Introduction to automation

Philippe COLLET, Mathias COUSTÉ

06.02.2020

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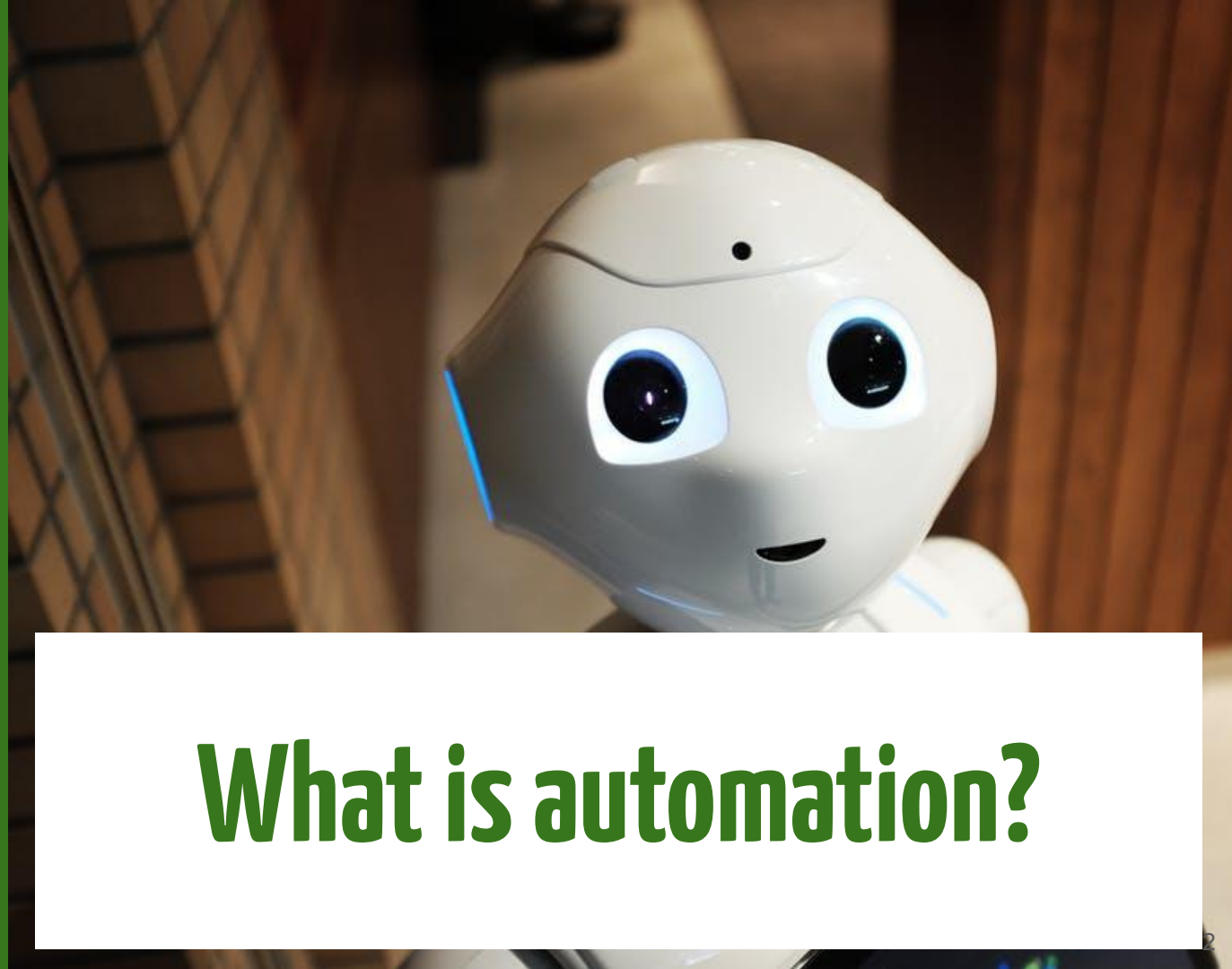


What is automation?

A little history

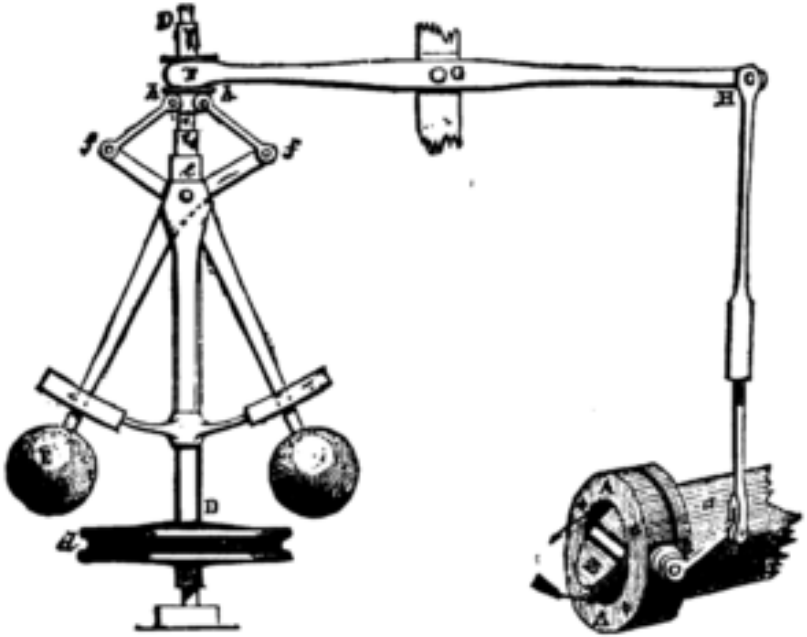


FIG. 4.—*Governor and Throttle-Valve.*

James Watt - 1788

What can we automate?

How to know if something should be automated ?

➔ Is it done by a human?

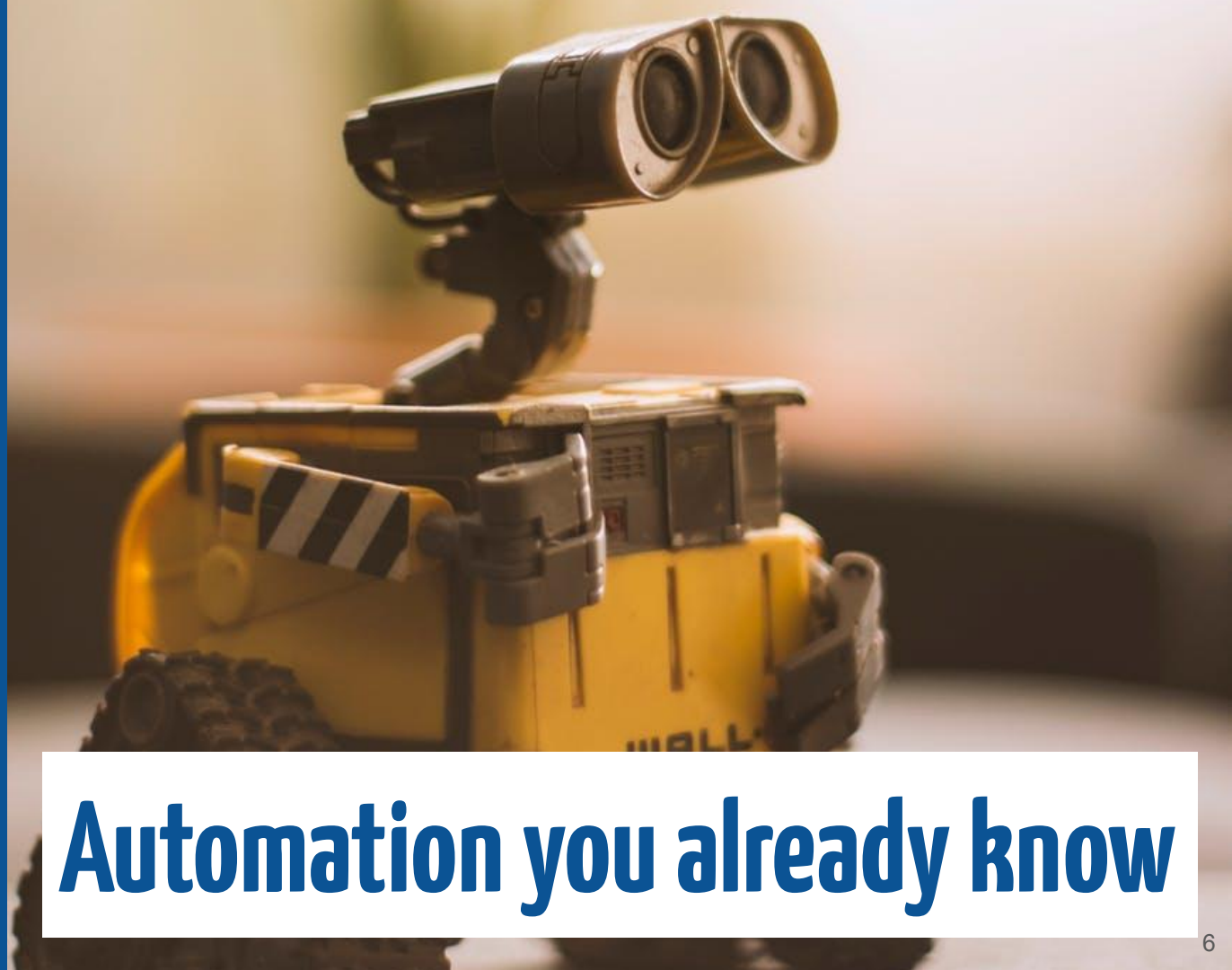
➔ Is it expensive?

