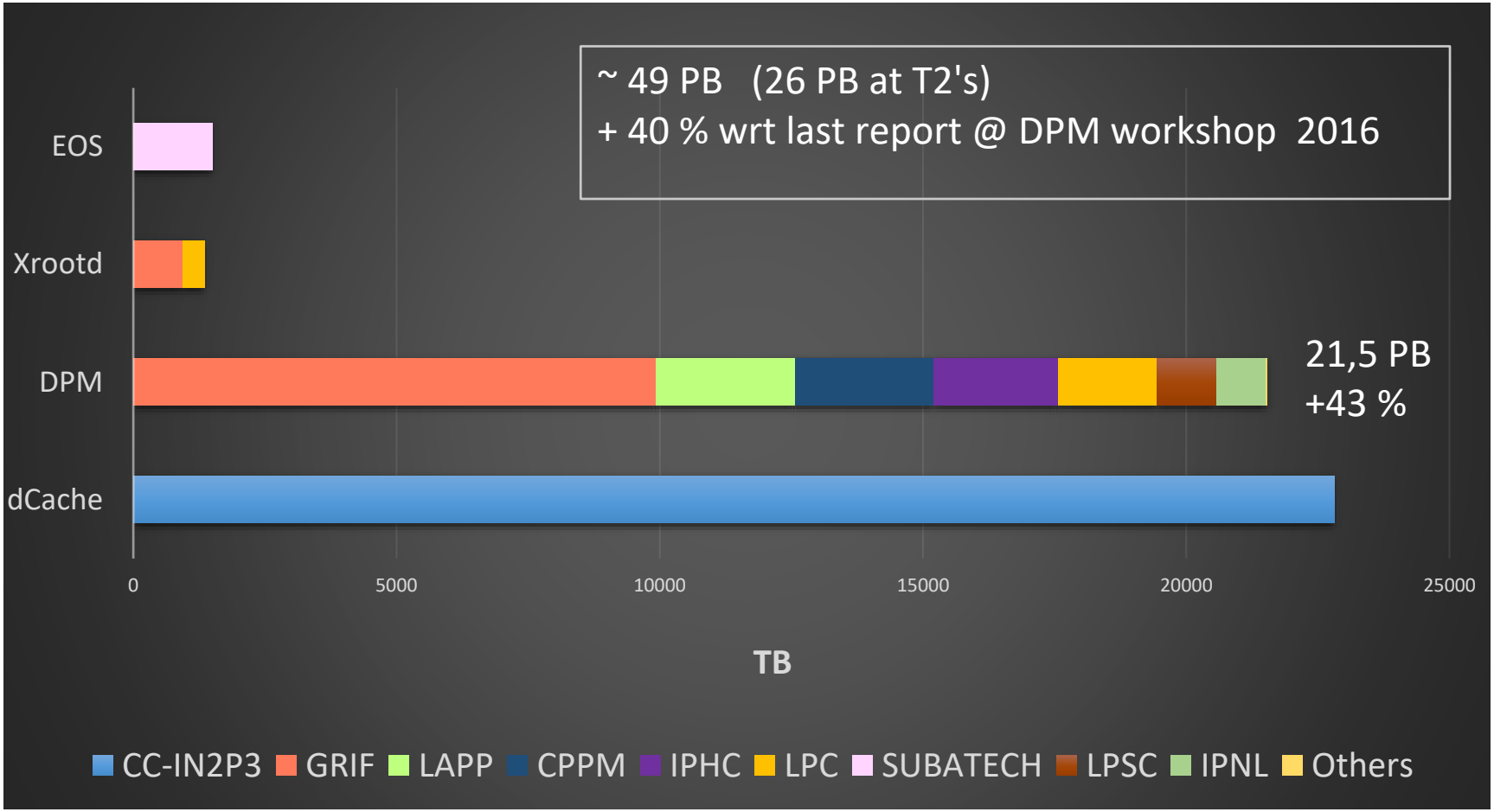
French DPMs sites

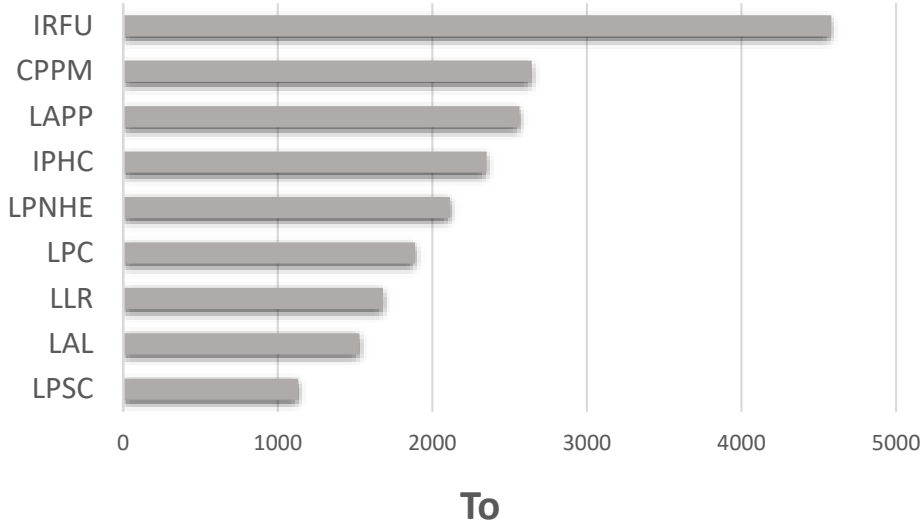
Status Report & Feedbacks

Grid Storage in France



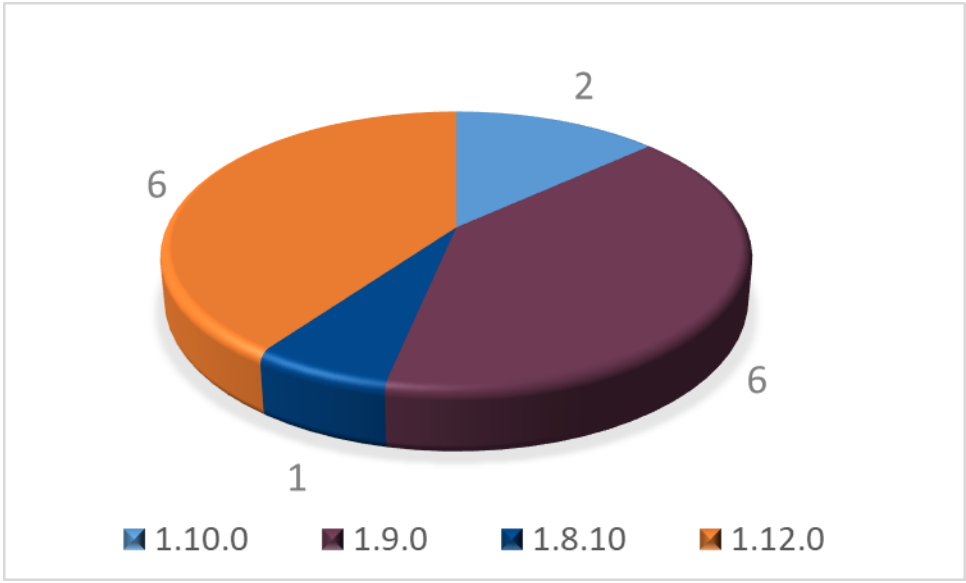
FR DPM Community

- Quite a large community
  - 15 DPM instances
  - ~ 21.5 PB
  - Several instances above 2 PB
- 3 testbeds
  - 2@GRIF
    - Epel testing
    - Quattor/Puppet conf validation
    - CMS MW validation
  - 1@LAPP ATLAS MW validation turned off and converted into a « New » testbed ATLAS FR-ALPES (LAPP Annecy- LPSC Grenoble)
- Support of the legacy stack will be *«organized»* via LCGFR-TECH mailing list
- In contact with French NGI to support the « one and only » non-WLCG site (OBSPM)



FR DPM Sites

- DPM is now configured by hybrid Puppet/Quattor (using dpm puppet modules within Quattor)
  - GRIF_LAL/LPNHE/IPNO/LLR, IPHC, IPNL, LAPP, LPSC
- Some sites have migrated puppet profiting of the ready-to-use puppet modules
  - GRIF_IRFU, CPPM, LPC
- On the road to DOME…



Migration to DOME *« how to »*

Thanks to the DPM upgrade task force

- GRIF_LAL/LLR/IRFU participating to the 1rst wave of volonteers
- IN2P3-CPPM, IN2P3-LPC and AUVERGRID volonteers for the 2nd wave

Upgrade to DOME (+add-ons) in two or three steps

0. upgrade DPM packages to the latest version (1.12.1)
1. **enable DOME** [1] (+ xrootd checksums) **with SRM still there**
   - SRR validation : should be configured just to be checked
   - ATLAS : no changes in AGIS config. SRM preferred for everything except lan_read
   - Issue(s) with diverging spacetoken vs. quotatoken
2. **then move to SRM-less** : enable gridftp redirection, enable non-gridftp TPC, non SRM
   - with changes in AGIS for ATLAS sites
   - LCGDM-2748 : DPM not aware in case of dead disknode [2]

No clear evidence whether there are some options or not...

