Large Scale Test EOS

ATLAS Distributed Computing
&
CERN IT (DSS + ES)

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- ## July - Kick-off meeting, draft test plan proposed

- ## August - Phase 1, 6 weeks:
  - Preparation and pre-testing

- ## October - Phase 2, 4 weeks:
  - Tuning

- ## November - Phase 3, 3 months:
  - Test Running

July 6th:
First draft proposed
https://twiki.cern.ch/twiki/bin/view/Main/LST2010

August:
DDM, FTS and panda setting up

October:
Up to 2k HC parallel jobs running

18 Nov
ANALY_CERN_XROOTD
EOSATLAS in production
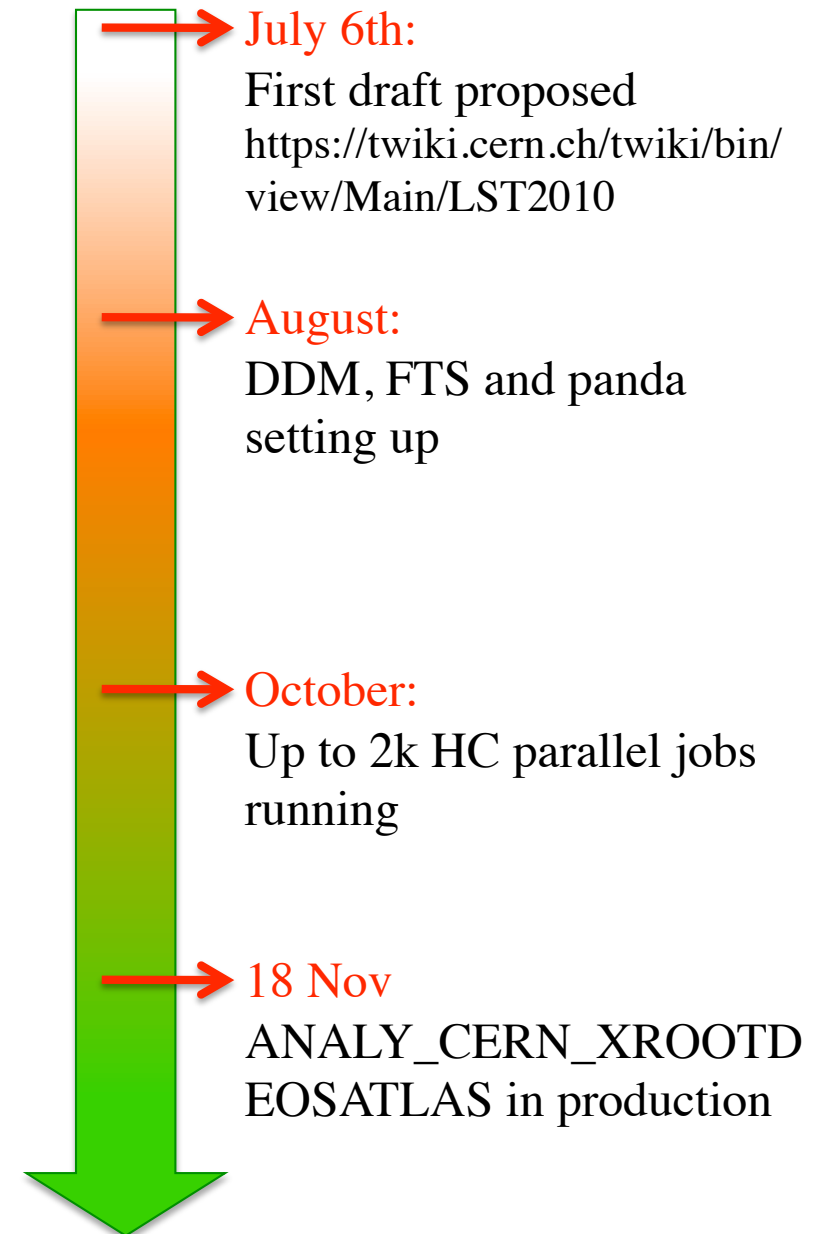
Preparation, Pre-testing and Tuning

