Migration to DOME

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eol(as we know it)

At the last DPM workshop it was announced that **the LCGDM stack** (the good old legacy DPM) will **not** longer be **supported** starting from **01/Jun/2019.**

Starting from that date the **only supported system** will be **DOME**

- ❖ LCGDM will **stay there but** will **not** be **fixed** it if it breaks
  - ❑ **packages will stay** in in EPEL **as long as** they **compile untouched;**
  - ❑ it is pure C so **it may take quite some time** to die…

- ❖ **migrate to DOME** but also (start thinking to) move to **SRM-less**!!
  - ❑ the **legacy components** that **provide the srm interface** (even in dome mode) may disappear/get broken at any moment after the EOL date;
  - ❑ devs put no deadline for dropping SRM but after LCGDM EOL we **have to be ready** to do this at any moment;
  - ❑ so we have **a couple of steps to go before June 2019.** Pass to DOME mode (a.k.a pass to 1.10 + DOME !) test and move to SRM-less mode.

A **task force** was created to **coordinate and support** the **upgrade** and for the **testing** of the **WLCG SRR** (which requires DOME and works in SRM-less mode)

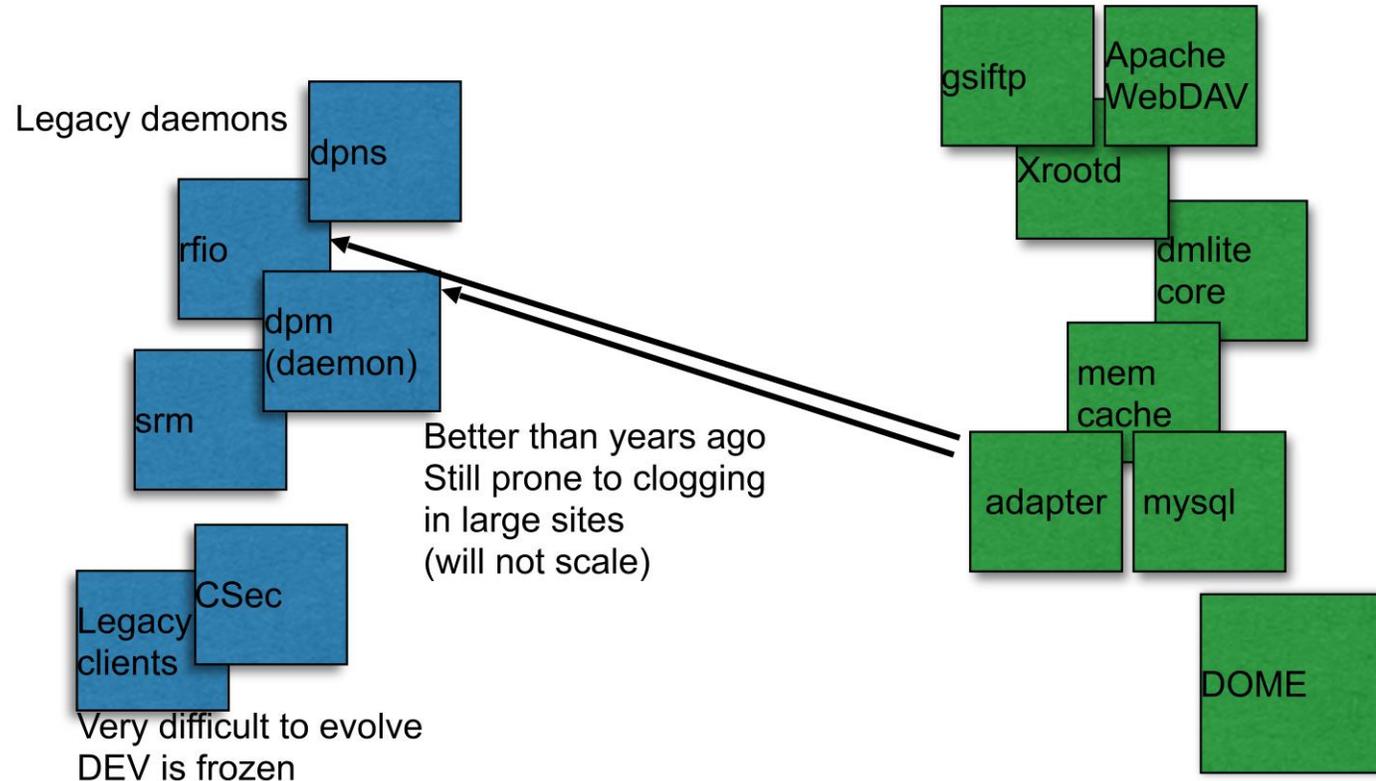❖ https://twiki.cern.ch/twiki/bin/view/LCG/DPMupgrade;

