



Software development does  
NOT stop at the last commit

Kris Buytaert

Open World Forum 2013, Paris

@krisbuytaert



# Kris Buytaert

- I used to be a Dev,
- Then Became an Op
- Chief Trolling Officer and Open Source Consultant  
@inuits.eu
- Everything is an effing DNS Problem
- Building Clouds since before the bookstore
- Some books, some papers, some blogs
- Evangelizing devops



What's this devops thing  
anyhow ?



# World , 200X-2009

Patrick Debois, Gildas Le Nadan, Andrew Clay Shafer, Kris Buytaert, Jezze Humble,  
Lindsay Holmwood, John Willis, Chris Read, Julian Simpson, Luke Kanies, John  
Allspaw and lots of others ..

## Gent , October 2009

Mountain View , June 2010

Hamburg , October 2010

Boston, March 2011

Mountain View, June 2011

Bangalore, Melbourne,

Goteborg , October 2011

....

Almost 20 events held in 2013.



devops, a definition:



- Adopt the new philosophy. We are in a new economic age. Western management must awaken to the challenge, must learn their responsibilities, and take on leadership for change.
- Cease dependence on inspection to achieve quality. Eliminate the need for massive inspection by building quality into the product in the first place.
- Improve constantly and forever the system of production and service, to improve quality and productivity, and thus constantly decrease costs.
- Institute training on the job.
- Institute leadership The aim of supervision should be to help people and machines and gadgets do a better job.
- Drive out fear, so that everyone may work effectively for the company.
- Break down barriers between departments. People in research, design, sales, and production must work as a team, in order to foresee problems of production and usage that may be encountered with the product or service.
- Eliminate slogans, exhortations, and targets for the work force asking for zero defects and new levels of productivity. Such exhortations only create adversarial relationships, as the bulk of the causes of low quality and low productivity belong to the system and thus lie beyond the power of the work force.
  - Eliminate management by objective. Eliminate management by numbers and numerical goals. Instead substitute with leadership.
  - Remove barriers that rob the hourly worker of his right to pride of workmanship. The responsibility of supervisors must be changed from sheer numbers to quality.
  - Remove barriers that rob people in management and in engineering of their right to pride of workmanship.
- Institute a vigorous program of education and self-improvement.
- Put everybody in the company to work to accomplish the transformation. The transformation is everybody's job.



# William Edwards Deming

## 1986, Out of the Crisis.

[http://en.wikipedia.org/wiki/W.\\_Edwards\\_Deming](http://en.wikipedia.org/wiki/W._Edwards_Deming)





Devops is a cultural and professional  
movement

Adam Jacob, Opscode



# C(L)AMS

- Culture
- (Lean)
- Automation
- Measurement
- Sharing



*Damon Edwards and John Willis*

*Gene Kim*



# Whats in it for you ?

- Faster time to market
  - Features go live in hours vs years
- In a more safe
- Reliable fashion
  - Fully automated
- More happy {customers,developers,managers,investors}



# A typical dev shop

- The PM:
- “Put this Code Live, here's a tarball” NOW!
- Marketing Campaign is launched
- We need this yesterday
- It's going on national radio at 5



# An oldschool ops shop

- What dependencies ?
- No machines available ?
- What database ?
- Security ?
- High Availability ?
- Scalability ?
- My computer can't install this ?



# Devs vs Ops





# Culture,

automation,

Measurement,

sharing



# Burn the Silos





# Crossfunctional Team

- Project team with skills from all over
  - Development
  - Continuous Integration
  - Testing
  - Infrastructure (HA/ Scale/ Performance)
    - Deployment
    - Measurement
- Seat them together !
- Goal = Help the business



# One Team = One Goal !





# Enable Communication





# Build Trust

- Experiment
  - Dev
  - Test
- Prod
- Automate all the things
- Measure success
- Measure Failure





# Lets Play Together



Devs



Ops



Getting Along





# RESPONSIBILITY

You made the mess, you clean it up



# Agile ?

- Agile vs Agile
- Scrum vs Kanban
- Definition of Done
  - Done means tested
  - Done means in production
  - Done means monitored and in production



A software project is not done until  
your last enduser is in his grave !

Kris Buytaert, DOD Amsterdam 2013



Culture,

# Automation,

Measurement,

Sharing



# Automate all the things

- Build
  - reproducible builds are undiscussable
- Test
  - testing reduces risk
  - automate deployments of your test infra
- Deploy
  - Infrastructure as Code
  - 100% automation
  - Can you rebuild your infrastructure ?



