ILCSoft Test system

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EUDET Annual Meeting 2010
Desy, 29th September 2010

Outline

- 1. Overview of the ILCSoft Test system

- 2. ILCTest package
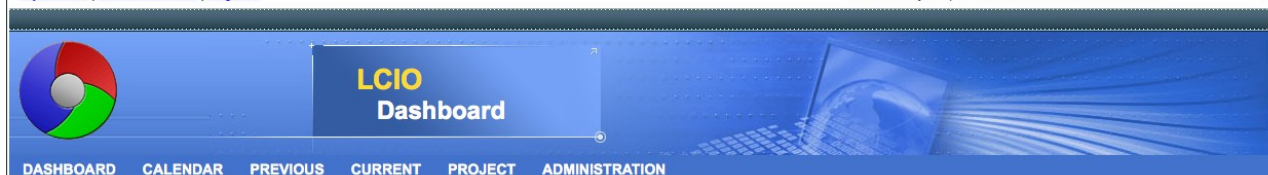
- 3. Summary

ILCSoft Test System

- CTest & CDash based test system running since June 2010

- Software Package Integration tests established and running on a nightly basis

- Infrastructure code developed to make adding new tests straight-forward

CDash Overview

My Projects

Project Name	Actions	Builds	Builds per day	Success Last 24h	Errors Last 24h	Warnings Last 24h
Calice		115	5	4	0	1
CED		614	6	6	0	0
CEDViewer		614	6	0	0	6
GEAR		618	6	6	0	0
ilcinstall		202	2	0	0	2
ILCTest		11	0	0	0	0
LCCD		615	6	3	0	3
LCIO		618	6	0	0	6
Marlin		625	6	0	0	6
MarlinReco		618	6	0	0	6
MarlinUtil		614	6	6	0	0
Overlay		614	6	6	0	0
RAIDA		614	6	6	0	0

e.g. LCIO

CMake tests defined in LCIO automatically published to CDash on a nightly basis

ILCSoft Integration Tests (Overview)

History

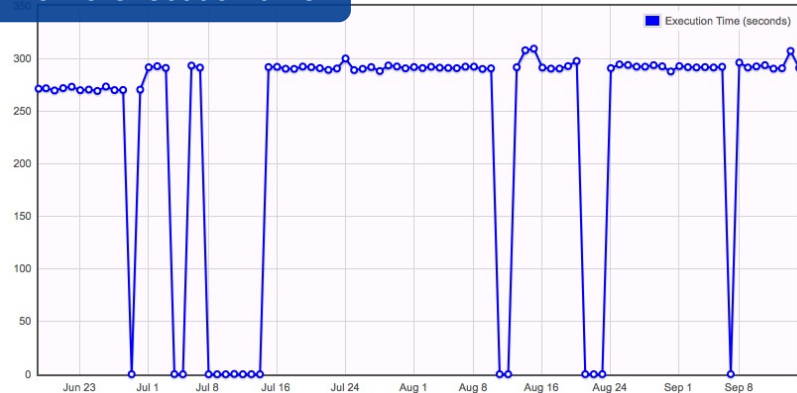[Show Build History]
[Build History Filter]

Date	Update Files	Update Errors	Update Warnings	Configure Errors	Configure Warnings	Build Errors	Build Warnings	Tests Failed
2010-09-15 03:01:15	0	0	0	0	0	0	50	0
2010-09-14 03:01:14	0	0	0	0	0	0	50	0
2010-09-13 03:01:13	0	0	0	0	0	9	50	0
2010-09-12 03:01:12	0	0	0	0	0	9	50	0
2010-09-11 03:01:11	0	0	0	0	0	5	50	0
2010-09-10 03:01:10	0	0	0	0	0	9	50	0
2010-09-09 03:01:09	0	0	0	0	0	9	50	0
2010-09-08 03:01:08	0	0	0	0	0	0	50	0
2010-09-07 03:01:07	0	0	0	0	0	8	50	5
2010-09-06 03:01:06	0	0	0	0	0	0	50	0
2010-09-05 03:01:05	0	0	0	0	0	0	50	0
2010-09-04 03:01:04	0	0	0	0	0	0	50	0
2010-09-03 03:01:03	0	0	0	0	0	0	50	0
2010-09-02 03:01:02	0	0	0	0	0	0	50	0
2010-09-01 03:01:01	0	0	0	0	0	0	50	0
2010-08-31 03:01:31	0	0	0	0	0	0	50	0
2010-08-30 03:01:30	0	0	0	0	0	0	50	0
2010-08-29 03:01:29	0	0	0	0	0	0	50	0
2010-08-28 03:01:28	0	0	0	0	0	0	50	0
2010-08-27 03:01:27	0	0	0	0	0	0	50	0
2010-08-26 03:01:26	0	0	0	0	0	0	50	0
2010-08-25 03:01:25	0	0	0	0	0	0	50	0
2010-08-24 03:01:24	0	0	0	0	0	0	50	0
2010-08-23 03:01:23	0	0	0	0	0	22	50	5
2010-08-22 03:01:22	0	0	0	0	0	22	50	5
2010-08-21 03:01:21	0	0	0	0	0	22	50	5
2010-08-20 03:01:20	0	0	0	0	0	0	50	0
2010-08-19 03:01:19	0	0	0	0	0	0	50	0

ILCSoft Integration Tests (Detailed)

