



# Непрерывная интеграция

Андрей Дзыня. Lohika Systems Kyiv

# О чем будем говорить

- Что такое непрерывная интеграция ?
- Зачем нам непрерывная интеграция ?
- Как же это непрерывная интеграция ?
- А нужна ли нам непрерывная интеграция ?



# Пример





**Where's The Build?!**  
This is Gladys and she's a racecar in the red. You were supposed to have a build finished an hour ago. What's the hold up, sonny? Can't you even build the crap you wrote?

If you start using continuous integration, Gladys won't have to get medieval on ya!  
[www.WheresTheBuild.com](http://www.WheresTheBuild.com)

# Бардак



# YOU BROKE THE BUILD!

This is Agnes and she's none too pleased with you, Bub. You broke the build. You should have known that you were making breaking changes, but you checked them in anyway.



If you start using continuous integration, Agnes won't have to come back.

[www.YouBrokeTheBuild.com](http://www.YouBrokeTheBuild.com)

# Процесс интеграции

Итерации

Ночные  
сборки

Непрерывно

# Что для этого нужно?



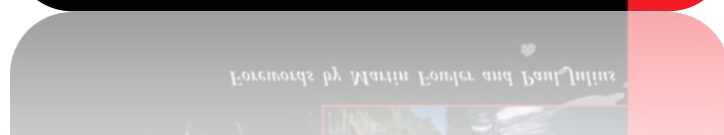
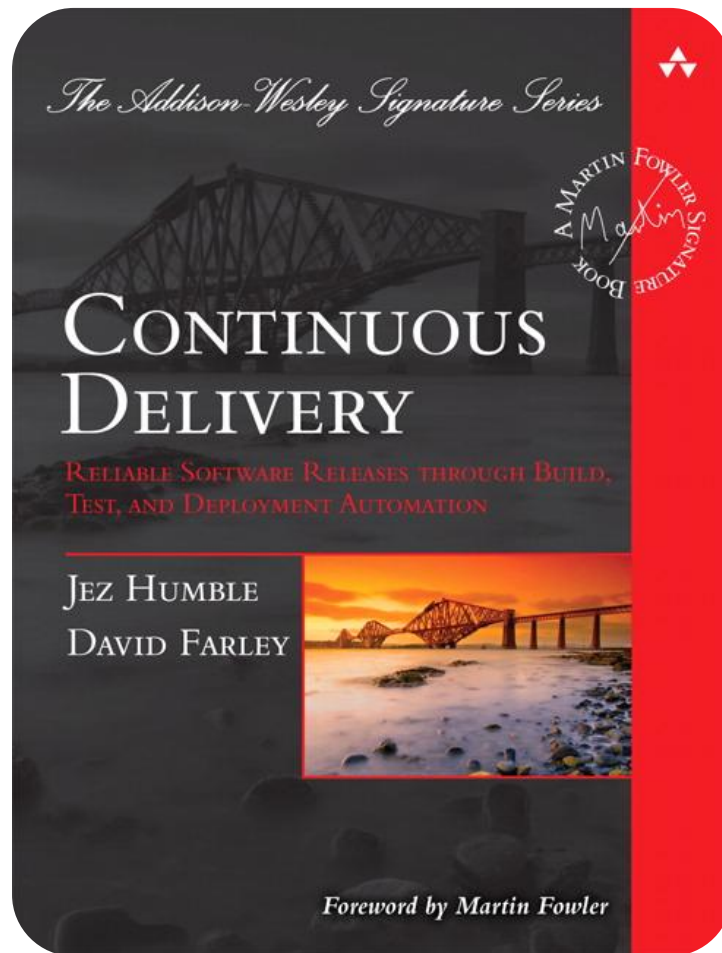
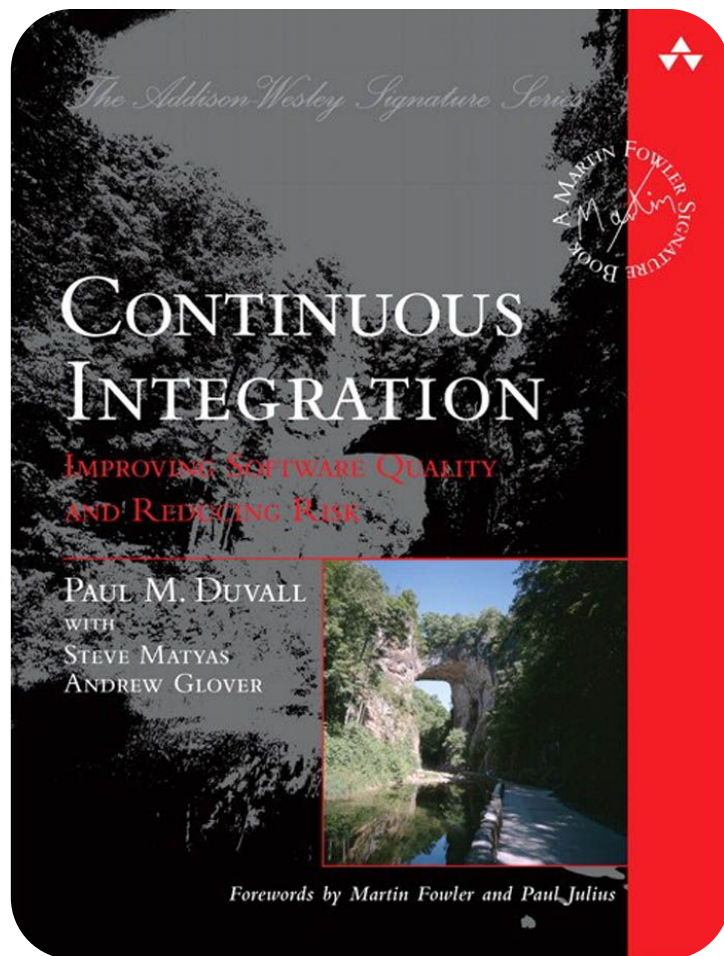


