CCIN2P3

Centre de Calcul
de l'Institut National de Physique Nucléaire
et de Physique des Particules

cnrs

CMS Network preDC24 tests

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Pre-Network test to prepare DC2024

Network tests to prepare the CMS DC2024

- **to “benchmark” the site**
- **to help to decide on the final DC24 objectives (site by site according the CMS global requirements)**

CMS will let people know when the test starts at their site so they can provide feedback to CMS

- **a summary has been discussed in the Offline & Computing Week of October (first week)**

Quick monitoring overview at CC-IN2P3

"User" monitoring mostly taken from the experiment side

- more convenient because use specific collaboration variables (user DN, id jobs, …)
- but does not give much information about what's going on at the site

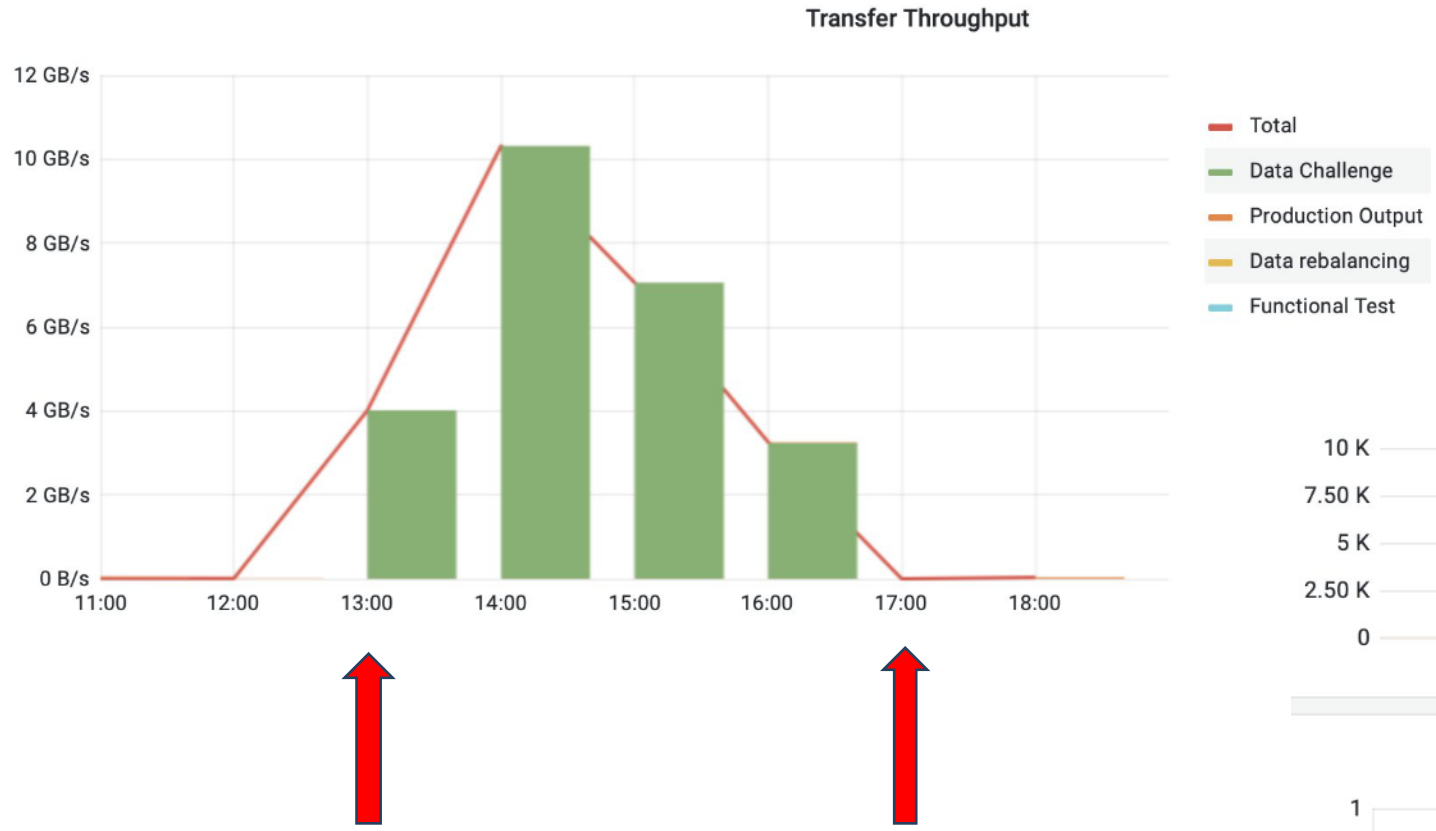
Service oriented monitoring

- network
  - based on LibreNMS
- storage (here, dCache)
  - based on ElasticSearch/Grafana/Kibana
- compute

Finally I have got a notification on September, 26th, 2PM that the corresponding FTS request has been submitted

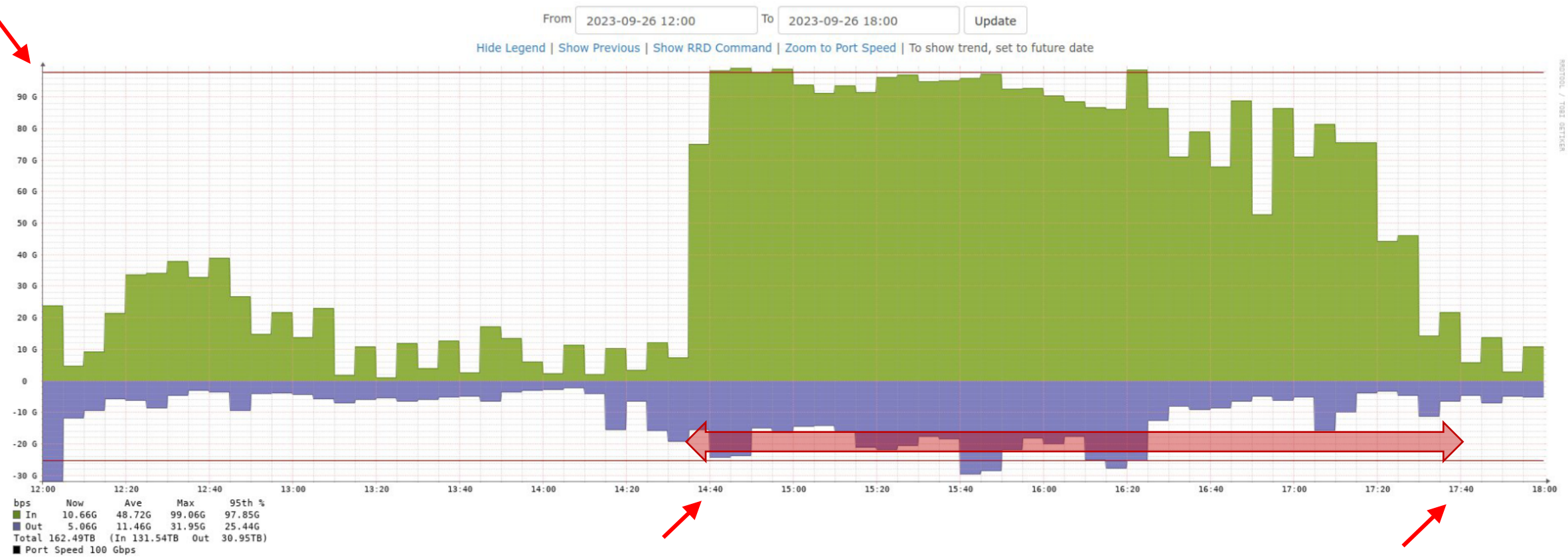
- 89TB dataset placed at CERN, previously copied to RAL and T2 IC for tests. No part of it is at IN2P3

Transfer monitoring from CMS (FTS)

