

CMSSW PR#27446

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Details to check



- ✓ LHERunInfoProduct
- ✓ Genxsec analyzer test on GENSIM and MINIAODSIM after HLT

GEN-SIM; 10_6_1_patch1

```
cmsDriver.py ZEE_13TeV_TuneCUETP8M1_cfi --conditions auto:phase1_2018_realistic -n 10 --era Run2_2018 --  
eventcontent RAWSIM --relval 9000,50 -s GEN,SIM --datatier GEN-SIM --beamspot  
Realistic25ns13TeVEarly2018Collision --geometry DB:Extended --io ProdZEE_13UP18.io --python  
ProdZEE_13UP18.py --no_exec --fileout file:step1.root --nThreads 4
```

DIGI; 10_6_1_patch1

```
cmsDriver.py step2 --datamix PreMix --conditions auto:phase1_2018_realistic --pileup_input das:/  
RelValPREMIXUP18_PU25/CMSSW_10_6_0-PU25ns_106X_upgrade2018_realistic_v4-v1/PREMIX --era Run2_2018 --  
eventcontent FEVTDEBUGHLT --procModifiers premix_stage2 -s DIGI:pdigi_valid,DATAMIX,L1,DIGI2RAW --datatier  
GEN-SIM-DIGI-RAW-HLTDEBUG --io DIGIPRMXUP18_PU25.io --python DIGIPRMXUP18_PU25.py -n -1 --no_exec --filein  
file:step1.root --fileout file:step2.root --nThreads 4
```

HLT; CMSSW_10_2_15_patch2 with contents of this PR

```
cmsDriver.py HLT --conditions auto:phase1_2018_realistic --era Run2_2018 --eventcontent FEVTDEBUGHLT -s  
HLT:@relval2018 --datatier GEN-SIM-DIGI-RAW-HLTDEBUG --io step2a_HLT.io --python step2a_HLT.py -n -1 --  
no_exec --filein filelist:step2.root --fileout file:step2a.root --nThreads 4
```



HLT steps failed



```
ssh to lxplus7
cmsrel CMSSW_10_2_15_patch2
cd CMSSW_10_2_15_patch2/src
cmsenv
git cms-init
git cms-addpkg Configuration/DataProcessing
git cms-addpkg DataFormats/Provenance
git cms-addpkg SimDataFormats/GeneratorProducts
git cms-merge-topic srimanob:102X_PrepareHLTULRelease
scram b
```

HLT steps failed

```
[gkole@lxplus735:src]$ cmsRun step2a_HLT.py
%MSG-i ThreadStreamSetup: (NoModuleName) 22-Jul-2019 21:01:22 CEST pre-events
setting # threads 4
setting # streams 4
%MSG
22-Jul-2019 21:01:42 CEST Initiating request to open file file:step2.root
22-Jul-2019 21:01:46 CEST Successfully opened file file:step2.root
22-Jul-2019 21:01:46 CEST Closed file file:step2.root
----- Begin Fatal Exception 22-Jul-2019 21:01:46 CEST-----
An exception of category 'FormatIncompatibility' occurred while
  [0] Constructing the EventProcessor
  [1] Constructing input source of type PoolSource
Exception Message:
The release you are using, "CMSSW_10_2_15_patch2" , predates
a release ("CMSSW_10_6_1_patch1") used in writing the input file, file:step2.root.
Forward compatibility cannot be supported.
----- End Fatal Exception
-----
```



Workflow repeated in CMSSW_10_2_15_patch2



GENSIM with a gridpack

```
ssh to lxplus7
cmsrel CMSSW_10_2_15_patch2
cd CMSSW_10_2_15_patch2/src
cmsenv
git cms-init
git cms-addpkg Configuration/DataProcessing
git cms-addpkg DataFormats/Provenance
git cms-addpkg SimDataFormats/GeneratorProducts
git cms-merge-topic srimanob:102X_PrepareHLTULRelease
scram b

curl -s --insecure
https://cms-pdmv.cern.ch/mcm/public/restapi/requests/get_fragment/B2G-RunIIFall18wmLHEGS-00015
--retry 2 --create-dirs -o
Configuration/GenProduction/python/B2G-RunIIFall18wmLHEGS-00015-fragment.py

cmsDriver.py Configuration/GenProduction/python/B2G-RunIIFall18wmLHEGS-00015-fragment.py --fileout file:B2G-RunIIFall18wmLHEGS-00015.root --mc
--eventcontent RAWSIM,LHE --datatier GEN-SIM,LHE --conditions 102X_upgrade2018_realistic_v11 --beamspot Realistic25ns13TeVEarly2018Collision --
step LHE,GEN,SIM --nThreads 8 --geometry DB:Extended --era Run2_2018 --python_filename B2G-RunIIFall18wmLHEGS-00015_1_cfg.py --no_exec --
customise Configuration/DataProcessing/Utils.addMonitoring --customise_commands
process.RandomNumberGeneratorService.externalLHEProducer.initialSeed=24312 -n 100

and
cmsRun B2G-RunIIFall18wmLHEGS-00015_1_cfg.py

(worked successfully)
```

```
[gkole@lxplus768:v2]$ cmsDriver.py step2 --datamix PreMix --conditions auto:phase1_2018_realistic --era Run2_2018 --eventcontent FEVTDEBUGHLT --procModifiers premix_stage2 -s DIGI:pdigi_valid,DATAMIX,L1,DIGI2RAW --datatier GEN-SIM-LHE-DIGI-RAW-HLTDEBUG --io DIGIPRMXUP18_PU25.io --python DIGIPRMXUP18_PU25.py -n -100 --no_exec --filein file:B2G-RunIIFall18wmLHEGS-00015.root --fileout file:step2.root --nThreads 8 DIGI:pdigi_valid,DATAMIX,L1,DIGI2RAW,ENDJOB We have determined that this is simulation (if not, rerun cmsDriver.py with --data) entry file:B2G-RunIIFall18wmLHEGS-00015.root Step: DIGI Spec: ['pdigi_valid'] Step: DATAMIX Spec: Step: L1 Spec: Step: DIGI2RAW Spec:
```

