

DAQ Infrastructure

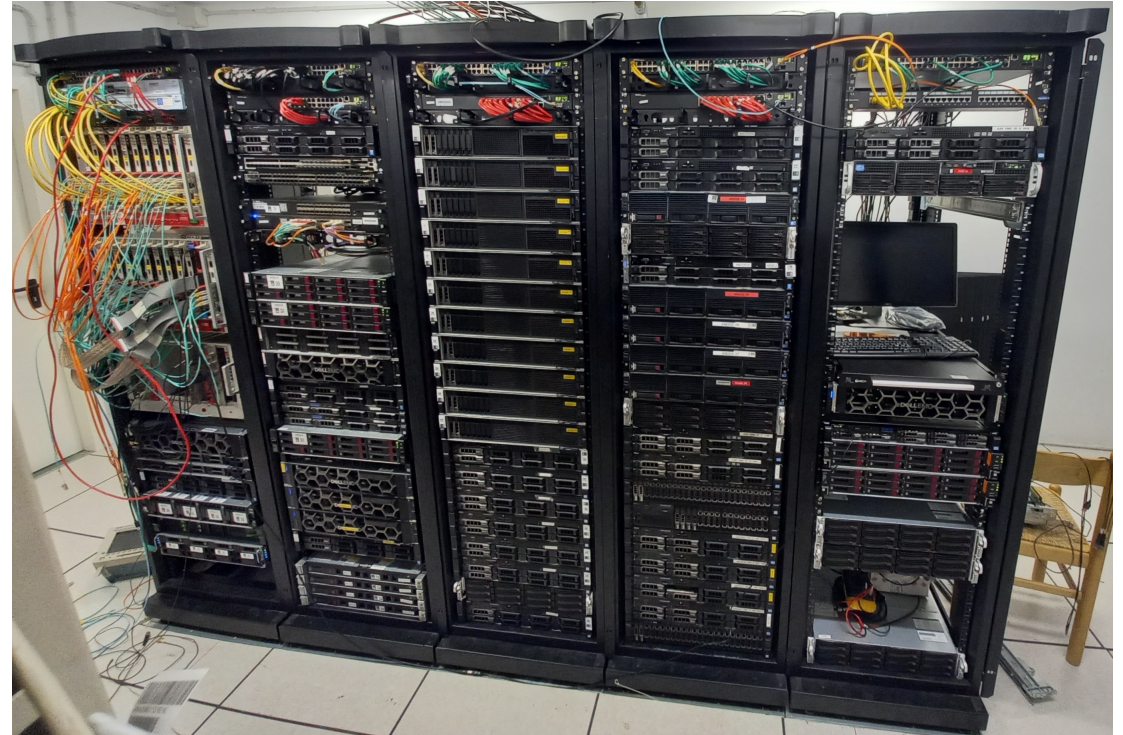
At LNL and at Orsay

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The Agata DAQ at LNL

- 60 machines in the VAX room :
 - 40 acquisition nodes :
 - Debian 8 Jessie (3.16 kernel) : 35
 - Debian 10 Buster (4.19 kernel) : 5
 - 7 analysis server
 - Ceph storage cluster (9 servers), 300TB filesystem
 - Proxmox VM servers, spare storage...
- 10 switches





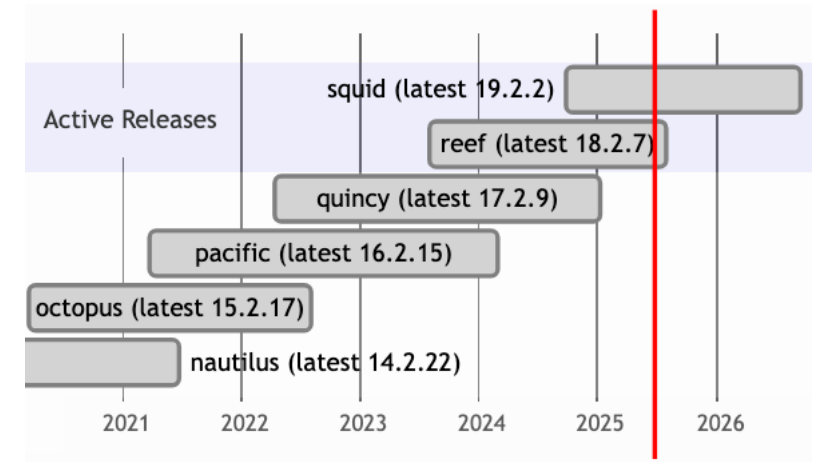
The Agata DAQ at LNL - Upgrades

Last may :

