SUCCESFUL TESTING
THE CONTINUOUS DELIVERY PROCESS

@huibschoots & @mieldonkers

INTRODUCTION

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Tester

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Developer

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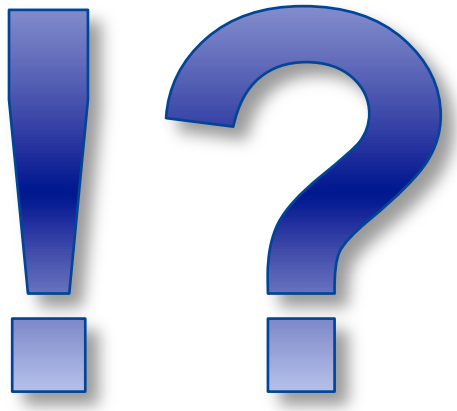
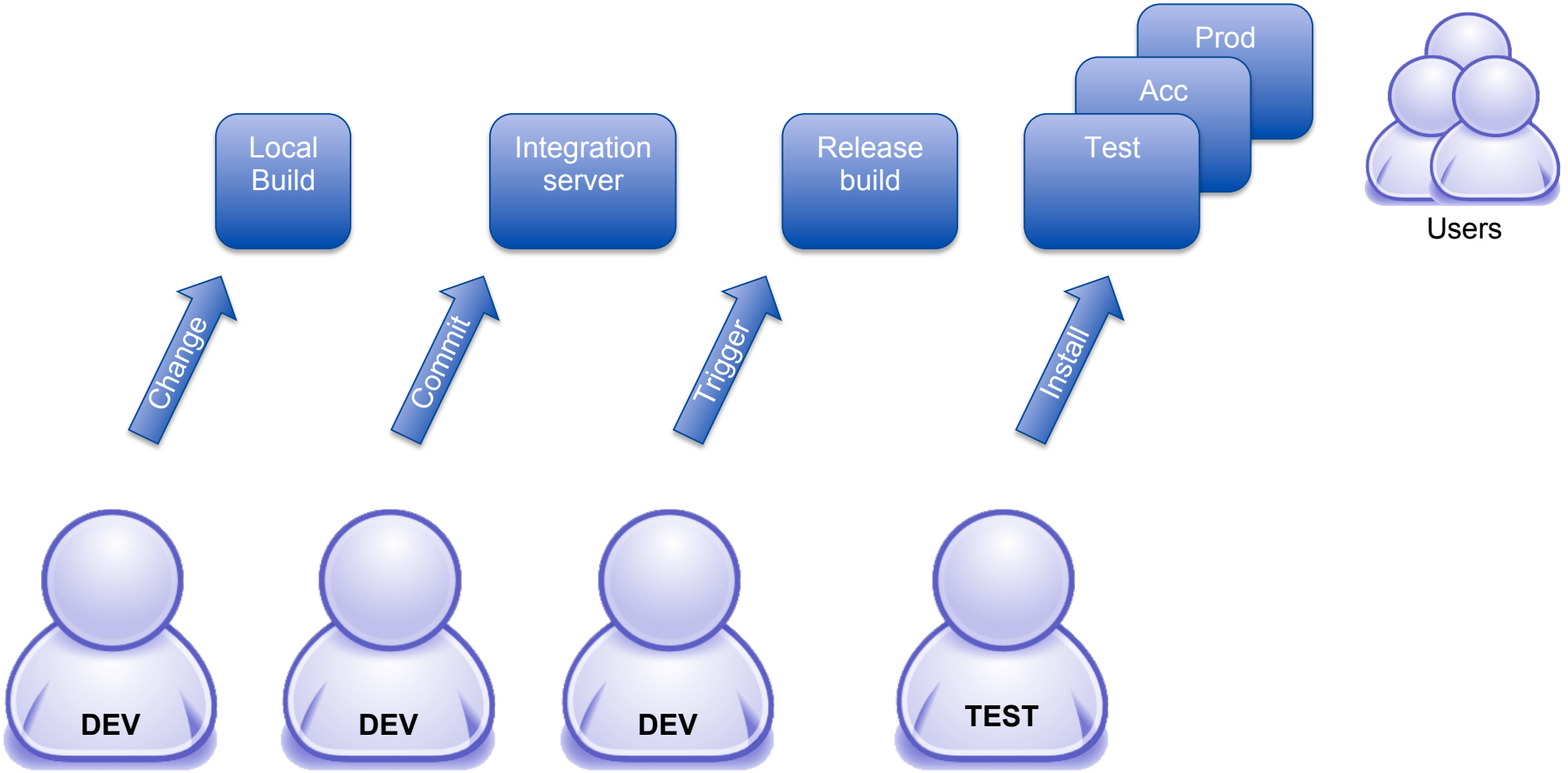
Typical



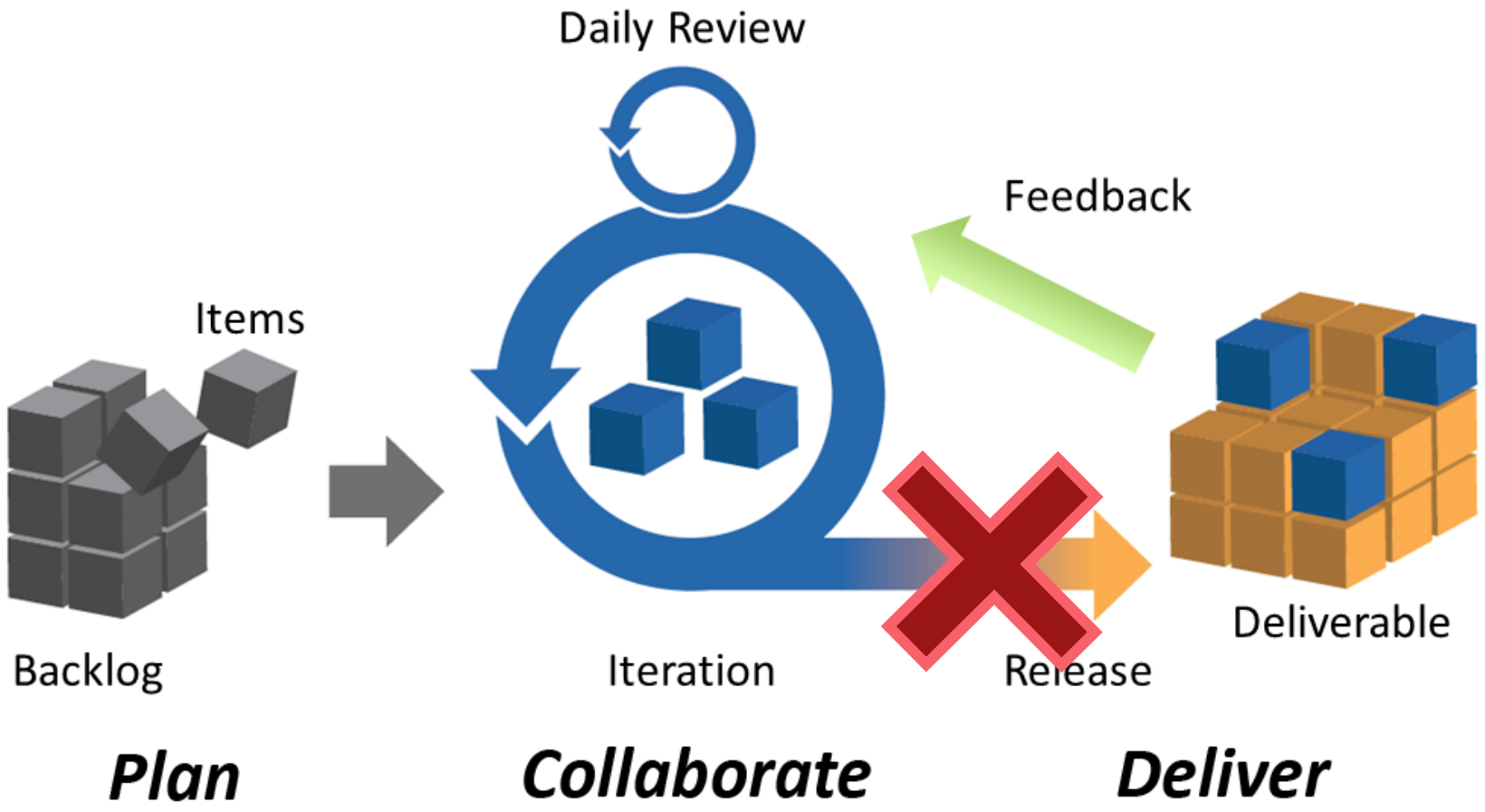
- Experience with Continuous Delivery?
- As a tester, do you need to wait for an acceptable release from developers?
- Loose time doing all repetitive manual stuff?
- Maintain different environments and software versions manually, over-and-over-and-over…
- Is this really release 1.6.5?

