Status of GENIE AVS/CI

GENIE Physics Validation via Automated Validation Suite and Continuous Integration Service at FNAL

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GENIE STWG Meeting

June 13, 2018

AVS Overview (I)

- Nightly builds
  - Different platforms (SL6, SL7)
  - Different versions of Root (Root5, Root6)
  - (Prototype of) Unit Tests
    - Currently only LwlynSmith and Nieves cross-sections
    - GitHib
      - https://github.com/yarba/GENIE_UnitTests
    - Based on boost unit tests framework
  - Operation test: “mini-splines” and several events (CCQE)

AVS Overview (II)

- Weekly full chain, including Physics Validation (“comparisons”)
  - Everything from Nightly
  - Sanity check (gevscan)
  - Cross-sections validation (comparisons, “new style”)
    - Includes regression test (optional)
    - Recent addition: Includes benchmark of tunes
  - MINERvA validation (comparisons, “new style”)
    - Includes regression test (optional)
    - Includes benchmark of tunes (optional)
  - Hadronization validation (comparisons, “old style”)
    - Includes regression test (optional)
    - Includes benchmark of tunes (optional)
  - Most recent addition: T2K validation (comparisons, “new style”)
    - Only CC0pi for now
    - Includes benchmark of tunes (but no regression)

Reporting Results

- GENIEMC Slack – automated validation channel
  - Reports nightly in case of problems
  - Reports results from weekly full chain validation
- GENIE CI reporting site
  - http://dbweb6.fnal.gov:8080/GenieCI/app/view_builds/index
- While not a 100% necessary, one might still need a VPN
  - http://networking.fnal.gov
  - http://networking.fnal.gov/vpn

How to Launch GENIE AVS

- In principle, it is very straightforward (I have done it multiple times)
- Documentation is available:
  - https://cdcvs.fnal.gov/redmine/projects/genie_ci/wiki
- Authorization is needed to launch validation round
  - A number of GENIE authors are already authorized
  - Please contact us if you would like to be authorized

GENIEMC Slack – automated validation
“Orange alert” – Warning

geniemc.slack.com

Download the Slack Mac app for greater control over your notifications. Easier if you're in multiple workspaces, too!

GENIE
Julia Yarba

Jump to...

All Unreads
All Threads

Channels
automated_validation
general
random

Direct Messages
slackbot
Julia Yarba (you)
Costas Andreopoulos
Gabriel Perdue
Hugh Gallagher
Jacob Morrison
Jeremy Wolcott
Robert Hatcher
Steve Dennis 1
Steve Dytman
Tomasz Golan

Apps

#automated_validation
8 | 0 | Add a topic

Search

Thursday, April 5th

continuous-integration APP 12:57 AM
CI build of GENIE_ROOT5 workflow for slf6 Warning at phase unit_test
For more details about the warning phase, check the unit_test phase logs
Experiment: GENIE
Code revision: trunk
Build type: e7:prof
Platform: slf6
Show more

continuous-integration APP 1:03 AM
CI build of GENIE_ROOT5 workflow for slf6 Warning at phase unit_test
For more details about the warning phase, check the unit_test phase logs
Experiment: GENIE
Code revision: trunk
Build type: e7:debug
Platform: slf6
Show more

continuous-integration APP 2:11 AM
CI build of GENIE_ROOT6 workflow for slf6 Warning at phase unit_test
For more details about the warning phase, check the unit_test phase logs
Experiment: GENIE
Code revision: trunk
Build type: e10:debug
Platform: slf6
Show more

CI build of GENIE_ROOT6 workflow for slf6 Warning at phase unit_test
For more details about the warning phase, check the unit_test phase logs
Experiment: GENIE
Code revision: trunk
Build type: e10:prof
Platform: slf6
Show more

Sunday, April 8th

Message #automated_validation

Example: Warning from unit test
Most likely, change in the xsec is larger than tolerance (perhaps, as part of the development process.
Click on the link for more info.

GENIEMC Slack – automated validation
“Green light” – everything seems to be fine

geniemc.slack.com

Download the Slack Mac app for greater control over your notifications. Easier if you're in multiple workspaces, too!

GENIE
Julia Yarba

Jump to...