# Определение

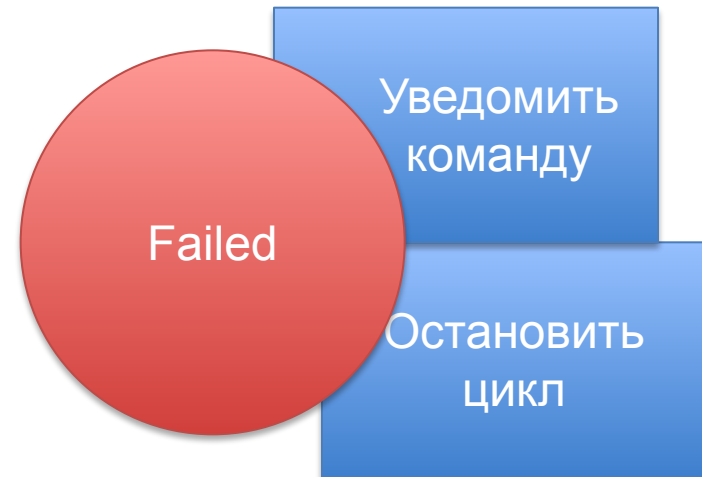
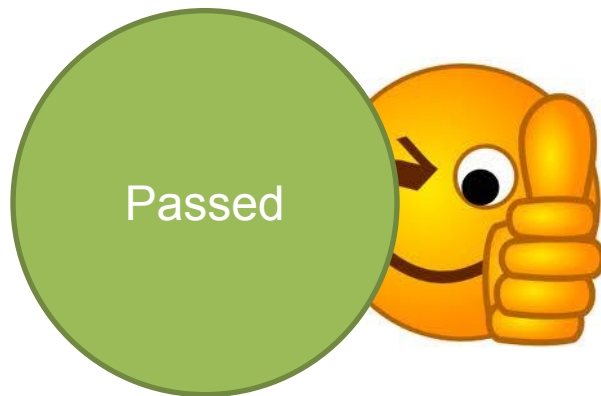
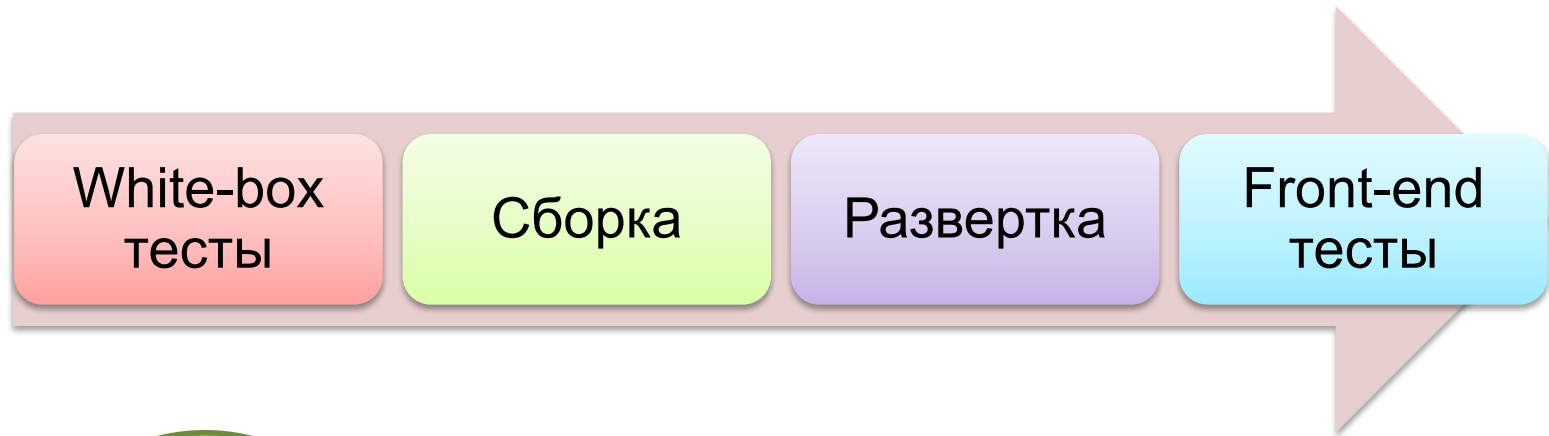


- Непрерывная интеграция, как практика частой интеграции изменений в проекте или изменений в существующем хранилище кода, должна происходить как можно чаще. Чтобы ошибки, возникшие на этапах проверки, были обнаружены и переданы разработчикам как можно быстрее.

