



# One-Click Deployment with Jenkins

Florian Anderiasch | October 28, 2011



# Who am I?

Developer  
Ex-Admin  
DevOp?

„I rant a lot“  
@anderiasch  
stay in touch!



# Who are you?

# Developers?

# Admins?

# Continuous Integration?

How often  
do you  
release?

6-12 months?

# 1 - 6 months?

2-4 weeks?

1-14 days?

# 1-24 hours?

# Less than 15 minutes?

# 15 minutes!



# Why One-Click Deployment?

Everything is  
moving faster.

# React faster to user feedback



# Faster ROI Time to market





Developers are lazy.

# Basic requirements

# Agile software development

# Scrum or Kanban

# Test Driven Development

# Continuous Integration

Integrating the fresh  
parts of code into  
the application

at least daily

# Continuous Inspection



instant  
feedback

# Refactoring

# Continuous Deployment

# Reproducible results

There are  
practices  
you want  
to avoid

# Having your SVN repo in your webserver's docroot.

Using SSH and vi and  
your root account on  
the live server.

Who's still doing this? :-)



# What do we need?

First of all:  
centralized  
build server

There are plenty:

CruiseControl / phpUC  
Bamboo  
buildbot

tests are running  
all the time



# Jenkins



# TESTING

I FIND YOUR LACK OF TESTS DISTURBING.

A perspective view looking down a walkway supported by a series of tall, light-colored vertical columns. The walkway leads towards a large glass-walled building with a complex steel frame roof. The sky is bright and clear.

# Advantages

Information  
available  
at one  
single point

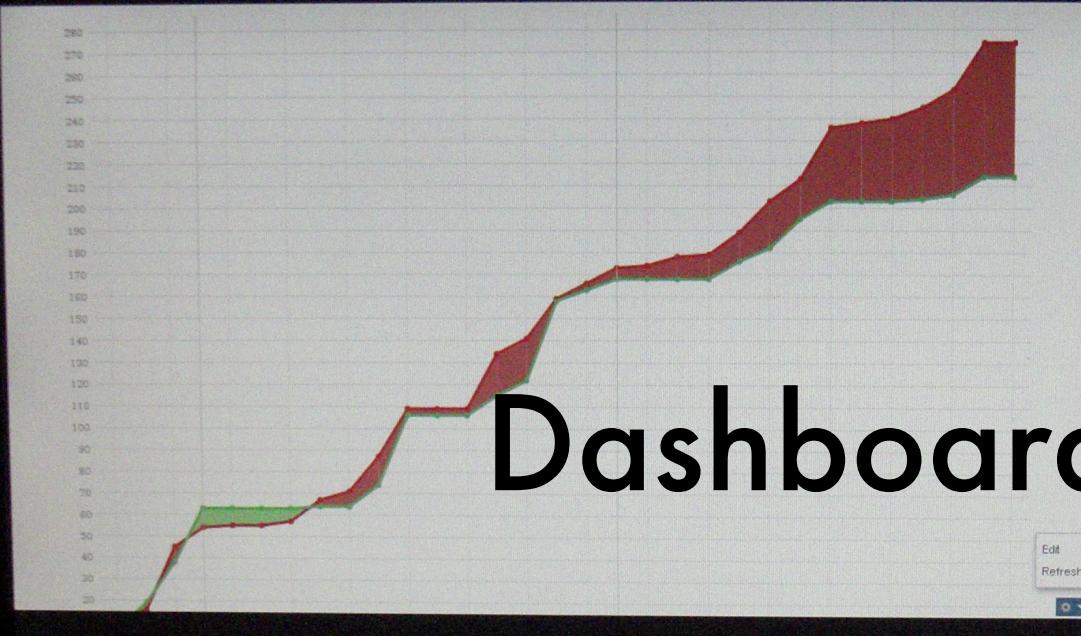


find errors

A close-up photograph of a traffic light. The main focus is the circular green signal at the bottom, which features a white walking person icon. Above it, there's another circular signal that is mostly obscured by shadow but appears to be yellow. To the left, a portion of a grey metal pole is visible. The background is a bright, overexposed white.

and  
fix them  
quickly

# Metrics



0 DAYS  
REMAINING

#### Admin Activity

10 November - 17:00

Mayflower Administration kommentierte ADMIN-1035 (\*\* PROBLEM alert - vaillantgroup-development-new.bizCheck Updates is CRITICAL \*\*) mit:  
[Created via e-mail, from: system AT mayflower DOT dyndns DOT org]

\*\*\*\*\* Nagios 3.0.3 \*\*\*\*\*

Notification Type: PROBLEM

Service: Check Updates  
Host: vaillantgroup-development-new.biz  
Address: 85.214.103.150  
State: CRITICAL

Date/Time: Wed Nov 10 17:13:34 CET 2010

Additional Info:

Updates CRITICAL - 6 security update(s), 45 package update(s).

