# Status of ORKA's ILCRoot Repository Migration and Installation

Brett Viren

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# Repository (Re)Migration

- This time taken from SVN at
  http://m65g.fnal.gov:9880/ilcroot_orka
  - → We should now turn off commits.
  - → Developers should move to the new Redmine/**git** (see next)
- Migration points:
  - Last one: r50 / 2012-12-03
  - This one: r191 / 2013-09-24
- The past few build related fixes have been re-based and committed.
- Initial build tests okay but more in-depth testing and use is needed.

A re-re-migration is not expected.
If any **git**-related problems happen to pop up, let's just fix them.
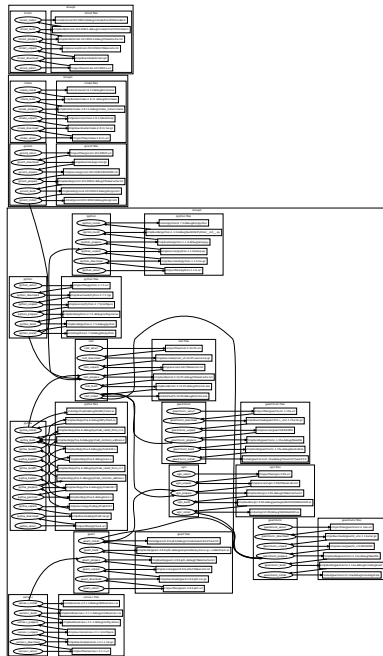
# ORKA ILCRoot Redmine

Redmine project at:

https://cdcvs.fnal.gov/redmine/projects/orka-ilcroot

Requires FNAL "services" and/or Kerberos accounts for some access.

wiki
- world readable
- requires Redmine "Developer" role to edit.
- holds (old) installation and general **git** instructions

repo
- world read-only and authenticated commits to **git**
- commits need Redmine "Developer" role and Kerberos
- multiple **git**s possible: suggest secondary repo(s) to hold personal ILCRoot analysis code

issues
- for bug reports, feature requests, expected milestones
- requires Redmine "Reporter" role to add issues
- so far unused, but can be very useful

# ILCRoot + Externals

1. cmake
2. gccxml
3. geant
4. geant3vmc
5. geant4vmc
6. ilcroot
7. pythia
8. python
9. root
10. vgm
11. xerces-c

Relatively small project. Figure shows build steps and their dependencies.

# Installation Mechanism

New installation method: **worch**

https://github.com/brettviren/worch

- Previously used a hackish set of shell scripts (grinst)
    - In principle may still work but no longer well supported.
- **worch** leverages work done for LBNE
- supports parallel building and multiple installations

Status:

- Builds and installs ILCRoot + dependencies
- Debug vs. optimized builds not yet fully supported.
- User environment management system in development.
    - So far supports UPS or Environment Modules
    - Either way, simple "source ilcroot.sh" will be provided
- Need to work out a comfortable ILCRoot developer environment.
  For now, carry on as usual but with SVN $\rightarrow$ **git**.

# Install ILCRoot with **worch**

Clone **worch** and run the provided **waf** on the ORKA/ILCRoot example suite:

```
$ git clone https://github.com/brettviren/worch.git
$ cd worch
$ ./waf --prefix=/path/to/install \
        --orch-config=examples/orka/suite-ilcroot.cfg \
          configure build
...
'build' finished successfully (31m22.537s)
```

Think of **worch** as a "meta-**cmake**" and **waf** like a "meta-**make**" and the `*.cfg` files like "meta-CMakeLists.txt" files.

# ILCRoot release versioning with **worch** bundles

Can install a specific release via a **worch** bundle:

```
$ wget http://somerver.gov/path/to/ilcroot-builder-vX.Y.Z
$ chmod +x ilcroot-builder-vX.Y.Z

$ ./ilcroot-builder-vX.Y.Z \
        --prefix=/path/to/install \
        --orch-config=examples/orka/suite-ilcroot.cfg \
          configure build
...
'build' finished successfully (31m22.537s)
```

Example bundle tested on SL6 and Debian (sid):

http://www.phy.bnl.gov/~bviren/orka/ilcroot/bundles/worch-ilcroot-builder-20131006

Besides simplifying installation, bundles provide one possible method of release management.

# Making bundles is easy

bundle = **waf** + **worch** + configuration files

```
$ git clone https://github.com/brettviren/worch.git
$ cd worch/
$ emacs path/to/suite.cfg  # edit config file(s)
$ ./scripts/worch-prepare-bundle <name> path/to/suite.cfg .
$ cp <name> ~/public_html/<public-file-name>
```

Eg:

```
./scripts/worch-prepare-bundle \
        worch-ilcroot-builder-20131006 \
        examples/orka .
```

Bundling is a fairly new idea in **worch** and details are subject to change.

# Installation on RACF

Currently and todo:

- Been poaching from Daya Bay (daya0010) to get SL6
  - Avoid SL5, soon to be obsolete, supporting ancient Python hampers `worch` development.
  - All RACF move to SL6 in October, then can poach off of LBNE too.
  - Above example can be found in: `daya0010:/data3/bv/orka`
- Build exists, need user environment setup
  - Anyone can go in and hack their environment by hand right now, but it would be tedious.
- Identify which other platforms will be used and port to them.

# Summary of ORKA ILCRoot migration and installation

- Migration to Redmine and `git` is done.
  - please, no more commits to the old SVN
- New, simpler build system in place and ready for testing by others.
  - Builds ILCRoot + dependencies on Sci. Linux 6 and Debian (sid)
- User and developer environment setup in progress
- Will add this info to the Redmine wiki.