- Storage set up and configuration
  - CERN-PROD_EOSDATADISK and EOSSCRATCHDISK created
    - Basic tests performed
  - Endpoint included in the FTS servers
  - ATLAS DDM dashboard monitored
- Pandaqueue ANALY_CERN_XROOTD
- ATLAS DDM Functional Test started
- HammerCloud useful data uploaded
- HC functional tests
- HC stress tests

✓ HC stress tests run "weekly"

✓ DDM FT monitoring

- Storage reconfiguration
  - from RAID to JBOD
  - Throughput limitation (~ 450 MB/s:
    - More gridftp servers

- Space publication:
  - Number of file replica configurable by dir:
    - Space as seen from ATLAS difficult to publish correctly
      - ✓ Patch deployed

- CERN batch queue re-configuration
  - Dedicated queue to know the exact number of parallel job running vs EOS

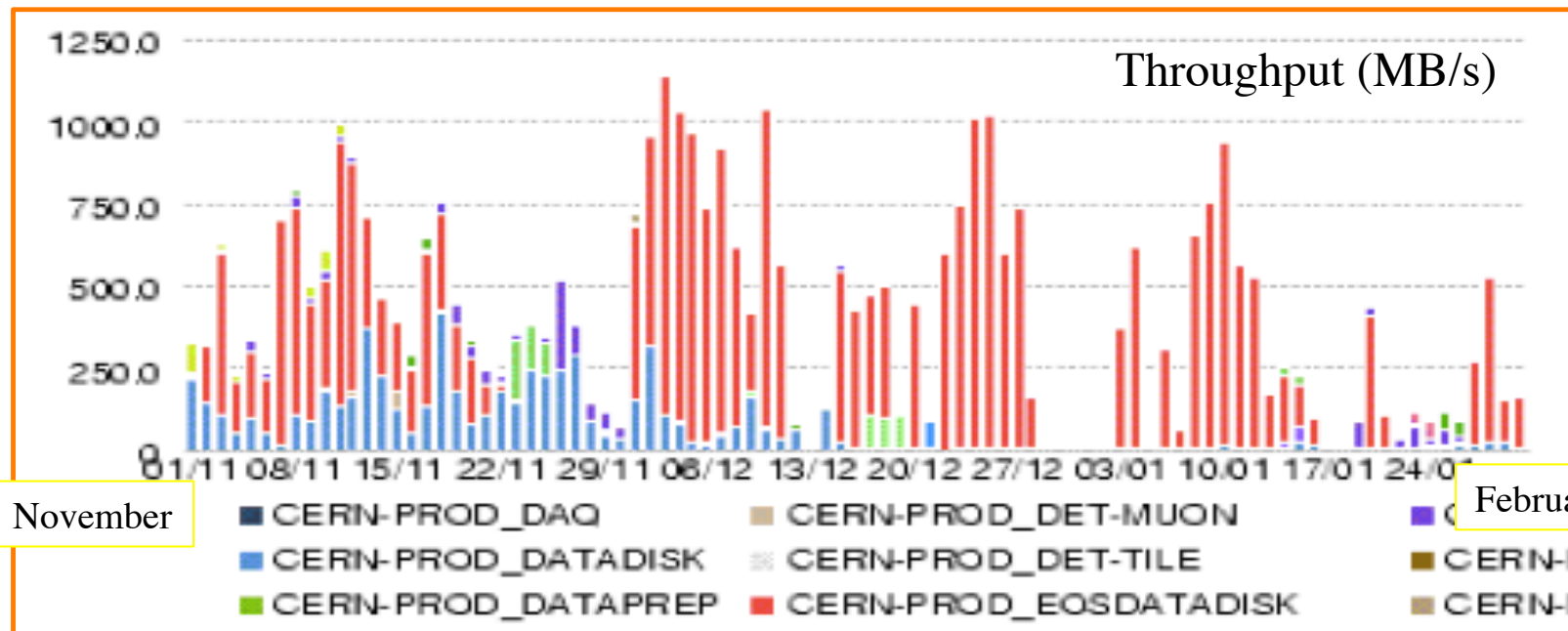Operations handled by ADC and IT-DSS experts

