DE Cloud report

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ATLAS Sites Jamboree

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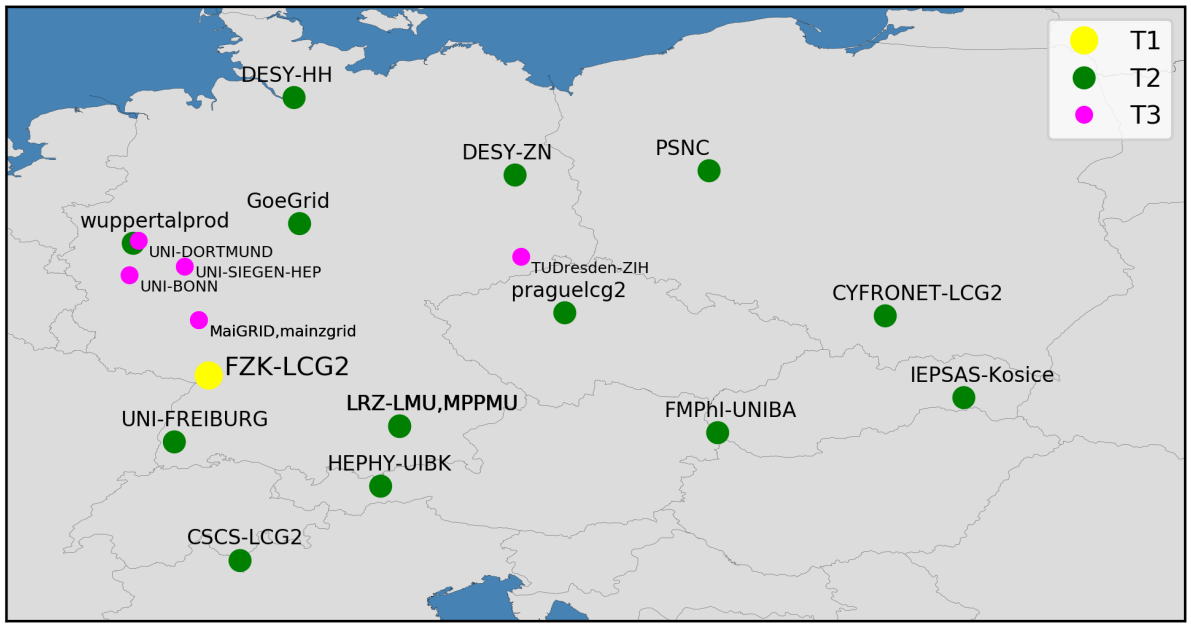
Introduction

DE cloud consists of sites from

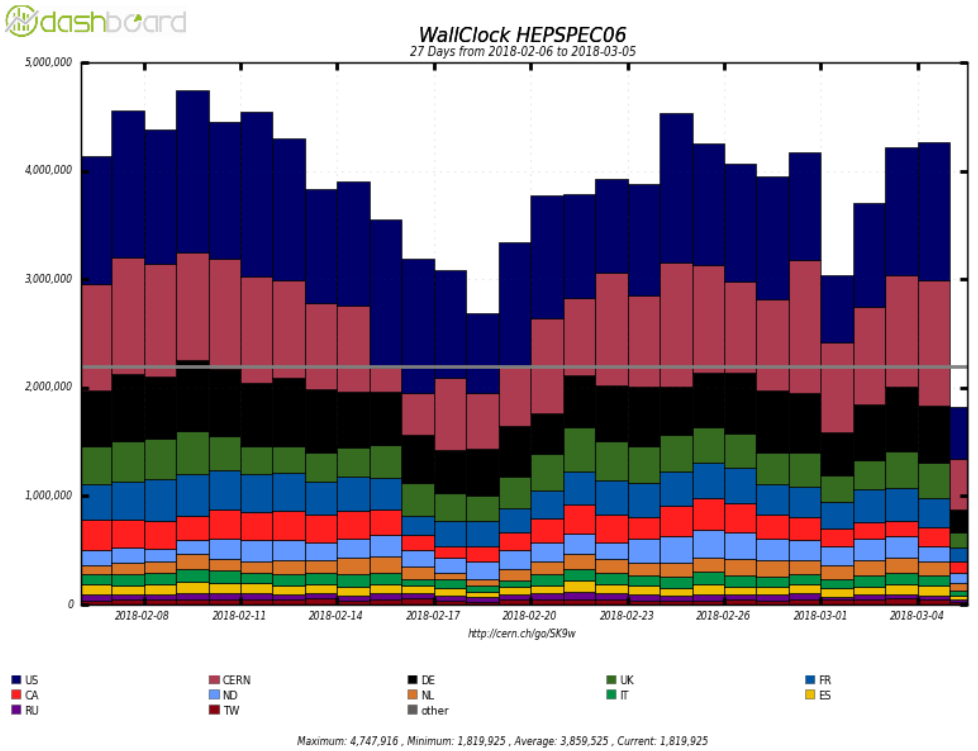
- Austria
- Czechia
- Germany
- Poland
- Slovakia
- Switzerland