# Continuous Integration

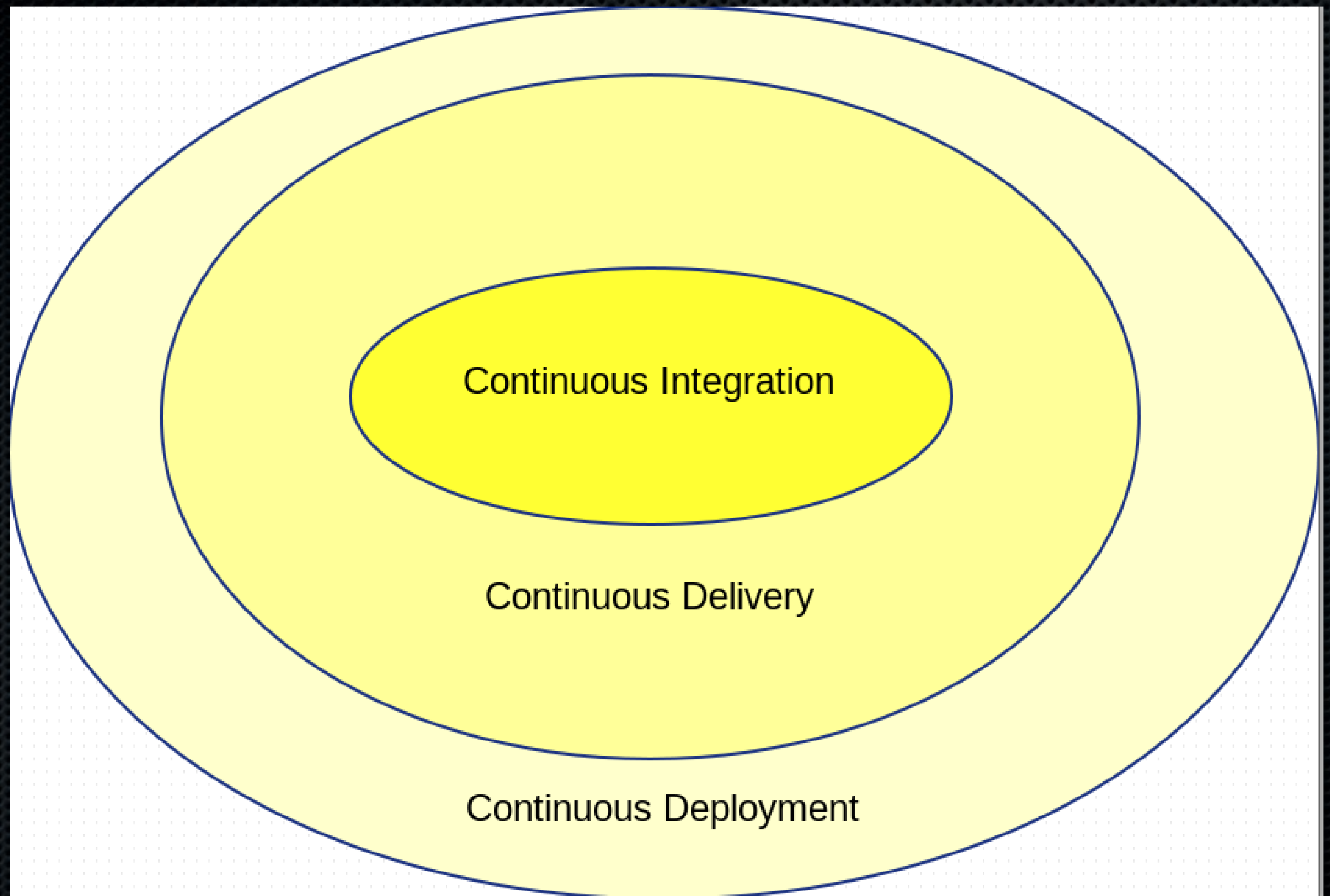
- Builds
- Nightly Builds
- Builds with tests
- Nightly Builds with tests
- Frequent integration
- Continuous Integration



# Test Automation

- Unit tests
- Regression tests
- Selenium
- Cucumber
- TDD
- BDD







devops (<)> continuous delivery



" Our job as engineers (and ops, dev-ops, QA, support, everyone in the company actually) is to enable the business goals. We strongly feel that in order to do that you must have the ability to deploy code quickly and safely. Even if the business goals are to deploy strongly QA'd code once a month at 3am (it's not for us, we push all the time), having a reliable and easy deployment should be non-negotiable."