ES
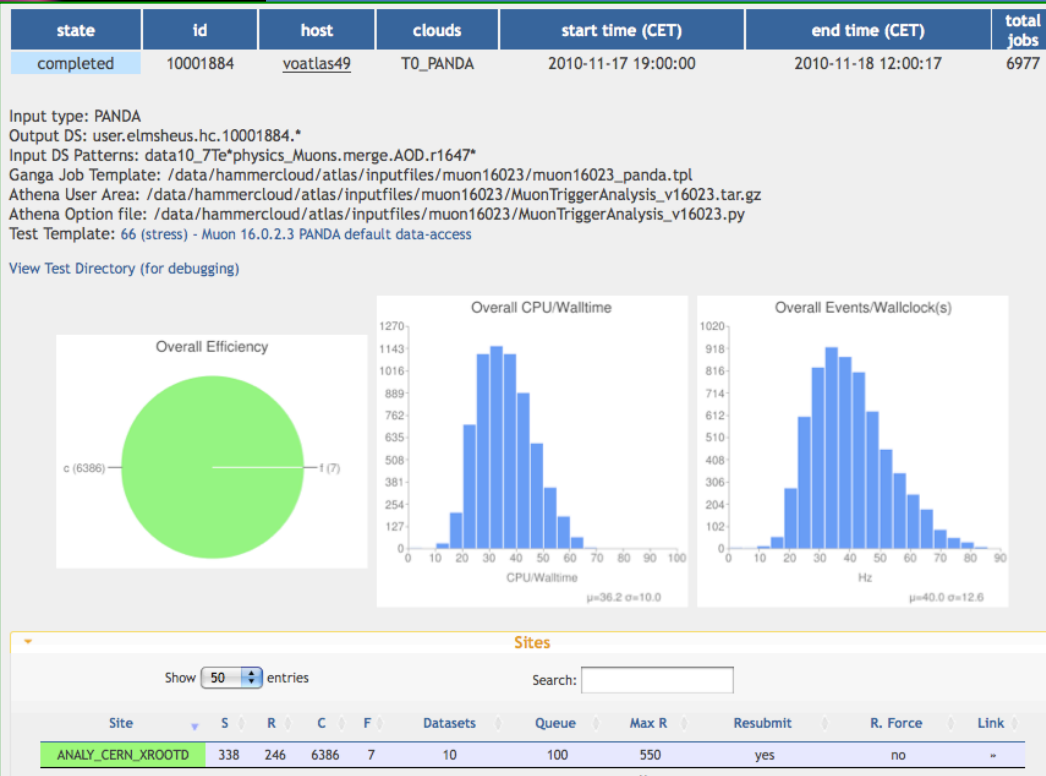
- ANALY_CERN_XROOTD up to 2k parallel job running (10th Nov)

- CERN-PROD_EOSDATADISK stable import up to 1GB/s

✓ Nov 18th : ANALY_CERN_XROOTD open to ATLAS users
  - 500 parallel jobs max due to I/O limitations (33 diskservers)

Operations handled by ADC shifters -- as all other ATLAS Sites

- ## PD2P activated

  - Special algorithm: datasets accessed in any ATLAS Grid Site were replicated

    - Far too aggressive

    - Difficult to tune: we moved from "accessed once" to "accessed 2", then 3, now to "accessed at least 5 times but no ESD"

Throughput (MB/s)

November

February

	CERN-PROD_DAQ		CERN-PROD_DET-MUON	
	CERN-PROD_DATADISK		CERN-PROD_DET-TILE	CERN-
	CERN-PROD_DATAPREP		CERN-PROD_EOSDATADISK	CERN-

- ## Storage cleaning
  - – Due to too aggressive PD2P always too close to full
    - • Often subscriptions get broken (older than 15days)
  - – Thresholds for Victor and for blacklisting tuned ad-hoc

