Supercomputing Services and 'Data'

High Performance Computing (HPC-SIG-Oxford)

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Oxford Supercomputing Centre

Oxford e-Research Centre

Oxford Supercomputing Centre Resources

- Data Centre located at IAT Begbroke Science Park.
  - 1MW power currently provisioned.
  - Ability to house 55 racks at 11KW per rack.

- Mixture of HPC services including standard x86 based clusters, GPU enabled service, and a large 1TB shared memory service.

- Large local storage 400TB usable, to support researchers activities on OSC resources for the lifetime of their project.

- Gateway to e-Infrastructure South regional resources.

- Provide dedicated support and training activities.

Supercomputing Services: HPC / Advanced Research Computing

- A very distributed HPC structure across Oxford. The HPC-SIG-Oxford group acting as a representative body of the HPC community.

- Oxford Supercomputing Centre is just one 'central' provider of HPC. OSC is not the largest provider of HPC. There are significant HPC providers in many other departments.

- We are all producers and consumers of data from internal and external sources.

- Support research projects with internal and external collaborators.

- All adopting different approaches for service provision, especially data storage and associated policies for access, management, retention etc.

Data Management / Data Provision / Data Requirements

- Data stored at multiple locations around the university.
  - Size range from few TB to ~1PB (and growing)
- At present provide only short term data storage (project lifetime)
- Ever increasing storage demands and requirement to retain (but where?)
- Relies on good network connectivity to move large amounts of data.
  - Who will commit to funding network improvements?
  - Where are the network improvements required?
  - Should there be a separate research computing network to connect the few key HPC sites in the university?
- Need for better large-scale backup and archiving facilities. We would all prefer not to run this infrastructure ourselves.
- Projects range from many (millions) small files (MB), to those with few large files (TB)
- Need standards based services for data management, data collection, data curation.
- Metadata largely ignored at the moment by the HPC providers.
- Need to collaborate with external partners/institutes.
- Need Secure storage for certain research disciplines
- Already using data repositories that are external e.g. EBI, Nerc datacentres, etc.

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