

19 July 2024

Report LHCb

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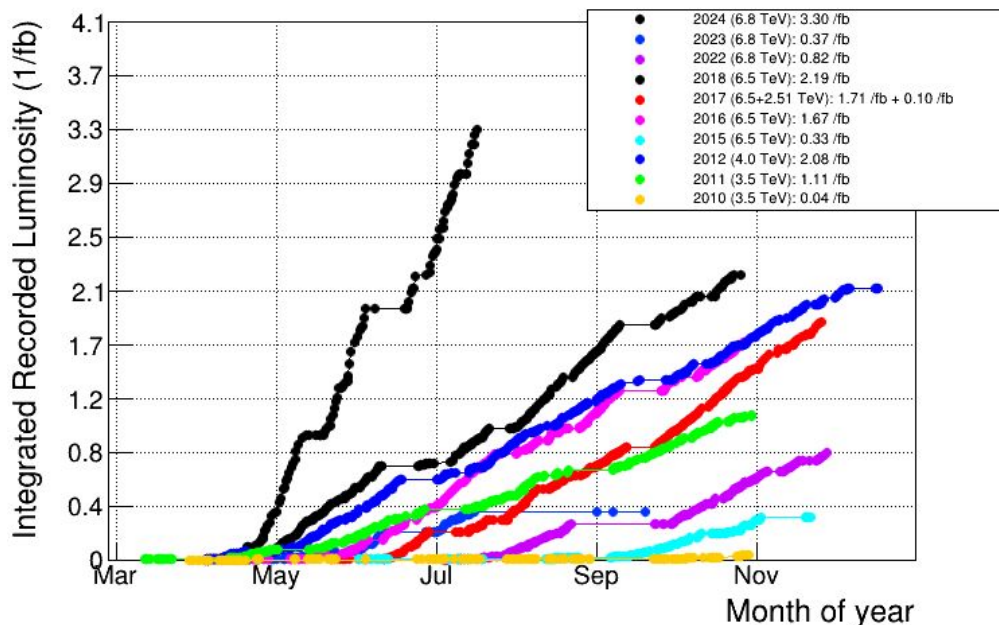
LHCb is taking data in upgrade conditions since May

Real Data are **streamed**
to Tape at CNAF as tested
multiple time during
Tape Challenges

Tape usage LHCb



LHCb Integrated Recorded Luminosity in pp by years 2010-2024



Anticipated data taking

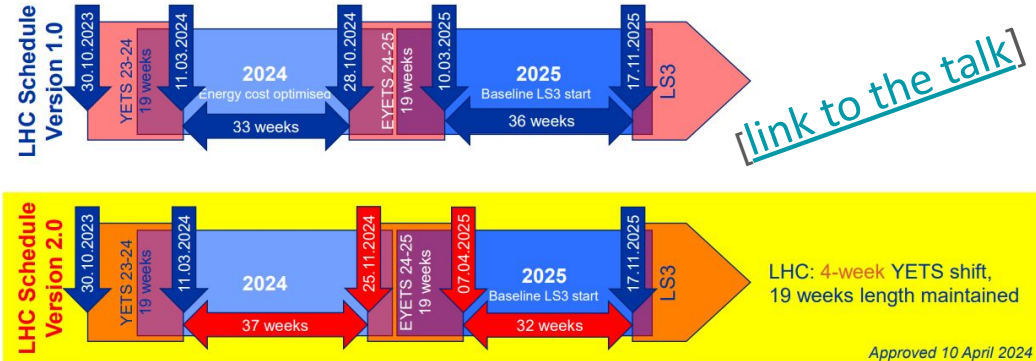
LHC modified is schedule to postpone the technical stop by 4 weeks.

This sets additional strains on 2024 storage resources for all experiments including LHCb.

Recomputing the 2024 requests for the updated schedule LHCb is short of 20 PB of disk (wrt. pledges) and 10 PB of tape (wrt. pledges).

LHCb will probably exceed **tape** pledges at CNAF significantly by the end of 2024.