- All sounds familiar?

Building a release



Why Continuous Delivery



Agile Project Management: Iteration

What is Continuous Delivery

- Continuous Delivery pipeline
- Automation
- Manual control
- Feedback

Goals

- Predictability
- Quality
- Speed

What are the key benefits of Continuous Delivery?

- Low-risk releases
- Faster return on investment in software projects
- Improvement of competitiveness and responsiveness
- Quality improvement of new software versions

Continuous Improvement Cycle

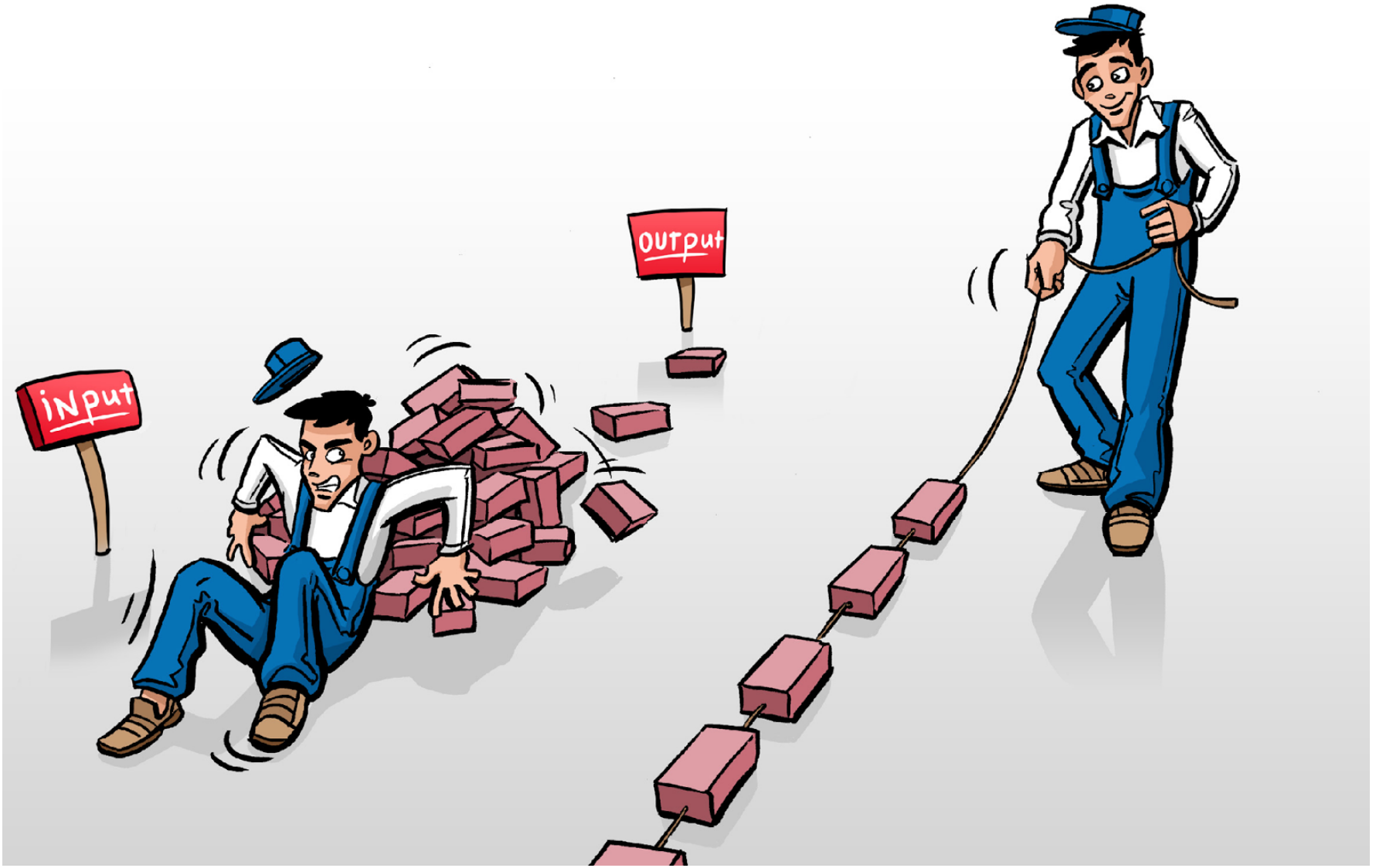
Requires:

Discipline &

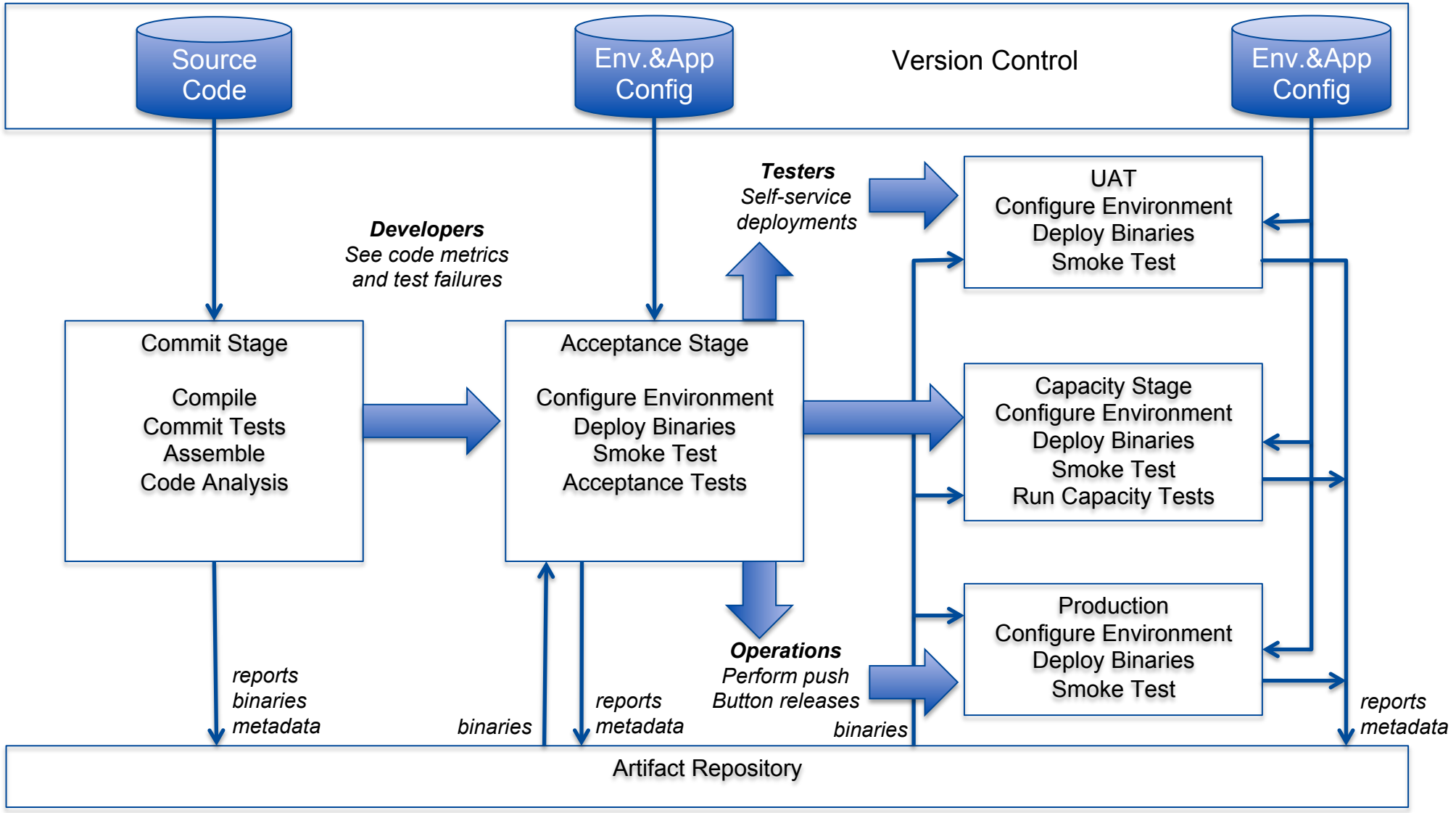
Responsibility

Stop the line!

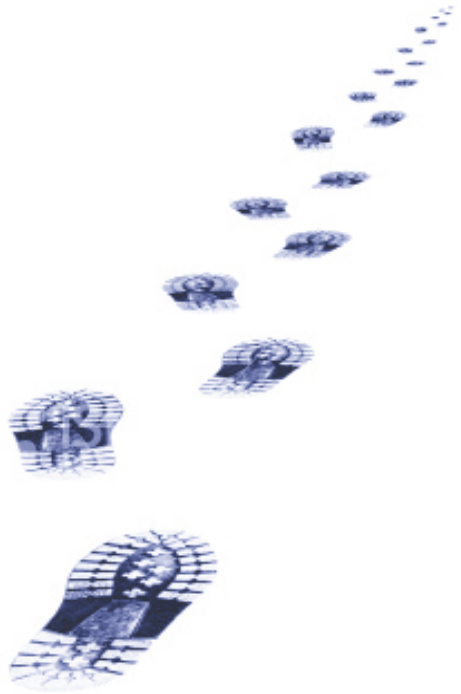
Push vs. Pull



ANATOMY IN DETAIL



What are the main steps of Continuous Delivery?



- Build – compile, unit test, version, package
- Quality – metrics, documentation
- Test – acceptance-, regression- and performance tests
- Provision environments – deployment to test- and staging environment
- Production – green/blue deployment to production

Main steps to create a Continuous Delivery pipeline?

- Getting started with virtual environments, e.g. Amazon EC2
- Configure your Continuous Integration Server
- Provisioning your Test, Staging and Production environments
- Configure your Continuous Delivery Pipeline
- Create a Dashboard of your Systems

EXAMPLE

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Continuous Delivery :: Production Step :: select version and environment for deployment

