21 June 2024

Report LHCb

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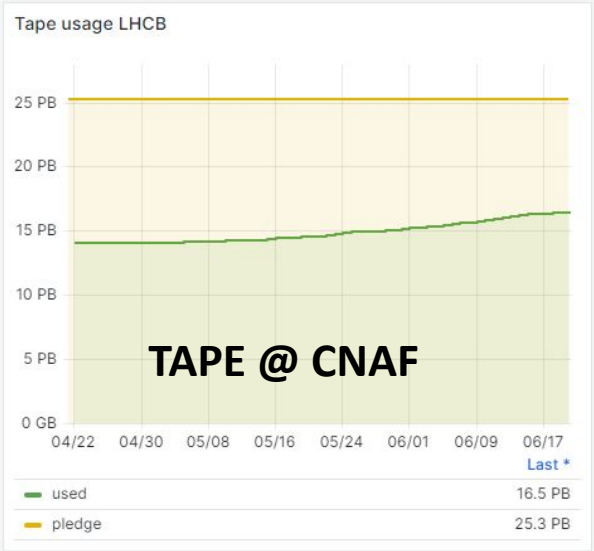
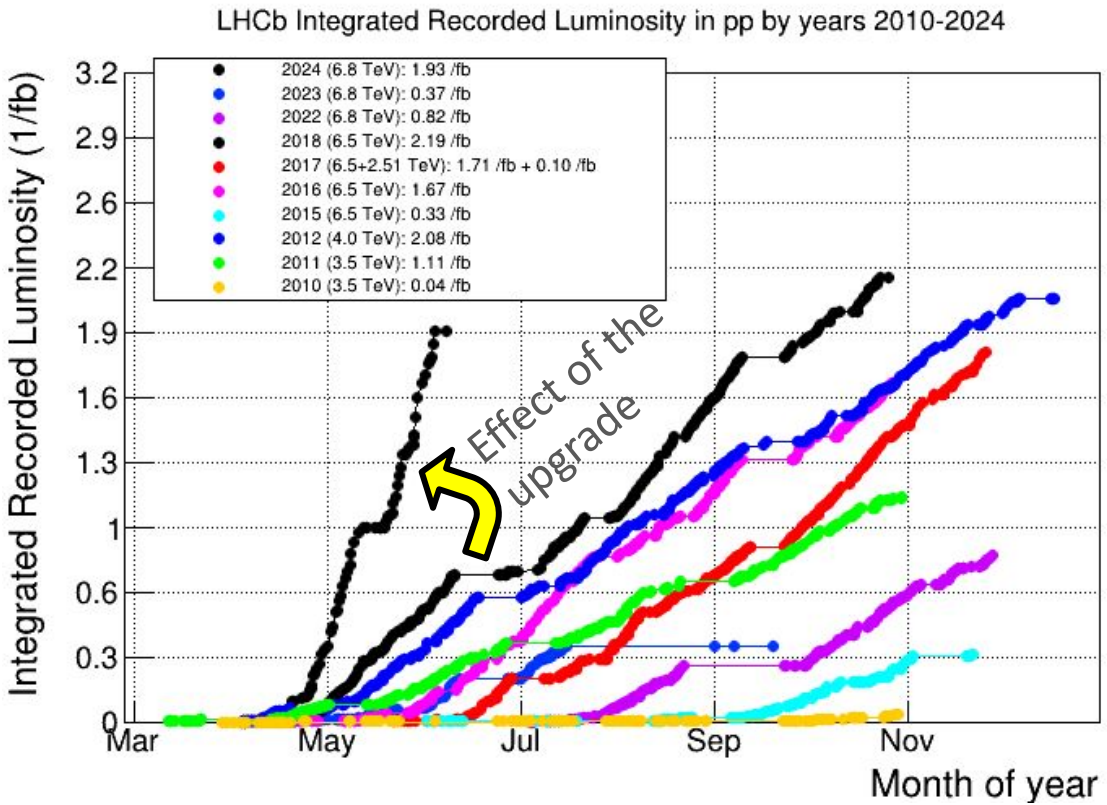
LHCb is taking data in upgrade conditions since May

