



Gitlab CI examples in CLICdp, Key4hep, and iLCDirac

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- <https://docs.gitlab.com/ce/ci/README.html>
- CI/CD is configured via yaml files that are part of the repository or included from other repositories
- Gitlab “shared” runner provided by IT, custom runner also possible
 - I have no experience with the kubernetes cluster integration
- Sequence of jobs defined by “needs” (and *stages*, or *dependencies*)

```
install: # one job
  artifacts:
    paths:
      - installation
unittest: # second job
  needs: ["install"]
  artifacts:
    reports:
      junit: junit_job.xml
```



- One of the jobs in the iLCDirac pipeline, compiles documentation, code reference
- Runs on docker with CC7 image, picks up installed software, runs *sphinx*, fails if there are warnings, uploads compiled documentation as an artifact for the job that does the copy to EOS
- using *anchors* to reuse parts of the job description: *cc7docker*, *rule_no_sweep*, *retry_policy*

```
compiledoc:
  <<: *cc7docker
  <<: *rule_no_sweep
  stage: unittest
  variables:
    GIT_STRATEGY: none
  needs: ["install"]
  script:
    - export HOME=/root/
    - cd installation/ILCDIRAC
    - source ../bashrc
    - unset REQUESTS_CA_BUNDLE
    - pip install sphinx==1.8.0
    - cd docs
    - export PYTHONPATH=$PWD/source:$PYTHONPATH
    - bash patchSphinx.sh
    - SPHINXOPTS=-wsphinxWarnings make completeDocumentation
    - mv build/html ../../../../ilcdiracdoc
    - if [ -s sphinxWarnings ]; then exit 1; fi
  artifacts:
    paths:
      - ilcdiracdoc
    expire_in: 2 hours
    when: always
  allow_failure: true
  <<: *retry_policy
```

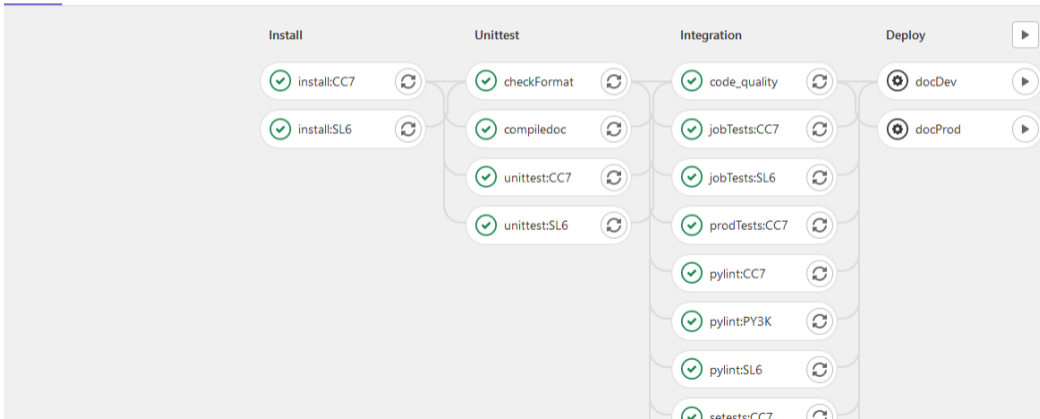
iLCDirac PR and Nightly pipeline



■ Runs for iLCDirac PRs and nightly schedules

- ▶ Difference between fork and main repo, e.g., jobs allowed to fail because secrets could be missing
- ▶ Different variable values (branches, versions) for different schedules

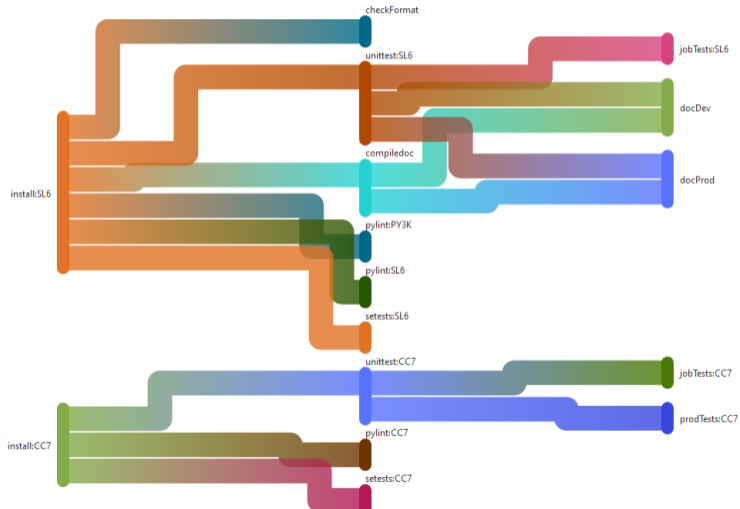
Pipeline Needs Jobs 18 Tests 3928 Code Quality



