LArSoft - Bug #23159

Cannot get hit handle

08/22/2019 04:35 PM - Tingjun Yang

Status:	Closed	**Start date:**	08/22/2019
Priority:	Normal	**Due date:**	
Assignee:	Kyle Knoepfel	**% Done:**	100%
Category:		**Estimated time:**	0.00 hour
Target version:		**Spent time:**	2.00 hours
Occurs In:		**Co-Assignees:**	
Experiment:	DUNE		

Description

Dear LArSoft experts,

I am getting a strange error when I run an analyzer on the attached art file:

```
%MSG-s ArtException:  PostEndJob 22-Aug-2019 14:37:10 CDT ModuleEndJob
cet::exception caught in art
---- OtherArt BEGIN
  ---- EventProcessorFailure BEGIN
    EventProcessor: an exception occurred during current event processing
    ---- EventProcessorFailure BEGIN
      EndPathExecutor: an exception occurred during current event processing
      ---- ScheduleExecutionFailure BEGIN
        Path: ProcessingStopped.
        ---- LogicError BEGIN
          Product retrieval via Handle<T> succeeded for product:
          Branch Type = Event
          Process Name = Reco
          ModuleLabel = trajcluster
          Product ID = 1982930578
          Class Name = std::vector<recob::Hit>
          Friendly Class Name = recob::Hits
          Product Instance Name =
          but an attempt to interpret it as an object of type 'std::vector<recob::Hit, std::alloca
tor<recob::Hit> >' failed.
          cet::exception going through module NeutrinoTrackingEff/pmtrajfittceff run: 20000001 sub
Run: 0 event: 21
        ---- LogicError END
        Exception going through path end_path
      ---- ScheduleExecutionFailure END
    ---- EventProcessorFailure END
  ---- EventProcessorFailure END
---- OtherArt END
%MSG
```

The command to reproduce this error is:

```
lar -c standard_ana_dune10kt_1x2x6.fcl prodgenie_nu_dune10kt_1x2x6_detsim_072_reco.root
```

The analyzer module is NeutrinoTrackingEff_module.cc in larreco. Here are the offending lines:

```
    std::vector<art::Ptr<recob::Hit>> tmp_all_trackHits = track_hits.at(0);
    std::vector<art::Ptr<recob::Hit>> all_hits;
    art::Handle<std::vector<recob::Hit>> hithandle;
    if(event.get(tmp_all_trackHits[0].id(), hithandle))  art::fill_ptr_vector(all_hits, hithandle)
;
```

The exception is thrown on the last line.

Any help/suggestion on solving this problem is highly appreciated.

Thanks,
Tingjun

History

#1 - 08/26/2019 10:20 AM - Kyle Knoepfel

- Status changed from New to Feedback

Tingjun, which release/branch of LArSoft are you using and what experiment code/version?

#2 - 08/26/2019 10:21 AM - Tingjun Yang

Hi Kyle, this is for dunetpc and develop branch can be used to reproduce this problem. Thanks.

#3 - 08/26/2019 10:26 AM - Kyle Knoepfel

- Assignee set to Kyle Knoepfel

- Status changed from Feedback to Assigned

#4 - 08/26/2019 03:54 PM - Kyle Knoepfel

- % Done changed from 0 to 100

- Status changed from Assigned to Resolved

- Tracker changed from Support to Bug

The problem is understood. The code referenced above uses the Event::get(ProductID) interface, which will only return the product successfully **if the data product has already been read into memory**. This is in contrast to Event::getByLabel, which will read the product off disk if it has not already been read. In this particular workflow, the product in question has not been read off disk, so the Event::get fails. The *art* documentation will be updated to better describe the behavior.

The solution is to use Event::getByLabel instead:

```
art::Handle<std::vector<recob::Hit>> hithandle;
auto const pd = event.getProductDescription(tmp_all_trackHits[0].id());
if (pd &&
    event.getByLabel(pd->inputTag(), hithandle))
  ...
```

I have pushed this fix to larreco's HEAD of develop (larreco:fae497b0).

#5 - 08/26/2019 04:05 PM - Tingjun Yang

Thanks Kyle.

#6 - 09/04/2019 10:04 AM - Kyle Knoepfel

- Status changed from Resolved to Closed

Files

prodgenie_nu_dune10kt_1x2x6_detsim_072_reco.root	850 KB	08/22/2019	Tingjun Yang