WP2 DR CTA report
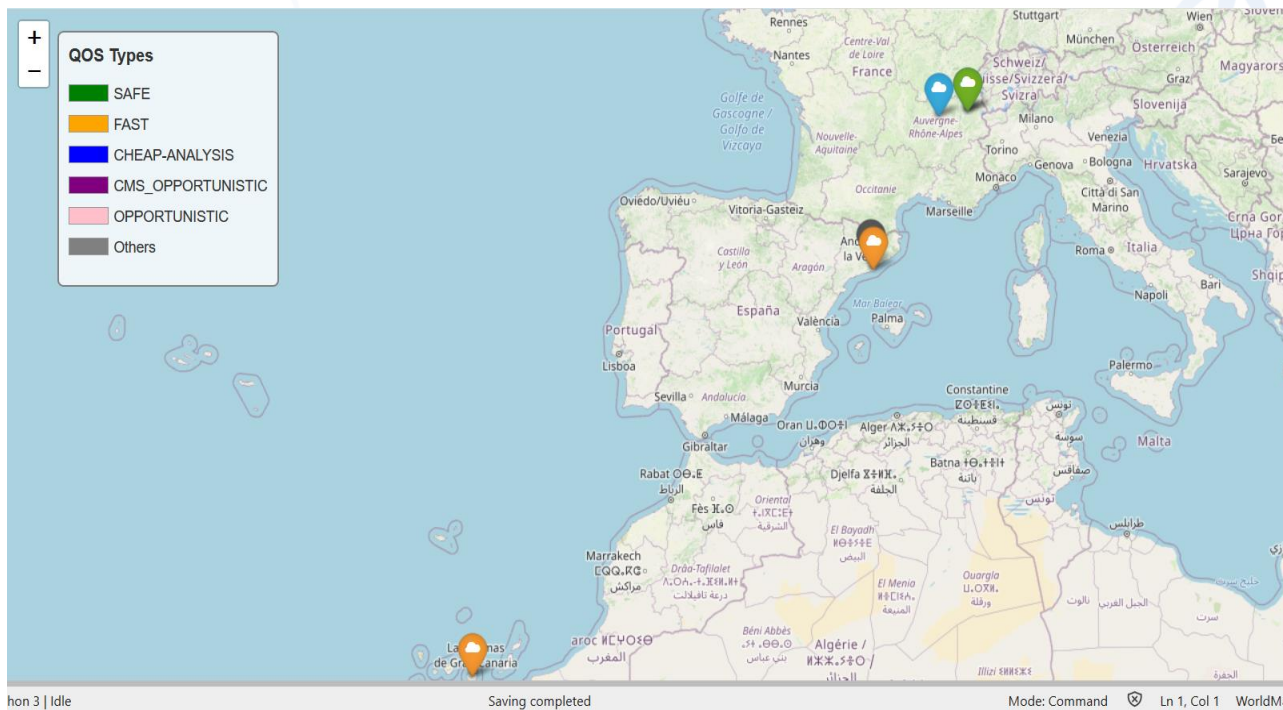
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Lapp/CNRS

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CTA Ingest use case

- Simulation of ingest for ~ 1 night of data from one site (5,5TB / 500 000 files)

