

AN ANALYSIS OF 35+ MILLION JOBS OF TRAVIS CI

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MOTIVATION

- ▶ Continuous interaction is used by millions of projects
- ▶ The continuous integration evolved with the time: new usages and new environment
- ▶ Understanding the usage will help to design better continuous integration tools and help developers to keep their application reliable

STUDYING TRAVIS-CI



TRAVIS-CI

PROJECTS	USERS
932,977	600,000
FREE <small>PLAN</small>	

STUDYING THE USAGE OF CONTINUOUS INTEGRATION

- ▶ **Who** use Travis-CI?
- ▶ **When** did the active projects start to use Travis-CI?
- ▶ **How** Travis-CI is used?
- ▶ **How often** Travis-CI configurations change?

35+ MILLION TRAVIS-CI JOBS

JOBS

35,793,144

PROJECTS

272,917

USERS

123,168

PERIOD OF THE STUDY

4 MONTHS (FROM OCT 2018)



STUDY

WHO USE TRAVIS?

BIGGEST TRAVIS-CI USERS



1. Apache



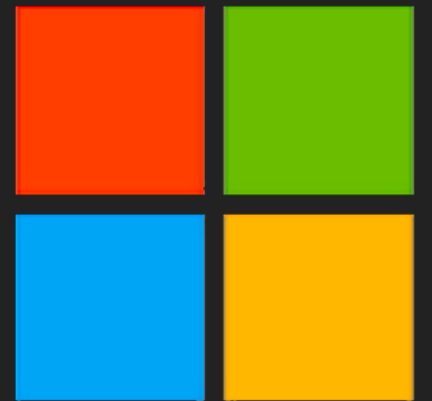
2. Elastic



3. Mozilla



4. Azure



5. Microsoft



6. Robert de
Bock



7. Rust-lang



8. Rails



9. Mike North



10. Pytorch

WHO USE TRAVIS?

