Jenkins

Diego Pacheco

About Me

- Cat's Father
- Principal Software Architect
- Agile Coach
- SOA/Microservices Expert
- DevOps Practitioner
- Speaker
- Author

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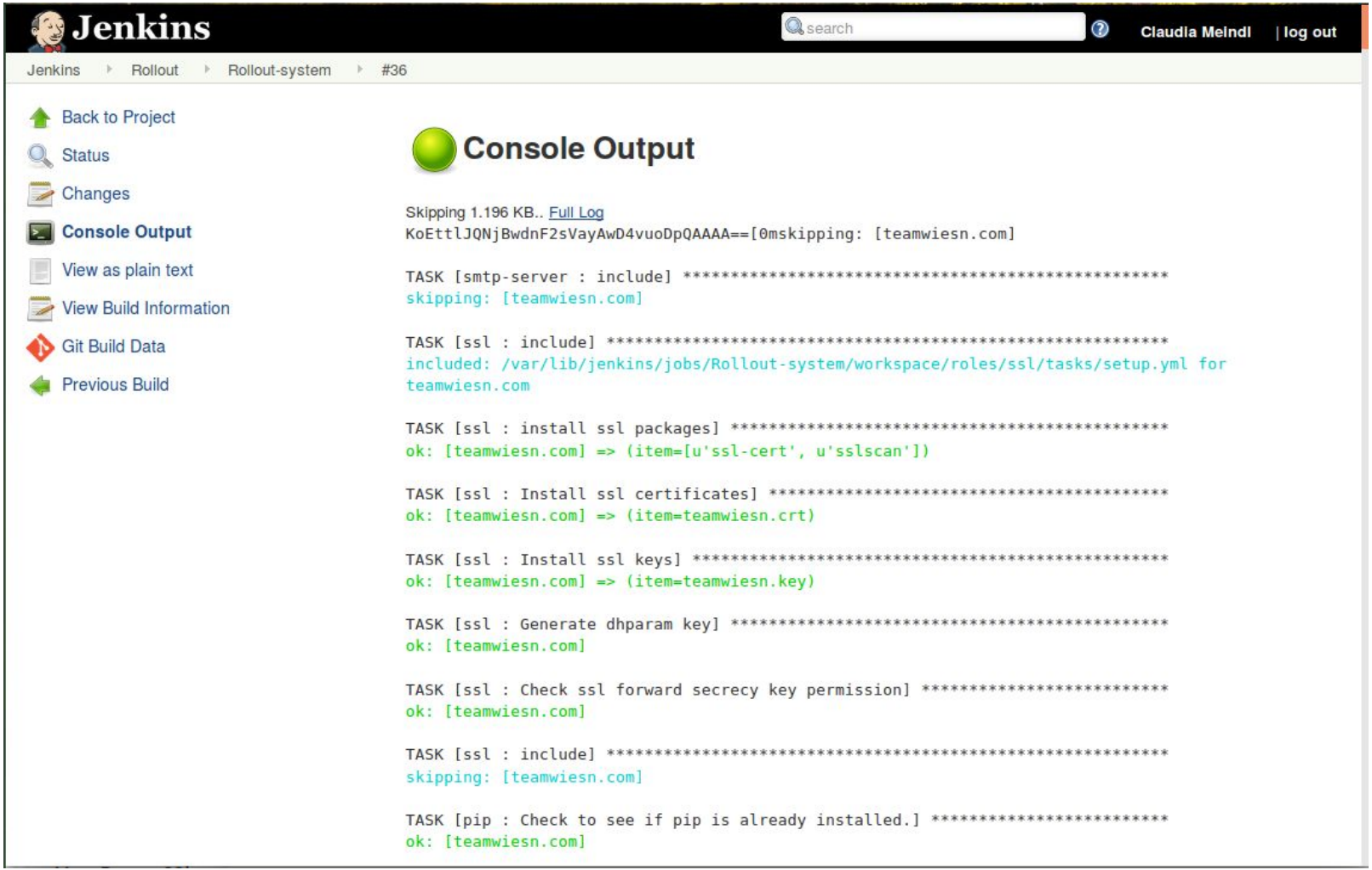
Jenkins

