DAV support in DPM

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IT/SDC

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Overview

- Current release
  - New headers
  - 3rd party copies
- News on performance
- Next release

Current release

- Current stable release is 0.13.0
  - Released the 28th of October
  - Available in EPEL 5 and 6
- What's new?
  - Want-Digest header support
  - X-Auth-Ip header support
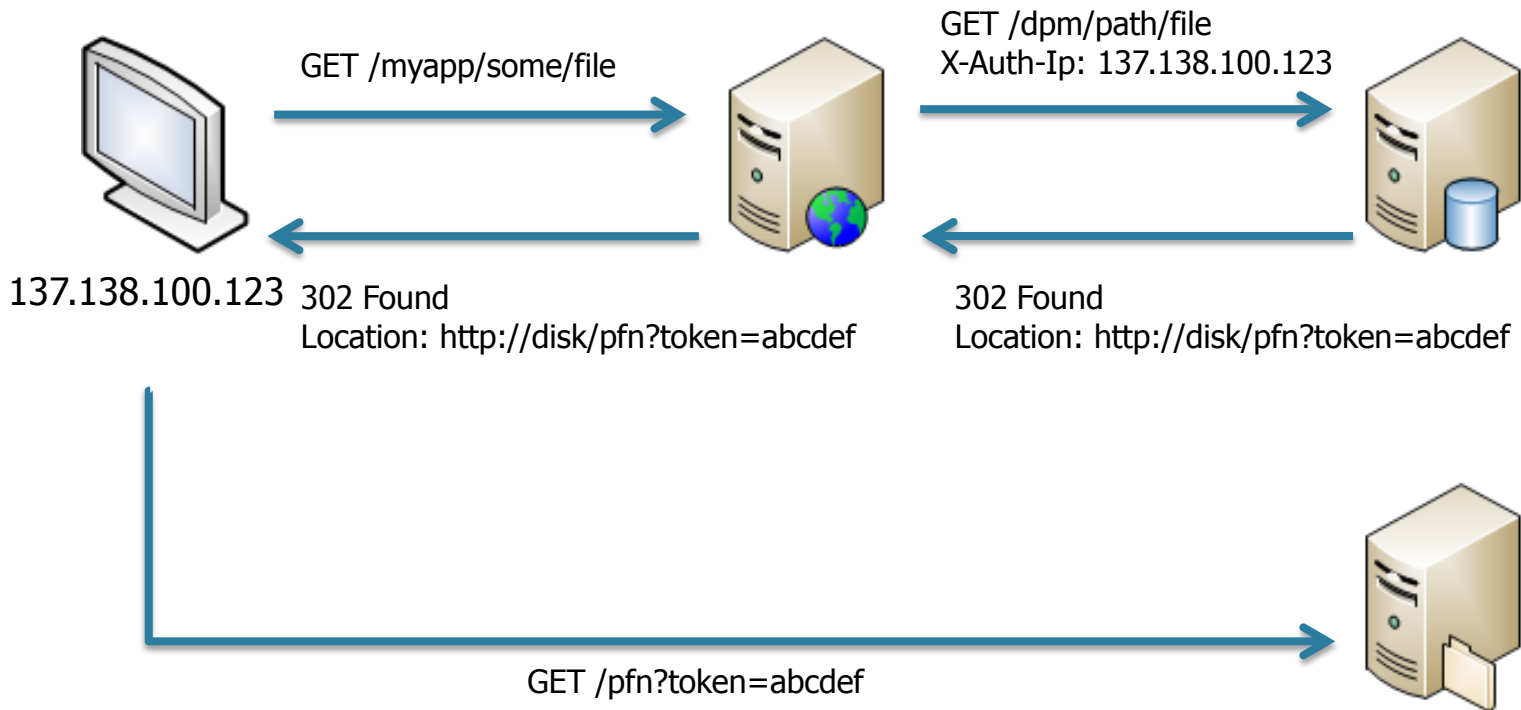 - Improved HTTP 3rd party copies

Want-Digest header

- RFC 3230
- The client can specify an additional header to request one (or several with or without priorities) checksums
  - Want-Digest: md5
  - Want-Digest: md5;q=0.3 sha;q=1
- RFC doesn't specify it, but adler32 supported too
- Server answers with
  - Digest: md5=12345==
- Digest is picked from DB is available, otherwise calculated on the fly by the disk node
  - Can be slow!

