

Hoe en waarom DevOps de wereld van performance testen verandert



Najaarsevenement 14 oktober 2015

Inleiding

- Wie zijn we
 - **Marc Koper**: Specialist in performancetesten / testautomatisering
 - **HenkJaap van den Broek**: Relatiemanager bij PerformanceArchitecten
- Waarom deze presentatie:
 - Binnen (IT)organisaties veel beweging richting DevOps
 - Performance binnen IT behoeft (steeds meer) aandacht
 - Huidige Best Practices sluiten onvoldoende aan bij veranderende organisaties



Inhoud presentatie

1. Uitdaging performancetesten binnen DevOps
 - Waarom Performancetesten?
 - Huidige best practices
 - DevOps
 - Mismatch best practices met DevOps
2. DevOps en hoe kunnen we dit gat dichten?
 - DevOps en Performance
 - Andere visie nodig op performancetesten
 - Performancetesten in de DevOps omgevingen
 - Performancetesten in DevOps "algemeen"
3. Restrisico's
 - Welke risico's zijn hiermee niet afdoende af te dekken
 - Wat kunnen we hier wel doen?
 - Toekomst

1. Uitdaging performancetesten binnen DevOps

Waarom performancetesten?

- Performance risico's en impact (Business en IT)

Hoe doen we dat? (Traditioneel gezien)

- Best Practices

DevOps

- Overview

Mismatch bestaande Best Practices t.o.v. DevOps

- Analyse

Waarom performancetesten?

NBR > ANZ Bank's internet banking system suffers outages ☰

ANZ Bank's internet banking system suffers outages

JENNY RUTH · MONDAY JUNE 22, 2015

SHARE

ANZ Banks says its internet banking system is now back online. It has been intermittently out of action since at least 9.30am this morning.

ANZ spokesman Stefan Herrick says some customers haven't been able to log on at all and some have been able to but are finding the system is much slower than usual.

The bank's technical team doesn't know the cause but "are working through that now and, obviously, they hope to have it up again as soon as possible," Mr Herrick says.

ANZ apologises to any customers who have been inconvenienced, he says.



Waarom performancetesten?

Adding value to test tooling

Amazon Outage Send Panic Across The Net

By Mohseen Lala — 20 Sep '15 — Google+

The inevitable yet unexpected just happened. Amazon suffered a huge outage merely hours ago.



Amazon Web Services image credit: Amazon

According to Venturebeat, the company's Northern Virginia DynamoDB failing crippled some of the biggest companies in the world for for nearly 5 hours.

The Amazon Outage

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amazon.com

Oops!

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Waarom performancetesten?

How Facebook Lost \$1,218,136.99 in 1 Day

Facebook went down for about 40 minutes on Sept. 28. What gives?

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Here's why Facebook's been going down lately OCTOBER 5, 2015

HP vs Dell 10:49 AM EDT

Asking these 4 questions will stop up to 90% of hacks 10:44 AM EDT

Millennials are driving an \$18 billion food revolution 10:42 AM EDT

Apple's smaller iMac just got a way better screen 10:41 AM EDT

Starbucks is testing coffee delivery to New York offices 10:28 AM EDT

Israeli security startup Cybereason raises \$59 million in funding round led by Softbank 10:19 AM EDT

How to make a global company a great employer 10:00 AM EDT

Donald Trump will live Tweet tonight's Democratic debate 9:50 AM EDT

Playboy won't publish any more pictures of naked women 9:18 AM EDT

5 things to expect from tonight's Democratic debate 9:14 AM EDT

Failure is just the beginning: Lessons in innovation from GE, Google, and Intel 9:08 AM EDT

Fore! How this company is using VR to sell golf clubs 9:00 AM EDT

Why the CNN Democratic debate will be as useless as the GOP's 8:48 AM EDT

Twitter just confirmed 'up to 336' layoffs 8:46 AM EDT

Zugata comes out of stealth to fix universally-hated performance review process 8:28 AM EDT

The DoJ doesn't think much of

Here's why Facebook's been going down lately

by Kia Kokalitcheva @imkialikethecar OCTOBER 5, 2015, 5:44 PM EDT



It happened three times last month

Facebook says three major outages that struck the social network last month were the unintended result of planned software upgrades.

