



Fermilab



U.S. DEPARTMENT OF
ENERGY

Office of
Science



LArSoft's migration to art 3.09

Kyle J. Knoepfel

21 September 2021

LArSoft Coordination Meeting



art 3.09 presented in April



Fermilab U.S. DEPARTMENT OF ENERGY Office of Science

art 3.09 changes

Kyle J. Knoepfel
13 April 2021

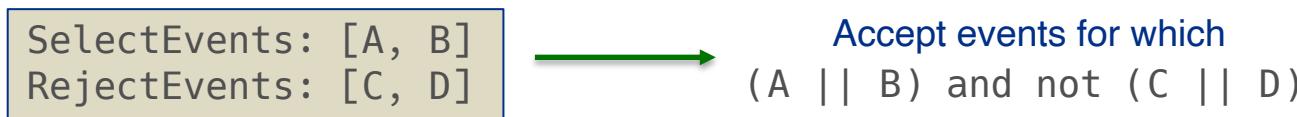


<https://indico.fnal.gov/event/48717/>

art 3.09 vs. 3.06 – new features

- **art 3.08 new features**

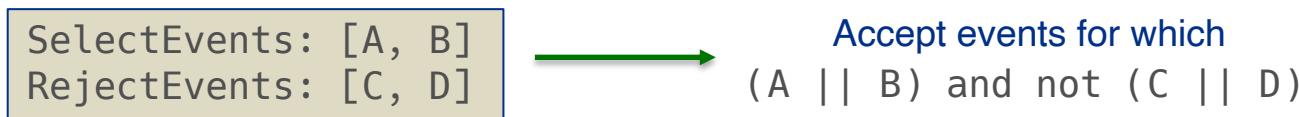
- https://cdcvn.fnal.gov/redmine/projects/art/wiki/Series_308
- `hep::concurrency::cache` (concurrent caching facility)
- Event-level concurrent processing of analyzers and output modules
- Ability to reject events that pass filter criteria



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- **art 3.09 new features**

- https://cdcvn.fnal.gov/redmine/projects/art/wiki/Series_309
- User-defined Path IDs
- Updated product-retrieval API

art 3.09 vs. 3.06 – breaking changes

- art 3.08 breaking changes
 - https://cdcvn.fnal.gov/redmine/projects/art/wiki/30800_breaking_changes
 - Largest change: the art/Framework/Services/Registry/ServiceMacros.h header has been deprecated in favor of two separate header files:
 - art/Framework/Services/Registry/Service**Declaration**Macros.h
provides the DECLARE_ART_SERVICE() macros*
 - art/Framework/Services/Registry/Service**Definition**Macros.h
provides the DEFINE_ART_SERVICES() macros*

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- art 3.09 breaking changes
 - https://cdcv.s.fnal.gov/redmine/projects/art/wiki/309_breaking_changes
 - Some API changes in fhicl-cpp
 - Some product-retrieval deprecations (one renamed function)

A side-effect going from `cetbuildtools` 7 to `cetbuildtools` 8

- Before `cetbuildtools` 8, deprecated Boost unit test facilities were enabled by default.
- With `cetbuildtools` 8, the deprecated facilities are disabled by default.

A side-effect going from cetbuildtools 7 to cetbuildtools 8

- Before cetbuildtools 8, deprecated Boost unit test facilities were enabled by default.
- With cetbuildtools 8, the deprecated facilities are disabled by default.
- The biggest changes to be aware of:
 1. Naïve change – requires streaming:
 - `BOOST_CHECK(a == b);`
 - + `BOOST_TEST(a == b);`

2. When (1) doesn't work:
 - `BOOST_CHECK(a == b);`
 - + `BOOST_TEST((a == b));`

3. Already streamed comparisons
 - `BOOST_CHECK_EQUAL(a, b);`
 - + `BOOST_TEST(a == b);`

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PRs available for LArSoft:

- <https://github.com/LArSoft/larcorealg/pull/22>
- <https://github.com/LArSoft/lardataalg/pull/25>
- <https://github.com/LArSoft/larana/pull/12>
- <https://github.com/LArSoft/larcore/pull/8>
- <https://github.com/LArSoft/larcoreobj/pull/12>
- <https://github.com/LArSoft/lardata/pull/17>
- <https://github.com/LArSoft/lardataobj/pull/14>
- <https://github.com/LArSoft/larevt/pull/13>
- <https://github.com/LArSoft/larexamples/pull/7>
- <https://github.com/LArSoft/larsim/pull/71>
- <https://github.com/LArSoft/larreco/pull/34>