➔ Is it recurrent?

What about computer sciences?

- If something is hard to do, do it often.
- Our job is to automate things for others but we sometimes forget to do it for ourselves.
- With good automation a developper will spend more time delivering value.

2



Automation you already know

Coding = Automating

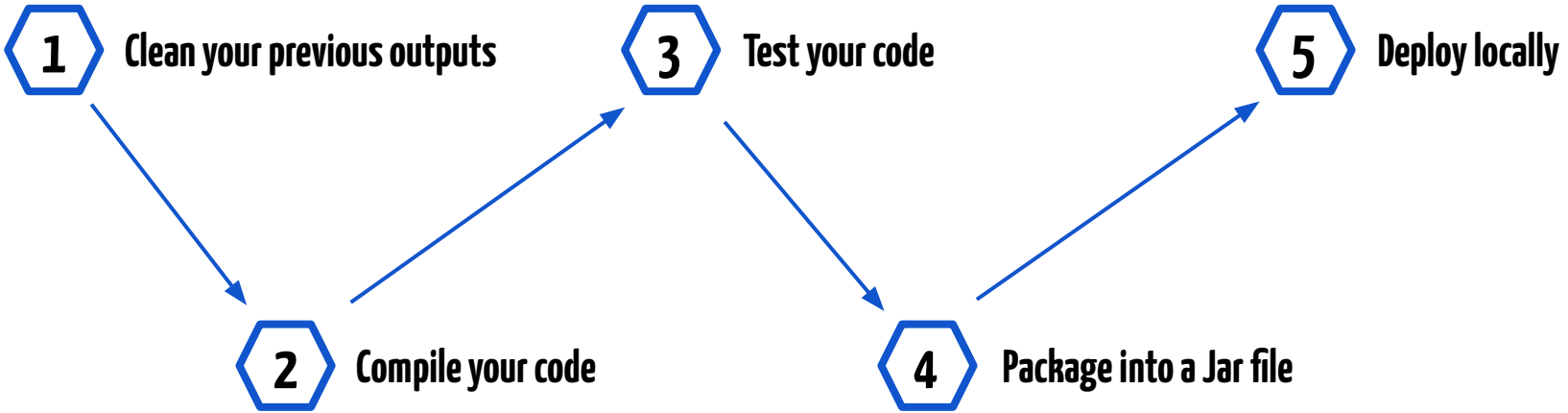
```
private static void setupFolder(AppConfig config, TeamPool pool) {
    // Create pool folder
    File poolFolder = FileUtils.getFile(config.getWorkspaceFolder(), POOL_FOLDER_NAME_PREFIX + pool.getId());
    if (!poolFolder.exists()) {
        poolFolder.mkdir();
    }

    pool.setPoolFolder(poolFolder);

    // Create teams config file
    File teamsConfig = FileUtils.getFile(poolFolder, POOL_TEAMCONFIG_FILENAME);
    try {
        Files.writeString(Paths.get(teamsConfig.toURI()), pool.toConfigFile(), StandardOpenOption.CREATE,
                StandardOpenOption.APPEND);
    } catch (IOException e) {
        e.printStackTrace();
    }
    pool.setTeamsConfigFile(teamsConfig);
}
```

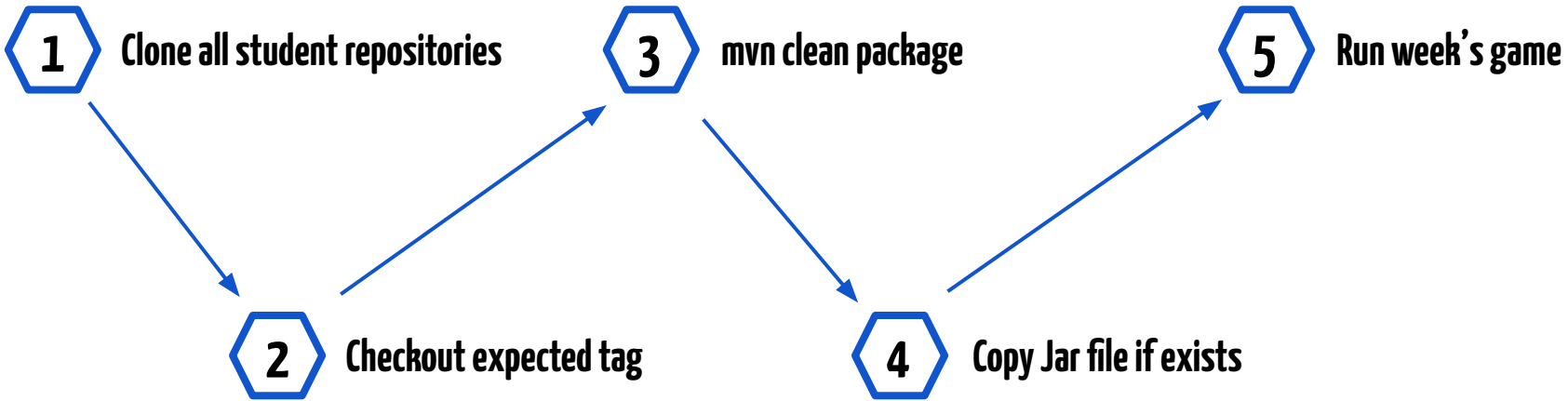
Maven

```
user ~ $ > mvn clean install
```



QGL weekly retrieve script

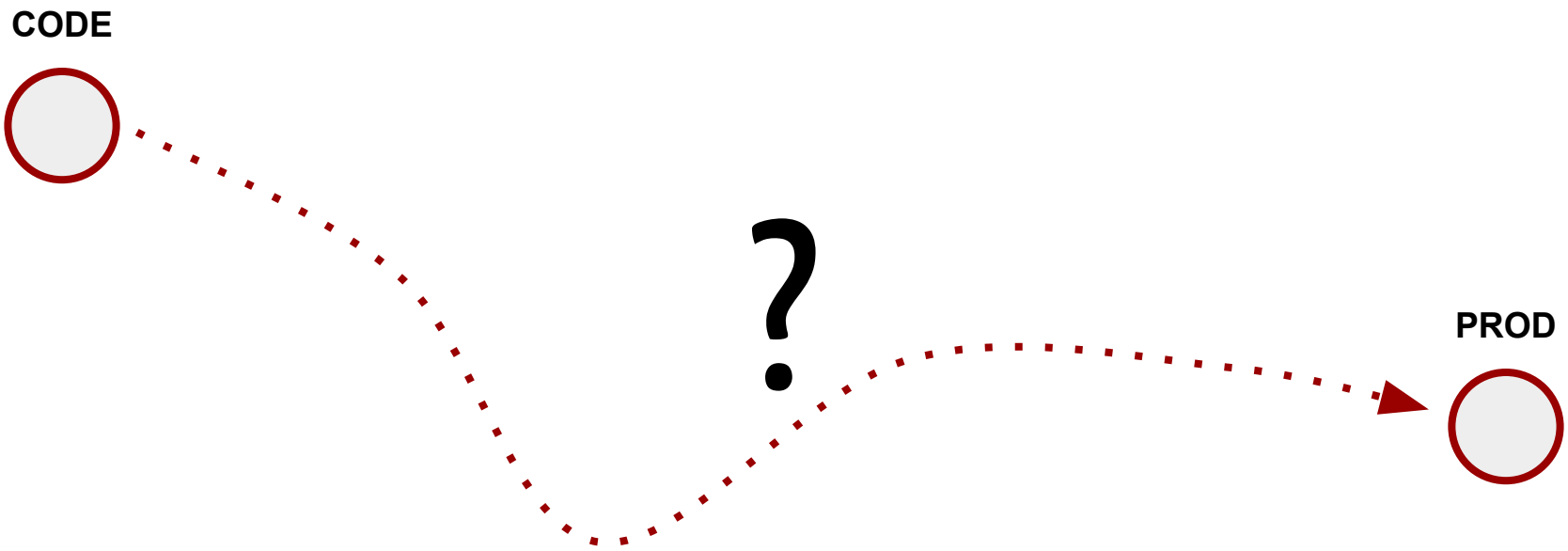
```
user ~ $ > ./retrieve.sh week2
```



3

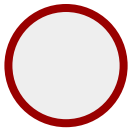
From code to prod !