X-Auth-Ip header

- Can be used by trusted DNs
  - NsTrustedDNS configured in zlcgdm-dav.conf
- In addition to X-Auth-Dn and X-Auth-Fqan[N]
- Intended to allow "portals" on top of lcgdm-dav
  - i.e. A nice looking web application can request a token on behalf of the user, so then the user can do the PUT to the final location
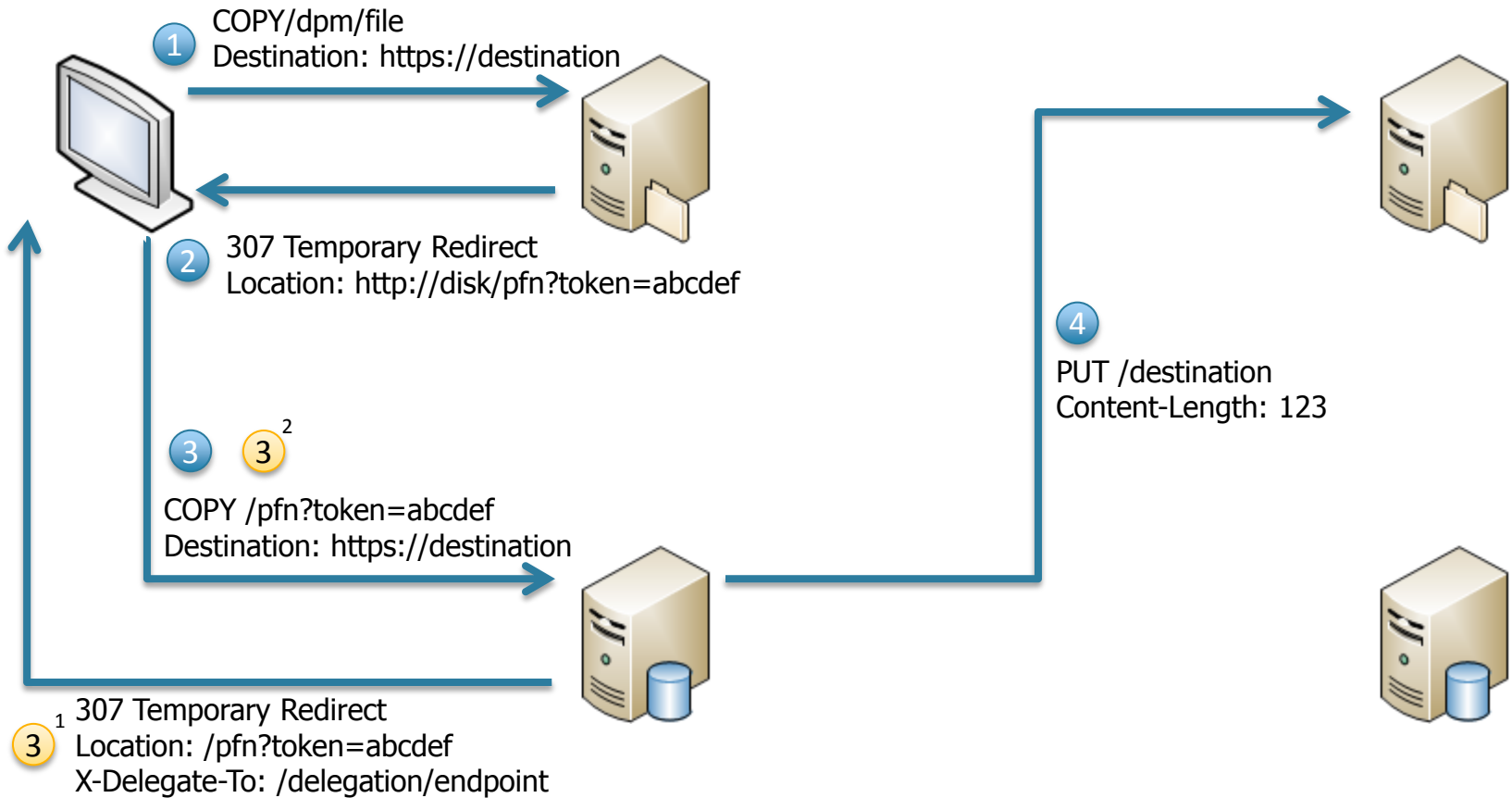
X-Auth-*

GET /myapp/some/file

GET /dpm/path/file
X-Auth-Ip: 137.138.100.123

137.138.100.123

302 Found
Location: http://disk/pfn?token=abcdef

302 Found
Location: http://disk/pfn?token=abcdef

GET /pfn?token=abcdef

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3rd party copies

- Lots of work and refactoring of the 3rd party copy logic
  - Following agreement with dCache
- For instance
  - Redirect mechanism to trigger delegation if supported, failure otherwise
  - Delegation only if needed
  - GridFTP-like performance markers

