GridPP-DPM-tools

Fixing DPM, one step at a time.

So, what is it?

- Set of useful python scripts that talk to DPM for you.

- Add several generic filesystem-like functions (du, find)

- Also adds several utility functions that don't come with DPM yet.

- Originally Greig Cowan's fault, but since he moved on I've been trying to ~~sabotage~~ improve them...

dpm-disk-to-dpns

- Find the mappings between the files on a pool and the SURL in the DPNS namespace.

- svr018:~# /opt/lcg/bin/dpm-disk-to-dpns -s disk051.gla.scotgrid.ac.uk:/gridstore0

  - disk051.gla.scotgrid.ac.uk:/gridstore0/dteam/2008-11-15/ae-node160.beowulf.cluster-1226793054-01.4680904.0 /dpm/gla.scotgrid.ac.uk/home/dteam/ae-node160.beowulf.cluster-1226793054-01

  - disk051.gla.scotgrid.ac.uk:/gridstore0/dteam/2008-11-16/ae-node162.beowulf.cluster-1226793696-06.4681117.0 /dpm/gla.scotgrid.ac.uk/home/dteam/ae-node162.beowulf.cluster-1226793696-06

  - disk051.gla.scotgrid.ac.uk:/gridstore0/dteam/2008-11-16/ae-node178.beowulf.cluster-1226794505-20.4681240.0 /dpm/gla.scotgrid.ac.uk/home/dteam/ae-node178.beowulf.cluster-1226794505-20

dpm-dpns-to-disk

- SURL to local storage system translation:

- svr018:~# /opt/lcg/bin/dpm-dpns-to-disk /dpm/gla.scotgrid.ac.uk/home/
  atlas/atlasproddisk/panda/panda.
  06f32d06-9187-4c16-9b71-3578e84625e2_dis22699178/HITS.
  025491._37262.pool.root.1

  - /dpm/gla.scotgrid.ac.uk/home/atlas/atlasproddisk/panda/panda.
    06f32d06-9187-4c16-9b71-3578e84625e2_dis22699178/HITS.
    025491._37262.pool.root.1 disk051.gla.scotgrid.ac.uk:/gridstore0/atlas/
    2009-01-07/HITS.025491._37262.pool.root.1.5759970.0

dpns-du

- du-like disk usage reporting. Can do summaries and also suppress zero-sized files.

- svr018:~# /opt/lcg/bin/dpns-du -z /dpm/gla.scotgrid.ac.uk/home/atlas/atlasuserdisk/

  - 243.00K /dpm/gla.scotgrid.ac.uk/home/atlas/atlasuserdisk/SAM/

  - 139.53M /dpm/gla.scotgrid.ac.uk/home/atlas/atlasuserdisk/user/christophe-ochando/user.christophe-ochando.francescprod.scot.graviton10k.evgen.EVNT.1/

  - 139.53M /dpm/gla.scotgrid.ac.uk/home/atlas/atlasuserdisk/user/christophe-ochando/

dpns-find

- This tool does not attempt to emulate everything that UNIX find can do. It is just a simple tool to help people find the files paths

- svr018:~# /opt/lcg/bin/dpns-find /dpm/gla.scotgrid.ac.uk/home/atlas/atlasproddisk   HITS.025491._37262.pool.root.1

  - /dpm/gla.scotgrid.ac.uk/home/atlas/atlasproddisk/panda/panda.06f32d06-9187-4c16-9b71-3578e84625e2_dis22699178/HITS.025491._37262.pool.root.1

dpm-list-disk

- This allows you to list the replicas on disk from the DPM head node without having to log onto the pool nodes.

- svr018:~# /opt/lcg/bin/dpm-list-disk -patlas   (also outputs fileid)

- Replica: disk034.gla.scotgrid.ac.uk:/gridstore1/atlas/2006-12-01/ file3527a588-524c-4f7b-81e5-540e40ad9443.41800.0 34427

- Replica: disk035.gla.scotgrid.ac.uk:/gridstore3/atlas/2006-12-01/fileda3273ab-9d1c-4b03- b993-736529a8cca2.41809.0 34434

- Replica: disk036.gla.scotgrid.ac.uk:/gridstore2/atlas/2006-12-01/filef7d25961-415d-46e2-ab3d- a937a0cb303f.41829.0 34454

dpm-sql-spacetoken-list-files

- This allows you to list the files in a given spacetoken. For performance, it does this by performing SQL queries against the dpm_db database.