# Ликбез



# Build pipeline



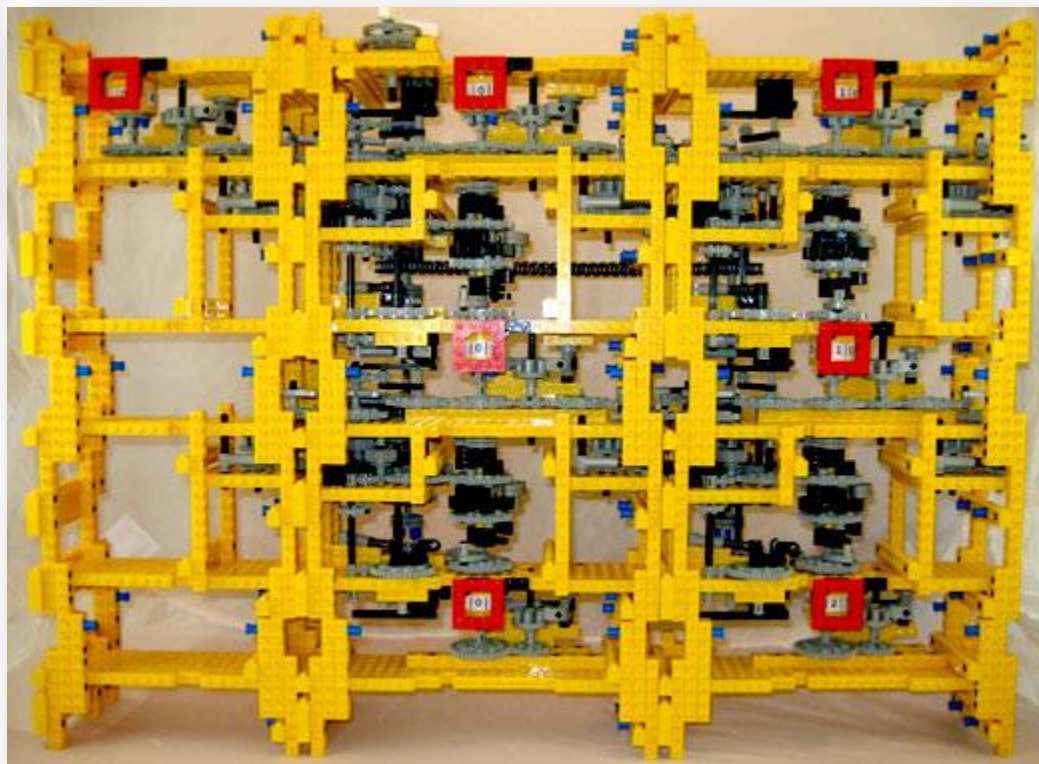
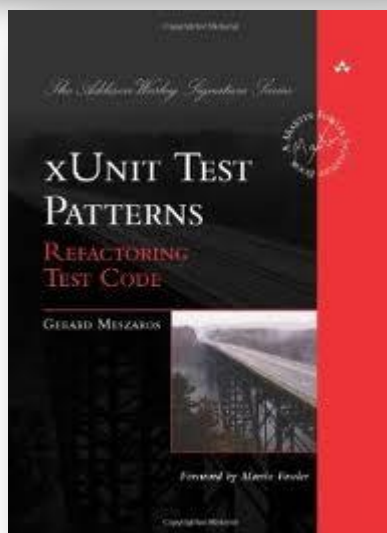
# Триггеры



# Статические анализаторы



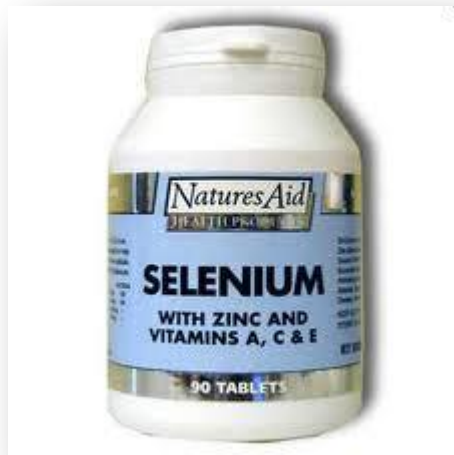
# White-box тестирование



# Сборка/Развертка



# Функциональное тестирование





С чего начать?



# Системы непрерывной интеграции



Hudson/J



Hudson/Jenkins



Team City






g  
Agile



BAMBOO

The Zen of continuous integration.

# Доска

S	W	Job ↓	Last Success	Last Failure
		<a href="#">Deploy to Integra</a>	6 hr 56 min ( <a href="#">#607</a> )	9 hr 45 min ( <a href="#">#604</a> )
		<a href="#">Deploy to Integra with application data reset</a>	3 hr 19 min ( <a href="#">#112</a> )	15 days ( <a href="#">#89</a> )
		<a href="#">Front-end-Tests-critical-Integra</a>	7 days 5 hr ( <a href="#">#2</a> )	N/A
		<a href="#">Front-end-Tests-smoke-Integra</a>	5 days 7 hr ( <a href="#">#13</a> )	5 days 8 hr ( <a href="#">#9</a> )
		<a href="#">Integrational Tests</a>	2 hr 38 min ( <a href="#">#1614</a> )	N/A
		<a href="#">Package</a>	3 hr 25 min ( <a href="#">#906</a> )	N/A
		<a href="#">Unit Tests</a>	1 hr 52 min ( <a href="#">#2085</a> )	N/A

Icon: [S](#) [M](#) [L](#)

[Legend](#)  [for all](#)

# Unit тесты



Revision: 3085  
Changes

1. ADM-834: added buffering ([detail/WebSVN2](#))



[Started by an SCM change](#)



