

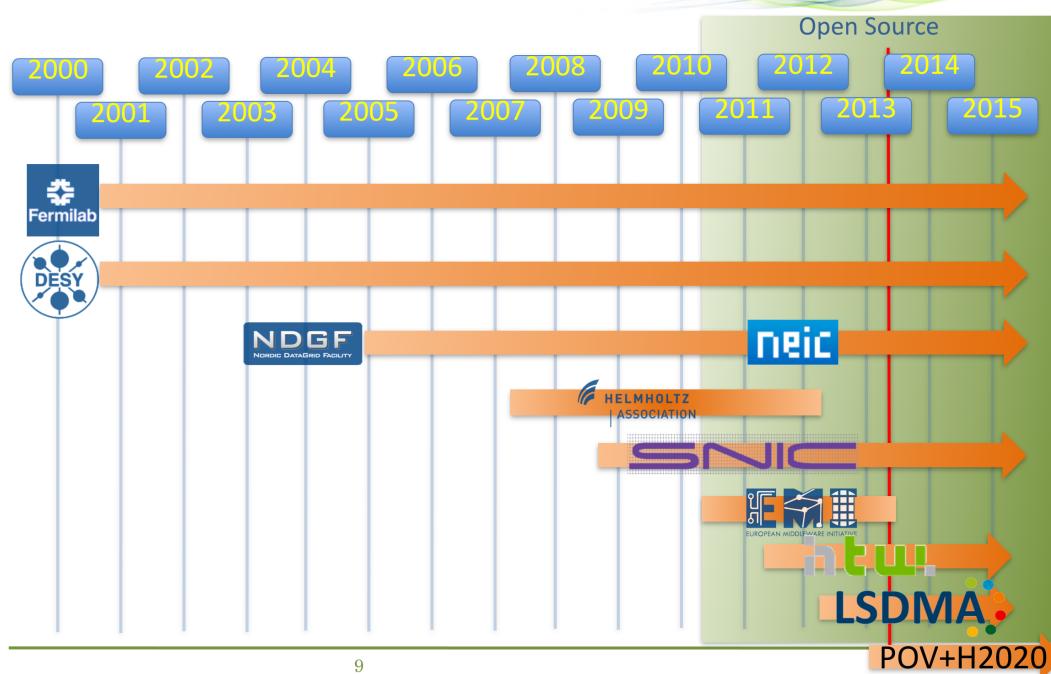
Ways to Contribute to dCache

- Promote dCache
- Reuse dCache for other purposes
- Contribute to dCache

dCache exists because...

it was funded through the years

Funding dCache project timeline



Funding

Funding and Objectives



Standardization

NFS 4.1 / pNFS

HTTP / WebDAV

Contributing to the
Dynamic Federation

2013

Deploying new
technologies
into
Production
and exploring
new
communities

2015

Data Life Cycle

Multi Tier Storage
Quality of Service
Migration Archiving



AAI → AARC

Improve Interoperability
of R&E AAI

Promote dCache

We would like to ask:

- If you do a press release concerning service related to dCache put a dCache logo somewhere 
- Talk about dCache when you talk to customers or colleagues at conferences
- Talk to us what for you are using dCache
- If you feel you can not promote dCache, please tell us why

Promote dCache

But I have done this before and the interest was not all that great

- Times change —> 1000+1 attempt might ring a bell
 - Examples where we have talked for years:
 - Distributed storage: human brain project Europe needs federated storage
 - Aachen, Jülich collaboration (Bastian Tweddel) also Human Brain project Germany need federated storage—> NDGF had this for years
 - Fermilab —> Intensity frontier realised that dCache can be used very cheaply
 - Cache management (HSM, hot spot replication)
 - BlueArc \$1000/TB and \$100/TB for dCache (Craig Group Intensity Frontier)