MOST POPULAR LANGUAGES



3. Python



12. JavaScript



3. Php



10. Ruby



5. C++



0. C



2. Java



8. Go



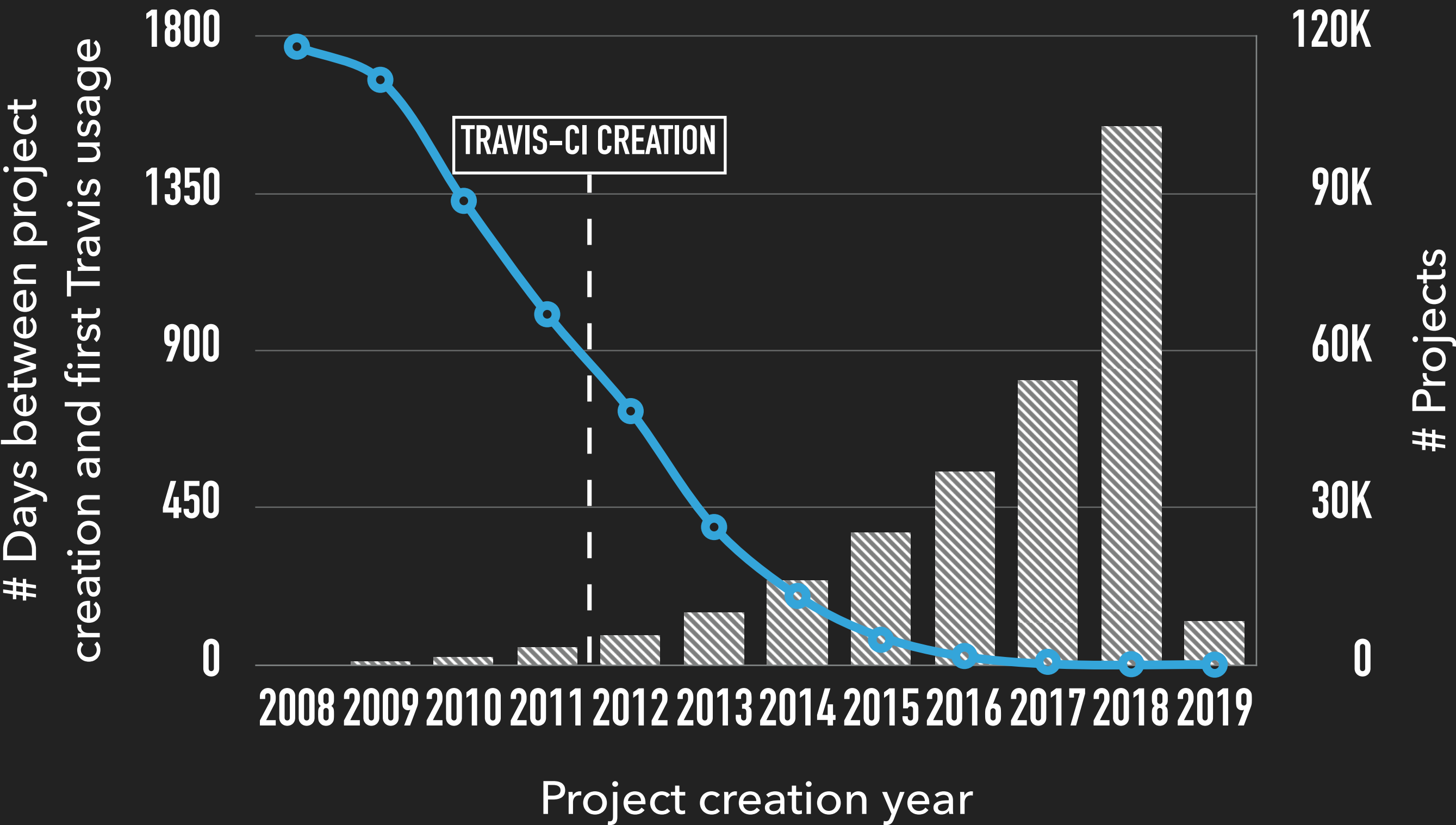
0. Shell



10. Rust

Ranking is different between Travis-CI and GitHub

WHEN DID THE ACTIVE PROJECTS START TO USE TRAVIS-CI?



HOW TRAVIS-CI IS USED?

