Introduction to infrastructure as code in Terraform

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data rabbit

About me/quick introduction

- **Michal Mikolajczak**

- Worked mainly in companies combining the fields of IT and medicine

- Primarily on stuff connected to machine learning and (medical) image processing

- But as all this fancy methods/functionalities must finally be deployed/delivered to client at some point – had also quite a lot of dealing/exposure to DevOps/infrastructure

- Currently associated with **Kardiolytics** – start-up analysing cardiac blood vessels state using CT scans, and **Datarabbit** – small ML/cloud-focused software house


OUTATIME

Downsides of manual deployment

- Time-consuming,
- Poorly scalable,
- Error-prone,
- Simply frustrating,

SHOULDN'T HAVE DONE THAT

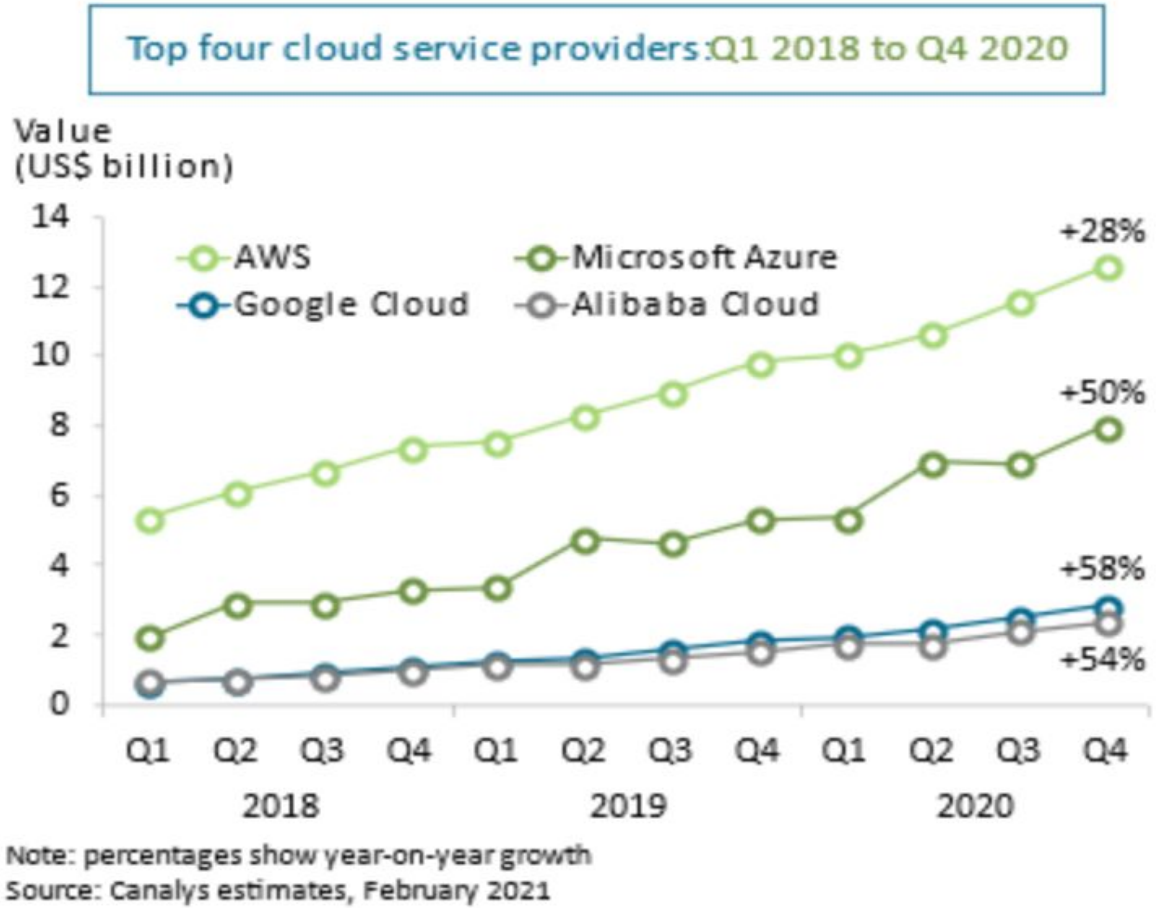
I SHOULD NOT HAVE DONE THAT

Downsides of manual deployment

- Time-consuming,
- Poorly scalable,
- Error-prone,
- Simply frustrating,

In conjunction, this leads to more outages as well as “harder” and in consequence less frequent deployments.


aws



Note: value on y-axis refers to revenue

“451 Research’s most recent Voice of the Enterprise: Cloud Transformation survey finds that cloud is now mainstream with 90% of organizations surveyed using some type of cloud service. Moreover, analysts expect 60% of workloads to be running in some form of hosted cloud service by 2019, up from 45% today. “

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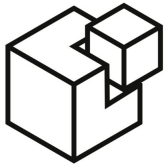
DevOps is a set of ideas, processes and tools with aim to shorten systems delivery lifecycle, while providing continuous delivery and high software quality.


code
plan
build
Dev
test
release
deploy
operate
Ops
monitor

Infrastructure as a code – benefits

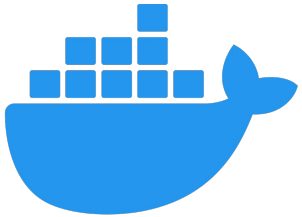
- Self-serving,
- Fast,
- Safe/less error-prone,
- Allows version control,
- Validatable (static analysis, tests, reviews),
- Reusable,
- ...

HashiCorp
Packer



SALTSTACK

puppet



docker

CHEF

ANSIBLE

Apache
MESOS™

CloudFormation

HashiCorp
Terraform

kubernetes

Terraform

- Open-source infrastructure as code software tool,
- Focus on infrastructure provisioning,
- Cloud agnostic,
- Uses declarative language/syntax,
- Agentless/masterless,
- Very large community, with more than 100 official plugins for different providers,


Let's go. In and out. 20 minute adventure.


LOONEY TUNES
"That's all Folks!"

Any questions?