- Ceph storage cluster :
 - 2 new disk servers (2 x HPE Apollo 4200 – 260 TB)
 - XFS file system extended to 300 TB
 - Ceph upgrade from Pacific 16 to vers Quincy 17.2.8
- new spare storage server
- 4 new analysis servers (HPE n2600 server)
 - + 1 Dell 4148 FC switch to connect to datas at 10 Gb/s

Upcoming :

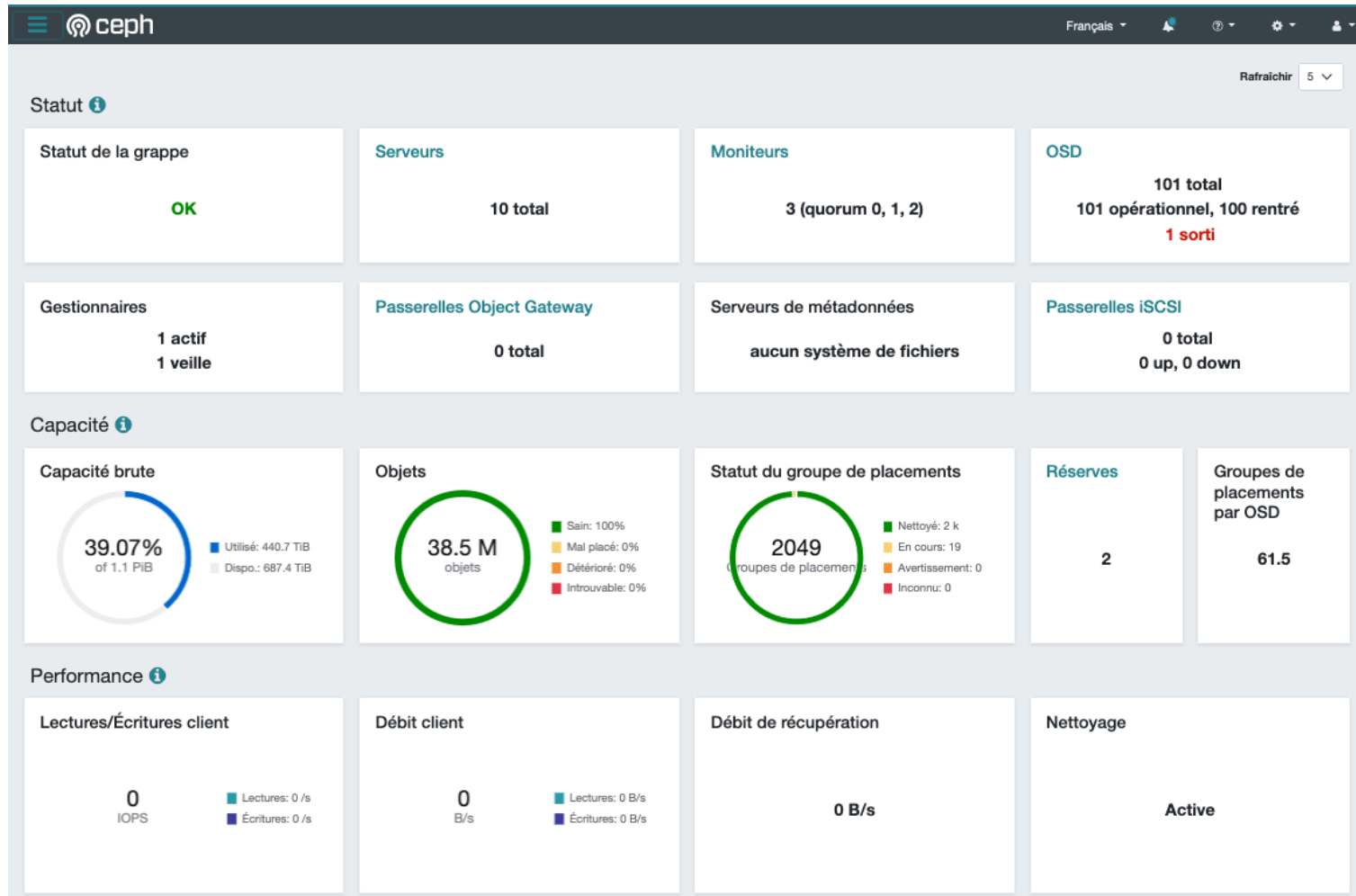
- Ceph : upgrade to Reef version, remove oldest servers, *use of a CephFS data pool*
- Installation of Phases 2 acquisition nodes, and high-speed network switches
- Replace Xymon monitoring with CheckMK, to improve network monitoring