Mayflower Administration kommentierte ADMIN-1106 (\*\* PROBLEM alert - vaillantgroup-development-new-host.bizRaid Status is CRITICAL \*\*) mit:  
[Created via e-mail, from: system AT mayflower DOT dyndns DOT org]

\*\*\*\*\* Nagios 3.0.3 \*\*\*\*\*

Notification Type: PROBLEM

Service: Raid Status  
Host: vaillantgroup-development-new-host.biz  
Address: 85.214.154.71  
State: CRITICAL

Date/Time: Wed Nov 10 17:07:24 CET 2010

Additional Info:

CRITICAL - Checked 2 arrays, 1 have FAILED

# Dashboards

# Awareness



# Awareness!

24/010/03

Landschaftsamt  
München

bremicker  
VERKEHRSTECHNIK  
82362 Weilheim i. OB

RAL



# Continuous Integration in PHP projects

# PHPUnit DocBlox

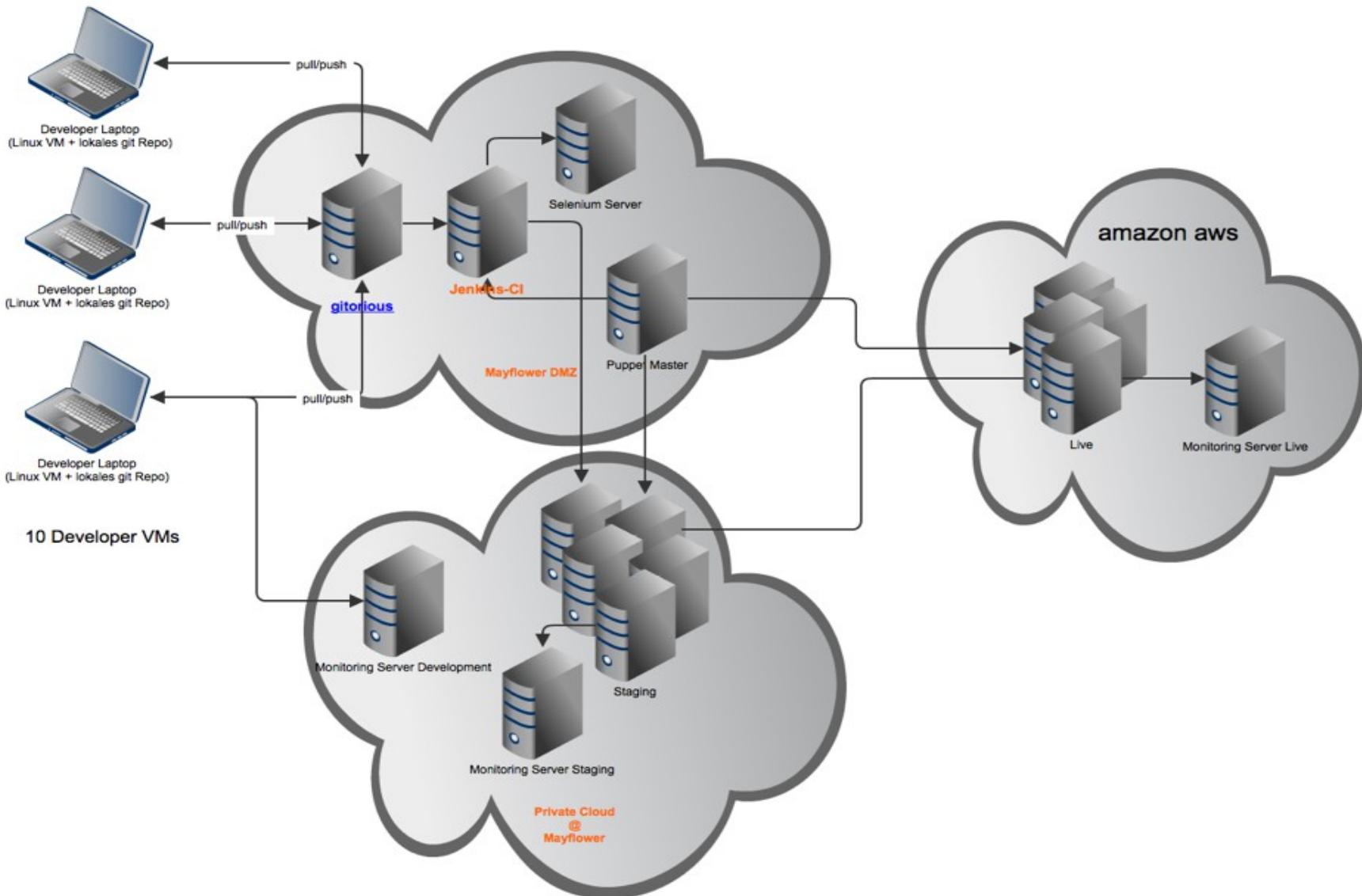
# Continuous Inspection in PHP projects

PHP\_CodeSniffer  
PHP\_Depend  
PHPMD  
phpcpd  
jslint

# Infrastructure



EUCALYPTUS





# One Ubuntu package to rule them all.



# Developer VM

## Ubuntu 11.04

Jenkins: Dev-VM  
Testing: Dev-VM  
Ubuntu 11.04

**Staging VMs:**  
**Frontend: Ubuntu 11.04**  
**Backend: Ubuntu 10.04 LTS**

**(bad idea, use one version)**

Amazon AWS live:  
Frontend: Ubuntu 11.04  
Backend: Ubuntu 10.04 LTS

# Frontend Nodes

Varnish

nginx

PHP 5.3 with APC

Zend Framework 1.11

Dojo 1.6

Doctrine2.1