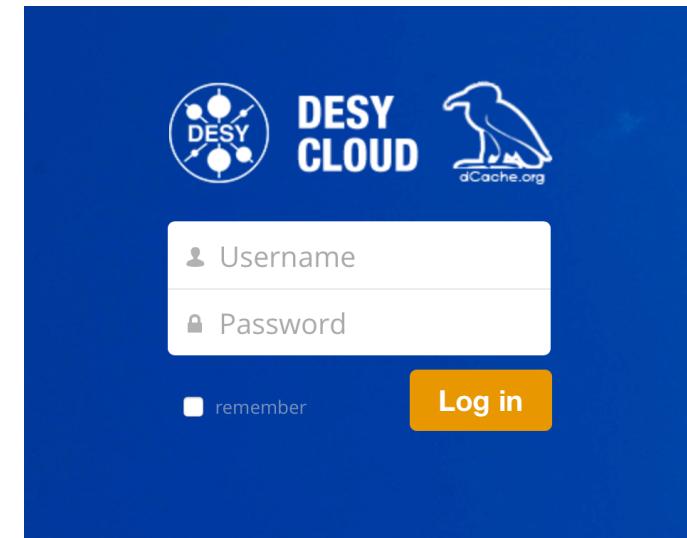
Promote dCache

But I have talked to dCache before what we would need, but we never got it

- When you talk to us, it does not mean that we guarantee all the effort will go into what you need (you know, limited resources)
- But bring it up, again and again and again, at some point we might get to it