TESTING

58.64%

BUILDING

8.30%

DOCUMENTING

3.26%

FORMATTING

1.82%

RELEASING

1.43%

ANALYZING

0.18%

COMMUNICATION

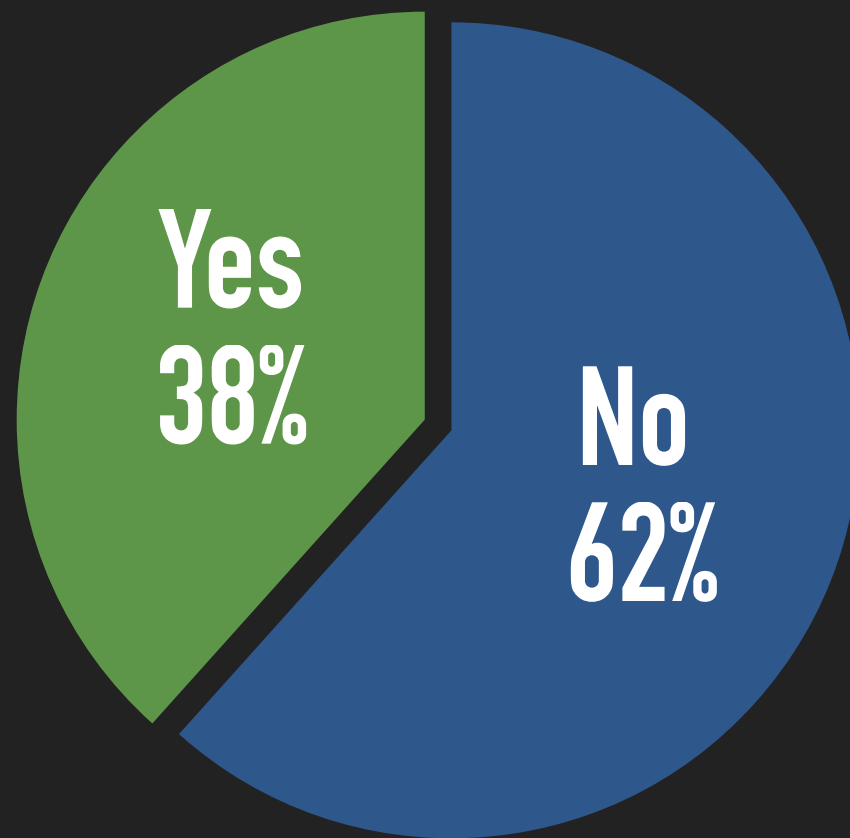
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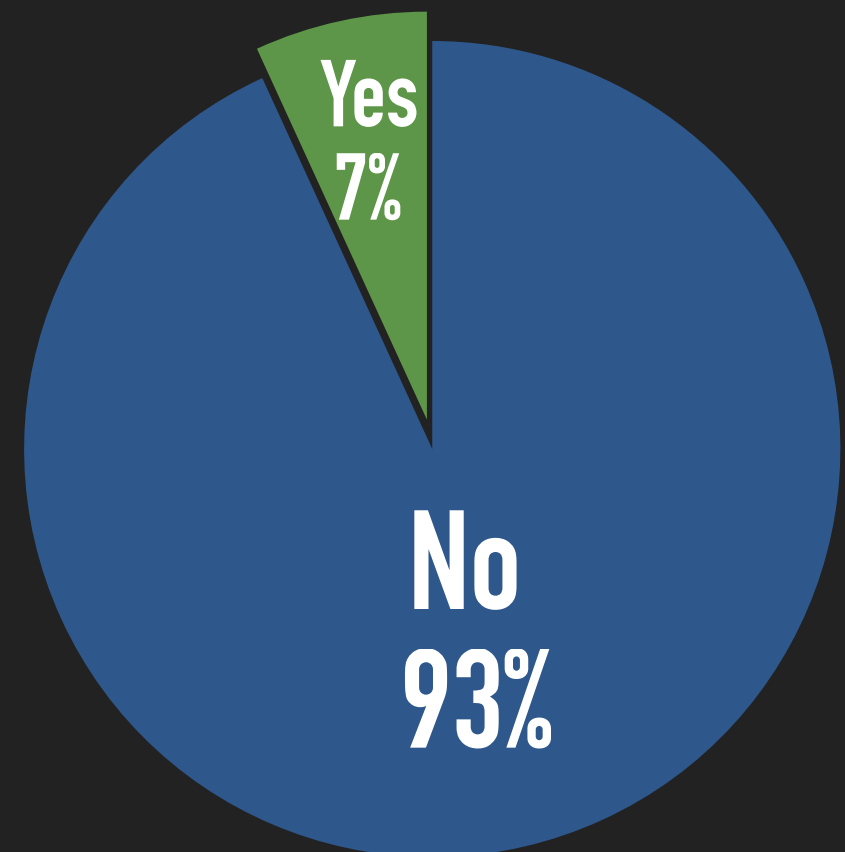
26.26%

HOW FREQUENTLY THE TRAVIS-CI'S CONFIGURATION CHANGE?

Projects that change the configuration



Commits that change the configuration



SUMMARY

TAKE AWAY

Continuous integration is used for a diversity of tasks but it sill mostly used for testing.

CONTRIBUTIONS

- ▶ A study of 35+ million Travis-CI's jobs
- ▶ The script to collect Travis-CI's jobs
- ▶ A dataset of 35+ million Travis-CI's jobs

