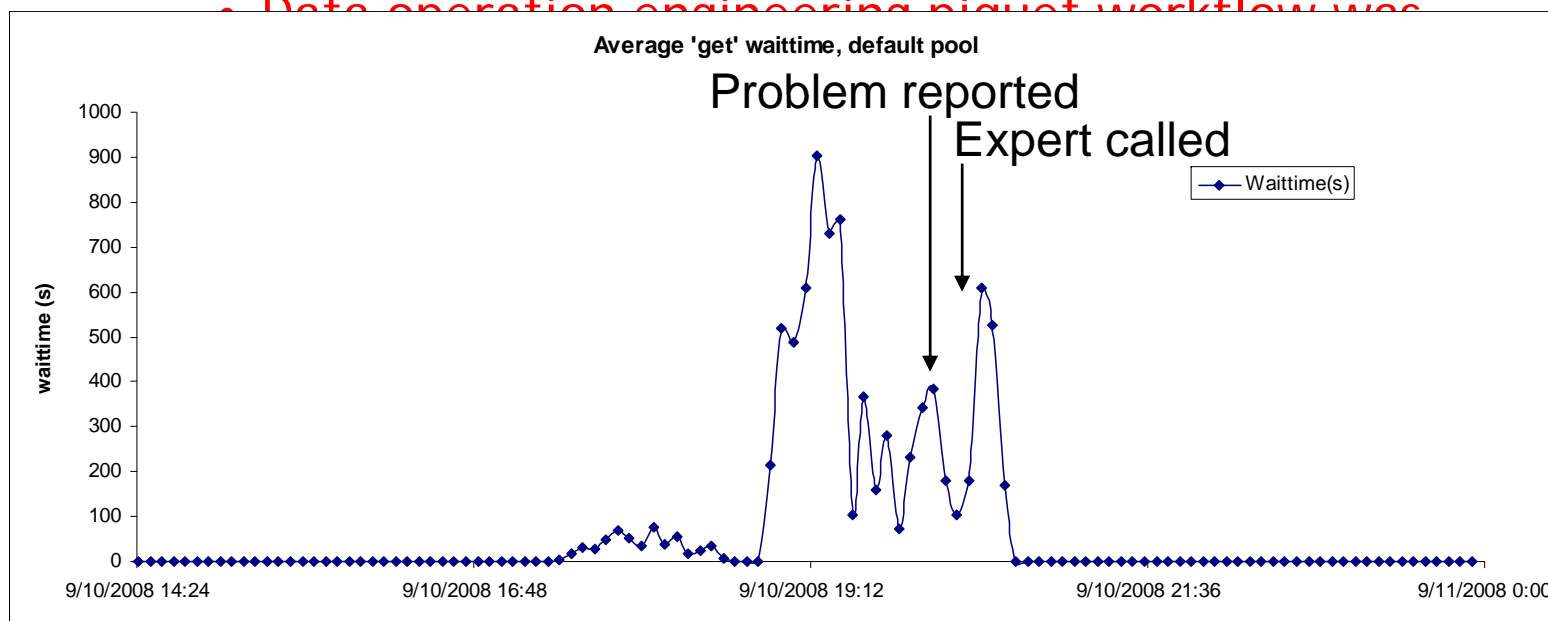
- Focused on providing a stable service for LHC startup



- 22-25/8: router problems
- 8/9: router problems

- No CASTOR issues but ...
  - ATLAS: file(s) unavailable for transfer

• Data operation engineering piguet workflow was



- LHCb: raw data file(s) 'disappeared'

- Files were accidentally deleted from CASTOR by LHCb

- Metrics have been implemented and deployed on preproduction cluster
  - Data collected in lemon
  - RRD graphs not yet implemented
- Production deployment delayed for several reasons
  - New metrics imply several changes to exception/alarms and automated actions used in production
  - An unexpected technical dependency on the late SRM 2.7 version
    - Ongoing work to back-port the implementation

- MB 16/9 approved a proposal for setting up a dedicated CASTOR instance (*c2cernt3*) for physics analysis at CERN
  - Planned production date is 1/10
  - First deployment based on current CASTOR with an enhanced xrootd interface
  - ~100TB per VO
    - Can be sub-partitioned for physics groups
- CASTOR enhancements (e.g. quota) are being developed for better coping with the analysis scenario
  - Upgrade rollout will closely follow the certification
- A production service with slightly less strict stability requirements compared to the Tier-0 instances

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- Reminder: the selected strategy is to do a single tender for an overall solution
- Four phase process developed:
  1. Request (many) conceptual designs
  2. Commission 3-4 companies submitting conceptual designs to develop an outline design
  3. In-house, turn a selected outline design into plans and documents enabling
  4. Single tender for overall construction.

- Price enquiry sent out in June
- 11 companies replied to concept design price-enquiry
  - As the cooling is the most complex aspect of the design, particular importance was given to this when evaluating the provided conceptual designs
  - It turned out that the four cheapest all have different approaches for the cooling
- Workshop with 4 companies on 26-27<sup>th</sup> of August
  - Dedicated session with each company

- Deadline for second phase (outline design) now moved to end of November
- Third phase - in-house turn the selected outline design into a tender
- Tender: aim for a FC approval at the March'09 meeting
- Contract: adjudication at September or November FC meeting
- 18 months construction work starting 2010
- New centre ready in early 2012