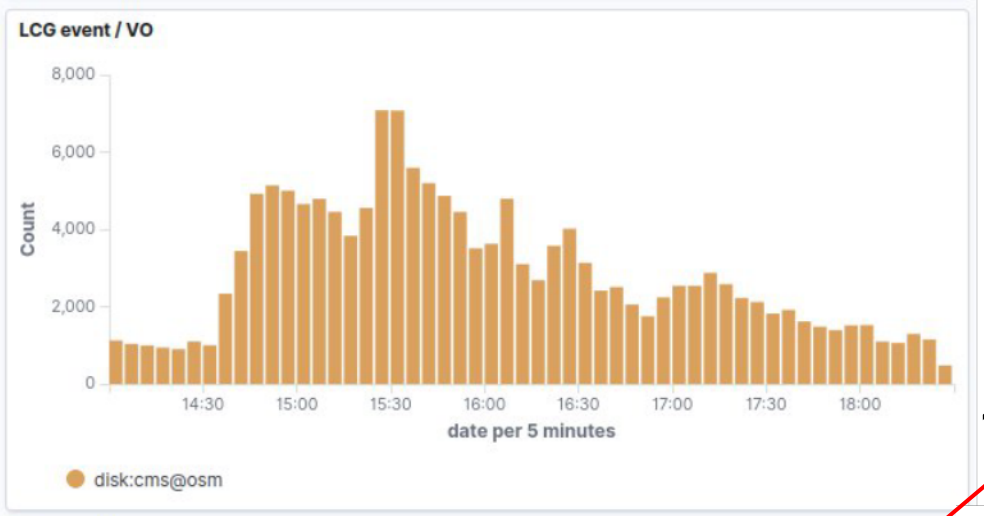


What can we see from CC-IN2P3? (I)

CERN -> CC-IN2P3 data through LHCOPN
Current throughput limit : 100Gb/s



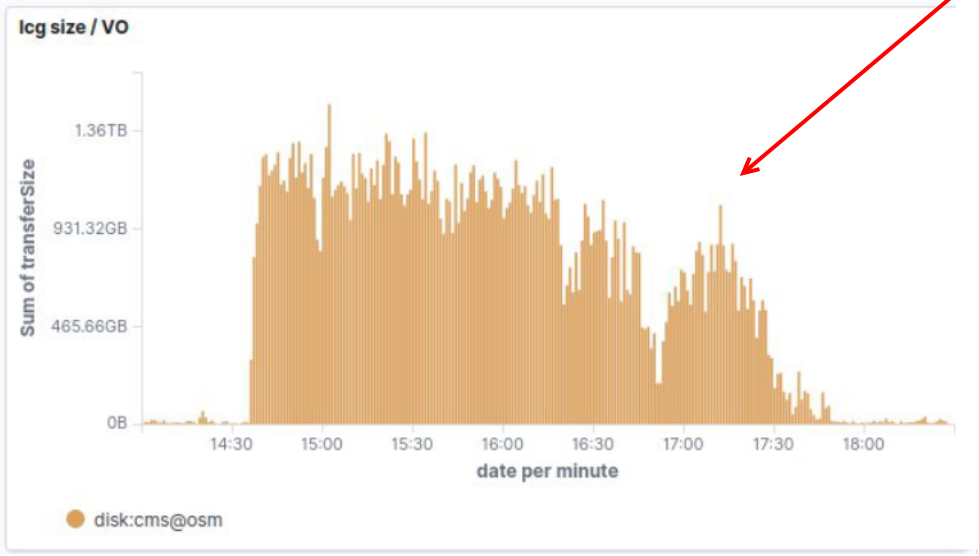
What can we see from CC-IN2P3? (II)

