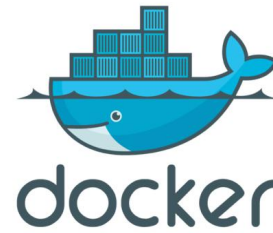


# MEETUP ОТ «НАС»



ТЕМА:



**Автотестирование и  
автодеплой веб-  
приложений с GitLab  
CI/CD и Docker**

**Руслан Гайнанов**

DevOps-инженер ГК НАС

# What we have

NGINX +  
Tomcat (Java) +  
MySQL +  
Redis +  
SOLR



NGINX +  
Payara (Java) +  
PostgreSQL



x 9



x 7





DDD (Russian: Davai Davai Deploy) –  
Just deploy this sh\*t already. Come  
on!

— [https://twitter.com/Steve\\_Jules/status/862247438551265280](https://twitter.com/Steve_Jules/status/862247438551265280)





# CI/CD software

[Comparison of continuous integration software](#)

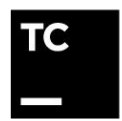


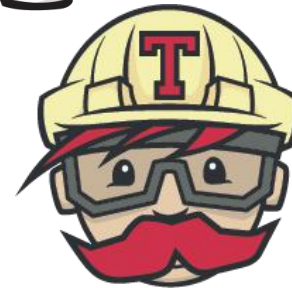
GitLab CI

 circleci



Jenkins

 TeamCity



Travis CI

# Good Plan



Agile Development

Continuous Integration

Continuous Delivery

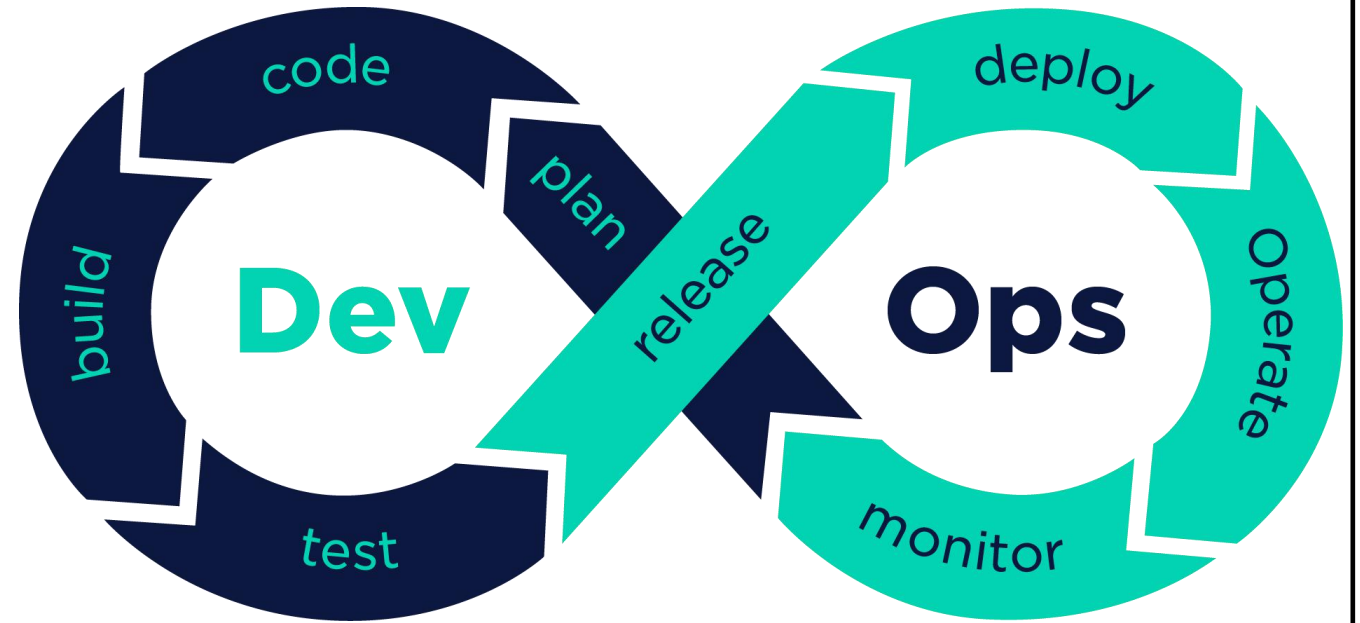
Continuous Deployment

DevOps



# Basic terms

- Dependency (зависимость)
  - **Pipeline** (пайплайн)
  - **Stage** (стадия)
  - **Job** (работа)
  - **Runner** (раннер)
  - **Artifact** (артефакт)
- 
- Push, commit, branch, production, deploy, feature, repository, project, ...