3rd party copies

COPY/dpm/file
Destination: https://destination

① ②

307 Temporary Redirect
Location: http://disk/pfn?token=abcdef

④

PUT /destination
Content-Length: 123

③ ③²

COPY /pfn?token=abcdef
Destination: https://destination

③¹

307 Temporary Redirect
Location: /pfn?token=abcdef
X-Delegate-To: /delegation/endpoint

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3rd party copies

- Client-side logic implemented in Davix
  - Used by gfal2-plugin-http
- Testing of FTS3 for HTTP 3rd party copies ongoing
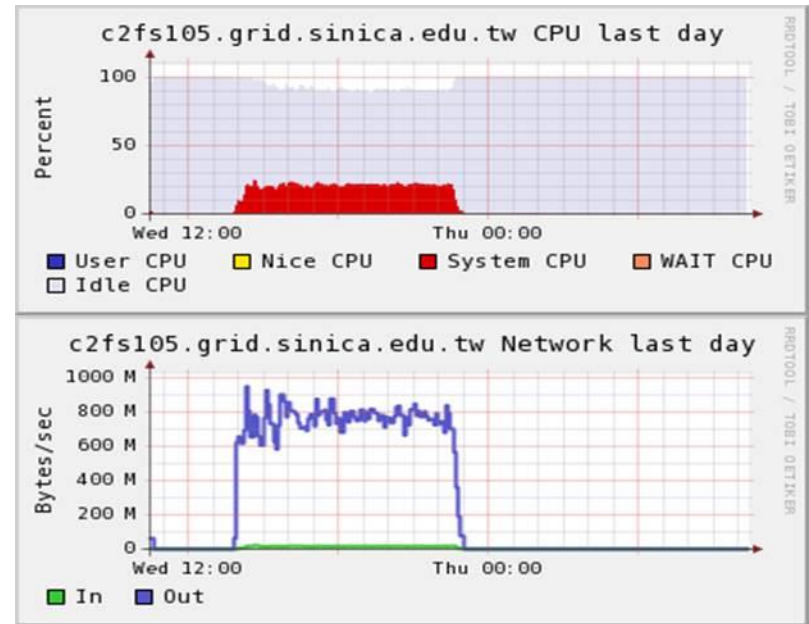 - First functional, then stress tests

Performance

- More comparisons between HTTP and XROOTD have been done to check the viability of HTTP as a every-day protocol
- The results are encouraging!

Performance – Stress Test w. staging
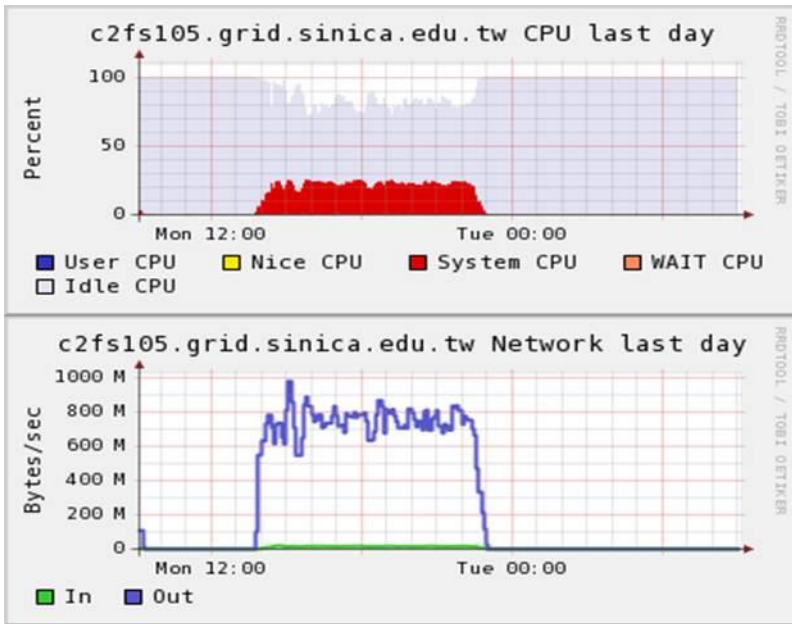
WebDAV

XRootD

Next release

- ## It will be lcgdm-dav 0.14
  - ### Few bug-fixes
    - Some needed for 3rd party copies
    - Broke with the latest GridSite based on CANL
  - ### Bigger buffer size for reading
    - Should improve performance
  - ### Global Access Service will be moved into dmlite-plugin-librarian
    - Is anyone actually using this?

Next release

- Working on HTTP as the DPM replication protocol
  - An administrator would do a PUT with a special flag to indicate "give me a new location where to replicate this file"
    - Pool and filesystem could be specified
  - The returned URL then can be used as destination of a COPY operation
    - Lcgdm-dav takes care of copying the file
    - No delegation needed, as the destination includes a token to authorize

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Questions?

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