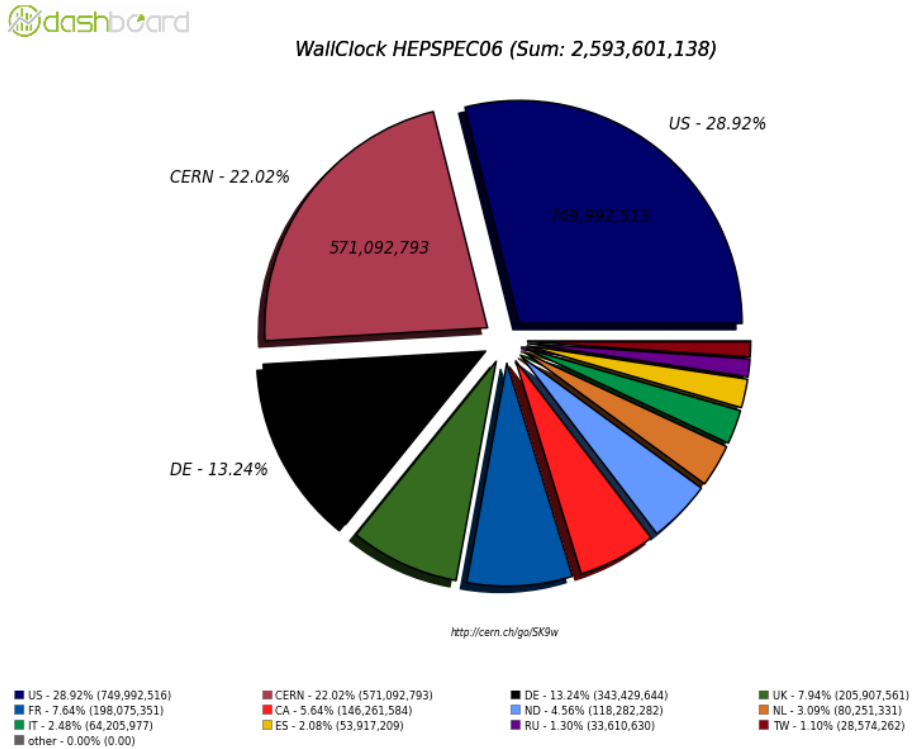


DE cloud support

- about 10 people
- meetings
  - weekly
  - monthly
  - yearly F2F

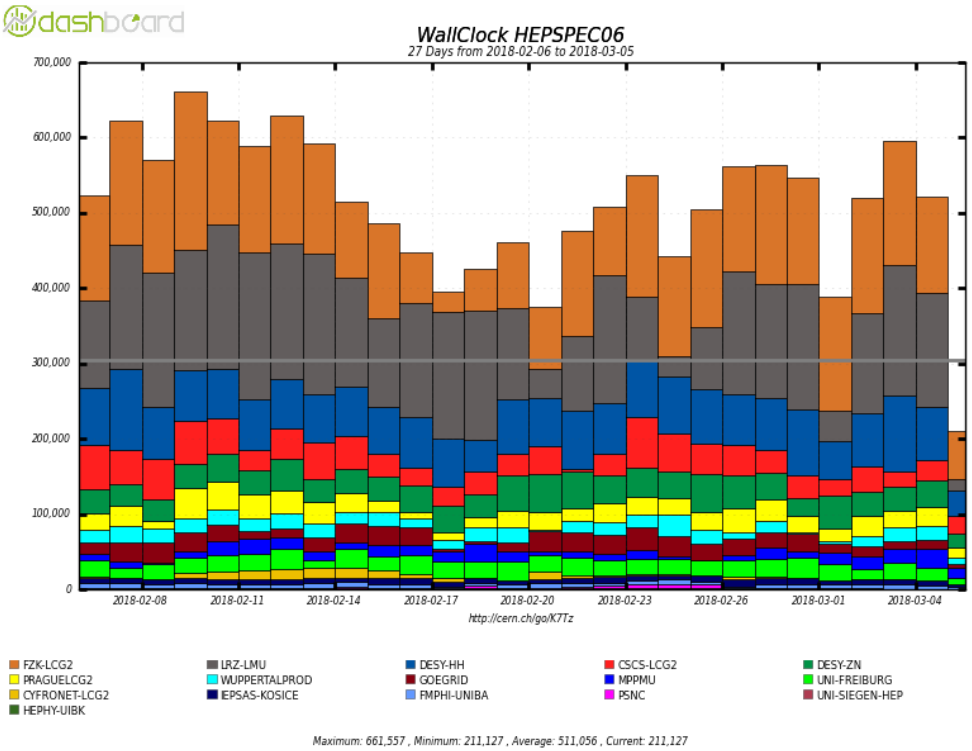
Resources

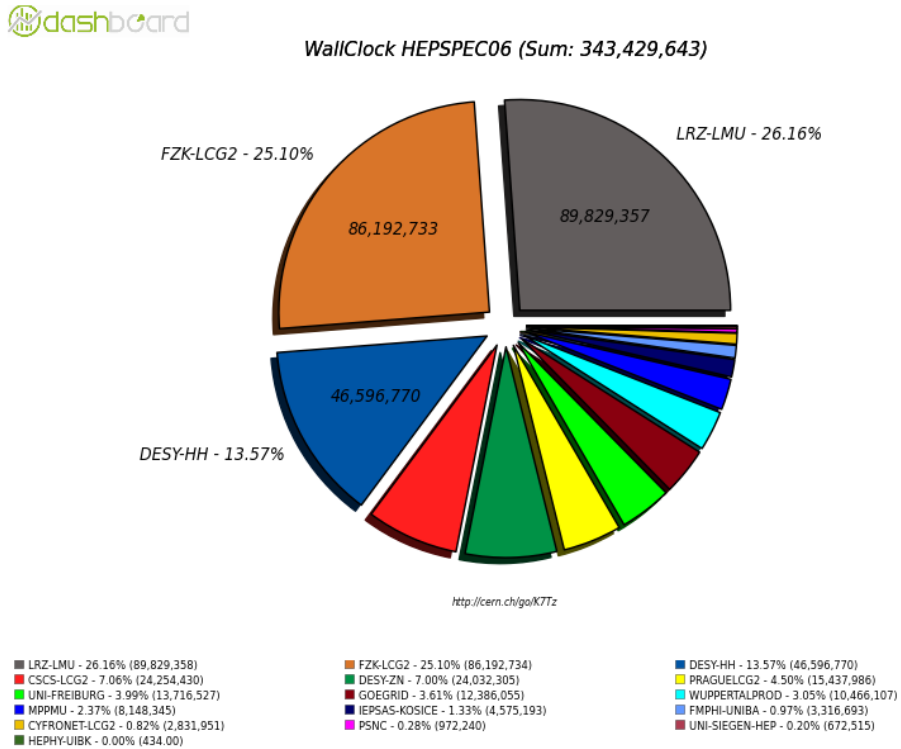




- DE cloud is usually 2nd to 3rd in computing resources contribution

Resources





- stable contribution of above-pledge resources
- most significant contribution from FZK, LRZ, and DESY-HH

Resources

Grid sites

- T1
- 14 active T2s
- 6 active T3s

Opportunistic HPC resources

- Munich - SuperMuc, Hydra
- praguelcg2 - Anselm, Salomon
- ...

