CMS STEP09
Data Transfer at CCIN2P3

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CMS Transfer tests:

- T0-T1:
  stress T1 tapes: importing real cosmics data from T0
  from 6-9 June 2009

- T1-T1:
  50TB replicate (AOD synchronization) between all T1s
  two step:
  first 3-7 June,
  second 8-12 June 2009

- T1-T2:
  stress T1 tapes
  measure latency at transfers from T1 MSS to T2
  from 2-14 June 2009

Test Objectivitis:

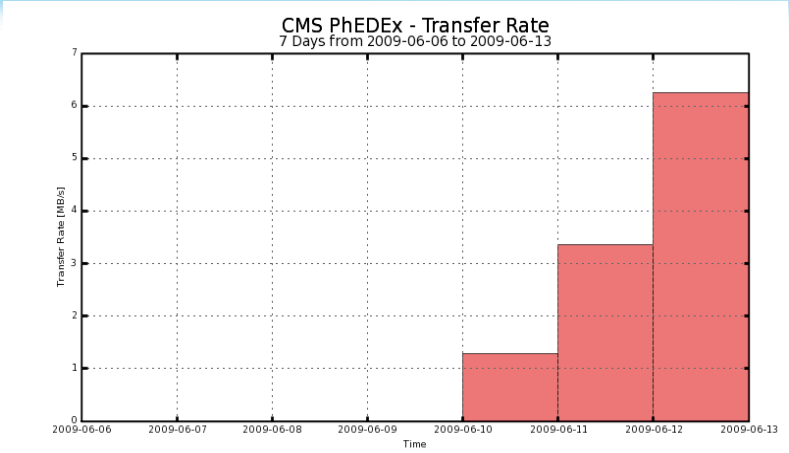
Stress tapes at T1 sites.

- Writing test: export data from T0 and writing to tape at all T1 sites, check latencies
- Reading test: transfer datasets from T1->T2 including stage from tape,
  investigate impact of tape system

AOD synchromization:

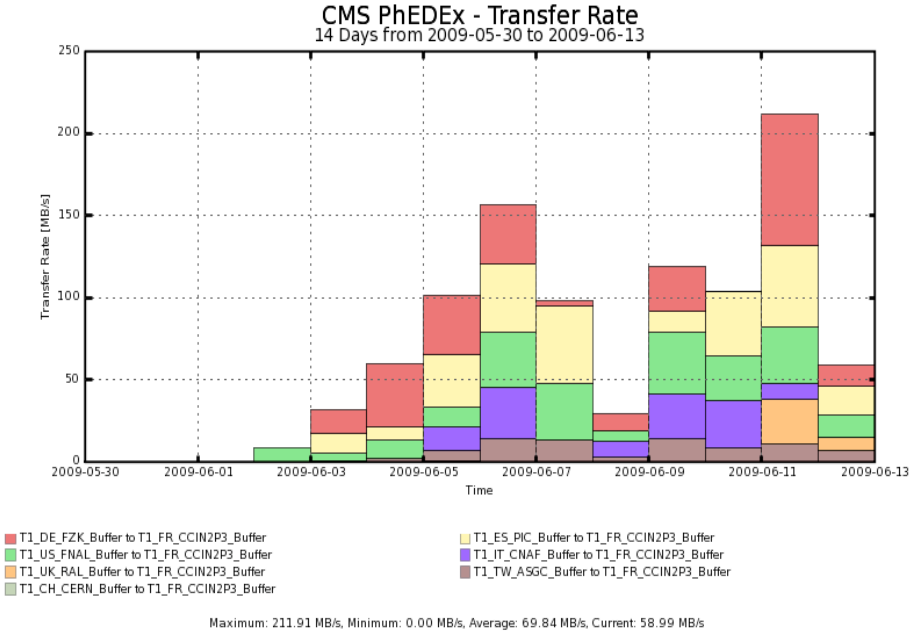
- Each T1 site has a full set of AOD on disk
- After each re-reconstraction pass,
  AOD produced at the custodial sites
  has to be synchronized between all T1 sites
- Test synchnization of 50TB of AOD data between all 7 T1 sites
  Starting of 50 TB AOD dataset at the T1 sites
  according to the custodial fractions

