GridPP
UK Computing for Particle Physics

GridPP Tier-2 experiences of DPM

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1. What is a Tier-2?

2. GridPP experiences

   (a) Configuration, administration, monitoring

3. Open questions

4. Summary

In terms of storage, they can typically be characterised by:

- **No tape** backend.
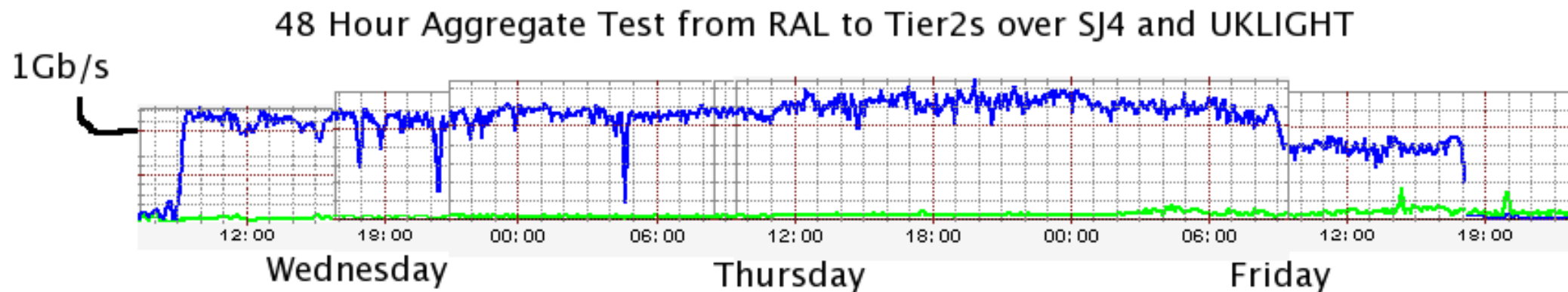
- Relatively small amount of RAID5 disk ($\sim$10-100TB).

- $\sim$3 high end servers.

- 1GbE external $+$ internal connectivity.

- Resources may have to be shared with non-WLCG users.

- **Limited manpower** ($\sim$1 FTE).

  – Ease of configuration, management and monitoring are essential to maximise availability.

- A lot of experience:

http://www.gridpp.ac.uk/wiki/DPM
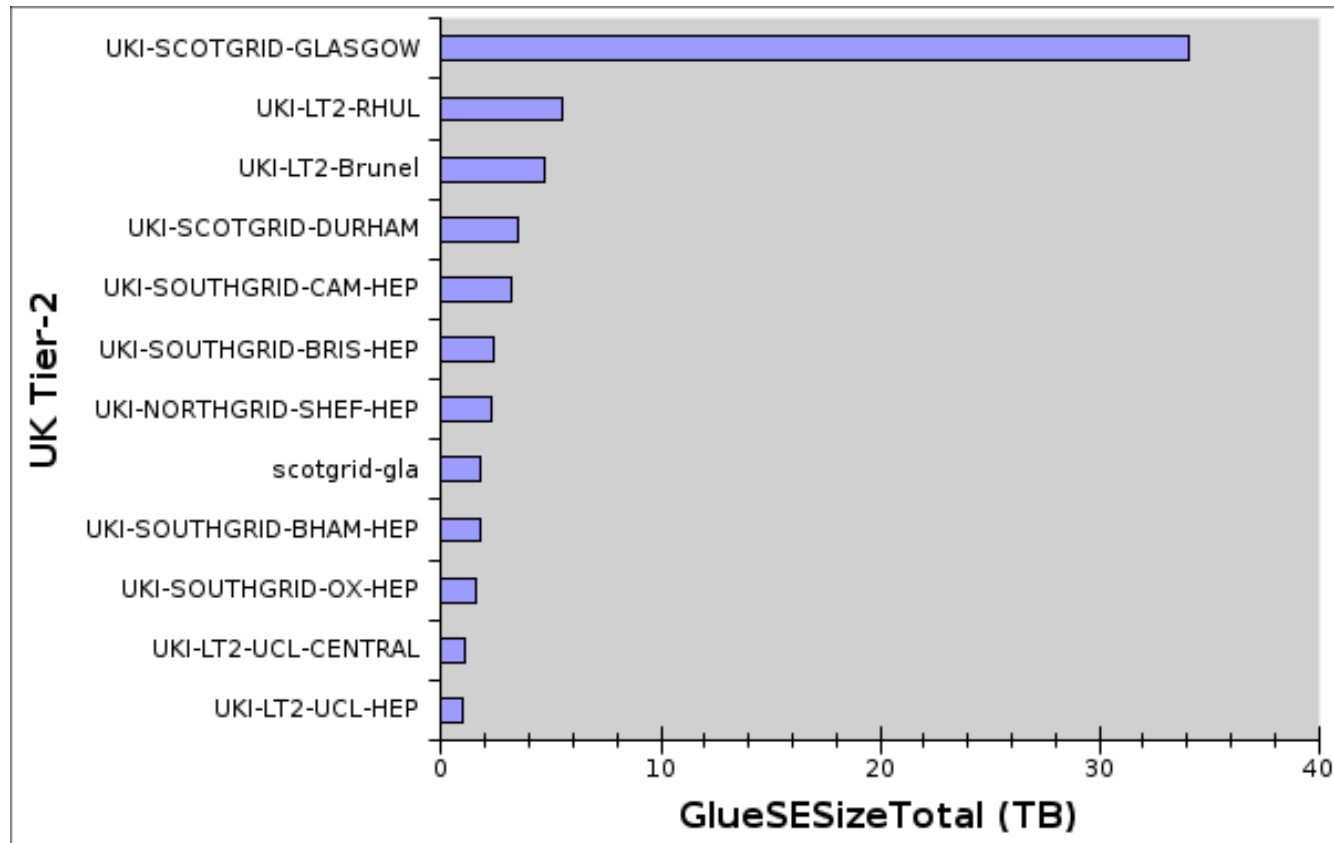
- DPM heavily involved in the testing of Tier-2 infrastructure.