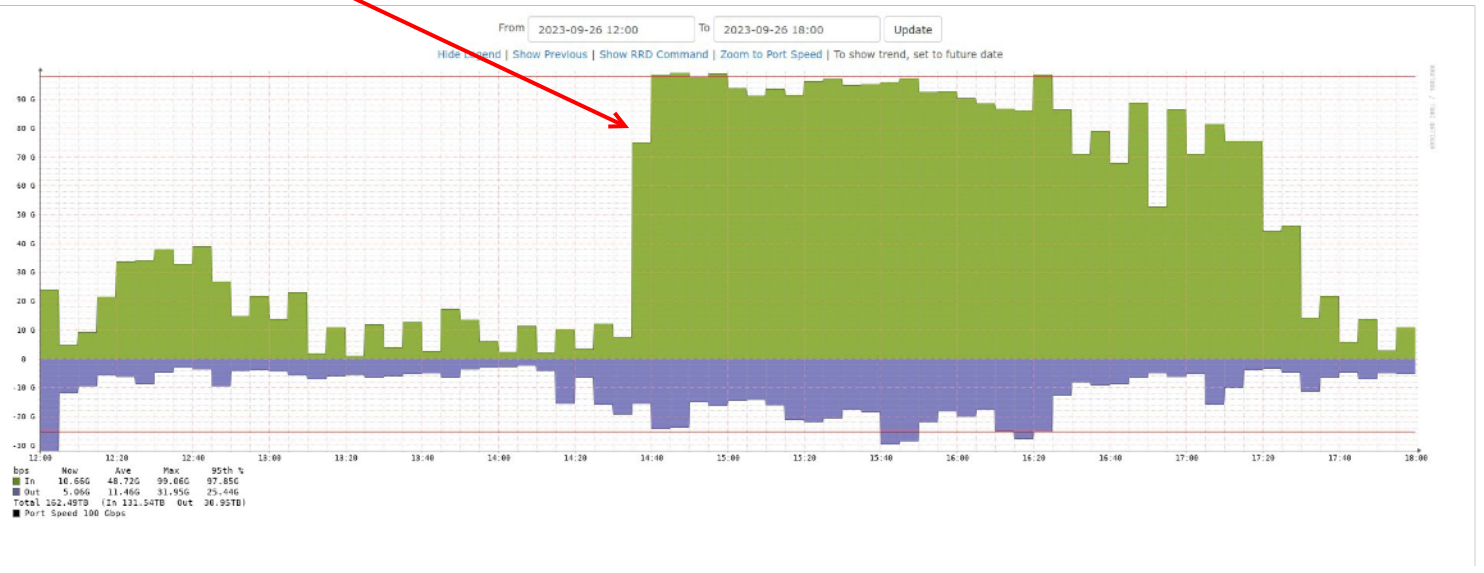


Data written into dCache
'dCache point of view'

~same shape

Network 'point of view'