Implementation of Ingest use case

- https://gitlab.in2p3.fr/CTA-LAPP/cta-rucio-cmd
  - Using a singularity image based on the docker image stored on in2p3 registry:
    - docker://gitlab-registry.in2p3.fr/cta-lapp/cta-rucio-cmd:latest
  - List of parameters used during the DR:
    - Nb of files per dataset (5-2000)
    - Nb of dataset (10-200)
    - Size of files (1MB – 2GB)
    - Upload rse (LAPP-WEBDAV, CC-IN2P3-DCACHE, ALAPAMED-DPM)
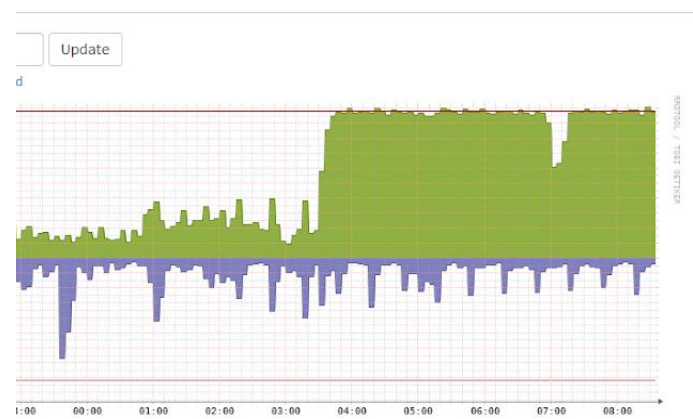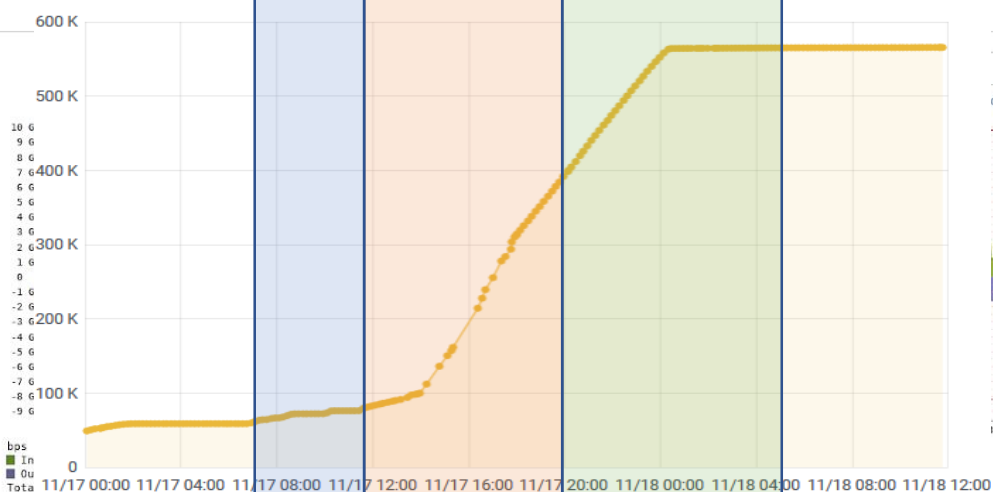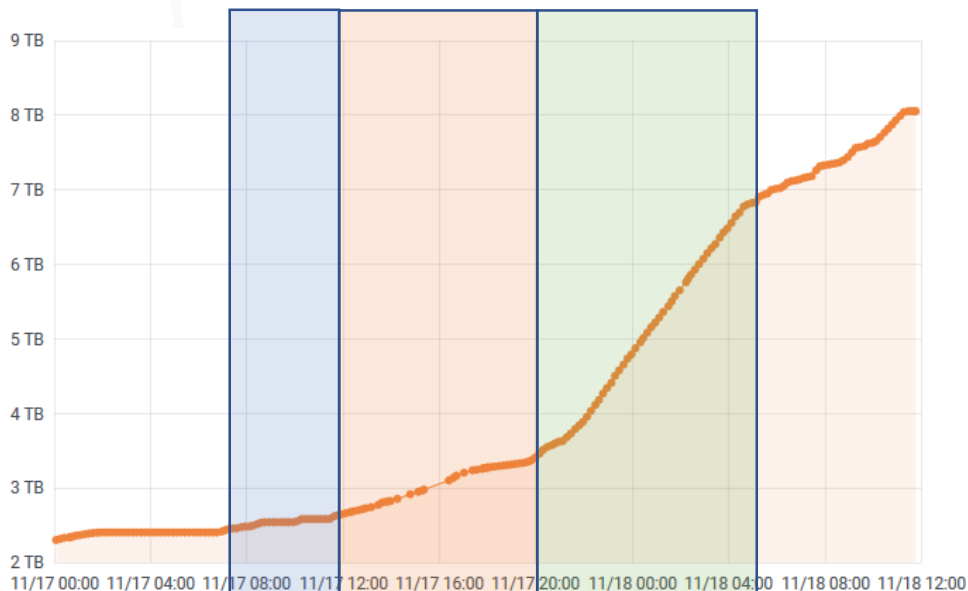
Upload