<https://gitlab.cern.ch/CLICdp/iLCDirac/ILCDIRAC>

iLCDirac PR and Nightly pipeline

Same as before, just the “DAG” view



Test Overview

Uses `junit.xml` file from artifact, here produced by `pytest`



Pipeline Needs Jobs 18 Failed Jobs 1 Tests 3930 Code Quality

Summary

3930 tests 9 failures 0 errors 99.77% success rate 2172.09s



Jobs

Job	Duration	Failed	Errors	Skipped	Passed	Total
jobTests:CC7	906.10s	0	0	0	14	14
jobTests:SL6	611.41s	0	0	0	14	14
setests:CC7	281.56s	0	0	0	15	15

Test Details

Details for failed tests



< unittest:SL6

1936 tests

9 failures

0 errors

99.54% success rate

38.00s


Tests

Suite	Name	Filename	Status	Duration	Details
Interfaces.API.NewInterface. Tests.Test_Whizard2. Whizard2TestCase	test_setSinFile_fails2_1	Interfaces/ API/ NewInterface/ Tests/Test_ Whizard2.py 		8.00ms	View details
Interfaces.API.NewInterface. Tests.Test_Whizard2. Whizard2TestCase	test_setSinFile_fails2_0	Interfaces/ API/ NewInterface/		7.00ms	View details

Results visible for each PR

 Code quality improved on 6 points and degraded on 52 points

Expand

 Test summary contained 9 fixed test results out of 3980 total tests

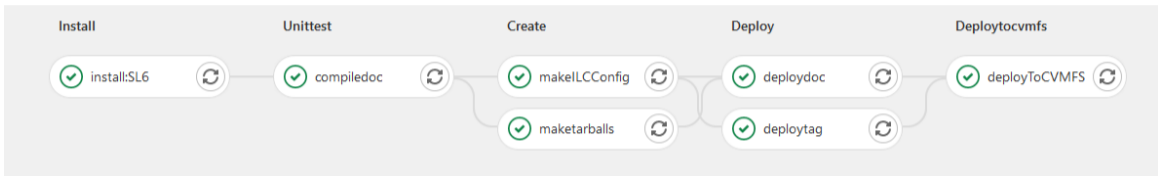
 View full report

Expand

Test coverage in the PR diff

```
71 + # Check if file exist
72 + if not os.path.isfile(kkmcConfigFilePath):
73 +     return self._reportError('KKMC config file does not exist!')
74 +
```


iLCDirac Tag



- Runs for new git tags
 - ▶ Can also parse tags, e.g., do not deploy for 'pre' tags
- Always copies documentation client tarball to EOS
- Deploys client installation to CVMFS

Scheduling



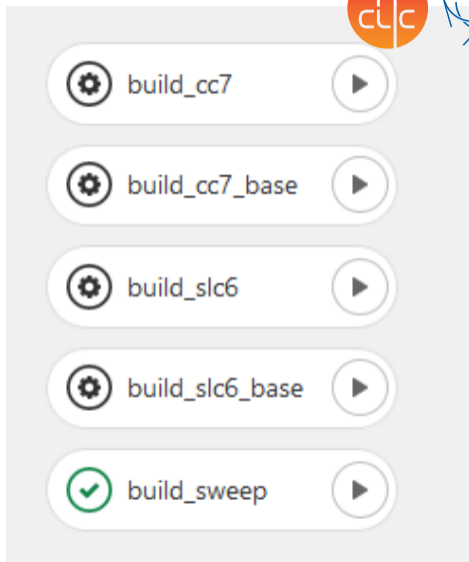
- Someone broke something on Friday
- Schedules can be triggered manually here
- Sweeper based on script from ATLAS: port PRs to different branches
 - Use project access token to push to repository

Description	Target	Last Pipeline	Next Run	Owner	
SweepV30	🔒 Rel - v30r0	✅ #2376580	in 6 hours	Andre Sailer	
SweepV29	🔒 Rel - v29r2	✅ #2376576	in 6 hours	Andre Sailer	
v6r22/v29r2	🔒 Rel - v29r2	❌ #2376635	in 7 hours	Andre Sailer	
v7r0/v30r0	🔒 Rel - v30r0	❌ #2376694	in 8 hours	Andre Sailer	

Building Docker Containers



- all set to `when: manual`
- Could change to run based on changed file, but not enough changes



<https://gitlab.cern.ch/CLICdp/iLCDDirac/iLCDDirac-CI-Images>

Key4hep deploy



- <https://gitlab.cern.ch/key4hep/k4-deploy>
- Builds Key4hep stack and connects to CVMFS publisher via ssh
- Trying to use gitlab-runner deployed on the CVMFS publisher machine

Epilogue



- More examples <https://gitlab.cern.ch/gitlabci-examples>
- Documentation <https://docs.gitlab.com/ce/ci/README.html>