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Apps

#automated_validation
8 | 0 | Add a topic

Search

Sunday, April 8th

Experiment: GENIE
Code revision: develop
Build type: ROOT5+e7:prof
Platform: slf6
Workflow: GENIE_ROOT5_validation
Show more

Yesterday

continuous-integration APP 7:45 AM
CI build of GENIE_ROOT6_validation workflow for slf6 completed
Experiment: GENIE
Code revision: develop
Build type: ROOT6+e14:prof
Platform: slf6
Workflow: GENIE_ROOT6_validation
Personality: make
Jenkins project: genie_ci_validation, build 192
Build slave: buildservice004.fnal.gov
Trigger: trigger script by vito@larsoftdev6.fnal.gov
For more details about this CI build status and to access the logs, please, see the web monitoring application.
To access more logs see the Jenkins project web page.
Results for **GENIE Physics Validation** are available here
Show less

continuous-integration APP 10:17 AM
CI build of GENIE_ROOT5_validation workflow for slf6 completed
Experiment: GENIE
Code revision: develop
Build type: ROOT5+e7:prof
Platform: slf6
Workflow: GENIE_ROOT5_validation
Show more

Message #automated_validation

GENIE AVS CI Monitoring Site (I)

dbweb6.fnal.gov

Mail - yarba_j@fnal.gov | Your Workspaces | Slack | * automated_validation | GENIE Slack | Experiment CI Builds

GenieCI

Click here if the slide bar at the bottom doesn't show

Multiplatform continuous integration for GENIE

Select builds:

From build: buildname

# of builds: number

Select build date range:

From: mm/dd/yyyy

To: mm/dd/yyyy

Update Clear

Platforms +

Build types +

Test suites +

Validation suites +

Update Clear

Build	Start Time	Build Type	checkout	build	unit_test	ci_tests
genie_ci/826 (GENIE)	2018-03-31 01:51:06.621986	slf6 ROOT6 e10:debug	✓	✓	✓	✓
	2018-03-31 01:50:35.435592	slf6 ROOT6 e10:prof	✓	✓	✓	✓
genie_ci/825 (GENIE)	2018-03-31 00:40:16.418347	slf6 ROOT5 e7:debug	✓	✓	✓	✓
	2018-03-31 00:40:15.976490	slf6 ROOT5 e7:prof	✓	✓	✓	✓

Build	Start Time	Build Type	checkout	build	checkoutcmp	buildcmp	unit_test	ci_tests	setup_v
genie_ci_validation/186 (GENIE)	2018-03-30 17:28:36.132259	slf6 ROOT6 e14:prof	✓	✓	✓	✓	✓	✓	
genie_ci_validation/185 (GENIE)	2018-03-30 17:26:38.969734	slf6 ROOT5 e7:prof	✓	✓	✓	✓	✓	✓	

Build	Start Time	Build Type	checkout	build	unit_test	ci_tests
genie_ci/824 (GENIE)	2018-03-30 01:50:55.708817	slf6 ROOT6 e10:debug	✓	✓	✓	✓
	2018-03-30 01:50:53.778731	slf6 ROOT6 e10:prof	✓	✓	✓	✓
genie_ci/823 (GENIE)	2018-03-30 00:40:16.167396	slf6 ROOT5 e7:debug	✓	✓	✓	✓
	2018-03-30 00:40:14.507915	slf6 ROOT5 e7:prof	✓	✓	✓	✓
genie_ci/822 (GENIE)	2018-03-29 01:50:47.125332	slf6 ROOT6 e10:prof	✓	✓	✓	✓
	2018-03-29 01:50:44.549955	slf6 ROOT6 e10:debug	✓	✓	✓	✗
genie_ci/821 (GENIE)	2018-03-29 00:40:19.074917	slf6 ROOT5 e7:prof	✓	✓	✓	✓
	2018-03-29 00:40:19.076718	slf6 ROOT5 e7:debug	✓	✓	✓	✓
genie_ci/820 (GENIE)	2018-03-28 01:50:33.484323	slf6 ROOT6 e10:debug	✓	✓	✓	✓
	2018-03-28 01:50:35.236198	slf6 ROOT6 e10:prof	✓	✓	✓	✓
genie_ci/819 (GENIE)	2018-03-28 00:40:13.175254	slf6 ROOT5 e7:debug	✓	✓	✓	✓
	2018-03-28 00:40:13.415973	slf6 ROOT5 e7:prof	✓	✓	✓	✓

Progress Legend

- *Pending*
- *Unknown*
- *Succeeded*
- *Warning*
- *Failed*
- *Skipped*

GENIE AVS CI Monitoring Site (II)

dbweb6.fnal.gov

Mail - yarba_j@fnal.gov | Your Workspaces | Slack | * automated_validation | GENIE Slack | Experiment CI Builds

