

ILCSoft Test system

Jan Engels
Steve Aplin

EUDET Annual Meeting 2010
Desy, 29th September 2010





- 1. Overview of the ILCSoft Test system
- 2. ILCTest package
- 3. Summary



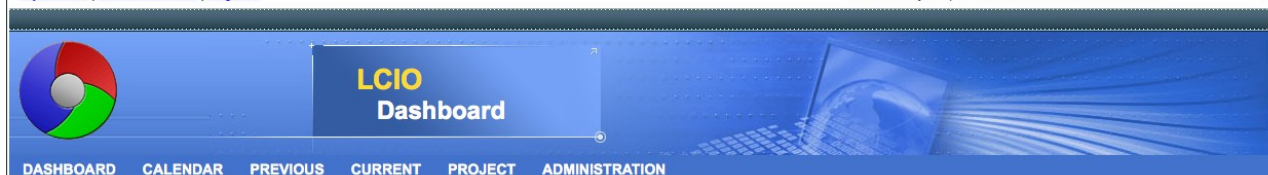
- CTest & CDash based test system running since June 2010
- Software Package Integration tests established and running on a nightly basis
- Infrastructure code developed to make adding new tests straightforward

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

My CDash | All Dashboards | Log Out Wednesday, September 15 2010 11:25:19 CEST



LCIO Dashboard

DASHBOARD CALENDAR PREVIOUS CURRENT PROJECT ADMINISTRATION

No file changed as of **Wednesday, September 15 2010 00:00:00 CEST** [Help](#)

[Show Filters](#)

Nightly

Site	Build Name	Update		Configure			Build			Test				Build Time
		Files	Min	Error	Warn	Min	Error	Warn	Min	NotRun	Fail	Pass	Min	
grid-llc-pa0	linux-gcc-debug			0	0	0	0	12	0.1					2010-09-15T02:01:57 CEST
grid-llc-pa0	linux-gcc-debug-x64			0	0	0	0	12	0.1					2010-09-15T04:01:42 CEST
grid-llc-pa0	linux-gcc-default			0	0	0	0	12	0.2					2010-09-15T02:02:08 CEST
grid-llc-pa0	linux-gcc-default-tests	0	0.1	0	0	0	0	13	0.3	0	0	21	0.3	2010-09-15T02:01:11 CEST
grid-llc-pa0	linux-gcc-default-tests-x64	0	0.1	0	0	0	0	13	0.2	0	0	21	0.2	2010-09-15T04:01:08 CEST
grid-llc-pa0	linux-gcc-default-x64			0	0	0	0	12	0.2					2010-09-15T04:01:54 CEST
Totals	6 Builds	0	0.2	0	0	0	0	74	1.1	0	0	42	0.5	

No Continuous Builds

Name	Status	Time Status	Time	Details
t_c_ana_c2j_rec	Passed	Passed	0.14	Completed
t_c_ana_c_rec	Passed	Passed	0.17	Completed
t_c_ana_c_sim	Passed	Passed	0.09	Completed
t_c_ana_j2c_rec	Passed	Passed	0.13	Completed
t_c_ana_j_rec	Passed	Passed	0.10	Completed
t_c_ana_j_sim	Passed	Passed	0.06	Completed
t_c_rec_c_sim	Passed	Passed	3.78	Completed
t_c_rec_j_sim	Passed	Passed	1.95	Completed
t_c_sim	Passed	Passed	1.99	Completed
t_j_ana_c_rec	Passed	Passed	1.88	Completed
t_j_ana_c_sim	Passed	Passed	1.46	Completed
t_j_ana_j_rec	Passed	Passed	1.41	Completed
t_j_ana_j_sim	Passed	Passed	0.87	Completed
t_j_rec_c_sim	Passed	Passed	2.03	Completed
t_j_rec_j_sim	Passed	Passed	1.63	Completed
t_j_sim	Passed	Passed	0.65	Completed
t_test_calohit	Passed	Passed	0.14	Completed
t_test_example	Passed	Passed	0.00	Completed
t_test_randomaccess	Passed	Passed	0.01	Completed
t_test_trackerhit	Passed	Passed	0.10	Completed
t_test_trackerpulse	Passed	Passed	0.10	Completed