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

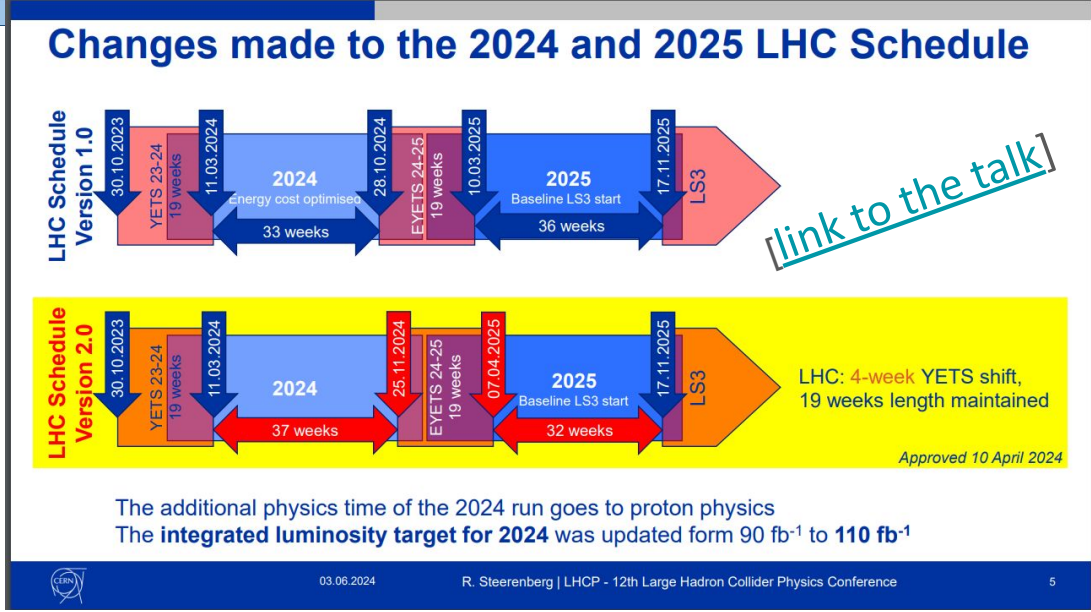




Anticipated data taking

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.

Disk

Despite large disk overpledge from UK, Germany and France, LHCb got 10 PB less than requested.

The additional 4 weeks of datataking, result into an additional 10 PB shortfall. This will put strain on operations.

Operations on disk at CNAF will be critical during the last part of the 2024.

Please take this warning into account when planning CNAF operations for 2024 fall.

LHCb		2023			2024	
		C-RSG recomm.	Pledged	Used	C-RSG recomm.	Pledged
CPU	Tier-0	215	215	258	174	174
	Tier-1	707	598	652	572	542
	Tier-2	391	434	492	319	394
	HLT	50	50	0	50	0
	Total	**1363**	**1297**	**1402**	**1115**	**1110**
	Others			26		
Disk	Tier-0	30.3	30.3	23.4	30.6	30.6
	Tier-1	60.5	54.7	35.2	61.2	53.0
	Tier-2	11.6	7.9	3.6	11.8	9.4
	Total	**102.4**	**92.9**	**62.2**	**103.6**	**93.0**
Tape	Tier-0	91.0	91.0	37.8	117.1	117.0
	Tier-1	157.0	133.7	55.8	133.3	125.0
	Total	**248.0**	**224.7**	**93.6**	**250.4**	**242.0**