[Test Result](#) (no failures)



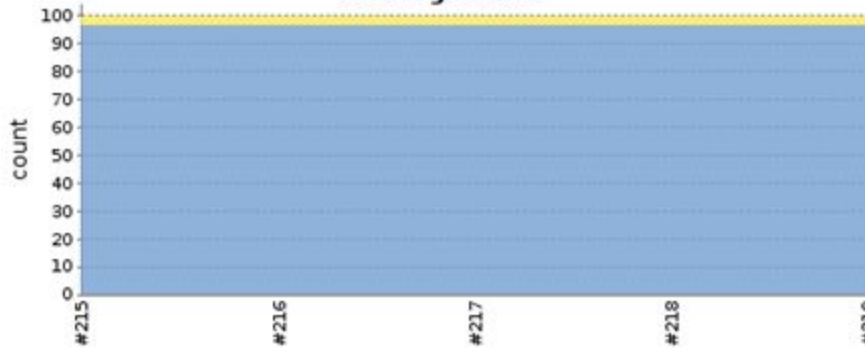
The only pattern Chuck Norris knows is God Object.

## Module Builds

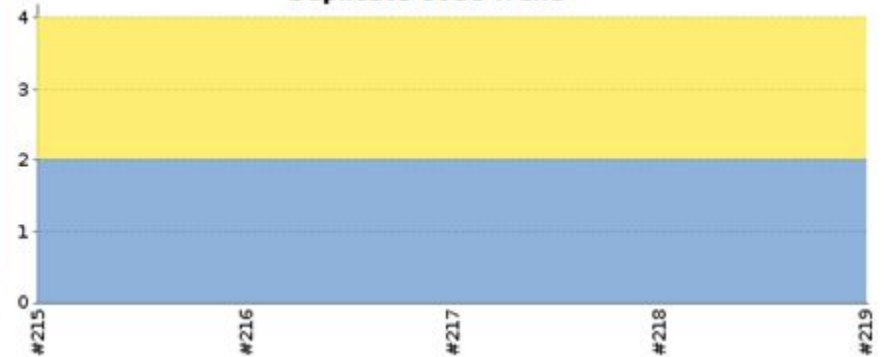
<a href="#">Build #1</a>	4.7 se
<a href="#">Build #2</a>	
<a href="#">Build #3</a>	
<a href="#">Build #4</a>	
<a href="#">Build #5</a>	
<a href="#">Build #6</a>	8 sec
<a href="#">Build #7</a>	
<a href="#">Build #8</a>	9.2 se