Kohsuke Kawaguchi

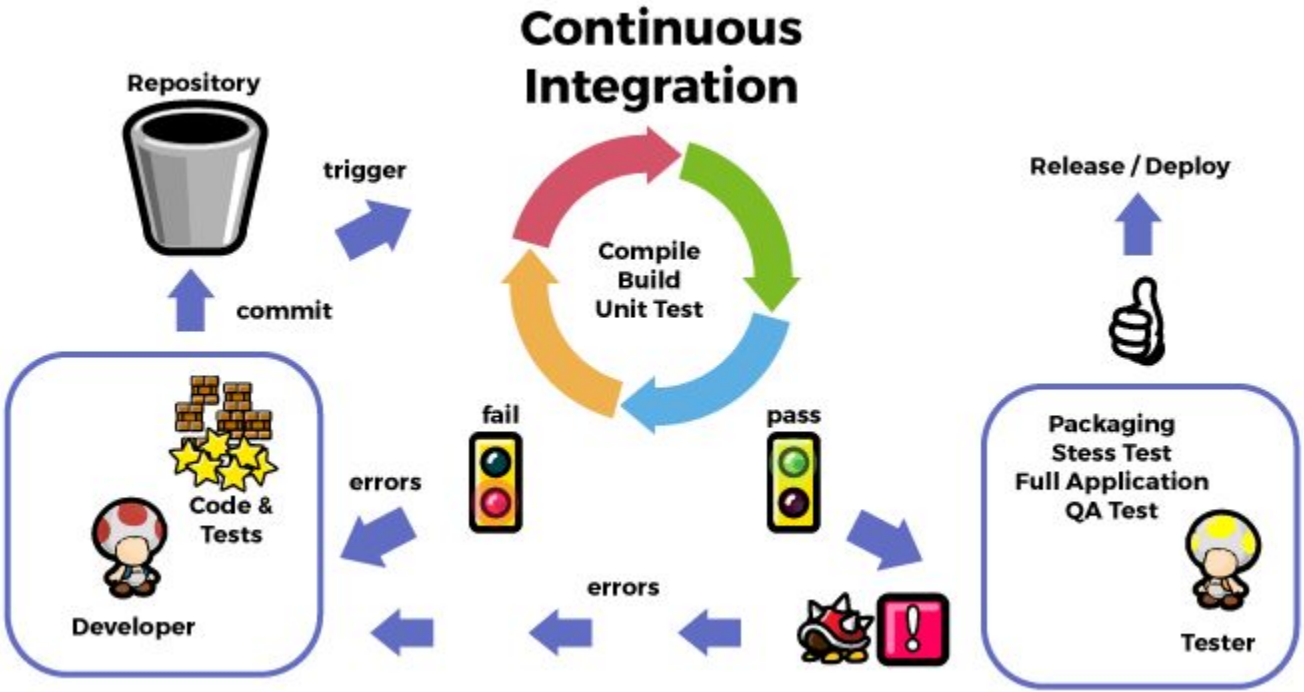
- 2004 as Sun Microsystem project (Hudson)
- 2011 was renamed to Jenkins
- Built with Java, of course :-)
- Super easy to use
- Lots of plugins
- Pretty much everybody uses it
- Used for CI/CD, Builds, Deploys, Ops
- Distributed - It can work with multiple machines
- Support for most of languages


Jenkins
search
Claudia Meindl
| log out
Jenkins
Rollout
Rollout-system
#36
Back to Project
Status
Changes
Console Output
View as plain text
View Build Information
Git Build Data
Previous Build
Console Output
Skipping 1.196 KB.. Full Log
KoEttlJQNjBwdnF2sVayAwD4vuoDpQAAAA==[0mskipping: [teamwiesn.com]
TASK [smtp-server : include] **
skipping: [teamwiesn.com]
TASK [ssl : include] **
included: /var/lib/jenkins/jobs/Rollout-system/workspace/roles/ssl/tasks/setup.yml for
teamwiesn.com
TASK [ssl : install ssl packages] ***
ok: [teamwiesn.com] => (item=[u'ssl-cert', u'sslscan'])
TASK [ssl : Install ssl certificates] ***
ok: [teamwiesn.com] => (item=teamwiesn.crt)
TASK [ssl : Install ssl keys] ***
ok: [teamwiesn.com] => (item=teamwiesn.key)
TASK [ssl : Generate dhparam key] ***
ok: [teamwiesn.com]
TASK [ssl : Check ssl forward secrecy key permission] ***************************
ok: [teamwiesn.com]
TASK [ssl : include] **
skipping: [teamwiesn.com]
TASK [pip : Check to see if pip is already installed.] **************************
ok: [teamwiesn.com]