Disk

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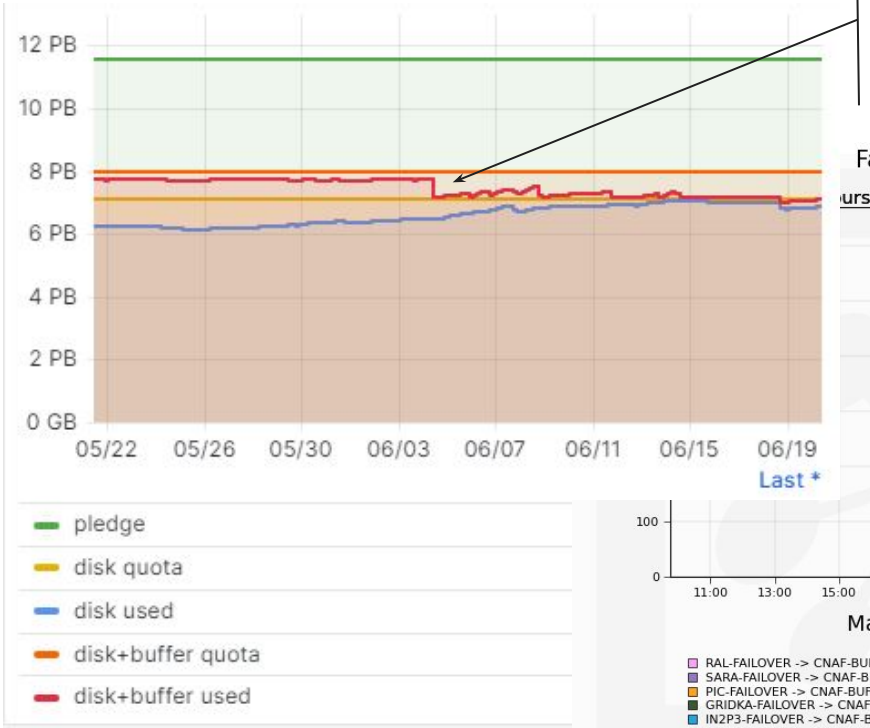
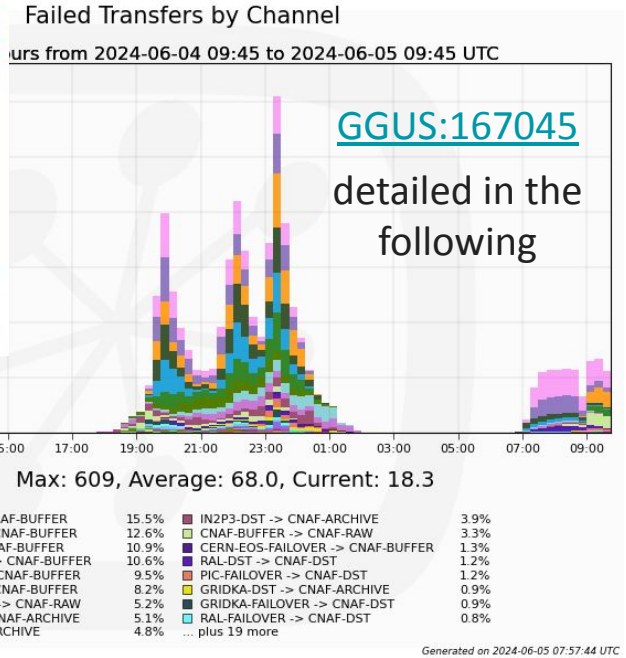
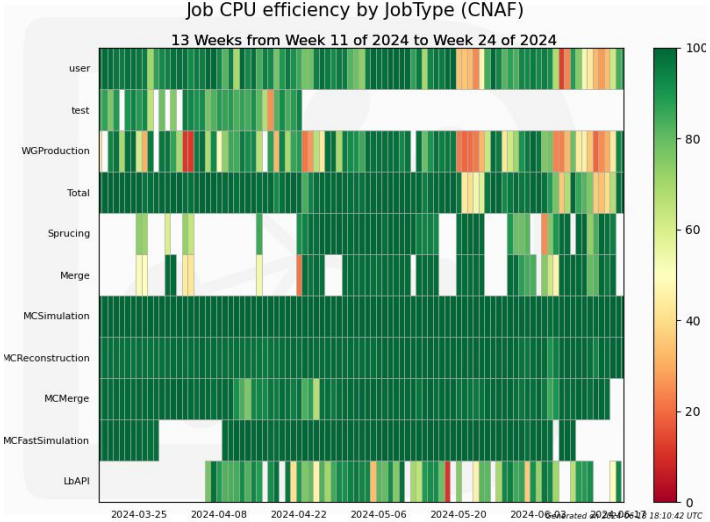


FTS Failures for exhausted disk quota?

