TRAVISCI, CIRCLECI & JENKINS
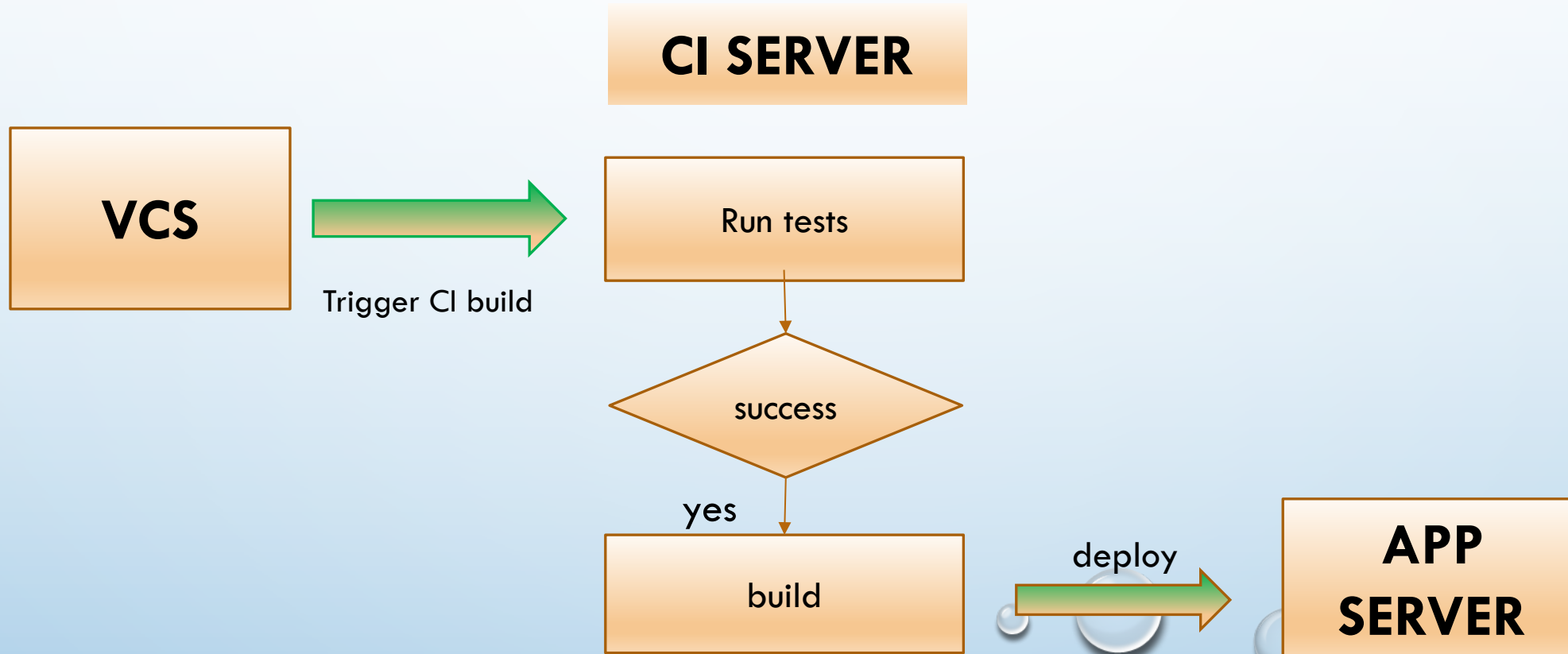
JUNYUAN GU

001825583

CI BASICS

- BASED ON A FREQUENT INTEGRATION OF THE CODE INTO A SHARED REPOSITORY. EACH CHECK-IN IS VERIFIED BY AN AUTOMATED BUILD.

CI SERVER

VCS → Trigger CI build → Run tests

Run tests → success

success → yes → build

build → deploy → **APP SERVER**

TRAVISCI-PROS

- **GITHUB INTEGRATION**

- **FREE FOR OPEN SOURCE**

- OPTION TO RUN TESTS ON LINUX AND MAC OS X AT SAME TIME

- **SUPPORT OF BUILD MATRIX**, WHICH GIVES AN OPPORTUNITY TO RUN TESTS WITH DIFFERENT VERSIONS OF LANGUAGE AND PACKAGES.