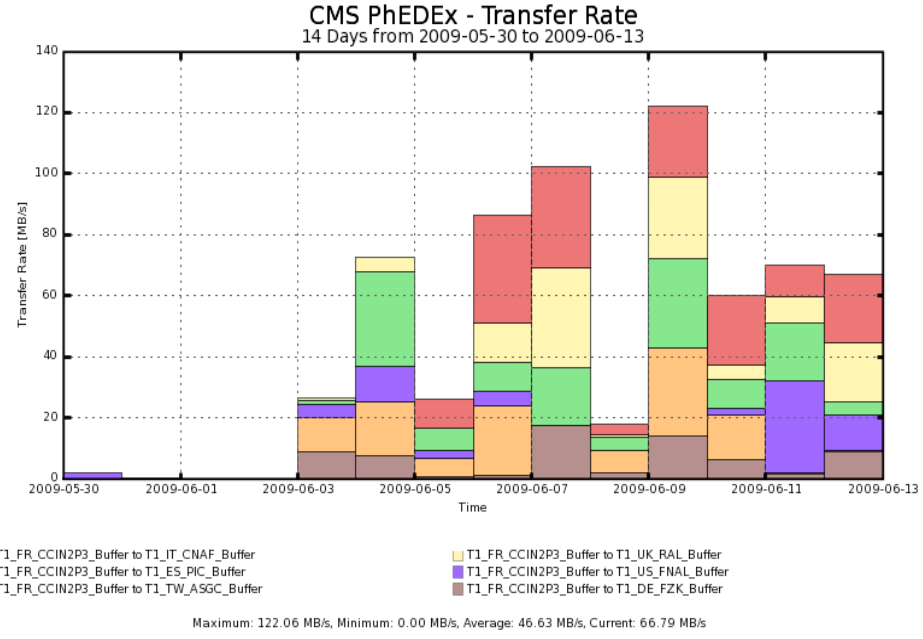
STEP09 Data Transfer tests:



Transfers

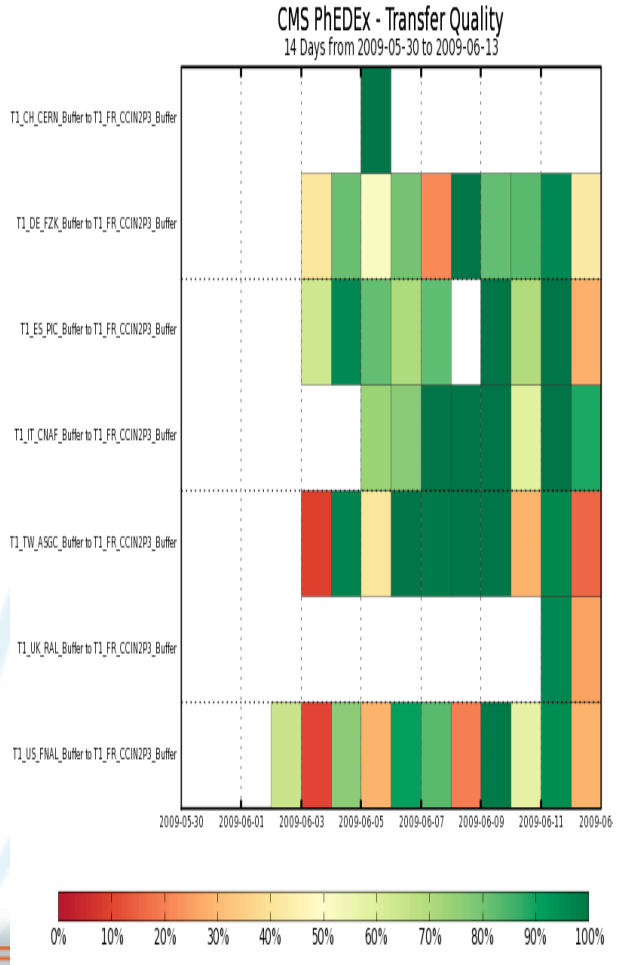
- CERN to CCIN2P3
- T1s to CCIN2P3
- CCI2P3 to T1s



