First Insights with Phase II Reconstruction

Software Meeting 1.3.2018

Thomas Hauth | March 1, 2018

ETP - KIT

Reconstruction Tests with Release 1.1

Configuration

- Recent `release/01-01` branch
- Executed for all files in
  `/ghi/fs01/belle2/bdata/Data/Raw/e0002/` (around 5000 jobs)
- Global Tag:
  `332_COPY-OF_GT_gen_prod_004.11_Master-20171213-230000`
  (which still had some payloads with mismatched checksums)

Note: Around 10% of the batch jobs did not complete due to crashes of KEKCC worker nodes. I resubmitted them and they are currently running.

Goal

None of the jobs should crash, even for runs with bad conditions or sub-detector configuration. In the online domain, `basf2` must still be able to process all input.

Reconstruction Tests with Release 1.1

Tested Reconstruction Modes

Release 1.1 contains the scripts used in Phase 2 on HLT and ExpressReco: `hlt/operation/phase2/global/`
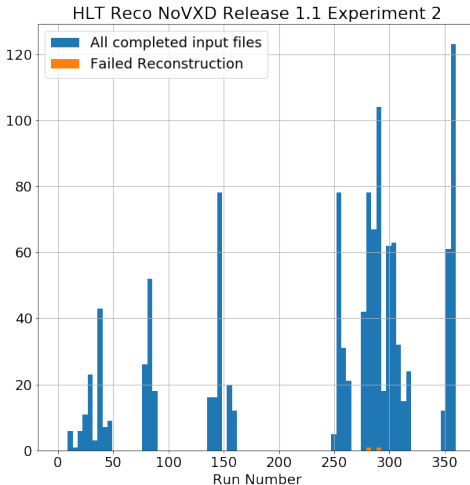These scripts can also be executed on events from disk.

- **HLT reconstruction + DQM, without SVD**
  This configuration (including the SVD reconstruction later) will be executed on the HLT filter nodes and used for HLT filter decissions. The NoVXD configuration is a simpflified configuration w/o SVD tracking (but SVD unpacking)
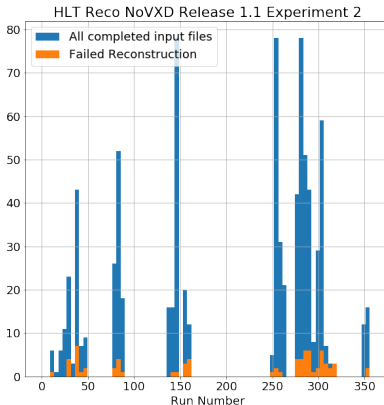
- **Express reconstruction + DQM, with PXD and SVD**
  This configuration runs the full reconstruction chain (with PXD and SVD) and generates DQM plots for the shifter.

HLT Reco no VXD

HLT Reco NoVXD Release 1.1 Experiment 2

In total, four jobs crashed because of the
`FullGridTrackTimeExtractionModule`. All other jobs succeeded.

ExpressReco

HLT Reco NoVXD Release 1.1 Experiment 2

More crashes than in the HLT configuration:

`GenFit consistency check` - 70 crashes

`FullGridTrackTimeExtractionModule` - 3 crashes

Summary

Glass-Half-Full Message

- Many components work remarkably well, for example Unpacker and DQM histograms
- No events terminated due to memory consumption or stuck process (ok, its cosmics ..)
- Only four crashes with the HLT configuration is already quite good - of course we want 0
- The source of the crashes was clearly identified and experts are looking into bug fixes

Glass-Half-Empty Message

- We will need a patch for release 1.1 as soon as the two sources of crashes have been fixed
- Many jobs still generate a large amount ($>$ 100MB) of log output. I will compile a list and contact he respective groups