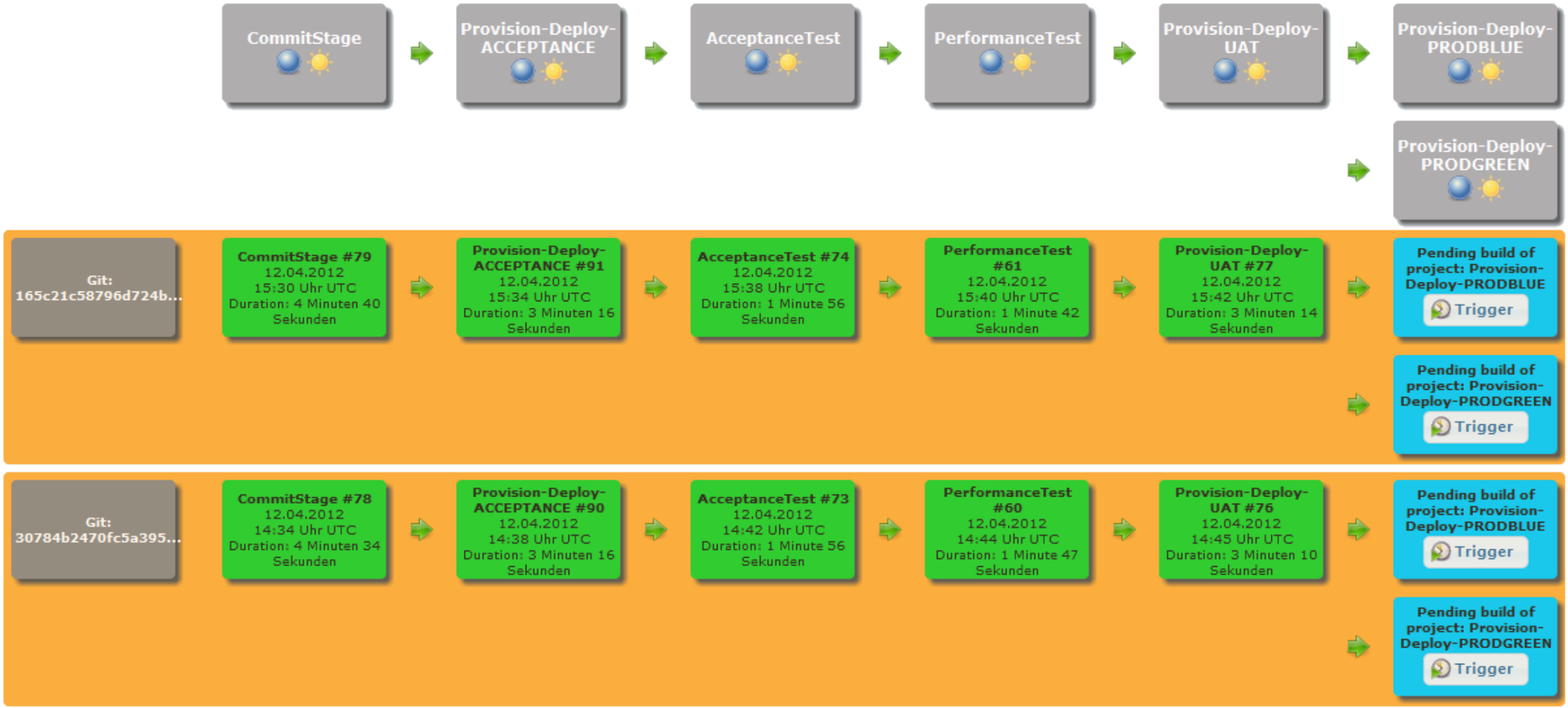
Available Releases

Deploy VERSION Version 1.4.237 to ENVIRONMENT PRODUCTION-BLUE Submit

Continuous Delivery :: System Status :: displays server status and versions deployed

Acceptance/Performance Test	UAT Environment	Production Green	Production Blue
Version: 1.4.237	Version: 1.4.236	Version: 1.4.174	Version: 1.4.225
Go to ACCEPTANCE	UAT-ENVIRONMENT	not running	PRODUCTION-BLUE
Status: running AWS Instance ID: i-44b9bc20 Instance-Type: m1.small Time started: 2012-04-12T10:25:14+0000 AWS-TAG: ACCEPTANCE	Status: running AWS Instance ID: i-abd722cc Instance-Type: t1.micro Time started: 2012-06-22T07:39:53+0000 AWS-TAG: UAT-ENVIRONMENT	Status: not running AWS Instance ID: i-375eab50 Instance-Type: t1.micro Time started: AWS-TAG: PRODUCTION-GREEN	Status: running AWS Instance ID: i-40181224 Instance-Type: t1.micro Time started: 2012-06-22T08:09:47+0000 AWS-TAG: PRODUCTION-BLUE
			 LIVE

What are the main steps of Continuous Delivery?