❖ phase I: **early adopters**
  ❑ **upgrade to DOME** (keeping SRM) and **test SRR**;
  ❑ in France: GRIF (LLR and LAL);
  ❑ to be done **by the end of 2018**;

❖ phase II: **all sites**
  ❑ **by summer 2019 80% of DPM storage** (in terms of capacity) to be upgraded and reconfigured ;
  ❑ **by the end of 2019 80% of DPM sites** to be upgraded and reconfigured;
  ❑ then the tails may take a lot of time…
  ❑ there is, so far, **no plan/phase/deadline for dropping SRM.**
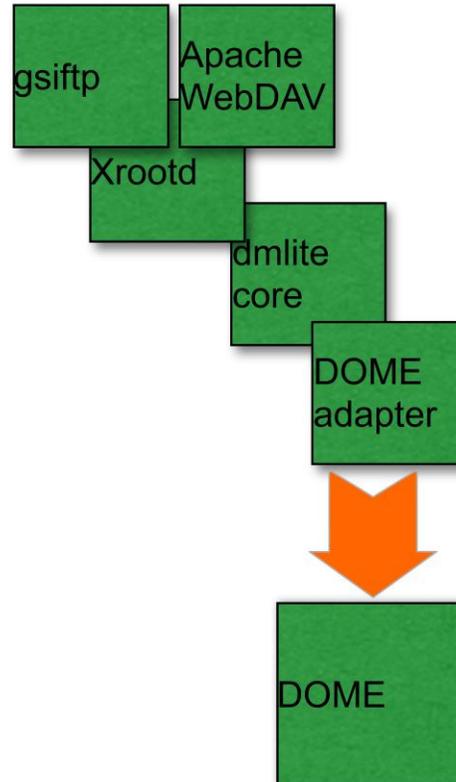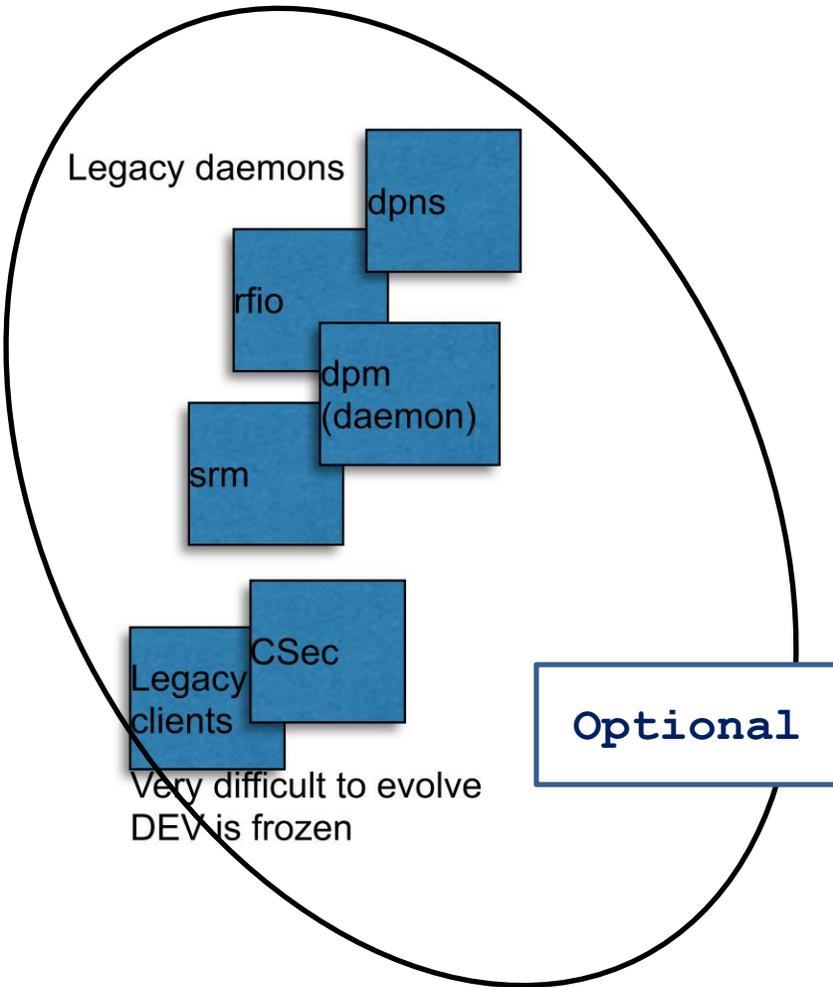
dome: what is it?