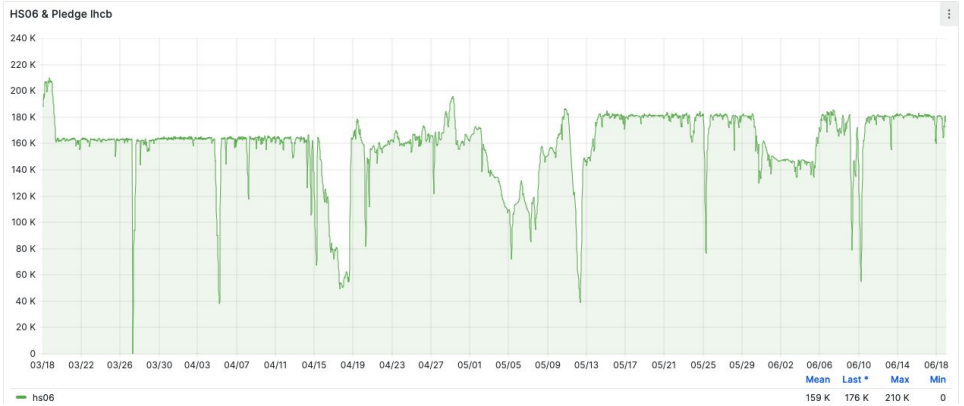


CPU

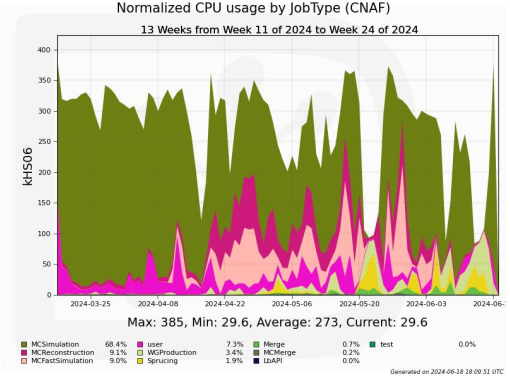
The use of CPU resources is at **nominal values**



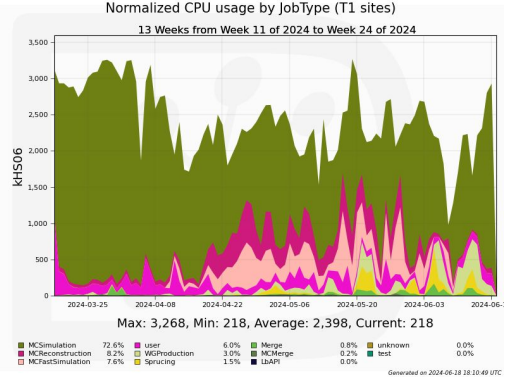
CPU – **CNAF** (Tier1)



from DIRAC: **CNAF** (Tier1 + Tier2)



from DIRAC: **all** Tier1 sites



Requests for 2025

The official exclusion of Russian collaborators, increased the %FTE of INFN.

New Beijing and Warsaw T1s reduced the pressure on Tape, but still missing tape at T1s is the major risk (from computing operations): **LHCb will request to INFN an overpledge**.

	Pledge '24	Request '25	Increment
CPU Tier-1 [HepScore24]	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 [HepScore24]	62595	97014	+34419