Space evolution at CERN-PROD_EOSDATADISK acc. to DQ2

ES
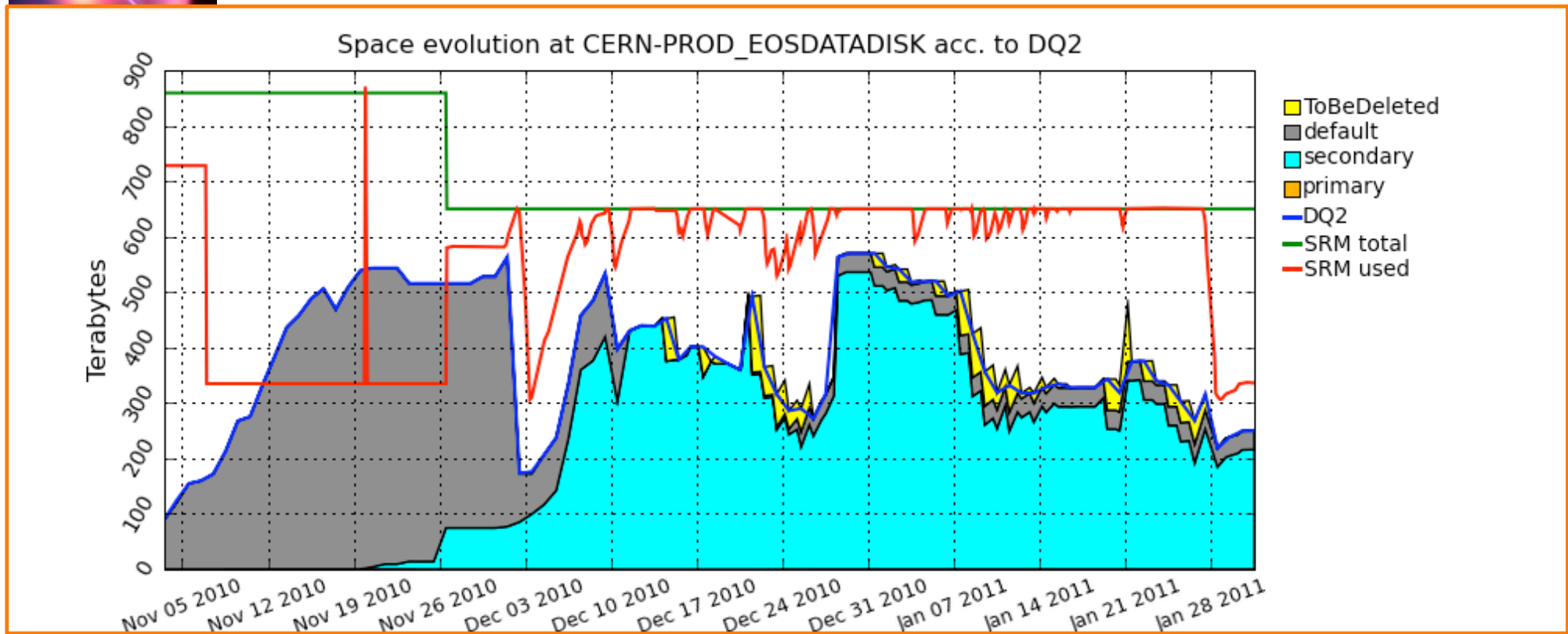
- Coordination
  - Global coordination:
    - ADC Coordinator & CERN-IT/DSS Group Leader
  - "Daily" coordination:
    - one from IT-DSS and one from ADC (IT-ES)

- Meetings:
  - Weekly during Preparation and Tuning phases
  - Wrap-up after each phase completion

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- Large Scale Test on EOS is still ongoing
  - Cap to 500 parallel jobs running now removed
  - Direct access has been successfully tested (functional tests, still to run stress tests)

- LST plan was effective to evaluate up to here the behavior of EOS as an ATLAS Grid Site
  - Can LST 'procedures' be re-used to perform similar test of different storage technologies?
  - .... EOS ....