Experiment Data Management
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Motivations

▶ Do the right thing:
  Proper sharing of research artifacts is a requirement for reproducibility
  ◦ Details of SuT
  ◦ Experiment orchestration code
  ◦ Input & output data

▶ Hype around Open Science
  ◦ Publications of course, but also data

▶ Policies
  ◦ Requirements for Data Management Plans
  ◦ Generated data volume as a metric for the usefulness of RIs
Requirements

- Storing data *during* experiments ~ usually on nodes
- Storing data *between* experiments
- Archiving data after experiments
  - With a stable reference (DOI)
  - On the very long-term
- Data Management Plan
Status

Data Management Plan:

- Testbed X does not produce data itself (not a telescope). User experiments do, they should be the ones with a DMP.
  - Hard sell in the Research Infrastructures community
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Archiving:

- De-facto standard: GitHub (and not very well done – commit hash?)
- What we should probably explore: data repositories
  - Public instances: Zenodo, Figshare, Driad, KNB, ICPSR
    - Limitations: size, no statistics
  - Self-hosted: Dataverse, CKAN, Fedora Commons (usually hosted by universities – useful to have instances for testbeds or federations?)
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Storage:
- ChameleonCloud: Swift-based object store
- Emulab: per-project NFS dir (no quotas on Virtual Wall, 100 GB on CloudLab)
- Grid’5000:
  - NFS directory per user (now with more security)
  - Disk reservation
Disk reservation on Grid’5000

Target experiments:
- Evaluation/use of Big Data solutions

Problem:
- Moving data to/from nodes is time-consuming
  - Amplified by our short reservation policy (one night / one week-end)

Solution:
- Make it possible to leave data on nodes (using additional disks)
  - Implemented by enabling/disabled disks in the RAID controller based on who reserved the node
    - Disks are not visible by other users

1Joint work with Florent Didier and Pierre Neyron