About DevOps

dev+ops=profit!

No deployment at Friday 5:59:59pm!

Ops being a***** refused to deploy

AGAIN,
WHAT
ABOUT
QA?????

What is DevOps?

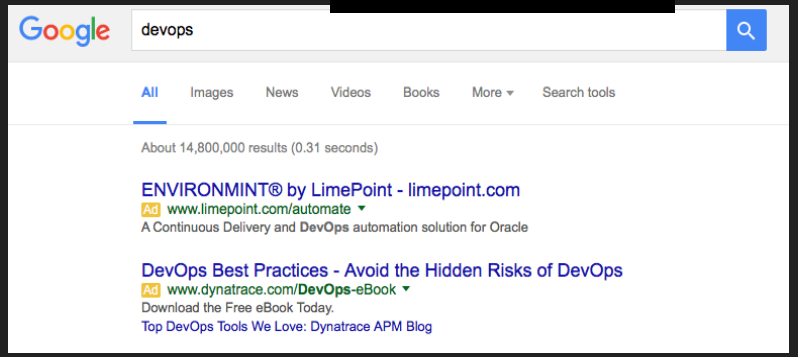
Job Title ?

DevOps Engineer
ThinkingPhones
SG • Dec 28, 2015
Similar

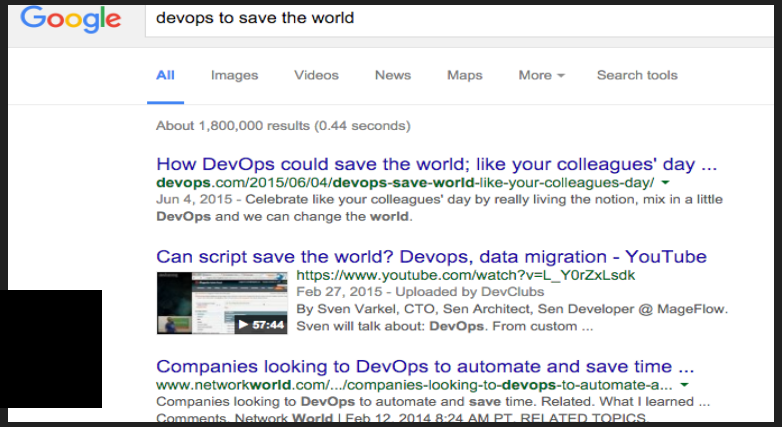
DevOps Engineer
Autodesk
Singapore - SG • Dec 9, 2015
Similar

DevOps Engineer
ZUMATA Technologies
Singapore • Dec 16, 2015
7 connections to the poster • Similar

Software/Tools?



Save the world?

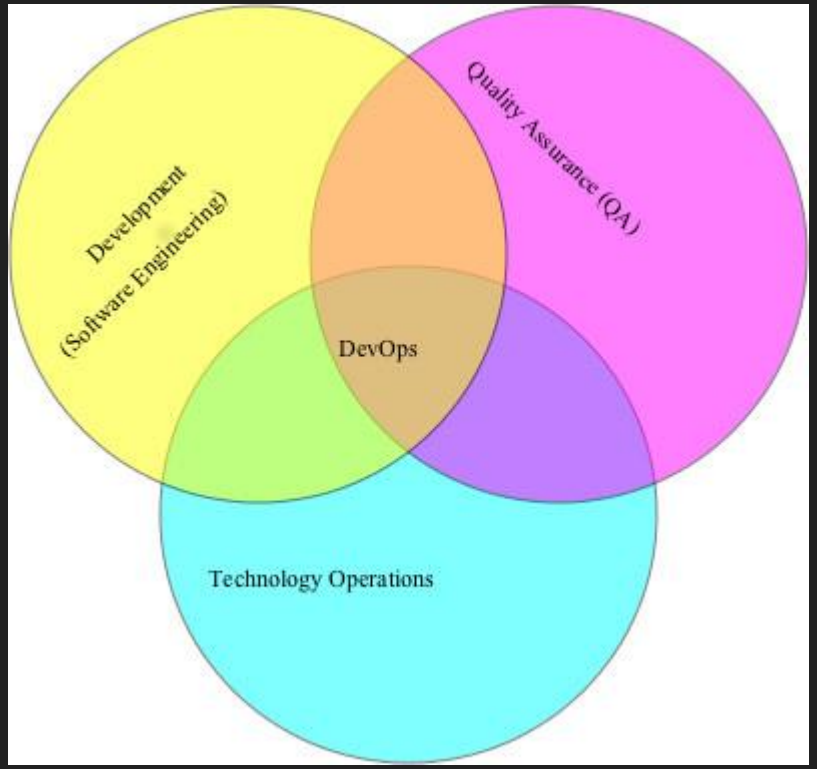


According to Borat, DevOps is...

So, What is DevOps?

DevOps (a clipped compound of "development" and "operations") is a **culture, movement or practice** that emphasizes the collaboration and communication of both software developers and other information-technology (IT) professionals while automating the process of software delivery and infrastructure changes.

- From Wikipedia*, so must be correct!*



Did you notice?

It is not just Dev + Ops!

QA is in the Venn Chart!