Build automation

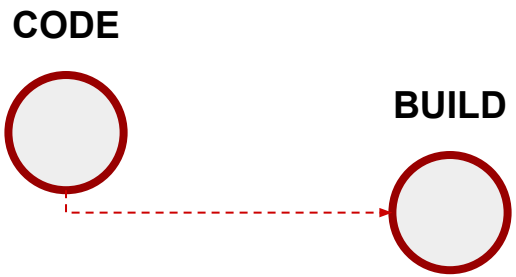


Build automation

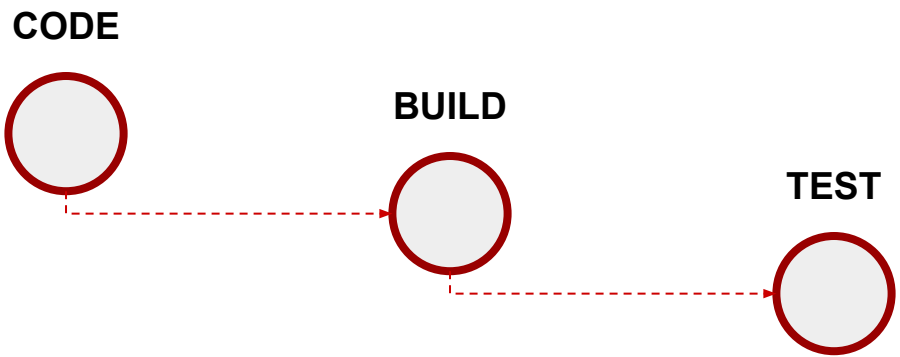
CODE



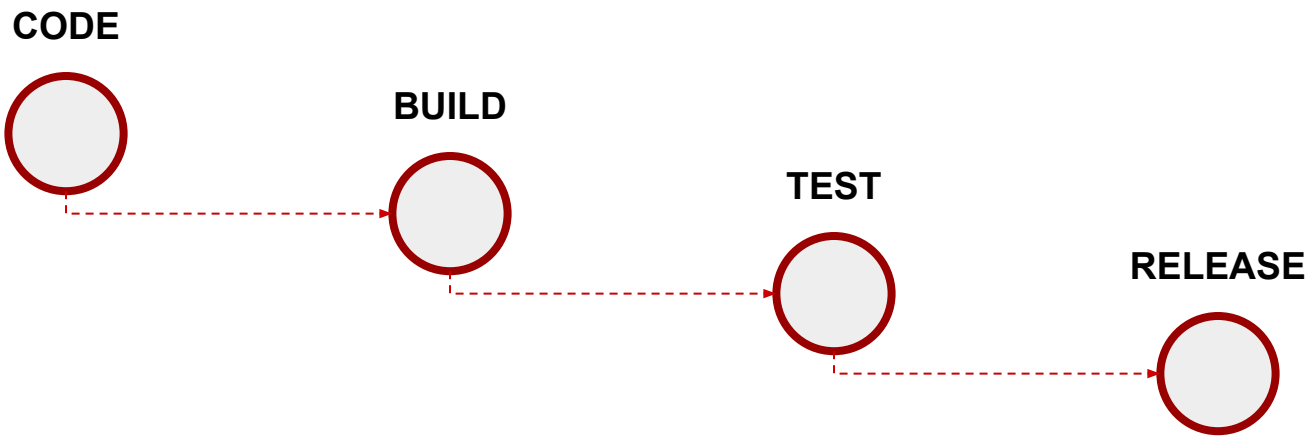
Build automation



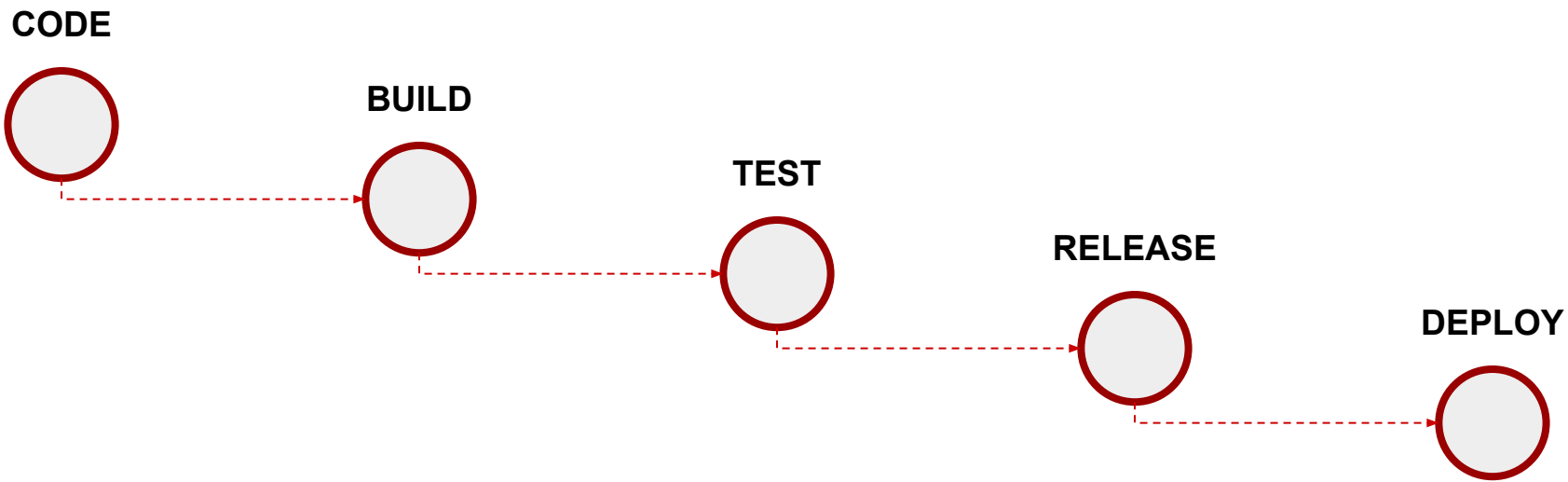
Build automation



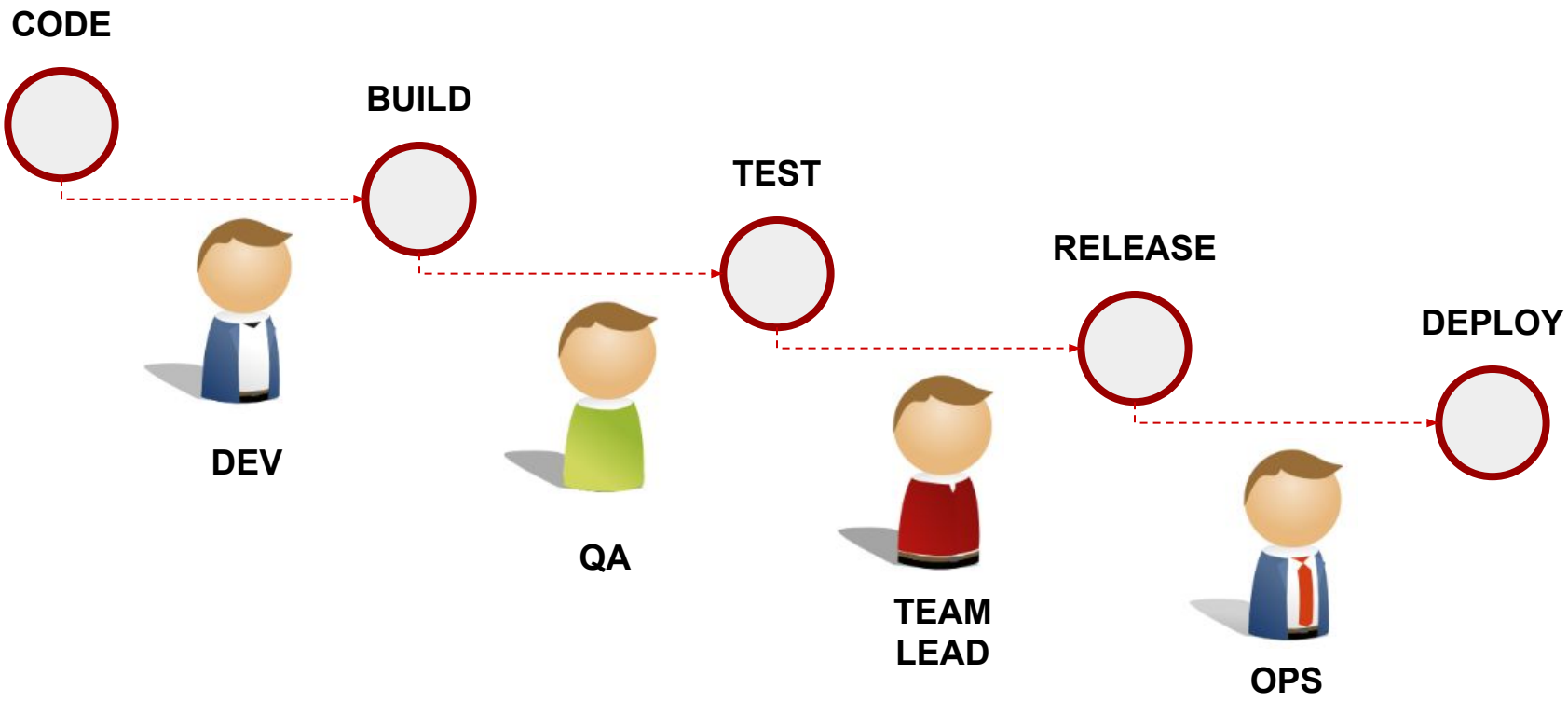
