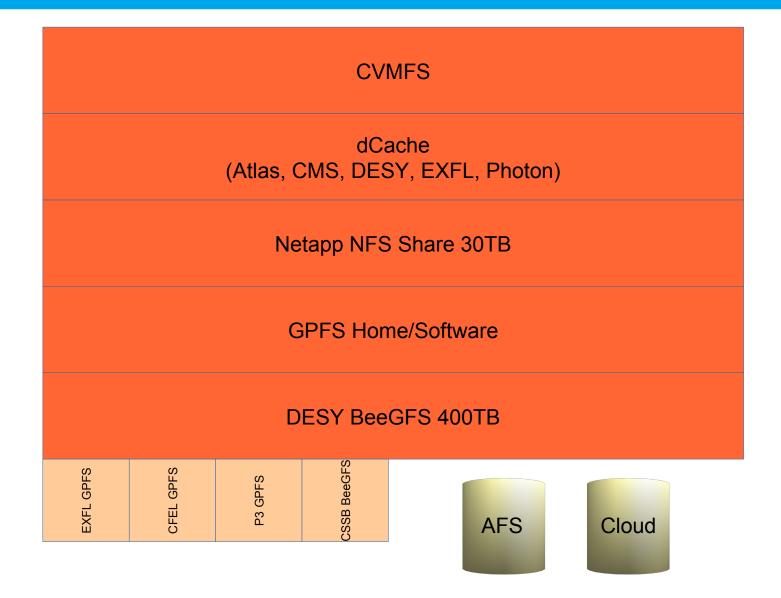# Storage 2 –Te hBg PBitcre

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Storage – The Big Picture

CVMFS

dCache
(Atlas, CMS, DESY, EXFL, Photon)

Netapp NFS Share 30TB

GPFS Home/Software

DESY BeeGFS 400TB

EXFL GPFS

CFEL GPFS

P3 GPFS

CSSB BeeGFS

AFS

Cloud

Storage – The Big Picture

	EXFL	CFEL	P3	CSSB	ALL
HOME	GPFS				
SCRATCH	• EXFL GPFS	• CFEL GPFS	• P3 GPFS	• CSSB BeeGFS	• DESY BeeGFS • Netapp
DATA					
User Software					

CVMFS – The new kid on the block

The CernVM File System provides a scalable, reliable and low-maintenance software distribution service. It was developed to assist High Energy Physics (HEP) collaborations to deploy software on the worldwide-distributed computing infrastructure used to run data processing applications.

- For user read-only
- Not only for HEP
- Cache Data on BeeGFS
- Maybe the successor for AFS software distribution
- Mountpoint *cvmfs*

Storage - dCache

System for storing and retrieving huge amounts of data, distributed among a large number of heterogenous server nodes, under a single virtual filesystem tree with a variety of standard access methods.

- We mount all dCache instances on workgroup and slurm nodes if requested
- We recommend always to stage data first on a cluster filesystem (beeGFS, GPFS)
- Mountpoint *pnfs* (automounter)
- dCache can give access to different type of space (tape, disk, with or without additional copies) for details
  - contact osm.service@desy.de
  - see http://www.dcache.org

Storage - Netapp

- Our NFS share
- Mountpoint */data/netapp*
- High quality storage. Not very fast but reliable.
- Revamp of the service
  - Completly filled for over 1 year
  - Unclear usage
  - Old netapp hardware instance
- We will have a new volume on a new netapp
- We will not automatically migrate the data

Storage - BeeGFS

BeeGFS (formerly FhGFS) is the leading parallel cluster file system, developed with a strong focus on performance and designed for very easy installation and management. If I/O intensive workloads are your problem, BeeGFS is the solution.

- Phase out old Hardware, and get additional 200TB.
- Support contract with the vendor.
- 2nd instance exclusive for cssb
- For the desy part still scratch space
- Mountpoint
  - */beegfs/desy*
  - */beegfs/cssb*

Storage – BeeGFS policy

- No backup
- Data which belongs to expired accounts will be deleted
- **when** space is running short
  - we will start to scan the fillesystem for files older than 3month
  - we will send you a list of files which are affected, these files will be deleted after a month
  - you can send us a list of folders to exclude from scan

Storage – AFS

- No kerberos ticket and/or AFS token forwarding in Slurm
  - Not only a limitation. AFS is not well suited for HPC
- The future of AFS is a little bit brighter than last year
- We recommend still not to use AFS directly in your jobs

Storage – Cloud

ownCloud is a suite of client–server software for creating file hosting services and using them. ownCloud is functionally very similar to the widely used Dropbox. It also supports extensions that allow it to work like Google Drive, with online document editing, calendar and contact synchronization, and more. (wikipedia)

- No running sync client for the workgroup server or slurm nodes
- Command line client to sync parts of your Desy Cloud space into your home folder
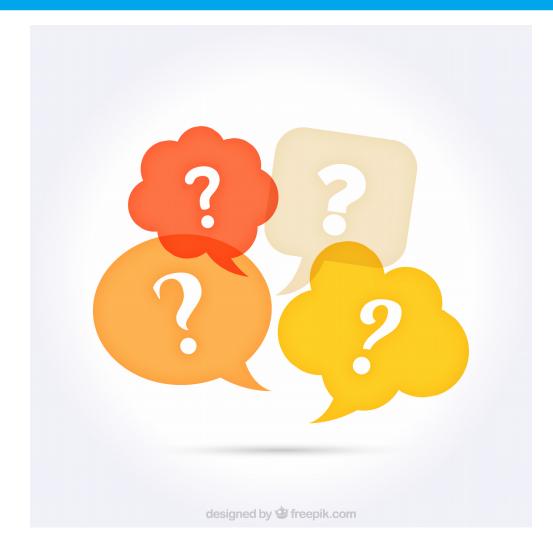- See https://it.desy.de/dienste/speicherdienste/desycloud/index_ger.html

Storage – No DUST in maxwell

- At the moment we don't plan to mount the NAF2 scratch space in maxwell
- But maybe sshfs is simple way to accomplish this ;-)