- On one hand : TPC is part of the DOMA activity,
- On the other hand : End of the Legacy stack support(including SRM) 01/06/2019

The way to proceed : more or less a site choice

[1] https://twiki.cern.ch/twiki/bin/view/DPM/DpmSetup1100#2_Upgrade_to_DPM_1_10_0_Dome_Fla

[2] https://its.cern.ch/jira/browse/LCGDM-2748

Migration to DOME

In work

Current situation (WLCG sites)

Site	DPM	DOME enabled	XrootD	XrootD chksum	SRR validation	GridFTP redirection	SRM support	TPC XRootD	Upgrade Status
LAL (GRIF)	1.12.1	✓	4.9.0	No	OK	-	Yes	-	production
LLR (GRIF)	1.12.1	✓	4.9.1-1	Yes	OK	-	Yes	-	production
IRFU (GRIF)	1.12.1	✓	4.9.0	No	OK	-	Yes	-	production
LPNHE (GRIF)	1.10.0	No	4.8.4-1	No	-	-	Yes	-	production
IN2P3-CPPM	1.9.2	✓	4.8.0-1	No	-	-	Yes	-	production
IN2P3-IRES	1.10.0	No		No	-	-	yes	-	production
IN2P3-LAPP	1.9.2	No	4.8.2	No	-	-	yes	-	production
IN2P3-LPC	1.12.1	✓	4.9.1-1	No		-	yes	-	check on-going
IN2P3-LPSC	1.9.0	No		No	-	-	yes	-	production
FR-ALPES	1.12.1	✓	4.9.0	Yes	-	-	yes	-	ATLAS testbed : stat file pb
AUVERGRID	1.12.1	✓	4.9.1-1	No	OK	-	yes	-	production

Migration to DOME

In work

Plans

Site	DPM	DOME enabled	XrootD	XrootD chksum	SRR validation	GridFTP redirection	SRM support	TPC XRootD	Upgrade Status
LAL (GRIF)	1.12.1	✓	4.9.0	No	OK	YES	NO	-	production
LLR (GRIF)	1.12.1	✓	4.9.1-1	Yes	OK	-	YES	-	production
IRFU (GRIF)	1.12.1	✓	4.9.0	No	OK	-	YES	-	production
LPNHE (GRIF)	1.10.0	No	4.8.4-1	No	-	-	YES	-	production
IN2P3-CPPM	1.12.1	✓	4.8.0-1	No	OK	YES	NO	YES	< end of 2019
IN2P3-IRES	1.10.0	No		No	-	-	YES	-	production
IN2P3-LAPP	1.12.1	YES	4.9.0	YES	OK	YES	NO	YES	< end of 2019
IN2P3-LPC	1.12.1	YES	4.9.1-1		OK		YES		< end of June 2019
IN2P3-LPSC	1.9.0	No		No	-	-	yes	-	production
FR-ALPES	1.12.1	✓	4.9.0	Not yet	OK	YES	NO	YES	ATLAS testbed ASAP
AUVERGRID	1.12.1	✓	4.9.1-1		OK	-	yes	-	production

Sites Feedback

- Remaining features requests *(2016 DPM workshop report)* : load balance and load mgmt
  - Scalability
  - Redistributing files
  - VO's/users «quotas» on connections/bandwidth.
- Not so many issues
  - « Graceful restart » not so graceful ! ➔ config. options
- Improvements appreciated on
  - Documentation
  - DB check tools
- Good reactivity and great help from the dpm_forum list
- Few concerns related to SRM deprecation
  - More a communication/coordination problem between VOs and sites
  - No clear vision about smalls VOs still using SRM… or not
- Redirection gridftp : risk of headnode overload with old clients (lcg-cp)
  - A way to check : « *occurrences of PASV in the gridftp logfile /var/log/dpm-gsiftp/gridftp.log and /var/log/dpm-gsiftp/dpm-gsiftp.log. (Newer clients such as gfal2 use STOR instead, meaning a delayed passive ftp* »

Future of DPM storage

- Strategy / ideas/ concerns for the future of DPM in the context of WLCG DOMA ?
- DOMA-FR project :
  - **Starting point :** Set-up of a DPM federation (FR-ALPES) and integration within the ATLAS environment (Rucio, AGIS, HC)
    - Studies : Data access perf., Reliability, Usability…
    - Including DPM Volatile pools : Use cases, benefit ?
  - **Medium term interest** : CEPH back-end of DPM or Xrootd gateway
    - Cf. ECHO (RAL)
  - **Long-term concern :** DPM component within a DataLake
    - is this possible ?
    - Is it too early to identify potential limitations ?
- Discussion or common actions within the DPM collaboration ?