# Статические анализаторы

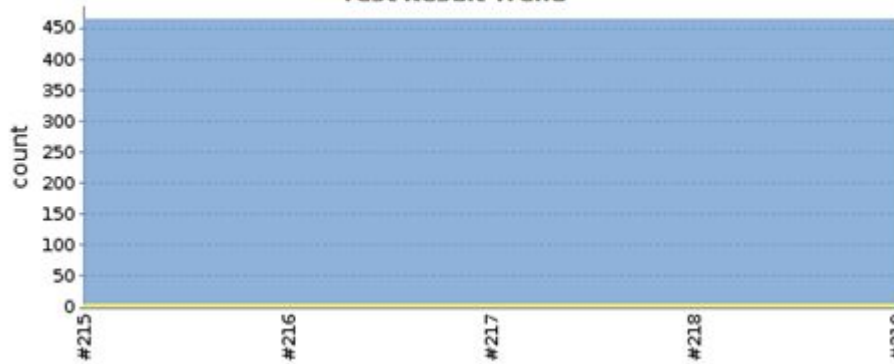
FindBugs Trend



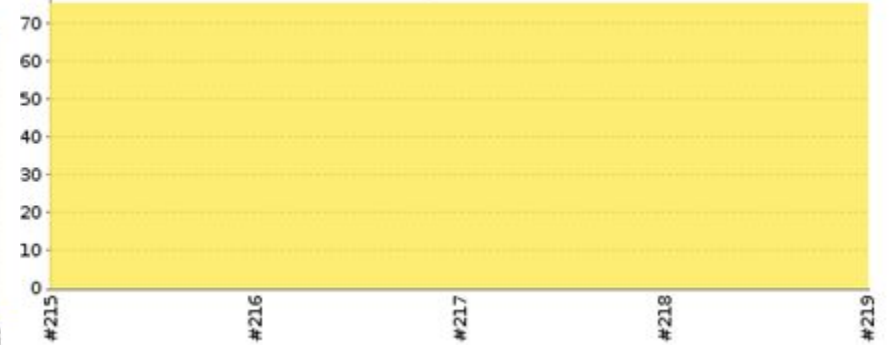
Duplicate Code Trend



Test Result Trend



Checkstyle Trend



# Сборка

## Build

---

Root POM

`pom.xml`

Goals and options

`clean install -Dmaven.test.skip -Denv=integra -Drelease=trunk -DgenerateReleaseInfo`

# Развертка

## Build

---

### Execute shell

```
Command ARTIFACTS_PATH=LastPackageArtifacts

ABSOLUTE_ARTIFACTS_PATH=$HOME/$ARTIFACTS_PATH
if [ `ls $ABSOLUTE_ARTIFACTS_PATH | wc -w` -eq "1" ]; then
  BRANCH=`ls $ABSOLUTE_ARTIFACTS_PATH`

  cd $ABSOLUTE_ARTIFACTS_PATH

  #make flat structure for artifacts and each node's property files inside separate folder
  if [ -e "$BRANCH" ]; then
    find ./ \(\ -iname '*.war' -or -iname '*.tar' -or -iname '*.sql' -or -iname '*.sh' \) -exec mv {} ./ \;
    mv ./$BRANCH/deployment/properties/* ./
    rm -rf $BRANCH
  fi
fi
cd $ABSOLUTE_ARTIFACTS_PATH

chmod +x ./deployToDevIntegra.sh
./deployToDevIntegra.sh
```

# Функциональное тестирование

```
2
3+ import org.testng.annotations.Test;
9
10 @SeleniumBrowseContext(app = App.TESTAPP)
11 public class LoginPositiveTest extends FrontEndTestCase {
12
13     private LoginPageObject loginPage;
14     private TestPageObject testPage;
15
16- @Test(groups = { "smoke", "critical" })
17     public void loginLogoutSuccess() {
18         loginPage = new LoginPageObject(selenium);
19         open(loginPage);
20         loginPage.loginAsAdmin();
21         testPage = new TestPageObject(selenium);
22         loginPage = testPage.logout();
23         loginPage.assertLoginTitle();
24     }
25 }
26
```



# Результаты тестов

## Test Result

3 failures (+1)

### All Failed Tests

Test Name
>>> <del>.....</del> <a href="#">.automatedtests.testcase.leapspot.HomepageSubscriberTest.homepageConnectTabLayout</a>
>>> <del>.....</del> <a href="#">.automatedtests.testcase.leapspot.IndividualShowTest.individualShowAddRemoveCard</a>
>>> <del>.....</del> <a href="#">.automatedtests.testcase.leapspot.IndividualShowTest.individualShowPageLayout</a>

### All Tests

Package	Duration
<del>.....</del> <a href="#">.automatedtests.testcase.cms.device</a>	36 sec
<del>.....</del> <a href="#">.automatedtests.testcase.cms.format</a>	33 sec
<del>.....</del> <a href="#">.automatedtests.testcase.cms.graphics</a>	55 sec
<del>.....</del> <a href="#">.automatedtests.testcase.cms.login</a>	11 sec
<del>.....</del> <a href="#">.automatedtests.testcase.cms.metadata</a>	1 min 13 sec

# Логи теста

## Regression

`com.andamanosystems.automatedtests.testcase.leapspot.HomepageSubscriberTest.homepageConnectTabLayout` (from Home