CIRCLECI-PROS

- **GITHUB AND SLACK INTEGRATION**

- CIRCLECI IS A CLOUD-BASED SYSTEM — NO DEDICATED SERVER REQUIRED, AND YOU DO NOT NEED TO ADMINISTRATE IT. HOWEVER, IT ALSO OFFERS AN ON-PREM SOLUTION THAT ALLOWS YOU TO RUN IT IN YOUR PRIVATE CLOUD OR DATA CENTER.

- **FAST BUILDS**

- **COMPETITIVELY PRICED**

- **DOCKER SUPPORT**

JENKINS-PROS

- HOSTED INTERNALLY（THE WAR FILE HAS INTEGRATED WITH JETTY, WHICH IS HTTP SERVER）

- FREE OPEN SOURCE

- GREAT TO BUILD, DEPLOY OR LAUNCH ANYTHING ASYNC

- TONS OF INTEGRATIONS

- RICH SET OF PLUGINS WITH GOOD DOCUMENTATION

CONS

TRAVISCI

- PRICE IS HIGHER COMPARED TO CIRCLECI, NO FREE ENTERPRISE PLAN

CircleCI

- CircleCI supports only 2 versions of Ubuntu for free (12.04 & 14.04) and MacOS as a paid part

- Despite the fact CircleCI do work with and run on all languages tt supports only the following programming languages "out of the box": Go (Golang), Haskell, Java, PHP, Python, Ruby/Rails, Scala

Jenkins

- Dedicated server (or several servers) are required. That results in additional expenses. For the server itself, DevOps, etc...

- Setup is not easy for beginners.

TRAVIS CI AND CIRCLECI : ALMOST THE SAME

- **BOTH OF THEM:**

- HAVE YAML FILE AS A CONFIG

- ARE CLOUD-BASED

- HAVE SUPPORT OF DOCKER TO RUN TESTS

- **BUT 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 VS CIRCLECI I

- **BUILD CONFIGURATION**:

JENKINS PROJECTS ARE GENERALLY CONFIGURED IN THE JENKINS WEB UI AND THEIR SETTINGS ARE STORED ON THE FILESYSTEM OF THE JENKINS SERVER. THIS MAKES IT DIFFICULT TO SHARE CONFIGURATION INFORMATION WITHIN A TEAM OR ORGANIZATION.

WHILE ALMOST ALL CONFIGURATION OF CIRCLECI BUILDS IS STORED IN A YAML FILE THAT LOCATES IN THE ROOT OF EACH PROJECT.

- **ACCESS TO BUILD MACHINES**:

IT'S OFTEN UP TO AN OPS PERSON OR TEAM TO MANAGE JENKINS SERVERS. THESE PEOPLE GENERALLY GET INVOLVED WITH VARIOUS CI MAINTENANCE TASKS LIKE INSTALLING DEPENDENCIES AND TROUBLESHOOTING ISSUES.

BUT WITHIN TRAVIS AND CIRCLE EVERY BUILD STARTS IN A FRESH ENVIRONMENT WHERE CUSTOM DEPENDENCIES MUST BE INSTALLED AUTOMATICALLY.

JENKINS VS CIRCLECI II

- **PLUGINS:**

JENKINS PLUGINS ARE JAVA-BASED LIKE ITSELF AND A BIT COMPLICATED. USERS HAVE TO USE PLUGINS TO DO ALMOST ANYTHING WITH JENKINS. EVEN CHECKING OUT A GIT REPOSITORY REQUIRES A PLUGIN.

WHILE ALL CORE CI FUNCTIONALITY IS BUILT INTO CIRCLECI. WHEN YOU DO NEED TO ADD CUSTOM FUNCTIONALITY TO YOUR BUILDS AND DEPLOYMENTS, YOU CAN DO SO WITH A COUPLE SNIPPETS OF BASH IN APPROPRIATE PLACES.

- **DISTRIBUTED BUILDS:**

JENKINS IS NOT A CLUSTERING MIDDLEWARE. THEREFORE, IT IS POSSIBLE TO MAKE A JENKINS SERVER DISTRIBUTE YOUR BUILDS TO A NUMBER OF "SLAVE" MACHINES TO EXECUTE THE JOBS, BUT THIS TAKES A FAIR AMOUNT OF WORK TO SET UP.

CIRCLECI DISTRIBUTES BUILDS TO A LARGE FLEET OF BUILDER MACHINES BY DEFAULT.

CONCLUSION

- **CIRCLE CI** 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 <u>OPEN-SOURCE</u> PROJECTS, THAT SHOULD BE <u>TESTED IN DIFFERENT ENVIRONMENTS</u>.

- **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.