

# Large Scale Disk Pool - Status and Milestones

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# Demonstrator Goals

- Test data handling scenarios implemented using an xrootd-based disk pool setup with functional extensions developed by DSS group (EOS prototype)
  - Collect and summarize the performance and operational experience with at the scale of several hundred TB
  - If necessary, evaluate alternate implementation options scenarios based on distributed file systems
- ATLAS will be gaining the operational experience for the storage solution under test while running normal ATLAS production and distributed analysis jobs.
- The efficiency of the data analysis tasks will be evaluated and ATLAS software will be further scrutinized and tuned to achieve the best possible performance numbers.
- Special attention will be paid to the new data access features like TTreeCache introduced in the 5.26 version of Root.

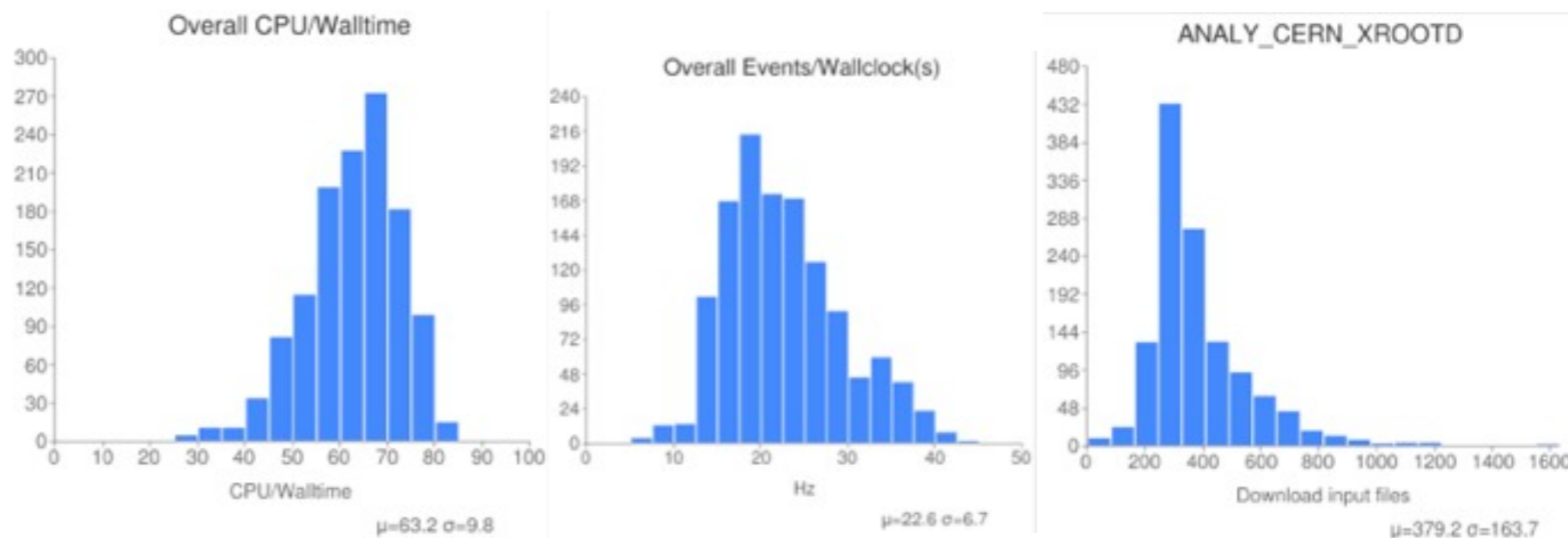
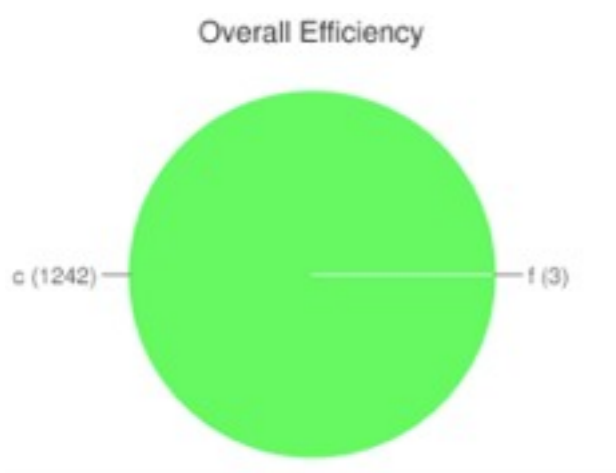
# Performed Tests

- ATLAS site has been set up
  - data import/export to EOS
- Several HammerCloud tests
  - ramping up number of client jobs
- Exercise Storage Server Replacement
  - pool now on planned disk configuration (JBOD)
- Intensive I/O production test (TAG reprocessing)
- Conclusion: after above tests we will consider site as operational and begin with 3 months test