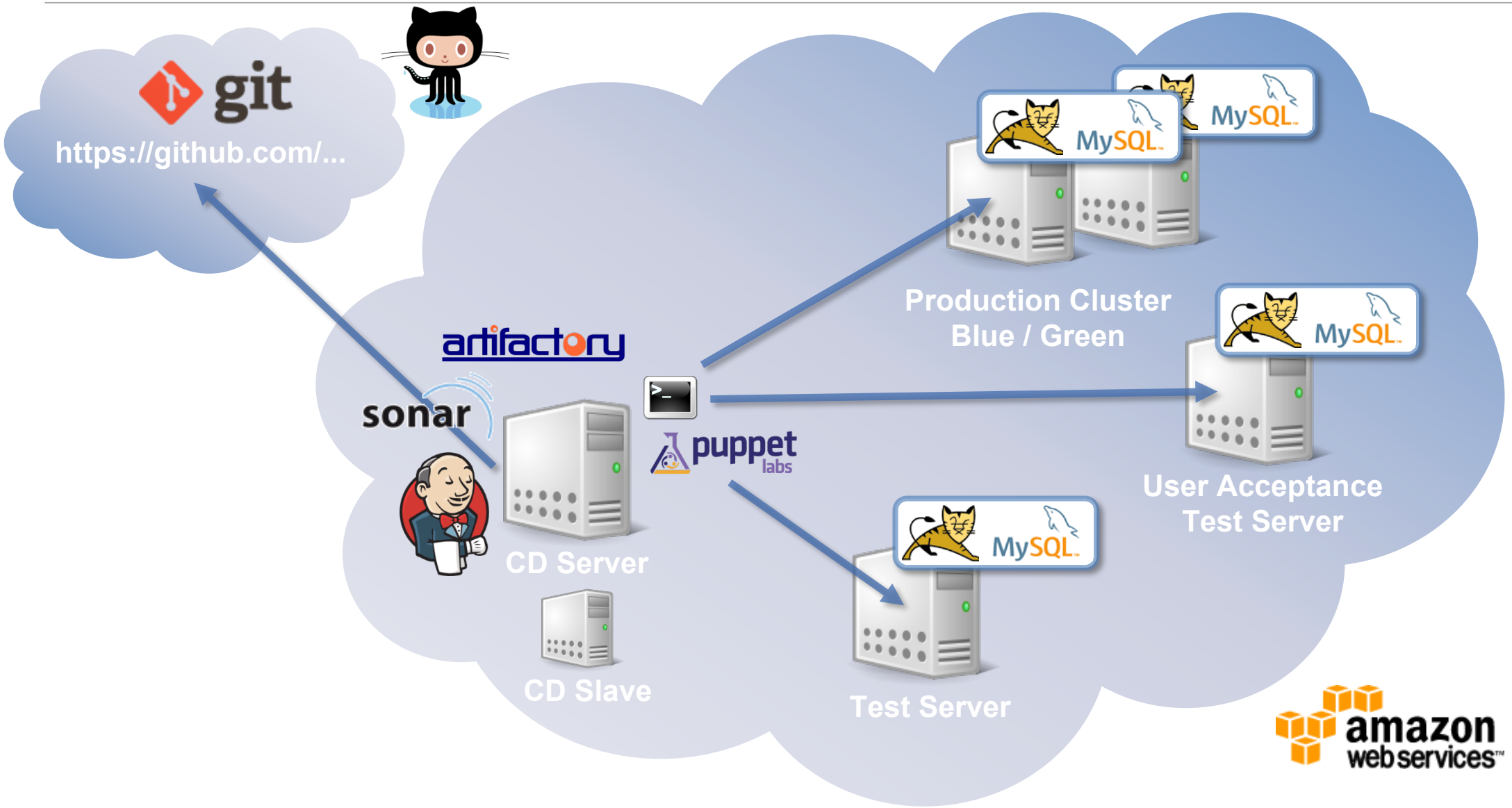


Tooling that can help you

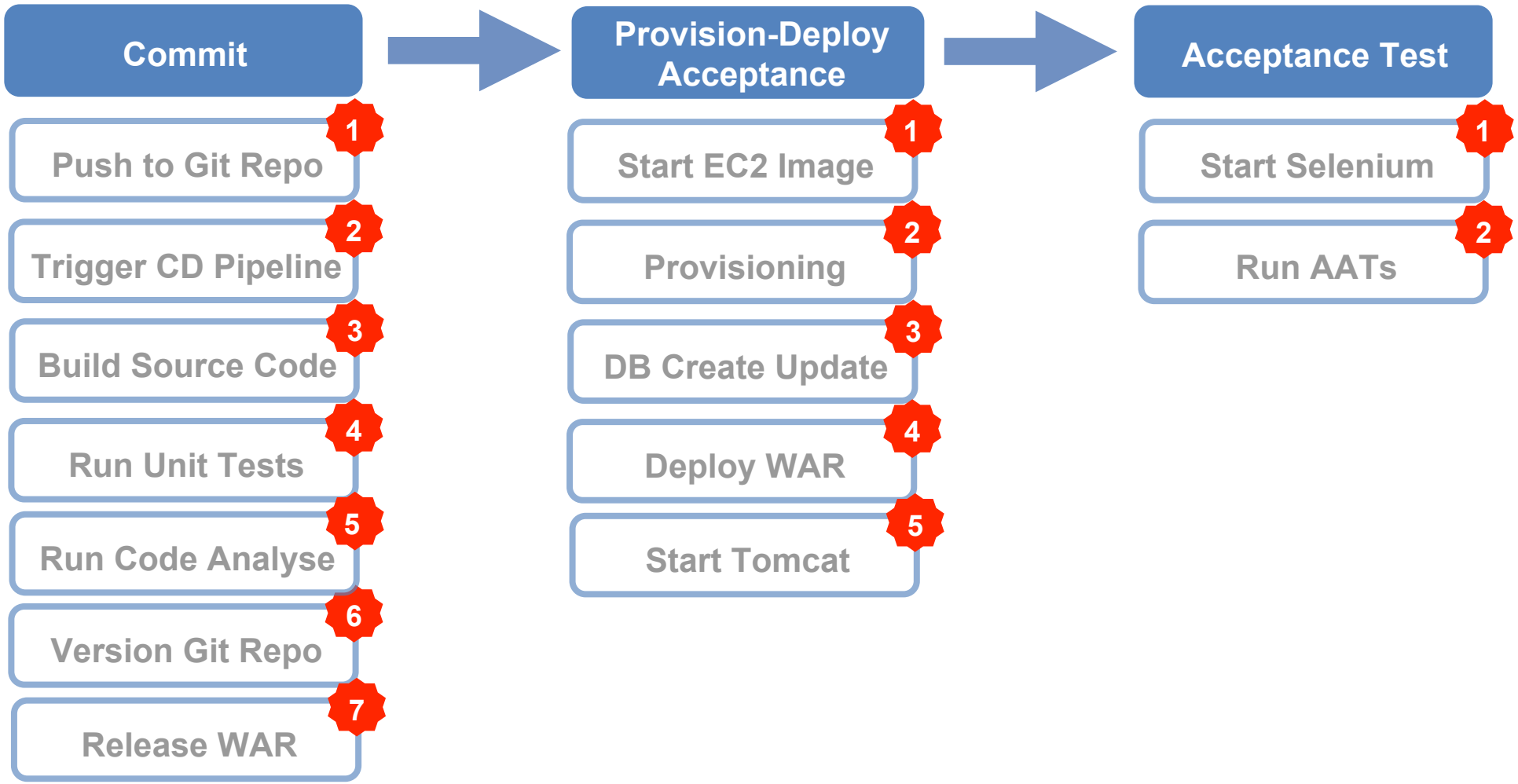
Example – Technology Stack

- Amazon EC2 (Virtualization, Cloud)
- Jenkins (CI Server)
- Git/Github (Version Control)
- Sonar (Code Quality)
- jUnit (Unit Tests)
- jBehave (Acceptancetests)
- Selenium (UI Tests)
- Puppet (Provisioning)
- Tomcat (Application Server)
- Artifactory (Artifact Repository)
- Maven (Build Tool)
- jMeter (Performance Tests)
- AppDynamics (Performance Tests)
- Liquibase (DB Versioning)