- svr018:~# /opt/lcg/bin/dpm-sql-spacetoken-list-files --st=ATLASUSERDISK

- disk033.gla.scotgrid.ac.uk:/gridstore3/atlas/2008-09-03/SRM-lcg-cr-svr018.gla.scotgrid.ac.uk-ATLASUSERDISK-1220431468.3853058.0

- disk038.gla.scotgrid.ac.uk:/gridstore3/atlas/2008-09-16/am_test.3984286.0

- disk035.gla.scotgrid.ac.uk:/gridstore4/atlas/2008-10-31/user08.markhodgkinson.ganga.......

dpm-sql-spacetoken-usage

- This allows you to list spacetokens and their usage. For performance, it does this by performing SQL queries against the dpm_db database.

- svr018:~# /opt/lcg/bin/dpm-sql-spacetoken-usage

- Space Token   Token Desc.   Pool   # Files   Total Size (GB)

- --

- None 9dc7a6dc-3f30-426a-8508-ac5bc6ca428a ATLASDATADISK   atlas   152036   19789.92

- None bcd0dfbe-83d8-4a05-bc38-abfed8d6fcd0 ATLASLOCALGROUPDISK   atlas   59831   5065.10

- None 4edb9884-3715-4837-9762-bbc554e56e24 ATLASMCDISK   atlas   43445   35182.67

dpm-sql-usage-by-vo-user

