



ESCAPE

European Science Cluster of Astronomy &
Particle physics ESFRI research Infrastructures

DOMA-QoS: call for participation

How you can help shape the future!

Paul Millar on behalf of DOMA-QoS working-group



DOMA-QoS: optimising storage

- To allow experiments to describe their **storage needs** in more fine-grain; distinguishing between
 - the needs of **different work-flows** (CPU-bound vs IO-bound)
 - the needs for storing **different kinds of data** (low value data vs high value data)
- Match **available storage** to the different demands
 - Use **cheapest storage** that satisfies requirements (→ increased capacity).
 - Support (limit capacity of) more **expensive storage**, where work-flow would benefit.
- Support technical changes to **enable QoS**.
- Liaise between experiments and sites to build a **consensus opinion** on WLCG's role within Storage QoS.



Prove this has merit

- We want to **build demonstrators**, to show Storage QoS is practical (works in the real world) and useful (cuts down cost, provides better performance).
- Therefore, we are looking for real (physical) storage that
 - has **sufficient capacity** to be useful,
 - **different enough** (from RAID-6 disk) that it needs to be handled differently.
- Sites do not need to identify an interested experiment:
 - We will act as match-maker and (try to) find interest within an experiment.
- We're also interested in **feedback from experiments**.
- Fits in with the **LHCC review feedback**.



So, what's stopping us?

- Have the feeling that **sites are reluctant** for a number of reasons:
 - Suffering from **reputaiton**: poor performance, sites banned, etc.
 - Non-trivial **infrastructure costs**: buying hardware, etc.
 - **Operational costs**: setting up experimental software, investigating problems, etc.
- To resolve these problems, we need **“buy-in” from the experiments.**
 - At least, at some level, we need the experiments to say they are **happy** for sites to invest in building these prototypes.
 - Perhaps experiments could unlock some **pledged resources** towards such projects.
 - **Indemnify sites** who are taking a risk and building up demonstrators.
- Such activity cannot be done on generic ideas, but must be **concrete projects.**



Call for participation

- Document: “Call for participation: DOMA-QoS proposed demonstrators”
- For details, see:
https://docs.google.com/document/d/15nGnkpsv4YAtmR32VcKTH_yYhNJ6yWeNjASTiocOwBw/edit?usp=sharing
- Codify what we want to **achieve**, and how to go about it.
- Provides some **examples** that may be built upon.



Suggested demonstrators

- #1 Fast disk (NVMe-SSD) [1 possible]
- #2 Erasure coding (CEPH, etc) [2 possible]
- #3 Opportunistic storage (out-of-warranty drives) [1 possible]
- #4 Shingled Magnetic Recording (SMR) [0]
- #5 Low endurance SSD [0]
- #n <your idea here!>



Summary

- Please **read** the Call for Participation document
- **Let us know** if you are interested in participating:
wlcg-doma-qos@cern.ch

