



# Grid Status



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## Data Mover

Permanent storage of data from the MICE DAQ.

- Initial transfer/"File Compactor" *still* triggered manually (moveFiles script)
- Autonomous process - "Data Mover" - then makes copy at RAL Tier 1 for tape archival.
- Separate agents then make copies at Imperial and Brunel

MLCR DataMover PC is being moved to SL6, will move to state tracking in MySQL DB, other tweaks.



## MICE Raw Data

Raw data on Grid, for up to October 2013 run inclusive

- Data validation up to last October (run 5683)
- All data tarballs valid (internal checksums OK)
- All data tarballs have two copies on tape at Tier 1 Castor
- All data tarballs have overall checksums match between Castor and MLCR copy
- Copies of data at RAL PPD, Imperial College (web) and Brunel (Grid/WebDAV)



# MICE Data

Copies of data at RAL PPD, Imperial College (web) and Brunel (Grid/WebDAV)

The screenshot shows a web browser window titled "dCache.org - File system - Internet Explorer". The address bar contains the URL "http://gfe02.grid.hep.ph.ic.ac.uk:8301/MICE/Step1/05600/". The browser interface includes a menu bar (File, Edit, View, Favorites, Tools, Help) and a toolbar with various icons. The main content area displays the path "[S:/192.76.8.32] / MICE/ Step1/ 05600/" and a blue bird logo. Below this is a "FILE SYSTEM" section with a table listing files.

| Name  | Size      | Last Modified                |
|---|-----------|------------------------------|
| <a href="#">05683.tar</a>   | 122398720 | Mon Oct 28 00:14:09 GMT 2013 |
| <a href="#">05660.tar</a>   | 71229440  | Mon Oct 28 00:14:09 GMT 2013 |
| <a href="#">05679.tar</a>   | 231854080 | Mon Oct 28 00:14:00 GMT 2013 |
| <a href="#">05603.tar</a>   | 13148160  | Mon Oct 28 00:13:55 GMT 2013 |
| <a href="#">05653.tar</a>   | 1300480   | Mon Oct 28 00:13:53 GMT 2013 |
| <a href="#">http://gfe02.grid.hep.ph.ic.ac.uk:8301/MICE/Step1/05600/05683.tar</a> | 5498880   | Mon Oct 28 00:13:53 GMT 2013 |



## CVMFS

### CVMFS

- a read-only filesystem based on HTTP; uses caching to give (usable) global coverage
- the master copy, Stratum-0, is at the RAL Tier1
- installed on Grid clusters at Brunel, Imperial and RAL PPD and Tier 1
- MAUS is compiled and built at Imperial, then the binaries moved to the Stratum-0 and replicated across the Grid
- Now a manual, interactive process so we get more feedback during the install
- Have so far installed MAUS 0.6.0, 0.8.1, 0.8.5



## Offline Reco

MAUS installed at RAL Tier1 for Offline Reco

- automated process waiting for new raw data files
- when a new data file appears, makes Offline Reco and run-specific Monte-Carlo job using latest approved MAUS
- uses fast-response queue at RAL Tier1
- automatically runs MAUS jobs, creates output tarballs, saves them to Grid disk and tape :)

Steps tested in principle during EMR run. Needs automation (dongle) and exercising of the system.



## Batch Reprocessing

A manually-triggered process, in response to a particular MAUS release becoming available via CVMFS:

- makes Offline Reco and run-specific Monte-Carlo job using that MAUS release for every run in a specified Step.
- uses Tier2 sites across the UK
- automatically runs MAUS jobs, creates output tarballs, saves them to Grid disk and tape :)
- Demonstrated last autumn with MAUS-v0.6.0 - took a few weeks

MAUS 0.8.1 and 0.8.5 failing with major memory leaks (killed at 6 GB)



# Reco Data

- Saved to Grid disk and tape, with web access

[S:/192.76.8.32]

/ RECO/ MAUS-v0.6.0/ 1/ Step1/ 05600/

| FILE SYSTEM   |        |                              |
|---|--------|------------------------------|
| Name  | Size   | Last Modified                |
| <a href="#">05678_offline.tar</a>   | 344759 | Thu Nov 21 01:12:29 GMT 2013 |
| <a href="#">05661_offline.tar</a>   | 328491 | Thu Nov 07 10:45:56 GMT 2013 |
| <a href="#">05660_offline.tar</a>   | 332092 | Thu Nov 07 10:45:54 GMT 2013 |
| <a href="#">05659_offline.tar</a>   | 355226 | Tue Nov 05 05:12:23 GMT 2013 |
| <a href="#">05658_offline.tar</a>   | 323605 | Tue Nov 05 03:12:24 GMT 2013 |
| <a href="#">http://gfe02.grid.hep.ph.ic.ac.uk:8301/RECO/MAUS-v0.6.0/1/Step1/05600/05678_offline.tar</a> | 3921   | Tue Nov 05 02:12:42 GMT 2013 |





## Miscellaneous Data

Longstanding drive to archive a variety of data from other activities in MICE, e.g.:

- Testbeam and cosmic data
- Field Maps
- Geometry and surveys
- Muon Beams library
- EPICS Archiver archive

(Data curation seems to be becoming a topic with the funding agencies)

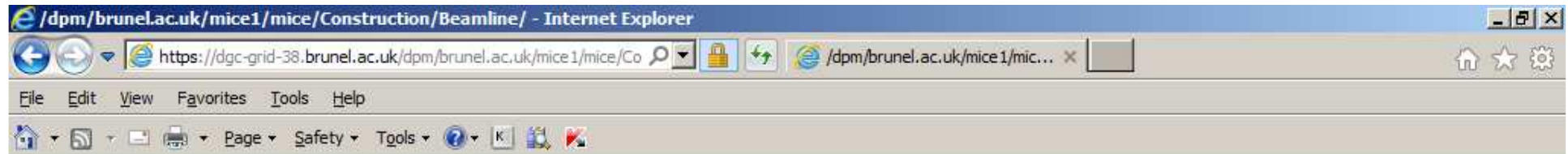
The Grid storage is my responsibility (wearing my Archivist hat) but *preparation, indexing and making data available rests with its creator!*

<https://micewww.pp.rl.ac.uk/projects/computing-software/wiki/GridDataStorage>






## Other Data

- Saved to Grid disk and tape, with web access



### /dpm/brunel.ac.uk/mice1/mice/Construction/Beamline/

| Mode       | UID | GID | Size | Modified                      | Name   |
|------------|-----|-----|------|-------------------------------|--|
| drwxr-xr-x | 101 | 109 | 2    | Wed, 02 Oct 2013 19:36:09 GMT |  <a href="#">Magnets/</a> |
| drwxr-xr-x | 101 | 109 | 6    | Wed, 02 Oct 2013 19:41:27 GMT |  <a href="#">Maps/</a>    |
| drwxr-xr-x | 101 | 109 | 1    | Wed, 02 Oct 2013 19:42:21 GMT |  <a href="#">Windows/</a> |

Request by /C=UK/O=eScience/OU=Brunei/L=ECE/CN=henry nebrensky (No proxy)

Powered by ICGDM-DAV 0.14.0

<https://dgc-grid-38.brunel.ac.uk/dpm/brunel.ac.uk/mice1/mice/Construction/Beamline/Magnets/>



## Future

### Near future:

- Batch Offline Reco run with MAUS-v0.8x
- Data Mover to SL6

### Step IV:

- automated Data Mover at end of each run
- robot dongles for mover and reco certificates
- data distribution to RAL PPD and Glasgow

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- MC Production