

# Evolution of the art suite build process

Chris Green



# Immediate-term improvements

For the next release of the art suite (likely 1.08.10, due out early next week), the build-from-source procedure shall:

- Have a pre-validation procedure to check for system-level prerequisites prior to a full from-source build.
- Have one "build everything" script as opposed to the current ensemble.
- Be able to restart a build at a particular point without hysteresis after fixing a problem.
- Fail more quickly upon encountering a problem with the build, with pointers to the log script for the package at issue.
- A (very preliminary) version of a manifest.



# Other deficiencies

- Despite the use of ssibuildshims, there is still too much duplication in bootstrap and build scripts.
- In its current form the manifest is educational only.
- Bumping versions for dependency changes (and *bona fide* new versions) is manual and fiddly -- UPS table files must be altered by hand, in addition to bootstrap and build scripts.
- Source packages must be bootstrapped (or unwound from tarballs) manually.
- Want to be able to automatically obtain source for and build an entire suite based on a, "manifest."



# Art suite release strategy

- We will produce new releases of the art suite and requested externals irregularly depending such on such factors as art development activity, particular requested features, bug reports and new external packages for a given experiment.
- We tend to update packages used by art (gcc, boost, ROOT, CLHEP, etc., etc.) when we feel there is good reason (new feature we wish to use, bug fix, experiment request, etc.) The frequency of this varies by package, but:
  - We try not to get so far behind on a given product that any given upgrade is likely to be painful.
  - We tend to announce in advance of a suite release at the stakeholders meeting to get input from experiments.
  - In the event of a release and problems and/or experimental unhappiness with a particular item, we are certainly not averse to producing a point release of the art suite with the particular package upgrade rolled back.
  - We don't generally upgrade just because there is a new version: we're still on GCC 2.8.1 (2.8.2 is out), CMake 2.8.8 (2.8.12 is out), and Boost 1.53.0 (1.55.0 is out), for example. However, see point 1.
- We upgrade other packages as experiments ask and agree: Geant4, PostGresQL, GENIE, etc., etc.

# Directions

- Look at worch as a possible way to solve remaining problems: need to enumerate all requirements to (SLF5, list previous, etc.) to be sure it meets (or can be made to meet) them.
- Want a wider "architecture" document, setting out what we have, how it all interacts to solve what problems, what remains to be done and what the plan might be for doing same (worked well for Darkside).