!!!! WARNING: The BMTF Packer returns the entire detector information in one fed (# 1376), instead of the real BMTF which owns 2 feds (1376, 1377) !!!!

```
Step: ENDJOB Spec: Config file DIGIPRMXUP18_PU25.py created
```

```
DIGIPRMXUP18_PU25_try1.py
```

```
error: Begin processing the 8th record. Run 1, Event 2, LumiSection 1 on stream 1 at 24-Jul-2019 21:15:47.253 CEST ----- Begin Fatal Exception 24-Jul-2019 21:16:21 CEST----- An exception of category 'ProductNotFound' occurred while [0] Processing Event run: 1 lumi: 1 event: 1 stream: 3 [1] Running path 'L1simulation_step' [2] Calling method for module L1CaloLayer1/'simCaloStage2Layer1Digis' Exception Message: Principal::getByToken: Found zero products matching all criteria Looking for type: edm::SortedCollection<EcalTriggerPrimitiveDigi,edm::StrictWeakOrdering<EcalTriggerPrimitiveDigi> > Looking for module label: DMEcalTriggerPrimitiveDigis Looking for productInstanceName:
```

```
=====  
[gkole@lxplus768:v2]$ cmsDriver.py step2 --conditions auto:phase1_2018_realistic --era Run2_2018 --eventcontent FEVTDEBUGHLT -s DIGI:pdigi_valid,L1,DIGI2RAW --datatier GEN-SIM-LHE-DIGI-RAW-HLTDEBUG --io DIGIPRMXUP18_PU25.io --python DIGIPRMXUP18_PU25.py -n -1 --no_exec --filein file:B2G-RunIIFall18wmLHEGS-00015.root --fileout file:step2.root --nThreads 8 DIGI:pdigi_valid,L1,DIGI2RAW,ENDJOB We have determined that this is simulation (if not, rerun cmsDriver.py with --data) entry file:B2G-RunIIFall18wmLHEGS-00015.root Step: DIGI Spec: ['pdigi_valid'] Step: L1 Spec: Step: DIGI2RAW Spec:
```

!!!! WARNING: The BMTF Packer returns the entire detector information in one fed (# 1376), instead of the real BMTF which owns 2 feds (1376, 1377) !!!!

```
Step: ENDJOB Spec: Config file DIGIPRMXUP18_PU25.py created
```

```
[gkole@lxplus768:v2]$
```

cmsRun worked



HLT -> MiniAODSIM



```
[gkole@lxplus768:v2]$ cmsDriver.py HLT --conditions auto:phase1_2018_realistic --era Run2_2018 --eventcontent FEVTDEBUGHLT -s HLT:@relval2018 --datatier GEN-SIM-LHE-DIGI-RAW-HLTDEBUG --io step2a_HLT.io --python step2a_HLT.py -n -1 --no_exec --filein file:step2.root --fileout file:step2a.root --nThreads 8 HLT:@relval2018,ENDJOB
```

We have determined that this is simulation (if not, rerun cmsDriver.py with --data)

entry file:step2.root

Step: HLT Spec: ['@relval2018']

Step: ENDJOB Spec:

customising the process with customizeHLTforMC from HLTrigger/Configuration/customizeHLTforMC

Config file step2a_HLT.py created

cmsRun worked! (were little warning)

```
[gkole@lxplus768:v2]$ cmsDriver.py step3 --conditions auto:phase1_2018_realistic -n -1 --era Run2_2018 --eventcontent RECO SIM,MINIAODSIM,DQM --runUnscheduled -s RAW2DIGI,L1Reco,RECO,RECO SIM,EI,PAT,VALIDATION:@standardValidation+@miniAODValidation,DQM:@standardDQM+@ExtraHLT+@miniAODDQM --datatier GEN-SIM-LHE-RECO,MINIAODSIM,DQMIO --io RECO PRMXUP18_PU25.io --python RECO PRMXUP18_PU25.py --no_exec --filein file:step2a.root --fileout file:step3.root --nThreads 8 RAW2DIGI,L1Reco,RECO,RECO SIM,EI,PAT,VALIDATION:@standardValidation+@miniAODValidation,DQM:@standardDQM+@ExtraHLT+@miniAODDQM
```