Etsy Blog upon releasing Deployinator

<http://codeascraft.etsy.com/2010/05/20/quantum-of-deployment/>



# Infrastructure as Code

- Treat configuration automation as code
- Development best practices
  - Model your infrastructure
  - Version your cookbooks / manifests
  - Test your cookbooks/ manifests
  - Dev/ test /uat / prod for your infra
- Model your infrastructure
- A working service = automated ( Application Code + Infrastructure Code + Security + Monitoring )
- Think Puppet, Chef, Cfengine, ...
- IAC -ne scripting



# Orchestration

- On what servers is XYZ running ?
- Restart apache on all servers with fact X
- Configure DB
  - then configure web
  - then restart app

Over different hosts , automated

- Mcollective, Rundeck, Ansible ...



Culture,

Automation,

# Measurement : measure all the things

Sharing





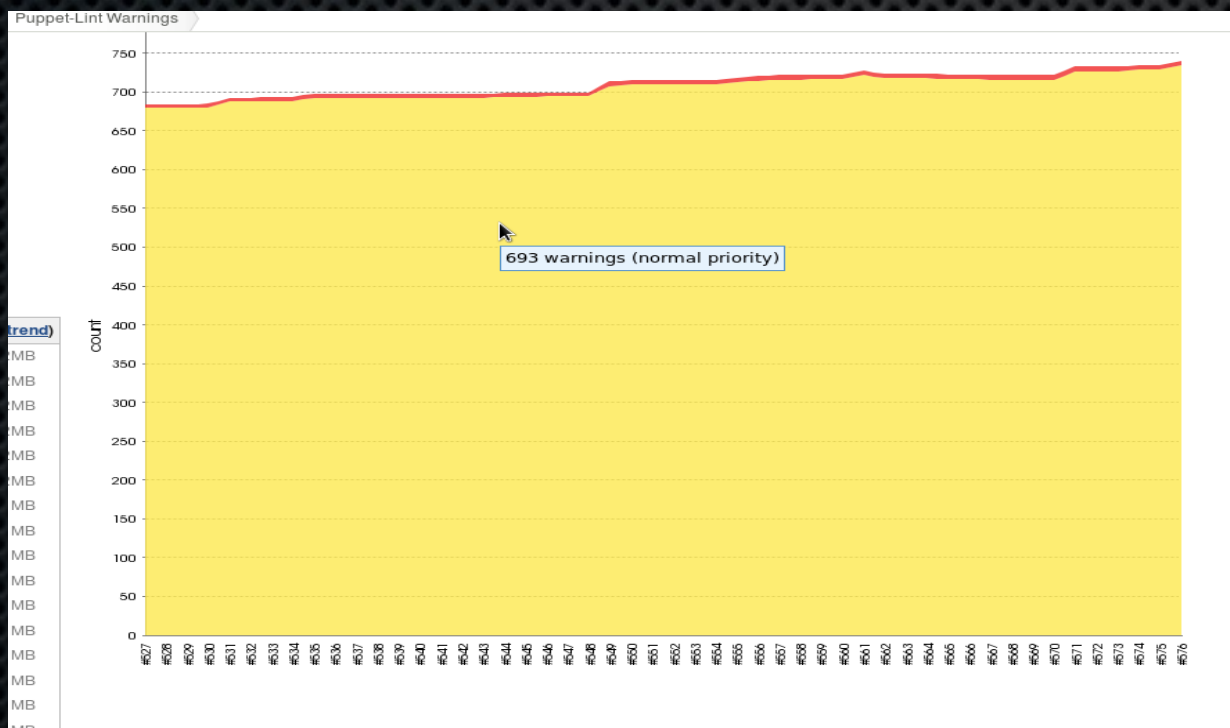
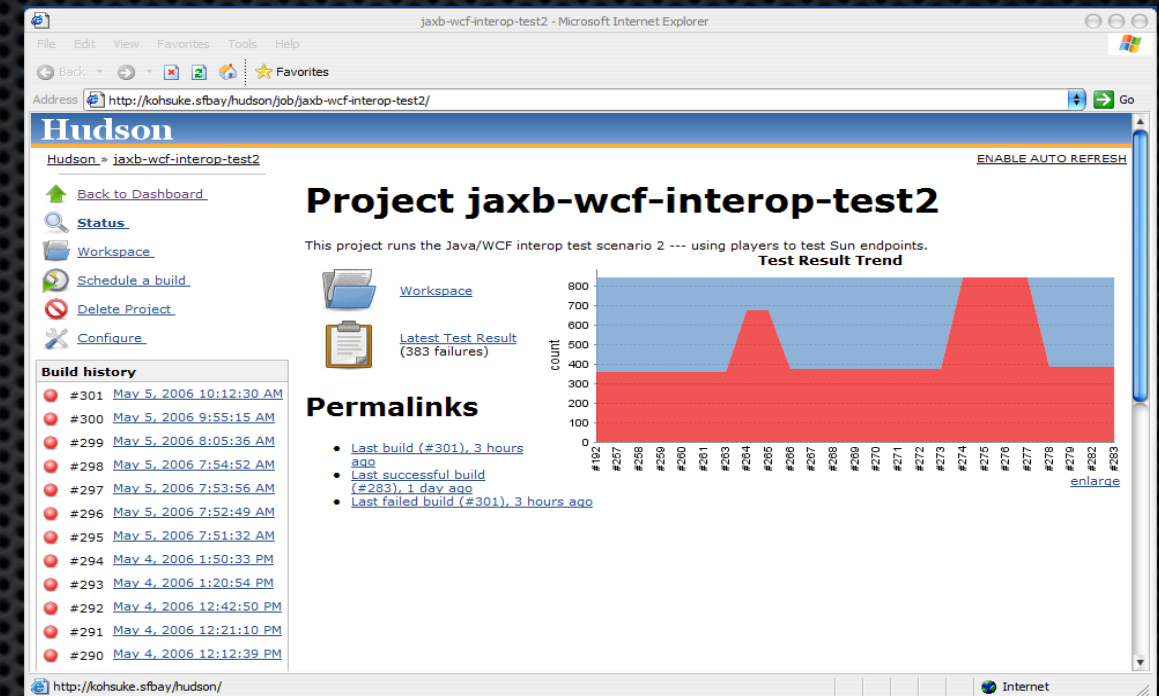
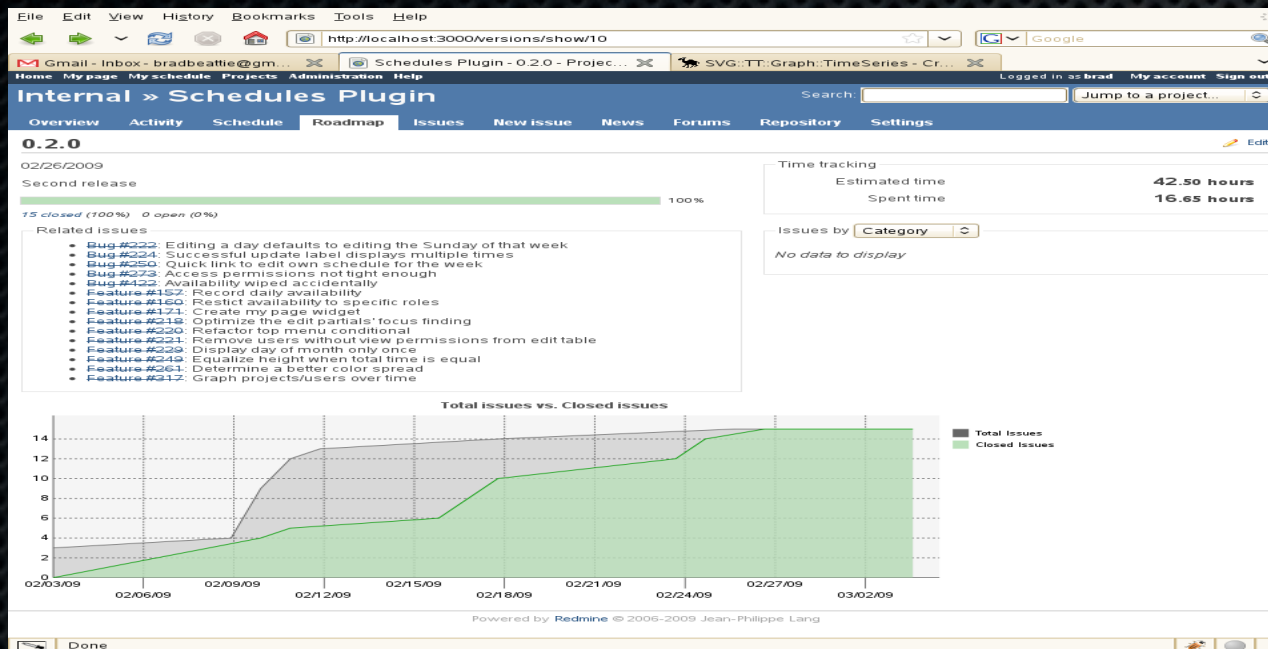


