

CMS tests of the CREAM CE

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- The aim was to test CREAM in a production environment
- At the time we started the testing most of the CREAM CEs were available at Tier-1s
- Since CMS only runs productions (not analysis) at the Tier-1s our use case for the testing was through the Production Agent
- The test was done through *backfill jobs*
 - Standard production jobs that analyze a dataset present at the site and write out files in a specific location (on tape) that can be easily reclaimed after the test
 - Normally used to keep the infrastructure active when there are no production tasks and spot site problems
 - Job rate may be tuned

- CMS testers
 - Jose Hernandez Calama (Integration)
 - Guillermo Gomez-Ceballos, Andrey Tsyganov (DataOps)
 - The CMS contact persons at the Tier-1s
- 16/10 - 26/10 Setup and configuration tests
27/10 - 5/11 Production tests
- ICE (WMS): at CERN and CNAF, then added at FZK
 - Initially gLite 3.1 Update 41 (Feb 25) (patch #1841)
then gLite 3.1 Update 55 (Sep 22) (patch #2862)
- CREAM: at CERN CNAF, FZK (KIT), PIC, RAL
 - Initial tests with gLite 3.1 Update 44 (Apr 14) (patch #2748)
then gLite 3.1 Update 56 (Oct 6) (patch #3259)
 - Tried also with ASGC but then they had other problems
 - CERN used only during the configuration tests

- About 49 K jobs executed at 4 sites
- Not really a stress test
 - number of jobs running at the sites kept reasonably low (<1 K /day) because of other production activities going on
- About 30 K jobs completed successfully
 - Statistics of job efficiencies not meaningful since the errors were mainly due to application failures
 - e.g. proxy expired, datasets not found, etc...
 - Actually the test helped in spotting other (non-CREAM related problems) ;-)
- Inefficiencies due to ICE and CREAM are negligible



- CMS adapted the Production Agent to be able to submit production workflows to CREAM CEs at the CMS Tier-1s
- Five CMS Tier-1s (plus CERN) provided a CREAM CE, four were used for the tests
- During ~10 days 30 Kjobs have been executed successfully
 - All failures were basically on the CMS side
- CMS did not observe issues in the use of CREAM in production. Before replacing the LCG-CE need to:
 - verify the compatibility with other submission methods
 - monitor the CREAM CEs with the CMS site readiness tools
 - verify the system at full scale (no reasons not to keep the WMS submitters to CREAM for normal activities)

Backup slides

- PIC: `ce-test.pic.es:8443/cream-pbs-glong_sl5`
- KIT: `cream-1-fzk.gridka.de:8443/cream-pbs-cmsL`
`cream-2-fzk.gridka.de:8443/cream-pbs-cmsL`
- CNAF: `ce01-lcg.cr.cnaf.infn.it:8443/cream-lsf-cms`
- RAL: `lcgce01.gridpp.rl.ac.uk:8443/cream-pbs-grid2000M`
- ASGC: `cream01.grid.sinica.edu.tw:8443/cream-lcgpbs-cms`

- Production Agent version used:
 - PA 0_12_16_patch1
- Datasets accessed:
 - /Cosmics/Commissioning08-v1/RAW at PIC, RAL, CNAF and ASGC
 - /Calo/Commissioning08-v1/RAW at FZK