GenieCI

Multiplatform continuous integration for GENIE

Select builds:

From build: buildname

# of builds: number

Select build date range:

From: mm/dd/yyyy

To: mm/dd/yyyy

Update Clear

Platforms +

Build types +

Test suites +

Validation suites +

Update Clear

Time	Build Type	checkout	build	unit_test	ci_tests
-03-31 6.621986	slf6 ROOT6 e10:debug	✓	✓	✓	✓
-03-31 5.435592	slf6 ROOT6 e10:prof	✓	✓	✓	✓
-03-31 6.418347	slf6 ROOT5 e7:debug	✓	✓	✓	✓
-03-31 5.976490	slf6 ROOT5 e7:prof	✓	✓	✓	✓

Time	Build Type	checkout	build	checkoutcmp	buildcmp	unit_test	ci_tests	setup_validation	ci_validation
-03-30 6.132259	slf6 ROOT6 e14:prof	✓	✓	✓	✓	✓	✓	✓	!
-03-30 8.969734	slf6 ROOT5 e7:prof	✓	✓	✓	✓	✓	✓	✓	!

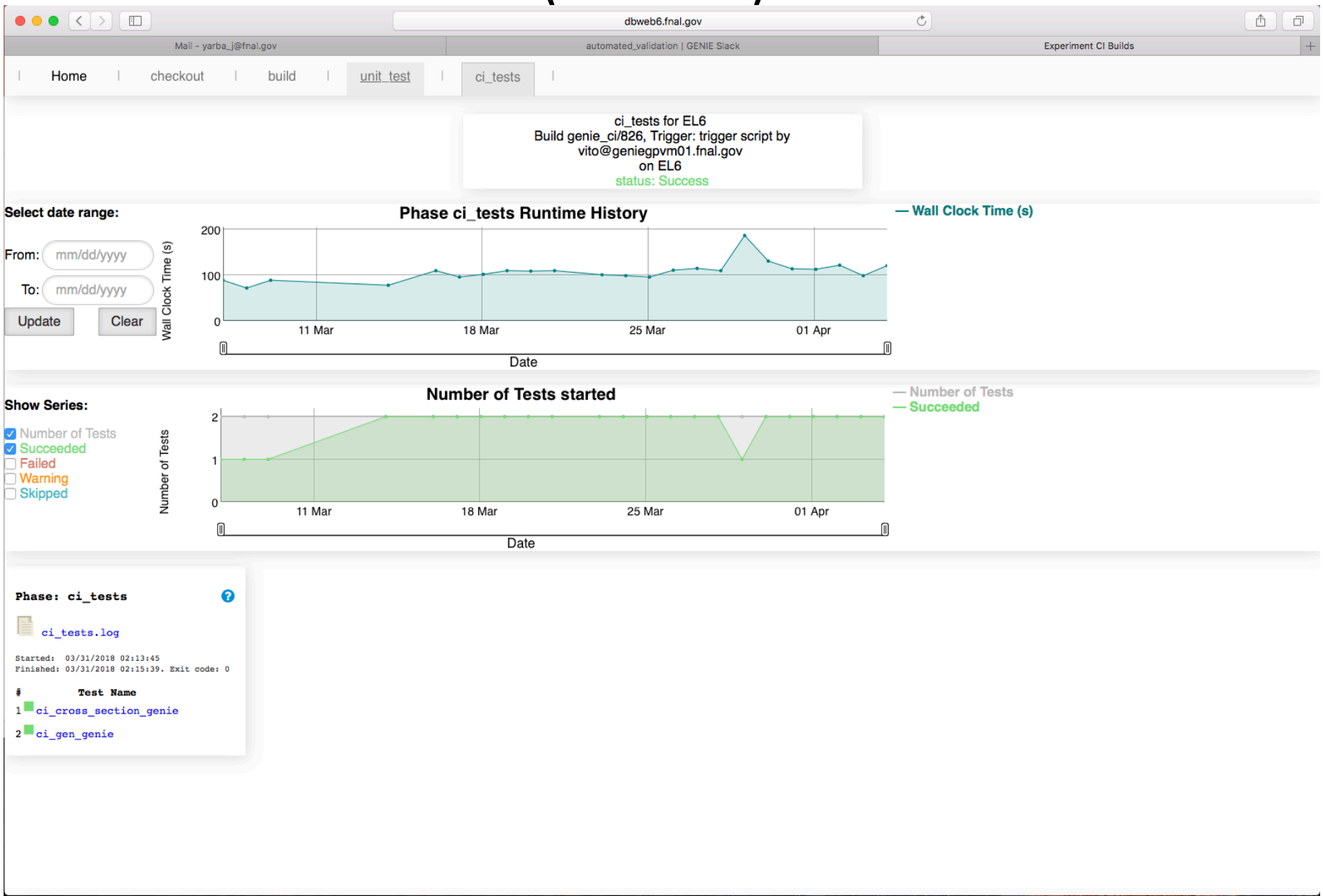
Time	Build Type	checkout	build	unit_test	ci_tests
-03-30 5.708817	slf6 ROOT6 e10:debug	✓	✓	✓	✓
-03-30 3.778731	slf6 ROOT6 e10:prof	✓	✓	✓	✓
-03-30 6.167396	slf6 ROOT5 e7:debug	✓	✓	✓	✓
-03-30 4.507915	slf6 ROOT5 e7:prof	✓	✓	✓	✓
-03-29 7.125332	slf6 ROOT6 e10:prof	✓	✓	✓	✓
-03-29 4.549955	slf6 ROOT6 e10:debug	✓	✓	✓	✗
-03-29 9.074917	slf6 ROOT5 e7:prof	✓	✓	✓	✓
-03-29 9.076718	slf6 ROOT5 e7:debug	✓	✓	✓	✓
-03-28 3.484323	slf6 ROOT6 e10:debug	✓	✓	✓	✓
-03-28 5.236198	slf6 ROOT6 e10:prof	✓	✓	✓	✓
-03-28 3.175254	slf6 ROOT5 e7:debug	✓	✓	✓	✓
-03-28 3.415973	slf6 ROOT5 e7:prof	✓	✓	✓	✓

