

Current & future IT infrastructure

Thanks to J. Jacob and P. Lejeannic working in GANIL today !

Summary

- Short status of actions
- Infrastructure evolution in GANIL
- CEPH status

Short status of actions

Standard evolution

- Adding one OSD server in CEPH cluster to have replica 3
 - details in few slides
- CEPH upgrade from Jewel (V10.2) to Luminous (V12.2)
- Adding 11 anodes
- Working on an automatic installation system (ansible)

Orsay evolution

- J. Jacob and P. Lejeannic will be in a new service
- Trip in GANIL of G. Philippon 2 weeks ago
 - Long discussions on the possible future

Infrastructure evolution

Old hardware ... short term actions

- Electronic switches bought for installation in LNL
- Services machines are 7 years old
- Linco compliant servers still in production

Servers for future electronics

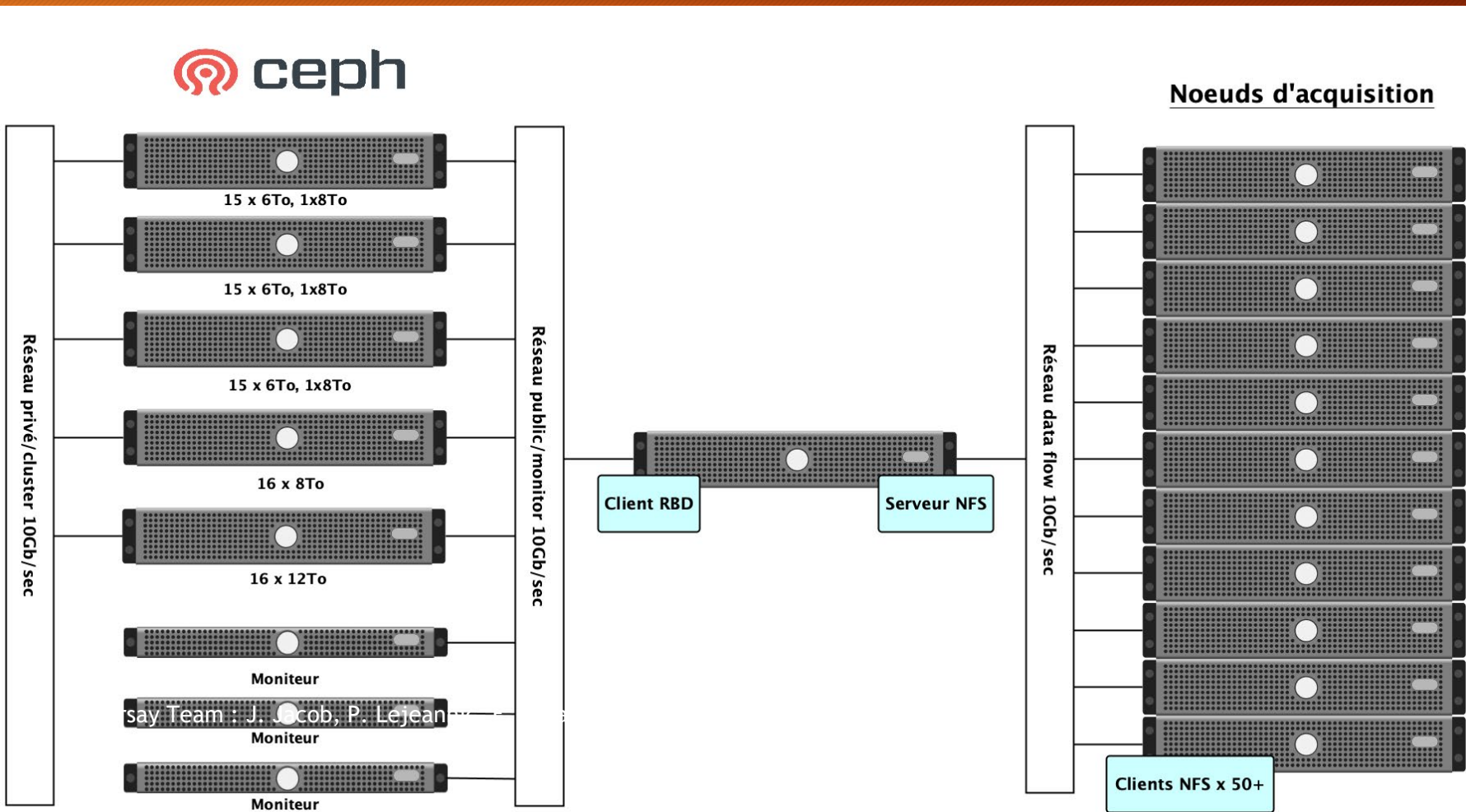
- DAQ evolution ?
 - Needs GPU ?
 - Needs data distribution to avoid cache miss ?
 - ...
- Need discussion on fibers between rooms
 - Use of patch panels !!!!
 - 10 Gb interconnections between rooms
 - fibers switches in DAQ room
 - Not maximal fiber numbers reduction
 - 100 Gb interconnections between rooms
 - fibers switches in both room
 - 10 times less fibers between rooms

Network evolution

- Important to understand sites constraint
- Lot of solutions, but need to make adaptations

CEPH status

CEPH infrastructure in GANIL



Usable space :

- 2014 : 110 TB
- 2016 : 150 TB
- 2018 : 170 TB
- soon : 300 TB

Replica 3 (instead replica2)