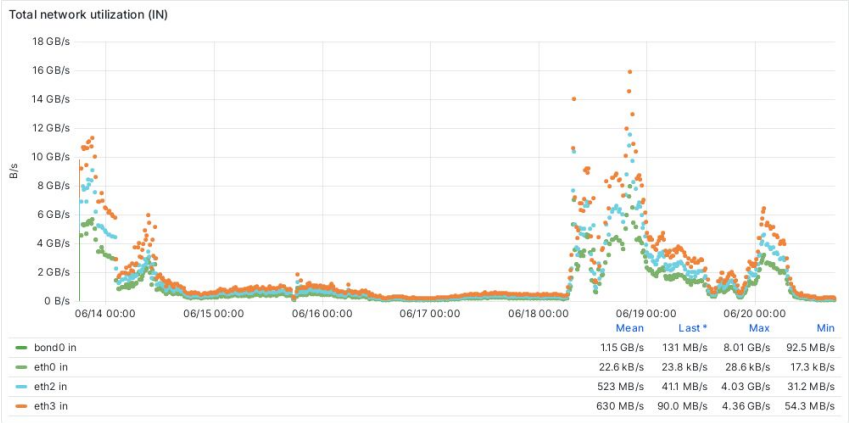
Data transfer problem

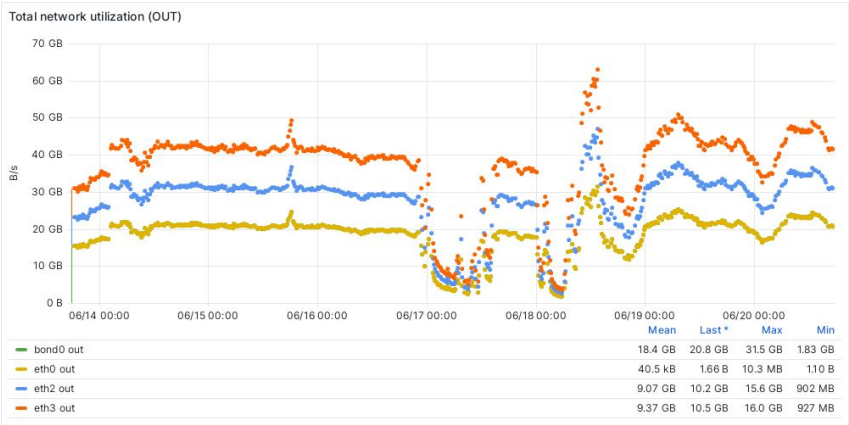
FTS transfers continue to fail (GGUS:167045) due to the **high rate of both POSIX and WebDAV accesses** → StoRM WebDAV endpoints (which are also NSD GPFS servers) overloaded

The endpoints overload slows down WebDAV that **saturates the provided threads** → FTS transfers fail

Remedial actions taken:

- **enlarged the StoRM WebDAV queue of requests**, decreased the number of actual running threads → more requests accepted before failing
- **new server machines in preparation** to split the POSIX and WebDAV traffic → need to move the monitoring to AlmaLinux 9