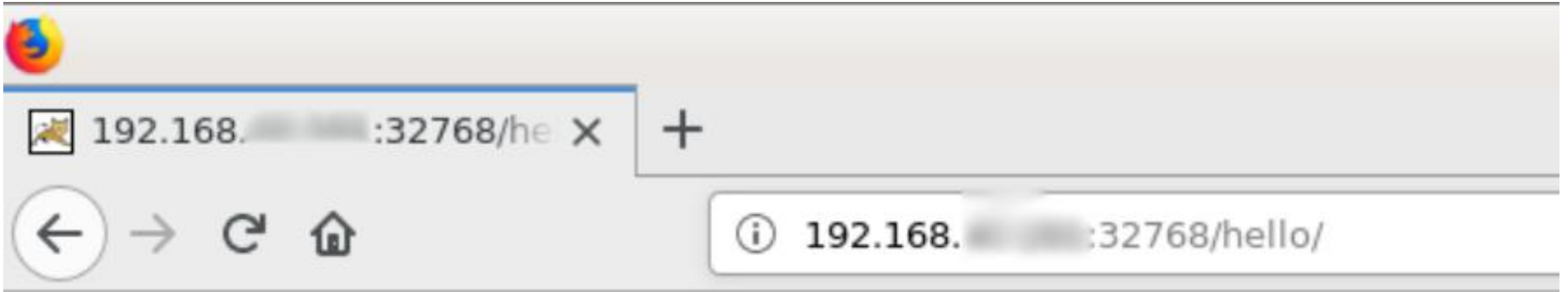






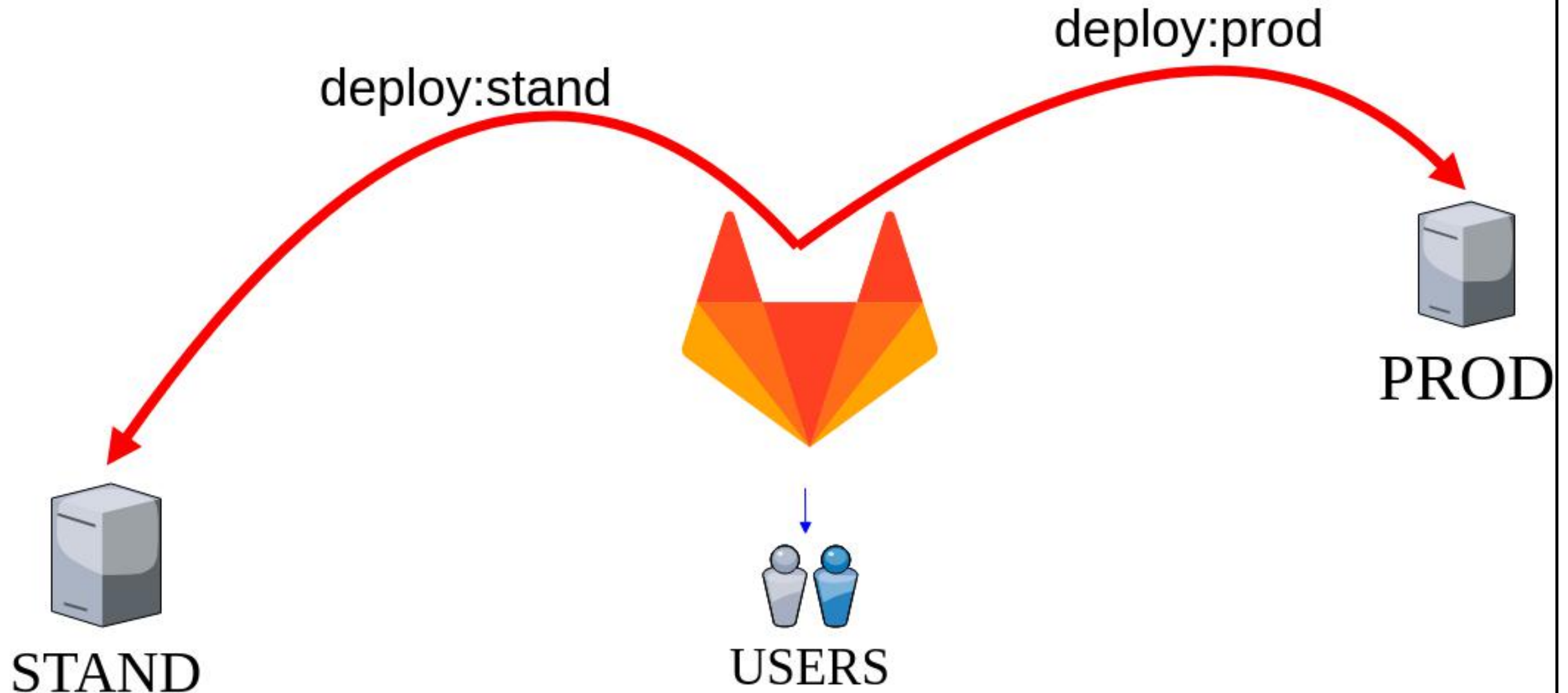
# "Hello" web application

<https://github.com/GRomR1/java-servlet-hello>



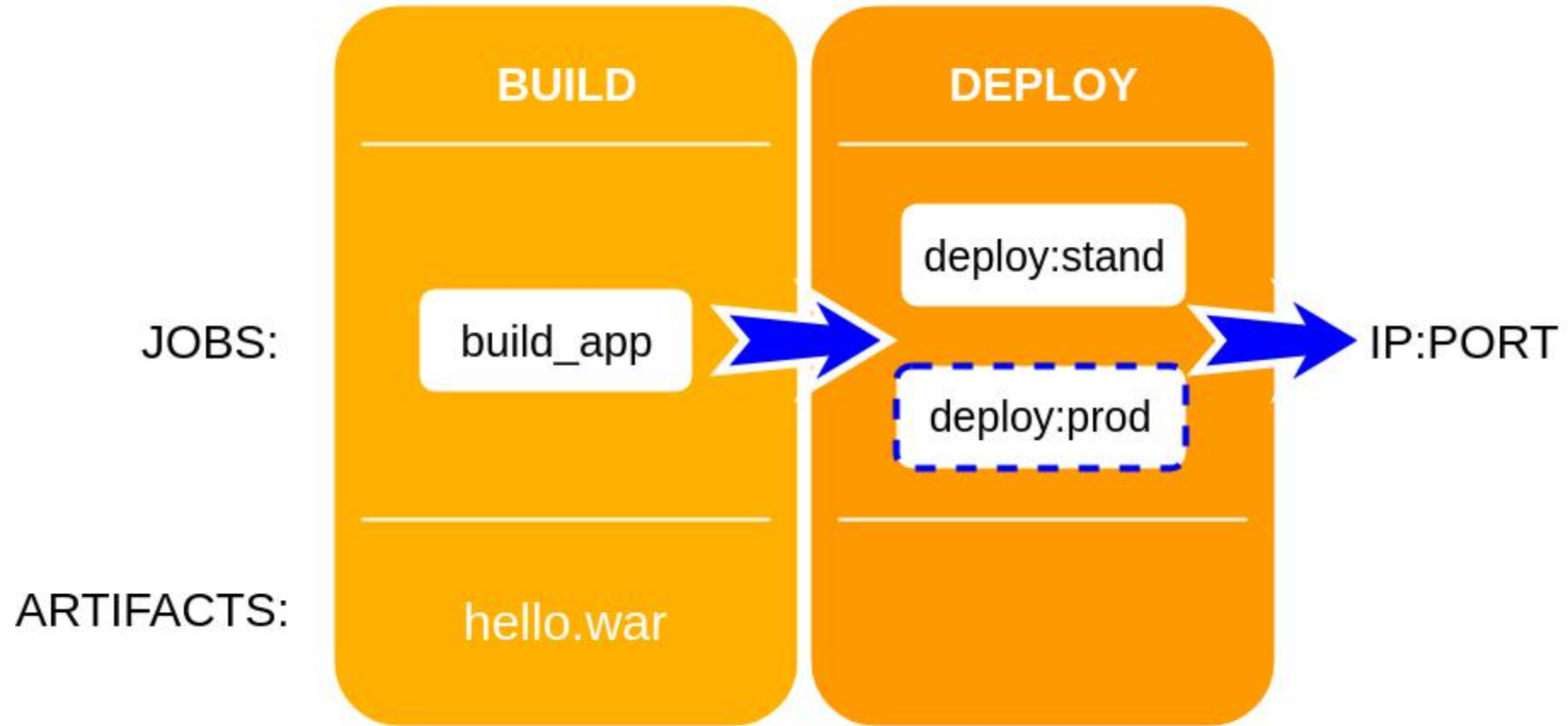
**Hello World!**

# Test Infrastructure





# Simple Pipeline



# Simple Pipeline

 **passed** Pipeline #11260 triggered 11 minutes ago by  Гайнанов Руслан

## Update .gitlab-ci.yml

🕒 3 jobs from `master` in 45 seconds (queued for 1 second)

🔑 7f68794e  

**Pipeline** Jobs 3

### Build

 build\_app



### Deploy

 deploy:prod



 deploy:stand





# Let's code



# Prepare Runner

<https://docs.gitlab.com/runner/>

```
gitlab-runner register -n \  
  --url "https://YOUR_GITLAB_URL/" \  
  --registration-token "XXXXXXXXXXXXXXXXXXXXXXXXXXXX" \  
  --description "stand" \  
  --tag-list "stand-shell" \  
  --executor "shell" \  
  --limit 1
```

# Edit .gitlab-ci.yml (1/3)

## build\_app:

**stage:** build

**dependencies:** []

**tags:**

- **stand-shell**

**script:**

- docker run --rm -i -v \${PWD}:/hello -w /hello maven  
mvn clean install

**artifacts:**

paths:

- **hello.war**

expire\_in: 1 week



# Edit .gitlab-ci.yml (1/3)

✓ passed

Job #58711 triggered about 5 hours ago by  Гайнанов Руслан

Retry

```
Running with gitlab-runner 10.6.0 (a3543a27)
  on stand bbb10681
Using Shell executor...
Running on stand...
Fetching changes...
HEAD is now at a82fc6e Add .gitlab-ci.yml
From https://gitlab.unit-org.ru/rgaynanov/java-servlet-hello
 a82fc6e..7f68794  master    -> origin/master

Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-utils/3.0/plexus-utils-3.0.jar (226 kB at 679 kB/s)
[INFO] Deleting /hello/target
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 3.602 s
[INFO] Finished at: 2018-08-13T06:20:18Z
[INFO] Final Memory: 11M/573M
[INFO] -----
Uploading artifacts...
hello.war: found 1 matching files
Uploading artifacts to coordinator... ok          id=58711 responseStatus=201 Created token=
i6c1ZZCp
Job succeeded
```

build\_app

Duration: 42 seconds

Runner: #21

Tags: **stand-shell**

Job artifacts

The artifacts will be removed in  
6 days remaining

Keep

Download

Browse

Commit [7f68794e](#) 

Update .gitlab-ci.yml

✓ Pipeline #11260 from master

build

→ ✓ build\_app

# Edit .gitlab-ci.yml (2/3)

## deploy:stand:

**stage:** deploy

**dependencies:**

- build\_app

**tags:**

- stand-shell

**script:**

- docker run -d --rm --name hello-**\${CI\_COMMIT\_SHA:0:8}** -P  
-v \${PWD}/hello.war:/usr/local/tomcat/webapps/hello.war  
tomcat:9.0-jre8-alpine
- docker ps -f "name=hello-**\${CI\_COMMIT\_SHA:0:8}**"  
--format '{{.Ports}}'

# Edit .gitlab-ci.yml (2/3)

passed

Job #58712 triggered 12 minutes ago by  Гайнанов Руслан

Retry

```
Running with gitlab-runner 10.6.0 (a3543a27)
  on stand bbb10681
Using Shell executor...
Running on stand...
Fetching changes...
Removing hello.war
HEAD is now at 7f68794 Update .gitlab-ci.yml
Checking out 7f68794e as master...
Skipping Git submodules setup
Downloading artifacts for build_app (58711)...
Downloading artifacts from coordinator... ok      id=58711 responseStatus=200 OK token=i6c1Z
ZCp
$ docker run -d --rm --name hello-tomcat-${CI_COMMIT_SHA:0:8} -P -v ${PWD}/hello.war:/usr/local/tomcat/webapps/hello.war tomcat:9.0-jre8-alpine
fdaa9ddb517615c32c08d254f7941ce30a5d604234001028968d9045e3fc41b5
$ docker ps -f "name=hello-tomcat-${CI_COMMIT_SHA:0:8}" --format '{{.Ports}}'
0.0.0.0:32768->8080/tcp
Job succeeded
```

deploy:stand

Duration: 2 seconds

Runner: #21

Tags: **stand-shell**

Commit [7f68794e](#) 

Update .gitlab-ci.yml

✓ Pipeline #11260 from master

deploy

✗ deploy:prod

➔ ✓ deploy:stand



# Edit .gitlab-ci.yml (3/3)

## deploy:prod:

**stage:** deploy

**dependencies:**

- build\_app

**tags:**

- prod-shell

**script:**

- docker stop hello
- docker run -d --rm --name hello -p 80:8080
  - v \${PWD}/hello.war:/usr/local/tomcat/webapps/hello.war
- tomcat:9.0-jre8-alpine