Mokka execution time

Marlin execution time

32bit build history
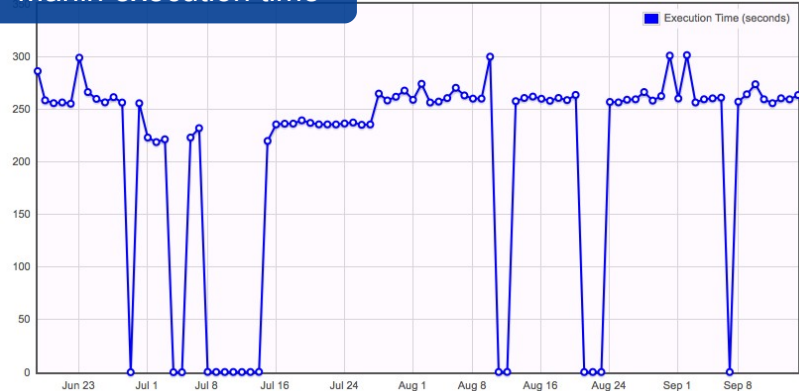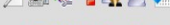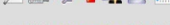
64bit build history
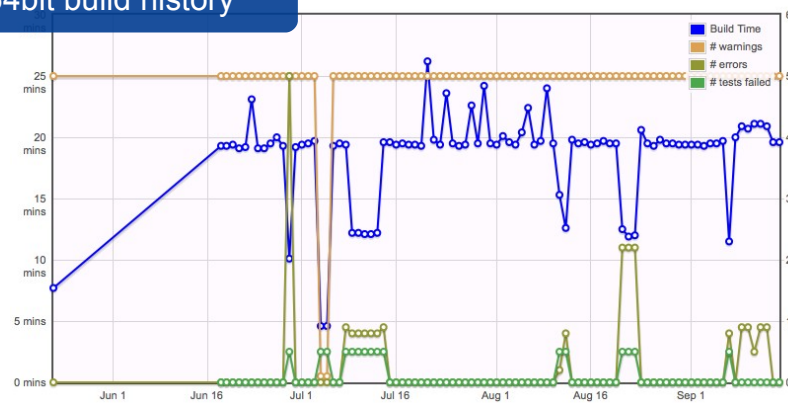
On a Nightly basis runs the Standard LOI reconstruction over a handful of events to test that the full Sim/Rec software chain is working properly.

Automatic Email notification if and when build or tests fail.
Developers may subscribe to several projects to keep an overview

S. Aplin

ILCTest – Package structure

Project Name	Actions	Builds	Builds per day	Success Last 24h	Errors Last 24h	Warnings Last 24h
Calice		115	5	4	0	1
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RAIDA		614	6	6	0	0

- **3 main directories:**

- doc - Documentation

- include – c++ utility headers to simplify writing tests

- tests – directory containing the individual tests and cmake macros to simplify adding new tests

ILCTest – package structure

- C++ header file to simplify writing tests (include/ILCTest.h)
  - // first line in your c++ source file
  - static ILCTest ilctest = ILCTest("hello_world");

    ...
  - ilctest.log("hello world test"); // a log message

    ...
  - If(x != 42){ ilctest.error("wrong answer!!") ; }

    ...
  - cout << ilctest.last_test_status() << endl; // prints "FAILED"

    ...
  - If(r > 3){ ilctest.fatal_error("this is a fatal error. program will quit now!") ; }

- If all tests were successful, message "TEST_PASSED" is printed. Otherwise "TEST_FAILED". Useful for checking with CTest.

ILCTest – package structure

- CMake utility macros (tests/CMakeLists.txt)

  - ADD_TEST_DIRECTORY(subdir)
    - cmake macro to add a new test and the corresponding cmake option to turn the test ON or OFF

  - ADD_STD_ILCTEST(testname)
    - cmake macro to add a new c++ test in the current directory and check for the "TEST_PASSED" / "TEST_FAILED" expression given by the utility header include/ILCTest.h (previous slide)

ILCTest – package structure

- **tests/simple** - directory containing a set of examples
  - hello_world – shows a very simple example for writing a c++ test using the ILCTest.h header and the cmake utility macro ADD_STD_ILCTEST

  - fibonnacci – a very simple test which is completely independent of the iLCTest package (just uses python and cmake)

  - root_example – another c++ test which also uses ILCTest.h and additionally uses the ROOT framework to produce and check some dummy histograms

  - marlin_example – a more elaborate test which compiles a marlin plugin, runs Marlin with this plugin and checks for a set of regular expressions in the output of the test.

  - ...

ILCTest – compile and run tests

- – # 1. initialize ilcsoft
- – . /afs/desy.de/project/ilcsoft/sw/i386_gcc34_sl4/v01-09-02/init_ilcsoft.sh

- – # 2. usual cmake build steps
- – mkdir build
- – cd build
- – cmake -C $ILCSOFT/ILCSoft.cmake ..   # to enable ilcsoft tests
- – make

- – # 3. run the tests
- – ctest   # run all tests
- – ctest -R fibo   # run tests matching regex fibo
- – ctest -D Experimental   # upload test results to CDash (Experimental)

- – # (optional) reconfigure build settings
- – ccmake ..

Work in progress

- Currently a student (Yuri Flores) is working on a ROOT based histogram comparison program

- Testing against reference histograms

- To be integrated with ILCTest

Summary

- Basic Functionality is established

- The fact that the test system has been running for several months will make the release of ILCSoft v01-10 smother than has been the case in the past

- Physics Tests currently being developed and integrated

- Unit Testing to be extended

- System already being used by CALICE