"Each unrelated issue began as a planned code change that had unintended consequences in our ability to respond to server requests," Facebook Director of Production Engineering and Site Reliability Pedro Canahuati told the *Wall Street Journal*.

Photograph by Ted Aljibe — AFP/Getty Images

MORE

Welcome to the media business, Apple—Chinese censorship is now your problem, too

Facebook to add new 'shopping' tab, other ad formats

facebook

Sorry, something went wrong.

We're working on it and we'll get it fixed as soon as we can.

Defeat 1.3° Clear

THE IRISH NEWS 13 October 2015

NEWS SPORT BUSINESS LIFE ARTS NOTICES OPINION

Facebook failure disappoints users

Facebook went down for the second time in a week

29 September, 2015 01:00

FACEBOOK went down yesterday for the second time in a week, leaving users to vent their frustration at the crash on Twitter.

As users tried to log in to the social network, they were met with the error message "sorry something went wrong. We're working on it and we'll get it fixed as soon as we can".

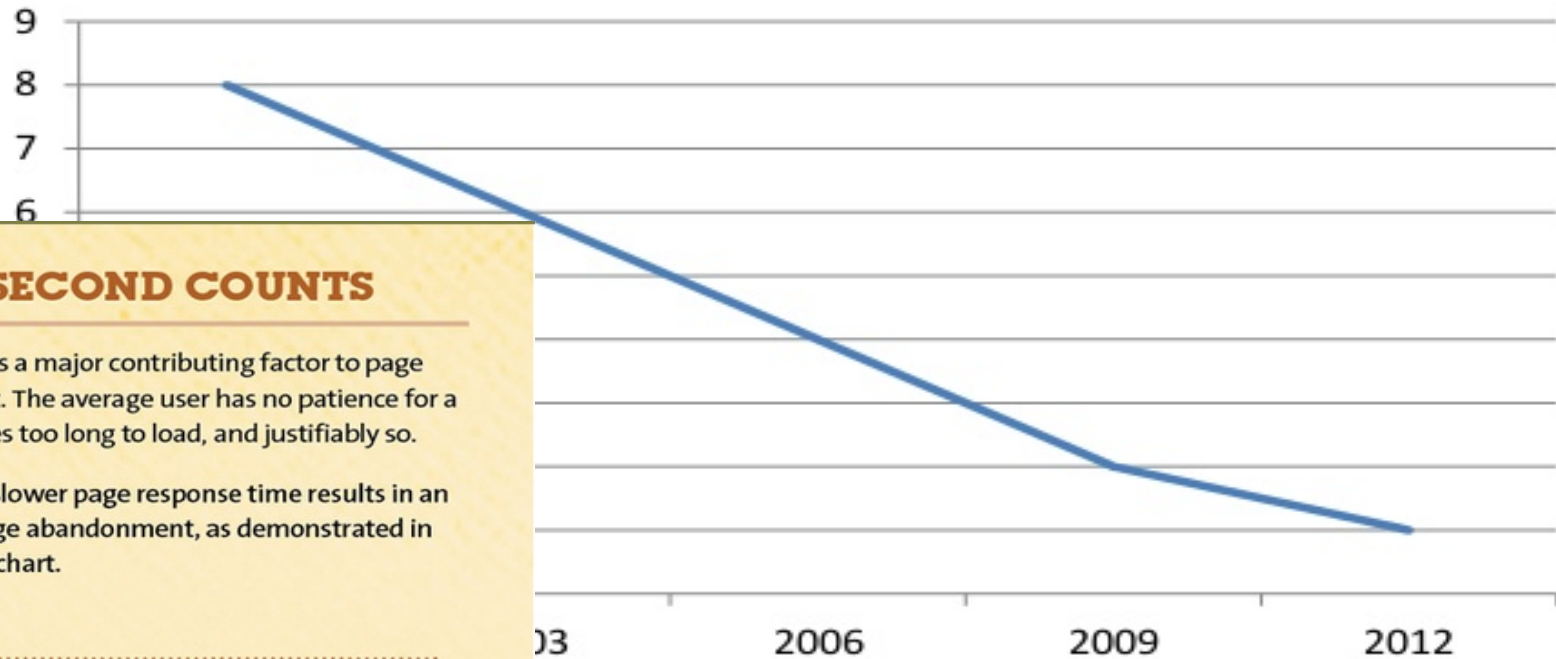
Visitors to the Facebook website first started experiencing problems at around 8pm UK time but the problem appeared to have been resolved around 40 minutes later.