# Real Pipelines

| Pipelines Jobs Schedules Environments Charts |                                                                                              |                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                      |                                                                                       |
|----------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| All 4987                                     |                                                                                              | Pending 0                                                                     | Running 2                                                                                                                                                                                                                                                                                                                                                                                                                                     | Finished 4829                                                                                                                                                                                        | Branches Tags                                                                         |
|                                              |                                                                                              |                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                      | Run Pipeline CI Lint                                                                  |
| Status                                       | Pipeline                                                                                     | Commit                                                                        | Stages                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                      |                                                                                       |
| passed                                       | #7489 by    | <a href="#">ES-1817 2 - 357d018a</a><br>ES-1817 Отображение добавляемы...     |                                                                                                   |  00:04:26<br> 6 months ago     |    |
| passed                                       | #7485 by    | <a href="#">ES-1822 - 752d0943</a><br>ES-1822 Поправил лишние клики           |                                                                                                   |  00:08:10<br> 6 months ago     |    |
| passed                                       | #7484 by    | <a href="#">ES-1729 - 862c4728</a><br>ES-1729 Добавил возможность авто...     |                                                                                                   |  00:08:51<br> 6 months ago     |    |
| passed                                       | #7483 by    | <a href="#">ES-1822 - 3e838346</a><br>ES-1822 Поправлена конечная дата        |                                                                                                   |  00:08:13<br> 6 months ago     |    |
| passed                                       | #7482 by    | <a href="#">ES-2006 - 3aa6adea</a><br>Merge remote-tracking branch 'origin... |                                                                                                   |  00:04:40<br> 6 months ago     |    |
| passed                                       | #7481 by    | <a href="#">ES-2006 - a4dfaedd</a><br>ES-2006 реализована смена родите...     |                                                                                                   |  00:03:59<br> 6 months ago     |    |
| passed                                       | #7479 by    | <a href="#">ES-2015 - d5249e37</a><br>ES-2015 Поправлена верстка              |                                                                                                   |  00:04:02<br> 6 months ago     |    |
| passed                                       | #7478 by    | <a href="#">ES-1729 - eb162392</a><br>ES-1729 Исправил ошибку добавле...      |                                                                                                   |  00:08:30<br> 6 months ago     |    |
| passed                                       | #7476 by  | <a href="#">ES-1729 - c4d13c9e</a><br>ES-1729 очистка полей отдела и до...    |                                                                                           |  00:08:34<br> 6 months ago |  |
| passed                                       | #7475 by  | <a href="#">ES-1729 - 15e0137c</a><br>ES-1729 исправил список недочетов...    |                                                                                           |  00:08:31<br> 6 months ago |  |
| passed                                       | #7474 by  | <a href="#">ES-1822 - 65805ab0</a><br>ES-1822 Правка верстки                  |                                                                                           |  00:09:02<br> 6 months ago |  |
| passed                                       | #7473 by  | <a href="#">master - 074cfec2</a><br>Merge branch 'ES-2017' into 'master'     |      |  00:04:50<br> 6 months ago |  |



# Branch Pipeline

passed

Pipeline #7479 triggered 6 months ago by  Malkov Sergey

## ES-2015 Поправлена верстка

8 jobs from ES-2015 in 4 minutes 2 seconds (queued for 2 seconds)

 [d5249e37](#)  

Pipeline Jobs 8

Build

 build\_main

Liquibase

 do\_liquibase

Staging

 deploy\_to\_sta... 

 stop\_stand 

Admin\_only

 add\_https\_to\_... 

 build\_images 

 clear\_cache 

 create\_dump 



# Master Pipeline

[Pipelines](#) [Jobs](#) [Schedules](#) [Environments](#) [Charts](#)

passed Pipeline #7473 triggered 6 months ago by Везденов Виктор Сергеевич

## Merge branch 'ES-2017' into 'master'

Pipeline Jobs 10

Build

Liquibase

Staging

Production

Admin\_only

✓ build\_main



✓ do\_liquibase



✓ deploy\_to\_sta...



✓ deploy\_to\_prod



⚙ reload\_nginx



⚙ add\_https\_to\_...



⚙ build\_images



⚙ clear\_cache



⚙ create\_dump



⚙ get\_previous\_...



# Back to reality





# The scripts is overloaded

## .deploy\_to\_stand\_template:

script: &deploy\_stand

- echo "Stopping container \$MYSQL\_CONTAINER"

```
&& [[ $(docker ps -f "name=$MYSQL_CONTAINER" --format '{{.Names}}') ==
$MYSQL_CONTAINER ]]
```

&& docker stop \$MYSQL\_CONTAINER

```
- sudo cp -r ${DB_DUMP_PATH}/${DB_DUMP_DIR_NAME}/*
${DB_PATH}/${CI_COMMIT_REF_SLUG}/${CI_COMMIT_SHA:0:8}
```

```
- sudo chown -R 999:999
${DB_PATH}/${CI_COMMIT_REF_SLUG}/${CI_COMMIT_SHA:0:8}
```

```
- if echo ${COMMIT_MESSAGE} | grep '(_debug_)'; then      export
DEBUG_OPTS='-
agentlib:jdwp=transport=dt_socket,address=0.0.0.0:1003,server=y,suspend=n
';      fi
```

..... 250 rows.....

```
$ if grep ${LAST_COMMIT_DB} ${HISTORY_COMMIT_DB_FILE}; then echo No need to run liquibase > prod_liquibase.log; elif rm -rf ${CI_PROJECT_DIR}/messenger-liquibase/target && mkdir ${CI_PROJECT_DIR}/messenger-liquibase/
target && cp -r messenger-liquibase-built/* ${CI_PROJECT_DIR}/messenger-liquibase/target && mv ${CI_PROJECT_DIR}/messenger-liquibase/target/messenger-liquibase-${CI_COMMIT_REF_SLUG}-${CI_COMMIT_SHA:0:8}.jar ${CI_PROJ
ECT_DIR}/messenger-liquibase/target/messenger-liquibase-1.0.jar && docker run --rm --name maven-liquibase --link ${MYSQL_CONTAINER}:db -e PROD_DB_USER=${PROD_DB_USER} -e PROD_DB_PASS=${PROD_DB_PASS} -e MAVEN_OPTS=" -
DdataSourceUrl=jdbc:mysql://db:3306/messenger?useUnicode=true&serverTimezone=UTC&autoReconnect=true&useSSL=false -DdataSourceUsername=${PROD_DB_USER} -DdataSourcePassword=${PROD_DB_PASS}" -v ${CI_PROJECT_DIR}:/uc -v
${CACHE_PATH}/maven:/cache -w /uc/messenger-liquibase ${MAVEN_IMAGE} sh -c 'mvn exec:java -Dexec.mainClass="ru.orgunit.messenger.liquibase.RunLiquibase" -Dmaven.repo.local=/cache' >> prod_liquibase.log 2>&1; then ec
ho Run liquibase && echo SUCCESS >> prod_liquibase.log; echo $(date '+%d.%m.%Y%H:%M:%S') ${LAST_COMMIT_DB} >> ${HISTORY_COMMIT_DB_FILE}; else echo Run liquibase && echo ERROR >> prod_liquibase.log && tail -n 300 pro
d_liquibase.log && tar -cvzf liquibase.tar.gz prod_liquibase.log > /dev/null; export PREVIOUS_WAR=$(ls -t /uc/dev/war/master/ | head -1); docker run -d --restart=always --name ${TOMCAT_CONTAINER} --log-opt max-size=5
00m --link ${REDIS_CONTAINER}:redis --link ${MYSQL_CONTAINER}:db -e PROD_DB_USER=${PROD_DB_USER} -e PROD_DB_PASS=${PROD_DB_PASS} -e TELEPHONY_PASSWORD=${TELEPHONY_PASSWORD} -e JAVA_OPTS="-DdataSourceUrl='jdbc:mysq
l://db:3306/messenger?useUnicode=true&serverTimezone=UTC&autoReconnect=true&useSSL=false' -DdataSourceUsername=${PROD_DB_USER} -DdataSourcePassword='${PROD_DB_PASS}' -DredisHost=redis -DredisPort=6379 -DfileDefaultDi
rectory=/var/filedefaultdirectory/ -DtelephonyHost=192.168.40.211 -DtelephonyPort=5038 -DuserName=unitcontrol -Dpassword='${TELEPHONY_PASSWORD}' -Xmx5g -Xms4g -XX:+UseG1GC" -e TZ=Europe/Moscow -p ${EXPOSED_PORT}:8080
-v ${WAR_PATH}/master/${PREVIOUS_WAR}:/usr/local/tomcat/webapps -v ${PROD_FILES_PATH}/master/filedefaultdirectory:/var/filedefaultdirectory ${TOMCAT_IMAGE}; exit 1; fi
29.01.2018T07:49:00 dbbc53a9dbad09c1bc7e806f9fcd881e7466a94
$ tail -n 300 prod_liquibase.log
No need to run liquibase
```

production

⌚ reload\_nginx

➔ ✅ deploy\_to\_prod

# The scripts is overloaded

## .deploy\_to\_stand\_template:

script: &deploy\_stand

- echo "Stopping container \$MYSQL\_CONTAINER"

```
&& [[ $(docker ps -f "name=$MYSQL_CONTAINER" --format '{{.Names}}') ==
$MYSQL_CONTAINER ]]
```

```
&& docker stop $MYSQL_CONTAINER
```

```
- sudo cp -r ${DB_DUMP_PATH}/${DB_DUMP_DIR_NAME}/*
${DB_PATH}/${CI_COMMIT_REF_SLUG}/${CI_COMMIT_SHA:0:8}
```

```
- sudo chown -R 999:999
${DB_PATH}/${CI_COMMIT_REF_SLUG}/${CI_COMMIT_SHA:0:8}
```

```
- if echo ${COMMIT_MESSAGE} | grep '(_debug_)'; then      export
DEBUG_OPTS='-
agentlib:jdwp=transport=dt_socket,address=0.0.0.0:1003,server=y,suspend=n
'; fi
```