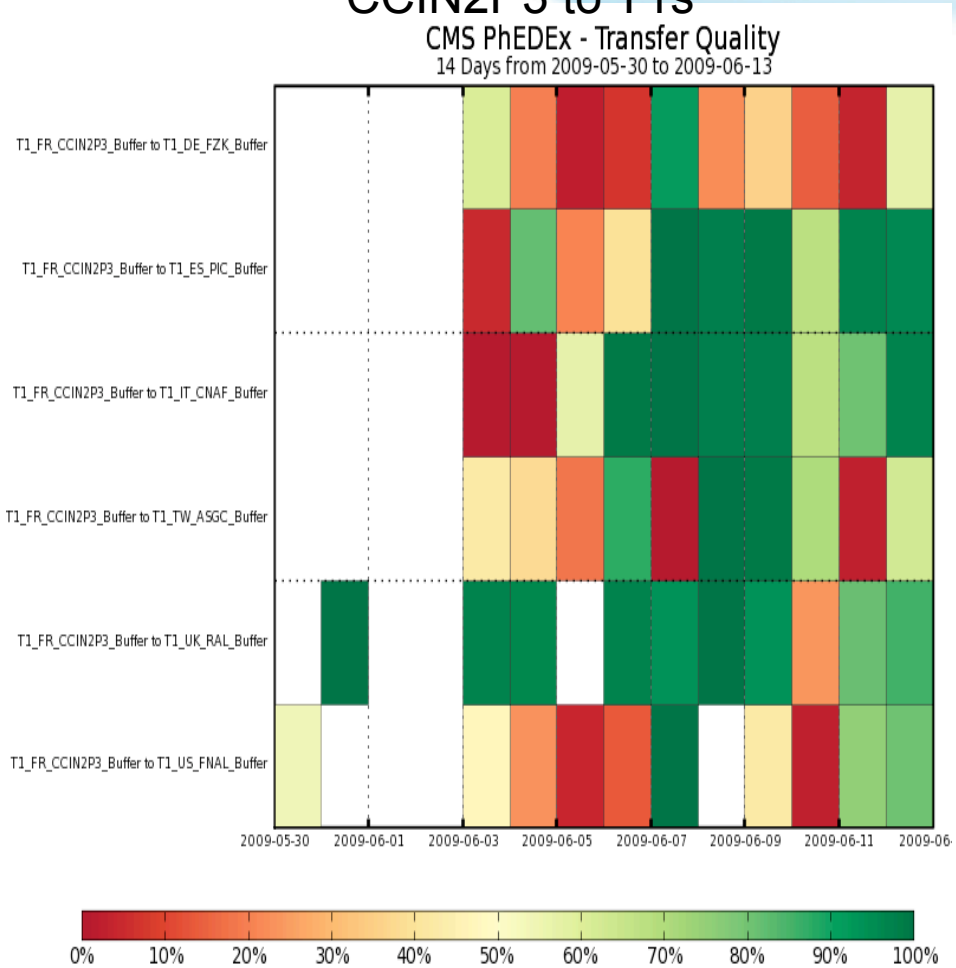


STEP09 Data Transfer: Quality

T1s to CCIn2P3

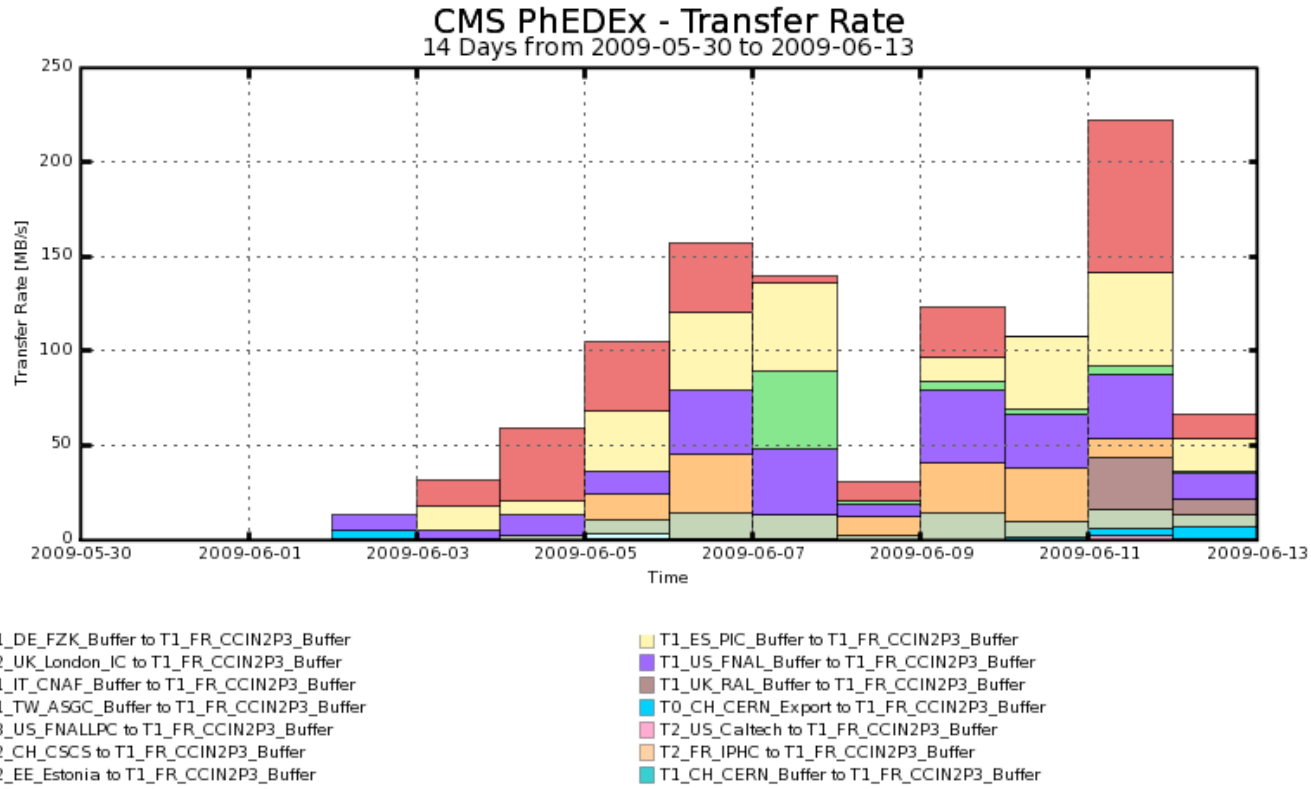


CCIN2P3 to T1s



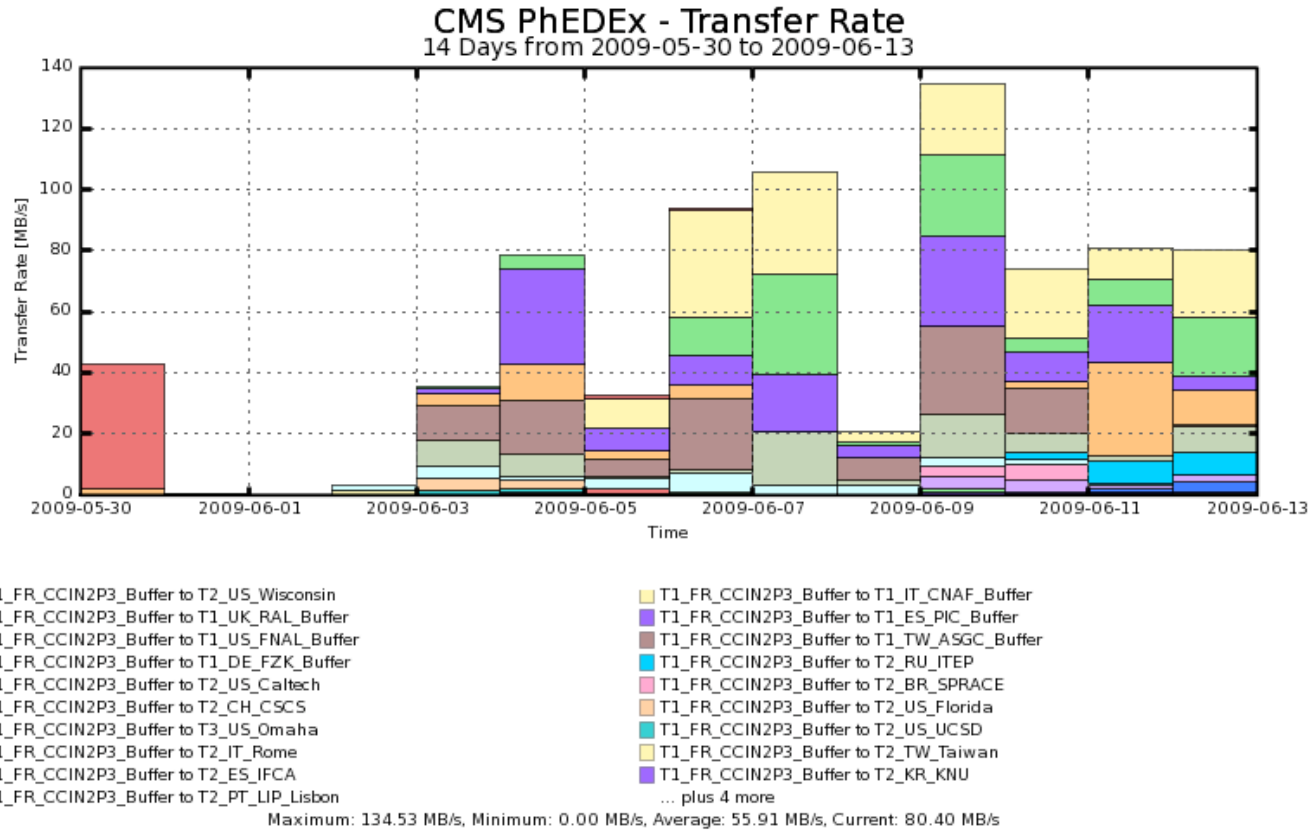
STEP09 Data Transfer: data IMPORT

From 14 CMS sites



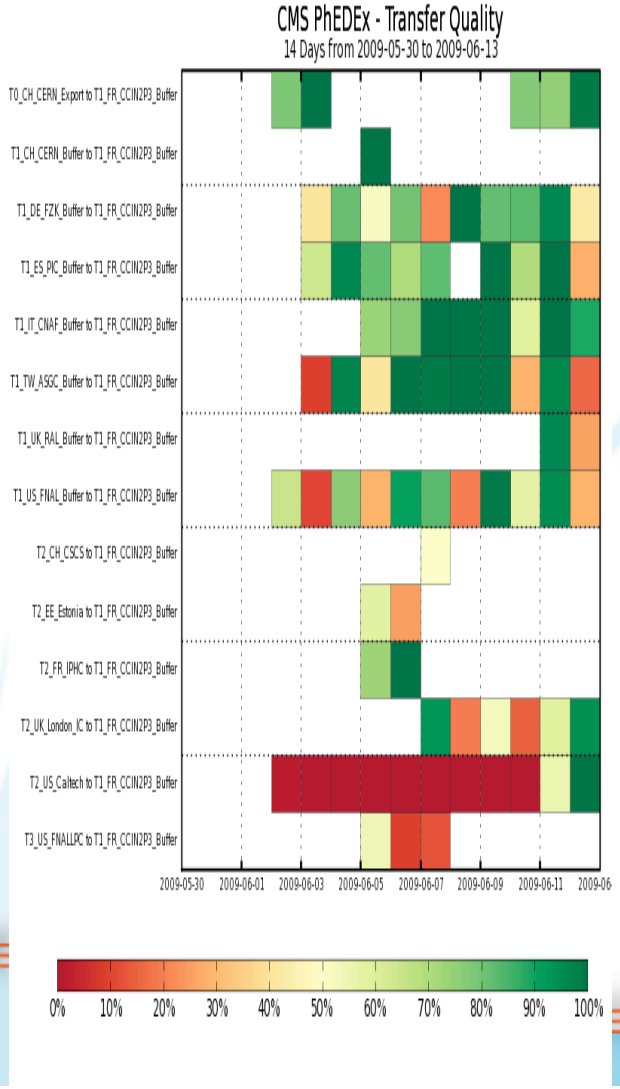