Changes made to the 2024 and 2025 LHC Schedule



The additional physics time of the 2024 run goes to proton physics
The **integrated luminosity target for 2024** was updated from 90 fb^{-1} to **110 fb^{-1}**



03.06.2024

R. Steerenberg | LHCP - 12th Large Hadron Collider Physics Conference

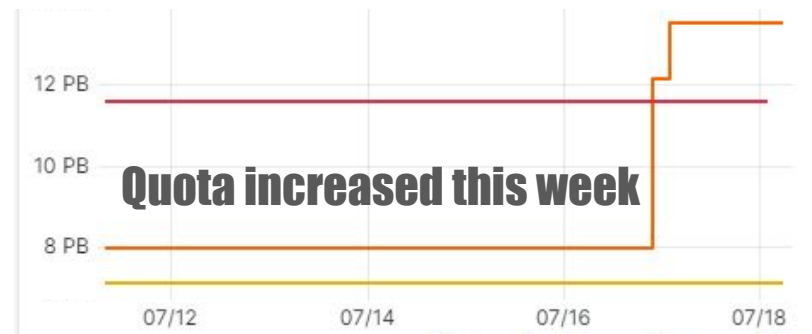
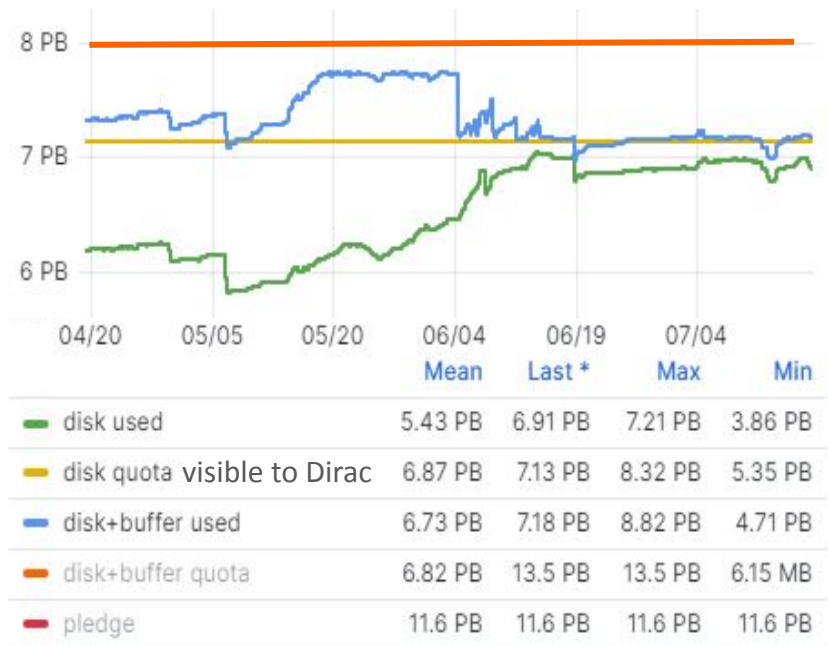
5

Disk pressure

A (too) large amount of disk space is reserved for tape buffer, added to the delays in the provisioning of the pledge, the disk “visible” to DIRAC was half of the pledge.

This has generated some panic in the LHCb operation team.

Thanks to the storage team for their support in this critical step.



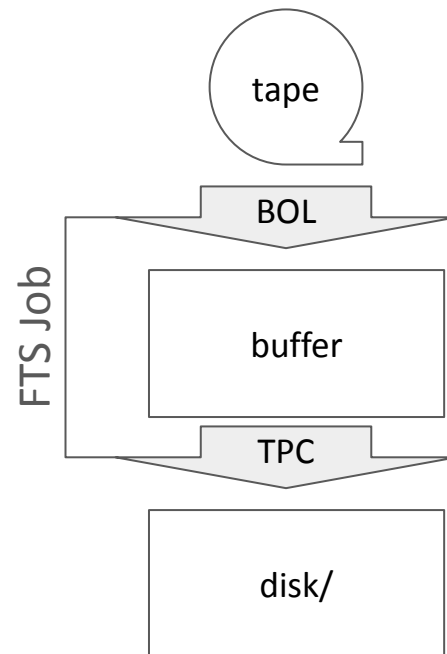
A word on buffer

Dirac (should) never access data directly from tape buffer.

