

# CI on AWS



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# AWS RTE benefits



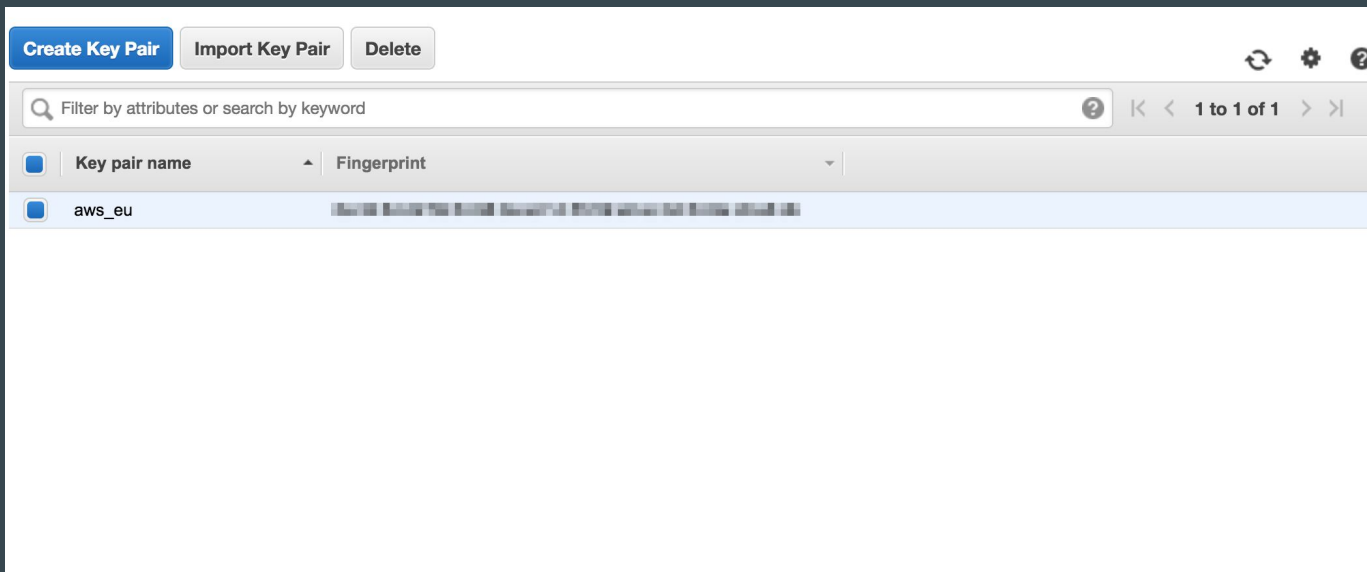
- Reliable (multi-AZ deployments, regions, ...).
- Easy horizontal and vertical scaling (AMIs, instance type).
- Added value (firewall, backups).
- AWS ecosystem (around 100 services, fully capable CLI and GUI)
- Price.

# How to start



Prerequisites:

- SSH key for Amazon EC2 instance.
- User for AWS CLI (IAM).



# How to start



Start EC2 instance

- EC2 console -> Launch Instance
- AWS Marketplace -> Centos
- Instance type -> t2.micro
- Configure security rules
- Configure parameters

When done ... start your instance.

# AWS CLI



- Enable EPEL

*`rpm -ivh http://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm`*

- Install pip

*`yum install python2-pip`*

- Install AWS CLI

*`pip install awscli`*

- Configure

*`aws configure`*

# AWS CLI



- Test CLI

*aws ec2 describe-instances --instance-ids ID*

- Start/stop another instance

*aws ec2 start-instances --instance-ids ID*

*(aws ec2 stop-instances --instance-ids ID)*

# CI - Continuous Integration

- *Continuous Integration is a software development practice where members of a team integrate their work frequently, usually each person integrates at least daily - leading to multiple integrations per day. Each integration is verified by an automated build (including test) to detect integration errors as quickly as possible. (Martin Fowler)*
- => Advantages:
  - automatic control of source code
  - quick discovery of integration errors in source code
  - save time during finalization of new version
  - save capacity of QA department
- automatic build usually runs on an integration server

# Jenkins



- <https://jenkins.io/>
- leading CI server
- contains hundreds of plugins (for integration with tools which are used for automatic testing)
- open source
- large community
- supports distributed builds



# Distributed builds

- <https://wiki.jenkins.io/display/JENKINS/Distributed+builds>
- master-slave mode
- CI server is installed only on one machine (master) but build itself can run on different machine or machines (slaves)

=> save resources of master (memory, CPU, etc.)

=> possible to run build on different environments

=> possibility of parallelization which leads to faster builds

# Jenkins on AWS (our solution)



- Jenkins is installed on one machine (master) which runs nonstop (to be available anytime).
- Other machines (slaves) are started on demand when they are needed (to save costs).
- Slaves are started and stopped via aws console on master.
- Machines are connected via ssh.

# How to run Jenkins on AWS



1. Prepare two AWS machines and decide which one will be master and which one will be slave.
2. Copy **init-master.sh** to master and run it as root.
  - to install Jenkins server and create ssh credentials
3. Copy **init-slave.sh** to slave and run it as root.
  - to prepare slave to master control and install docker
4. Copy ssh public key from `/var/lib/jenkins/.ssh/id_rsa.pub` on master to `/data/.ssh/authorized_keys` on slave.
  - to enable ssh connection between master and slave
5. Install aws console on master for user jenkins
6. Copy test file **MathTest.php** to `/data` on slave
7. Setup Jenkins server according to **Jenkins-setup-tutorial.pdf**

# Jenkins - expected result



✓ test-pipeline 1

Pipeline

Changes

Tests

Artifacts

↺

⚙

📄

Logout

✕

Branch: —

🕒 2m 18s

No changes

Commit: —

🕒 3 days ago

Started by user test@iww.com

Start

phpunit

End

phpunit - 2s

🔗

📄

✓

▼ docker run -i --rm -v /data:/data phpunit/phpunit /data — Shell Script

2s

1 [test-pipeline] Running shell script

2 + docker run -i --rm -v /data:/data phpunit/phpunit /data

3 PHPUnit 6.5.6 by Sebastian Bergmann, Julien Breux (Docker) and contributors.

4

5 .... 4 / 4 (100%)

6

7 Time: 160 ms, Memory: 4.00MB

8

9 OK (4 tests, 4 assertions)

Thank you

<https://github.com/intraworlds/workshop-ci-on-aws>

**TESTUJETE?  
NEVÍTE JAK?**

**Přijďte  
na IWorkshop**

**29.5.2018  
od 17:00  
Beer Factory  
Dominikánská 8  
Plzeň**

**TESTOVÁNÍ  
PRO  
VÝVOJÁŘE**

Více na [www.intraworlds.cz/workshop/](http://www.intraworlds.cz/workshop/)