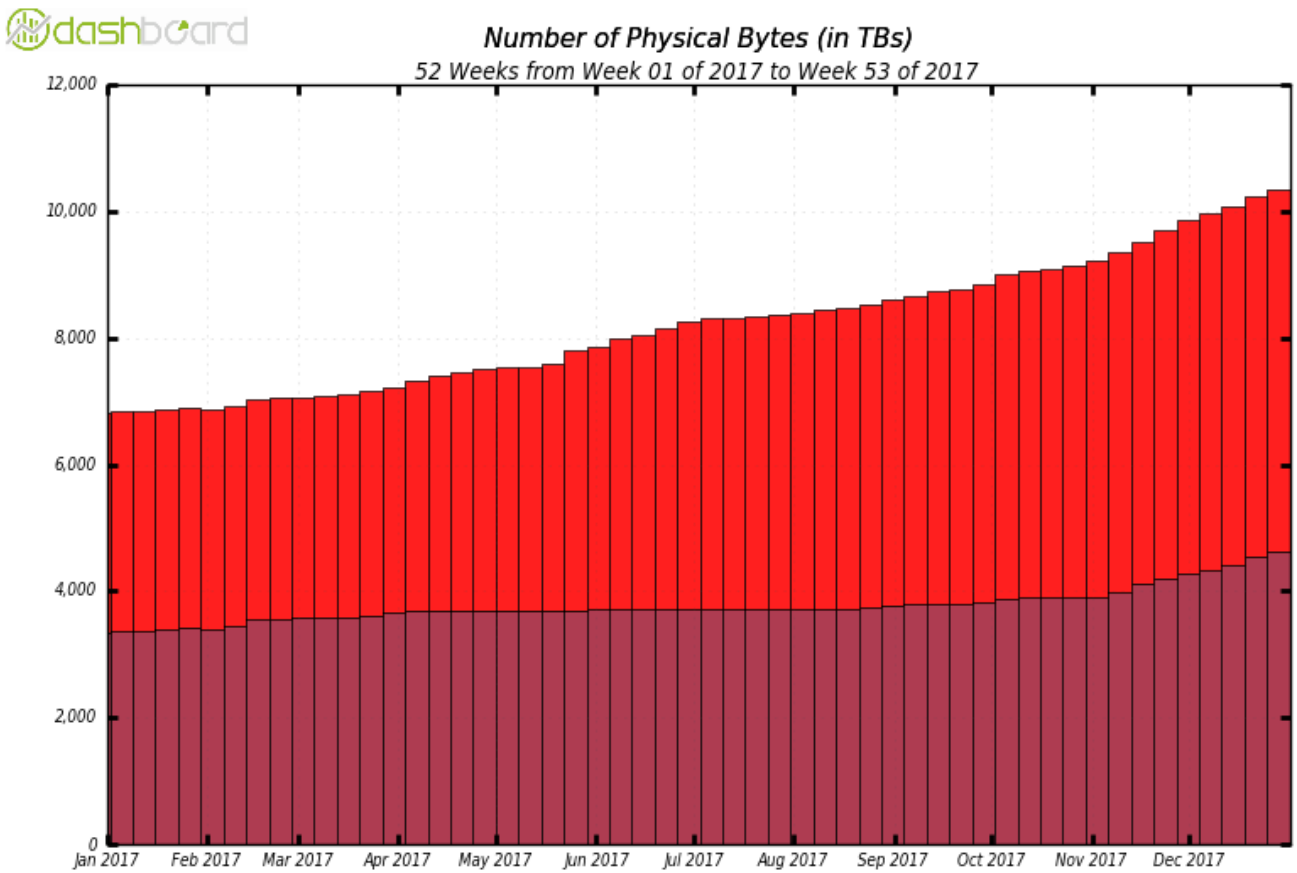
Storage

- dCache and DPM systems
- movers - queues are using generic movers (usually lcgcp or xroot)
- object stores - no current plans for deployment
- storage issues
  - it would be nice to have a way to declare files *temporarily unavailable* to stop job and transfer failures until the storage is back
- tape - next slides

