



CIRCLECI VS TRAVIS CI VS JENKINS

ASSIGNMENT 6

CONTINUOUS INTEGRATION (CI)

- A software development practice that is based on a frequent integration of the code into a shared repository. Each check-in is then verified by an automated build.

Continuous Deployment (CD)

- CD refers to automate deployment of product onto staging or production environments once it passes CI stage.

OVERVIEW

| | Travis CI | CircleCI | Jenkins |
|-----------------------|--|------------------------------------|---|
| Compatibility | Linux, Mac OS X, etc | Ubuntu, Mac OS X, etc | Windows, Mac OS X, Unix, etc |
| Supported Language | Python, Node.js, Ruby, Java, Go, etc | Crystal, Node.js, Go, Haskell, etc | Python, Ruby, Java, Android, C/C++, etc |
| SCM Tools support | Github | Github, Bitbucket | Github |
| Usage Plans | Free for open source projects, Paid for Enterprise | Free | Free |
| Server Machine | Cloud based | Cloud based | Server based |
| Customization Options | Less | Very less | More |
| Configuration | YAML | YAML | Fully customizable |
| Control on system | Very less | Very less | Full |

SETUP

| Travis CI | Circle CI | Jenkins |
|--|--|---|
| <ul style="list-style-type: none">Travis uses a YAML file to configure all the steps required for the build process.Any build on Travis CI is made up of two steps—installing the dependencies and running the build script. Both steps are executed by commands inside the YAML file.Builds are defined as broken only if something fails in the <code>before_install</code>, <code>install</code>, or <code>after_install</code> phases. | <ul style="list-style-type: none">Circle CI also uses a YAML file which syntax is much clearer and more readableThere are three main sections in the file: job, test, work flowCircle CI caches requirements installation. It checks 3rd party dependencies instead of constant installations of the environments needed | <ul style="list-style-type: none">No need for 3rd party for continuous integration system.Developers can also specify conditions for customized builds. Jenkins is supported by a massive plugin archive so developers can alter how the software looks and operates to their liking.Jenkins offers a lot of flexibility in terms of when and how frequently integration occurs |

CIRCLECI PROS

- Fast start
- CircleCI has a free plan for enterprise projects
- It's easy and fast to start
- Lightweight, easily readable YAML config
- You do not need any dedicated server to run CircleCI

CIRCLECI CONS

- CircleCI supports only 2 versions of Ubuntu for free (12.04 и 14.04) and MacOS as a paid part
- Despite the fact CircleCI do work with and run on all languages it supports only the following programming languages “out of the box”:
 - Go (Golang), Haskell, Java, PHP, Python, Ruby/Rails, Scala
 - Some problems may appear in case you would like to make customizations: you may need some 3rd party software to make those adjustments
 - Also, while being a cloud-based system is a plus from one side, it can also stop supporting any software, and you won’t be able to prevent that

TRAVIS CI PROS

- Build matrix out of the box
- Fast start
- Lightweight YAML config
- Free plan for open-sourced projects
- No dedicated server required
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TRAVIS CI CONS

- Price is higher compared to CircleCI, no free enterprise plan
- Customization (for some stuff you'll need 3rd parties)

JENKINS PROS

- Price (it's free)
- Customization
- Plugins system
- Full control of the system

JENKINS CONS

- Dedicated server (or several servers) are required. That results in additional expenses. For the server itself, DevOps, etc...
- Time needed for configuration / customization

CONCLUSION

- CircleCI is recommended for small projects, where the main goal is to start the integration as fast as possible.
- Travis CI is recommended for cases when you are working on the open-source projects, that should be tested in different environments.
- Jenkins is recommended for the big projects, where you need a lot of customizations that can be done by usage of various plugins. You may change almost everything here, still this process may take a while. If you are planning the quickest start with the CI system Jenkins might not be your choice.