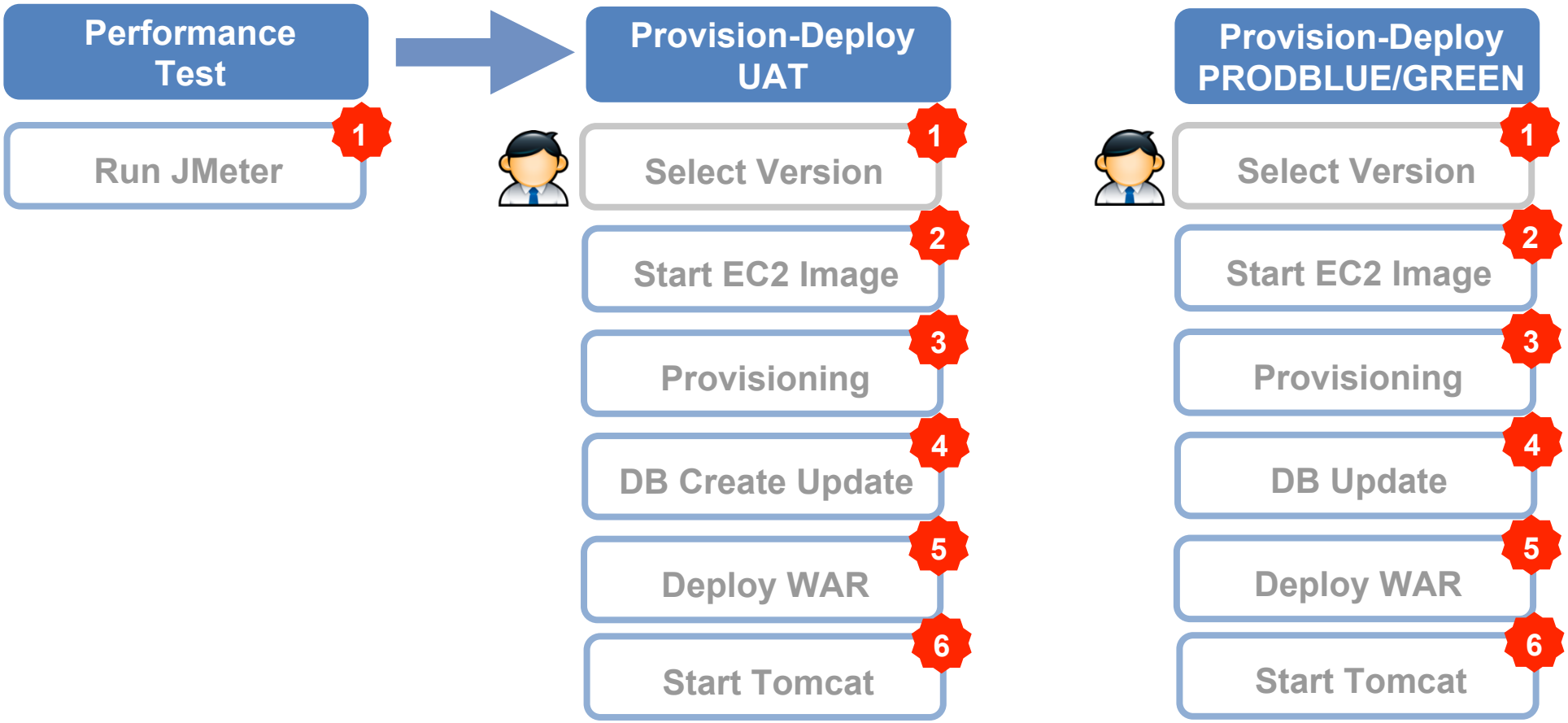
Our Setup


git
https://github.com/...
artifactory
sonar
puppet labs
CD Server
CD Slave
Production Cluster
Blue / Green
MySQL
MySQL
User Acceptance
Test Server
MySQL
Test Server
amazon
web services