# Hammer Cloud Tests

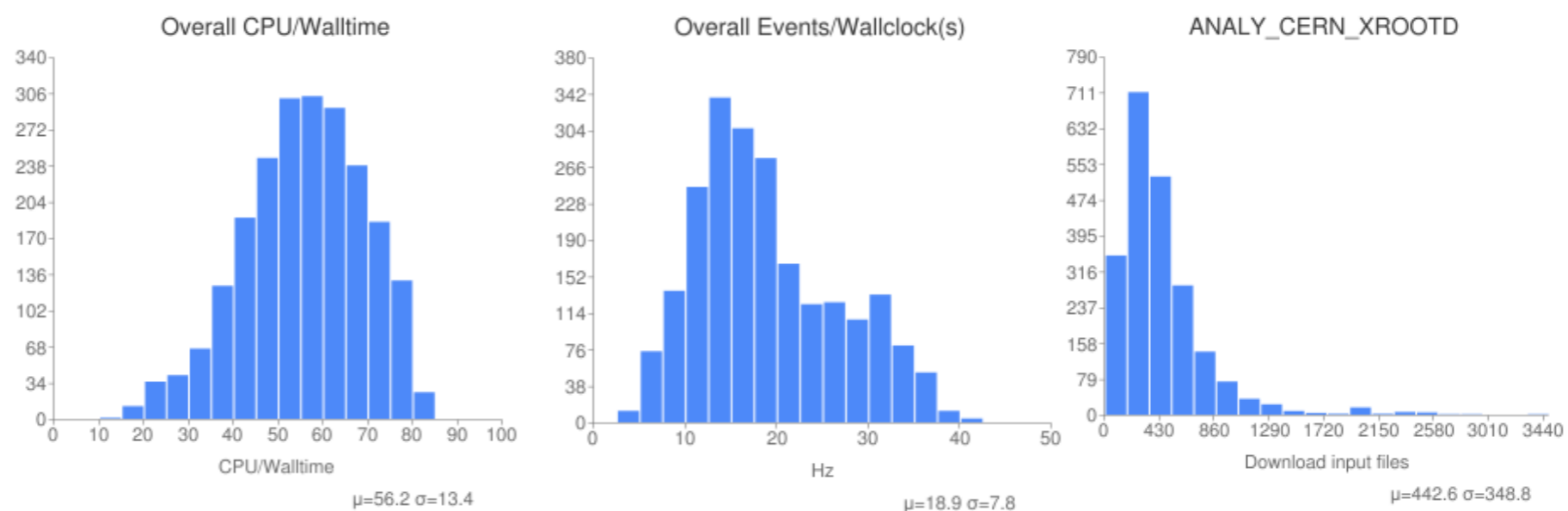
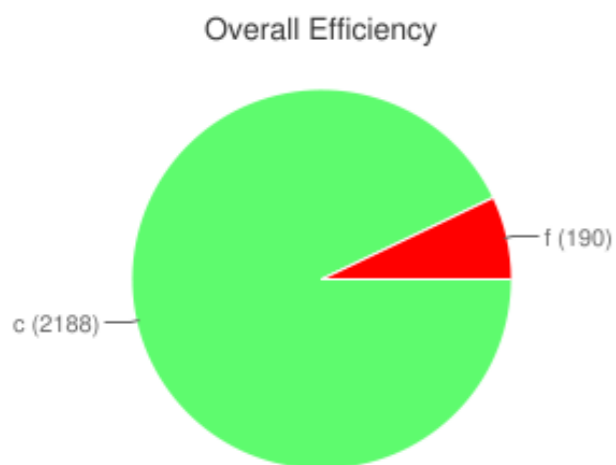
EOSATLAS POOL 27 Disk Server RAID0

HC 10001181



HC 10001381

EOSATLAS POOL reconfigured to 8 Disk Server JBOD



Remark: inefficiencies are due to missing files/lost filesystems

HC tests are ongoing. Results show fast file download contributing to a high event processing rate.

# Timescales

- Jul 1 : Kick-off meeting
- Jul 7 : Draft test plan proposed
- Aug 1 : Preparation and pre-testing and tuning of xrootd based setup completed
- (shifted) Oct 15: larger scale test with a selected ATLAS users. Test setup performance and reliability metrics during 3 months
- Nov 15: open EOS via a separate queue to normal ATLAS users.
- IT-DSS group is contacting also other experiments which may have interest in similar tests

# Summary & Outlook

- good progress made with ATLAS tests
  - promising preliminary results
  - operations integration & validation ongoing in DSS group
- confident to reach final results for the review in January

# XROOT demonstrator coordination

- Several XROOT based demonstrators are currently active
  - wide area redirection
    - CMS/Brian :T1-> T2,3
      - Integration of EOS and Castor/xroot planned
    - ATLAS/Graeme & Doug: also T3 ->T3
      - interest in xroot proxy to mediate T3->T3 network access
  - LST/EOS large scale disk pool
  - XROOT proxy caching
- Ultimately all involved parties are interested in showing also a complete setup with several (if not all of the above) components working together in one system
- Started already cross demonstrator discussions on time plans to connect the individual setups
  - Will meet at CHEP to discuss a possible joint architecture and integration plan
- If there would be general coordination forum for all WLCG demonstrators we would also be happy to fit into that scheme.