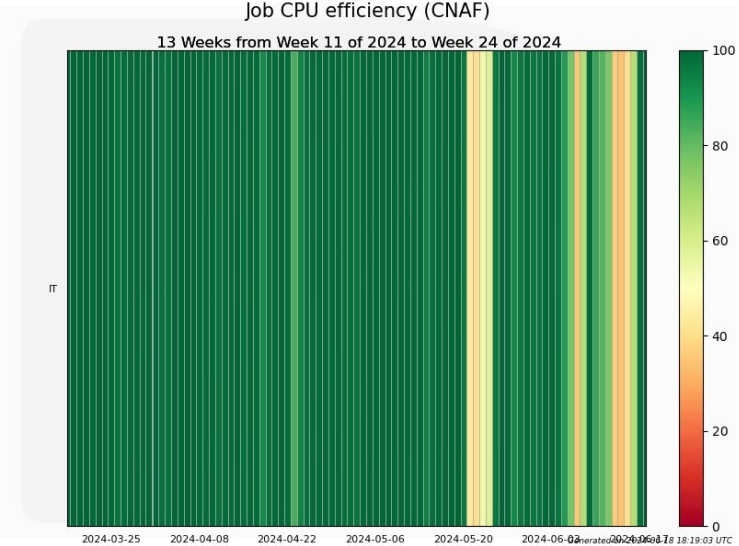


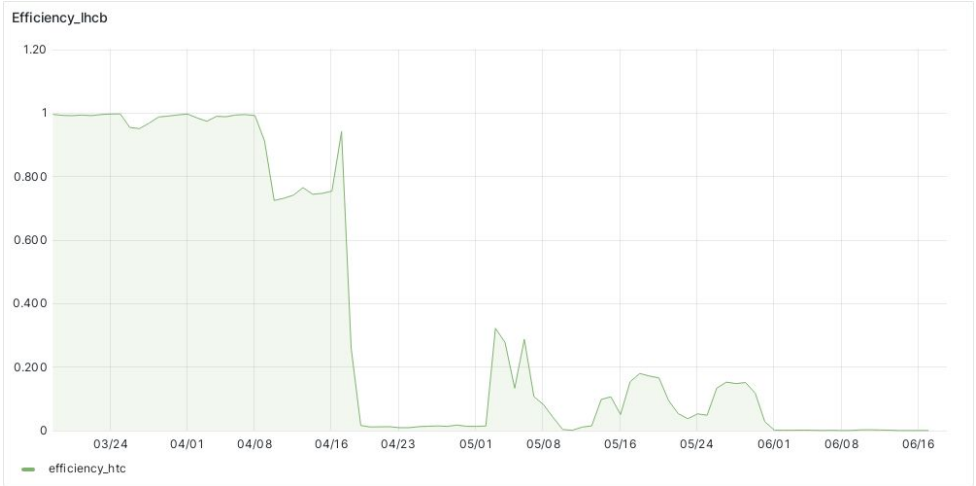


Monitored efficiency inconsistency

With the migration to HTCondor 23, the monitoring of the efficiency as measured by DIRAC and Tier1@CNAF is **inconsistent**.

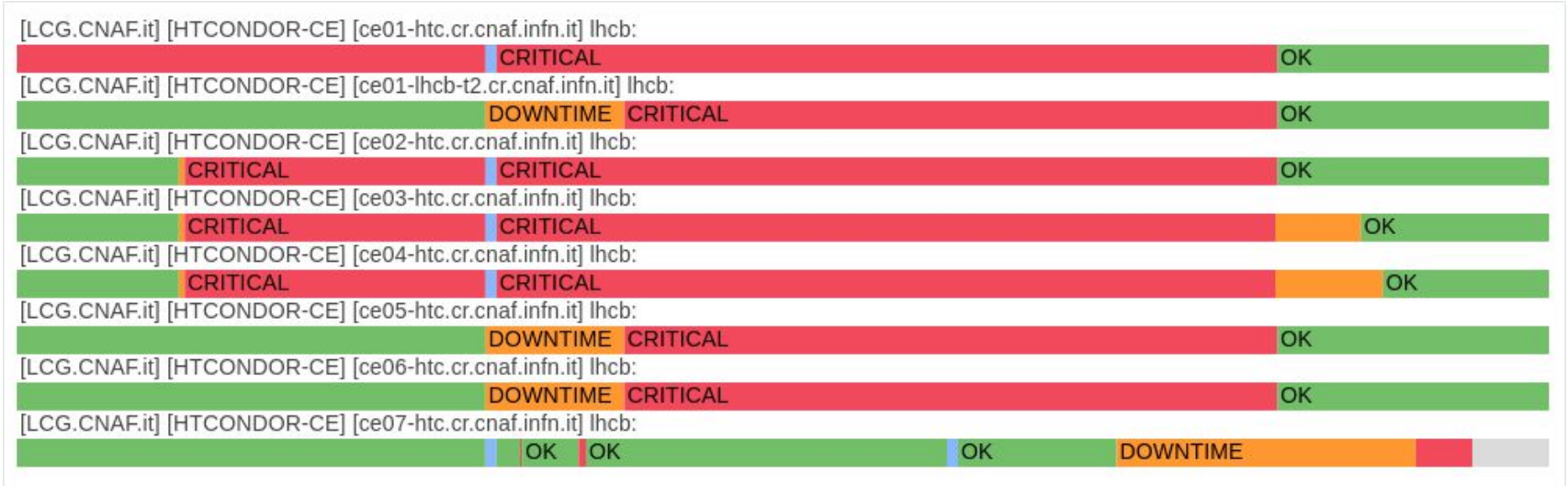
Some HTCondor users have reported a weird behavior of `RemoteUserCPU`: **it is often zero**, preventing a meaningful measure of the efficiency.





