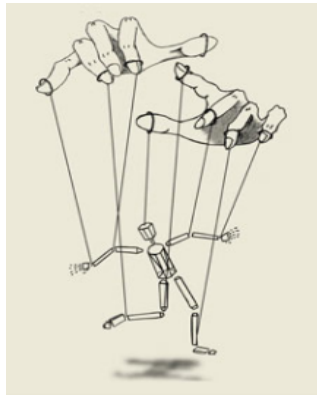

Continuously deliver your puppet code with jenkins, r10k and git

Toni Schmidbauer

October 3, 2014

whoami

- SysAdmin@s-itsolutions.at
- toni@stderr.at
- stderr@jabber.org
- `http://stderr.at`
- `http://github.com/tosmi`

Agenda

- A short story about configuration managment
- What is continuous delivery
- Tools used to achieve continuous delivery
- DEMO
- Things to improve

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- So configuration management is the solution to all our problems

The solution to all our problems

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- Broke our systems

WHY????

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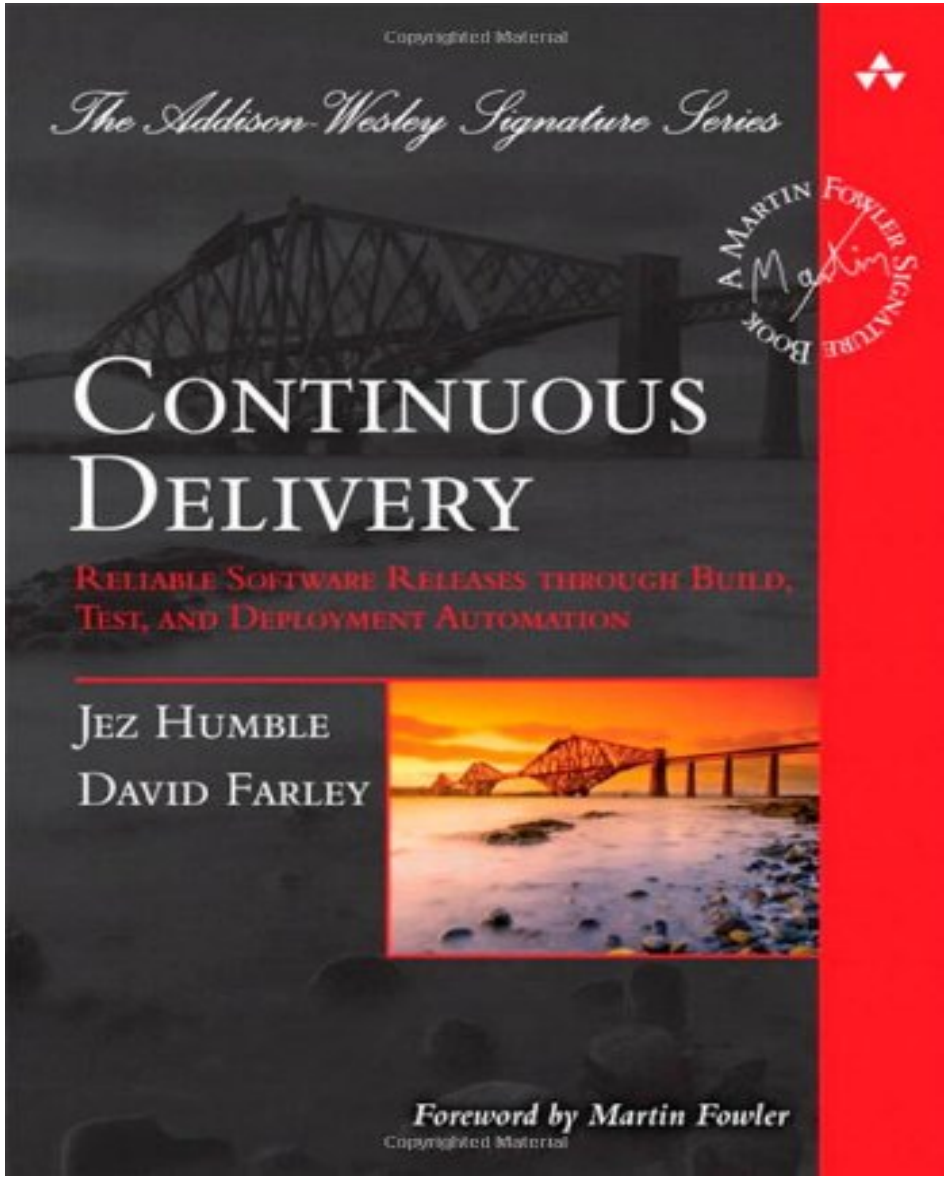
- Every system was a special case