We have determined that this is simulation (if not, rerun cmsDriver.py with --data)

entry file:step2a.root

Step: RAW2DIGI Spec:

Step: L1Reco Spec:

Step: RECO Spec:

Step: RECO SIM Spec:

Step: EI Spec:

Step: PAT Spec:

Step: VALIDATION Spec: ['@standardValidation', '@miniAODValidation']

@standardValidation+@miniAODValidation in preparing validation

Step: DQM Spec: ['@standardDQM', '@ExtraHLT', '@miniAODDQM']

customising the process with setCrossingFrameOn from SimGeneral/MixingModule/fullMixCustomize_cff

customising the process with miniAOD_customizeAllMC from PhysicsTools/PatAlgos/slimming/miniAOD_tools

Config file RECO PRMXUP18_PU25.py created

cmsRun worked ..



XGenAnalyzer on GENSIM



Run XGenAnalyzer on GENSIM file

/afs/cern.ch/user/g/gkole/work/L3-validation/PR27446/v2/B2G-RunIIFall18wmLHEGS-00015.root

GenXsecAnalyzer:

Overall cross-section summary

Process	xsec_before [pb]	passed	nposw	nnegw	tried	nposw	nnegw	xsec_match [pb]	accepted
[%] event_eff [%]									
0	1.064e+01 +/- 1.854e-01	73	73	0	73	73	0	1.064e+01 +/- 1.854e-01	100.0 +/- 0.0
1	4.899e+00 +/- 8.532e-02	27	27	0	27	27	0	4.899e+00 +/- 8.532e-02	100.0 +/- 0.0
Total	1.554e+01 +/- 2.041e-01	100	100	0	100	100	0	1.554e+01 +/- 2.041e-01	100.0 +/- 0.0
	+/- 0.0								

Before matching: total cross section = 1.554e+01 +- 2.041e-01 pb

After matching: total cross section = 1.554e+01 +- 2.041e-01 pb

Matching efficiency = 1.0 +/- 0.0 [TO BE USED IN MCM]

Filter efficiency (taking into account weights)= (99.9301) / (99.9301) = 1.000e+00 +- 0.000e+00

Filter efficiency (event-level)= (100) / (100) = 1.000e+00 +- 0.000e+00 [TO BE USED IN MCM]

After filter: final cross section = 1.554e+01 +- 2.041e-01 pb

After filter: final fraction of events with negative weights = 0.000e+00 +- 0.000e+00

After filter: final equivalent lumi for 1M events (1/fb) = 6.435e+01 +- 5.437e+01

=====



XGenAnalyzer on MiniAOD



Run XGenAnalyzer on MiniAOD file

```
/afs/cern.ch/user/g/gkole/work/L3-validation/PR27446/v2/step3_inMINIAODSIM.root
```

```
GenXsecAnalyzer:
```

```
-----  
-----  
Overall cross-section summary  
-----  
-----
```

Process	xsec_before [pb]	passed	nposw	nnegw	tried	nposw	nnegw	xsec_match [pb]	accepted
0	1.064e+01 +/- 1.854e-01	73	73	0	73	73	0	1.064e+01 +/- 1.854e-01	100.0 +/- 0.0
1	4.899e+00 +/- 8.532e-02	27	27	0	27	27	0	4.899e+00 +/- 8.532e-02	100.0 +/- 0.0
Total	1.554e+01 +/- 2.041e-01	100	100	0	100	100	0	1.554e+01 +/- 2.041e-01	100.0 +/- 0.0

```
-----  
Before matching: total cross section = 1.554e+01 +- 2.041e-01 pb
```

```
After matching: total cross section = 1.554e+01 +- 2.041e-01 pb
```

```
Matching efficiency = 1.0 +/- 0.0 [TO BE USED IN MCM]
```

```
Filter efficiency (taking into account weights)= (99.9301) / (99.9301) = 1.000e+00 +- 0.000e+00
```

```
Filter efficiency (event-level)= (100) / (100) = 1.000e+00 +- 0.000e+00 [TO BE USED IN MCM]
```

```
After filter: final cross section = 1.554e+01 +- 2.041e-01 pb
```

```
After filter: final fraction of events with negative weights = 0.000e+00 +- 0.000e+00
```

```
After filter: final equivalent lumi for 1M events (1/fb) = 6.435e+01 +- 5.437e+01
```




LHERunInfoProduct output



- ✿ Run LHERunInfoProduct using an simple analyzer
- ✿ Output looks normal (same as after GENSIM and MINIAODSIM)
- ✿ The output are linked to the PR

Backup