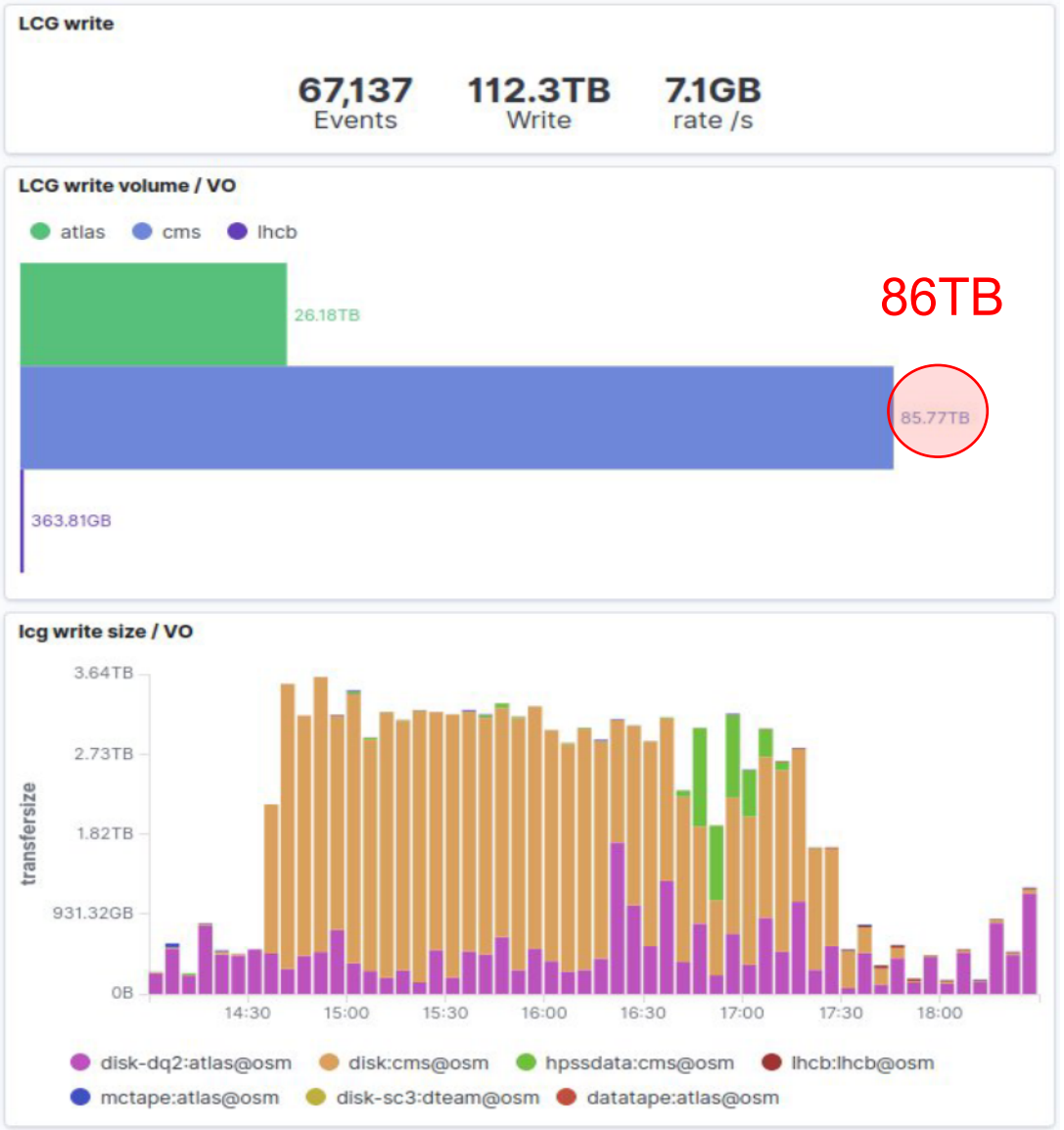


What can we see from CC-IN2P3? (III)

- The test filled up all the LHCOPN bandwidth (100Gb/s)
- The data were copied right away to dCache (see previous slide with both ‘points of view’ network Vs dCache)
- No bottleneck seen, though the network link was saturated for ~3 hours

Note that the LHCOPN link as well as dCache are shared services

- Low activity from the other VOs



Results from this preDC24 Network test

Tier 1 tests

- Transferred the same 89TB dataset sourced at CERN to each T1
- Asked for info from T1 sites
- Compared transfer rate with expected rate

Site	Expected limit (GB/s)	SIte network monitoring peak (GB/s)	FTS monit peak (GB/s)
T1_DE_KIT_Disk	12.5	13	10.5
T1_ES_PIC_Disk	12.5	12.5	9
T1_FR_CCIN2P3_Disk	12.5	12.5	10.3
T1_IT_CNAF_Disk	25	12.5 ±	4.8
T1_RU_JINR_Disk	5-10	Not provided	3.2
T1_UK_RAL_Disk*	10	5.5	5
T1_US_FNAL_Disk	50	Not provided	5.7

* combined test with ATLAS

± network monitoring checked at later date

Conclusion

- CMS Network preDC24 test to prepare the DC24
  - “benchmark” the site
  - make sure that there is not obvious bottleneck or issue

- Notification was sent after the FTS request submission
  - need to get real-time information
  - require various monitoring: network, storage, ...
  - need to disentangle the various contributions

- This is not the end...
  - new network test today, starting 10AM, combining CMS and ATLAS
  - To follow...

Thank You ! Questions ?