So whats our solution?

or: why should i care?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The Addison-Wesley Signature Series
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CONTINUOUS DELIVERY
RELIABLE SOFTWARE RELEASES THROUGH BUILD, TEST, AND DEPLOYMENT AUTOMATION
JEZ HUMBLE
DAVID FARLEY
Foreword by Martin Fowler
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Continuous delivery

- is a pattern for getting software from development to release

1

[1] Continuous Delivery: Jez Humble, David Farley

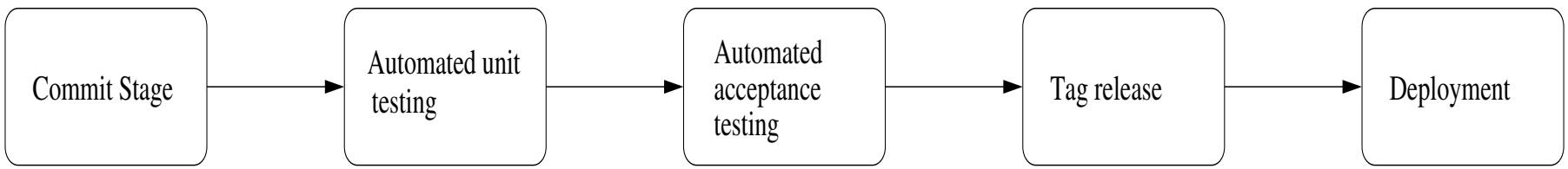
Continuous delivery

- is a pattern for getting software from development to release
- this pattern is called **the deployment pipeline**

1

[1] Continuous Delivery: Jez Humble, David Farley

The deployment pipeline



Tools to build a deployment pipeline

Jenkins

- Jenkins is an Open Source continuous integration server
- It's purpose is to execute and monitor jobs
- Jobs are shell scripts or any other thing that's executable and returns 0 on success
- You can link jobs together, thats our pipeline
- Many plugins available to extend Jenkins (e.g. git, build-pipeline, Build Publisher Plugin, monitor)

Jenkins II


Build Pipeline: Puppet Production
Run
History
Configure
Add Step
Delete
Manage
puppet_production...
puppet_production...
puppet_production...
Pipeline #14
GITTAG: prod_20140429_1
#14 puppet_production_rspec_lint
Apr 29, 2014 3:55:43 PM
1 min 39 sec
#12 puppet_production_deployment
Apr 29, 2014 3:57:28 PM
10 sec
#12 puppet_production_update_foreman
Apr 29, 2014 3:57:43 PM
13 sec
Pipeline #13
GITTAG: prod_20140425_1
#13 puppet_production_rspec_lint
Apr 25, 2014 2:58:26 PM
1 min 41 sec
#11 puppet_production_deployment
Apr 25, 2014 3:00:11 PM
10 sec
#11 puppet_production_update_foreman
Apr 25, 2014 3:00:27 PM
14 sec
Pipeline #12
GITTAG: prod_20140423_1
#12 puppet_production_rspec_lint
Apr 23, 2014 4:06:23 PM
1 min 38 sec
#10 puppet_production_deployment
Apr 23, 2014 4:08:06 PM
6.9 sec
#10 puppet_production_update_foreman
Apr 23, 2014 4:08:18 PM
14 sec
Pipeline #11
GITTAG: prod_20140422_2
#11 puppet_production_rspec_lint
Apr 22, 2014 5:08:02 PM
1 min 37 sec
#9 puppet_production_deployment
Apr 22, 2014 5:09:44 PM
1.4 sec
#9 puppet_production_update_foreman
Apr 22, 2014 5:09:51 PM
13 sec
Pipeline #10
GITTAG: prod_20140422_1
#10 puppet_production_rspec_lint
Apr 22, 2014 11:49:49 AM
1 min 44 sec
#8 puppet_production_deployment
Apr 22, 2014 11:51:39 AM
6.5 sec
#8 puppet_production_update_foreman
Apr 22, 2014 11:51:51 AM
14 sec
Help us localize this page
Page generated: May 8, 2014 11:55:35 AM
REST API
Jenkins ver. 1.532.2

