Trigger Offline Monitoring Report

Ricardo Gonçalo (RHUL)

Trigger General Meeting – 3th March 2010

On shift

- Offline expert on call – Ricardo Gonçalo
- Starting today – John Baines
- Offline shifter – Joana Miguéns, Nuno Anjos, Sky French, Fedor Prokoshin
- Infrastructure support – Alessandro DiMattia and Anna Sfyrla

Diary

- Wed 24 Feb – beams expected sometime soon
  - Not much happening, mostly high-rate random triggers plus cosmics
  - Splash setup – L1_EM14 "Ring of Fire" plus BPTX
- Thu 25 Feb – plan to have beams tomorrow
  - Overnight combined runs with splash configuration
  - Fri 26 Feb – LHC injection and splashes in ALICE at 23:45
  - Trips in power converters – splashes postponed
- Sat 27 Feb – machine closed again at 21:00 after access
  - Another trip close to 24:00 in sector 67
- Sun 28 Feb – first splashes during run 149135
  - 02:39 – single splash from beam 2 at ATLAS triggered by EM14 and BPTX
  - 04:05 – 2 splashes from beam 1: LB 112, events 13983, 13984
  - 16:19 – 19 splashes with beam 1
  - 21:30 – 10 splashes with beam 2
  - Single beams (1, 2 and then 1+2 but not crossing) in LHC
- Mon 1 Mar – LHC cryogenic filters cleaning; taking cosmics
- Tue 2 Mar – beams in LHC … and HLT online again!
  - 21:15 beam injection;
  - 22:16 run 149412 – HLT algorithms(HLT prescale 1077) from LB 122
- Beams are back and HLT is online again!

Run #	Config.	L2 Forced Accept	Late Events	Proc. Timeout	PT crash	Stop Transition	HLT Error	Lumi Blocks
149412	900GeV			2 (recovered)			1 (recov.)	197
149394	cosmics	3195 (recovered)					11	65
149310	cosmics						2 (recov.)	244
149304	cosmics						4	132
149278	cosmics						2 (1 recov)	136
149172	cosmics						2 (recov.)	173
149146	1 beam		762 (recov.)				4	90
149061	1 beam						1	409
148909	1 beam						4	414
148631	cosmics	1 (recovered)						30
148508	cosmics				1 (recov.)		2 (recov)	55
148397	cosmics			1 (recovered)		1 (recovered)	32 (recov)	252
148396	cosmics					1 ? (no post-pr.)	11 ?	152
148295	cosmics	6 (recovered)		1 (recovered)				100
148209	cosmics	3 (recovered)					1 (recov.)	409
148156	cosmics						2 (recov.)	142
148072	cosmics						1 (recov.)	419
147932	cosmics						1	215
147931	cosmics	6 (recovered)	53 (recov.)			1 (recovered)	1 (recov.)	202
147788	cosmics		5 (recov.)				1 (recov)	156

P1HLT Savannah Bugs

- Following these Savannah bugs

- Ongoing:
  - USERDEF_2 returned by T2CaloTau: https://savannah.cern.ch/bugs/?63614

  - Timeout in muons at EF with cosmics menu: https://savannah.cern.ch/bugs/index.php?63629

  - Timeout in xe30_allL1_allCells: https://savannah.cern.ch/bugs/?63627

  - GAUDI_EXCEPTION in xe30_allL1: https://savannah.cern.ch/bugs/?63748

- Should be moved to tdaq:
  - https://savannah.cern.ch/bugs/index.php?62879

- Old issues:
  - https://savannah.cern.ch/bugs/?62331

  - https://savannah.cern.ch/bugs/index.php?58618

USERDEF_2 returned by T2CaloTau

- Just a Warning, not sending events do debug stream

- But showing up in other events that were sent to debug_hlterror, so probably very frequent

- Tracked down by Pilar, with Denis and Mansoora's help to LAr HEC errors not properly set in TauAllCaloDRFex.

- Fixed by TrigT2CaloTau-00-04-23

- https://savannah.cern.ch/bugs/?63614

Timeouts in EF muons

- Shows up in cosmics menu in EF_mu4_MSonly_cosmic and EF_mu4_L2MSonly_passL2_cosmic

- After reprocessing errors sometimes become a MISSING_FEATURE in EF_mu4_L2MSonly_passL2_cosmic

- Also a MISSING_FEATURE error in L2_mu4_tile_SiTrk_cosmic, both before and after processing

- https://savannah.cern.ch/bugs/index.php?63629

Timeout in MET chains

- Timeouts in EF_xe30_allL1_allCells and EF_xe30_allL1

- Usually recoverable

- Also showed up in online HLT running in runs 149412 and 149444

- https://savannah.cern.ch/bugs/?63627

Gaudi Exception in xe30_allL1

- In Run 00149278 (event Global ID ~ 500,000)
- In chain xe30_allL1 see a gaudi_exception in this event in the DEBUG stream analysis.

- Error appears in both the pre-processing and the post-processing analysis DEBUG stream analysis

- More details here: https://trigmon.web.cern.ch/trigmon/ResultsAnalysis/RESULTS/2010/00149278_debug_hlterror/

- https://savannah.cern.ch/bugs/?63748

Infrastructure

- Debug stream:
  - Processing `debug_*` streams routinely in Tier0
  - Online ➔ RAW ➔ Analysis ➔ HLT➔ Analysis

- Prompt reconstruction:
  - Processing `express_express` stream since Friday
  - SMK 734, L1PKS 1194, HLTPSK 1077 (i.e. InitialBeamV2 menu with all chains active)
  - c71 for the HLT (AtlasP1HLT-15.5.6.1)
  - c72 for offline reco (AtlasProduction-15.6.5.3)
  - Results in
    `/castor/cern.ch/grid/atlas/caf/atlcal/temp/trigger/data10_1beam/express_express/` (before merging)
  - And
    `/castor/cern.ch/grid/atlas/caf/atlcal/perm/trigger/data10_1beam/express_express/` (after merging result files)

- Test of CAFHLT:
  - To be done soon, possibly today
  - Will use AtlasCAFHLT-15.5.6.1.1
  - Will look at a run with beam(s): 149166; and a long cosmics run: 149310; for comparison with previous runs

- Debug stream analysis:
  - Need a consistency check to make sure all events in initial debug stream are accounted in reprocessing

DQ Flags

- Most Signature Groups have started to fill DQ flags

- But some groups missing:
  - Some for good reasons, but in some cases there is no one (that I know of) covering this: L1MUB/E, L1CTP, TRCOS
  - Martin following up on this

Conclusions

- Still ramping up on some fronts, but getting there

- HLT online now!
  - Which means that everything needs to work smoothly…