



# CSCS Tier2 Status LHCb

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nerally smooth running for both clusters (Phoenix and Piz Daint).
Daint has however still slightly higher failure rate for pilots and jobs than penix.

We had a problem with the queue length definitions on Piz Daint which resulted in jobs getting killed. This got solved end of November.

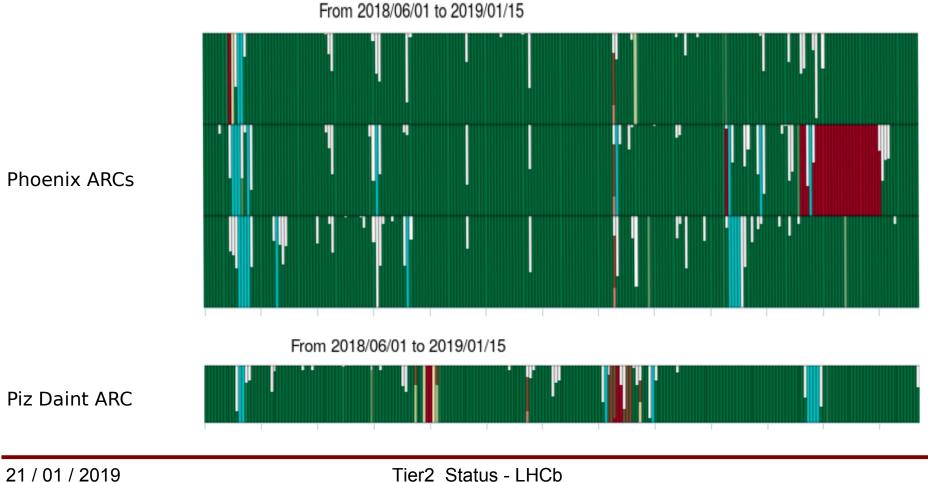
- Tickets: In general I do not see CSCS tickets as I am not involved. Tickets are dealt with centrally. I get only involved, when CSCS and LHCb cannot solve them or something has to be discussed and/or a ticket is not the right channel.
- Monitoring: CSCS monitoring: The new monitoring plots for Phoenix and Piz Daint are a big improvement and are sufficent for LHCb. Unfortunately you need to tunnel through ela to access the plots.

LHCb monitoring: We have split the site CSCS into LCG.CSCS.ch (Phoenix) and LCG.CSCS-HPC.ch (Piz Daint) and have now the same monitoring for both clusters and we can therefore create the same type of plots.





SAM Availabiliy: 01/06/2018 - 15/01/2019

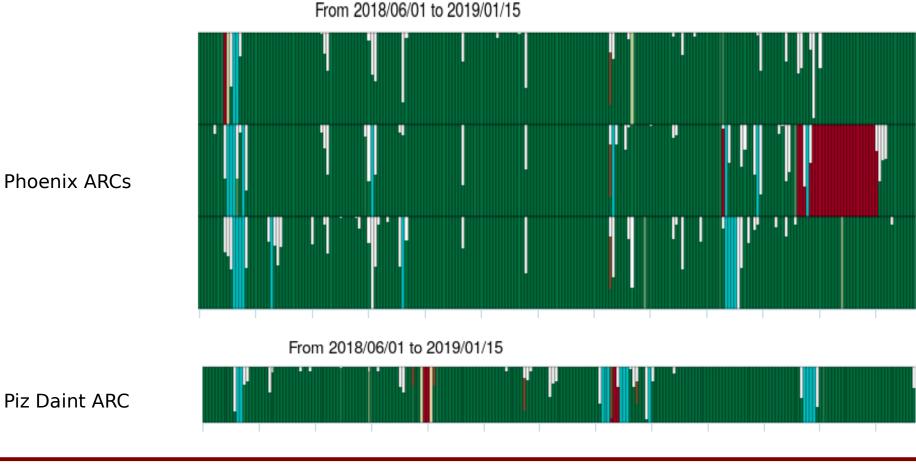






SAM Reliability:

01/06/2018 - 15/01/2019



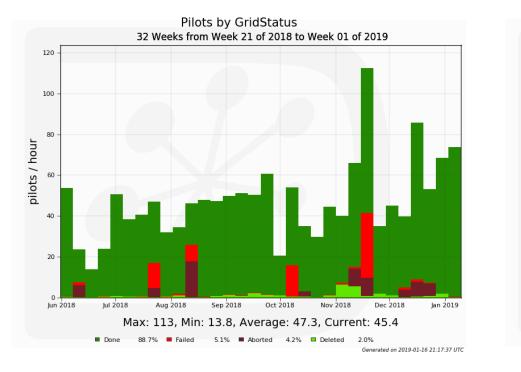


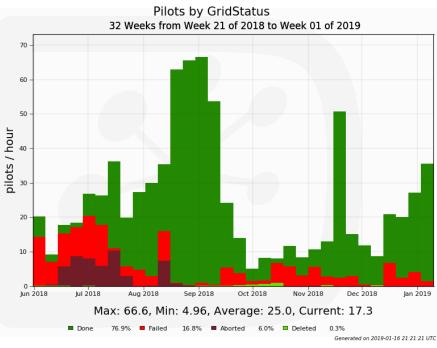


Pilot Efficiency:

#### 01/06/2018 - 15/01/2019

Phoenix





Piz Daint



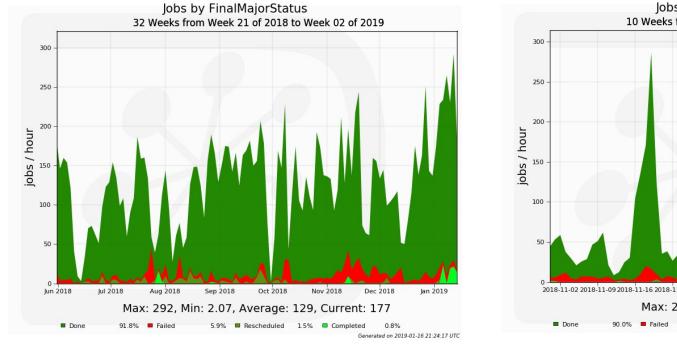


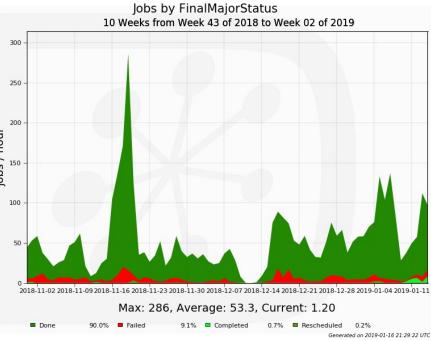
Job Efficiency:

#### 01/06/2018 - 15/01/2019

Phoenix









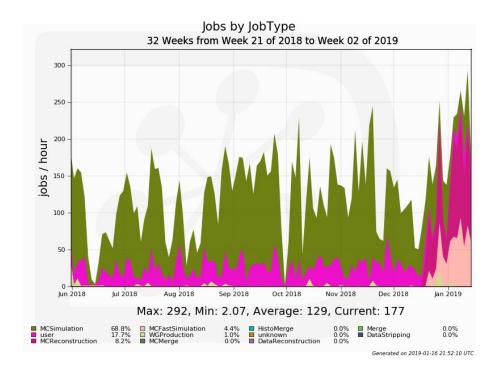


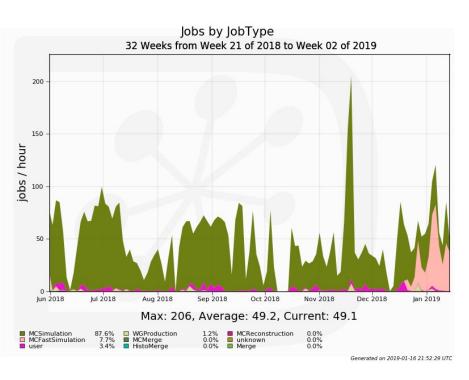
Job Types:

01/06/2018 - 15/01/2019

Phoenix





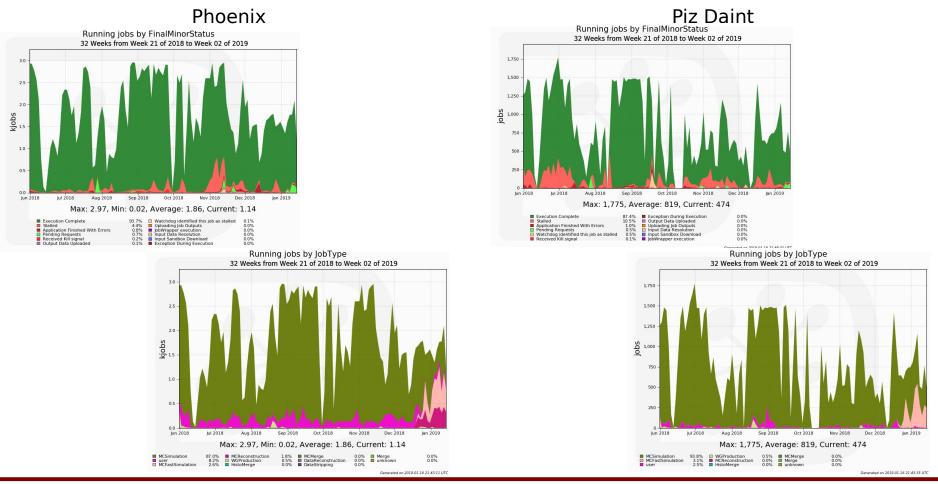






#### Running Job:

01/06/2018 - 15/01/2019



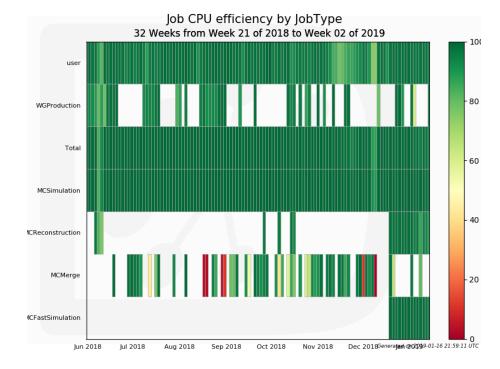


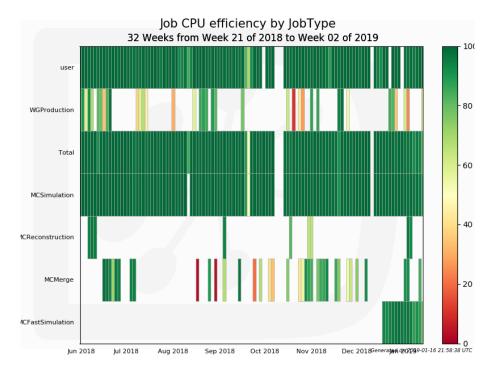


CPU Efficiency:

01/06/2018 - 15/01/2019







Piz Daint



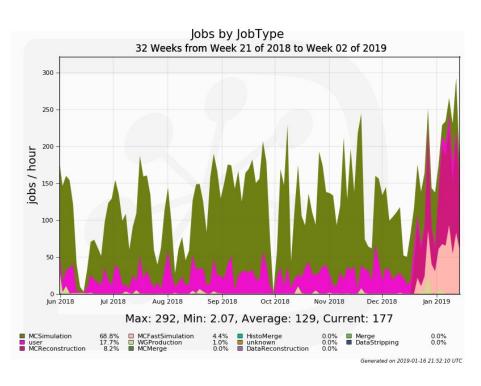


Phoenix Performance:

Jobs by FinalMinorStatus 32 Weeks from Week 21 of 2018 to Week 02 of 2019 300 250 200 jobs / hour 150 100 50 -Jul 2018 Jun 2018 Aug 2018 Sep 2018 Oct 2018 Nov 2018 Dec 2018 Jan 2019 Max: 292, Min: 2.07, Average: 129, Current: 177 Received Kill signal
 Output Data Uploaded
 Watchdog identified this job as stalled
 Input Data Resolution 91.8% 3.2% 1.7% 0.9% 0.9% 0.4% 0.2% 0.2% 0.0% 0.0% Execution Complete
 Application Finished With Errors Stalled Input Sandbox Download Pending Requests
 JobWrapper execution Uploading Job Outputs
 Exception During Execution 0.6% 0.0% Generated on 2019-01-16 21:49:22 UTC

#### Job Statistic on Phoenix

#### Job Types on Phoenix



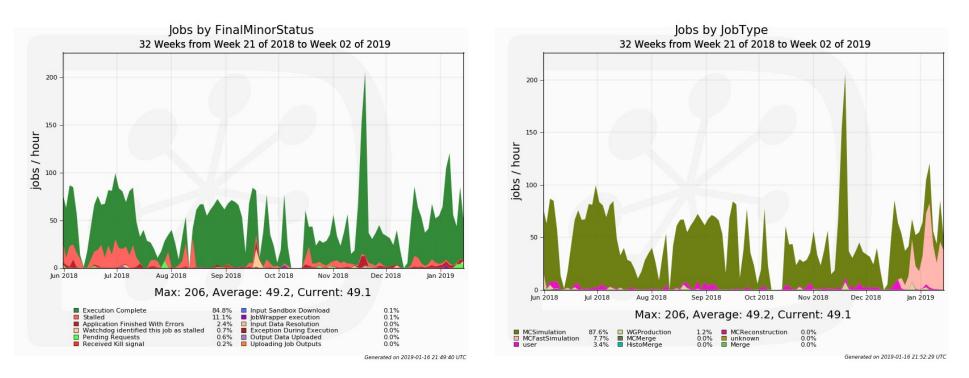




Piz Daint Performance:



Job Types on Piz Daint







# UZH - Tier3 Status LHCb

#### since 01/11/2018 (fix of queue length problem)

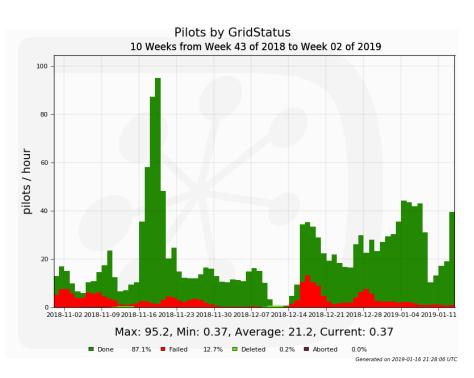




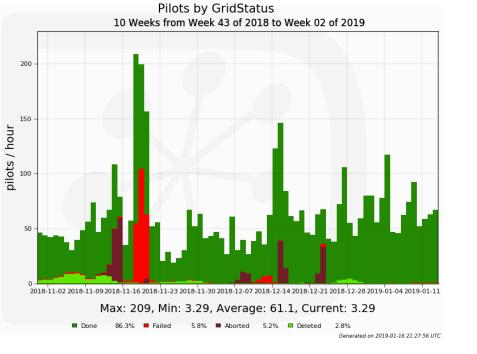
Pilot Efficiency:

#### 01/11/2018 - 15/01/2019

Phoenix



Piz Daint



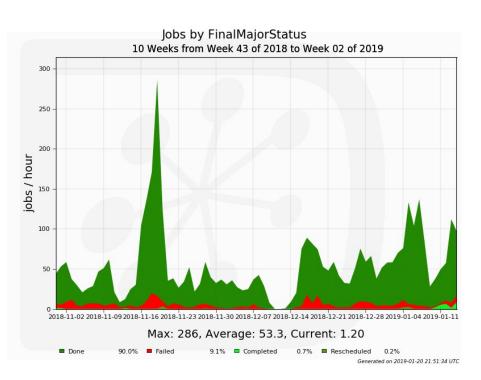




Job Efficiency:

#### 01/11/2018 - 15/01/2019





Piz Daint

Jobs by FinalMajorStatus 10 Weeks from Week 43 of 2018 to Week 02 of 2019 350 300 250 jobs / hour 100 50 0 2018-11-02 2018-11-09 2018-11-16 2018-11-23 2018-11-30 2018-12-07 2018-12-14 2018-12-21 2018-12-28 2019-01-04 2019-01-11 Max: 340, Min: 15.1, Average: 151, Current: 15.1 Done 90.4% 
Failed 7.6% Completed 1.5% Rescheduled 0.5% Generated on 2019-01-16 21:28:59 UTC

21 / 01 / 2019



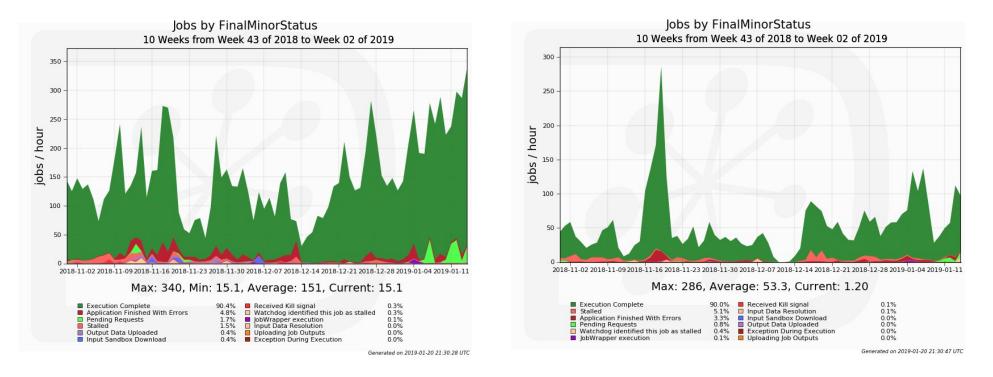


Job Performance:

01/11/2018 - 15/01/2019











#### Conclusions

 We reduced the fraction of stalled jobs on Piz Daint, it is now about of the same level than on Phoenix.

The job failure rate is still a bit higher on Piz Daint.

- Data access on Piz Daint seems to be less efficient than on Phoenix. The job success rate however is similar.
- The changes to the queue length in December do not seem to have a big effect for LHCb jobs running at CSCS. As LHCb started to run new workflows at around same time, it is hard to compare the numbers. As it did not get noticably worse, it seems to work fine for LHCb.

#### Thanks for all the work!





# UZH - Tier3 Status LHCb



# **UZH - Tier3 Cluster**



- Status: LHCb Zürich maintains a local simulation and analysis cluster, which is integrated into the institute Linux cluster. We are not part of WLCG but are part of the LHCb DIRAC framework, which allows us to run LHCb Grid jobs on idle CPUs.
- Hardware: 180 CPU cores (ca. 3000 HS06) - 250 TB disk space
- Development: Recently we started to use the UZH ScienceCloud, an OpenStack multi-purpose compute and storage infrastructure, for our needs. Instead of replacing old hardware in our cluster, we are using CPUs in the ScienceCloud running our own worker node images. This reduces the maintenance burden for us and should overall be cheaper for everybody. Currently around 40% of the CPU power is delivered by the ScienceCloud. We started to migrate the system scratch area to the ScienceCloud.
- Usage:

week 21-28 September 2017: dirac: LHCb LCG jobs others: local user jobs