Tape

Usage VS pledges

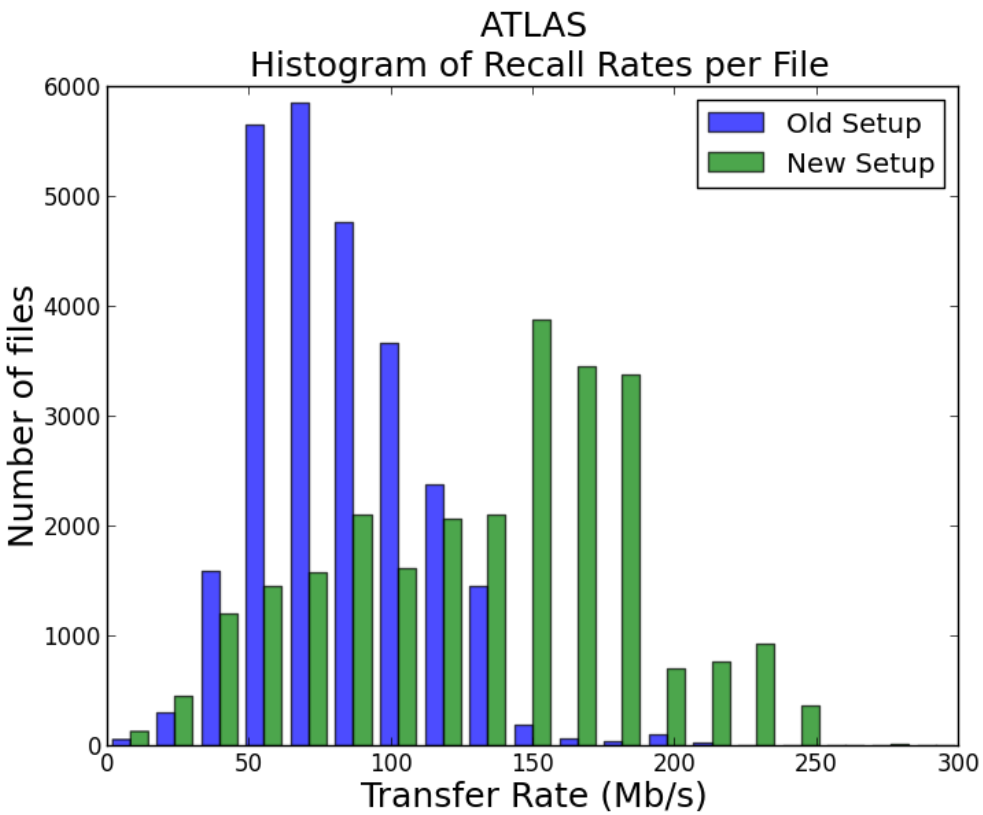
- pledge 2017: 22,090
- used: 10,330
- delta: -11,760