Build automation



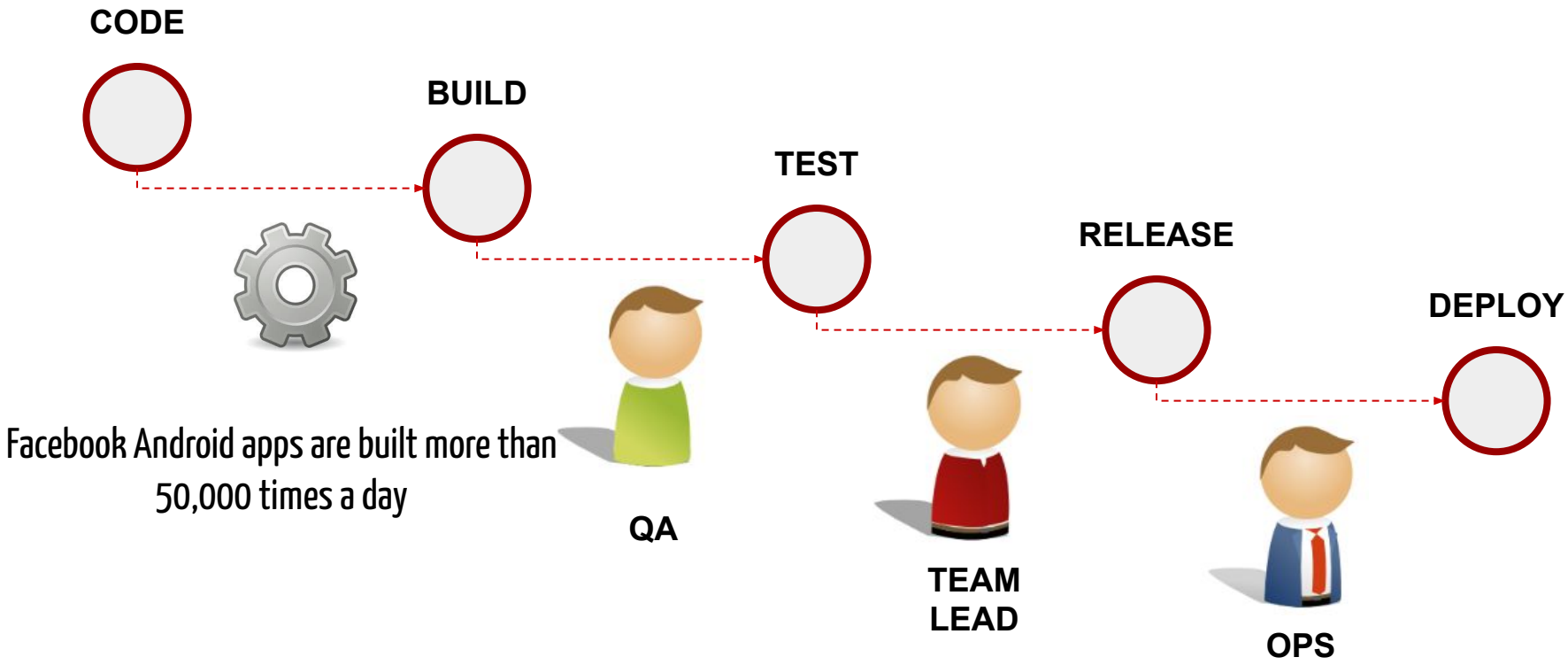
Build automation



Build automation

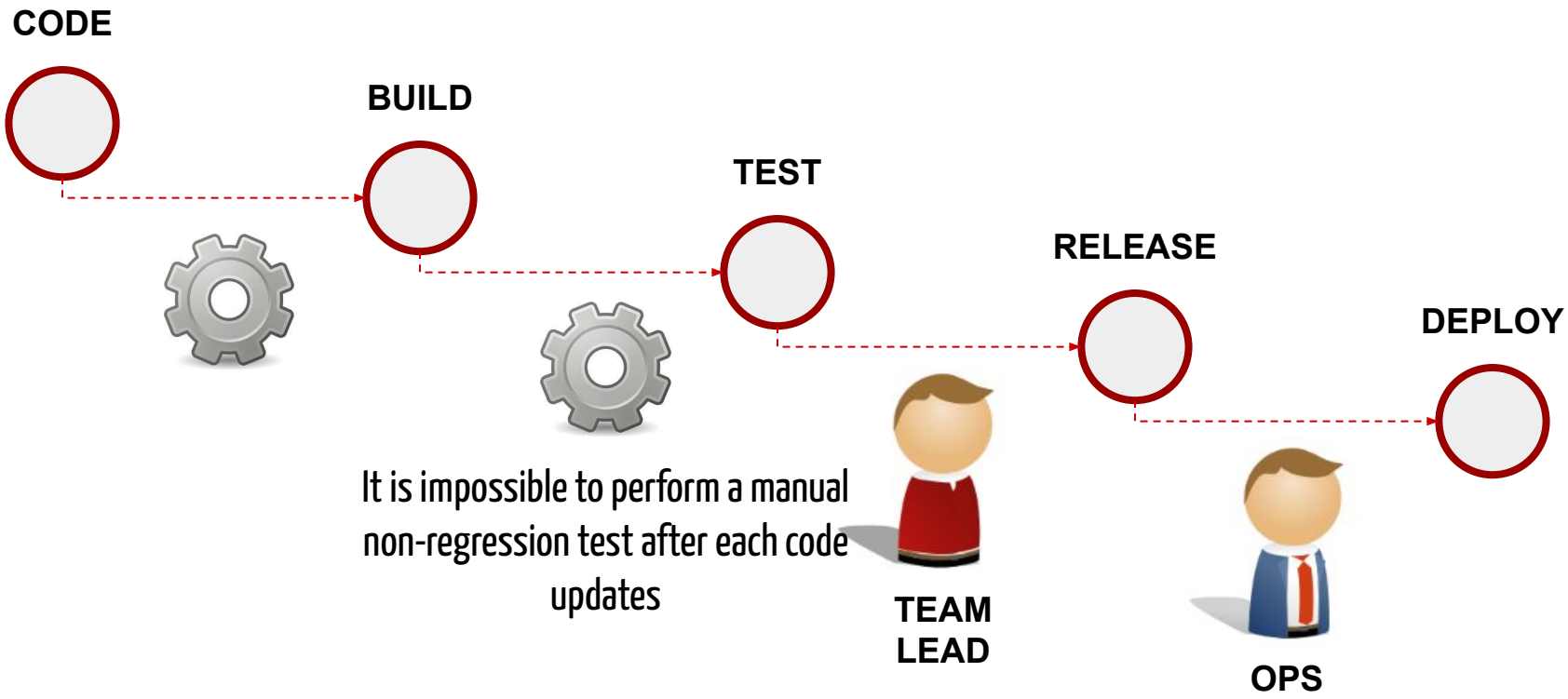


Build automation

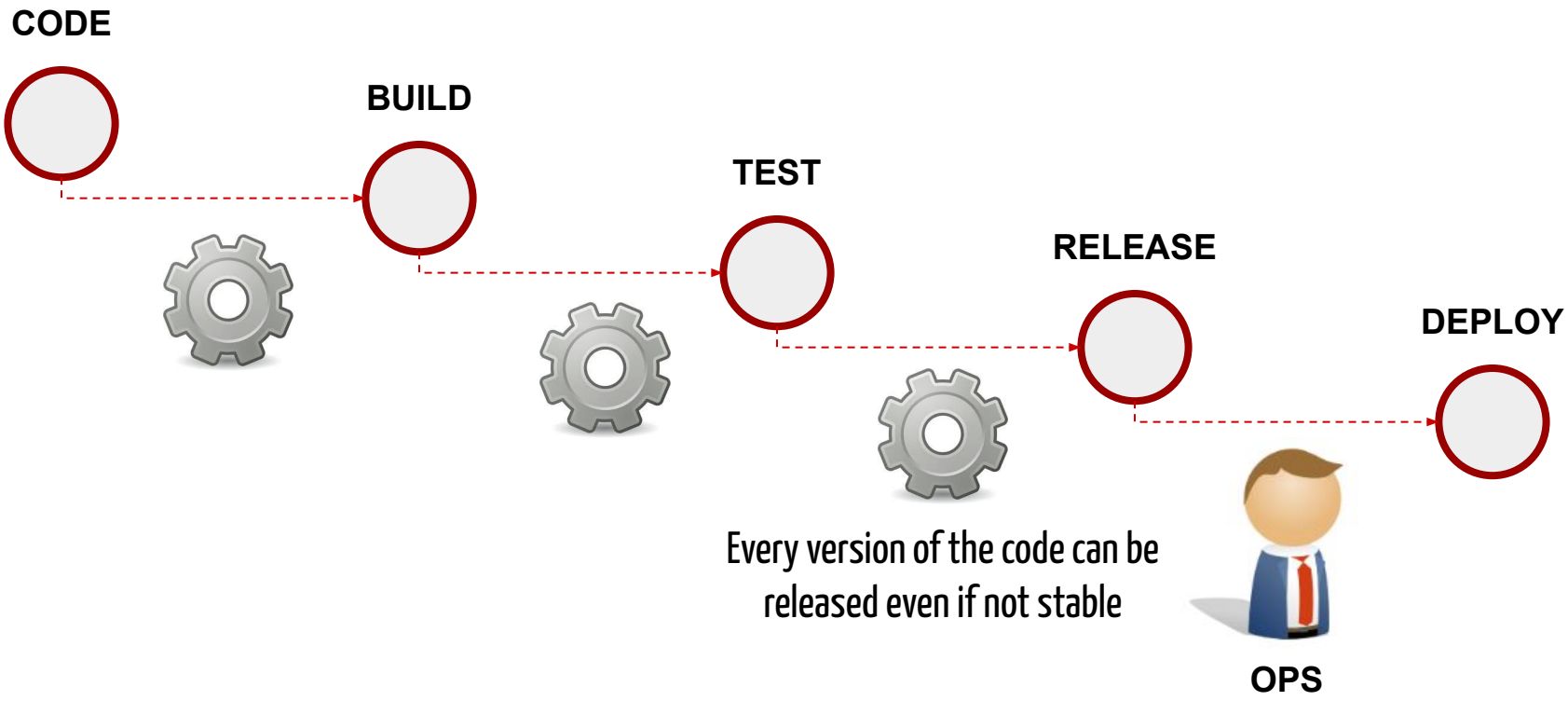


Facebook Android apps are built more than 50,000 times a day

