

Mini Data challenges en France

introduction



- ◆ Veulent faire des challenges assez régulièrement pour préparer DC26
- ◆ Une petite partie des T2 a été testé durant DC24 et certains ont changé depuis → le but est de d'atteindre les taux de transfert cibles définis pour DC24
- ◆ ATLAS + CMS (outils rucio)
- ◆ La semaine prochaine



Goals for DC26/27

For DC26 (or DC27 if it moves later) we are targeting:

- All sites should be moving the majority of their data via **IPv6**
- We should have a few **IPv6-only** sites for each experiment
- At least 80% of the traffic should be **identified via SciTags**
- At least 50% of the traffic should be using **jumbo frames**
- **Rucio/SENSE** to be used by few Production sites
- Sites should be able to easily utilize **90% of their declared WAN bandwidth** for an extended period (many hours to days)
- **Network [traffic monitoring](#)** should be able to track throughput by network type (LHCOPN, LHCONE, Research & Education, Commercial/Commodity) organized by the WLCG Monitoring Task Force

Mini-challenges should help get us there...



Running periodic 1-to-1 load tests (NANO-challenge?)

We want to regularly “benchmark” our facilities and networks by:

- Running periodic throughput tests between the T1 and each T2:
 - Start by **clearly defining the target rates** for each site for DC26
 - Pick a week in the calendar that is suitable for both sites
 - Define a target throughput for the test
 - Use the *dc_inject* tool to execute the test
- Running periodic throughput tests for the T1
 - Run a similar test (as above) using a group of T2s to inject data to/from the T1

This requires each participant site to have a **validated** [site network monitoring](#)

Q. Who will do this?

A. for USCMS: Diego Davila (UCSD), for USATLAS: Hiro Ito (BNL)



USATLAS Mini Data Challenge Fall 2024 (1 of 2)

- T1 to each T2s at full T2's network capacity
 - To check if there are any changes from the results from the last test.
 - Network capabilities of US T2s: AGLT2(200 Gbps) MWT2 (200 Gbps), NET2 (expected to be 400 Gbps). SWT2 (100 Gbps)
 - Individually as well as simultaneously
 - Simultaneous test might present “choke” point in the path.
- T2s to T1 at full wan disk capacity.
 - Not capable to reach the full network capability of BNL at 1.6 Tbps due to the storage layout of T1 storage
- T1 Tape staging and readout test.
 - Check the staging throughput and readout throughput of staged data from BNL.
- Check and validate the accuracy of the various monitor at the site as well as the central ones at CERN, ESNNet, BNL,...



USCMS DC26 mini-challenges Plans for Fall (1 of 4)

1. Validate all sites reporting to the WLCG monitoring dashboard:

<https://monit-grafana-open.cern.ch/d/Mwuxgoglk/wlcg-site-network?orgId=16&from=1730827738666&to=1731432538666>

2. Load Test all T2s and FNAL at the highest rate proposed for DC24:

- T2: ~100
- FNAL: ~400 Gbps
- We can increase if Sites are ready to push harder



◆ Quels buts:

- ◆ Valider des sites un par un ? Un challenge global ?
- ◆ Seulement les transferts ou bien scitags, jumbo frames etc?
 - ◆ Pour les transferts, on reprend la cible de DC24 ou bien 90% du WAN comme US ATLAS (implications sur la prod?) ?

◆ Toutes les VO?

- ◆ Probablement difficile à faire sans soutien de la VO pour ALICE et LHCb
- ◆ VO non LHC?



Mini DC en France en 2025

- ◆ Proposition comme point de départ de la discussion
- ◆ Étiquetage BGP : pas en mode challenge mais objectif 1^{er} semestre 2025
- ◆ Jumbo frames: pas en mode challenge mais objectif d'au moins deux sites FR participant
- ◆ Scitags : se fera au fil de l'eau dans les ops normales (MW)
- ◆ Transferts :
 - ◆ Organiser des tests CC ↔ un T2 pour les T2 lorsqu'ils ont une connectivité suffisante (à définir), reprendre la cible du DC24. Tester avant l'été.
 - ◆ Pas CPPM. Quid de LPNHE dans GRIF si on test GRIF à 80-100G ?
 - ◆ Pour tester le CC (disk) il faudra plusieurs T2, à organiser avec précaution pour limiter les impacts sur la prod, tester l'écriture sur bande semble trop compliqué
 - ◆ ATLAS + CMS, trop compliqué d'avoir ALICE et LHCb et les VO non LHC → utiliser l'outil intégré dans rucio quand prêt (sauf délai)



Discussion