STEP09 Data Transfer : data EXPORT

To 23 sites

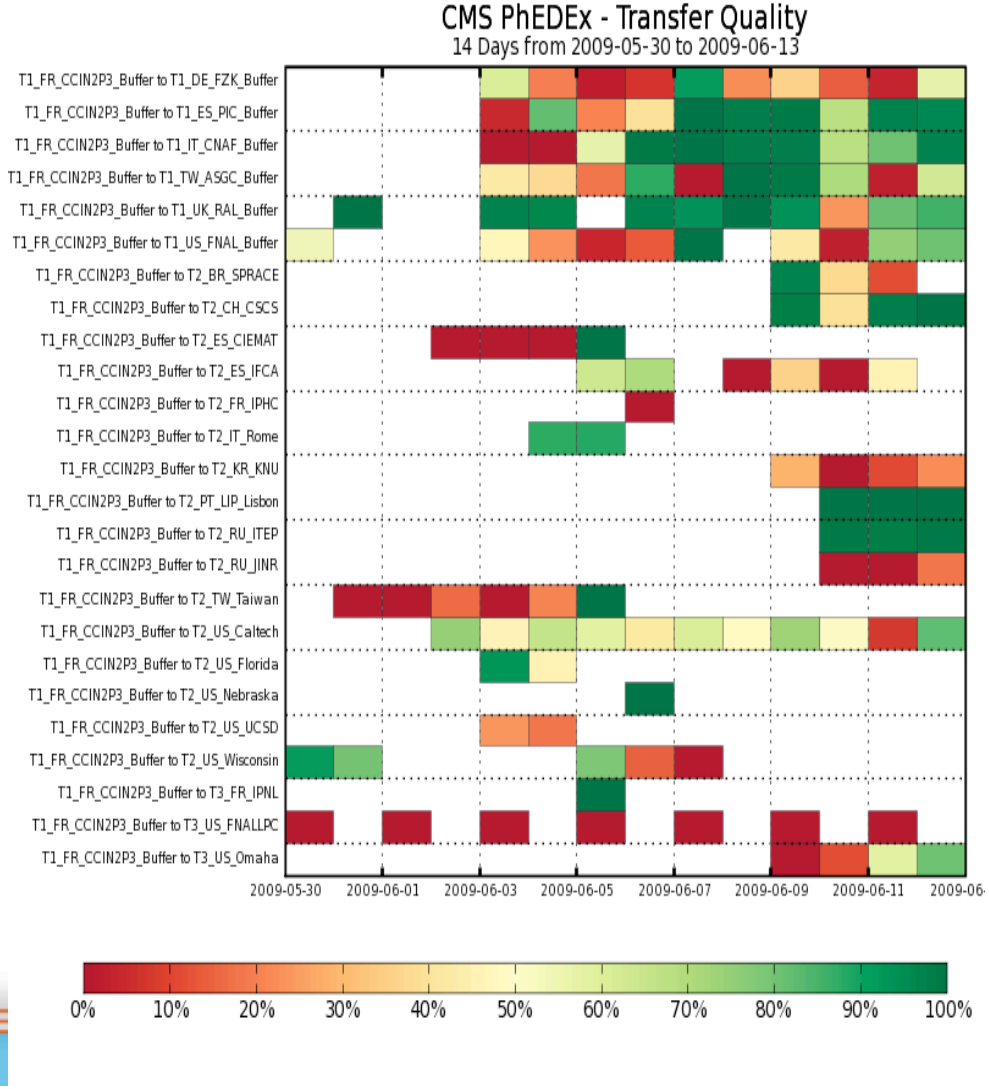


STEP09 Data Transfer: Quality

From all to CCIN2P3



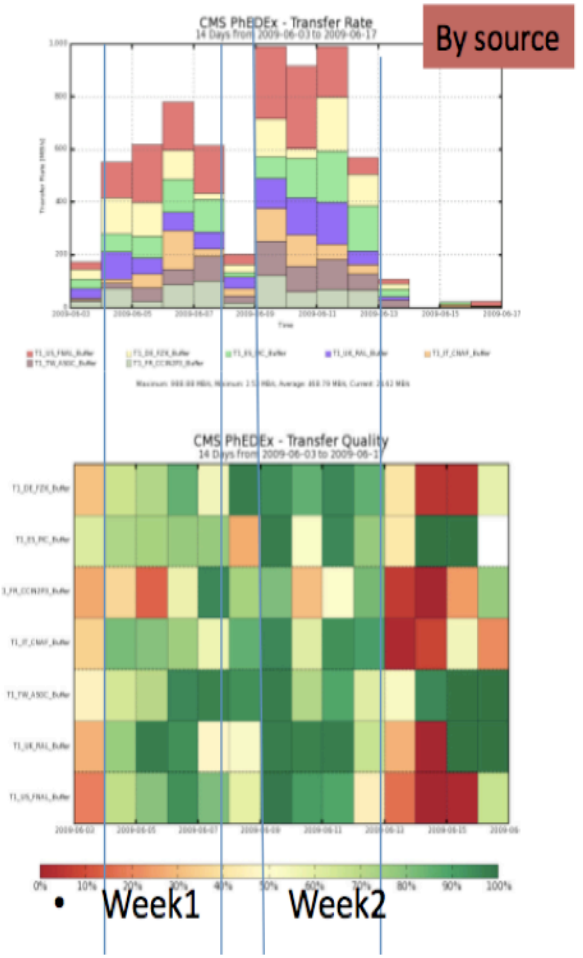
From CCIN2P3 to all



All CMS T1s:

T1→T1 transfers

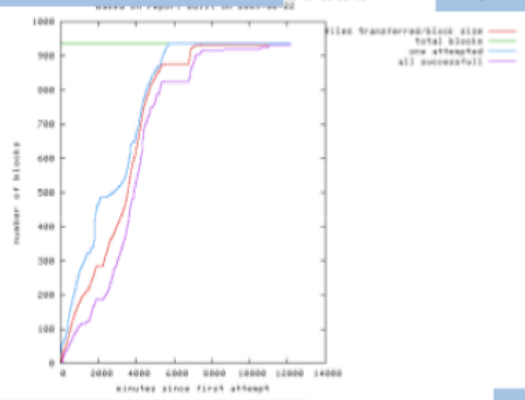