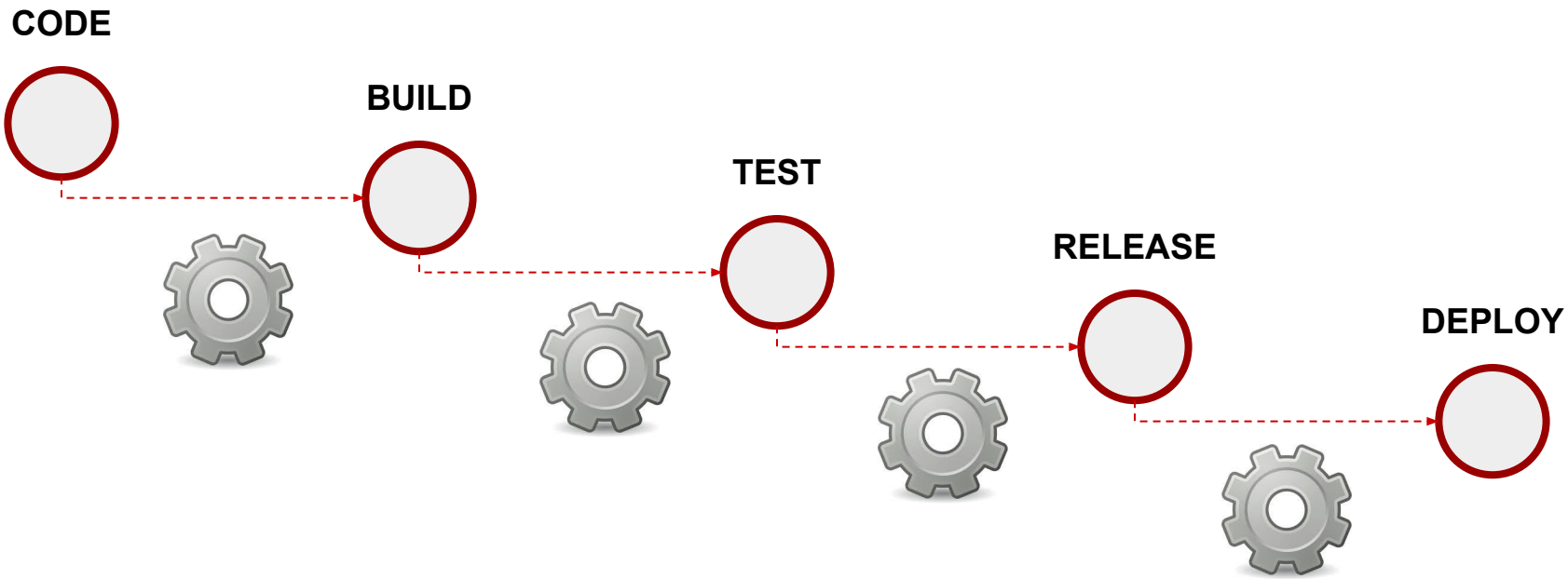
Build automation



Build automation

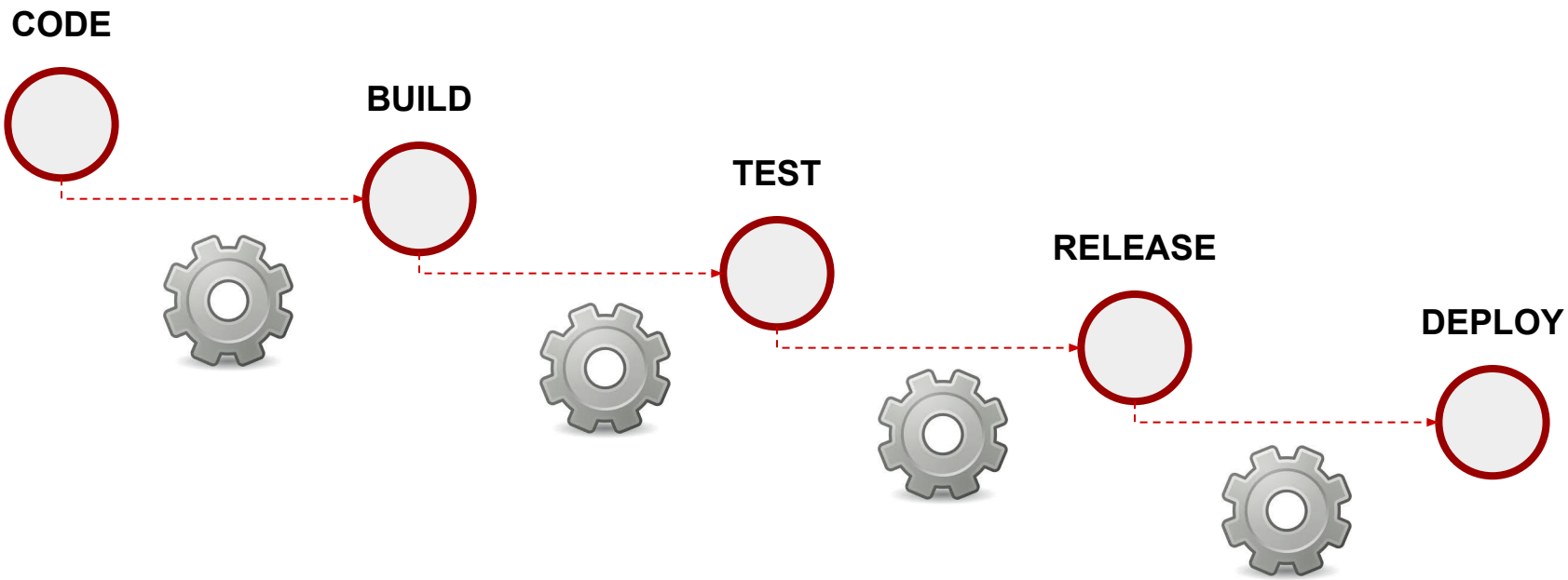


Build automation



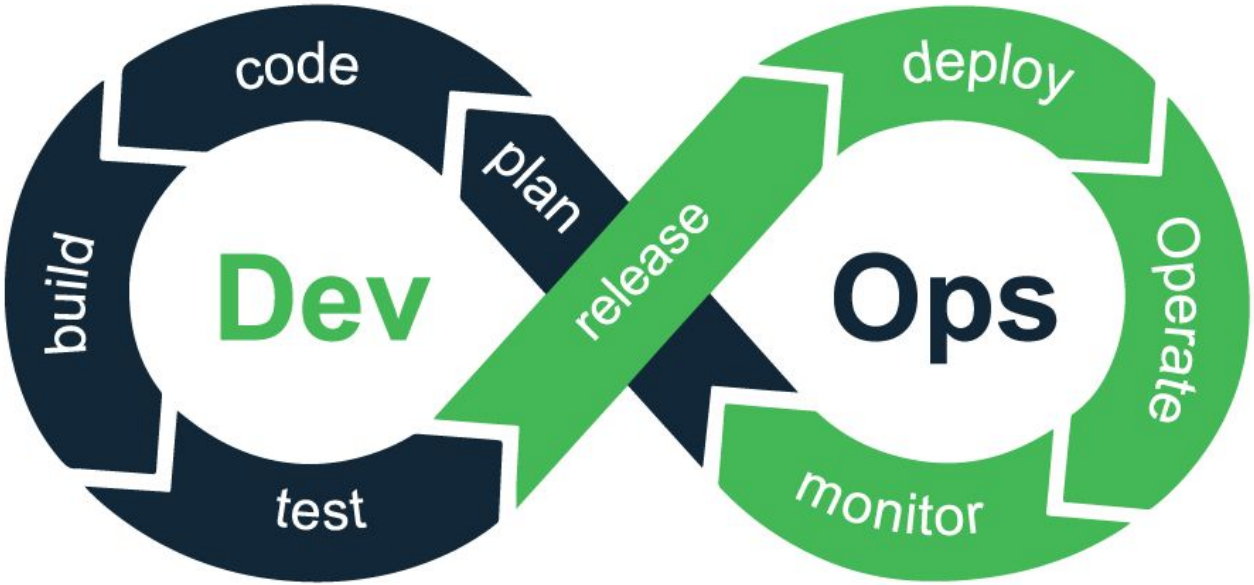
Facebook deploy in production multiple times per day
(and you never notice it)

Build automation