48 Hour Aggregate Test from RAL to Tier2s over SJ4 and UKLIGHT

- In the UK, many Tier-2s have bought large batch farms and some disk.

- Some sites have decided that instead of buying dedicated disk and servers, they will use the "free" disk that comes with each WN.

  – i.e., 100s TB spread across $\sim$100s WNs.

- How do Tier-2s manage a DPM of this scale?

- **YAIM** used for initial basic installation.

- Admin typically performs final tweaks by hand (i.e., adding extra pools/filesystems).

http://www.gridpp.ac.uk/wiki/DPM_Yaim_Install

Administration tools wish list

- Tool to check/fix database $\leftrightarrow$ namespace synchronisation.

  – List files on disk but not in db

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  – Expts have something similar for checking catalog $\leftrightarrow$ SRM synch.

- Quotas on pools to ease shared pools and support VOMs roles.

- GIP that correctly determines per-VO storage.

http://www.gridpp.ac.uk/wiki/DPM_Information_Publishing#Beta_Release_Plugin

- VO ACLs for access to pools.

  – How does this integrate with VOMs?

- Improved `dpm-drain` for targetting specific subset of files. i.e.,

  – files belonging to a single VO (role) in a filesystem.

- Pools on a private subnet.

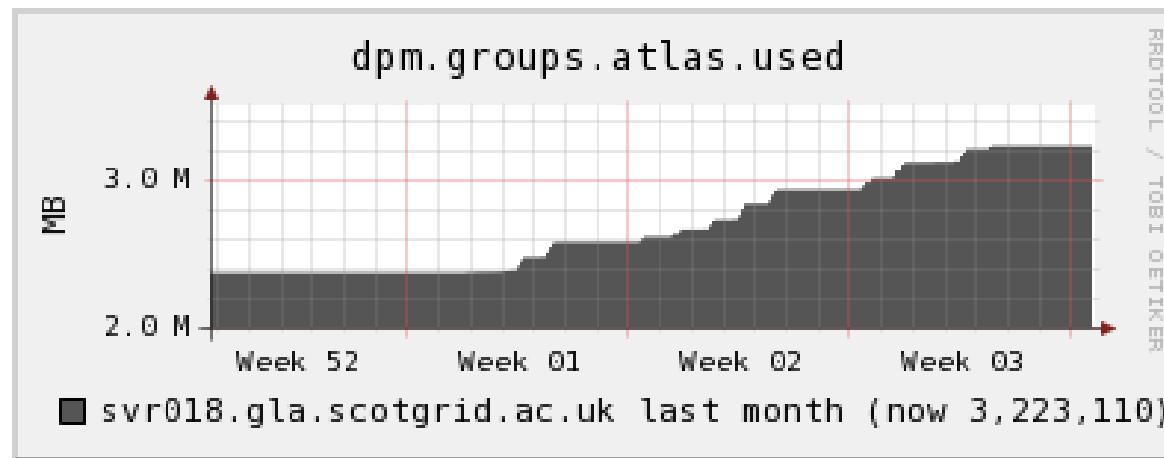 – GGUS #16477 suggests that it is not possible.

- rfio client library.

- SL4

- 64bit

http://www.gridpp.ac.uk/wiki/Installing_SL3_build_of_DPM_on_SL4

- Stress testing **rfio** access from batch farm.

- Graeme will talk next...

- **Monitoring** with MonAMI.

  – See monitoring session and BOF.

http://www.gridpp.ac.uk/wiki/MonAMI_DPM_plugin

- Good understanding within GridPP of how to setup basic Tier-2 SRM (see wiki).

- Once UK DPMs start being stressed, good admin tools will be essential.

- Further investigation of DPM scalability is required.

  – Still gaining experience in setting up a large site ($>$100TB).

  – Access to the storage from the batch farm.