ETF tests return to work

- HTCondor 23 stops to support GSI proxy authentication in favor to SSL
- LHCb ETF tests only available with proxy via GSI → HTC23-based CEs fail all tests
- LHCb now provides ETF tests also with **tokens** (thanks to Alexander Rogovskiy)



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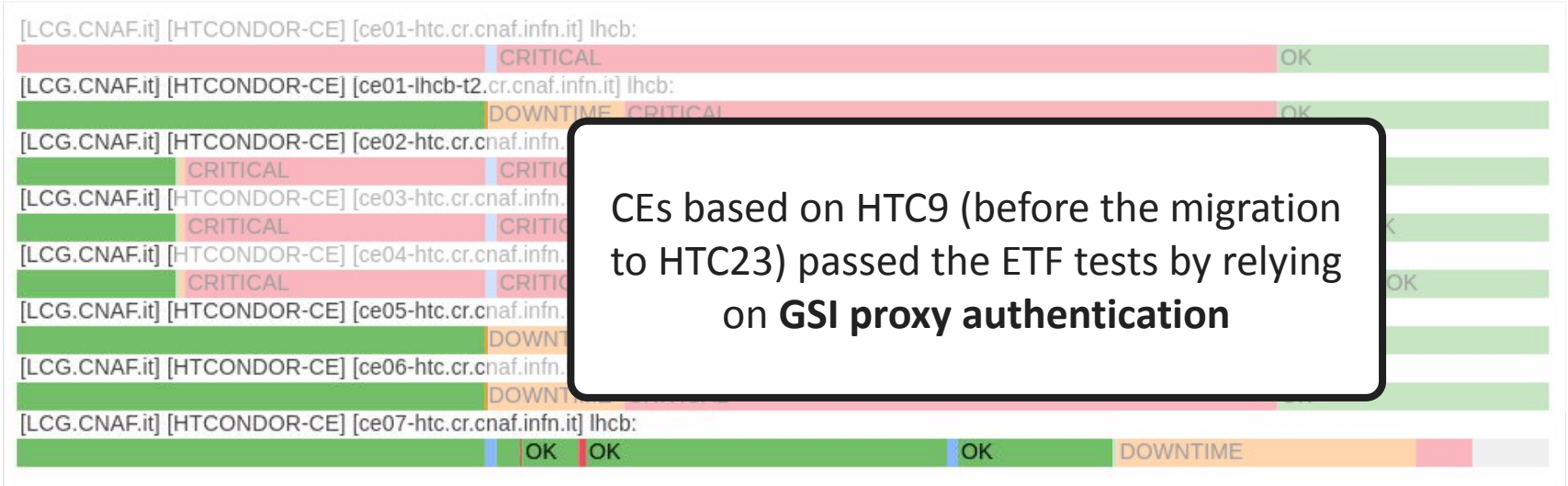

CEs based on HTC9 (before the migration to HTC23) passed the ETF tests by relying on **GSI proxy authentication**

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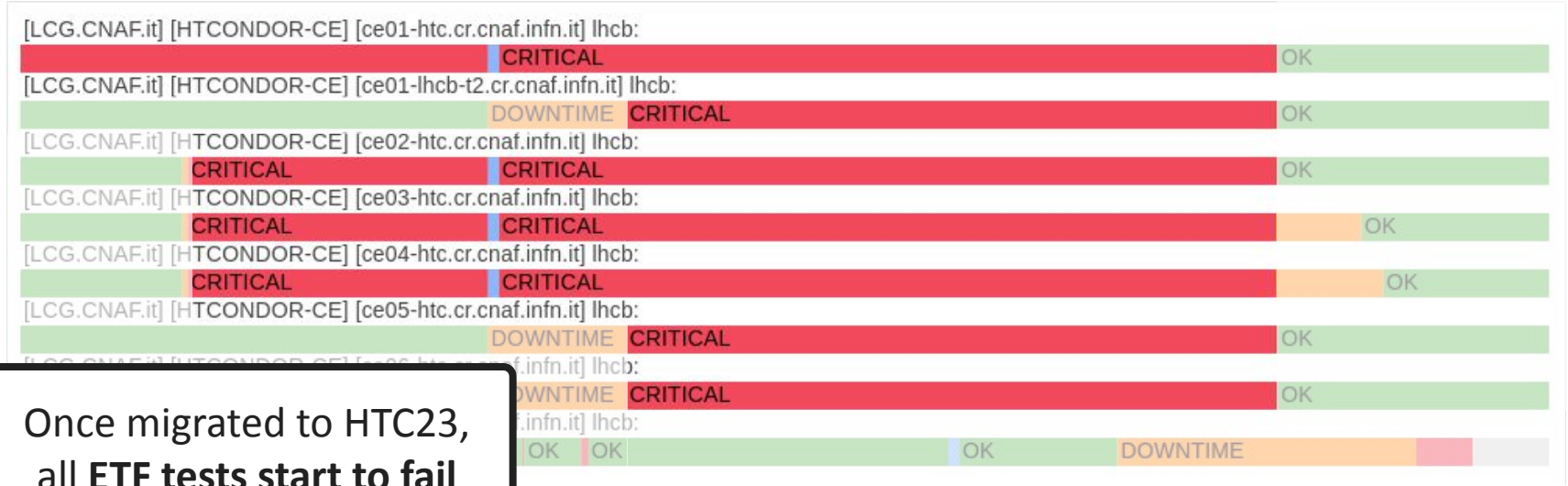