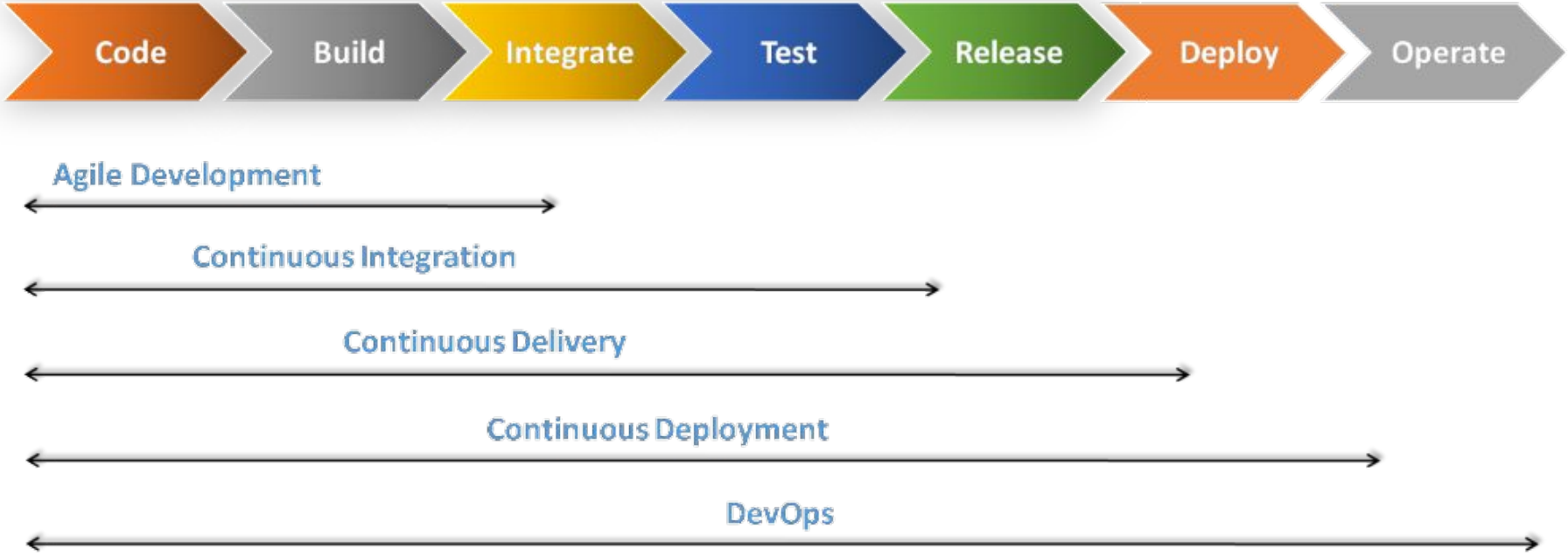
Jenkins Plugins

https://plugins.jenkins.io/

CI / CD == Pipelines with Jenkins



Pipelines for everything



Jenkins Pipelines / DSL

Jenkinsfile (Declarative Pipeline)

```
pipeline {
    agent any
    stages {
        stage('Test') {
            steps {
                sh 'echo "Fail!"; exit 1'
            }
        }
    }
    post {
        always {
            echo 'This will always run'
        }
        success {
            echo 'This will run only if successful'
        }
        failure {
            echo 'This will run only if failed'
        }
        unstable {
            echo 'This will run only if the run was marked as unstable'
        }
        changed {
            echo 'This will run only if the state of the Pipeline has changed'
            echo 'For example, if the Pipeline was previously failing but is now successful'
        }
    }
}
```

Jenkinsfile (Declarative Pipeline)

```
pipeline {
    agent any
    stages {
        stage('Deploy') {
            steps {
                retry(3) {
                    sh './flakey-deploy.sh'
                }

                timeout(time: 3, unit: 'MINUTES') {
                    sh './health-check.sh'
                }
            }
        }
    }
}
```

