



ST

{Storage} Demonstrators next steps

Dirk Duellmann, CERN IT

(input from A. Peters, O. Keeble, F. Furano, A. Klimentov and others)

- **Reliable storage - larger sites T0 / T1**
 - Data access can be reliably predicted
 - because human effort to insure consistency exists
 - Benefit
 - share effort and responsibilities in a more (manpower) effective way
- **Opportunistic storage - smaller sites / cloud**
 - Data existence and/or access can not be predicted well
 - because effort for cataloging / recovering loss is too high compared with contributed resources
 - Benefit
 - keep h/w resources available to experiments and absorb reliability problems in software
 - minimise operational impact on experiment / site

- **Clustering** several “close” sites to form a single reliable end-point
 - benefit: fewer endpoints(experiment), more centralised redundancy/recovery (sites)
 - benefit: read-write functionality in contrast to existing read-only federations
 - challenge: clear allocation of responsibilities?
stable operation during single site problems?
latency impact on operation and user jobs?
- examples:
 - dCache Nordic T1-T1
 - EOS Meyrin-Wigner T0-T0
 - EOS/dCache at Russian sites & universities
T1/2/3

- BOINC/Vac/Site-in-a-box
 - data is downloaded with job and destroyed after
 - execution agent on WN, but no shared storage needed
 - possible benefit: simple! challenge: trust?
- Site cache
 - existing data is cached & shared among WNs at a site
 - possible benefit: simple storage operation / use
 - install cache, clear cache, lookup “file”
 - examples: Xroot proxy, Squid proxy, DPM cache
- Regional cache
 - as before, but across several close (eg <30 ms) sites
 - possible benefit: increased cache hit ratio, but also increased latency impact
 - examples: Dynafed

- Produce one page description of benefits
 - including success metrics, timeline
 - experiment and site resources to evaluate benefits
 - main contact
- At least two experiments backing the concept and at least one involved in test
- At least two sites involved in test
- Software providers as required by test plan
- Collect proposals / feedback in WLCG MB
 - technical follow-up in GDB