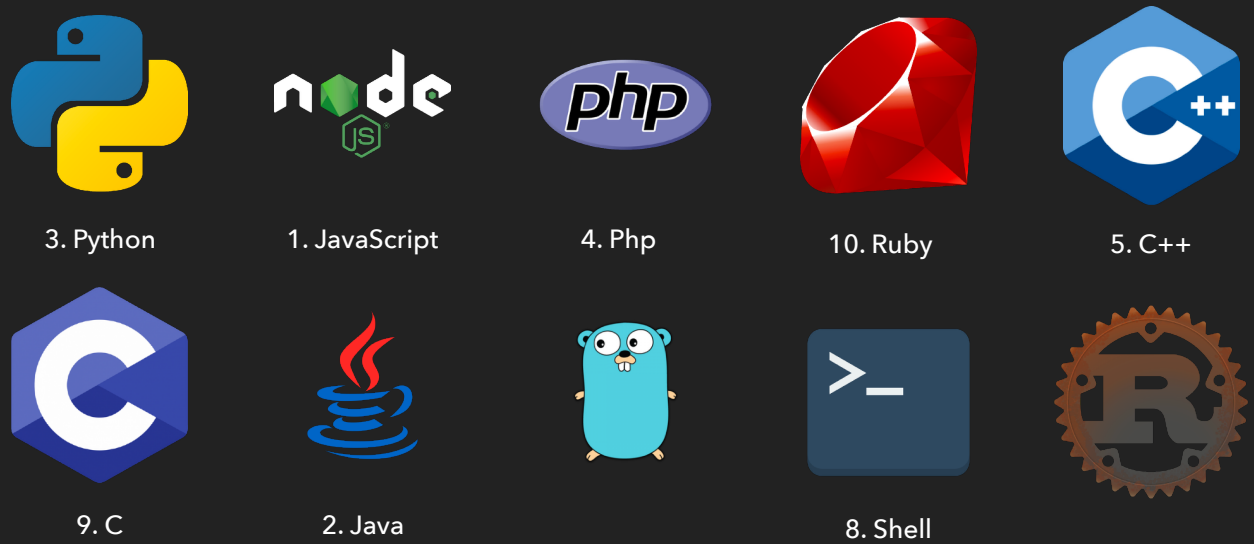
OPEN-SCIENCE

All the artefacts are open-science and available on GitHub and Zenodo:

- ▶ <https://github.com/tdurieux/travis-listener/>
- ▶ <https://zenodo.org/record/2560966>

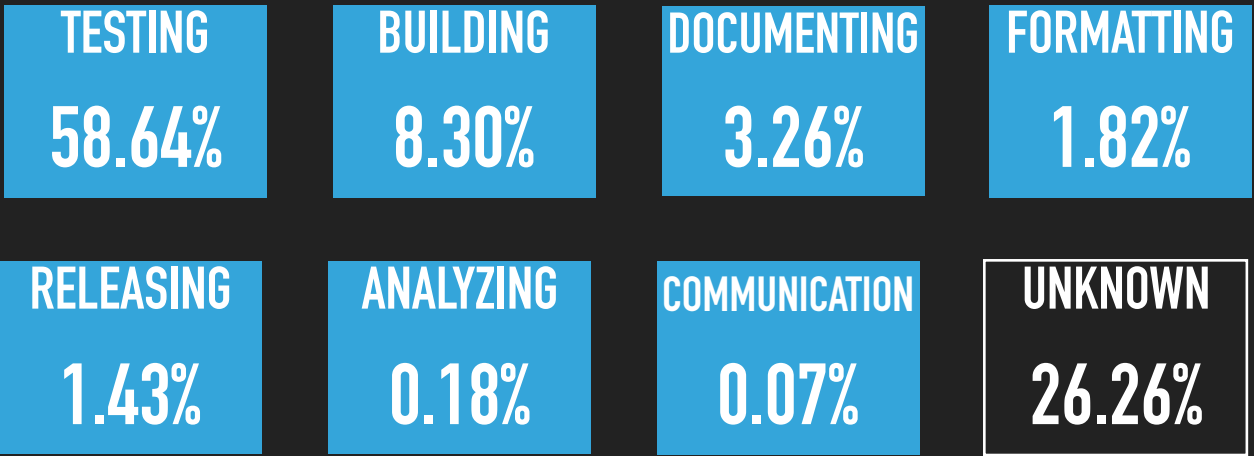
WHO USE TRAVIS?