Tape

Recall rates

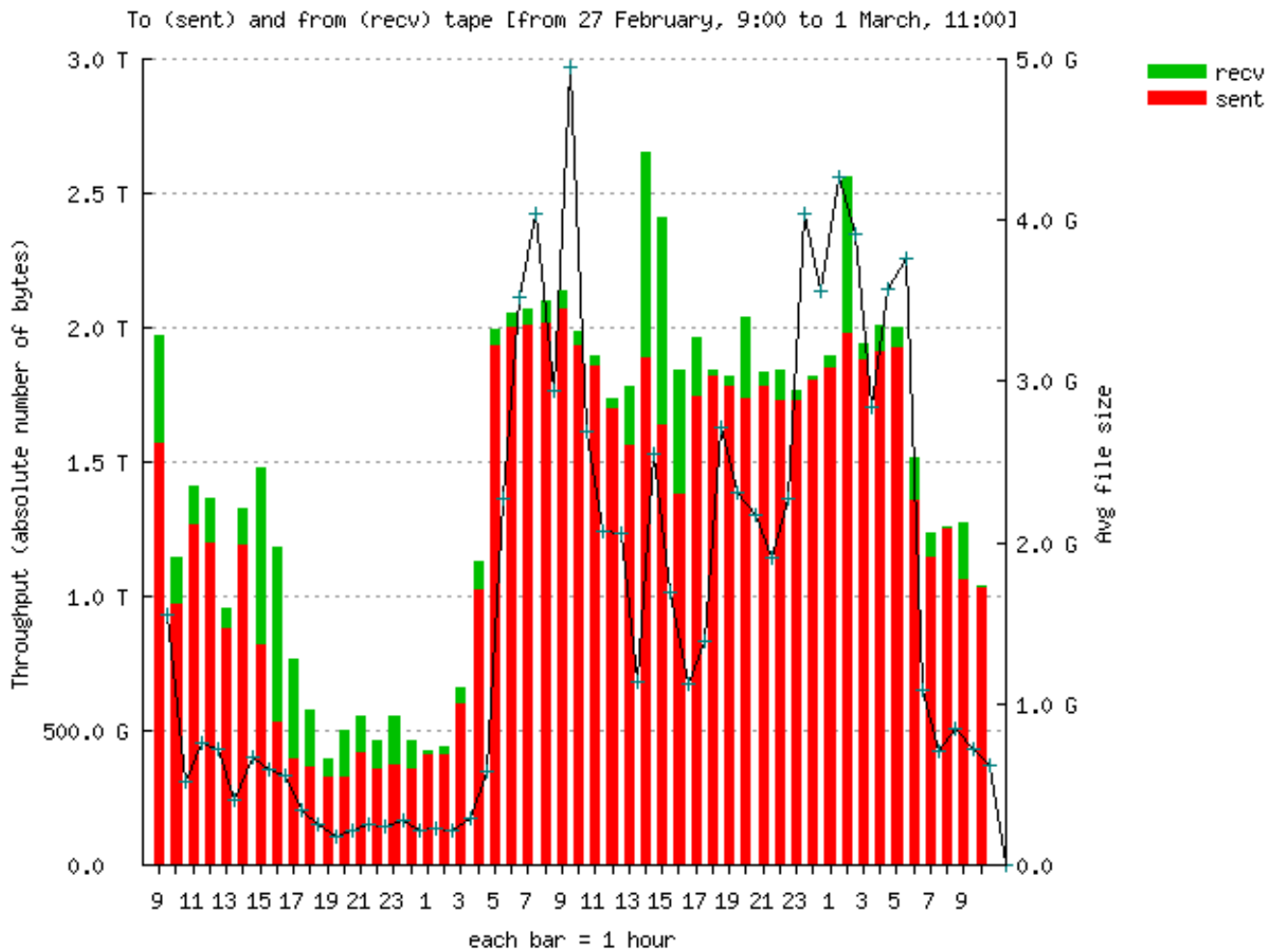
- old setup
  - January to April 2017
- new setup
  - from May 2017
  - improved recall rates per file on new storage
  - better server hardware, faster storage, new tape drives



