

# pre-GDB data-access: introduction

Wahid Bhimji

---

*13 May 2014*

# This meeting and this intro

---

- ❖ Scope of this meeting is on **data-access**.
  - ❖ Including local and WAN (federation or otherwise).
  - ❖ Not including planned data transfer or storage management:
    - ❖ But I have one slide on the later to start.
- ❖ Recently there was a [SLAC Federated Storage workshop](#). Some material from their revisited today:
  - ❖ Different crowd;
  - ❖ Different focus - including site impact and local access

# Storage Interfaces: Update






(i.e. allowing WLCG Tier 2 disk-only sites to not have SRM in Run2 )

---

- ❖ Some progress: e.g. :
  - ❖ Rucio using Dav / http (maybe in later talk..);
  - ❖ Performant gridftp redirection in DPM (and http , xrootd in FTS3)
- ❖ Some areas still needing attention: e.g.:
  - ❖ LHCb now uses T2s and uses srm to getTurl (XROOT plugin for Dirac in testing - expect to not need SRM for disk ops by Run 2);
  - ❖ ATLAS need checksum on stageout with xrscp (inc. dpm, dcache);
  - ❖ Need to agree a non-SRM method for used space by a VO (and one level of namespace “subdirectory”) (no other Spacetoken needs ?).

**Description** Covering local and remote data access including data federations: interesting studies, technologies and expectations...  
**Video Services** Vidyo public room : pre-GDB\_\_Data\_access\_ [More Info](#) | [Join Now!](#) | [Connect 31-S-028](#)

## Tuesday, 13 May 2014

- |               |   |   |
|---------------|---|---|
| 11:00 - 11:10 | <b>Intro 10'</b><br>Speaker: Wahid Bhimji (University of Edinburgh (GB))  | ▾ |
| 11:10 - 11:30 | <b>Federation workshop summary 20'</b><br>Speaker: Andrew Bohdan Hanushevsky (SLAC National Accelerator Laboratory (US))<br>Material: <a href="#">Slides</a>              | ▾ |
| 11:30 - 11:50 | <b>Monitoring 20'</b><br>Speakers: Alexandre Beche (CERN), Dr. Domenico Giordano (CERN)   | ▾ |
| 12:00 - 12:30 | <b>Data access analysis 30'</b><br>Speakers: Christian Nieke (Brunswick Technical University (DE)), Matevz Tadel (Univ. of California San Diego (US)), Valentina Mancinelli (Universita e INFN (IT)), Nicolo Magini (CERN)  | ▾ |
| <hr/>         |   |   |
|               | <b>Data access - from infrastructure point of view 15'</b><br>Speaker: Christian Nieke (Brunswick Technical University (DE))<br>Material: <a href="#">Slides</a>   | ▾ |
| <hr/>         |   |   |
|               | <b>Data access - from experiment point of view 15'</b><br>Speaker: Nicolo Magini (CERN)   | ▾ |
| <hr/>         |   |   |
| 12:50 - 14:00 | <b>Lunch</b>  |   |
| 14:00 - 14:20 | <b>CMS plans expectations on sites 20'</b><br>Speaker: Kenneth Bloom (University of Nebraska (US))  | ▾ |
| 14:20 - 14:40 | <b>Alice plans expectations on sites 20'</b><br>Speaker: Costin Grigoras (CERN)   | ▾ |
| 14:40 - 15:00 | <b>LHCb plans expectations on sites 20'</b>   | ▾ |
| 15:00 - 15:20 | <b>ATLAS plans &amp; expectations on sites 20'</b><br>Speaker: Robert William Gardner Jr (University of Chicago (US))<br>Material: <a href="#">Slides</a>    | ▾ |
| 15:25 - 15:45 | <b>Tea</b>  |   |
| 15:45 - 16:05 | <b>German sites perspectives and plans 20'</b><br>Speakers: Guenter Duckeck (Ludwig-Maximilians-Univ. Muenchen (DE)), Guenter Duckeck (Experimentalphysik-Fakultaet fuer Physik-Ludwig-Maximilians-Uni)   | ▾ |
| 16:05 - 16:25 | <b>Dynamic federations and http plugin for xrootd 20'</b><br>Speaker: Fabrizio Furano (CERN)  | ▾ |
| 16:25 - 16:45 | <b>ATLAS plans for Http/Dav 20'</b><br>Speaker: Cedric Serfon (CERN)  | ▾ |
| 16:45 - 17:05 | <b>Root I/O - status &amp; plans 20'</b><br>Speaker: Philippe Canal (Fermi National Accelerator Lab. (US))  | ▾ |

# Some data-access questions that may be worth keeping in mind

---

- \* Do we understand our data access well enough? Are I/O performance wins out there?
- \* Data federations are in production and offer increased flexibility and resource usage:
  - \* But do we have everything needed to work at scale?
    - \* Do sites need to plan or provision more?
    - \* How do we use this software: monitoring; caches etc.?
- \* Are we employing solutions compatible with wider communities? Should we? (c.f. Big Data etc.)
- \* Is our protocol zoo growing (http / xrootd / (rfio) / gridftp etc.. )? Are there paths to simplification?

# LHCb Federation plans / feedback

---

1. For production jobs, we always download the input dataset to the WN as these jobs are CPU-bound.
2. For working group or user analysis:
  - we access files using xroot (at all of our sites)
  - jobs are brokered to a site when the full dataset is supposed to be present (according to our FC)
  - we create an XML file catalog in the job that contains all replicas of all files, starting with the local replica
  - Gaudi is dereferencing the LFN using the XML: catalog, and tries to open the replicas in turn until successful.

Therefore in summary we access files on the WAN only in case a file is not reachable locally due to any reason (file actually missing, disk server down, overloaded....)
3. Interactive usage: users may access files from anywhere using xroot. Currently they need to specify from which SE, and we are going to implement a client that will find out the most appropriate location according to the FC (again with failover if the file cannot be accessed)