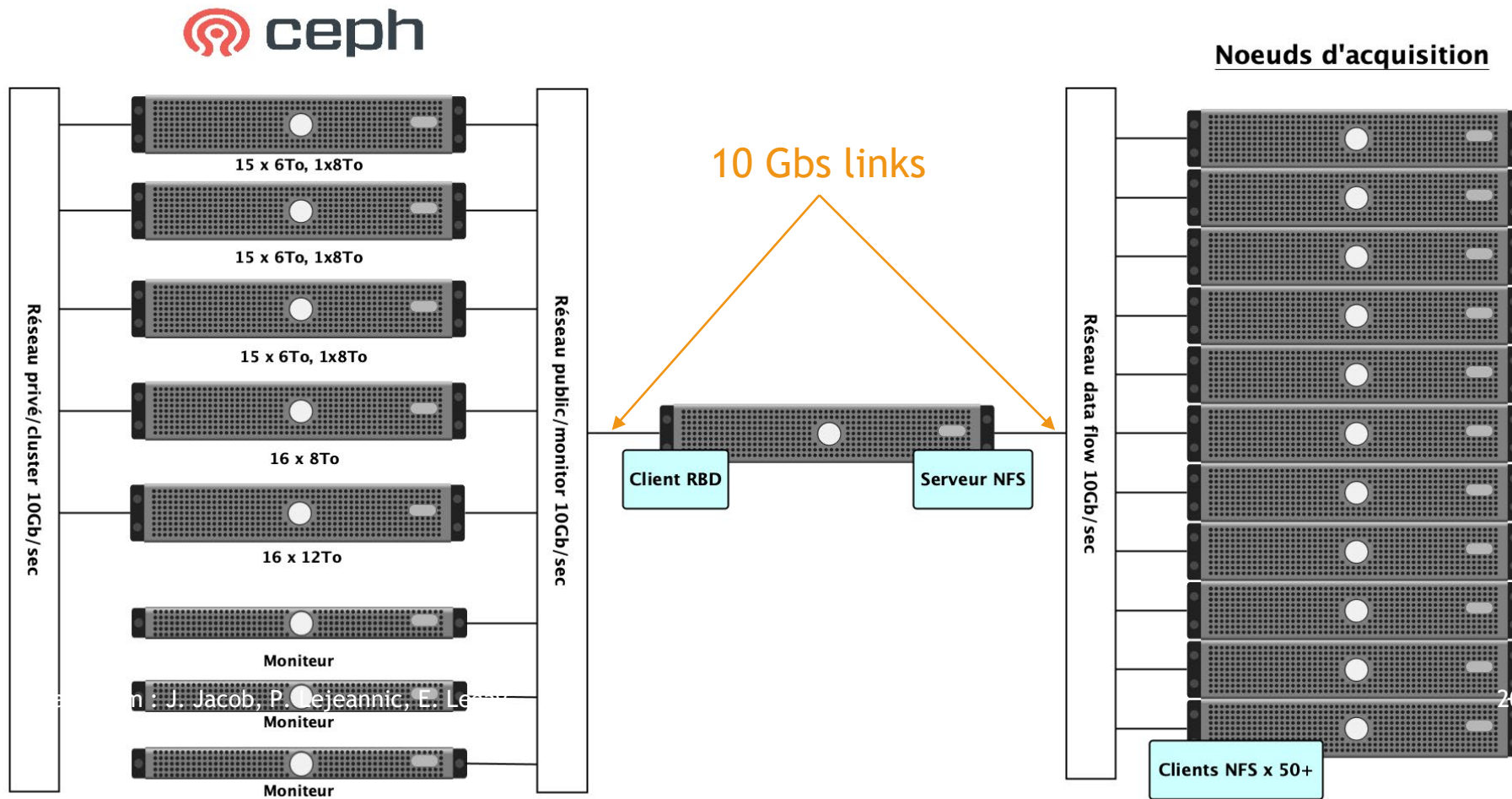
- Each data is written 3 times ... waste of space yes ;)



Going to erasure coding

- More or less similar to raid
 - Replica 3 : 6 disks used for 2 available
 - Erasure coding : 6 disks used for 4 available
- Need to create new volume with new policy ...
- Need to have space on disk ;)
- Migration will takes time

Now talking about bottlenecks ...



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26th AGATA Week

Solution : CephFS

- Remove NFS server
- Change Ceph disk format (from RBD to cephfs)
 - One more migration ;)
- Modify network configuration
 - Ceph public network and DAQ network have to communicate
- Remove all nodes in squeeze distribution

Orsay Team : J. Jacob, P. Lejeannic, E. Legay

2011.02.06 ... 

- [The next release of Debian is codenamed "bullseye"](#) — no release date has been set
- [Debian 10 \("buster"\)](#) — current stable release
- [Debian 9 \("stretch"\)](#) — oldstable release
- [Debian 8 \("jessie"\)](#) — oldoldstable release
- [Debian 7 \("wheezy"\)](#) — obsolete stable release
- [Debian 6.0 \("squeeze"\)](#) — obsolete stable release
- [Debian GNU/Linux 5.0 \("lenny"\)](#) — obsolete stable release

And after ?

- Using all possibility of CEPH cluster ;)
 - Dellyfire (home of visu, /agata, /agatalogs)
 - Analysis disk space
- Goal is to reduce the number of small disk server
 - to increase space density
 - to optimize computing nodes consumption