



Storage Protocol overview

Ale Di Girolamo for ADC



Use cases 1/3

- Storage Management (e.g. data deletion, free/used space)
 - Today we use SRM
 - Possibility to use WebDAV for deletion
 - performance should be (are being) evaluated
 - Possibility to use some ad hoc tool/whatever for free space:
 - but they should be reliable and maintainable as SRM
- Tape Management (staging)
 - Today we use SRM. No reasonable alternative available.

Use cases 2/3

- 3rd party scheduled transfers (FTS)
 - Today we use SRM+gridFTP (or directly gridFTP)
 - Possibility to use gridFTP alone (session reuse) and should be efficient as storages today implement gridFTP redirection
 - is this the case for all the storage?
 - Using xrootd or WebDAV is going to be possible on medium/long term (no experience/tuning/...)
- file upload from WNs to storage
 - today we use xrootd (e.g. EOS@CERN) but mostly SRM as for many storages you need to pass a space token to get the accounting right.
 - Possibility to use xrootd (xrscp), gridFTP or DAV as long as the accounting is sorted out.
 - Focus on one: probably xrscp is the best option as of today

Use cases 3/3

- file download from storage to WNs or localhost
 - zoo! xrscp/DAV/dccp/rfcp/SRM+gridFTP/gridFTP
 - Possibly focus on a subset: DAV via Rucio metalink or xrootd/FAX
 - The “localhost” could be a browser (log file viewing), for this WebDAV+Rucio HTTP Redirection seems to be the best option
- Direct I/O
 - today we use xrootd/dcap/file and we test webDAV
 - Possibly focus on xrootd (and file) for now
 - Consider Davix+DAV once matures to production

Summary of protocols

- We need SRM for tapes.
 - and this could be all if the items mentioned before (free/used space, deletion, space token accounting) are addressed properly
- We need gridFTP for 3rd party transfers.
 - Xrootd/webDav are under testing/commissioning xrootd but will take time
- We need xrootd for direct I/O. Possibly download and upload.
- WebDav can be used for all the rest (download/upload/deletions)
 - but till matures to production we need other protocols

Actions

1. Short Term (?) : Eliminate the need of space tokens (rely on paths) for accounting.
2. Short Term: Move to gridFTP only for 3rd party transfer (requires 1)
3. Short Term: Move to xrootd/http for uploads and downloads (requires 1)
4. Short/Medium Term: commission http/WebDAV to production quality for deletions
5. Medium Term: **Decommission SRM** from non tape sites (**requires all the above**)

6. Short Term: Move to xrootd (or file) all the directIO
7. Short Term: **Decommission other directIO protocols** (**requires 6**)

8. Medium/Long Term: Commission xrootd and WebDAV for 3rd party transfers
9. Medium/Long Term: **Decommission** gridFTP (**requires 8**)
10. Long Term: Consolidate Davix and evaluate Davix and xrootd for directIO
11. Long Term: Keep both webDAV and xrootd or decommission one

Together!

- The new framework (Rucio and ProdSys2) will (can) allow us to differentiate the protocol per activity per site:
 - sites can configure themselves and help us in testing, integrating and commissioning "new" protocols.
- We need help from the community in taking onboard initiative of testing other protocols and to implement the missing functionalities.





