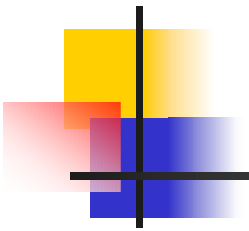
Build Issues Introduction



- There are several build issues that need to be addressed in the near to mid term.
  - RH 6
  - RootCint
  - Build Machines
  - RH 7.3
  - GCC
  - KAI license

RH6

- Red Hat 6
  - Used on only one of the Czech farms as far as I know
  - Have RH6 builds through p11.13.00
  - Dropping support will reduce our MC production a bit. They won't be able to run p13.xx.yy when ready.
  - Need official OK from the MC managers (Iain)

Root Cint & EDM

- Is a problem because it's too similar to d0omCint
- Root does not separate the root "plugin" functionality (tmb_analyze) from their persistence mechanism (EDM/root tree).
- Proposed ctbuild interface
  - D0OM_COMPONENTS <->ROOT_COMPONENTS
  - D0OM_COMPONENTS
    - <comp>_lnk.cpp -> <comp>_lnk.o
    - <comp>_ref.hpp
  - COMPONENTS
    - <comp>.cpp -> <comp>.o -> lib<pkg>.a
    - <comp_link.o -> lib<pkg>.a

Root Cint & EDM

- ROOT_COMPONENTS
  - <comp>_linkdef.h (input to ROOTCINT)
  - <comp>_dict.cpp -> <comp>_dict.o
  - *Proposal*
  - <comp>_dict.o -> lib<pkg>-root.so
  - Lib<pkg>.a -> lib<pkg>-root.so
- D0Reco links only against the .a's
- Program that makes the root trees would link against both .a's and .so's perhaps, maybe only .so's
- Running Root would only require .so's
- The .so's with the lib<pkg>.a may be **huge**

Build Machines

- Far too many builds being requested to satisfy with our current resources. Worst problem is Linux.
- One 8 CPU 700MHz, 8GB machine with Disks NFS mounted from D02ka.
- Takes about 36 hours to do a clean build. Can be a lot more depending on how many other builds we are trying to do. One build using all of the machine takes about 24 hours.
- ~x2 caused by NFS mounts. But this is done for productivity reasons. Need to get builds to the testers on clued0 ASAP.
- FAR too long. Would like to be under 12 hours, 24 hours is barely acceptable.
- Made worse by lack of coordination/poor timing between different "branches" of the release, Reco vs. MC for example.

Build Machines (cont)

- Have money in the budget for new machines??
- Proposal that needs study/testing
  - 1+ top of the line dual machine per build, replaced periodically, stay top of the line, 2GB+ memory.
  - Build on *local* disks nfs served to all that need it (100+GB). *Must be reasonably low traffic.*
  - Frozen releases nfs served from d02ka (or another server)
  - Details are being worked on, but need a test bed. D0lxbld4 would be ideal (see RH6 issue)

RH7.3

- Has problems with large executables and long link times due a new ld on Linux.
- CD thinks that they have a “fix” which is being packaged for inclusion in a Fermilab ups product.
- CDF has tested this fairly extensively.
- D0 hasn’t had time.
- Problem is worse with GCC, but solution may be GCC.

GCC 3.1

- Recall that Scott Snyder had been able to build essentially all of the D0 code several months ago with his “private” fixes.
- He supplied those to the developers. He continues to do this periodically.
- Paul has done the same, and worked with the developers.
- All fatal errors are fixed except for a few L2 problems. These prevent us from getting a D0Reco.

KAI licenses

- Effectively no support for over a year
- Still getting licenses at roughly 1-2 per month
- $10k for a site license for the next year.
- Do we advise that the lab buy it?