"Mini-splines" +
Several events
Feel free to click !

Progress Legend
Pending
Unknown
Succeeded
Warning
Failed
Skipped

Full chain physics validation
Feel free to click !

Reporting “Mini-splines” + Several Events (ci_tests)



Reporting Physics Validation (ci_validation)

dbweb6.fnal.gov

Mail - yarba_j@fnal.gov | Your Workspaces | Slack | * automated_validation | GENIE Slack | Experiment CI Builds

Home | checkout | build | checkoutcmp | buildcmp | unit_test | ci_tests | setup_validation | ci_validation

GENIE Physics Validation

Build	Start Time	Build Type	dag_1	dag_2	dag_3	dag_4	dag_5	dag_6	dag_7	dag_8	dag_9	dag_10	dag_11	dag_12	dag_13	dag_14	dag_15
genie_ci_validation/186 (GENIE)	2018-03-30 20:42:44.602221	slf6 ROOT6 e14:prof	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Progress Legend
Successful
Failed
Pending
Warning
Skipped
Held
Unknown

Feel free to click – it'll lead to a wiki that explains what all the dagNN mean

Phase: ci_validation

ci_validation.log

Started: 03/30/2018 18:03:01
Finished: 03/30/2018 18:03:01. Exit code: -1

+hadronization_test/

+minerva/

+sanity_mctest/

−xsec_validation/

Expandable folders contain contain results (plots or logfiles)

- genie_trunk_c02d01_cmp_numubarCC_BEBC_1.pdf
- genie_trunk_c03d12_cmp_numuCCQE_MiniBooNE_0.pdf
- genie_trunk_c02d10_cmp_numubarCC_FNAL_15FT_5.pdf
- genie_trunk_c01c02_cmp_numuCC_lowE.pdf
- genie_trunk_c03c01_cmp_numuCCQE_all.pdf
- genie_trunk_c02d07_cmp_numubarCC_CHARM_1.pdf
- genie_trunk_c01d02_cmp_numuCC_ANL_12FT_4.pdf

NOTE: Hadronization validation app produces Postscript output which may or may not be directly viewed, depending on the browser

Plans for Future

- Seek your feedback !
- Plans are largely driven by the upcoming release of v3
- Expand unit tests
  - Add unit test(s) for reweighting
  - …
- Expand physics validation suite
  - Refine benchmark of different tunes
    - Currently, there's "default" and additional tunes
  - Adding MiniBooNE and T2K apps – in progress
  - Implement regression testing tools to compare MC-to-MC results
  - Address several (small ?) "hiccups" discovered along the way (e.g. COH pion does not work in MINERvA; some of the XSec validation apps are not operational, etc.)
- Open to suggestions ^_^