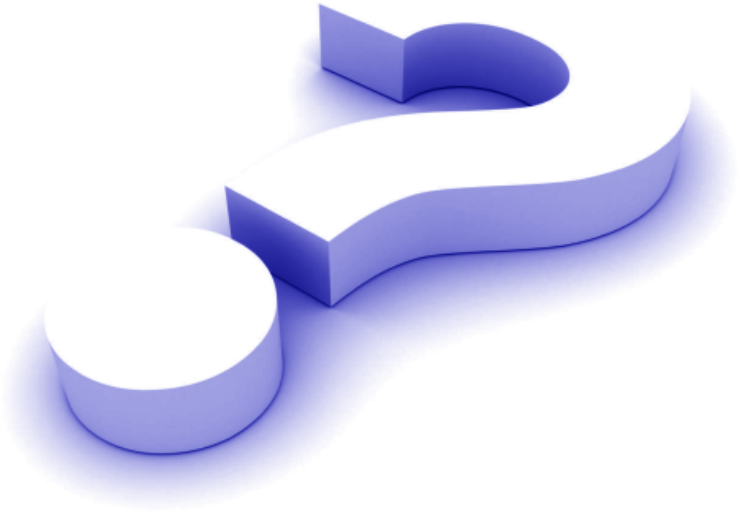
Example – Delivery Pipeline 1/2



Example – Delivery Pipeline 2/2

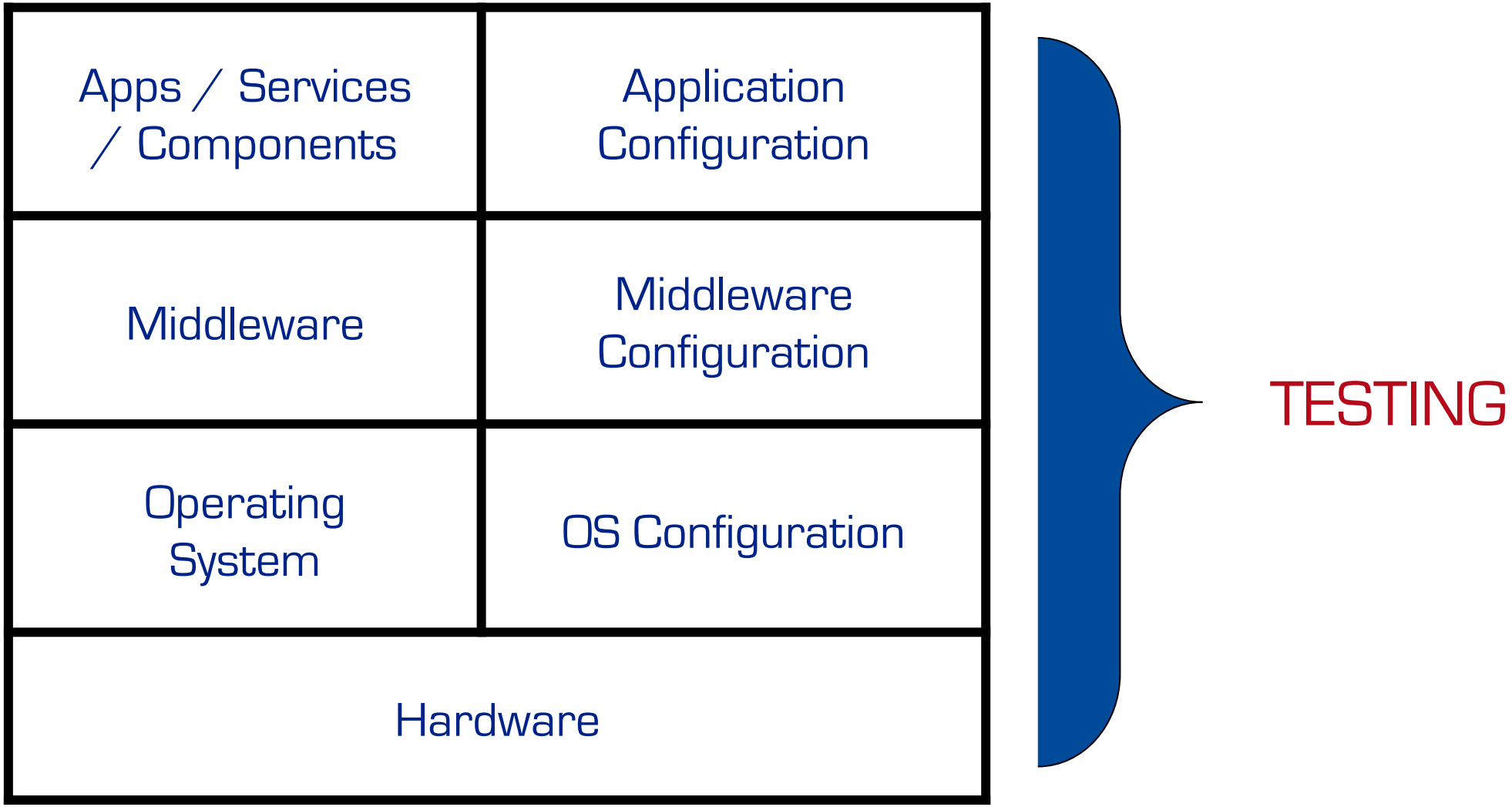


Ask yourself



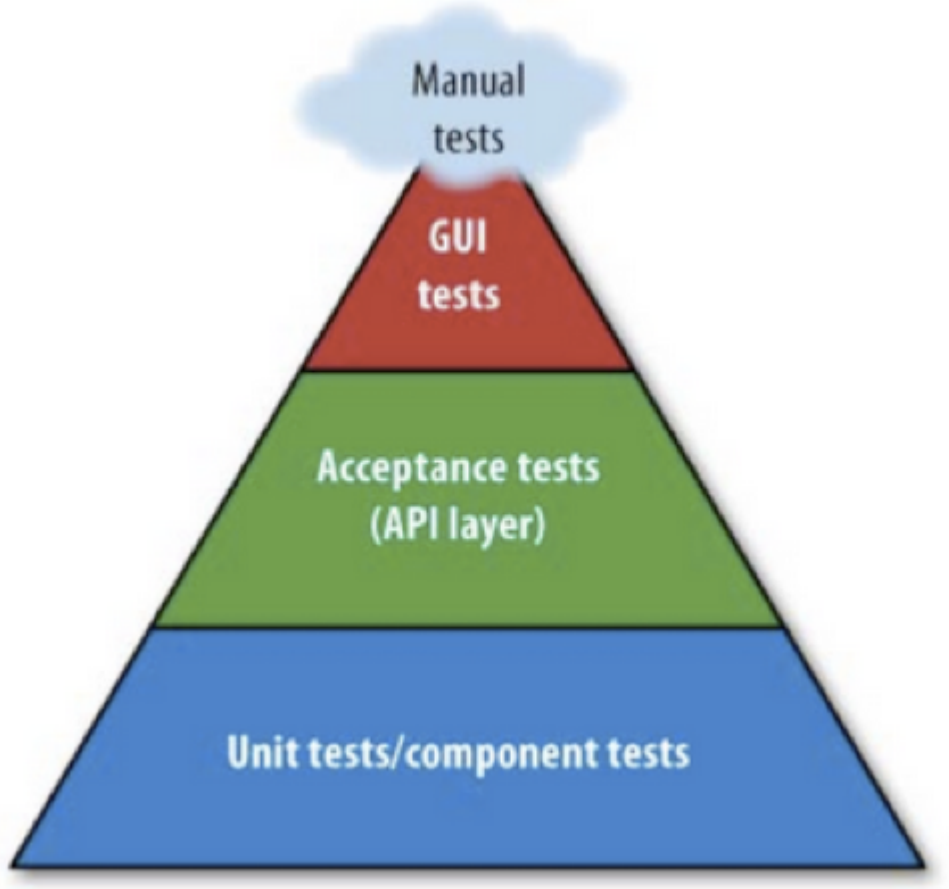
- Which parts are tested how?
- What remains to be tested?

Application Stack



What do we test where and when?

- Automation is key
- Do what we do best
- Team effort

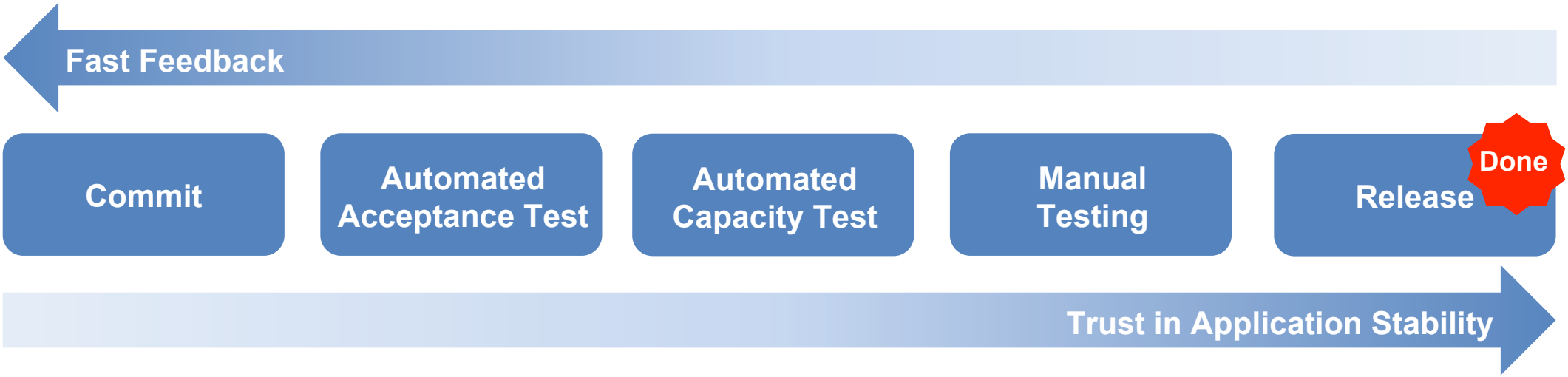


Manual testing

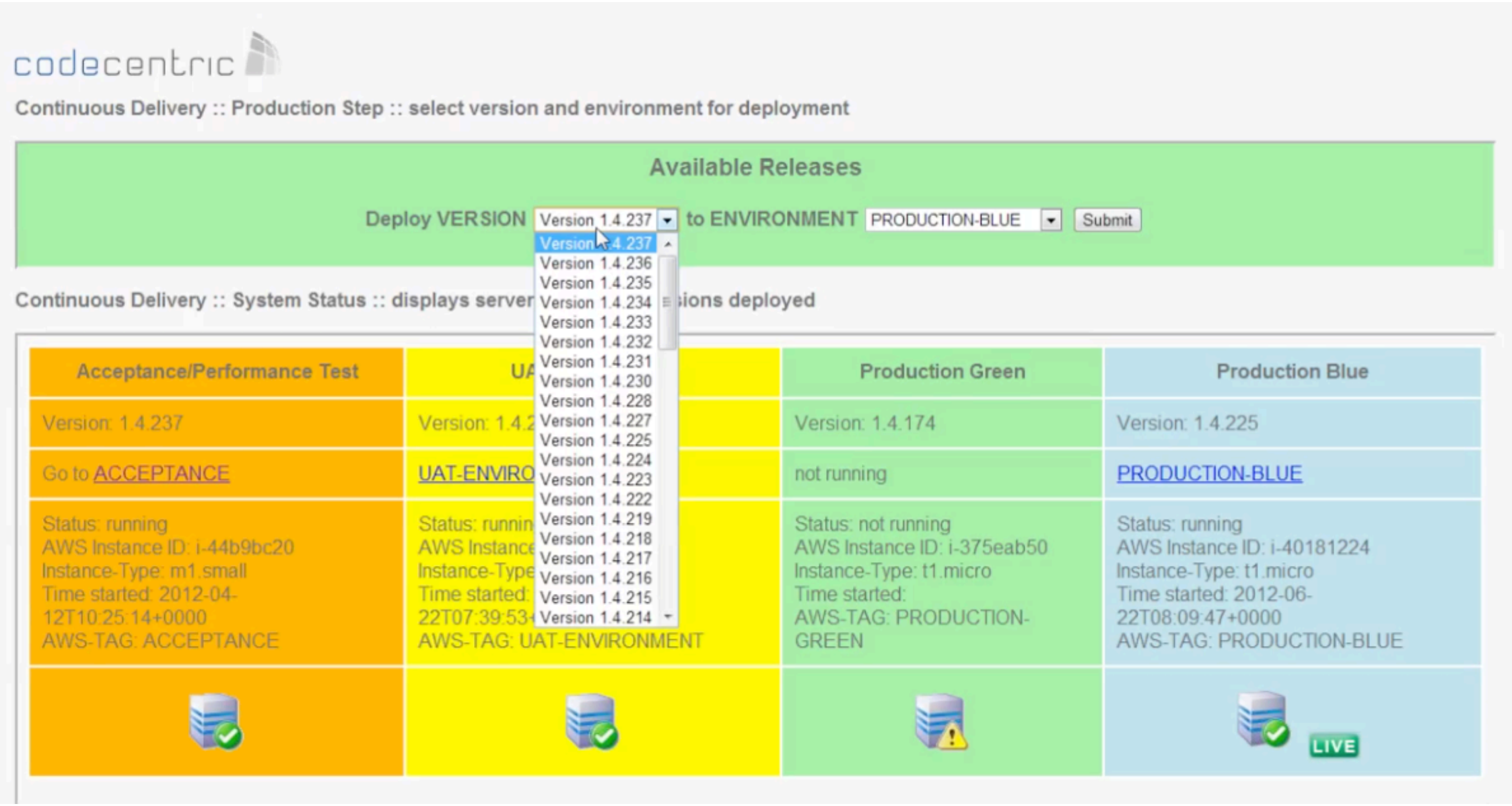
Still required:

- “Show me”
- Exploratory testing
- User acceptance testing

Anatomy of a Deployment pipeline



- Every change results in a trigger of the deployment process
- Software is build once and only once
- The same deployment process for every environment
- Deployment in production-like environments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Continuous Delivery :: Production Step :: select version and environment for deployment
Available Releases
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Version 1.4.237
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Version 1.4.230
Version 1.4.228
Version 1.4.227
Version 1.4.225
Version 1.4.224
Version 1.4.223
Version 1.4.222
Version 1.4.219
Version 1.4.218
Version 1.4.217
Version 1.4.216
Version 1.4.215
Version 1.4.214
Continuous Delivery :: System Status :: displays server
ions deployed
Acceptance/Performance Test
Production Green
Production Blue
Version: 1.4.237
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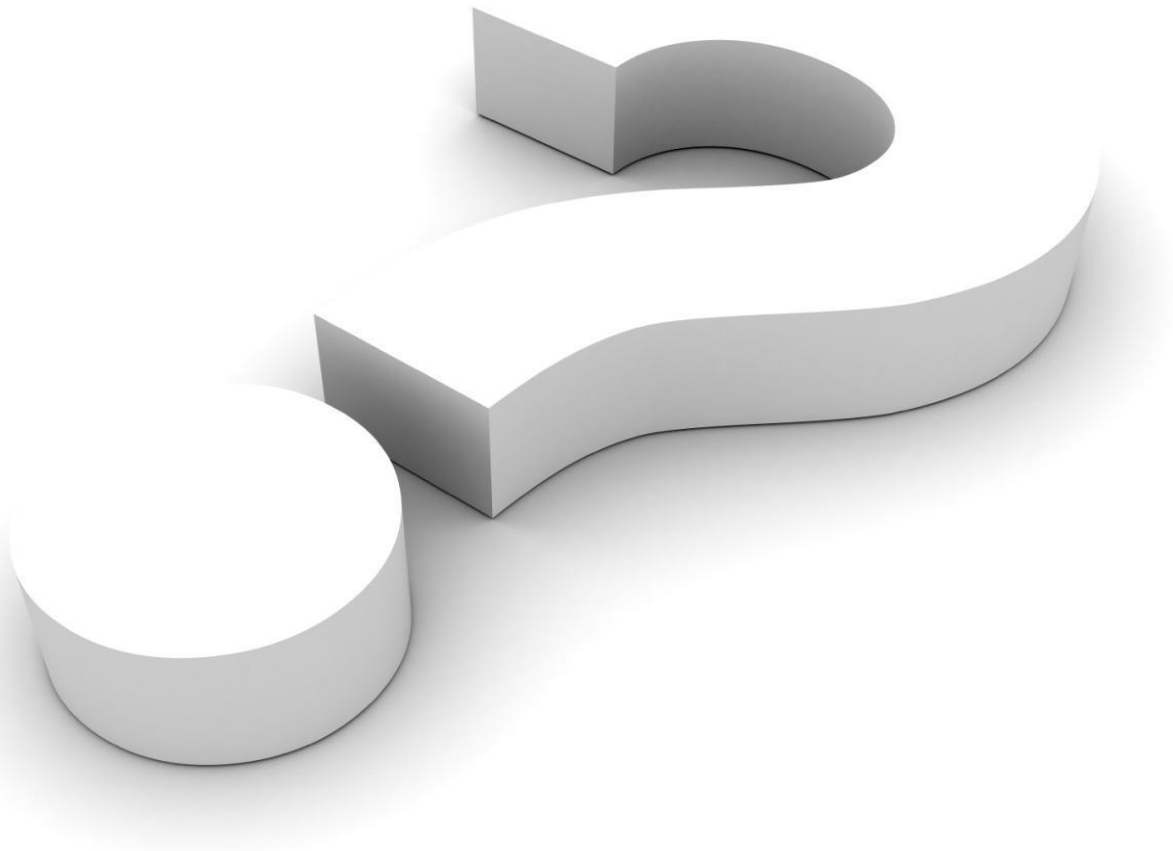
Version: 1.4.225
Go to ACCEPTANCE
not running
PRODUCTION-BLUE
Status: running
AWS Instance ID: i-44b9bc20
Instance-Type: m1.small
Time started: 2012-04-12T10:25:14+0000
AWS-TAG: ACCEPTANCE
Status: not running
AWS Instance ID: i-375eab50
Instance-Type: t1.micro
Time started:
AWS-TAG: PRODUCTION-GREEN
Status: running
AWS Instance ID: i-40181224
Instance-Type: t1.micro
Time started: 2012-06-22T08:09:47+0000
AWS-TAG: PRODUCTION-BLUE
LIVE

Summary

- Continuous delivery is a way to create a stable release process
- Automated testing makes continuous delivery possible
- Manual testing is (still) necessary
- Pull vs Push
- Dashboard

THANK YOU FOR YOUR ATTENTION – ANY QUESTIONS?



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See our website for more information:

http://www.codecentric.nl/portfolio/continuous-delivery/