Jenkins Pipelines / DSL

ApacheConf.groovy

```groovy
class ApacheConf {
  static void main(String[] args) {}
  static conf() {
                [
      "mainjob":
       [
          "email":"diego.pacheco.it@gmail.com"
       ]
    ]
  }
}

```

Jenkins Pipelines / DSL

```
15  ApacheConf.conf().each { groupname, app ->
16
17    freeStyleJob("JenkinsDSLJob") {
18      properties {
19
20          label("master")
21
22          def emailAdd = '$BUILD_USER_EMAIL ' + app.dev_email
23
24          publishers {
25            mailer(emailAdd, false, true)
26          }
27
28          parameters {
29            stringParam("APACHE_VERSION", "2.4.18", "Apache Version")
30          }
31
32          def item = hudson.model.Hudson.instance.getItem('JenkinsDSLJob')
33          def value = item.lastBuild.getEnvironment(null).get('APACHE_VERSION')
34
35          steps {
36            shell("sudo chmod 777 build_install_apache.sh && sudo ./build_install_apache.sh " + value)
37          }
38      }
39    }
40  }
```

Jenkins Pipelines / DSL

build_install_apache.sh

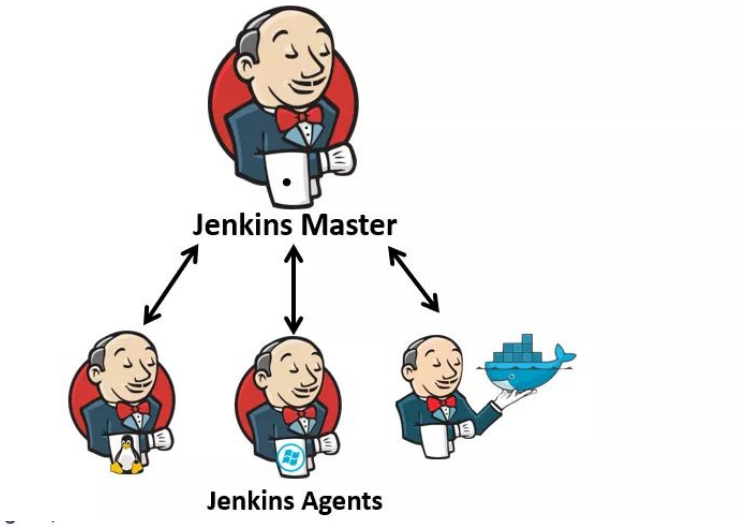
```
#!/bin/bash

#APACHE_VERSION=2.4.18
apacheVersion="$1"
echo "Building apache [ $apacheVersion ]... "

sudo rm -rf httpd*

sudo apt-get install -y libapr1-dev libaprutil1-dev

sudo wget http://www.carfab.com/apachesoftware//httpd/httpd-$apacheVersion.tar.gz
sudo tar xvf httpd-$apacheVersion.tar.gz
cd httpd-$apacheVersion
sudo ./configure
sudo make
sudo make install
```

Jenkins Pipelines / DSL

Important Things - To Keep in Mind!

- ❏ Jenkins DSL is great for Microservices or any REPEATING TASK with multiple repositories
- ❏ For Generic Jobs use good abstraction and DevOps Engineering
- ❏ You should not do Jenkins DSL for all JOBS just because is CODE
- ❏ Jenkins DSL is less productive than using the UI which is OK for generic jobs.
- ❏ You need to enable BACKUPS in Jenkins since you won't have jenkins DSL for everything.

Master and Agents




```
$ java -jar agent.jar -jnlpUrl http://yourserver:port/computer/agent-name/slave-agent.jnlp
```

Make sure to replace "agent-name" with the name of your agent.

https://wiki.jenkins.io/display/JENKINS/Distributed+builds

Running Jenkins 2 on Docker

run-jenkins-docker.sh

```
#!/bin/bash

echo "GOTO: http://localhost:8282/jenkins"

docker stop jenkins; docker rm jenkins;

docker run --name jenkins -p 8282:8080 -p 50000:50000 -v /var/jenkins/ jenkins/jenkins

```

Jenkins

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