The **disk operation manager engine (dome)** is XrdHTTP REST service which exposes **functionalities** (roughly) **equivalent** to the root mode of **DPM/DPNS** daemons.

It **talks to dmlite via the DOME adapted** and makes the legacy stack optional.

In legacy flavor Dome can be **running but** is **not used** by dmlite.

dome: what is it?

When **dome** is **enabled, dmlite** will **interact exclusively with it.**

Old **lcgdm** stack will remain, **independent and optional.**

Remove lcgdm (**srm-less**) **needs gsiftp redir** (not otherwise mandatory).

New protocols (xrootd, gsiftp, http) will improve in perf and robustness.

how to migrate/upgrade?

➢ **Documentation**

❖ https://twiki.cern.ch/twiki/bin/view/DPM/DpmSetupUpgrade ;

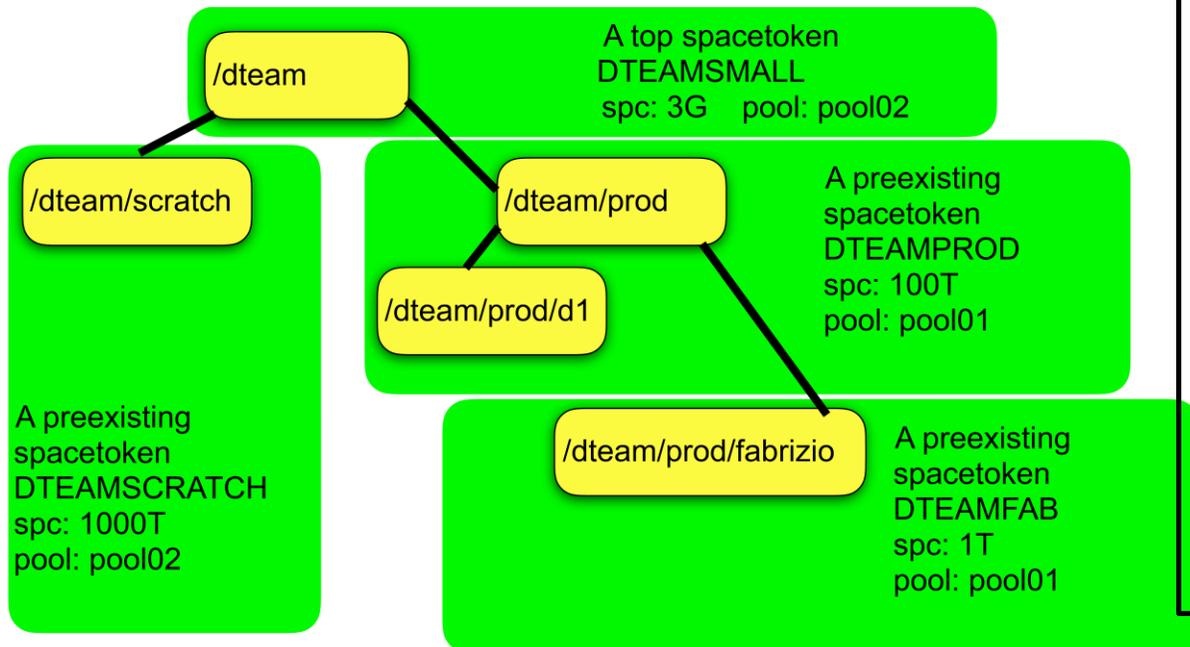❖ https://indico.cern.ch/event/699602/contributions/2941791/attachments/16600 57/2659148/EnablingDOME.pdf ;