# Self Service Metrics

- Being able to add new metrics
- Build your own dashboards
- Look at metrics / logs on all platforms
- Learn from the Logfiles
- Learn from the platform
-



# During development





# And runtime

## Operating System

- disk
- Cpu
- Memory

## MiddleWare

- Transactions
- Queue length
- Api calls
- (Aborted) Connections

## Application

- #users
- #feature usage
- response time







# Math 101

- $f(x)$
  - $f'(x)$
  - $f''(x)$
- 
- ... statistics 101
  - Machine Learning



Culture,

Automation,

Measurement,

# Sharing



# Dashboards

My Dashboard

Bunch ▾

Collection ▾

Group ▾

Data Browser Docs

## Random Metrics Random Metrics (a little more exciting)

Last 8 Minutes

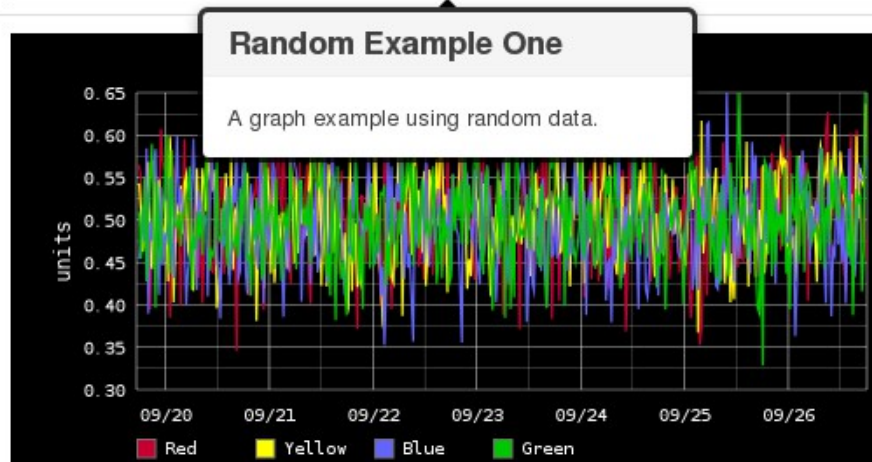
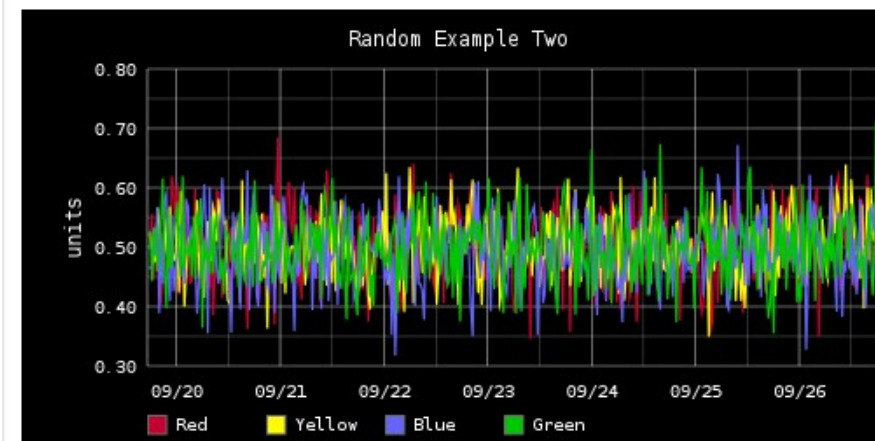
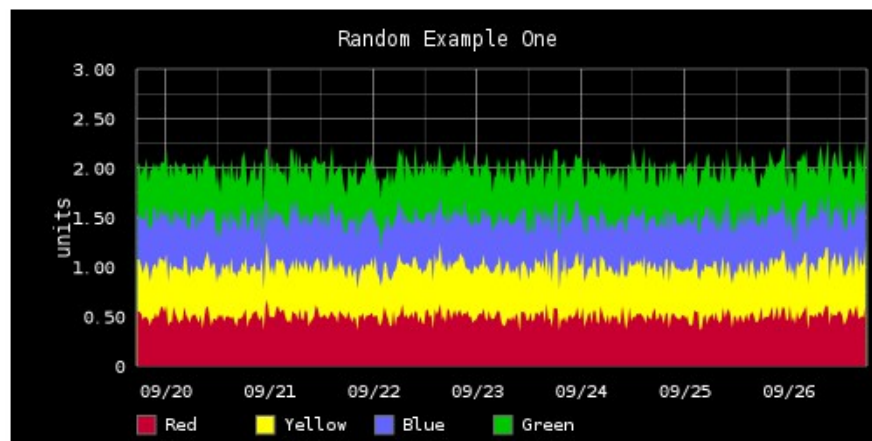
Last Hour