Monitoring with Jenkins

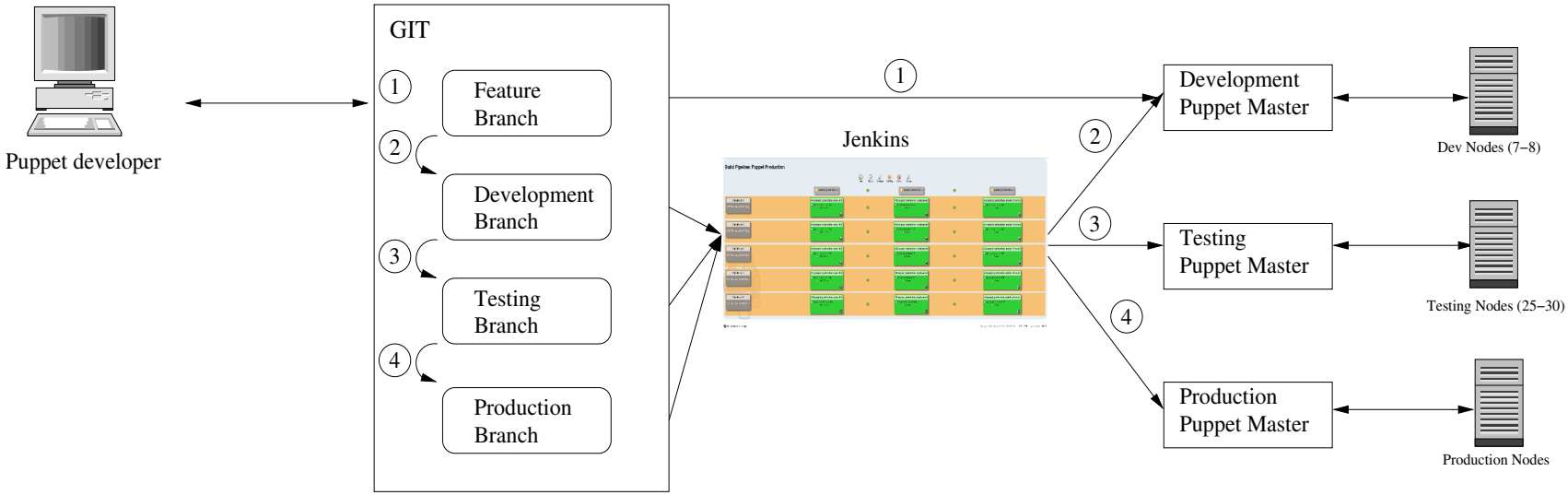
GIT

- One central repository managed with gitolite (access control for git) for internal modules
- 3 main branches
  - development
  - testing
  - production
- feature branches for new site local modules
- hiera data is in the same repository

GIT repository layout

- modules/: where r10k stores external (forge, github) modules
- site/: site local modules, that we do not want to share
- hiera/: our hiera yaml files
- Puppetfile: config file for r10k that specifies which external modules we need

GIT workflow



1. Features Branches get automatically created on Puppet Master (Dynamic Environments)
2. Development Branch gets deployed on commit via Jenkins
3. Testing Branch gets deployed via GIT tag pushing to testing triggers a deployment
4. Production Branch gets deployed via GIT tag pushing to production triggers a deployment

It's all the same for Hiera yaml files!

r10k

- a tool to deploy puppet environments and modules
- every git branch gets deploy to a puppet environment
- in the current version (1.3.2) dependencies have to be managed manually

Example Puppetfile

```
forge 'forge.puppetlabs.com'

mod 'puppetlabs/ntp', '3.1.2'
mod 'puppetlabs/postgresql', '3.4.2'
mod 'puppetlabs/stdlib', '4.3.2'
mod 'puppetlabs/firewall', '1.1.3'
mod 'puppetlabs/apache', '1.1.1'
mod 'puppetlabs/lvm', '0.3.2'
mod 'nosolutions/tsm', '0.2.2'
mod 'saz/sudo', '3.0.6'
mod 'spiette/selinux', '0.5.4'

mod 'concat',
    :git => 'https://github.com/puppetlabs/puppetlabs-concat',
    :commit => 'feba3096c99502219043b8161bde299ba65e7b8a'
```

You can are able to pin to a git tag/branch/commit hash

a word on testing

- you must have unit tests for your puppet code: **rspec-puppet**
- you need to test everything to get most out of the build pipeline
- we test
  - interal puppet modules
  - hiera data
  - puppet configuration
  - all internal modules are required to have rspec tests

rspec-puppet

puppet code

```
class samplemodule ( $message = 'defaultmessage' ) {
  notify { 'samplemessage':
    message => "This is the sample module, my message is: $message",
  }
}
```

rspec test

```
require 'spec_helper'

describe 'samplemodule', :type => :class do
  context 'with default parameters' do
    it { should contain_notify('samplemessage') }
  end
end
```

DEMO

Things to improve

- We need more test Systems (Centos/RHEL/Solaris)
- We need more acceptance tests
- Puppetlabs should package beaker as a rpm/deb whatever, gems suck in production

Thanks for you attention!