Scaling transfers for HL-LHC, DC24 plan

March, 2023

DOMA General meeting

Match 29th, 16:00 CERN time

https://indico.cern.ch/event/1258343/

Introduction to the project

This project has the objective of giving Rucio capabilities to request network services via SENSE in order to: *a) improve accountability, b) Increase predictability* and *c) isolate and prioritize transfer requests*

More info here: https://arxiv.org/abs/2209.13714

Objective for DC24

To participate in DC24 by introducing artificial network traffic using our current testbed

We would like to get T2-T2 traffic accounted since the main traffic will be flowing from UCSD to Caltech

Note: We will NOT be scale testing any Production infrastructure, just contributing with artificial traffic

Testbed components

- Rucio: we run our own instance
- FTS: CMS FTS-pilot
- Sites:
  - UCSD: fully decoupled from Prod
  - Caltech: fully decoupled from Prod
  - FNAL: fully decoupled
  - Nebraska: ?
  - SPRACE: ?
- Monitoring: provided via FTS
  - Need to agree on a flag to easily differentiate our transfers e.g. activity, RSE names

Features of the transfers

Sites	Likelihood of participation	Transfer rate	Network path
Caltech/UCSD	Very likely	400Gbps	Dedicated (CENIC)
FNAL-Nebraska	likely	100Gbps	Shared w/Prod(ESnet)
SPRACE/CERN*	maybe	?	Shared (FIU-AmLight/ESnet)

(*) Currently there is not commitment from CERN but we would like them to participate in our testbed.

Timeline

Most of our tests are decoupled from production infrastructure so there is no need to synchronize

Tests from FNAL and Nebraska share the network with production workflows, so for these tests we DO need to synchronize.

We plan to run a significant test: "mini challenge" by the end of summer/early fall where all the sites in our testbed are going to be exercised