Tape

Tape performance

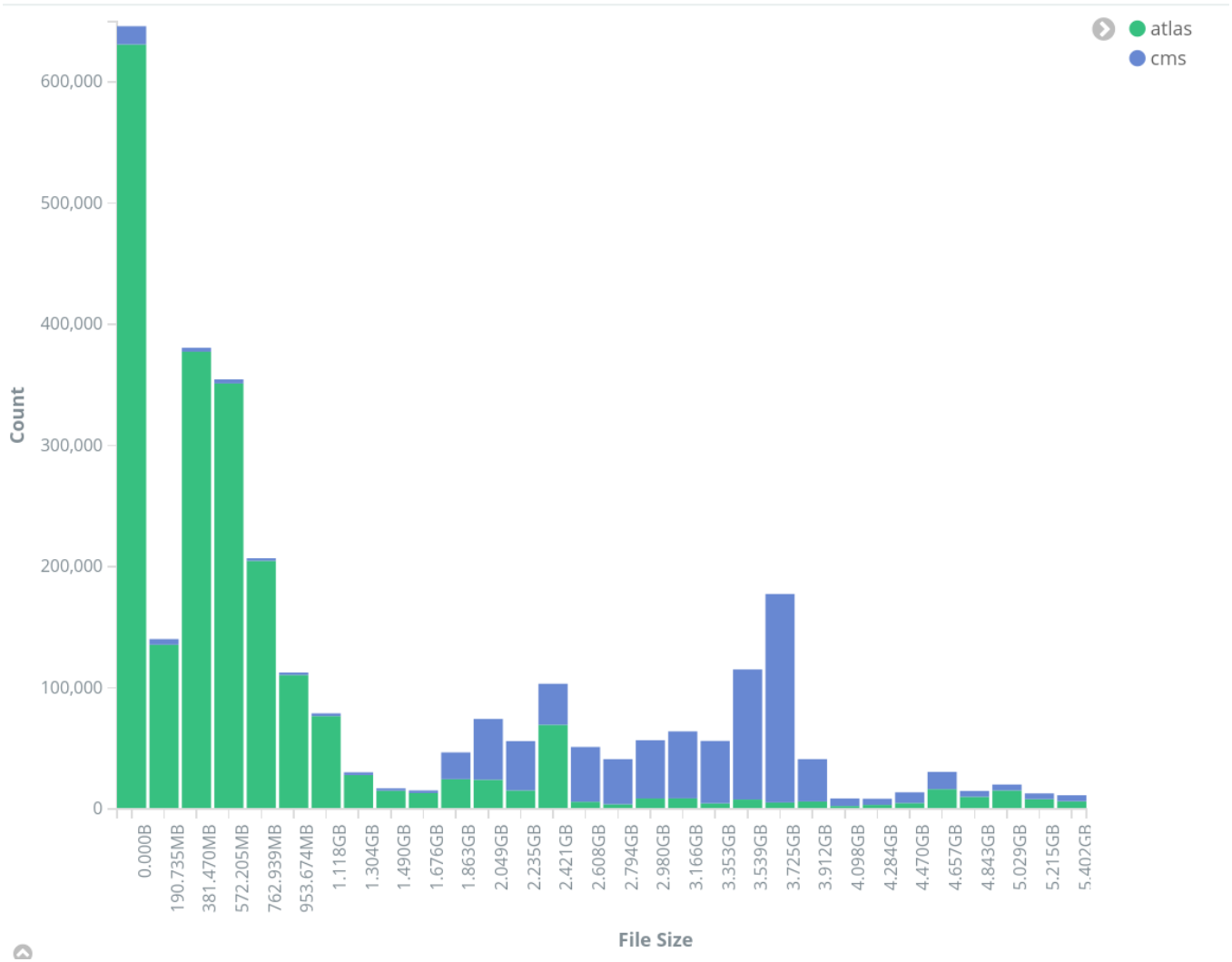
- small files (∼200MB) cause lower throughput (400G/hour for 4 drives)



Tape

file size on tape (ATLAS and CMS)

- distribution of file sizes written on tape in the last 90 days



Tape

Current hardware

- 1 Oracle SL8500 Library
- 17 T10k-C Drives
- 12 T10k-D Drives (+ some remnants of LTO5)

Ongoing efforts

- Additional tape drives to scale throughput with future requirements
- More SL8500 Libraries will be added
- Preparation of HPSS migration
- Close cooperation between user communities and GridKa

Network

DE Cloud T1/T2 sites connected via

- LHCOPN (multiple 10 Gb) - GridKa
- LHCONE (10 Gb) - Desy, Wuppertal
- X-Win (10 Gb) - Munich, Freiburg, Goettingen
- dedicated links to Prague (2x10 Gb), PL (4 Gb) and SK (shared 10 Gb) sites

Miscellaneous

migration to CC7

- I have seen no plans for recent migration

Containers

- FZK deployed Singularity on the whole farm
- connected with move to CC7

Unified queues

- DESY-HH and FZK-LCG2 have both ANALY and production UCORE queues
- Wuppertal has production UCORE queue

Detail in Rod's talk about unified queues

Conclusion

- DE cloud is usually 2nd to 3rd in computing resources contribution
- stable contribution of above-pledge resources
- plenty of free space on tape (but tape buffer accasionally gets full)
- singularity - FZK deployed Singularity on the whole farm

Thanks to all who provided me these informations