

# DC 2021

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GDB

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# DC2021

- Provisional date: ~~last week of September~~
  - Circulated to experiments a doodle
    - rucio DB upgrade on the last week of September
    - Last two weeks of October there are beam tests
  - Challenge will be in the **first or second week of October**
- Transfers continuous over a week
  - Transfers should be easily identifiable
  - Transfers should be disk to disk
- ~~All experiments~~
  - **Experiments have different targets and expectations**
    - Not all experiments interested in a purely network challenge
    - Two only want to un tape challenges



# Evolution of the situation

- To run both network and tape challenges without doubling the organisational effort it was proposed to run them back to back in October
  - Combined tape challenges need a much larger organisational effort and it might not be possible to do it in this way
  - Not least because CERN doesn't have all the hardware in place
- Proposal of building up to a full tape combined challenge in October
  - Few days only network
  - Few days including tape at T1 only
  - Follow up with full challenge including CERN later in the year
- None of this has been decided
  - Meeting with experiments representatives is being setup for the end of the month



# Network & tape requirements

- Network data challenge parameters are in the [HL-LHC document](#)
  - Those numbers are calculated using raw data transfers so still somewhat involving tape
- Tape challenges
  - A request for information about tape systems has gone [out to Tier1s](#) from Julia Andreeva
    - A couple of questions will be added there about bandwidth and T1 network monitoring
  - A request for information about tape requirements has gone out to [experiments](#) from Maria Arsuaga



# Ongoing work for the network challenge

- Even if the participation the details of the challenge are not fully defined yet work is ongoing
- CMS and ATLAS defined how to run their challenges
  - Injecting data in parallel with production activities
- ATLAS will use production data and production RSEs
  - Current testing was done using user spaces at every site
  - The challenge will happen using production spaces which allow for larger size
- CMS will use test data and test RSEs that they have setup at almost every sites
- Both centralised service to inject the data using a common account
  - Datasets selection for both can also be done from here
    - Aim to automatize as much as possible
- Sites don't need to do anything for this
  - Might change with tape challenges