https://engineering.fb.com/web/rapid-release-at-massive-scale/

Be DevOps


code
plan
build
Dev
test
release
deploy
Ops
Operate
monitor

Q&A

Automating your project

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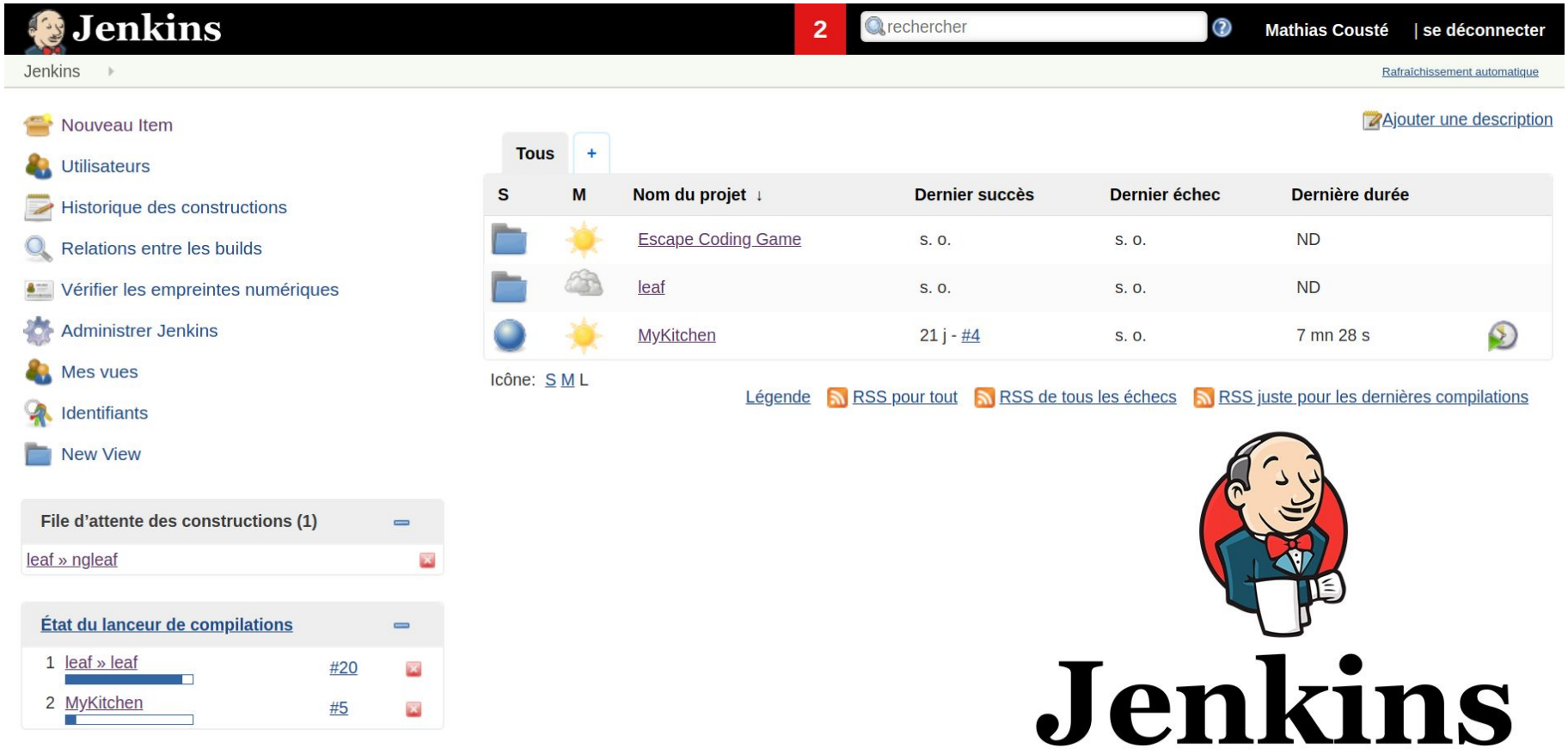
06.02.2020

