HTTP Update

WLCG DOMA / TPC
Derek Weitzel, 15 August 2018

Reminder:
Big-picture Goals

- Between now and January 1, would like to get the "full matrix" of connectivity.

  - Working with "standalone Xrootd" (Xrootd+HDFS, Xrootd+Lustre), DPM, and dCache.

  - **Need input: StoRM and ECHO**.

- Land patches as needed.

- Perform scale tests (work not started).

Goals for 15 August

- Focus on compatibility, not scalability: FTS-based fixes for broken DPM and dCache links. ✅

- Add another SE type to matrix (StoRM or EOS). ✅

- Start setup of Rucio instance for continuous transfer. ❌

- Move a second PhEDEx link to use HTTPS for TPC. ❌

Test Endpoints

- Using these for testing:

  - **DPM**: CERN DPM test instance. Added Glasgow endpoint (**thanks Sam**!).

  - **dCache**: DESY test instance, Imperial.

    - Did not make progress on adding AGLT2 to the testing (sorry Shawn!).

  - **Standalone Xrootd**: Florida, Nebraska

  - **EOS**: CERN EOS PPS (**thanks Xavi**!).

- Exact endpoint names updated in twiki page.

  - Anyone have friends who run Echo or Storm?

Connectivity Matrix

- Results of transferring files via fts3-devel.cern.ch and hcc-briantest7.unl.edu (when testing gfal2 / fts3 patches).

- Much better than last report as we put some simple FTS-side patches in place to tweak credential management.

- EOS does not implement COPY command (breaking EOS->EOS transfers) and does not implement token-based auth (breaking Xrd<->EOS).

  - Unclear why EOS<->dCache is broken. Needs debugging — potential dCache bug.

  - Picture will get better when EOS rolls out XrdHttp support.

To

From \ To	Xrd	dCache	DPM	EOS
Xrd	Working	Working	Working	Broken
dCache	Working	Working	Working	Broken
DPM	Working	Working	Working	Working
EOS	Broken	Broken	Working	Broken

Legend:
- Working (green)
- Broken (red)
- Untested (yellow)

Known Issues

- DAVIX:

  - Incorrect handling of checksums in response: https://its.cern.ch/jira/browse/DMC-1063. **In progress**.

- gfal2:

  - Fallback to GridSite delegation if requested by storage: https://its.cern.ch/jira/browse/DMC-1069. **Patch available**.

  - Remove file after transfer attempt: https://its.cern.ch/jira/browse/DMC-1068. **Patch available.**

- DPM:

  - Do not require GridSite delegation if there's a valid bearer token for remote site. https://its.cern.ch/jira/browse/LCGDM-2452. **Workaround** by explicitly setting delegation style (GFAL PR #13).

- dCache:

  - Macaroon does not work with COPY unless its path points to parent directory. dCache RT#9468. **Workaround in FTS3 PR #18**.

  - Does not recognize "davs" as a valid scheme. dCache RT#9473.

- Xrootd:

  - XrdHTTP does not support checksums. **Fix merged** for 4.9.0 release.

  - XrdHTTP support for TPC & Macaroons currently in standalone plugin. **Fix merged** for 4.9.0 release.

- EOS: XrdHttp support still in progress.

Building a Testing Infrastructure

- Working with the Rucio team to setup a dedicated test instance:

  - Started discussion — Nebraska team needs to learn more about k8s before rollout.

  - Maybe next meeting?

Thinking Forward - Production

- Our single HTTP-based PhEDEx link (UCSD -> Nebraska) remains.

  - Working with Florida to change over Florida->Nebraska. **Not done yet.**

- Plan to work with Rucio (AGIS?) team to similarly incorporate this into an ATLAS instance. **Effort not started.**

29 August Goals

- All FTS3 patches rolled out to fts3-devel.cern.ch

- "10 TB test" in FTS — beginning of scale testing.

- 4 PhEDEx links upgraded.