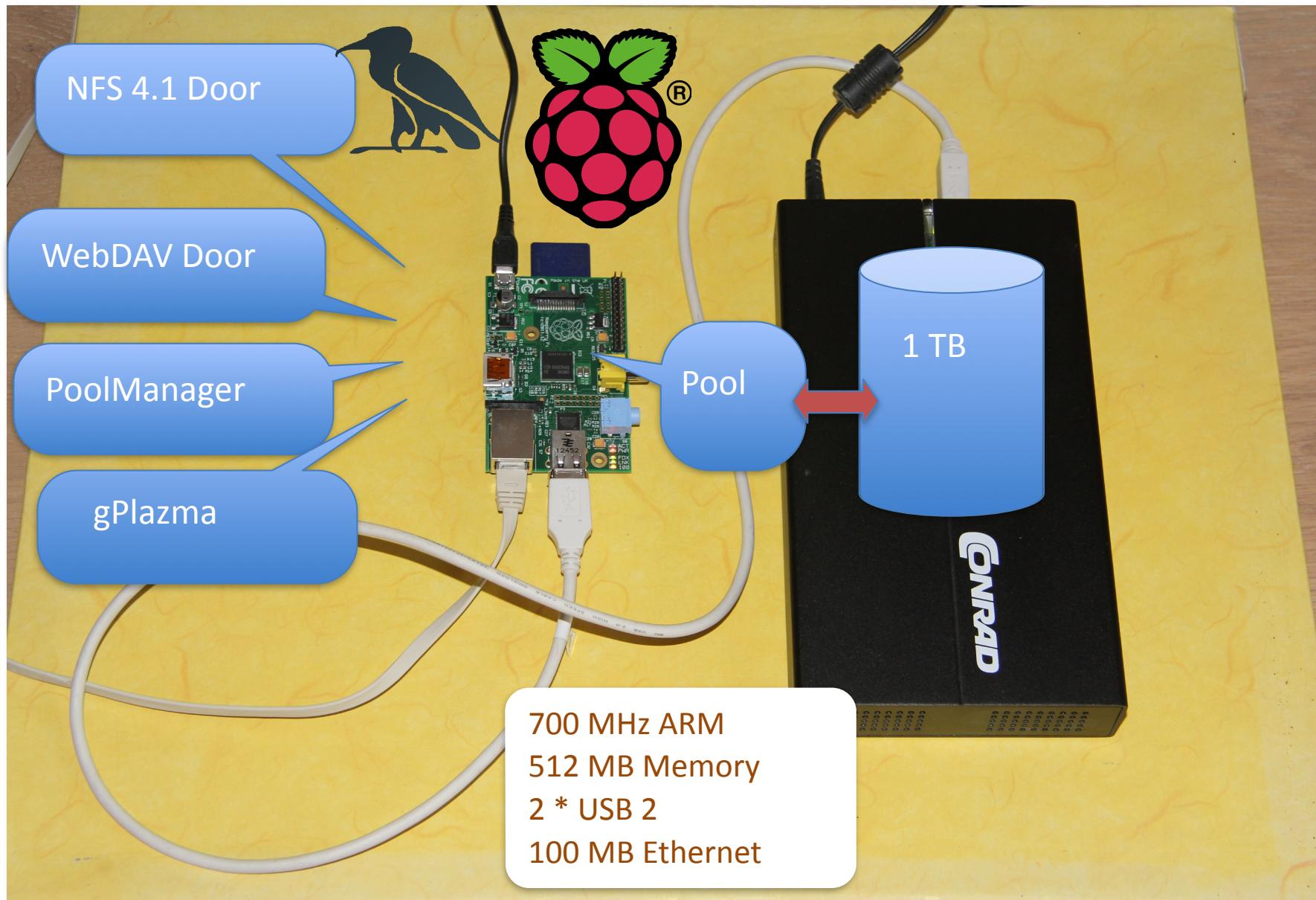
dCache for other purposes

- Tell us how dCache is used outside of WLCG?
 - Cheap, reliable, fast, multi protocol storage with HSM
 - advertise this to others who could use dCache
- Locally reuse dCache:
 - dCache mounted as NFS (File system)
 - dCache in combination with cloud provider
 - dCache as an object store
 - dCache in combination with CEPH
- dCache on a raspberry
- dCache pools on a HGST disk



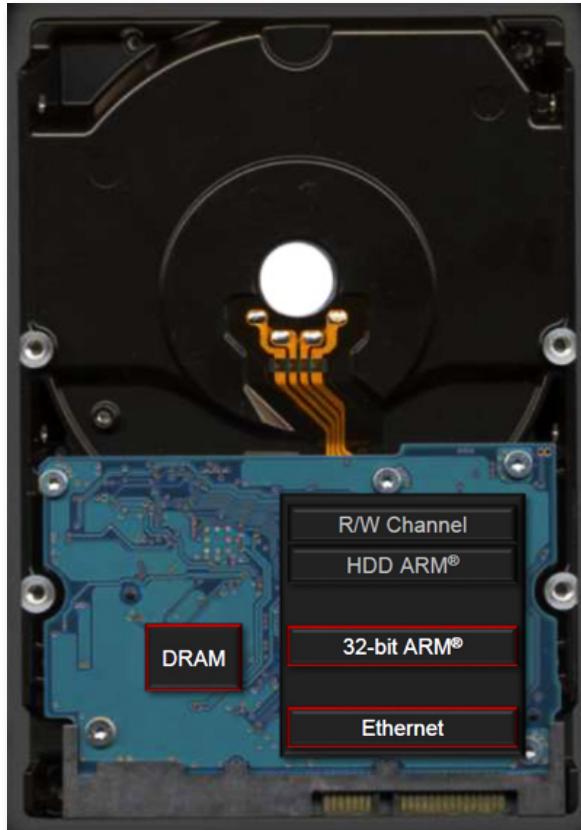
To very likely the smallest

One Machine – One Process





- Small ARM CPU with Ethernet piggybacked on regular Disk.
- Spec:
 - Any Linux (Debian on demo)
 - CPU 32-bit ARM, 512 KB Level 2
 - 2 GB DRAM DDR-3 Memory
 - 1792 MB available
 - Block storage driver as SCSI sda
 - Ethernet network driver as eth0
 - dCache pool code working!



- Are you aware of technologies that could be incorporated into dCache?
- Do you have dCache external services to combine with dCache:
 - Adding support for small files (anybody could have done this, because no change to dCache required)
 - ELK, elastic search filters, logstash config, kibana dashboards - <https://github.com/dCache/logstash4dcache>
 - Puppet modules
 - Nagios probes
 - Gen's T2 config example: https://github.com/GenKawamura/GridKa2014-Material_ATLAS-T2_Example

dCache - Contribute scripts

- <https://github.com/dCache/scripts.git>
 - Christoph's admin shell, chimera, spacemanager related scripts
 - Marc's postgres daily vacuum script <https://github.com/dCache/scripts.git>

dCache - Contribute monitoring

- <https://github.com/dCache/monitoring.git>
 - to gather nagios probes and other monitoring related things

dCache - Contribute code

- Code: It is quite a steep learning curve to start contributing actual code
 - + review can be a tough challenge
- Once you have some code in it gets easier
- Fixing error messages is a fairly easy thing and many people have

Things to take away

- Promote dCache (conferences and when talking to people) → (dCache Logo) 
- Reused dCache
- Contribute to dCache
 - Configuration examples
 - New technologies
 - Scripts, Monitoring
 - Help other people to succeed using dCache for their purposes
- Steer money in dCache's direction