1

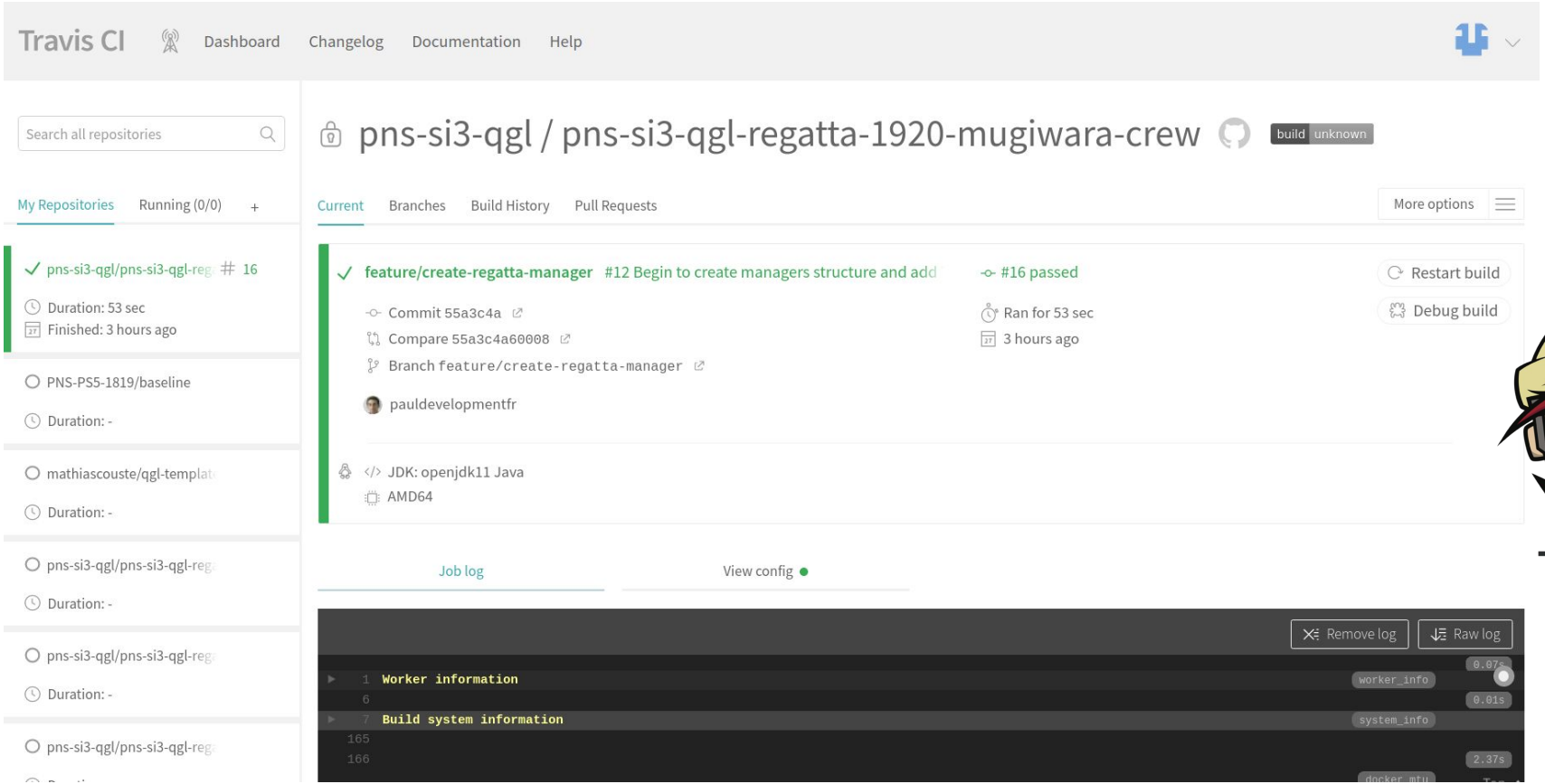
Existing tools

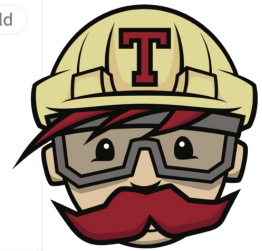
Jenkins



Jenkins

Travis CI





Travis CI

2

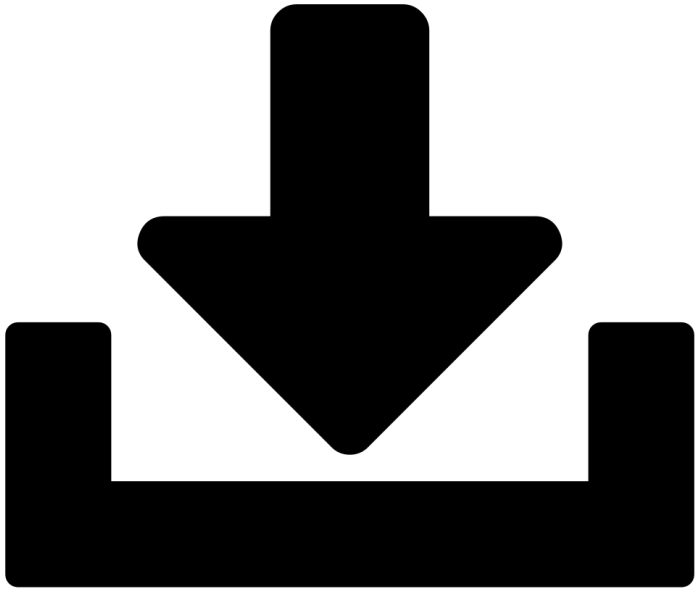
Travis' features

In the cloud

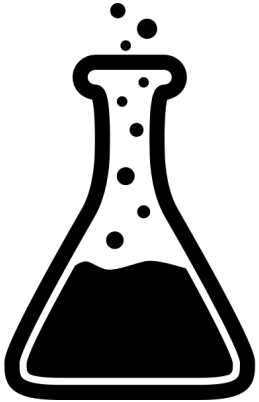
No installation ...

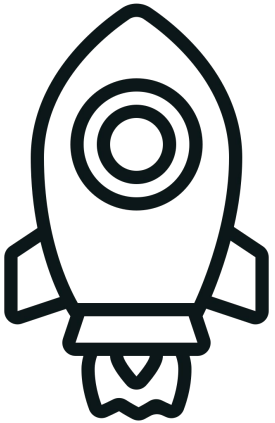
Integration only !

Clone your Git repository

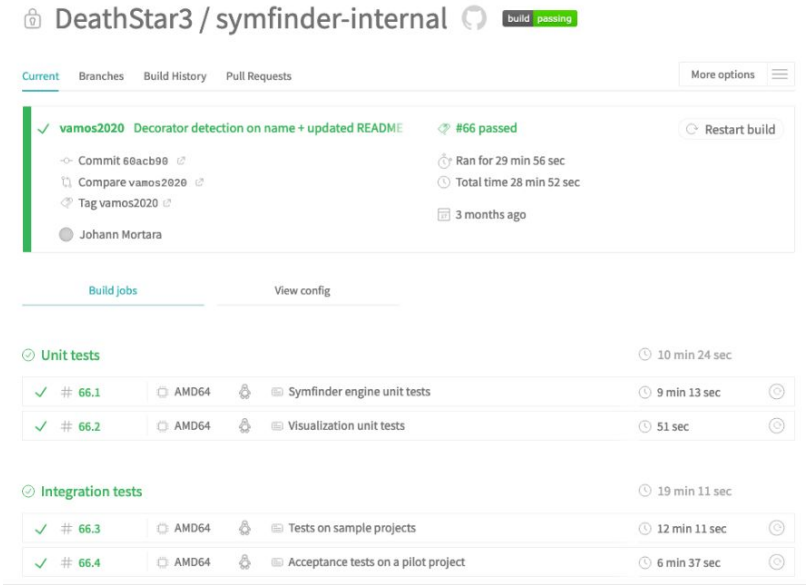


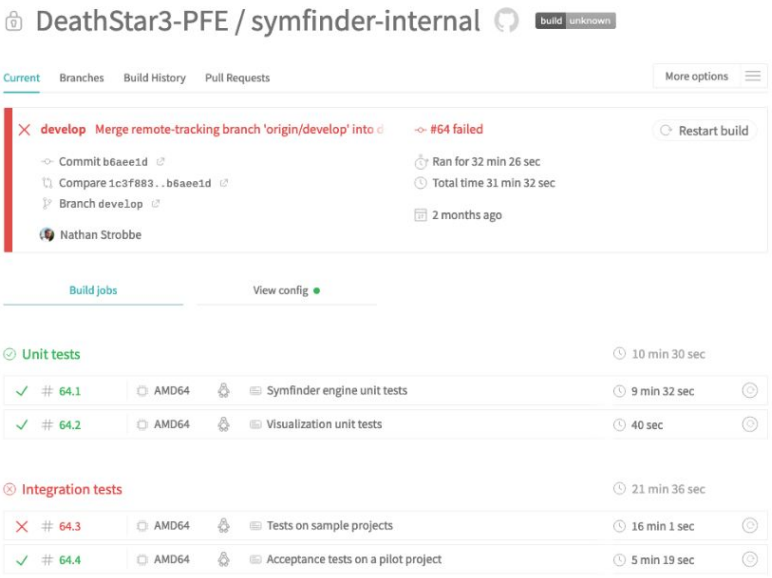
Run some specific tasks





PASS or FAIL


DeathStar3 / symfinder-internal
build passing
Current
Branches
Build History
Pull Requests
More options
vamos2020 Decorator detection on name + updated README
#66 passed
Restart build
Commit 60acb98
Compare vamos2020
Tag vamos2020
Johann Mortara
Ran for 29 min 56 sec
Total time 28 min 52 sec
3 months ago
Build jobs
View config
Unit tests
10 min 24 sec
66.1 AMD64 Symfinder engine unit tests 9 min 13 sec
66.2 AMD64 Visualization unit tests 51 sec
Integration tests
19 min 11 sec
66.3 AMD64 Tests on sample projects 12 min 11 sec
66.4 AMD64 Acceptance tests on a pilot project 6 min 37 sec