Some of those unable to use the site took to Twitter to express themselves.

Waarom Performancetesten

“1 second” is the new “4 seconds”

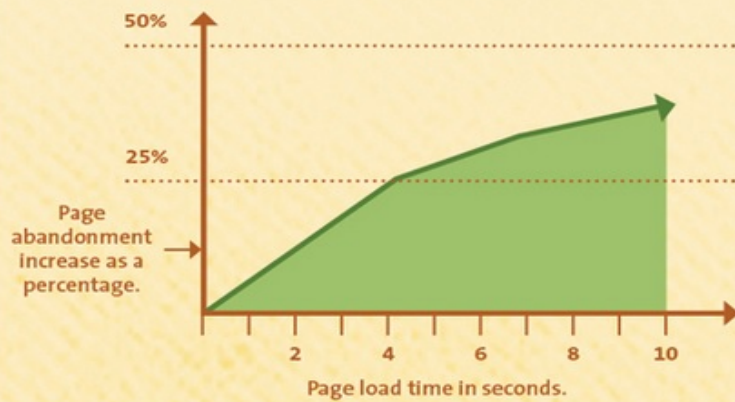
Acceptable Response Time (s)



EVERY SECOND COUNTS

Loading time is a major contributing factor to page abandonment. The average user has no patience for a page that takes too long to load, and justifiably so.

Observation: slower page response time results in an increase in page abandonment, as demonstrated in the following chart.



Waarom performancetesten - 2

Impact

- Klant
 - Consumerization
 - Reputatieschade
- Medewerkers
- IT

Risico's

- Intensiever gebruik, IT vraagt meer continuïteit.
- IT-ketens worden complexer (bv. Cloud, koppelingen)
- Big data
- 'Internet of things'



Huidige best practices performancetesten

Risico gebaseerd testen

- Analyse kans keer impact
- Technisch \leftrightarrow Business

Randvoorwaarden ingevuld

- Normen / Non Functional Requirements (NFR's)
- Verwacht gebruik in kaart?
- Rollen
- (Test)omgeving (zowel technisch als betreffende testdata)