➢ **mixing** up stuff (see FF slides, sl5)

❖ of course you cannot mix dome and non-dome;

❖ no problem mixing EL7 and SL6. **Version mix: DON'T!** Upgrade to 1.10;

❏ **v1.10 + legacy** mode is **transparent** (so **do it** as 1st step);

➢ setup (keeping SRM!)

❖ with **puppet** as **simple** as changing 1 or 2 boolean(s)

❏ run standalone: no need to puppetize (quattor sites have quappet);

❏ modules released in rpm. **Use the latest modules version!**

❏ manual setup always possible following the wiki;

❖ you'll have to **fix your script** to use dmlite shell and py api.

DPM
Disk Pool Manager

➢ `QT are` **`attached to directories and pools`**

❖ `define` **`used/available space`** `for the dir (in DB as the dir size)`

❑ **`mandatory`** `for writing to work;`

❖ `has also a` **`list of FQAN`** `authorized`

❑ `no catch-all GID for the moment;`

/dteam

A top spacetoken
DTEAMSMALL
spc: 3G   pool: pool02

/dteam/scratch

/dteam/prod

A preexisting
spacetoken
DTEAMPROD
spc: 100T
pool: pool01

/dteam/prod/d1

/dteam/prod/fabrizio

A preexisting
spacetoken
DTEAMFAB
spc: 1T
pool: pool01

A preexisting
spacetoken
DTEAMSCRATCH
spc: 1000T
pool: pool02

`existing` **`ST`** `have to be` **`modified into QT`**
`defining a directory`

`~# dmlite-shell`
`DMLite shell v1.10.0 (using DMLite API v20121218)`
`Using configuration "/etc/dmlite.conf" as root.`
`> quotatokenmod <token_id> path <path>`
`…`
`> #To check space`
`> quotatokenget / -s`

