

WLCG Storage/ Data TEG:
Recommendations relevant for
ROOT I/O Working group

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WLCG Technical Evolution Groups

- “Reassess the implementation of the grid infrastructures that we use in the light of the experience with LHC data, and technology evolution....”
- Achieving **commonalities between experiments where possible, etc. etc.**
- Several groups – most relevant here are
 - [Data Management](#) (chairs: Brian , Dirk) ,
 - [Storage Management](#) (chairs Wahid, Daniele)

Some Relevant Topics

- Federation (xrootd et al.)
- Storage as site run service
- Storage I/O , LAN Protocols

Initial work nearing completion (though likely some group will live on)

- Recommendations emerging
- Following are **_draft_** (wording not even fully discussed within group).

Most relevant recommendations

1. WLCG should ask the ROOT I/O working group to come up with a synthetic benchmark emulating experiment analysis, for sites and others to use.
2. Storage errors and how to handle them should be more explicitly determined. The client libraries should add high level “intelligence” to recover from storage failures: whether this can be achieved in the ROOT layer should be determined.
3. Storage solutions should provide the tools to measure per-job IOPS and bandwidth.
4. Monitoring of files accesses, access frequency, access pattern etc. shall be done at the application and storage system level.

Discuss

- Can this group take on these tasks:
 - Who ?
 - Is there work ongoing already
 - For 3 and 4 Something similar to TTreePerfStats but mechanism for activation; collection of data and performance overhead need to be looked at.
 - Should recommendations be tweaked/ dropped/ others made.