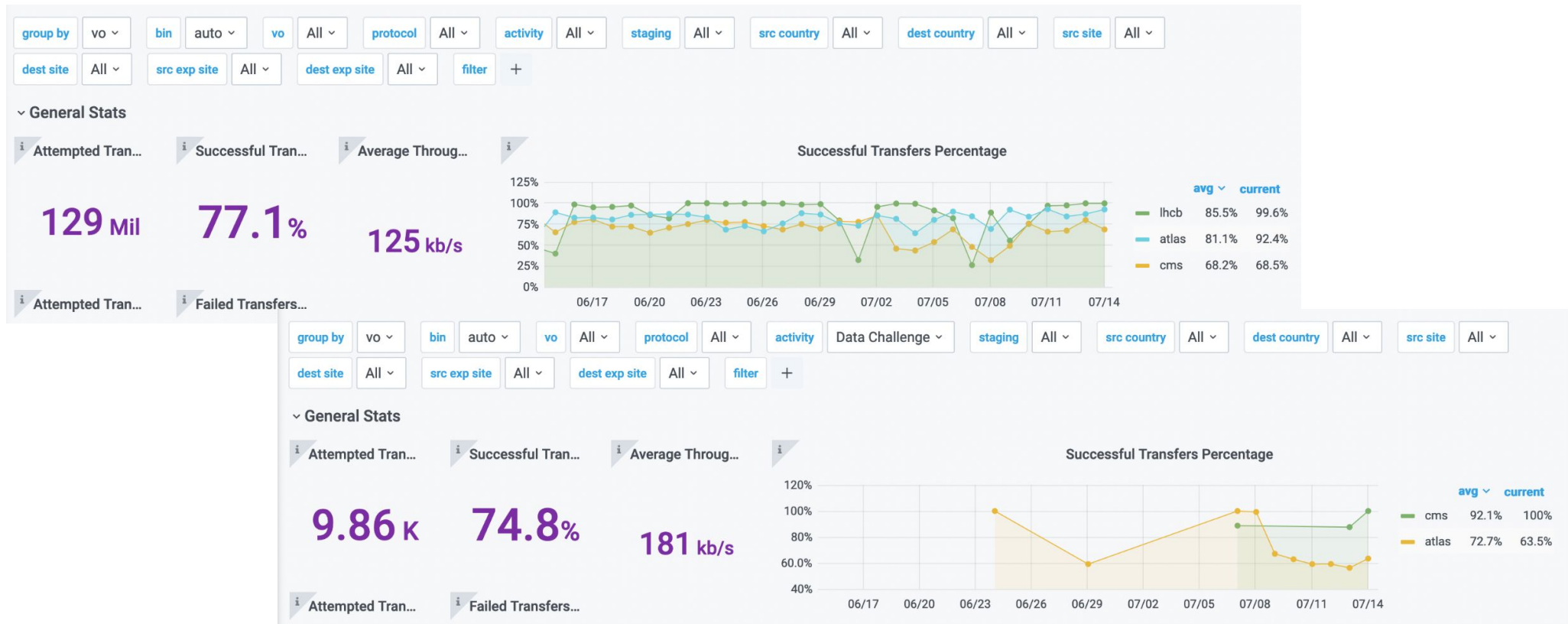


# Monitoring dashboards

- In grafana there are several dashboards
  - [WLCG FTS](#), [WLCG xrootd](#), [WLCG combined](#), [FTS FTS](#)
- All have pros and cons and were built with a use case in mind mostly accounting
  - [selectors](#), [grouping](#), [tables](#), [plots](#)
- Throughput numbers in all dashboards using FTS data need to be [corrected](#)
  - We opened a ticket for this [RQF1838225](#)
- [WLCG DC](#) will use the same data but will try to include needed things for this challenge and future challenges
  - For example now that we are also talking about tape and we might use the same monitoring we are going to include that too
  - [ipv6 selector](#) is also a possibility



# Currently



- ATLAS/CMS added activity in rucio which pushes it to FTS
  - LHCb also can add the Data Challenge activity and push it to FTS ([DOMATPC-14](#))
- ATLAS transfers are currently SRM+https tests with INFN-T1 tape test end point
  - Tape challenges monitoring possible



# Bandwidth information

- Important to have the sites bandwidth to understand how much of it we occupy
  - Some sites are worried about this because the bandwidth is shared so we have to be careful about how we do present it
- Idea: create a similar dashboard to the one we have for the throughput but with throughput/bandwidth ratio. No semaphore just different shades of blue
  - But would give an idea of occupancy

Volume Matrix [ATLAS]

	Volume Transferred (ATLAS)								
Src\Dst	wuppertalprod	praguelcg2	pic	mainz	ifae	WT2	UTA_SWT2	UNIBE-LHEP	UNI-
wuppertalprod	3 GB	9 TB	8 TB	162 MB	3 TB	582 GB	15 GB	4 TB	
praguelcg2	5 TB	918 GB	8 TB	412 GB	3 TB	2 TB	108 GB	1 TB	
pic	10 TB	12 TB	122 TB	68 GB	80 TB	2 TB	6 GB	115 GB	
mainz	141 GB	731 GB	17 GB	NO DATA	349 GB	163 GB	589 GB	21 GB	
ifae	2 TB	5 TB	15 TB	235 GB	369 GB	2 TB	93 GB	131 GB	
ZA-WITS-CORE	175 GB	35 GB	413 GB	NO DATA	3 GB	764 MB	3 GB	31 kB	
WT2	100 GB	1 TB	1 TB	66 GB	746 GB	446 GB	15 GB	307 GB	
UTA_SWT2	119 GB	219 GB	319 GB	31 GB	843 GB	92 GB	NO DATA	31 GB	
UNKNOWN	NO DATA	1 GB	199 MB	NO DATA	182 MB	294 MB	NO DATA	NO DATA	
UNIRF-I HFP	2 TB	3 TB	6 TB	15 GB	1 TB	482 GB	10 GB	NO DATA	





# Network Information

- Ongoing work to add network topology to CRIC
  - WLCG Networking group already discussing network topology integration in CRIC