### Error Message

All Shows button is absent on the menu expected:<true> but was:<false>

### Stacktrace

```
java.lang.AssertionError: All Shows button is absent on the menu expected:<true> but was:<false>
    at org.testng.Assert.fail(Assert.java:89)
    at org.testng.Assert.failNotEquals(Assert.java:443)
    at org.testng.Assert.assertTrue(Assert.java:37)
    at com.andamanosystems.automatedtests.ExtendedSelenium.assertElementPresent(ExtendedSelenium.java:52)
    at com.andamanosystems.automatedtests.pageobjects.leapspot.LeapSpotPageObject.assertHomepageMenuSubscribed
    at com.andamanosystems.automatedtests.testcase.leapspot.HomepageSubscriberTest.homepageConnectTabLayout (Hom
```

### Standard Error

Screenshot Path `/home/andaman/selenium/workspace/Front-end-Tests-critical-Test-Integra/automated-front-end-tests/`  
`/com.andamanosystems.automatedtests.testcase.leapspot.HomepageSubscriberTest.homepageConnectTabLayout.png`

# Pipeline

## Jenkins

search

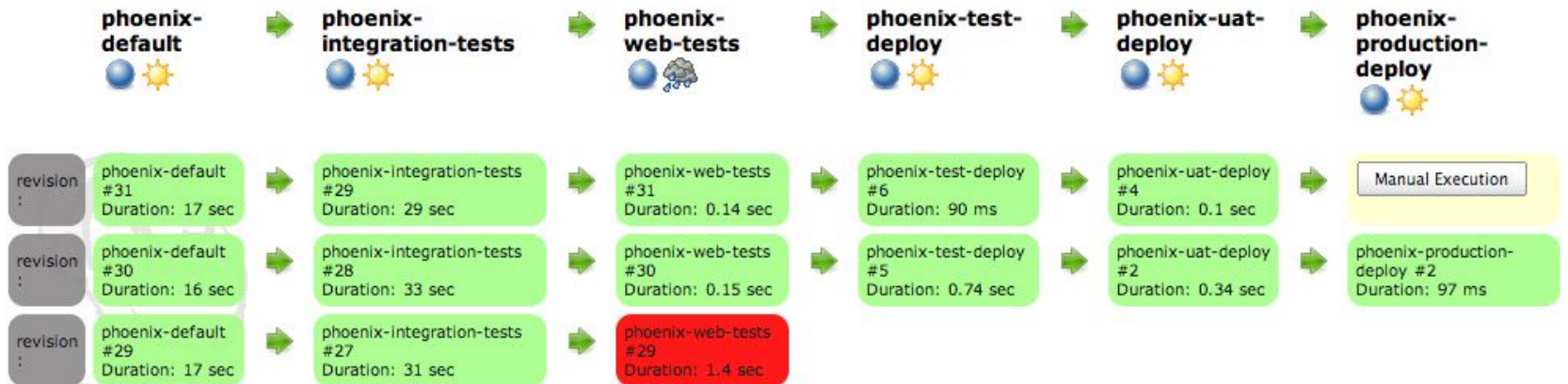
log in | sign up

Jenkins » phoenix-build-pipeline

DISABLE AUTO REFRESH

**View/Hide Build Pipeline Icon Legend**

Project Status	Build Stability	Build Status
Success	More than 80%	SUCCESS
Unstable	60-79%	UNSTABLE
Failure	40-59%	FAILURE
Abort	20-39%	ABORT
Building	Less than 20%	BUILDING



# Непрерывные улучшения



# Выводы

Плюсы:	Минусы:
Снижает риски	Трудозатраты на настройку системы
Меньше рутины	Преждевременный рефакторинг
Стабильная версия в любое время	Цена оборудования
Больше доверия команде разработки	Новые активности
Сбор метрик	

## "Works on my machine"?!

This is Phyllis and she doesn't care if the build works on your machine. As you can see, she's a busy woman with a jam-packed social calendar. She doesn't have time for brittle builds from the likes of you; she needs a build that just plain works. You hear?!



If you start using continuous integration, Phyllis can get back to gettin' her groove-thing on.

[www.BuildsOnMyMachine.com](http://www.BuildsOnMyMachine.com)







# Контакты



Senior Automation Test Engineer



andrii.dzynia@gmail.co  
m