## Backend Nodes

MySQL Master/Slave

Apache Solr

Gearman/RabbitMQ

memcached

ejabberd

# Development workflow

1. developer commits code
2. post commit hook: build
3. checks
4. packaging a .deb
5. (deploy to STAGING)
6. (deploy to LIVE)

```
<project>
<property />
<target name="build"></target>
<target name="clean"></target>
<target name="phpunit"></target>
<target name="deploy-to-staging"></target>
</project>
```

```
<target name="phpunit" depends="db-test"
       description="Run all tests">
<exec
  executable="PHPUnit"
  failonerror="true">
<arg
  line="
--configuration
${basedir}/tests/phpunit-verbose.xml
${basedir}/tests/AllTests.php
" />
</exec>
</target>
```

# „ant build“

ant sync

ant clean

ant db-up

ant parallelTasks

ant phpunit

ant phpcb

ant build-deb

# „ant parallelTasks“

ant phpmd

ant phpdoc

ant phpcpd

ant phpcs

ant jslint

# „build-deb“

git pull  
ant phpunit  
ant clean  
ant compilejs  
ant compilecss

# „deploy-to-staging“

ant deb-sign

ant db-staging-up

scp to all hosts

# „deploy-to-live“

fetch known-good .deb  
scp to all hosts  
there is no step 3

# Disadvantages and problems

Build time  
15 min on harddisk  
massive disk i/o  
4 min on ramdisk

# Complex setup

Jenkins:  
Single point of failure!