Einde traject

- Stabiele versie die naar productie gaat

Genoeg monitoring aanwezig voor bottle-neck analyse

Requirements

Scope

Plan

Installatie

Script

Executie

Analyse

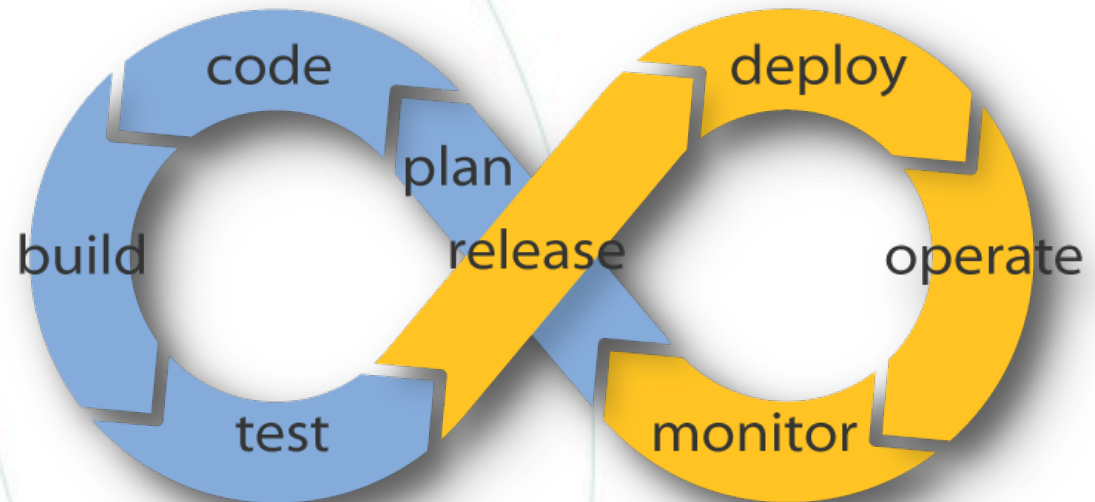
Rapporteren

Itereren

DevOps

- Samenwerking tussen Business, Development, Operations en QA, gebaseerd op de principes van Lean en Agile, met als doel om de business sneller kansen in de markt te laten grijpen en om feedback van (eind)klanten sneller te kunnen verwerken.

- Iteratief
- Continue
- Snel
- Feedback(loops)
- Flexibel
- Multidisciplinair



Endless Possibilities: DevOps can create an infinite loop of release and feedback for all your code and deployment targets.

Mismatch Best Practices (PT) met DevOps

Huidige best practices voldoen niet meer

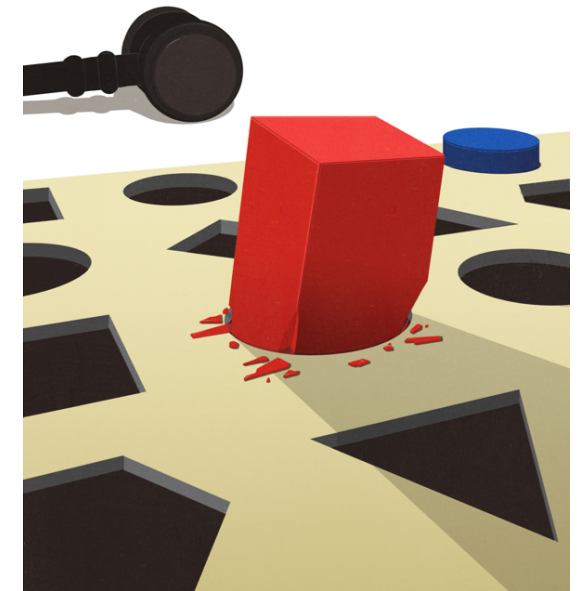
- Korter opvolgende opleveringen
- Testresultaten zijn te laat beschikbaar om gewenst inzicht te geven
 - DevOps heeft behoefte aan continue advies
 - Integraal performance beeld
- Tijd (plannen, uitvoer, analyse, rapportage)
- Aan het begin niet 100% duidelijk waar naartoe (Waar moet aan voldoen / NFR's)