RCSite	NOC	NetMonURL	LHCONE_AUP	IP Prefixes	Comment(Physical Site)	Subnet_ASN	Subnet_Name	Network Provider	WAN Bandwidth	LHCONE Bandw	LHCOPN Bandw	VO_List
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- Bandwidth for monitoring could be pulled from CRIC eventually
- There is also the proposal to add information to a repository with more detailed information with a full description of [the site network monitoring](#) (S.McKee)
  - Full description definitely helps understanding problems
  - [wlcg-doma repository](#)
    - Some site admins who were asked for feedback on this objected that this is yet another place where to update information



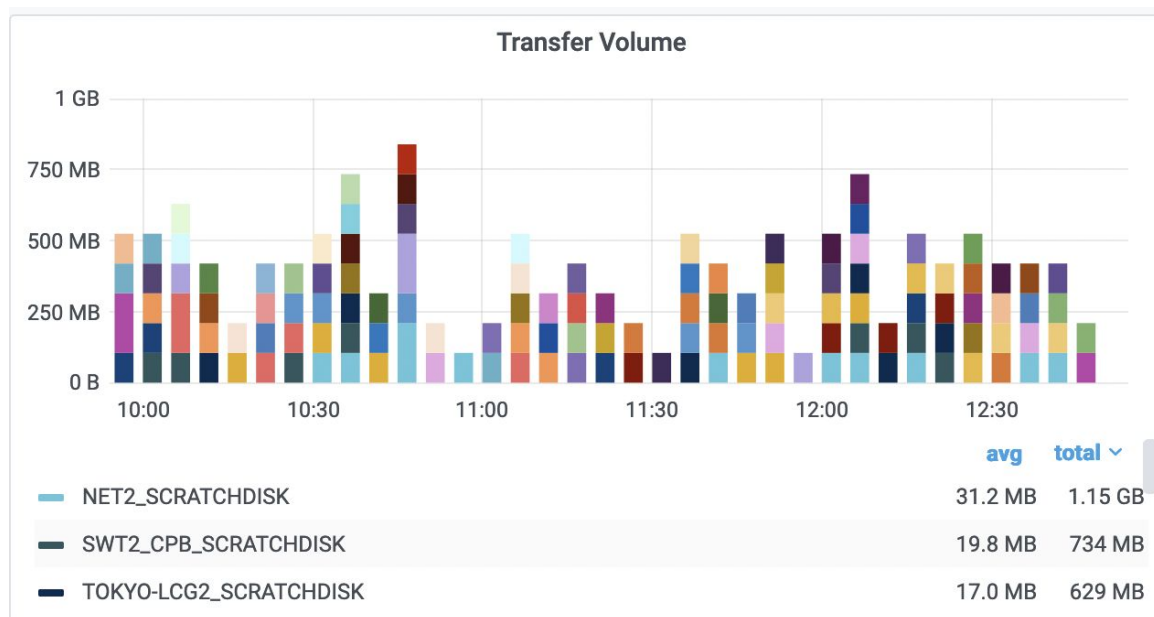
# xrootd monitoring

- xrootd monitoring review also started
- Aim is to eventually have something more similar to FTS to make it easier to have common dashboards
- And to make it more robust: UDP over WAN causes loss of information
  - It is not possible to change the monitoring on xrootd without significant recoding
- General Plan is to replace the GLED which uses UDP packets with a thin layer of UDP -> TCP translator on the storage which then sends TCP packets to a collector
  - dcache xrootd needs also some development
  - For this we need a review of what is actually needed
  - This method can also be used for Xcache
- Still to be discussed how many collectors and where they should be
  - Avoid extra services at sites



# HTTP-TPC commissioning

- Current status
  - ATLAS 87% done missing 8 T2, 1 T1
  - CMS 64% missing 18 T2, 1 T1
  - LHCb 80% missing 3 T2s, 1 T1
- As part of DOMA we are also commissioning SRM+http
  - Aiming at tape challenges
  - But at the moment ATLAS testing activity
    - Belle also interested in this though



All sites transferring to INFN-T1 using SRM+https

Still func tests

# Conclusions

- Data Challenges work ongoing
- Nothing is set in stone about the organisation
  - ATLAS and CMS working towards it
  - LHCb and Alice aim more only at tape tests
    - Some activity from them can still happen if well timed or low hanging fruit
- For T1s a couple more question on networking will be added to the existing tickets.
- Will keep on working on the monitoring
  - Feedback on the dashboard is important