- This allows you to list the usage of the DPM broken down by user (DN) and VO. For performance it does this by performing SQL queries against the cns_db database.

- svr018:~# /opt/lcg/bin/dpm-sql-usage-by-vo-user

-    VO: ops/Role=lcgadmin

  - User DN: /C=CH/O=CERN/OU=GRID/CN=Judit Novak 0973 - ops

  - Filesize: 5.9541015625K

  - User DN: /C=PL/O=GRID/O=PSNC/CN=Rafal Lichwala - OPS

  - Filesize: 9.298828125K

User Accounting in DPM

- dpm-sql-usage-by-vo-user can also be used to do the fabled User Level Accounting for Storage.

- This is essentially beta - next release of the toolkit will fix one or two niggles that Winnie has spotted.

- (People who spot issues should please always bother me about them. I only test stuff at Glasgow, so...)

- Also needs...

DPM Monitoring

- Based on Brian Bockleman's dCache monitoring. Mostly Greig's fault.
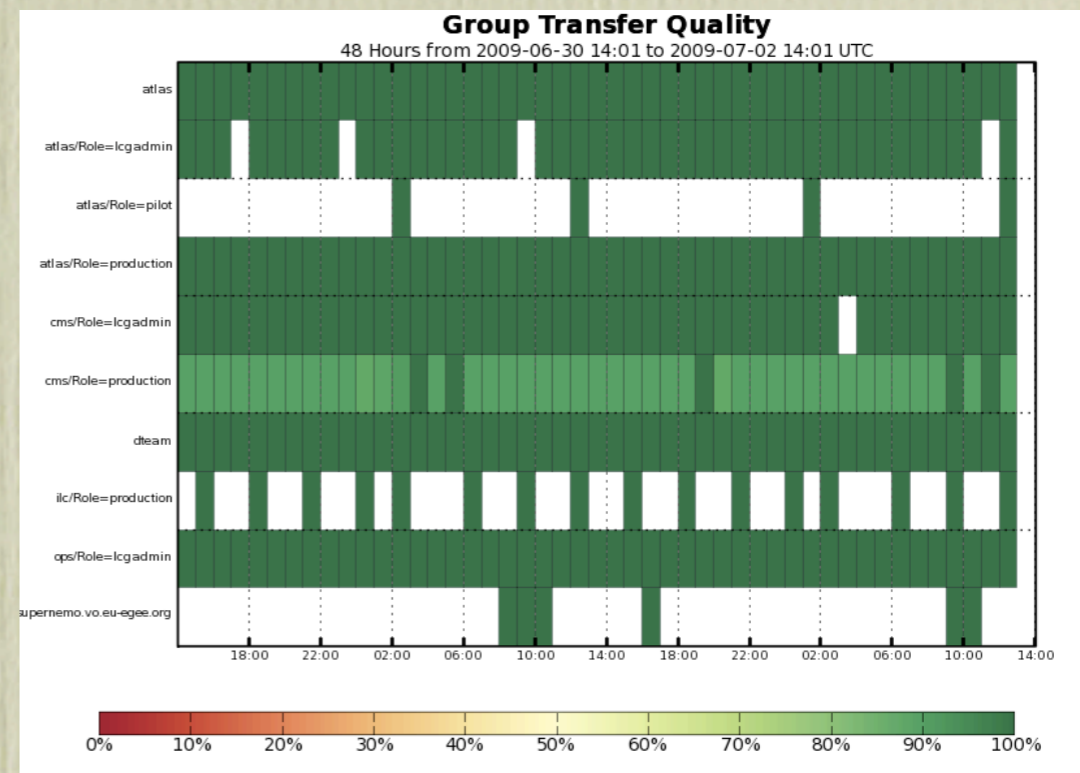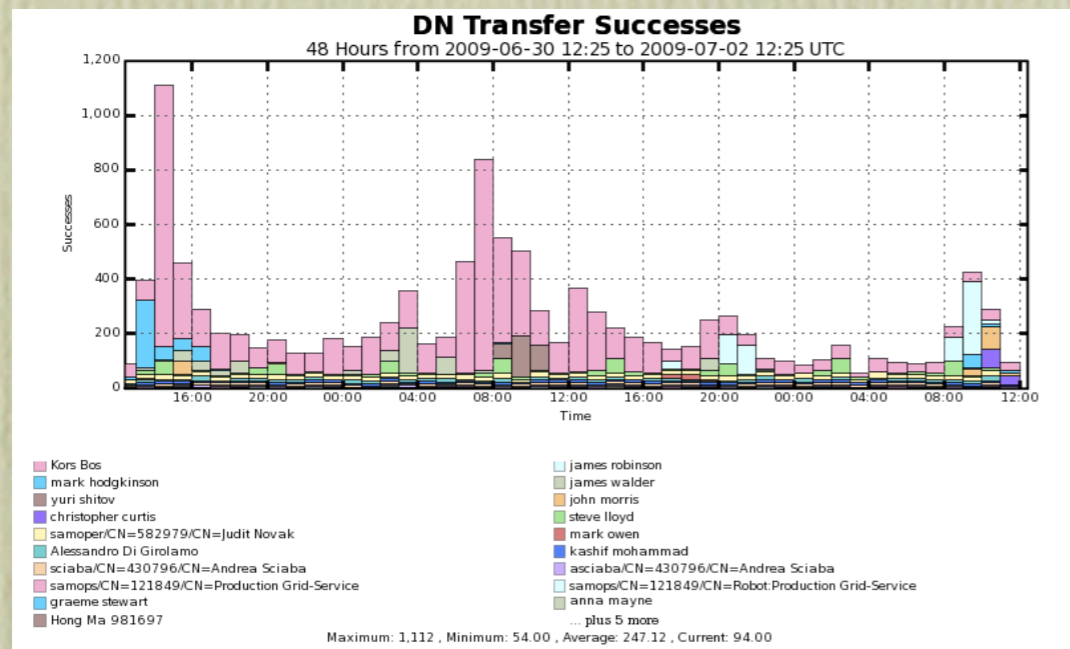
User Level Accounting Demo