Yes, Quality Assurance is part of the DevOps equation!

Why DevOps?

Continuous Delivery = lots of deployment

Traditionally, lots of friction between Ops and Dev.

> “Your code broke my production!”
>
> “Your production broke my code!”
>
> “Ops refuses to deploy…”
>
> “Devs are being careless…”
>
> …

Facebook used to say “Move fast and break things!”

Automation

Automation = predictibilty

Automation = faster/shorter turnaround

Automation = less error prone

Automation = faster for error to propagate

Automation = more effort up front

Automation = deep understanding on the system

What to automate?

- Deployment
- Setup
- Regression test
- Standard Error Recovery
- Notification
- Log collection/rotation
- Security Scan
- Monitoring

But before automate it,

- Understand the system
- Understand the code
- Understand the business impact
- Understand the business requirement
- Understand the need for automation, not everything needed to be automated

Automation tools

Best tool for automation is still

BASH + PERL/Python!

Why QA automation?

Imagine if the system can do deployment for every commit to the master branch!

Imagine if the regression test suite has 10000 test cases!

Imagine if you have team of 10 developers!

Imagine if your project milestone is measured in days!

Well, without Test Automation, your QA will hate you, really really hate you!

TDD/ATDD/BDD

- Unit Tests to cover function consistency!
  - add(3,4) always return 7
- Acceptance Tests to cover feature/function expectation!
  - Login page should always display login field and password field
- Behavioural Tests to cover features flow consistency!
  - Login with correct user ID and password combination should allow user to login and redirect us to user landing page

TDD

Java: JUnit

PHP: PHPUnit

Javascript: Jasmine, QUnit

almost all popular programming languages have its own unit test framework(s)

BDD, Gherkin

Feature: Some terse yet descriptive text of what is desired
In order to realize a named business value
As an explicit system actor
I want to gain some beneficial outcome which furthers the goal

Scenario: Some determinable business situation
Given some precondition
And some other precondition
When some action by the actor
And some other action
And yet another action
Then some testable outcome is achieved
And something else we can check happens too

Scenario: A different situation
...

Test Automation

Jenkins + Selenium

Multiple parallel execution

using cloud to dynamically scale out test executions

JBehave + Selenium

Why test automation

Would you have sex 5 times a day with random stranger without condom?

Would you do 5 deployments a day with random code change without test automation?

Deployment Automation

Git, do you know git enough?

Jenkins/Bamboo

CircleCI, Travis, or millions of CD SAAS wannabe.

Chef/Puppet/Ansible/… for system management

Or using ssh+bash/perl/Python/nodejs

Monitoring

- Nagios, Monit, Pingdom, …
  - You don’t want to be the last one to know production is down, trust me, you don’t!
- Pager Duty, Ops Genie for alert escalation
  - have a good escalation policy
- Logstash, Fluentd, Apache Flume, scribe, or rsyslogd
  - Log everything… disk is cheaper than your hours of debugging
  - disk space concern? Logrotate to the rescue!
- New Relic, Data Dog, Cloud Watch

System

Package management: YUM, Apt-get

htop!

- VIRT vs RES vs SHR

service, systemctl, /etc/init.d

iostat

netstat

sed, awk, cut, grep/egrep, sort, uniq, head, tail, more, less, find, uname, wget, curl, sudo, dmesg, netcat, ssh, scp, ps, lsof, tar, gzip, touch, which, echo, cat, chmod, chown, chgrp, bash, w, uptime, man

What about Docker?

Not enough hand-on experience to comment

Virtualbox works for me, so I am sticking with it. Vagrant is good if you want to have tool to manage your virtualbox VMs.

Why docker? light weight and simple setup to have production quality setup on your computer.

Network

- PING!
- But Ping is so old school, use mtr!
- telnet!
  - Challange: can you fetch google homepage using telnet??
  - telnet is very useful for connectivity check
    - how to tell the differences between firewall blocking and no app/service listening to the port?
- Wireshark, extremely powerful, also extreme complex
- Nginx (not just a web server…)

Security

XSS Scanner: OWASP Xenotix, w3af

SSH!!!!!!

SELinux

Sudo, no one login as root

Suricata, Kismet, etc for IDS

Check and read **OWASP**!!!!

So What is DevOps?

Tools?

Automation?

Test? TDD? BDD?

Jenkins?

Chef, Puppet?

AWS?

Monitoring? Alert? Dashboard?

Security?

DevOps is

Empathy

Communication

Ownership

Responsibility

Progressive

Quality

don’t be an asshole…

helping the team

DevOps is not

- about tools… all the greatest tools in the world, still no one want to work with an asshole
- about CI/CD… deliver a broken software is not DevOps
- about automation… automated error delivery system is not DevOps
- about monitoring… that poor guy can’t click on a button on a webpage really doesn’t care if you get paged in the middle of night, he just wants to click to go to the next page!
- about agile, but it does work well with Agile Manifesto
- QA replacement

Disclaimer

All slides before are strictly IMHO.. :) Enjoy coding, testing, deploying and all the midnight calls! When in doubt, ask Google…

Oh, Windows, what about windows? Please ask Weihan… LOL