The copy is managed with FTS that (should) limit the number of concurrent transfers.

Once the FTS job is completed, one could remove the file from the buffer.

If the above is correct and the logic could be implemented, the buffer size could be drastically reduced.



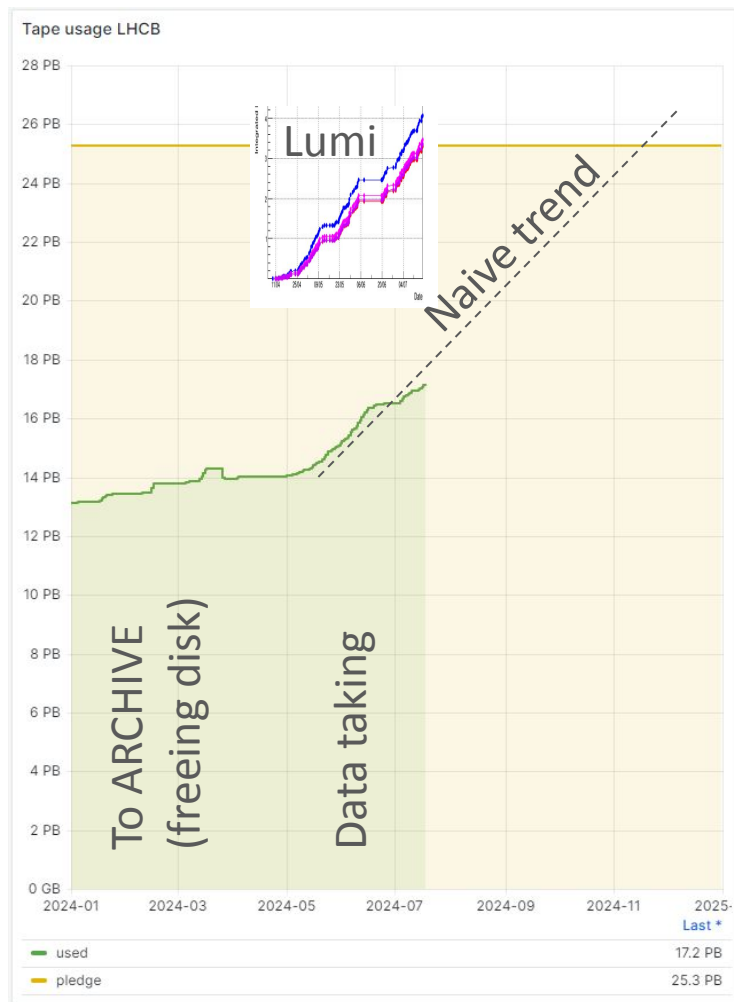
Another disk crisis is expected in November 2024.

It would be good to use the next months to collect data on the buffer usage under different configurations to be ready to minimize it size in November.

Tape

Tape usage scales well with the integrated luminosity.

Extrapolating the increase to November it is likely we will need at least part of the allocated over-pledge.