Dynamisch testobject

- Onderhoud van performance testen
- Kosten hiervan

Andere risico's

- Meer risico's met beter beheersbare impact

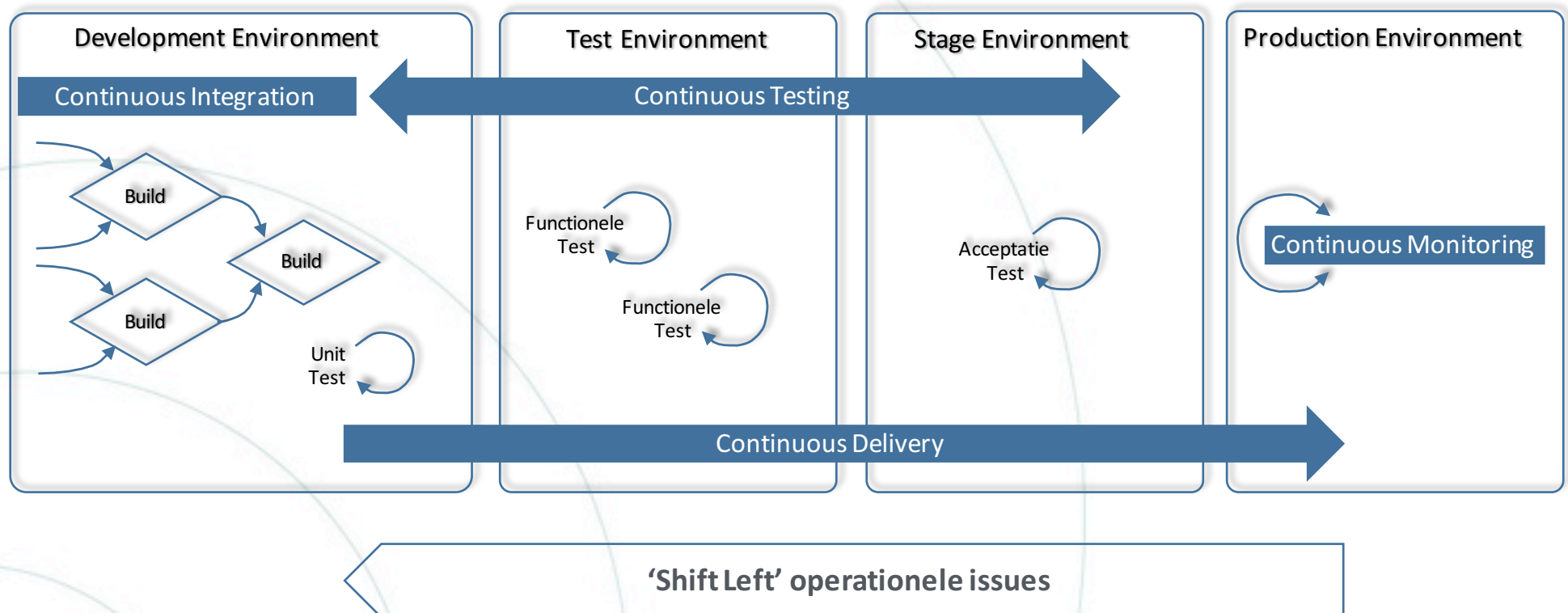


2. DevOps en hoe kunnen we dit gat dichten?

- Andere visie nodig op performancetesten
- Performancetesten in de DevOps omgevingen
- Performancetesten in DevOps “algemeen”