..... 250 rows .....

```
$ if grep ${LAST_COMMIT_DB} ${HISTORY_COMMIT_DB_FILE}; then echo No need to run liquibase > prod_liquibase.log; elif rm -rf ${CI_PROJECT_DIR}/messenger-liquibase/target && mkdir ${CI_PROJECT_DIR}/messenger-liquibase/
target && cp -r messenger-liquibase-built/* ${CI_PROJECT_DIR}/messenger-liquibase/target && mv ${CI_PROJECT_DIR}/messenger-liquibase/target/messenger-liquibase-${CI_COMMIT_REF_SLUG}-${CI_COMMIT_SHA:0:8}.jar ${CI_PROJ
ECT_DIR}/messenger-liquibase/target/messenger-liquibase-1.0.jar && docker run --rm --name maven-liquibase --link ${MYSQL_CONTAINER}:db -e PROD_DB_USER=${PROD_DB_USER} -e PROD_DB_PASS=${PROD_DB_PASS} -e MAVEN_OPTS=" -
DdataSourceUrl=jdbc:mysql://db:3306/messenger?useUnicode=true&serverTimezone=UTC&autoReconnect=true&useSSL=false -DdataSourceUsername=${PROD_DB_USER} -DdataSourcePassword=${PROD_DB_PASS}" -v ${CI_PROJECT_DIR}/uc -v
${CACHE_PATH}/maven:/cache -w /uc/messenger-liquibase ${MAVEN_IMAGE} sh -c 'mvn exec:java -Dexec.mainClass="ru.orgunit.messenger.liquibase.RunLiquibase" -Dmaven.repo.local=/cache' >> prod_liquibase.log 2>&1; then ec
ho Run liquibase && echo SUCCESS >> prod_liquibase.log; echo $(date '+%d.%m.%Y%H:%M:%S') ${LAST_COMMIT_DB} >> ${HISTORY_COMMIT_DB_FILE}; else echo Run liquibase && echo ERROR >> prod_liquibase.log && tail -n 300 pro
d_liquibase.log && tar -cvzf liquibase.tar.gz prod_liquibase.log > /dev/null; export PREVIOUS_WAR=$(ls -t /uc/dev/war/master/ | head -1); docker run -d --restart=always --name ${TOMCAT_CONTAINER} --log-opt max-size=5
00m --link ${REDIS_CONTAINER}:redis --link ${MYSQL_CONTAINER}:db -e PROD_DB_USER=${PROD_DB_USER} -e PROD_DB_PASS=${PROD_DB_PASS} -e TELEPHONY_PASSWORD=${TELEPHONY_PASSWORD} -e JAVA_OPTS="-DdataSourceUrl='jdbc:mysq
l://db:3306/messenger?useUnicode=true&serverTimezone=UTC&autoReconnect=true&useSSL=false' -DdataSourceUsername=${PROD_DB_USER} -DdataSourcePassword='${PROD_DB_PASS}' -DredisHost=redis -DredisPort=6379 -DfileDefaultDi
rectory=/var/filedefaultdirectory/ -DtelephonyHost=192.168.40.211 -DtelephonyPort=5038 -DuserName=unitcontrol -Dpassword='${TELEPHONY_PASSWORD}' -Xmx5g -Xms4g -XX:+UseG1GC" -e TZ=Europe/Moscow -p ${EXPOSED_PORT}:8080
-v ${WAR_PATH}/master/${PREVIOUS_WAR}:/usr/local/tomcat/webapps -v ${PROD_FILES_PATH}/master/filedefaultdirectory:/var/filedefaultdirectory ${TOMCAT_IMAGE}; exit 1; fi
29.01.2018T07:49:00 dbbc53a9dbad09c1bc7e806f9fcd881e7466a94
$ tail -n 300 prod_liquibase.log
No need to run liquibase
```



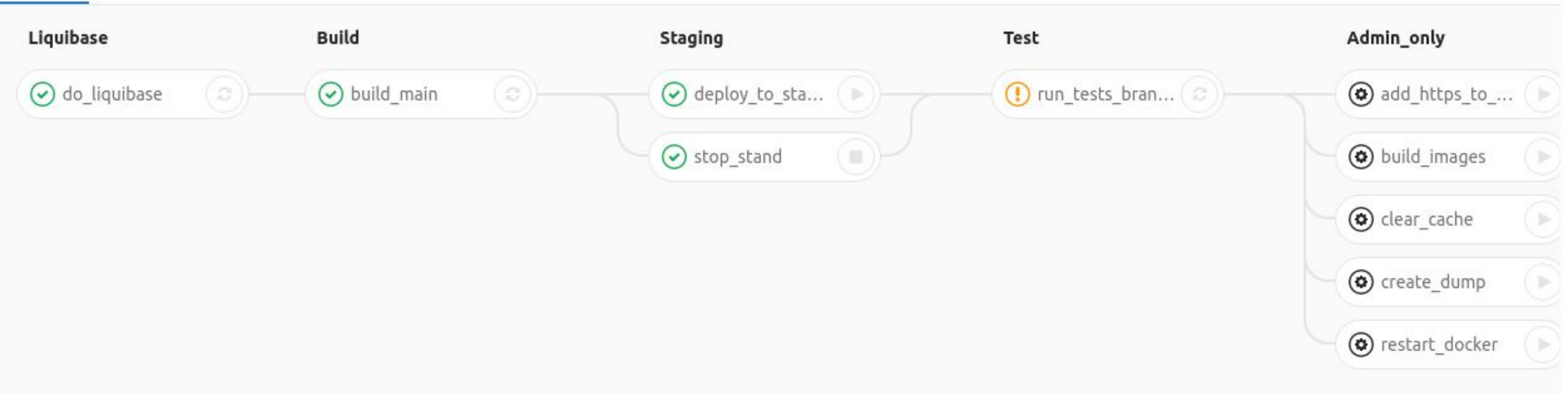
production

© reload\_nginx

→ deploy\_to\_prod

# Too many manual actions

Pipeline Jobs 12 Failed Jobs 1



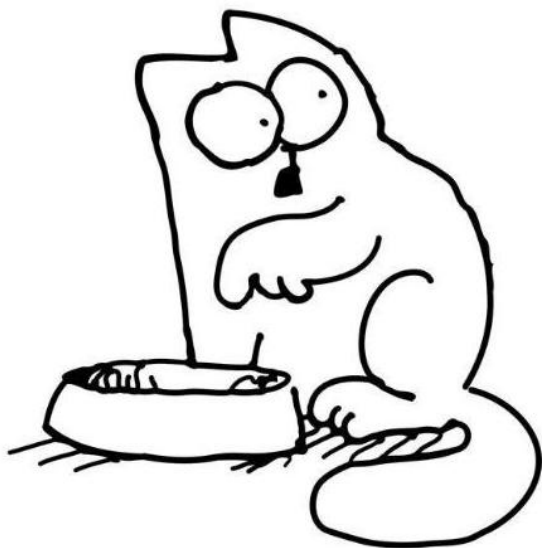


# P-U-S-H !!!



# Need tests

Есть что потестить?



| Feature                                                            | Steps  |        |         |         |           |       | Scenarios |        |       | Features |        |
|--------------------------------------------------------------------|--------|--------|---------|---------|-----------|-------|-----------|--------|-------|----------|--------|
|                                                                    | Passed | Failed | Skipped | Pending | Undefined | Total | Passed    | Failed | Total | Duration | Status |
| Проверка получения сообщения от пользователя из другой организации | 27     | 0      | 0       | 0       | 0         | 27    | 1         | 0      | 1     | 1:43.138 | Passed |
| Авторизация                                                        | 13     | 0      | 0       | 0       | 0         | 13    | 1         | 0      | 1     | 59.760   | Passed |
| Приглашение из своих контактов                                     | 30     | 1      | 12      | 0       | 0         | 43    | 0         | 1      | 1     | 2:34.925 | Failed |
| Гостевой режим, приглашение по почте                               | 32     | 0      | 0       | 0       | 0         | 32    | 1         | 0      | 1     | 1:20.407 | Passed |
| Гостевой режим                                                     | 28     | 0      | 0       | 0       | 0         | 28    | 1         | 0      | 1     | 1:36.632 | Passed |
| Регистрация и создание сущности заметка                            | 18     | 0      | 0       | 0       | 0         | 18    | 1         | 0      | 1     | 1:10.856 | Passed |

