

Fall 2024 (and beyond) WLCG Mini-Challenges: Planning and Discussion

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WLCG DOMA <https://indico.cern.ch/event/1439566/>

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Planning for Mini-Challenges

Today we want to discuss and plan for upcoming mini-challenges to prepare for DC26 (DC27?) and beyond.

I know of two planning activities so far:

1. The UK is planning a multi-VO (ATLAS, CMS, LHCb, possible DUNE) challenge around the end of November, beginning of December (Alessandra Forti, Katy Ellis)
2. USATLAS has been discussing a similar timescale for a capacity and capability mini-challenge and will discuss more broadly at next week's IRIS-HEP retreat

Mini-Challenge Components

The important topics to plan for and discuss for mini-challenges:

WHO? We cannot do a mini-challenge without participants. The guiding principle so far has been “bottom up” organization, where advocates of technologies, sites or experiments initiate the mini-challenges.

WHAT? We need to understand the items to test and measure. Will the mini-challenge focus on simply capacity/load-testing between select sites or will it also test capabilities at some scale?

WHEN? Scheduling can be critical, since we need the “WHO” able to run the challenge and we may want to co-schedule with other mini-challenges while avoiding critical time periods for the experiments.

Background Material

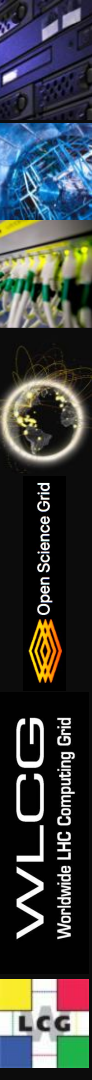
Here are some resources I know about:

Presentations

- [WLCG Data Challenge 2024 \(DC24\) Status and Plans Related to ATLAS DDM](#) (Jun 2023)
- [DC24 Planning and Near Term Activities](#) (Jul 2023)
- [USATLAS Data Challenge 2024 Take-aways](#) (Feb 2024)
- [Medium to Long Term Network Plans for ATLAS and CMS](#) (Mar 2024)
- [DC24 Network Activities & Results](#) (May 2024)

Some Google Docs

- [WLCG/DOMA Data Challenge 2024: Final Report](#)
- [USATLAS Milestones/MiniChallenges for Next WLCG Data Challenge in 2024](#)
- [Planning Mini-Challenges for US ATLAS Facilities and Distributed Computing](#)
- [NOTES: USATLAS Facility Status and Evolution Discussion](#)



Known Issues

Do we have the needed monitoring to properly understand each mini-challenge?

- What is missing or incorrect?
- For technology focused mini-challenges, what new monitoring is needed?
- Will the WLCG Monitoring Task-force be responsible for this?

Can we easily run the mini-challenges?

- The `dc_inject.py` (from Mario) and Hiro's load-testing scripts likely need improvements to enable easy use
- How to converge-on and then create the toolkit? (Who, When)

Questions / Discussion

I hope we can have a fruitful discussion about mini-challenges and here are some “seed” questions/topics

Who is willing to participate?

What load-testing mini-challenges are needed (specific sites, regional, targeting possible shared network “choke” points)?

Is end of November to Early December a good target time?

How many mini-challenges?

How best to share information and scheduling?

How to make progress on the tooling and infrastructure that enables mini-challenges?

Will the Technical Coordination Board take over planning and management of mini-challenges?



The Floor is Open for Discussion...

Acknowledgements

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- [OSG: NSF MPS-1148698](#)
- [IRIS-HEP: NSF OAC-1836650](#)



Backup Slides Follow

ESnet Monitoring for WLCG Data Challenge

ESnet created a very nice [monitoring dashboard](#)

LHC Data Challenge / LHC Data Challenge Overview

Last 6 hours

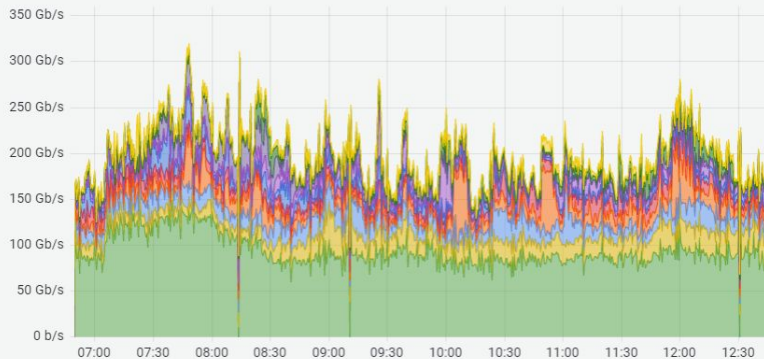
LHC Data Challenge Overview

Menu: Overview | Interfaces | Sites | Transatlantic | LHCOPN

This dashboard shows an overview of statistics relevant to the LHC data challenge. It contains a combination of SNMP and flow statistics from ESnet's Stardust measurement system. Use the navigation menu above this text or links in the data below to move to other dashboards that provide different views of the data.

SNMP Statistics

Top 10 Interfaces by Incoming Rate (SNMP)

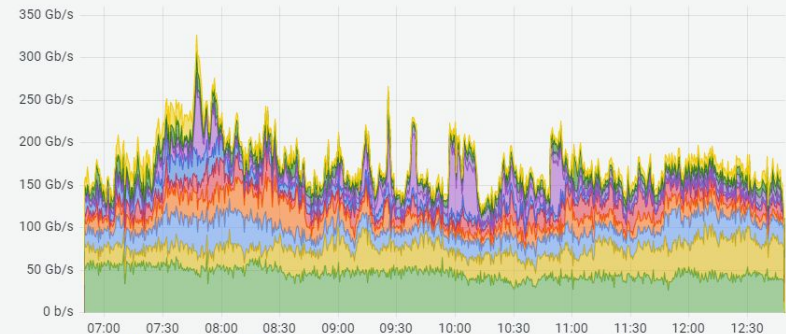


Legend for Top 10 Interfaces by Incoming Rate (SNMP):

- star-cr55:to_fnal-site_lhcone
- newy32aaa-cr6:mit_se-115
- cern-513-cr5:to_lhcone_geant
- chic-cr55:to_lhcone_uchicago-b_v4
- kans-cr5:to_lhcone_unl
- bnl515-cr6:bnl_se-105
- star-cr55:to_lhcone_aglt2-a
- bnl515b-cr6:bnl_se-101
- chic-cr55:aglt2_se-591
- pnwg-cr5:to_lhcone_canet

Top Interfaces by Incoming Volume (SNMP)

Top 10 Interfaces by Outgoing Rate (SNMP)



Legend for Top 10 Interfaces by Outgoing Rate (SNMP):

- wash-cr5:to_lhcone_internet2
- cern-513-cr5:to_lhcone_geant
- kans-cr5:to_lhcone_unl
- amst-cr5:to_lhcone_geant
- star-cr55:to_lhcone_in-gpop-b
- chic-cr55:to_lhcone_uchicago-b_v4
- bnl515b-cr6:bnl_se-101
- atla-cr5:to_lhcone_fir-a
- star-cr55:to_lhcone_aglt2-a
- chic-cr55:to_lhcone_uwmadison-b

Top Interfaces by Outgoing Volume (SNMP)