



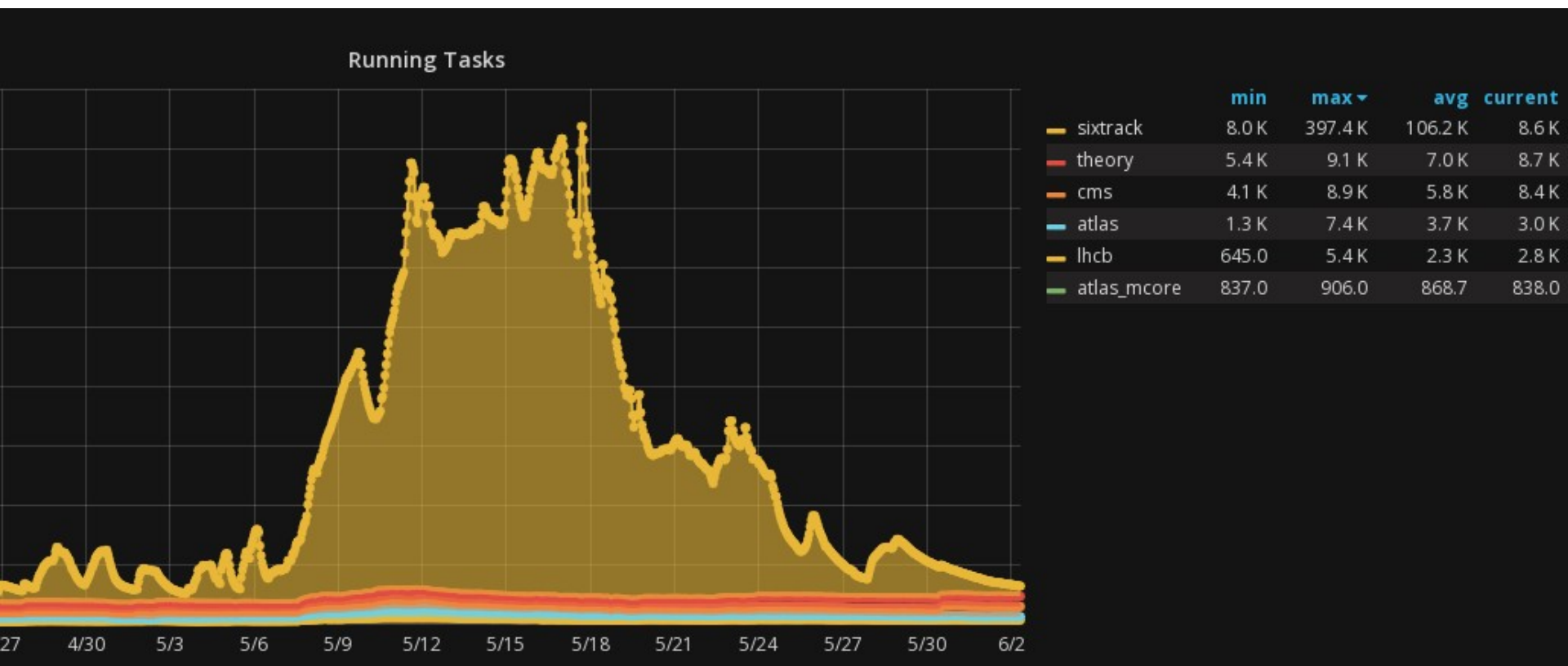
LHC@home during the BOINC Pentathlon

5-19/5 2017

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CERN-IT, on behalf of the LHC@home team

Running tasks on LHC@home, note “Swimming” part of Pentathlon 12-19th of May



LHC@home servers during Pentathlon

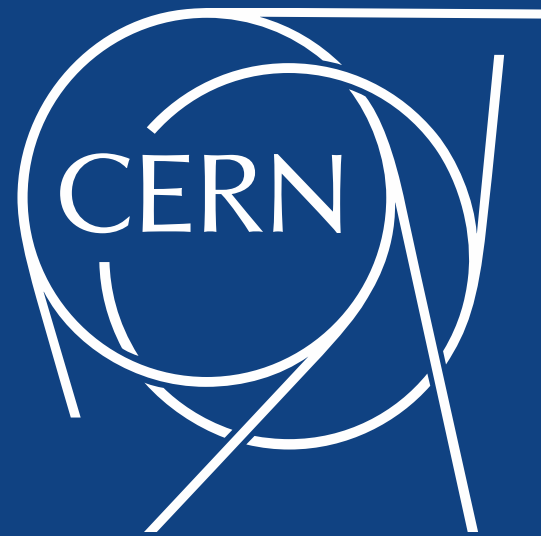
- Web front end (primary boincai06) lightly loaded (0.5-1.5)
- Download/upload server (primary boincai09) only I/O, 0-0.5
- Legacy assimilation and validator server for Sixtrack (boincai08) regular load 6-10
 - Also serving old http-only BOINC clients for Sixtrack
- MySQL database coping with demand
- Scheduler running out of Sixtrack tasks during batches of jobs with very short duration (a couple of seconds CPU and real time)
 - Increased maximum WUs to send and daily results quota
 - Some “baby-sitting” (daemon restart and relaunch of feeder to push out only Sixtrack tasks) done during the Pentathlon
 - The latter leads to volunteers not getting enough tasks of other applications
 - With jobs of average/long duration, no issue

Penthathlon – comments from Patrick

- Team registration: Only vetted BOINC-wide teams are allowed to prevent spam.
 - Local team registration on LHC@home was temporarily allowed during 2 days upon request from Patrick
- Authentication errors: Issue with BOINC client version? (Pre 7.2 clients will have issues with HTTPS on LHC@home)
- Volunteers not getting tasks/scheduler running out of Sixtrack tasks during batches of jobs with very short duration (a couple of seconds CPU and real time)
 - Can we handle these short runs during pre-processing and avoid sending them to volunteers? (As suggested by Igor)

Sixtrack and LHC@home - next steps

- Complete transition to HTCondor for submission
- Optimise duration of tasks, process very short (< 3 min) tasks at CERN to avoid network traffic on volunteer PCs
- Complete transition to multi-host setup, dedicated assimilation/validation server only for Sixtrack
- Review redirection of old clients and legacy http server
- Scheduling of tasks, understand more in detail what kind of improvements can be made and available BOINC scheduler features (and bugs...)



Extra slides

- Current LHC@home server setup
- Please refer to the [LHC@home meeting](#) on the 26th of April for more details.



- **LHC@home** consolidated
 - A single BOINC project with multiple applications
 - Accelerator physics simulations (Sixtrack) as native BOINC app
 - Simulations from ATLAS, CMS, LHCb and Theory running under CernVM and VirtualBox
 - Job management backend integrated with HTCondor – potentially wide range of (low-IO/high CPU) applications

LHC@home server setup

- Server setup now scalable
 - Load-balanced web front end (primary/fail-over)
 - Dedicated file upload/download servers
 - Legacy assimilation and validator server for Sixtrack
 - Also serving old http-only BOINC clients for Sixtrack
- Remote submission from HTCondor
 - Implement for Sixtrack on-going
 - Code fixes from Nikolas are being pushed upstream

References

- <http://cern.ch/lhcat home>
- <http://boinc.berkeley.edu>
- Contact the [BOINC service team](#) at CERN