# Solution?



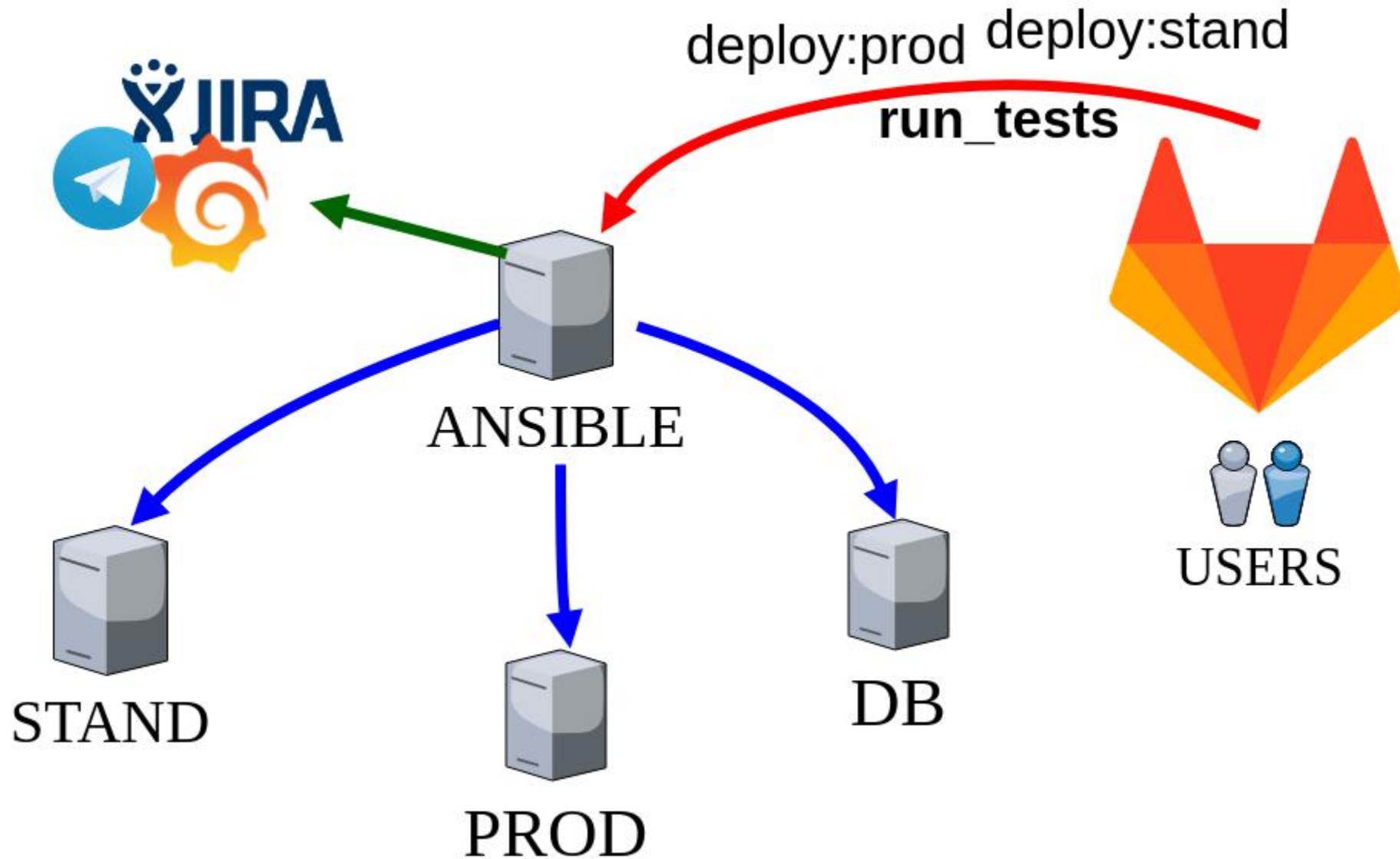


# Solution



ANSIBLE

# Our Workflow



# GitLab CI

## job:deploy

### 1. app-deploy-scripts

- cd /app/scripts && git pull

### 2. app

- cd /app/scripts/ansible
- **ansible-playbook** playbook-app.yml
  - e deploy\_stand=true
  - e stop\_stand=true
  - e branch=\${CI\_COMMIT\_REF\_SLUG}
  - e commit=\${CI\_COMMIT\_SHA}
  - e project\_dir=\${CI\_PROJECT\_DIR}
- artifacts:
  - tomcat\_port
  - mysql\_port

## job:run\_tests

- **ansible-playbook** playbook-app.yml
  - e run\_tests=true
  - e test\_type=smoke
  - e mysql\_port=\${MYSQL\_PORT}
  - e stand\_port=\${STAND\_PORT}



# CI Pipeline (Branch)

Pipeline Jobs 8 Failed Jobs 1

Auto\_deploy

Test



deploy\_stand\_...



stop\_stand



run\_tests\_bran...



# CI Pipeline (Master)

Pipeline Jobs 14

## Auto\_deploy

✓ deploy\_stand\_... 

⚙ stop\_stand 

## Test

⚙ run\_tests\_mas... 

## Production

⚙ deploy\_to\_pro... 

# CI Output

**job:deploy**

....

TASK [app: **Show info**]

ok: [stand] => {

    "branch": "es-2158",

    "mysql\_port": "21963",

    "stand\_url": "<http://192.168.0.1:11040>",

    "title": "Merge branch 'origin/master' into ES-2158"

}



# CI Output

**job:run\_tests**

....

TASK [app: **Result of tests**]

ok: [stand] => {

"msg": "**26 Scenarios (1 failed, 25 passed)**"

}

TASK [app: **Fail exit when tests failed**]

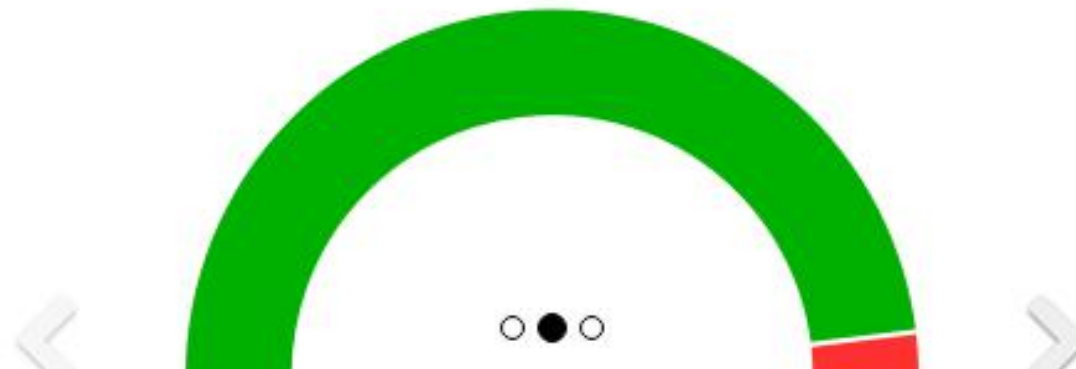
fatal: [stand]: FAILED! => {

"msg": "[http://URL/es-2158/2018-08-13\\_08-20-36/](http://URL/es-2158/2018-08-13_08-20-36/)"

}

The following graphs show passing and failing statistics for features

## Scenarios



## Test Results [2/4]

[illegible]

# Test Results [3/4]

|                                                       |        |       |       |       |       |     |        |       |    |            |        |
|-------------------------------------------------------|--------|-------|-------|-------|-------|-----|--------|-------|----|------------|--------|
| Проверка инвайтов (ES-2505)                           | 70     | 1     | 0     | 0     | 0     | 71  | 3      | 1     | 4  | 4:48.508   | Failed |
| Настройки, изменение персональных настроек            | 18     | 0     | 0     | 0     | 0     | 18  | 1      | 0     | 1  | 1:8.224    | Passed |
| Проверка панели сегодня в приказах для автора/ответст | 55     | 0     | 0     | 0     | 0     | 55  | 1      | 0     | 1  | 3:47.896   | Passed |
| Проверка панели сегодня в задачах для автора/ответст  | 80     | 0     | 0     | 0     | 0     | 80  | 1      | 0     | 1  | 3:51.141   | Passed |
|                                                       | 717    | 1     | 0     | 0     | 0     | 718 | 25     | 1     | 26 | 1:4:58.301 | 18     |
|                                                       | 99.86% | 0.14% | 0.00% | 0.00% | 0.00% |     | 96.15% | 3.85% |    |            | 94.44% |





# Test Results [4/4]

Feature: Проверка инвайтов (ES-2505)

Tags: @smoke @Send\_Invite

Структура сценария Регистрируем компанию Пользователем\_2, и потом регистрируемся по инвайту (ES-2505) ▾

1:50.424

Hooks >

Steps ▾

|                                                                                                                                    |        |
|------------------------------------------------------------------------------------------------------------------------------------|--------|
| * Выходим из системы                                                                                                               | 10.225 |
| * Открываем страницу авторизации                                                                                                   | 0.499  |
| * На форме авторизации нажимаем кнопку "Зарегистрируйтесь"                                                                         | 2.933  |
| * Находим поле "Введите название организации" и заполняем произвольным значением с "5" символами и запоминаем как "Имя_Компании_2" | 7.615  |
| * Ждём пару секунд                                                                                                                 | 2.000  |
| * Вводим случайный телефон и запоминаем его как "Тел_Номер_2"                                                                      | 7.213  |
| * Нажимаем кнопку "Продолжить"                                                                                                     | 2.871  |
| * Ждём пару секунд                                                                                                                 | 2.000  |
| * Вводим тестовый код из смс "123456"                                                                                              | 7.194  |
| * Нажимаем кнопку "Зарегистрироваться"                                                                                             | 2.771  |
| * В шапке выбираем организацию из памяти "Имя_Компании_2" и выбираем раздел "Просмотр информации"                                  | 4.130  |
| * В информации организации открываем таб с именем "Сотрудники организации"                                                         | 2.151  |
| * Выходим из системы                                                                                                               | 6.804  |
| * Переходим по ссылке из инвайта с именем "Инвайт_2"                                                                               | 0.898  |
| * Нажимаем кнопку "Принять приглашение"                                                                                            | 3.013  |
| * Находим поле "Введите номер телефона" и вводим значение из памяти "Тел_Номер_2"                                                  | 7.662  |
| * Нажимаем кнопку "Продолжить"                                                                                                     | 2.843  |
| * Нажимаем кнопку "Сменить организацию"                                                                                            | 2.727  |
| * Ждём пару секунд                                                                                                                 | 2.000  |
| * Вводим тестовый код из смс "123456"                                                                                              | 7.032  |
| * Нажимаем кнопку "Зарегистрироваться"                                                                                             | 2.712  |
| * В шапке выбираем организацию из памяти "Имя_Компании_1" и выбираем раздел "Просмотр информации"                                  | 3.869  |
| * В информации организации открываем таб с именем "Сотрудники организации"                                                         | 2.046  |
| * Находим поле "Поиск сотрудника по фамилии, имени, отчеству, телефону, e-mail" и вводим значение из памяти "Инвайт_1"             | 6.887  |
| * ↓ ЗАВЕДЕНА ЗАДАЧА НА ИСПРАВЛЕНИЕ БАГА КОТОРЫЙ НИЖЕ ↓ "ES-2505"                                                                   | 0.000  |
| * Статус приглашения со значением "Инвайт_2" должен отображаться как "Приглашение принято"                                         | 10.317 |

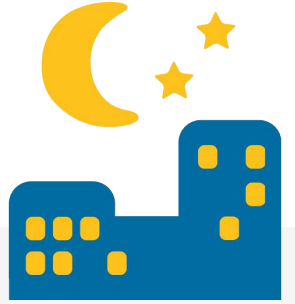
junit.framework.AssertionFailedError:

```
junit.framework.AssertionFailedError:  
SESSION_ID - 0181ca57813bf0d4f3ed04a2b19d4fc2
```

Не найден элемент:

```
*/table[@id='invited-list-table']/tr/td[contains(text(),'fcn@qcg.xkf')]/../td[contains(text(),'Приглашение принято')]
```

# Regress Test



**job:auto\_run\_regress**

Pipelines Jobs **Schedules** Environments Charts

All 1 Active 1 Inactive 0

New schedule

| Description   | Target             | Last Pipeline | Next Run   | Owner             |
|---------------|--------------------|---------------|------------|-------------------|
| Regress Tests | 🔗 auto_run_regress | ✅ #11284      | in 6 hours | 🌞 Гайнанов Руслан |

Take ownership



....