# Goodies

everyone  
can deploy

(including the  
product owner)

```
git bisect start  
$BAD $GOOD
```

30min from  
bugreport to  
deploy

We can still do  
hotfixes in this  
environment

# plotting plugin (gitstats)

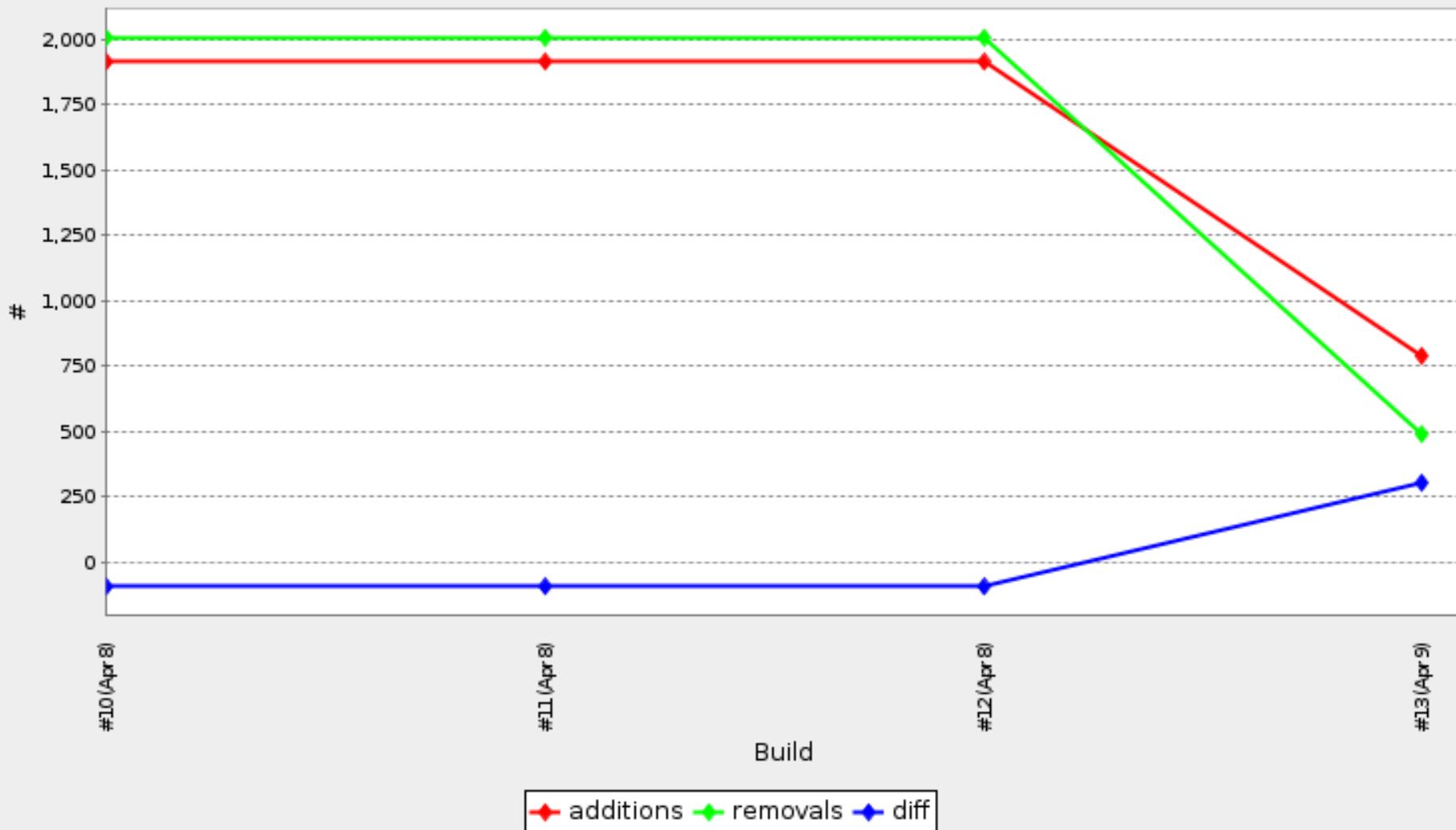


# Git stats

Jump to Plot 1: Git stats ▾

↑ top

## Git stats



```
echo $(olddir=`pwd`;cd /media/ram/PROJECT;
```

```
git log --oneline --after=$(date +%Y-%m-%d  
-d yesterday) --shortstat
```

```
| grep --color=none "^\ " | sed 's,^\ *,,' | awk  
'NF==7 {p+=$4;m+=$6;diff+=$4;diff-=$6;}'  
END {printf("%d %d %d\n", p, m, diff)}';cd  
$olddir;) > gitnum.properties.all
```

```
echo YVALUE=$(cat gitnum.properties.all | cut  
-d' ' -f1) >> gitnum.properties.plus
```

# Jenkins Plugin: Chuck Norris



# Questions?



# Thanks for listening!



## Contact

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# Images

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**Clouds (52), John Mueller, CC-BY-NC-ND**

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*Fork me on GitHub*

# Cinder

## Connecting CI server and IDE

Help is welcome

<http://github.com/winks/cinder>

needs XML from  
phpuc/hudson/bamboo  
and nothing else :)