

LBNE Software Build

Status

Issues Found

Next steps

Near Detector

Status

- Finished implementing **worch** configuration for art
- Testing/development on BNL RACF SL6.4
- Monday, release notice sent to the collaboration
- Success: 3 sites (BNL, Sheffield, Warwick), 2 platforms (SL, SUSE) and counting, with some minor bumps
- In progress: SL6.2 at FNAL

Individual build host issues

- `gdbm-devel` OS package missing
 - listed on system requirements page¹
 - pre-check script in development (Chris G.)
- 32bit `libc` devel headers missing
 - missing OS package `glibc-devel.i686` likely culprit

¹https://cdcvs.fnal.gov/redmine/projects/cet-is-public/wiki/System_Requirements

Fermilab build script issues

- Like to move `ups declare` after all package tests to avoid leaving behind a UPS product in broken state. Possible Catch 22:
 - UPS provided environment setup requires `ups declare`.
 - Some post-install tests need some amount of environment setup.
 - `worch` could be exploited here to break this loop
- Parallel-make issues
 - Hard-coded “`make -j 20`” in Fermilab GCC build script overloads a 4-core system
 - Serial-make still used in large packages (`art`, `Geant4`, `ROOT2`) takes more time than needed
 - Possibility of `waf × make` being “overly parallel”, so far tests of this (with `ORKA`) do not yet show a problem.
 - <https://github.com/brettviren/worch/issues/42>
- Temporary files left in installation locations (but see next)

²Is it safe?

Worch/waf issues

So far so good.

One new feature to consider: how to best purge temporary files.

- Large fraction of the size of the resulting UPS “products” installation area are temporary files (eg, .o object files, copies of installed files)
- Some temporary files used to determine the build dependency graph.
- What files should be purged and by what mechanism?
- What about if we want to re-run part of the installation but not want to rebuild what was purged?
- What if we want to reuse packages with identical build configuration in future releases but don't want to rebuild what was purged?
- <https://github.com/brettviren/worch/issues/43>

Next Steps

Larsoft

- Talking with Rick Snider.
- Will target larsoft “beta” for building by worch
- Hope to have ready in coincidence with late-Jan larsoft release

And more testing

- More platforms: CentOS (no problem?), Mac OS X, Ubuntu
- More groups: ND, FastMC, g4lbne
- More sites: especially non-US
- More functionality: testing with “real” jobs

Near Detector Software

- Reported to the ND group on Wednesday about worch-related status.
- Discussion on high level software issues
 - Consensus on adopting art as a basis for ND software
 - Strategy of working closely with the rest of LBNE software is recognized as desired
- Existing LBNE-NDC³ software identified
 - Developed by Kevin Yarritu, maybe maintenance moved to Xinchun?
 - I (or someone else?) will integrate into a worch configuration
 - Native build system is “scons”, will keep for now and pursue converting to art-style CMake for consistency.
 - No UPS nor Fermilab build script support on this one(?)
 - worch will make it up
- Other software mentioned as being in development.
 - needs better identification and repository?

³<https://cdcvns.fnal.gov/redmine/projects/lbne-ndc>