TASK [uc : **Result of tests**]

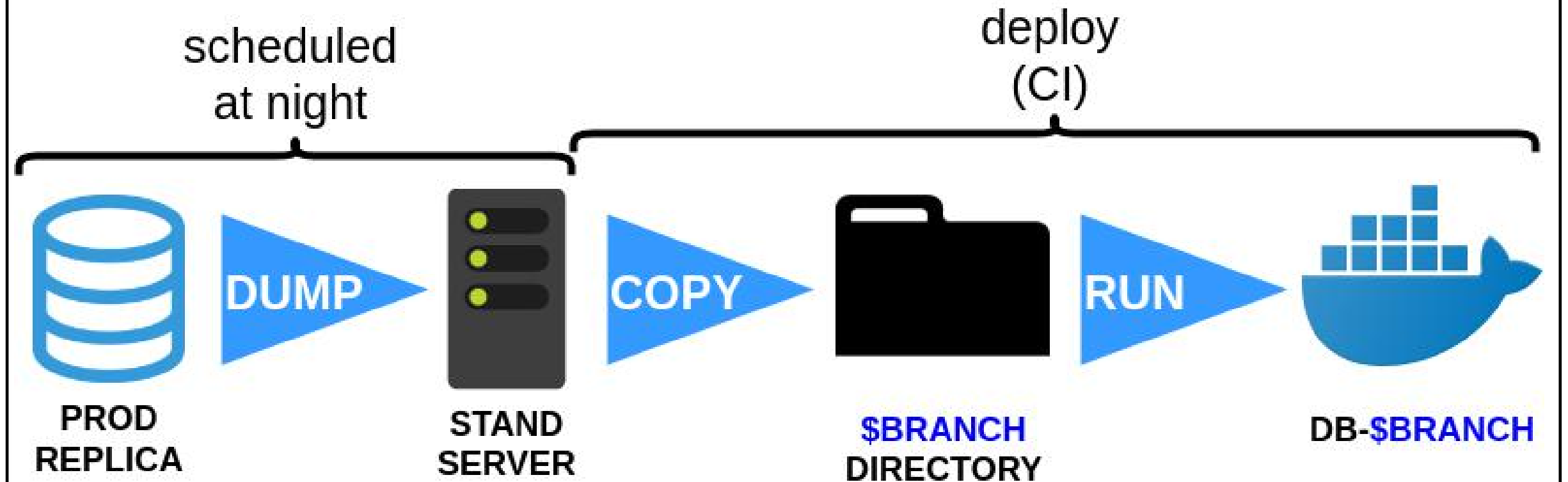
ok: [stand] => {

"msg": " **191 Scenarios** (35 failed, 156 passed)"

}



# Deploy databases





# Run MySQL in Ansible Task

- **name:** "run mysql-{{ **branch** }}"

**docker\_container:**

**name:** "mysql-{{ **branch** }}"

**image:** mysql:5.7

**volumes:**

- "/uc/dev/{{ **branch** }}/db:/var/lib/mysql"
- "/uc/scripts/db/conf/stand/base:/etc/mysql/mysql.conf.d:ro"

**ports:**

- "{{ **mysql\_port** }}:3306"

# Running DB containers

| Containers                                                                                      |                                             |                                                                                                                                                                                                                                                                     |       |           |             |                                                                                                  |                                                                                              |
|-------------------------------------------------------------------------------------------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------|-------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| <div>Search Settings</div> <div>Start Stop Kill Restart Pause Resume Remove Add container</div> |                                             |                                                                                                                                                                                                                                                                     |       |           |             |                                                                                                  |                                                                                              |
| mysql                                                                                           |                                             |                                                                                                                                                                                                                                                                     |       |           |             |                                                                                                  |                                                                                              |
| <input type="checkbox"/> Name                                                                   | State <sup>A</sup> <sub>2</sub><br>Filter ▼ | Quick actions                                                                                                                                                                                                                                                       | Stack | Image     | IP Address  | Published Ports                                                                                  | Ownership                                                                                    |
| <input type="checkbox"/> mysql-es-2253-tab-attachments                                          | running                                     |   >_        | -     | mysql:5.7 | 172.17.0.8  |  18869:3306   |  public   |
| <input type="checkbox"/> mysql-master                                                           | running                                     |   >_        | -     | mysql:5.7 | 172.17.0.14 |  3306:3306    |  public   |
| <input type="checkbox"/> mysql-es-2158                                                          | running                                     |   >_     | -     | mysql:5.7 | 172.17.0.18 |  21963:3306   |  public  |
| <input type="checkbox"/> mysql-master_for_test                                                  | running                                     |   >_  | -     | mysql:5.7 | 172.17.0.10 |  3366:3306  |  public |
| <input type="checkbox"/> mysql-new-ci                                                           | running                                     |   >_  | -     | mysql:5.7 | 172.17.0.12 |  30407:3306 |  public |



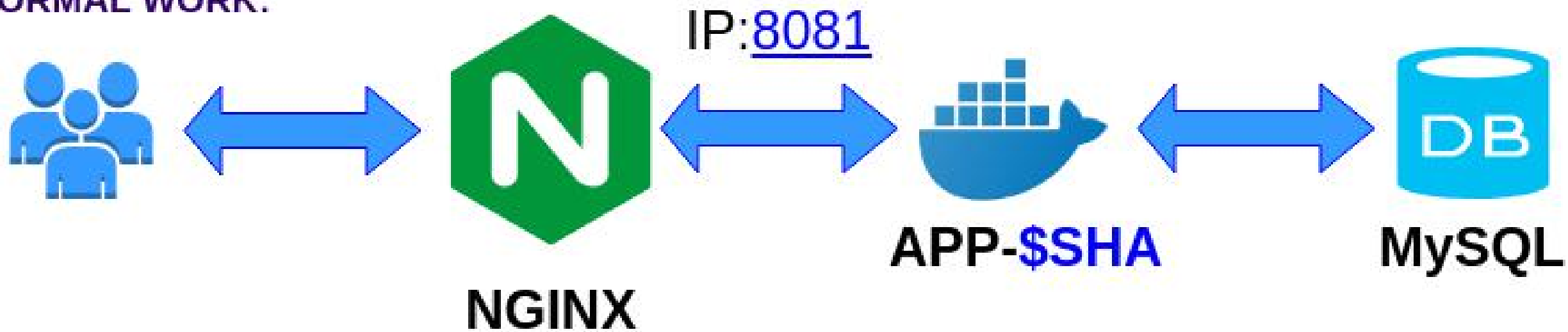
# Deploy on Production





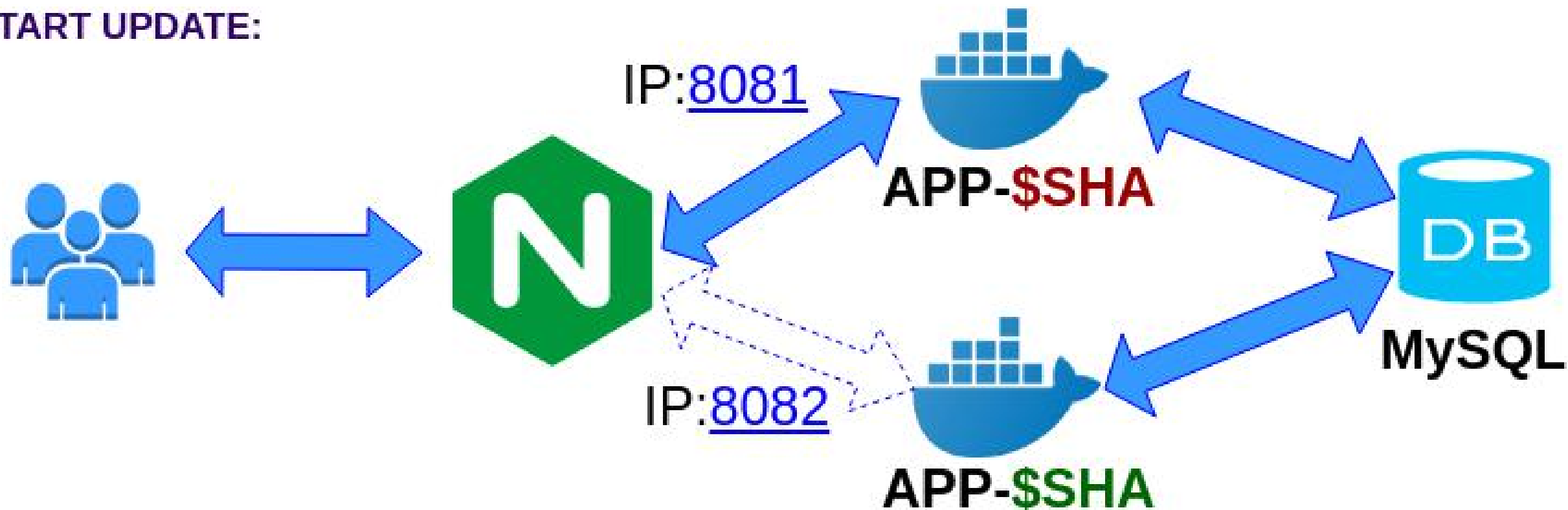
# Online Deploy on Production [1/5]