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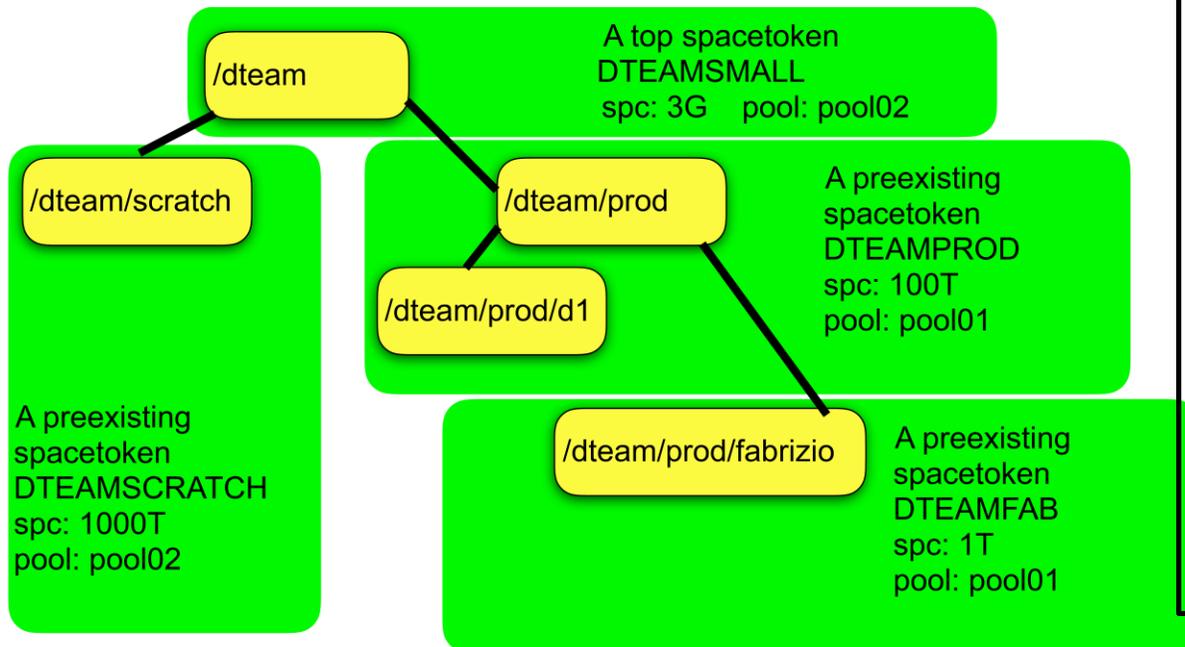　❖ has also a **list of FQAN** authorized
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```
counters have to be updated

~# # SHUTDOWN dpm daemons
~# # Update dir sizes (used by DOME)
~# /usr/bin/dmlite-mysql-dirspaces.py --nsconfig
/usr/etc/NSCONFIG
…
…
~# # If needed check the ST space (used by LCGDM)
~# dpm-dbck -y
```

➢ **First step** of upgrade/migration

  ❖ **DOME mode** + **LCGDM** and **w/o gsiftp redirection**

    ❑ your workflows should **work exactly as before;**

➢ SRM writes/dels (managed by DPMd)

  ❖ SRM + gsiftp updates dir size: DOME space in sync;

  ❖ ST counter is updated as usual;

  ❖ token-less a-la-CMS write/del the ST associated to the path QT is updated. So things will stay in sync;

  ❖ can go out of sync if the ST and the QT path do not match;

➢ SRM-less writes/dels (managed by DOME)

  ❖ will update the ST in associated to the QT: DPMd will be in sync.

srm-less

➢ Move (progr.) to **SRM-less** is more about the **VO's workflows**
  - ❖ **already** LHC **gftp-only sites**: EOS, Castor, RAL Echo, NERSC,…;
  - ❖ one tricky point is the use of old gsiftp clients;

➢ **Atlas** data management requirements
  - ❖ data access: xrootd/http; TPC gsiftp;
  - ❖ remote mgmt.: only tot space and quota needed
    - ❑ https://twiki.cern.ch/twiki/bin/viewauth/AtlasComputing/SRM2GridftpMigration
  - ❖ storage dump: done by sites;

➢ **CMS** data management requirements
  - ❖ data access already xrootd (and AAA);
  - ❖ TPC (PhEDEx, ASO) gsiftp (matter of properly set SITECONF/TFC);
  - ❖ local StageOut gfal with gsiftp (or http/xrootd when checksum ok).

➢ **LCGDM EOL 06/2019.** Old stack no longer supported

  ❖ will stay but may disappear if something gets broken;

➢ **upgrade to 1.10/migrate to DOME** (with SRM) by summer 2019

  ❖ few **pilot sites** committed to do this by end 2018
    ❑ GRIF LLR/LAL for France;

  ❖ note for **CPPM**: v1.10 changes the dome engine… **be careful**!

  ❖ other sites may follow at their own convenience;

➢ moving to **SRM-less** on a longer timescale

  ❖ no deadline. **But be ready** as SRM will not be fixed if it breaks;

  ❖ requires **validating** VOs **srm-less workflows**
    ❑ LLR testbed tested CMS. Others did for atlas;
    ❑ there are already some srm-less sites out there.