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

ILCSoft Integration Tests (Overview)

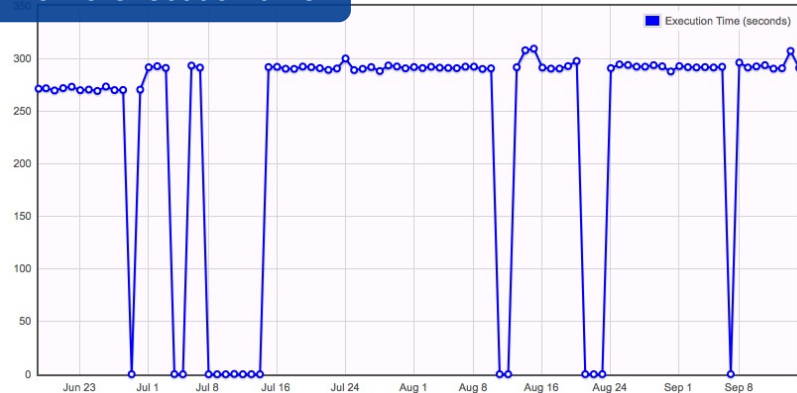


History								
Date	Update Files	Update Errors	Update Warnings	Configure Errors	Configure Warnings	Build Errors	Build Warnings	Tests Failed
2010-09-15 03:01:15	0	0	0	0	0	0	50	0
2010-09-14 03:01:14	0	0	0	0	0	0	50	0
2010-09-13 03:01:13	0	0	0	0	0	9	50	0
2010-09-12 03:01:12	0	0	0	0	0	9	50	0
2010-09-11 03:01:11	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)



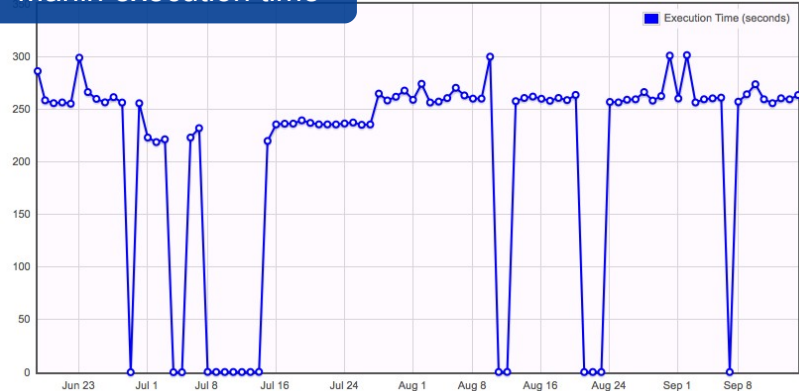
Mokka execution time



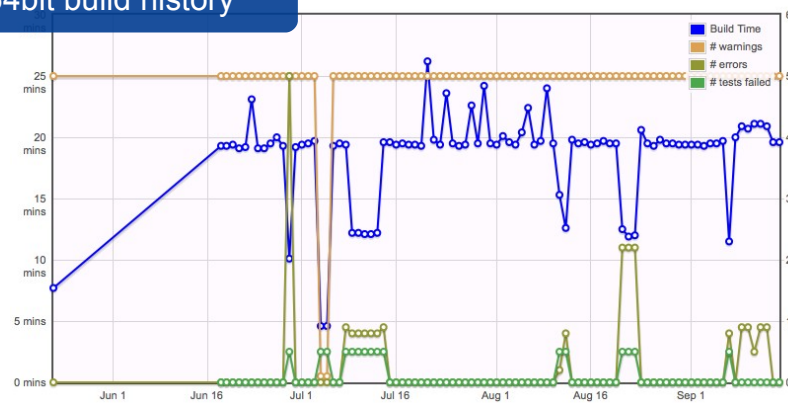
32bit build history



Marlin execution time













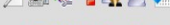
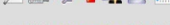
64bit build history



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

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- **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



- 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.



- 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)



- **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
- cmake ..



- Currently a student (Yuri Flores) is working on a ROOT based histogram comparison program
- Testing against reference histograms
- To be integrated with ILCTest



- Basic Functionality is established
- The fact that the test system has been running for several months will make the release of ILCSoft v01-10 smoother 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