DeathStar3-PFE / symfinder-internal
build unknown
Current
Branches
Build History
Pull Requests
More options
develop Merge remote-tracking branch 'origin/develop' into
#64 failed
Restart build
Commit b6aee1d
Compare 1c3f883..b6aee1d
Branch develop
Nathan Strobbe
Ran for 32 min 26 sec
Total time 31 min 32 sec
2 months ago
Build jobs
View config
Unit tests
10 min 30 sec
64.1 AMD64 Symfinder engine unit tests 9 min 32 sec
64.2 AMD64 Visualization unit tests 40 sec
Integration tests
21 min 36 sec
64.3 AMD64 Tests on sample projects 16 min 1 sec
64.4 AMD64 Acceptance tests on a pilot project 5 min 19 sec

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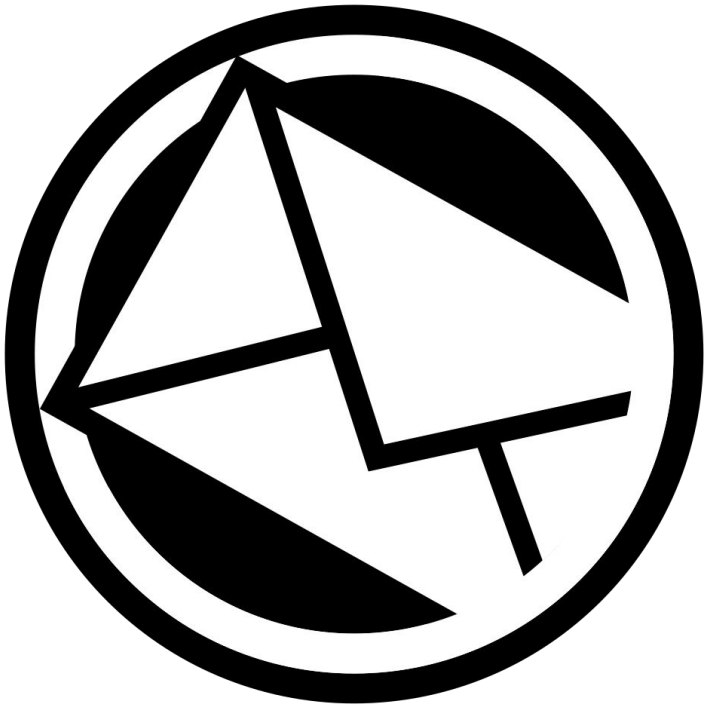
Integration with other tools

Github

Heroku

Get an email



Integration chains

Branch build flow

Pull request build flow

4

What do we expect?

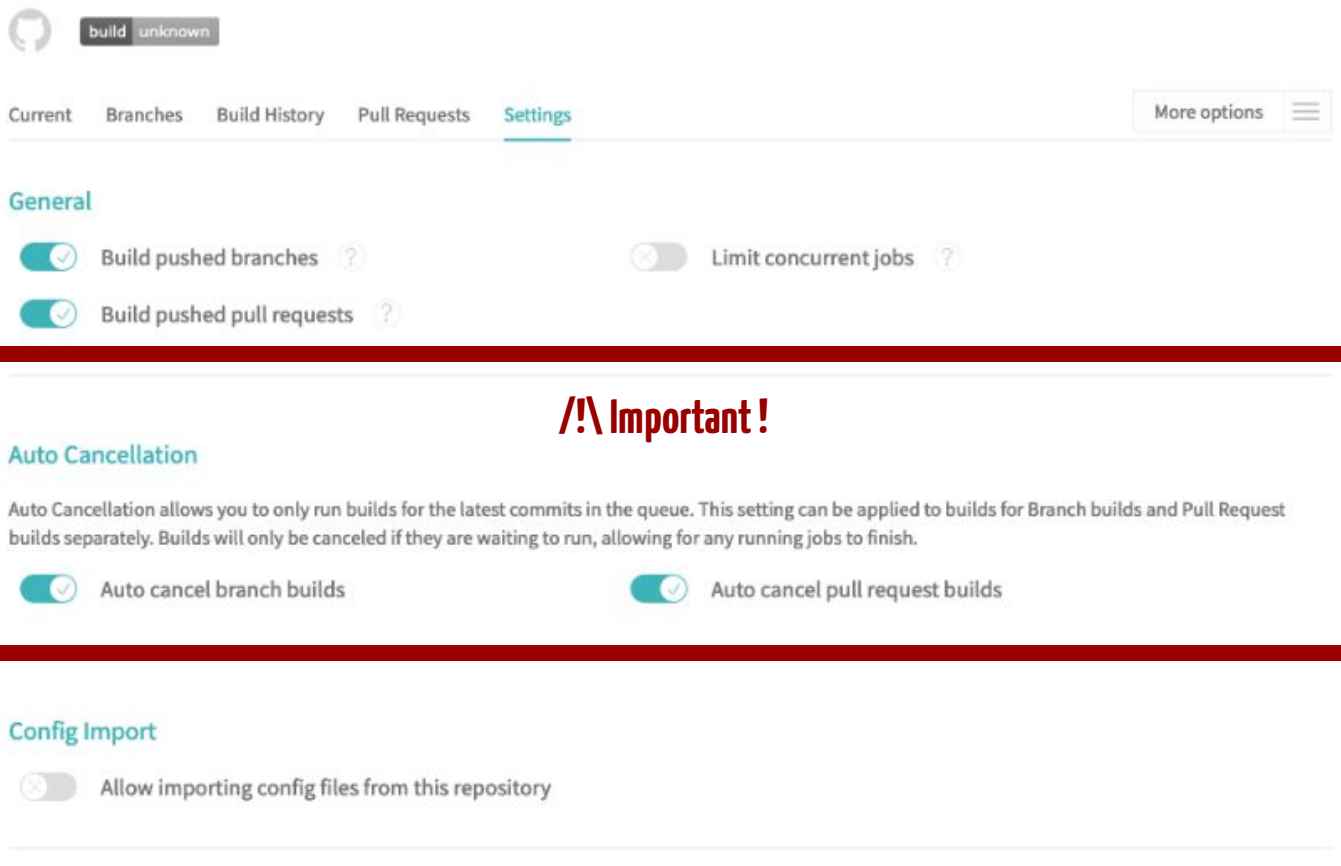
Setup 1

1. Signup with your github account
   Authorize application within github
2. Add a repository

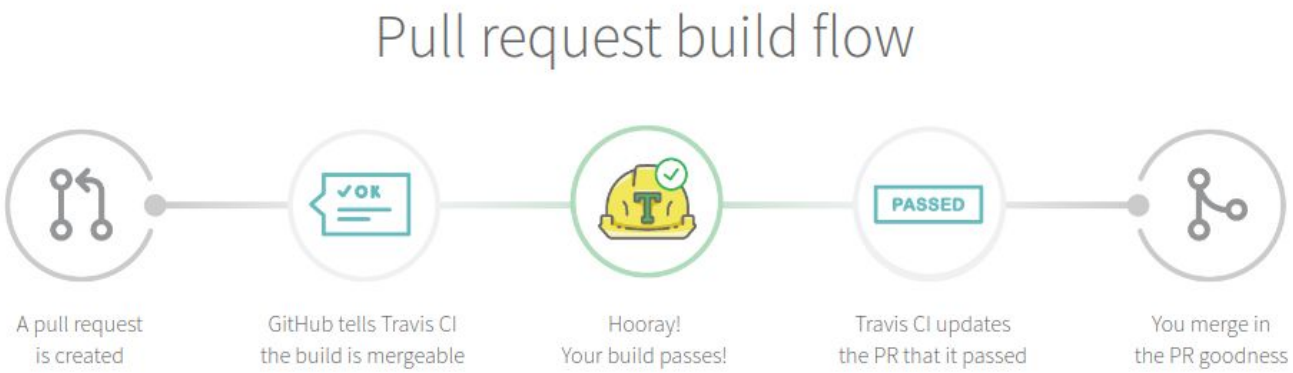
3. Configure the .travis.yml file
   https://docs.travis-ci.com/user/languages/java/

4. Tutorial: *https://docs.travis-ci.com/user/tutorial/*

Setup 2


build unknown
Current
Branches
Build History
Pull Requests
Settings
More options
General
Build pushed branches
Limit concurrent jobs
Build pushed pull requests
/!\ Important !
Auto Cancellation
Auto Cancellation allows you to only run builds for the latest commits in the queue. This setting can be applied to builds for Branch builds and Pull Request builds separately. Builds will only be canceled if they are waiting to run, allowing for any running jobs to finish.
Auto cancel branch builds
Auto cancel pull request builds
Config Import
Allow importing config files from this repository

Increase confidence in your weekly delivery



Q&A