NORMAL WORK:



# Online Deploy on Production [2/5]

START UPDATE:



# Online Deploy on Production [3/5]



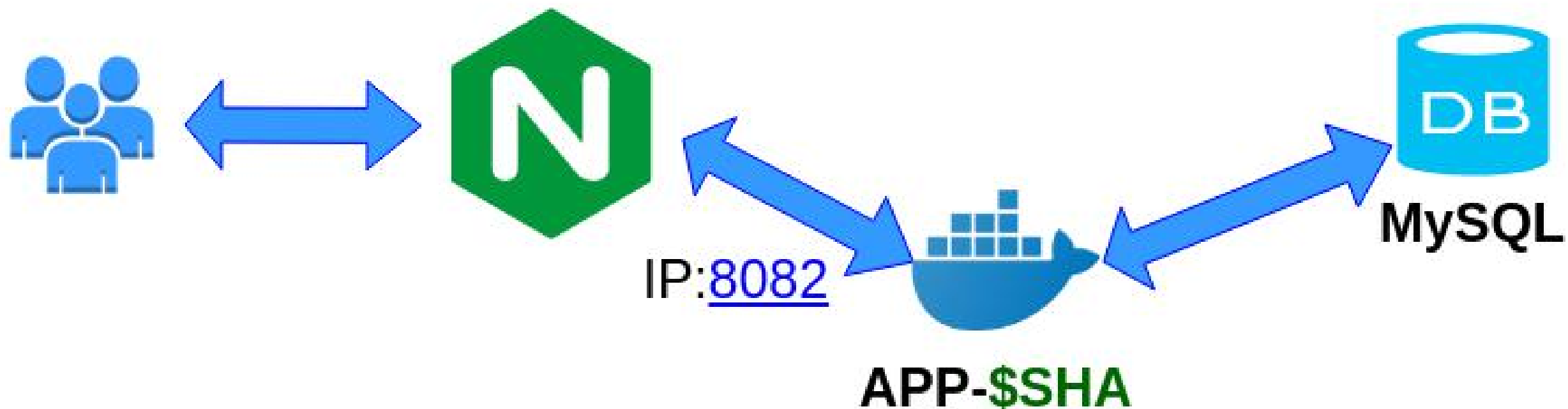
**nginx.conf:**

```
upstream app {  
    #server 127.0.0.1:8081; #prod  
    server 127.0.0.1:8082; #prod  
}
```

**# nginx -s reload**

# Online Deploy on Production [4/5]

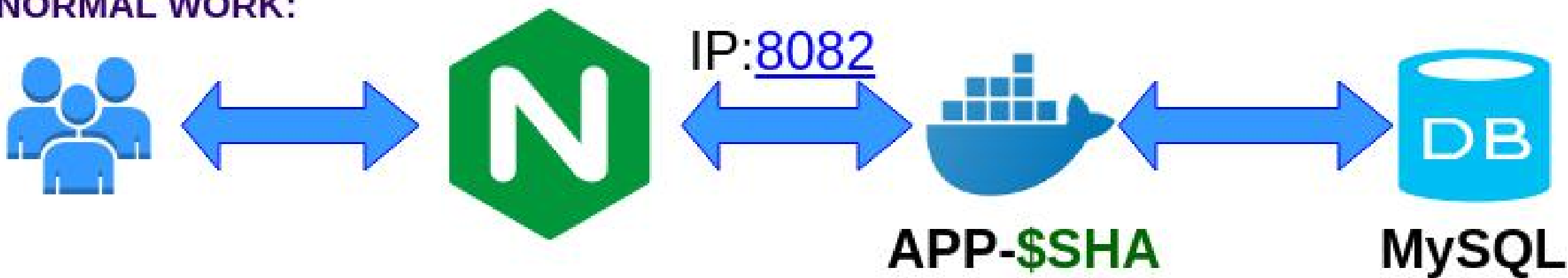
UPDATED:





# Online Deploy on Production [5/5]

NORMAL WORK:



# GitLab Environments

<https://docs.gitlab.com/ee/ci/environments.html>

Pipelines Jobs Schedules **Environments** Charts

new\_production

 View deployment

 Monitoring

Edit

| ID    | Commit                                                                                                                                                                                                                                                                                                                              | Job                                                                                                                     | Created    |                                                                                                                                                                                                                                                                   |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1679 |  master  <a href="#">cac13212</a><br> Merge branch 'ES-2570' into 'master'       | deploy_to_prod:new (#58873)<br>by    | a day ago  |          |
| #1646 |  master  <a href="#">11e61796</a><br> Merge branch 'ES-2488' into 'master'       | deploy_to_prod:new (#58217)<br>by    | a week ago |          |
| #1644 |  master  <a href="#">dc43c7ed</a><br> Merge branch 'ES-2549' into 'master' | deploy_to_prod:new (#58171)<br>by  | a week ago |    |
| #1639 |  master  <a href="#">0c954f5b</a><br> Merge branch 'ES-2560' into 'master' | deploy_to_prod:new (#58141)<br>by  | a week ago |    |



# Conclusion

- **GitLab CI/CD** - удобный и надежный инструмент для автоматизации тестирования и развертывания
- Для каждого проекта свой CI
- Настройки в файле .gitlab-ci.yml (формат YAML)
- Запуск скриптов от пользователя gitlab-runner



# Some advices

- Группируйте и разделяйте задачи (only и except)
- Используйте переменные (`$CI_COMMIT_SHA`, `$CI_COMMIT_REF_SLUG`, ...)
- Используйте права доступа (только Master обновляет Production)
- Помещайте в артефакты всё важное (или почти всё)
- Runner делает вызов внешних скриптов (`ansible-playbook ...`)
- Храните скрипты деплоя в отдельном репозитории (`app-deploy-scripts`)
- Отдельная стадия для редких, но важных скриптов (`admin_only`)
- Nginx + Docker = обновление backend незаметно
- MySQL + Docker = легкость в управлении

# Some useful links

- [\*\*GitLab CI/CD \(GR blog\)\*\*](#)
- [GitLab CI/CD Official Documentation](#)
- [Configuration of your jobs with .gitlab-ci.yml](#)
- [GitLab CI: Учимся деплоить](#)
- [GitLab Runner: Executors](#)
- [GitLab Container Registry](#)

# Questions

- Как расшифровывается DDD?

# Questions

- Как расшифровывается DDD?
  - Domain-driven design - Предметно-ориентированное проектирование



# Questions

- Как расшифровывается DDD?
  - Domain-driven design - Предметно-ориентированное проектирование
- Чем отличается стадия от работы?

# Questions

- Как расшифровывается DDD?
  - Domain-driven design - Предметно-ориентированное проектирование
- Чем отличается стадия от работы?
  - Stage - стадия - набор работ выполняемых последовательно (Build -> Stage -> Test -> Deploy)
  - Job - работа - последовательность скриптов выполняемых Runner'ом.
  - Работы внутри одной стадии запускается параллельно

# Questions

- Как расшифровывается DDD?
- Чем отличается стадия от работы?
- Какую команду NGINX необходимо выполнить после запуска нового backend?

# Questions

- Как расшифровывается DDD?
- Чем отличается стадия от работы?
- Какую команду NGINX необходимо выполнить после запуска нового backend?
  - `nginx -s reload`

# Questions

- Как расшифровывается DDD?
- Чем отличается стадия от работы?
- Какую команду NGINX необходимо выполнить после запуска нового backend?
  - `nginx -s reload`
- Как быть, если БД занимает сотни ГБ?