Last Ceph versions

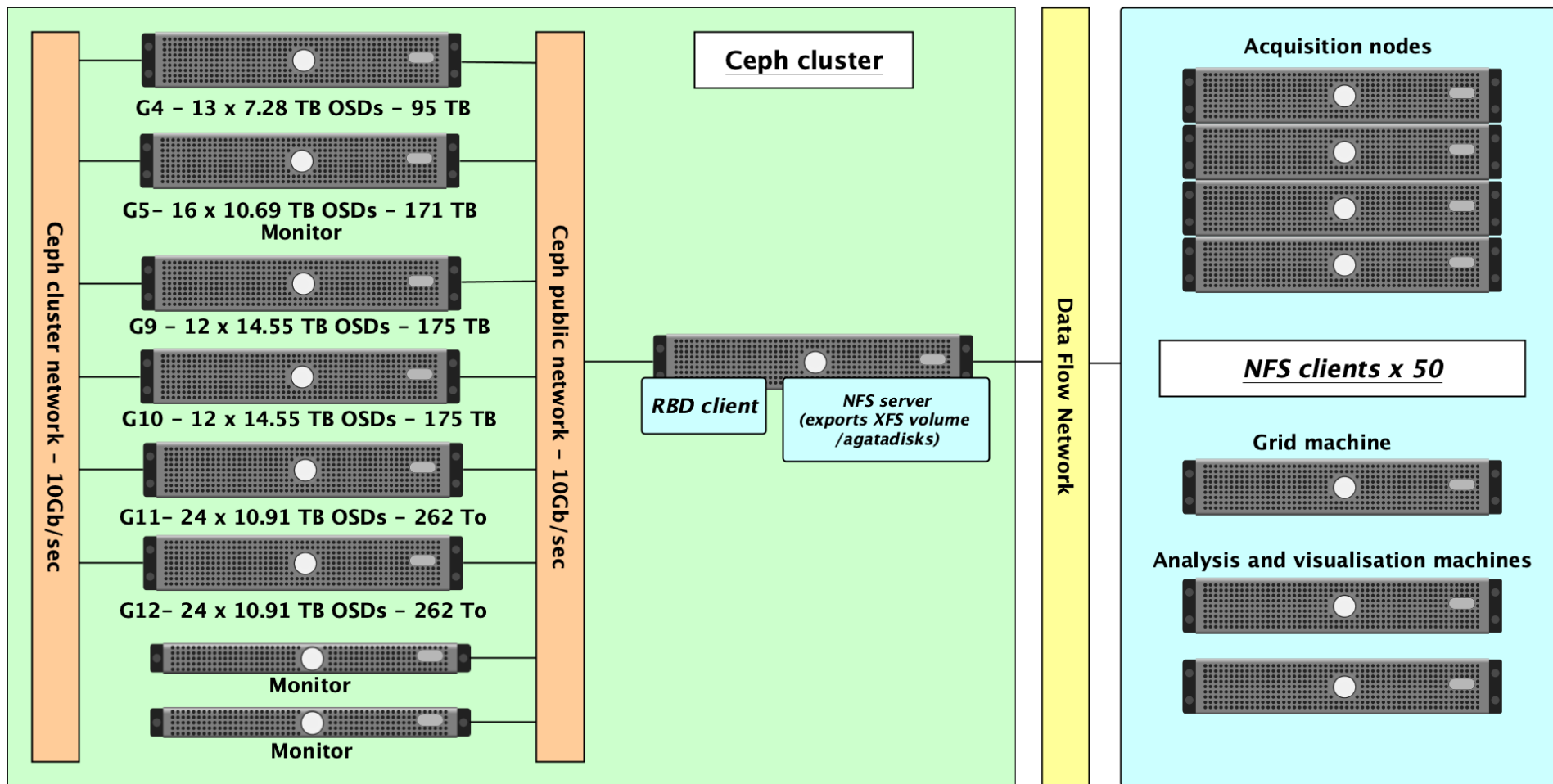


Ceph Quincy – Dashboard



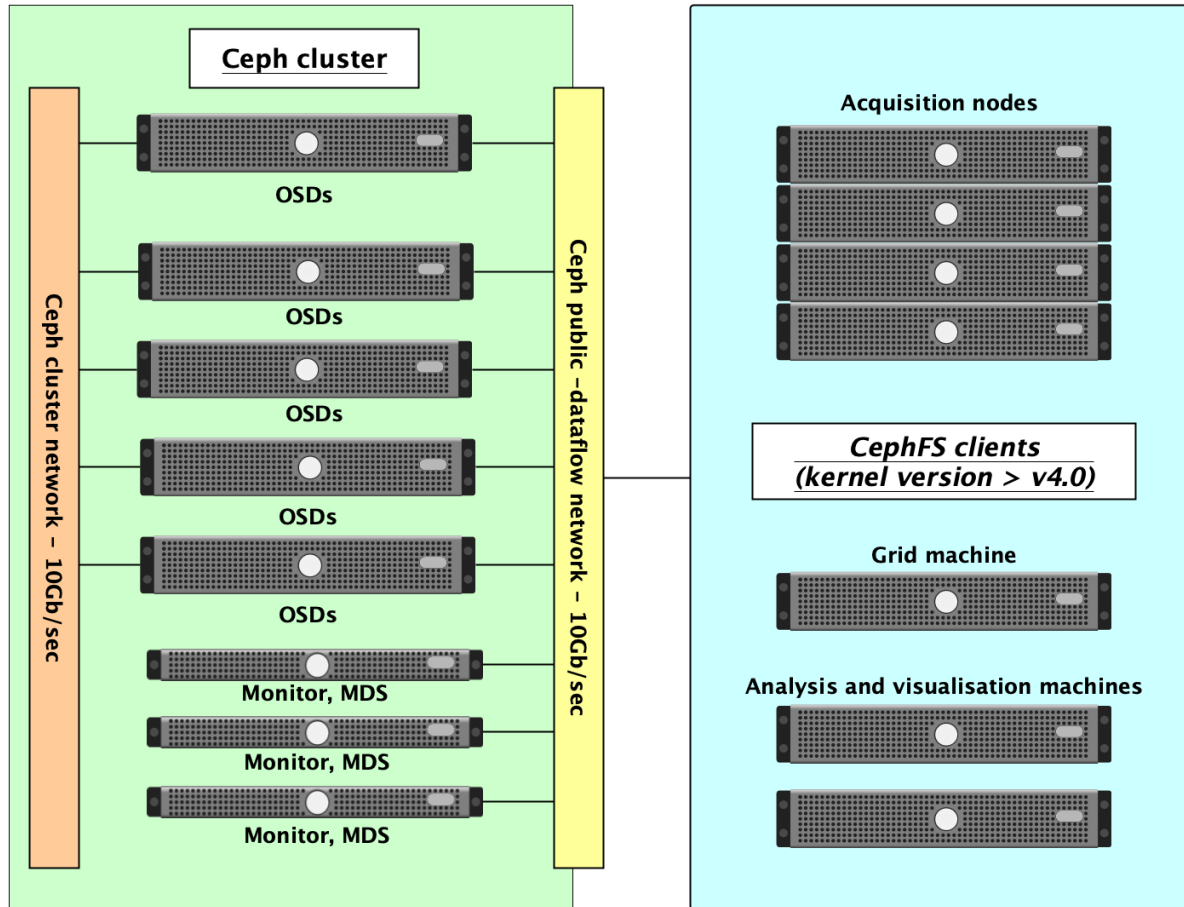


Ceph architecture at Legnaro





Ceph architecture, using CephFS

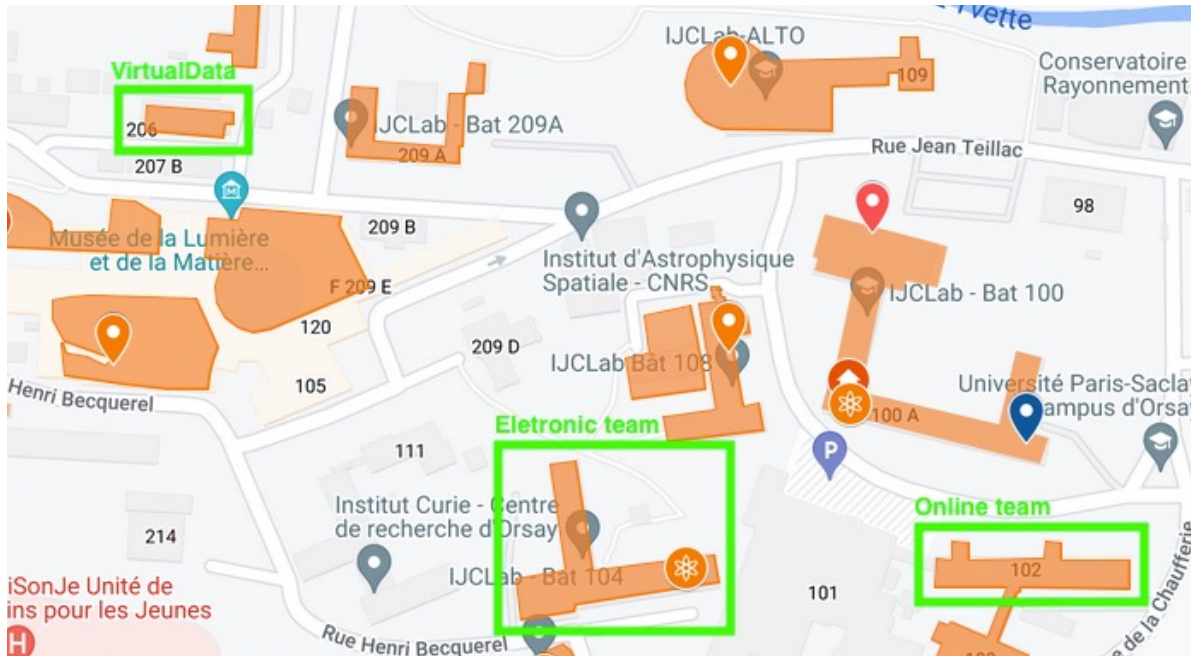


- CephFS : POSIX-compliant filesystem
- CephFS driver is part of recent Linux Kernel
- Each client communicates with the Meta Data Services, and access directly and parallelly the different storage servers
- More resilient and scalable
- Better performance



Agata DAQ at Orsay

- Used for R&D
