



Traffic load generator in 2007

D. Bonacorsi

CMS tutorials and detailed planning sessions

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Traffic load generator in 2007: grand-view



- **Next-generation traffic generator infrastructure**
 - ❑ new file-generator procedure, more flexible allocation of load to site links, ability to focus on testing specific routes (to help Commissioning)
 - ❖ Not all new: (as in SC4) separate instance, running in // with Prod transfers, ...
- **T0→T1 transfers**
 - ❑ Focus: do NOT go back w.r.t what achieved in 2006 (and CSA06) + improve
 - ❖ Large samples will be available for all T1s
 - T1 sites can (independently) ask for a load appropriate to face their goals
- **Exercise tape usage at T1**
 - ❑ Sites can profit of infrastructure and file generator and plug-in their test plans
- **T1↔T1 transfers**
 - ❑ Focus: exercise all T1s
 - ❖ some routes already worked fine in CSA06 though
- **T1↔T2 transfers**
 - ❑ Focus: we do need a much cleaner picture + stimulate T2 Ops
 - ❖ T1→T2 aimed to **constant** T1 data export and “**efficient/complete**” T2 data import
 - burst transfers ⇒ aim is to get *all* files to destination in a *reasonable* time
 - T2s frequently refresh (part of) storage, can act on subscriptions (in PhEDEx 2.5)
 - ❖ T2→T1 aimed to **reliable** T2 export / T1 import
 - Target rates are not challenging (~10 MB/s), but routes are crucial for MCprod Ops



Traffic load generator: the format



- Repeated “cycles” (1 cycle = e.g. N weeks) of continuous test transfers
 - ❑ allows to constantly, repeatedly check (and eventually push) the N major use-cases
 - ❖ week 1: determining daily rate. Different centres are used each day. Agents run for 24h and download as much data as possible
 - ❖ week 2: T2-T1 transfers. Agents at T1 harvest data from all associated T2s (association starts as ‘local’ and grows to ~all)
 - ❖ week 3: tail effects. Sites are subscribed to 1.1 * daily transfers. Agents run for 72h or until the transfer is complete. Examine the effect of tails on transfers
 - ❖ week 4: burst rates. Sites run bursts for 2 hrs getting as much data as possible. Delete data between bursts at the T2. Use the day to tune the FTS channels and PhEDEx params.
 - ❖ week 5: parallel transfers. Enough data is created for 1 week’s worth of transfer, at the T1. Every 12h a new site is added, so by the end of the week all sites are transferring
 - ❑ on day-1 of each **cycle**, the *general* testing scope of the overall **cycle** is agreed
 - ❖ at each cycle turn-on, testing activity at sites is well defined for N weeks
 - ❑ on day-1 of each **week** in a cycle, the *specific* testing focus of that **week** is identified
 - ❖ sites will know exactly which agents to turn on, when, and what others will do, and when
 - ❑ end of a cycle ⇒ think&discuss, assess the status, define next more ambitious cycle



Traffic load generator: sites involvement



- Sites encouraged(/forced?) to actively participate in the testing cycles
 - ❑ sites can profit of a test transfers infrastructure steered and coordinated by FIOps
 - ❖ ... but FIOps will not debug site-related issues
 - ❑ sites plug-in into a **cycle** with a clear testing plan/targets
 - ❖ e.g. if no site issues arise, the infrastructure guarantees std targets achievability
 - ❑ sites may eventually choose their Ops mode in each **week**
 - ❖ “passive” mode
 - sites just join the cycle and aim to reach the shared targets for the cycle
 - ❖ “active” mode
 - sites define their own targets in the cycle (from their own “evolution scenario in 2007”)

- Solid infrastructure + strong sites commitment + organizational flexibility
 - ❑ coordinated by FIOps + some level of delegation to Tiers regions



Infrastructure for traffic load generator: tentative schedule



- **Release PhEDEx 2.5.0** (end Jan07)
 - ❑ Start tests by volunteered Tiers (Feb07 - week1)
- **Deploy PhEDEx 2.5 CMS-wide** (few days, can start in // with tests)
 - ❑ Different schedule for pioneer sites start tests (templates ok? consistency tools ok? ..) by volunteered Tiers (Feb07 - week1)
- **Start cycle 1** (hopefully Feb07 week-2 already)

In parallel:

- **Review existing local (non-PhEDEx) transfer-related monitoring tools** (asap)
 - ❑ Crucial to understand what we will be running..
 - ❑ Both network, VO-views monitoring, disk-server monitoring
- **New FTS topology proposed by CMS** (negotiation with WLCG: in progress..)
 - ❑ Deploy on FTS servers CMS-wide (start asap, ~ 1 week)
- **Early access to FTS 2.0 features in CERN pre-prod** (negotiation with WLCG: done)
 - ❑ Also test PhEDEx-driven FTS 2.0 transfers
- **Release FTS 2.0 by gLite** (expected ~2-3 weeks from now)
- **Deploy FTS 2.0 on CMS Tiers** (schedule cannot be defined until we have a look at the release)
- **Move test transfers infrastructure on FTS 2.0 in some brand new cycle** (asa ready)

More detailed plan/twiki will be shortly public.