MOST POPULAR LANGUAGES

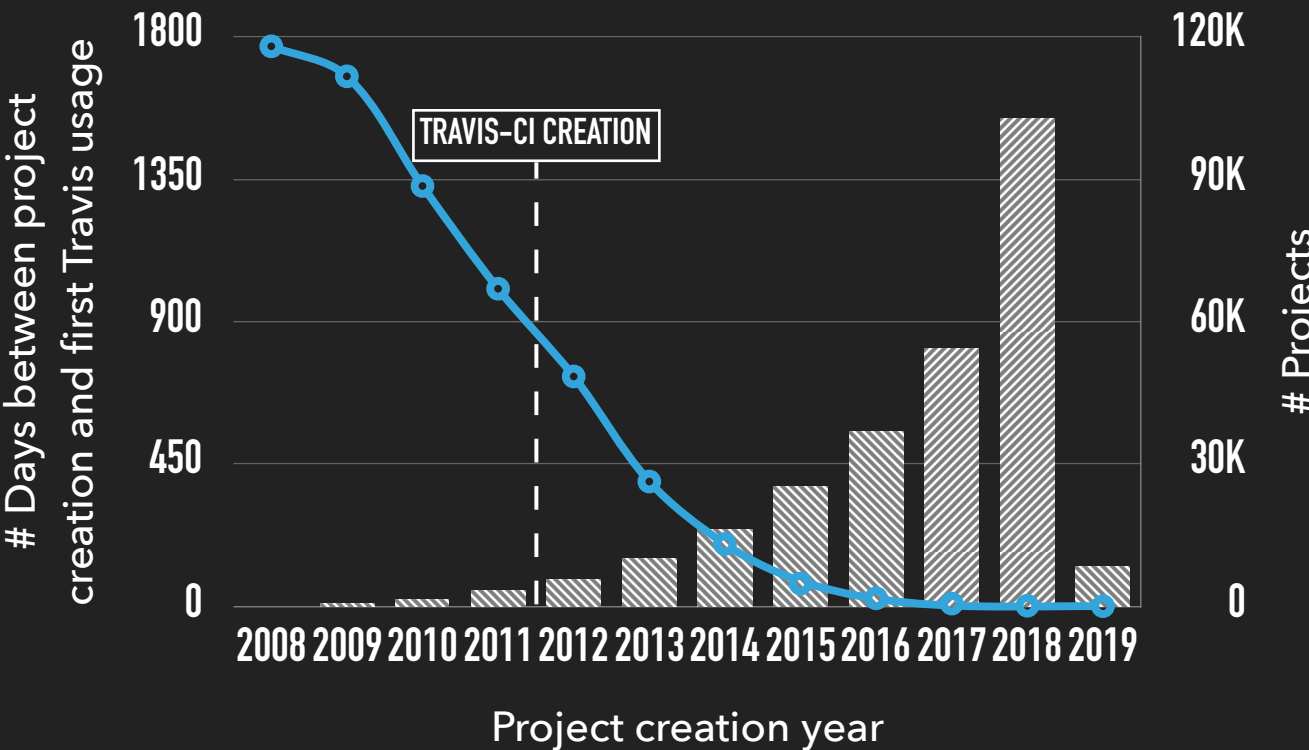


Ranking is different between Travis-CI and GitHub

HOW TRAVIS-CI IS USED?

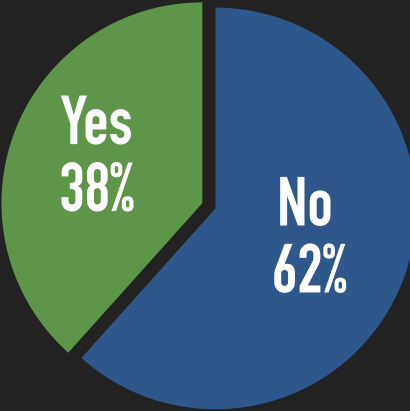


WHEN DID THE PROJECTS START TO USE TRAVIS-CI?

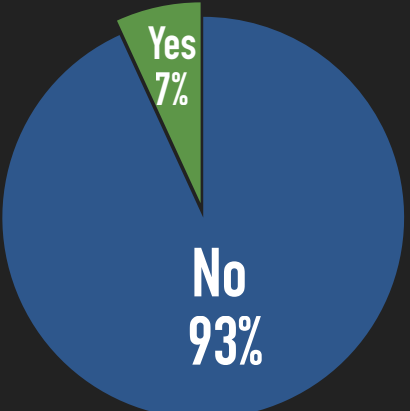


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WHY NOT TRAVIS-TORRENT?

- ▶ Travis-Torrent targets specific repositories
- ▶ Travis-Torrent is not updated since 2017
- ▶ 35+ millions jobs targets all jobs from a specific period
- ▶ 35+ millions contains recent jobs