THE RADIANCE TEST SUITE

Rob Guglielmetti

View, Inc. (ex NREL, et al.)

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MOTIVATION

- Needed 'easy' way to produce reliable, cross-platform Radiance installers
- Radiance for Windows
  - Include Windows versions of GUI apps (e.g. rvu)
- Keep pace with Radiance source development
- Regular Radiance releases related to specific OpenStudio releases

HISTORY

Radiance for Windows

- **Axel Jacobs**
  Learnix (last update ~2016)

- **Francesco Anselmo**
  Windows binaries compiled with mingw, (last update ~2008)

- **Georg Mischler**
  Rayfront ~2003, Windows rvu!

- **LBNL**
  Desktop Radiance (2000?)

NREL'S ANSWER

NREL RADIANCE BUILD/TEST

2013-present

- Implemented 'makefile management system' with CMake

- Custom build targets for cross platform apps

- Created a new, Qt-based rvu application that runs on Windows

- Wrote initial suite of tests using ctest

- Created **mirror** of the main Radiance source code repository

  - One-way sync between authors' code (in CVS) and the Git repository

GITHUB

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Mirror of the master Radiance cvs source repo, used for the creation of Radiance installers for the NREL OpenStudio project   Edit

Manage topics

🏷 **6,349** commits   **5** branches   🏷 **29** releases   **2** contributors   ⚖ View license

Branch: master ▾   New pull request   Create new file   Upload files   Find File   Clone or download ▾

Gregory J. Ward Moved -pd to ignored options where it belongs   Latest commit e9d5bc9 5 days ago

📁 InstallRules	Update to CMake build system from Rob G. and Alex S., adding test cases	2 years ago
📁 build_utils	SCons Option to build Pmap with OOC data on unix	2 years ago
📁 doc	Made it so output names don't collide when rcode2bmp run on all	6 days ago
📁 platform	Updating to SCons 3.x, adding support for Python 3	2 years ago
📁 resources	Update from Rob G.	2 months ago
📁 src	Moved -pd to ignored options where it belongs	5 days ago
📁 test	Noted absence of obj2mesh test, which could use gensurf as input	5 months ago
📄 .gitignore	Added missed files from CMake update	2 years ago
📄 .gitlab-ci.yml	Update from Rob G. to switch tests over to Ruby	2 months ago
📄 CMakeLists.txt	Checked in Rob G's changes for unit testing	5 months ago

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Releases   Tags

Draft a new release

Latest release

🏷 5.2

⎇ dd0f8e3

5.2 Official Release

Edit

rpg777 released this on Oct 9, 2018 · 292 commits to master since this release

Radiance 5.2 Official

This is the "NREL Release" of Radiance 5.2 Official. Full text from `readme.txt` follows.

Hello and welcome to the Radiance synthetic imaging system. This is the twenty-fourth release, Version 5.2, and it includes all source files for local compilation with a standard C compiler. To find out what's new in this release, check the text file `doc/notes/ReleaseNotes` .

Radiance is OpenSource software copyrighted and distributed by Lawrence Berkeley National Laboratory in California. By downloading and installing this software, you are implicitly agreeing to the OpenSource license appended to this README file. Please read it carefully before proceeding -- this is very different from previous

WE BUILT IT, THEY CAME FOR IT

robertguglielmetti$ ruby release_stats.rb

…

https://api.github.com/repos/NREL/Radiance/releases

Release: 5.2 Official Release

Published: 2018-10-09T20:52:20Z

Downloads (asset name, download count):

-- radiance-5.2.dd0f8e38a7-Darwin.dmg, 911

-- radiance-5.2.dd0f8e38a7-Linux.tar.gz, 3182

-- radiance-5.2.dd0f8e38a7-Windows.exe, 7235

Total downloads: 11328

BUT WHAT ABOUT THE TESTS?

Yeah, what about the tests?

2019 WORK

- RADCOMPARE utility
  - See Greg's pres.
- Tests(!)
  - Greg happens…
- Test wrappers
  - So that normies and CI suites can actually use the tests
- ~~Dashboard~~ (doh!)
  - Googs leaves NREL… ¯_( )_/¯
  - Work in progress for 2019/20

TEST WRAPPER

- Written in Ruby (get over it)

- Can run on all existing tests, or call specific tests, or "clean"

- Auto grabs all available cores for multithreaded apps (can be user specified)

- Make targets are all replicated in Ruby, and future additions in make will simply be replicated in this script

- Works like this:

  From build/resources:
  ruby ./test_lib.rb

SAMPLE OUTPUT

~/src/Radiance/build/resources $ ruby ./test_lib –n 16 –t test_rtrace

running test: test_rtrace

generating input file: rtmirror_fish.hdr

oconv basic.mat diorama_walls.rad closed_end.rad front_cap.rad glass_pane.rad antimatter_portal.rad bubble_in_cube.rad mirror.rad sunset_sky.rad > mirror.oct

command: vwrays -ff -vf fish.vf -x 2048 -y 2048 | rtrace -n 8 @mirror.opt -ffc -x 2048 -y 2048 mirror.oct | pfilt -1 -e +3 -r .6 -x /2 -y /2 > rtmirror_fish.hdr

command: pfilt -1 -r 1 -x 128 -y 128 -pa 1 rtmirror_fish.hdr | radcompare -v -rms 0.07 -max 1.5 -h ref/mirror_fish.hdr -

radcompare: input file type is 32-bit_rle_rgbe

radcompare: comparing inputs as HDR images

radcompare: relative RMS difference of reals in 'ref/mirror_fish.hdr' and '<stdin>' is 0.014809

result: PASS

WHAT NOW

Yeah, what now?

- Continued funding for this work has been promised by DOE

- Greg will add more (make-based) tests

- Rob will fold them into the "Ruby test wrapper"

- NREL will continue to host a Radiance source mirror on GH

- A Jenkins-based build/test workflow will be enabled and hosted at NREL, and test results will be posted to the NREL Radiance GH site

- Rob et al. will fix the build issues with rvu and address the still missing files from the NREL packages

- Timeframe: now-2020

ACKNOWLEDGEMENTS

THANK YOU!

Questions, Complaints, What-have-you?

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https://github.com/rpg777

https://github.com/NREL/Radiance