Karlsruhe Institute of Technology

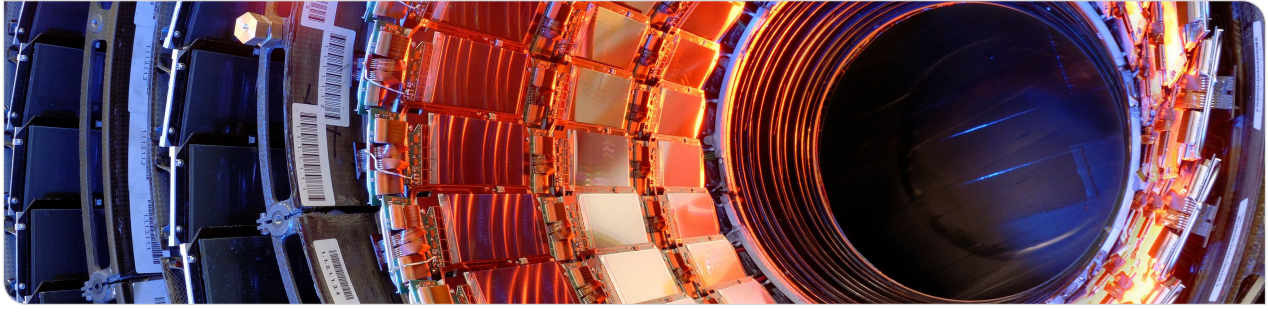
Institute of Experimental Particle Physics

CMS Germany

BMBF FSP-CMS

KIT dCMS Report

KIT dCMS Computing Team | January 12, 2023

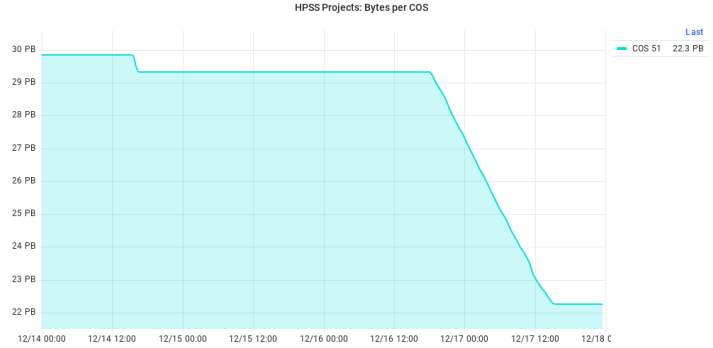


Storing User-Produced Samples centrally at CMS

- After **more than half a year** of discussion and development communication, finally a working procedure in place to put user-produced datasets into rucio-managed space
- If a group (e.g. Tau POG) needs this, the following steps need to be accomplished:
  - Create a CRIC (`group:pog_tau`) & rucio account (`pog_tau_group`)
  - Ensure that it is linked with a CERN e-group (`cms-embedding-pog-tau`) with people involved
  - Set quota for this group at a site (requires communication with site admins)
  - Setup datasets schemes (naming, blocks, `USER` datatier, file paths) that comply CMS conventions
  - Provide a list of (remote) file paths to the files per dataset, where they are currently stored
  - Let CMS O&C admins register the dataset in rucio. Done in case of Tau Embedding:
    `rucio list-dids --filter 'type=CONTAINER' group.pog_tau_group:*`
  - Files will copied to `/store/group/rucio/<rucio-group-account-name>` as defined by rucio rules:
    `rucio list-rules --account pog_tau_group`
  - After that, datasets can be replicated to other sites and/or tape storage
- Steps left to be done for Tau Embedding datasets:
  - Publish datasets in DBS under `prod/phys03` first, then let elevate to `prod/global`
    → Can be done with a self-written script for `prod/phys03`. KIT is working on that.
  - Replicate these datasets to `T1_DE_KIT_Tape` for long-term preservation

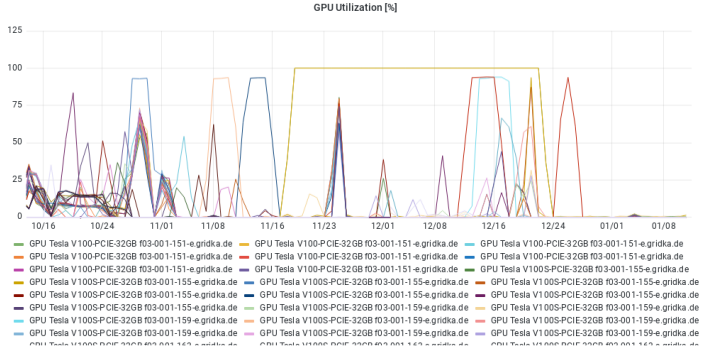
News on Storage at KIT

- Extension of dCMS User Storage at KIT on the way (750 TB). Currently hardware is benchmarked.
- At the end of 2022, we deployed a bulk deletion procedure for our new HPSS tape system → removed 7.5 PB of data



CMS GPU Usage at KIT

- CMS deployed this year our GPU's into central CMS scheduling
  → It is possible to send production and analysis (e.g. with CRAB) to our GPU resources
- CMS tested HLT workflows on our GPU's
- We observed increasing utilization of some of our GPU's beyond local user activities



New & Useful HappyFace4 Modules

- Timeseries on data pending on a storage element based on Rucio rules. Example Link
  → Many thanks to Daniel, who developed the first version of this module!
- Details on FTS transfer errors from CMS. Example Link
- Summary on finished Jobs at KIT, including details on errors. Link

Conclusion

Very useful for investigating problems from CMS at our site!