- Populated 7 datasets at 7 T1s with individual size proportional to custodial fraction of AOD and total size 50 TB
- Subscribed to all other T1s and unsuspended simultaneously
- Transfer goal:
  - Complete redistribution of 50 TB to all 7 T1s in 3 days
    - Requires 1215 MB/s global sustained
- In week 1 sites were working on configuration
  - Adaption of existing configurations to test conditions
- Week 2: reached 989 MB/s



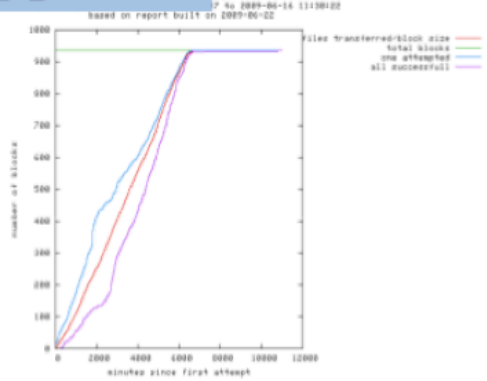
All CMS T1s:

T1→T1 latencies

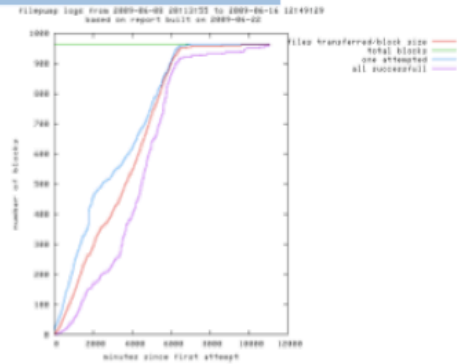
Imports to T1_FR_CCIN2P3



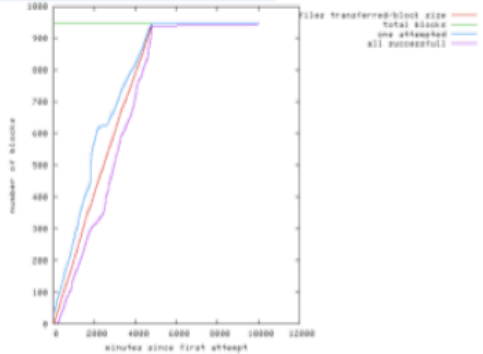
Imports to T1_IT_CNAF



Imports to T1_UK_RAL



Imports to T1_ES_PIC



- General feature: smooth import rates, long tails by few blocks/files

The full STEP09 post-modern will be availible on mid-July

Questions?