Once migrated to HTC23, all **ETF tests start to fail**

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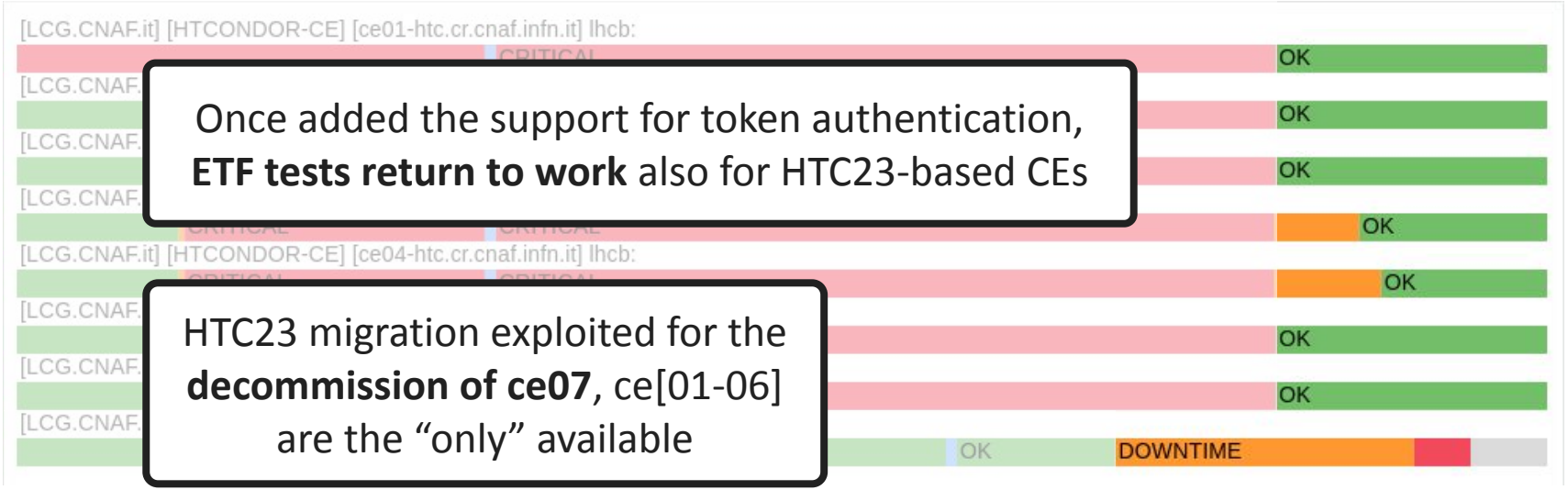

Other known problems

[GGUS:164032]

- Problem with **getting a macaroon token from resource path** with `role=user` (users with read-only permissions)
- Everything works with `role=production` (users with write permissions), but this happens by **accident** (Jira:STOR-1602)
- By design, StoRM allows to get a token only from the `/oauth/token` endpoint

[GGUS:165048]

- Token-based FTS transfers do not work at CNAF → no token-based transfers performed during DC24
- WebDAV does not support full path scopes that are the ones used by LHCb
- Open discussion in the WLCG Doma AuthZ WP: common-jwt-profile#45
- Alternative solution proposed by Christophe Haen (discussion link)