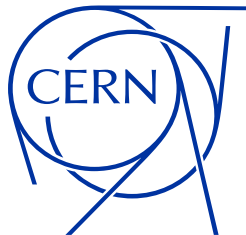# Rucio DC24 Retrospective

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for the Rucio Team

Summary

- The communities using Rucio reported overall success!

    - Rucio proved to be able to scale and meet the demands of the Data Challenge

    - Increasing the number of component instances and/or threads is a manual endeavour

- Focus on the areas of improvement

    - The injection method is somewhat artificial and exasperated some of the observed issues (e.g. short replication rule lifetime)

Transfer Submission to FTS

- Following an FTS outage, ATLAS reported poor submission performance
  - The top of the queue was dominated by transfer requests of expired replication rules
  - Contention between Rucio daemons
- Tracked in issue #6505
  - ATLAS applied a primitive patch directly on production

Handling of Expired Replication Rules

- ATLAS reported inability to delete expired replication rules on large datasets in their early stages of replication

    - In one case, more than 24 hours

    - Contention between Rucio daemons

- No significant effect on overall performance

- Tracked in issue #6511

Deletion Overlap on Slower Sites

- CMS reported poor deletion performance at some sites
  - Underlying issue is the rate of deletion at the sites themselves
  - But a design in Rucio does not handle this well, leading to multiple threads working on the same files
  - This hinders performance even further
- Affected dataset reuse and storage occupancy
- Tracked in issue #6512

Tokens (1)

- Both the Rucio and FTS consider their current implementations a 'technology preview'

    - Insufficient time for thorough testing prior to the Data Challenge

    - Too many choices, too many open questions

    - Lacking guidance from a person or body that oversees the token effort across all projects and can offer concrete advice on the development

- Despite this, and the fact that it was a secondary goal, it was without a doubt a success!

Tokens (2)

Transfer Successes

certificate
oauth2
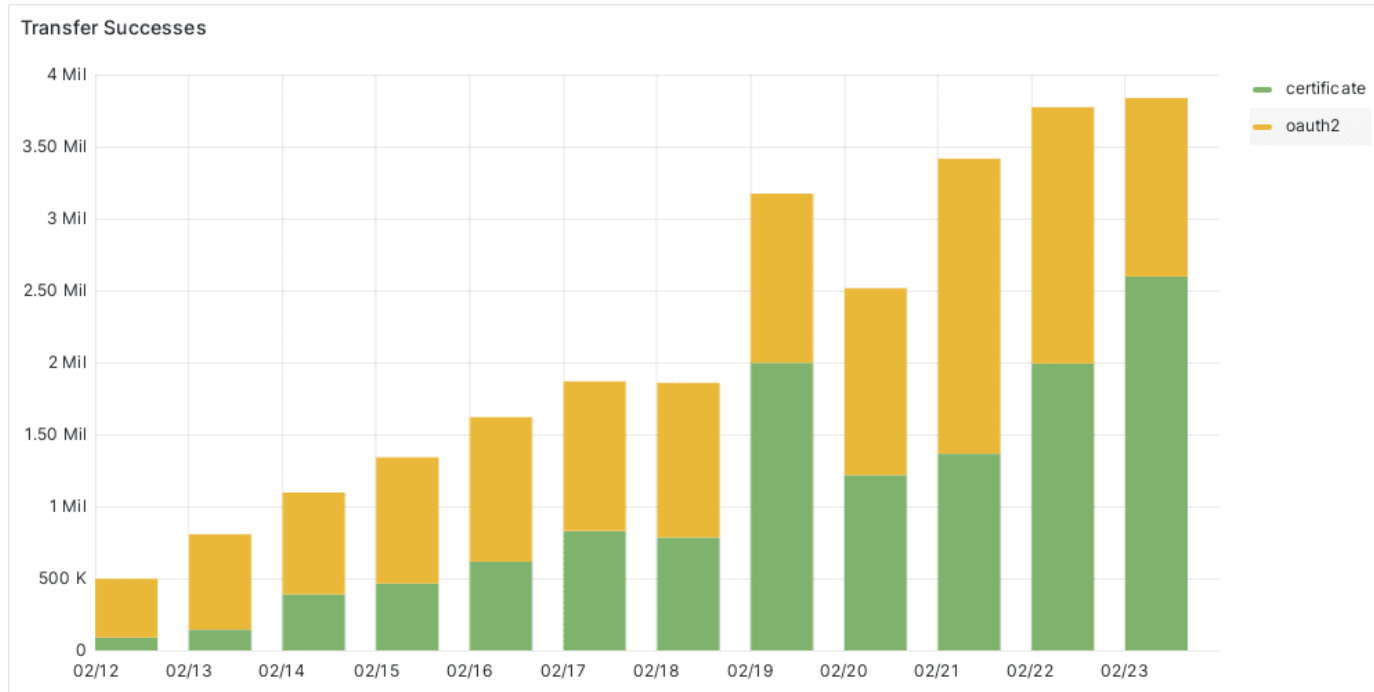
Use of tokens over certificates (ATLAS & CMS, 'Data Challenge' activity). [Source]

Tokens (3)

- Under the agreed model, did not observe any issues with IAM

    - It would be useful to invest in some monitoring

- RSE-wide *storage.modify* tokens are a cause for concern

    - Acceptable only for the short term

    - Token leaks happened already; they will happen again

    - Reattempt the file-specific destination token test

    - Attempt a hybrid model with RSE-wide *storage.create* on first attempts, then file-specific *storage.modify* on retries

Questions?