- VirtualData datacenter + the buildings hosting the electronic and online development groups
- High-speed connexion (100 Gb/sec)





- Virtualdata datacenter (<https://virtualdata.fr>)
 - 9 HP DL360 (Xeon Gold 5317) => *snode020-028*
 - 5 HP DL360 (Xeon Silver 4310) => *snode029-033*
 - 1 HP Apollo n2600 (Xeon Silver 4314) => *snode034-037*
 - 1 HP DL365 (AMD Epyc 9124) => *snode*
 - 1 HP DL360 (Xeon Gold 5416S)
 - 1 Dell P7920 - GPU : 2 x Nvidia RTX A500
 - 3 nodes Ceph cluster : system upgrades and CephFS tests

First acquisition nodes will go to LNL, 15 new have been ordered.

- Online dev building
 - 8 nodes (*snode000-007*), Dell C3400
- Electronic building
 - 4 nodes (*snode008-011*), Dell C3400



Grid connexion

- Certification authorities certificates has been upgraded on the grid machine 'agatagrid'
- Authentication to the VO Agata uses an Indigo-IAM (*Identity and Access Management*) server
<https://agata.pages.in2p3.fr/handbook/data/grid/grid>

Elog electronic logbook has moved : <https://elog.ijclab.in2p3.fr/AGATA>



THANK YOU