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 $\rightsquigarrow$ 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[1]

Target experiments:

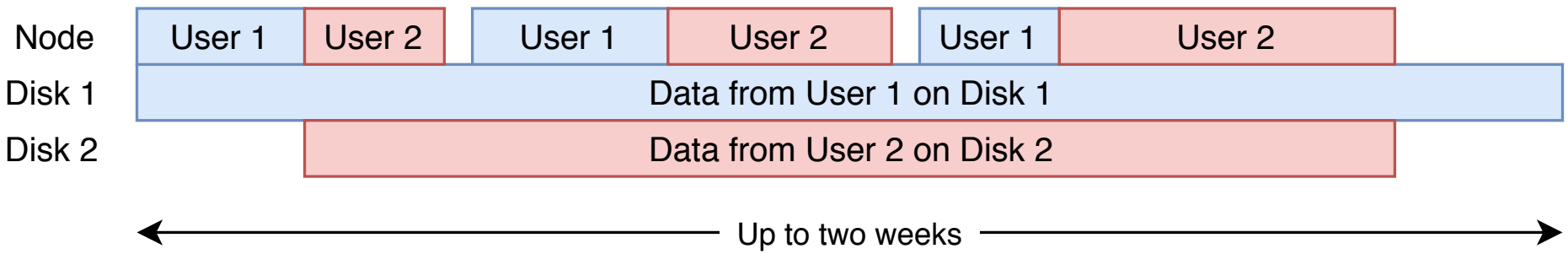
- Evaluation/use of Big Data solutions

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

[1] Joint work with Florent Didier and Pierre Neyron