# Download Presentation



<https://goo.gl/yK2Xi1>

<https://гайнанов.рус/assets/files/gitlab-ci/meetup-presentation.pdf>



**Автотестирование  
и автодеплой  
веб-приложений с  
GitLab CI/CD и  
Docker**

**Руслан  
Гайнанов**

**+7 922 36 37 775**

**rgaynanov@nas.company**  
**<http://vk.com/gainanovrus>**





# Periodic Table of DevOps Tools

<https://xebialabs.com/periodic-table-of-devops-tools/>

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                 |  |                                 |  |                                        |  |                                |  |                              |  |                                          |  |                                          |  |                                               |  |                                 |  |                                               |  |                                           |  |                                            |  |                                         |  |                                          |  |                                           |  |                                           |  |                                  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------|--|---------------------------------|--|----------------------------------------|--|--------------------------------|--|------------------------------|--|------------------------------------------|--|------------------------------------------|--|-----------------------------------------------|--|---------------------------------|--|-----------------------------------------------|--|-------------------------------------------|--|--------------------------------------------|--|-----------------------------------------|--|------------------------------------------|--|-------------------------------------------|--|-------------------------------------------|--|----------------------------------|--|
| PERIODIC TABLE OF DEVOPS TOOLS (V3)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                                 |  |                                 |  |                                        |  |                                |  |                              |  |                                          |  |                                          |  |                                               |  |                                 |  |                                               |  |                                           |  |                                            |  |                                         |  |                                          |  |                                           |  |                                           |  |                                  |  |
| <div><div><div>Os</div>Open Source</div><div><div>Fr</div>Free</div><div><div>Fm</div>Freemium</div><div><div>Pd</div>Paid</div><div><div>En</div>Enterprise</div></div> <div><div><div></div>Source Control Mgmt.</div><div><div></div>Database Automation</div><div><div></div>Continuous Integration</div><div><div></div>Testing</div><div><div></div>Configuration</div></div> <div><div><div></div>Deployment</div><div><div></div>Containers</div><div><div></div>Release Orchestration</div><div><div></div>Cloud</div><div><div></div>AIOps</div></div> <div><div><div></div>Analytics</div><div><div></div>Monitoring</div><div><div></div>Security</div><div><div></div>Collaboration</div></div> |  |                                 |  |                                 |  |                                        |  |                                |  |                              |  |                                          |  |                                          |  |                                               |  |                                 |  |                                               |  |                                           |  |                                            |  |                                         |  |                                          |  |                                           |  |                                           |  |                                  |  |
| 1 Os<br><b>GI</b><br>GitLab                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | 3 Fm<br><b>Gh</b><br>GitHub     |  | 4 En<br><b>Dt</b><br>Datical    |  |                                        |  |                                |  |                              |  |                                          |  |                                          |  |                                               |  | 2 En<br><b>Sp</b><br>Splunk     |  |                                               |  |                                           |  |                                            |  |                                         |  |                                          |  |                                           |  |                                           |  |                                  |  |
| 11 Os<br><b>Sv</b><br>Subversion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | 12 En<br><b>Db</b><br>DBMaestro |  |                                 |  |                                        |  |                                |  |                              |  |                                          |  |                                          |  | 5 En<br><b>XLr</b><br>XebiaLabs<br>XL Release |  | 6 Fm<br><b>Aws</b><br>AWS       |  | 7 Pd<br><b>Az</b><br>Azure                    |  | 8 En<br><b>Gc</b><br>Google Cloud         |  | 9 Fm<br><b>Op</b><br>OpenShift             |  | 10 Fm<br><b>Sg</b><br>Sumo Logic        |  |                                          |  |                                           |  |                                           |  |                                  |  |
| 19 En<br><b>Cw</b><br>ISPW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 20 En<br><b>Dp</b><br>Delphix   |  | 21 Os<br><b>Jn</b><br>Jenkins   |  | 22 Fm<br><b>Cs</b><br>Codeship         |  | 23 Os<br><b>Fn</b><br>FitNesse |  | 24 Fr<br><b>Ju</b><br>JUnit  |  | 25 Fr<br><b>Ka</b><br>Karma              |  | 26 Fm<br><b>Su</b><br>SoapUI             |  | 27 En<br><b>Ch</b><br>Chef                    |  | 28 Fr<br><b>Tf</b><br>Terraform |  | 29 En<br><b>XLd</b><br>XebiaLabs<br>XL Deploy |  | 30 En<br><b>Ud</b><br>UrbanCode<br>Deploy |  | 31 Os<br><b>Ku</b><br>Kubernetes           |  | 32 Fm<br><b>Cc</b><br>CA CD<br>Director |  | 33 En<br><b>Pr</b><br>Plutora<br>Release |  | 34 Pd<br><b>Al</b><br>Alibaba Cloud       |  | 35 Os<br><b>Os</b><br>OpenStack           |  | 36 Os<br><b>Ps</b><br>Prometheus |  |
| 37 Pd<br><b>At</b><br>Artifactory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | 38 Fm<br><b>Rg</b><br>Redgate   |  | 39 Pd<br><b>Ba</b><br>Bamboo    |  | 40 Fm<br><b>Vs</b><br>VSTS             |  | 41 Fr<br><b>Se</b><br>Selenium |  | 42 Fr<br><b>Jm</b><br>JMeter |  | 43 Os<br><b>Ja</b><br>Jasmine            |  | 44 Pd<br><b>Sl</b><br>Sauce Labs         |  | 45 En<br><b>An</b><br>Ansible                 |  | 46 Os<br><b>Ru</b><br>Rudder    |  | 47 En<br><b>Oc</b><br>Octopus<br>Deploy       |  | 48 Os<br><b>Go</b><br>GoCD                |  | 49 Os<br><b>Ms</b><br>Mesos                |  | 50 Pd<br><b>Gke</b><br>GKE              |  | 51 Fm<br><b>Om</b><br>OpenMake           |  | 52 Pd<br><b>Cp</b><br>AWS<br>CodePipeline |  | 53 Pd<br><b>Cy</b><br>Cloud<br>Foundry    |  | 54 En<br><b>It</b><br>ITRS       |  |
| 55 Pd<br><b>Nx</b><br>Nexus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | 56 Os<br><b>Fw</b><br>Flyway    |  | 57 Os<br><b>Tr</b><br>Travis CI |  | 58 Fm<br><b>Tc</b><br>TeamCity         |  | 59 Os<br><b>Ga</b><br>Gatling  |  | 60 Fr<br><b>Tn</b><br>TestNG |  | 61 Fm<br><b>Tt</b><br>Tricentis<br>Tosca |  | 62 Pd<br><b>Pe</b><br>Perfecto           |  | 63 En<br><b>Pu</b><br>Puppet                  |  | 64 Os<br><b>Pa</b><br>Packer    |  | 65 Fm<br><b>Cd</b><br>AWS<br>CodeDeploy       |  | 66 En<br><b>Ec</b><br>ElectricCloud       |  | 67 Os<br><b>Ra</b><br>Rancher              |  | 68 Pd<br><b>Aks</b><br>AKS              |  | 69 Os<br><b>Rk</b><br>Rkt                |  | 70 Os<br><b>Sp</b><br>Spinnaker           |  | 71 Pd<br><b>Ir</b><br>Iron.io             |  | 72 Pd<br><b>Mg</b><br>Moogsoft   |  |
| 73 Fm<br><b>Bb</b><br>BitBucket                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | 74 En<br><b>Pf</b><br>Perforce  |  | 75 Fm<br><b>Cr</b><br>Circle CI |  | 76 Pd<br><b>Cb</b><br>AWS<br>CodeBuild |  | 77 Fr<br><b>Cu</b><br>Cucumber |  | 78 Os<br><b>Mc</b><br>Mocha  |  | 79 Os<br><b>Lo</b><br>Locust.io          |  | 80 En<br><b>Mf</b><br>Micro Focus<br>UFT |  | 81 Os<br><b>Sa</b><br>Salt                    |  | 82 Os<br><b>Ce</b><br>CFEngine  |  | 83 En<br><b>Eb</b><br>ElasticBox              |  | 84 En<br><b>Ca</b><br>CA Automic          |  | 85 En<br><b>De</b><br>Docker<br>Enterprise |  | 86 Pd<br><b>Ae</b><br>AWS ECS           |  | 87 Fm<br><b>Cf</b><br>Codefresh          |  | 88 Os<br><b>Hm</b><br>Helm                |  | 89 Os<br><b>Aw</b><br>Apache<br>OpenWhisk |  | 90 Os<br><b>Ls</b><br>Logstash   |  |



Follow @xebialabs

|                                                  |                                 |                                    |                                    |                                  |                                                   |                                        |                                         |                                    |                                     |                                             |                                              |                                     |                                     |                                              |
|--------------------------------------------------|---------------------------------|------------------------------------|------------------------------------|----------------------------------|---------------------------------------------------|----------------------------------------|-----------------------------------------|------------------------------------|-------------------------------------|---------------------------------------------|----------------------------------------------|-------------------------------------|-------------------------------------|----------------------------------------------|
| 91<br>En<br><b>XLi</b><br>Xebialabs<br>XL Impact | 92<br>Os<br><b>Ki</b><br>Kibana | 93<br>Fm<br><b>Nr</b><br>New Relic | 94<br>En<br><b>Dt</b><br>Dynatrace | 95<br>En<br><b>Dd</b><br>Datadog | 96<br>Fm<br><b>Ad</b><br>AppDynamics              | 97<br>Os<br><b>El</b><br>ElasticSearch | 98<br>Os<br><b>Ni</b><br>Nagios         | 99<br>Os<br><b>Zb</b><br>Zabbix    | 100<br>En<br><b>Zn</b><br>Zenoss    | 101<br>En<br><b>Cx</b><br>Checkmarx<br>SAST | 102<br>En<br><b>Sg</b><br>Signal<br>Sciences | 103<br>En<br><b>Bd</b><br>BlackDuck | 104<br>Os<br><b>Sr</b><br>SonarQube | 105<br>Os<br><b>Hv</b><br>HashiCorp<br>Vault |
| 106<br>En<br><b>Sw</b><br>ServiceNow             | 107<br>Pd<br><b>Jr</b><br>Jira  | 108<br>Fm<br><b>Tl</b><br>Trello   | 109<br>Fm<br><b>Sk</b><br>Slack    | 110<br>Fm<br><b>St</b><br>Stride | 111<br>En<br><b>Cn</b><br>CollabNet<br>VersionOne | 112<br>En<br><b>Ry</b><br>Remedy       | 113<br>En<br><b>Ac</b><br>Agile Central | 114<br>Pd<br><b>Og</b><br>OpsGenie | 115<br>Pd<br><b>Pd</b><br>Pagerduty | 116<br>Os<br><b>Sn</b><br>Snort             | 117<br>Fm<br><b>Tw</b><br>Tripwire           | 118<br>En<br><b>Ck</b><br>CyberArk  | 119<br>En<br><b>Vc</b><br>Veracode  | 120<br>En<br><b>Ff</b><br>Fortify SCA        |