Consumed Space in DPM (by Groups)

30 Days from 2009-06-02 to 2009-07-02
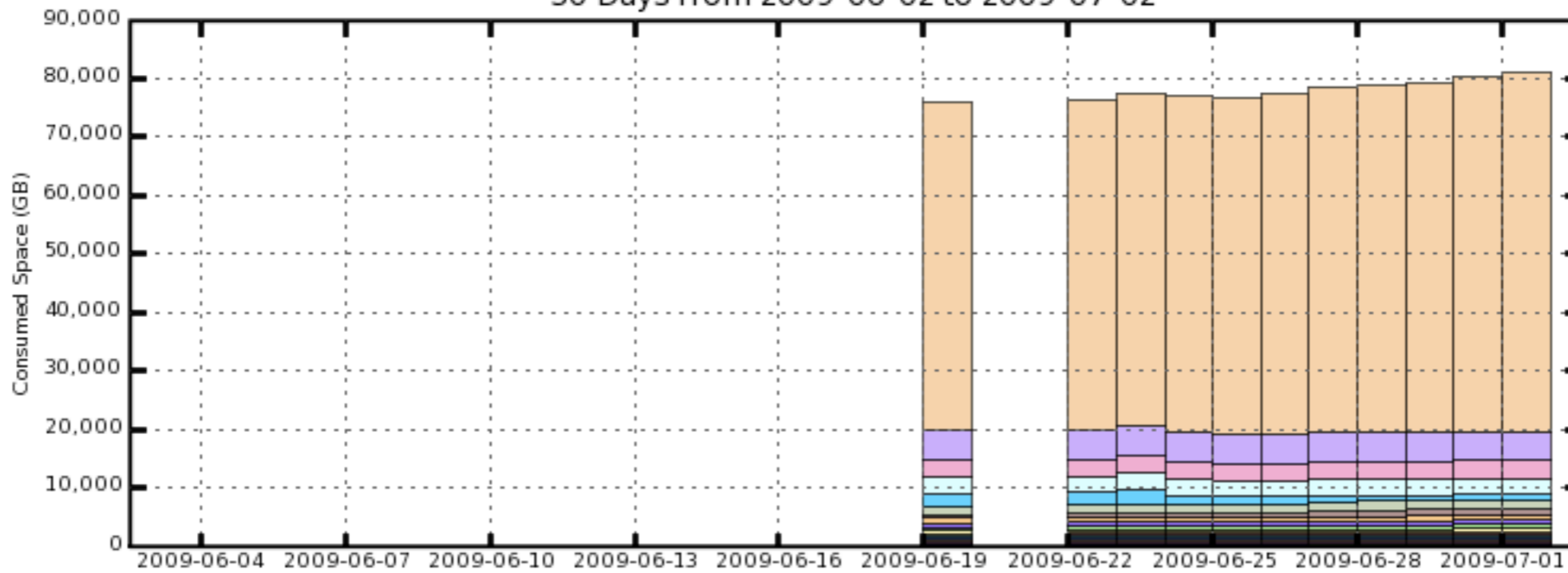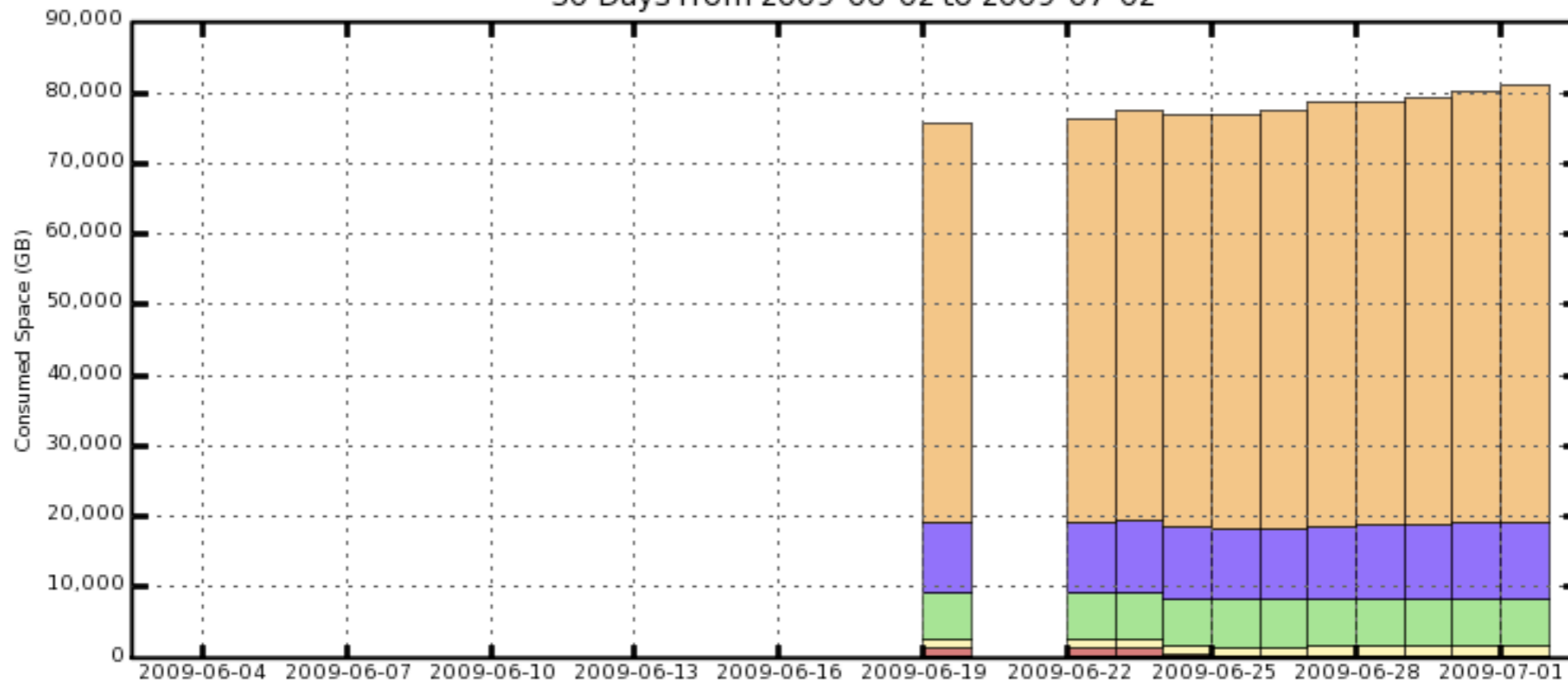
Maximum: 81,159 , Minimum: 0.00 , Average: 28,625 , Current: 81,159

Variables

Conclusions

- http://www.gridpp.ac.uk/wiki/DPM-admin-tools

- http://www.sysadmin.hep.ac.uk/rpms/fabric-management/RPMS.storage/