Last Day

Last Week

Last Month

Last Year



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# Visualize Business Metrics

- \$revenue
- #sales
- signups
- conversions
- Api calls
- Application use



# Sharing

- Open Source
- Talk about Experiences
- Publish the code
- No proprietary software was used in these slides

Don't get Locked In !

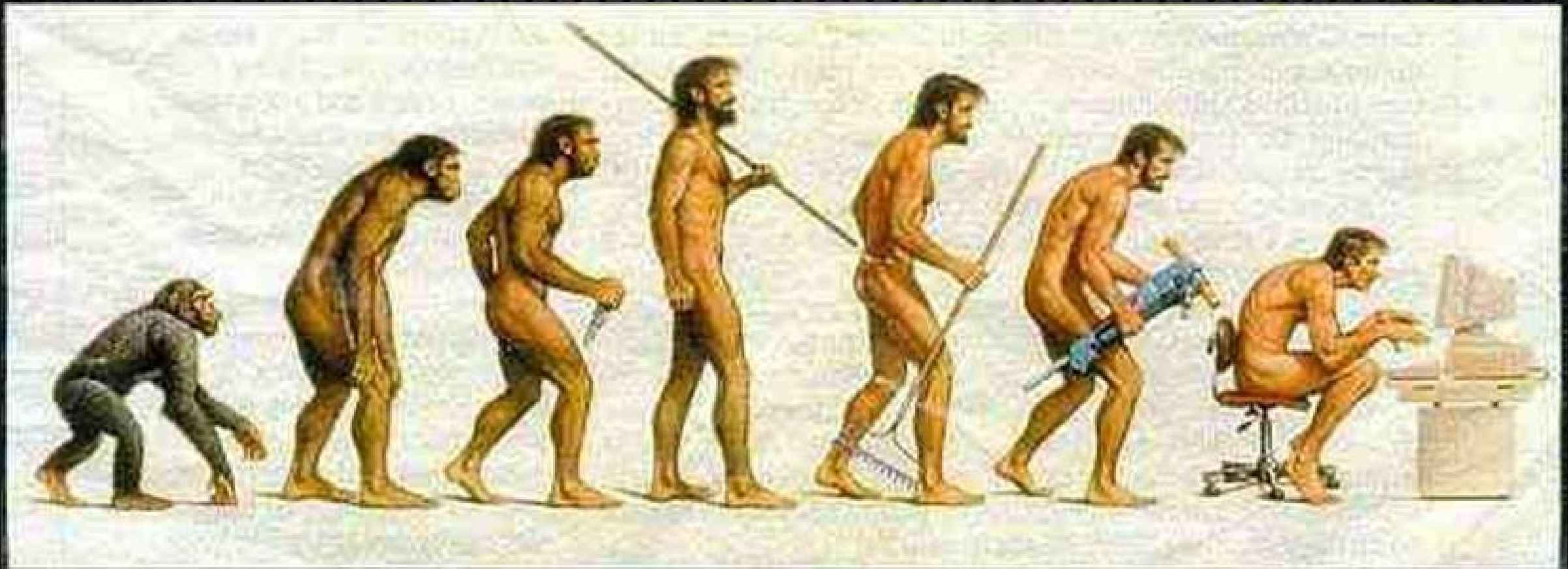


# Food





# It's not about the tools





# Contact

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## Further Reading

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