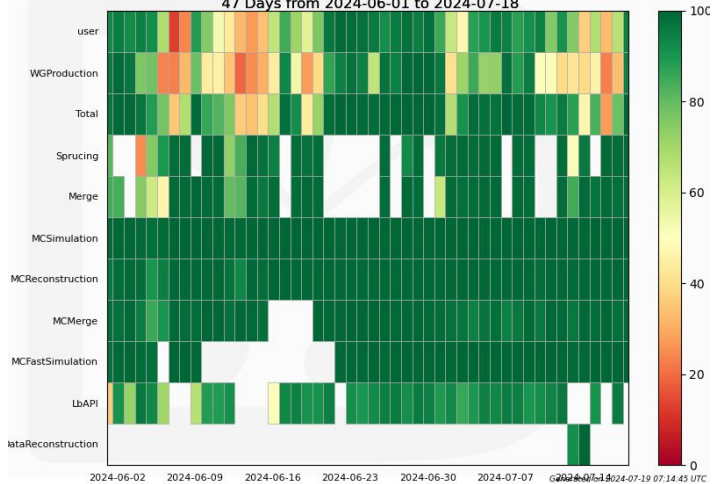


CPU

The use of CPU resources is at **nominal values**

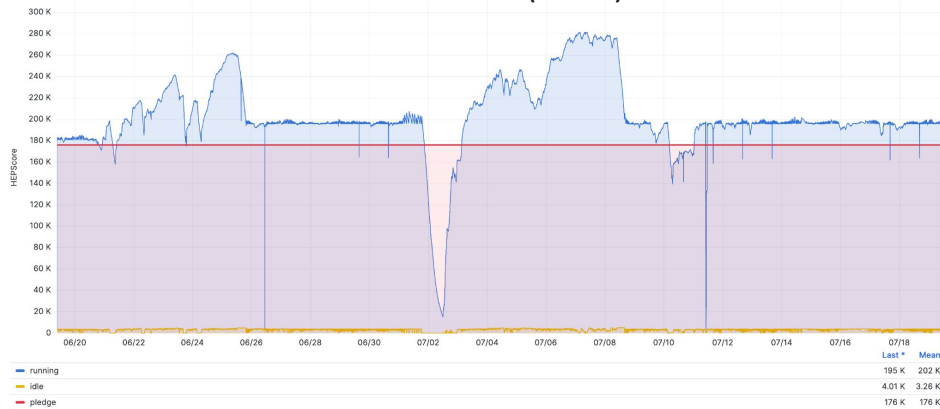
Job CPU efficiency by JobType (CNAF)

47 Days from 2024-06-01 to 2024-07-18



HEPScore usage lhcb

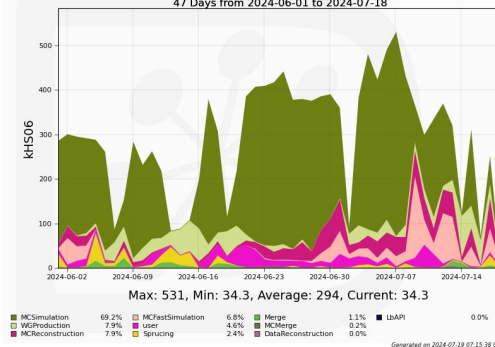
CPU – CNAF (Tier1)



from DIRAC: CNAF (Tier1 + Tier2)

Normalized CPU usage by JobType (CNAF)

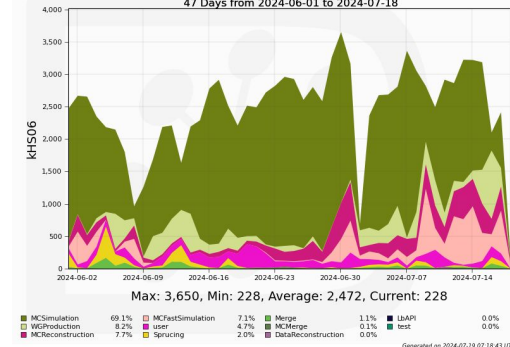
47 Days from 2024-06-01 to 2024-07-18



from DIRAC: all Tier1 sites

Normalized CPU usage by JobType (T1 sites)

47 Days from 2024-06-01 to 2024-07-18



Requests for 2025 (shown already in June)

	Pledge '24	Request '25	Increment
CPU Tier-1 [HepScore23]	113430	173801	+60371
Disk Tier-1 [TB]	11561	20096	+8535
Tape Tier-1 (RRB) [TB]	25261	36483	+11222
Tape Tier-1 (overpledge) [TB]	9068	15432	+6364
CPU Tier-2 [HepScore23]	62595	97014	+34419