Phase 1 : 7h30 -> 10h

Upload is very slow probably because Lapp Bandwidth is saturated because of ATLAS traffic

Phase 2 : 11h ->20h

Using CC-IN2P3-DCACHE instead of lapp's machines to perform the upload with file 1-10 MB

Phase 3 : 20h -> 04 (d+1)

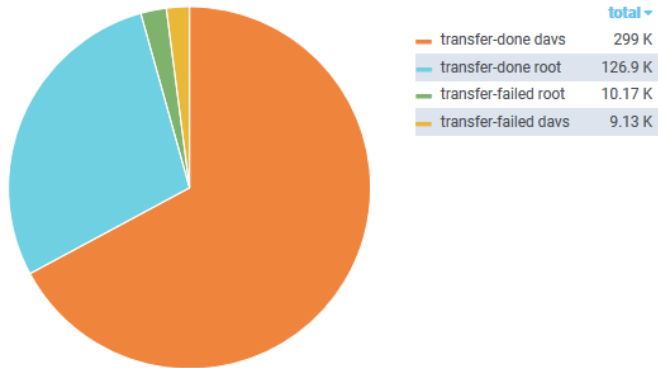upload 20*2 GB files (similar to CTA use case)

Issues 1/2

- Htcondor was not ready yet to support singularity container.
  - can not use Worker node from lapp
  - run script manually (shared machine with poor performances)
- check for replication in the script
  - too long, so removed
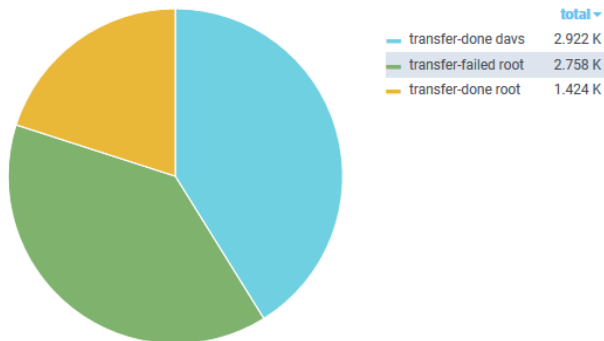- Bash script -> will change to python (Berkay)

Issues 2/2

🟡 Some replications errors during test:

	total ▾
— transfer-done davs	299 K
— transfer-done root	126.9 K
— transfer-failed root	10.17 K
— transfer-failed davs	9.13 K

Server responded with an error: [3012] io.netty.util.internal.OutOfDirectMemoryError
Copy failed with mode streamed, with error: HTTP 500 : Unexpected server error: 500
Server responded with an error: [3012] Failed to open file (No write pools online for

🟡 Rerun tests for investigation

	total ▾
— transfer-done davs	2.922 K
— transfer-failed root	2.758 K
— transfer-done root	1.424 K

Summary

- Overall happy with the upload ☺

- Investigate replication issues (but not reproduced yet)

- Internal improvment in lapp:
  - Running in htCondor : Done
  - Rewrite script in python : In progress (Berkay)

- Ready for bigger scale data challenge
  - 20 GB bandwith (was 10 GB)
  - 15 workers node available (was 3)

Back up slide

Potential Road Map

- Phase 1 : Test if the DataLake interface can implement the CTA's archive interface:
  - Targeted date : end Q2 2020
  - Ingest : Done
  - manage metadata to file : Blocked with current version of RUCIO
  - Replication policy : Done
  - OpenID authentication: Not yet tested
  - Retrieve files : Done

- Phase 2 : use the DataLake 's interface in batch job to pull and push files using a Singularity container
  - Targeted date : end Q4 2020
  - Data challenge : Use storage resources from LAPP, CC-IN2P3, PIC
  - Archive jobs are executed on MUST ressources using htcondor as job manager
  - Interface

- Phase 3 : use Dirac with the DataLake interface (RUCIO/DIRAC integration)
  - Targeted date : end Q1 2021
  - Using the DIRAC instance from the CC-IN2P3

- Phase 4 : use CTA partners infrastructures
  - Targeted date : end Q2 2021
  - Setup a datalake end point in La Palma for the ingest operation
  - Execution of CTA pipe