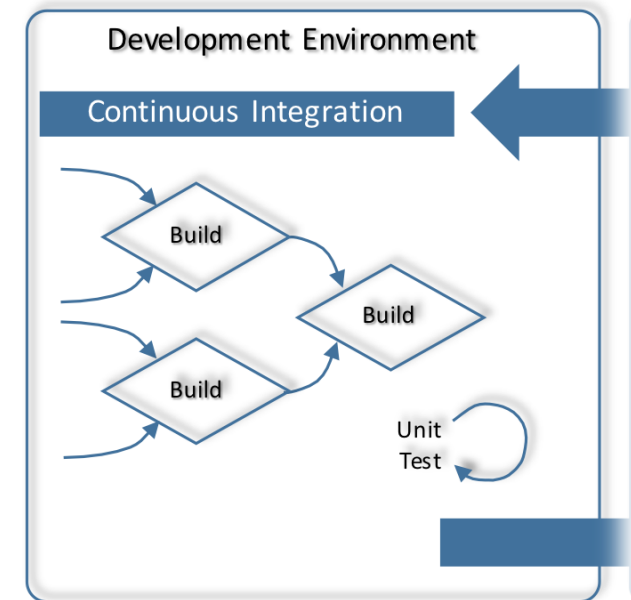


Andere visie - DevOps



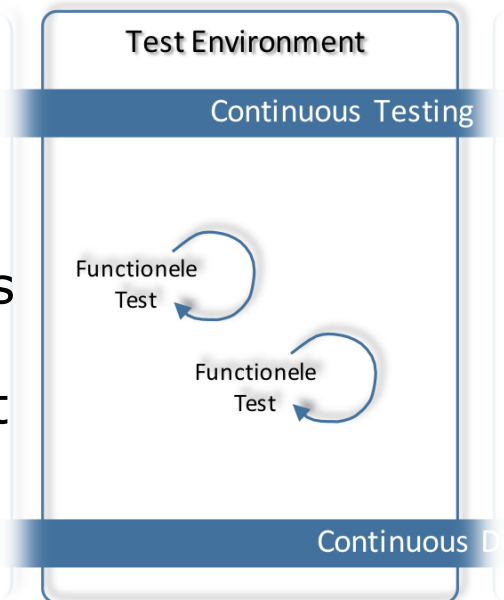
Andere visie – Development Environment

- Iteratief werken, korte cycli
- Veel unit testen
- Testen: zo vaak mogelijk en geautomatiseerd
- Performance testen
 - Performance in de unit testen meenemen
 - Vooral vergelijking met vorige versie
 - Performance “budget”
 - Flame graphs
 - Aandachtspunt: analyse van alle gegevens
 - Dynamisch testobject
 - Applicaties onderhoudsarm t.o.v. performance testen voor andere fases
 - Tooling aanpassen aan de technische mogelijkheden



Andere visie - Test Environment

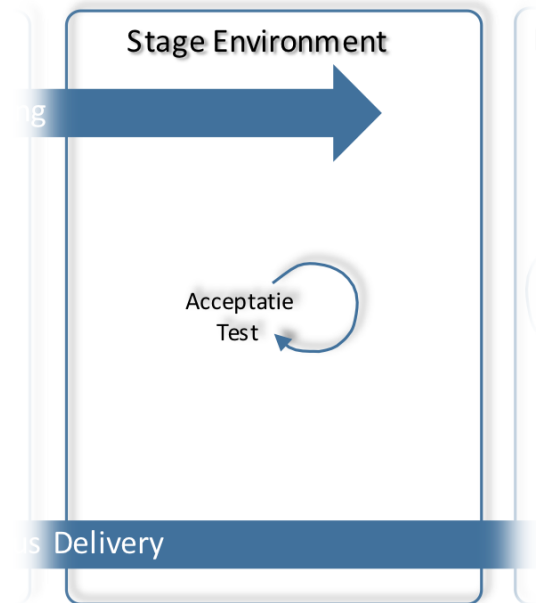
- Code kent regelmatige builds, deployments en tests
- Continuous testing
- Doel: goed werkende versie van software en inzicht kwaliteit
- Focus: feedback loops, automatische builds en testproces
- Stubs/drivers nodig
- Performance testen
 - Zodra nieuwe versie op het systeem staat
 - Vergelijkingstesten (geen productie-like omgeving)
 - Geautomatiseerd
 - Analyse
 - Integraal bruikbare informatie
 - Early stability
 - Performance "budget"



Andere visie – Stage Environment

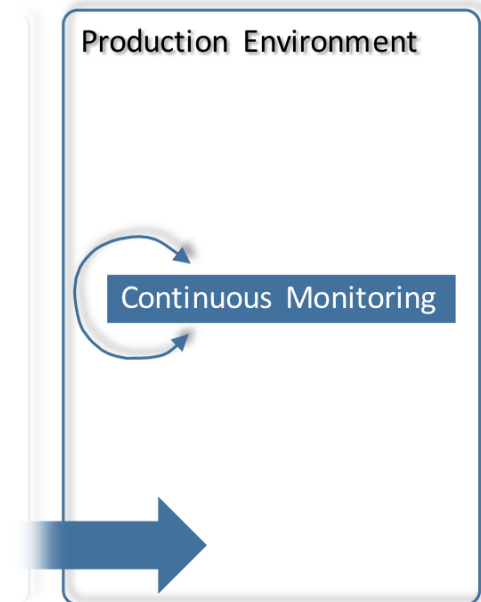
- Productie-like omgeving
- Frequente releases
- Zo min mogelijk stubs/drivers

