TravisCI, CircleCI & Jenkins

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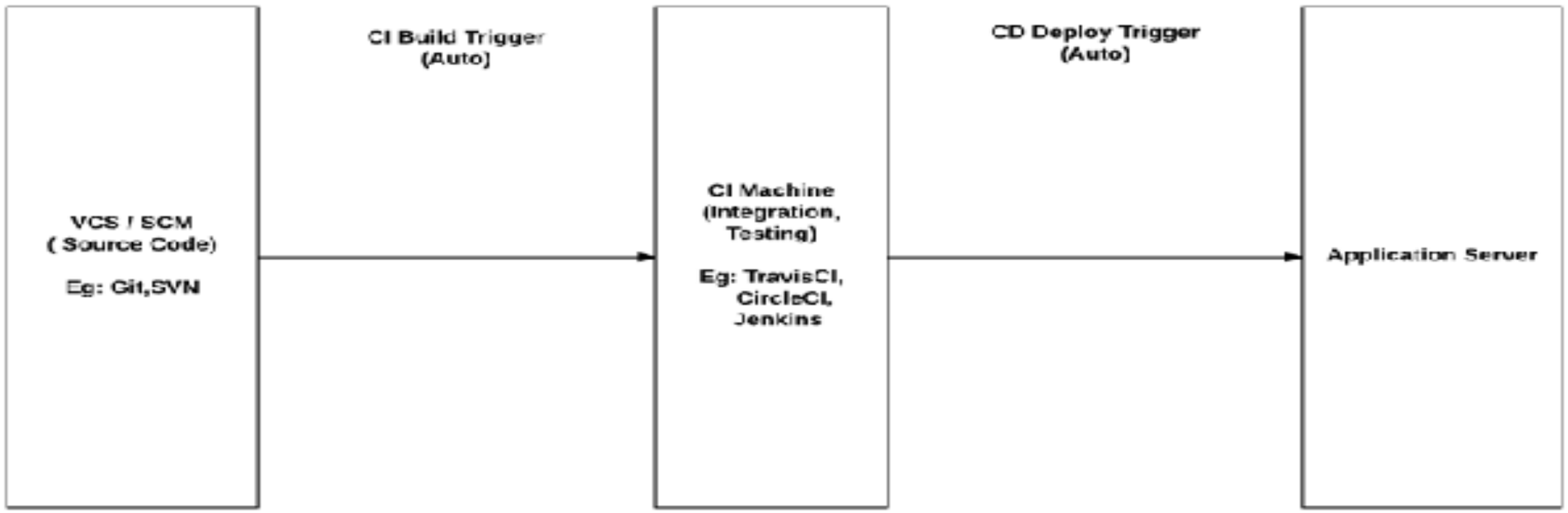
- continuous integration(CI) tools
- Jenkins
- Travis CI
- CircleCI
- comparison
- conclusion

continuous integration tools

Almost every company follow agile methodologies to develop and release their products. Software quality is paramount for any company. Agile methodologies promote predictable quality product releases. Agile methodologies have iterations and each iteration address specific set of features (User Stories) that are ready for production. Product managers validate and accept user stories.

- 1.Process Product, Release & Iteration backlog
- 3. Unit Testing & Code Review
- 4. Check-in Process
- 5. Automation
- 6. Build & Integration Testing
- 7. Release
- 8.Staging Deployment
- 9.Production Deployment
- 10.Operations Management

Automating all of these steps would ensure faster, predictable and quality releases. DevOps brought great cultural changes between Development team and Operations Team. Development teams need to simulate a production environment to resolve issues and Operations teams cannot have downtime for their applications.



Jenkins:

- Powerful CI/CD tool for big projects
- It needs dedicated server with Jenkins installed
- Lots of plugins available for Jenkins to make it easier to use and manageable
- It also supports different job models like Freestyle, Pipeline, etc.,
- More customization option available with Jenkins

Travis CI:

- Cloud based CI/CD tool. No dedicated server is required to maintain this tool
- Suggested to use for open source projects
- Free for open source projects and paid subscription available for Enterprises
- We can build our own matrix (More customization than CircleCI)
- YAML configuration

CircleCI:

- Same like Travis CI – cloud based CI/CD tool
- Minimal configuration/adjustments are allowed
- Quick starting
- Free plans available for Individual and Enterprises
- Best fit for small projects to start the integration process very fast

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
- 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 and CircleCI are almost the same

Both of them:

- Have YAML file as a config
- Are cloud-based
- Have support of Docker to run tests

What does TravisCI offer that CircleCI doesn't?

- Option to run tests on Linux and Mac OS X at same time

- Supports more languages out of the box:

Android, C, C#, C++, Clojure, Crystal, D, Dart, Erlang, Elixir, F#, Go, Groovy, Haskell, Haxe, Java, JavaScript (with Node. js), Julia, Objective-C, Perl, Perl6, PHP, Python, R, Ruby, Rust, Scala, Smalltalk, Visual Basic

- Support of build matrix

Jenkins

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

comparison

	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, Haskel, 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

conclusion

What CI system to chose? That depends on your needs and the way you are planning to use it.

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.