- Performance testen
 - Frequenter testen
 - Geautomatiseerd
 - Analyse → sneller/slimmer
 - Accurater testen
 - Tuning op de applicatie mogelijk
 - Onderhoud op performance scripts essentieel



Andere visie – Production Environment

- Ops
- Snellere deployments
- Snellere foutoplossing
 - Indien nodig: terug naar vorige versie
- Performance testen → Monitoren
 - Technische vs. functionele monitoring
 - Doel: dezelfde tooling
 - Integraal bruikbare informatie
 - Feedback naar de andere stages (patches, data, sizing)



Andere visie - Overall

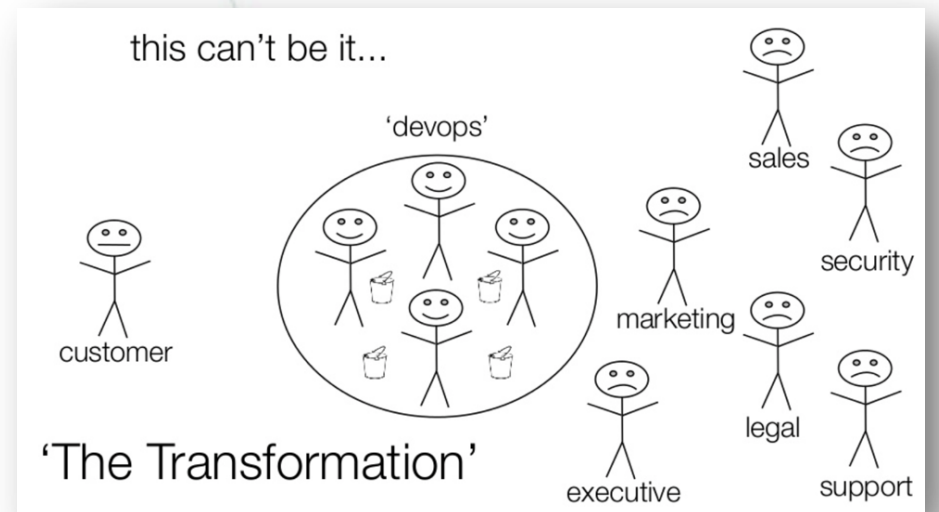
- Betrokken bij "alle" aspecten
- Communicatie
 - Awareness creëren
 - Resultaten delen en "concerns" bespreken
 - Continue
 - User Stories/Business analyse (NFR)
- Breder werkzaamheden en inpassen in team
- Voorkeur voor (private-) cloud
- Business case



'Shift Left' operationele issues

3. Restrisico's

- Welke risico's zijn hiermee niet afdoende af te dekken
 - Generalisten vs. specialisten
 - Te weinig aandacht voor performance strategie
 - Continuous irritation
 - Licentie-perikelen
 - DevOps blijft in beweging



Toekomst

- Verder toenemende performance eisen
- Toenemende datastroom
 - Meer productiedata (big data)
 - Meer testdata
- Nog complexere structuren
 - Internet of things (zoals MQTT)
 - Always online
 - Private en business (BYOD)
 - Micro services



Conclusie

- Kansen
 - Veranderende rol van de performance tester
 - Continue inzicht in performance
 - In geval performance issues:
 - Beter schaalbaar (vanwege Cloud)
 - 'Makkelijk' terug naar vorige versie
- Risico's
 - Performance test-expertise
 - Lange termijn gevolgen op actuele beslissingen
 - Awareness
 - Technisch
- De tijd zal het leren

Performance

Architecten



Meer informatie: info@PerformanceArchitecten.nl