Spring Boot Microservices
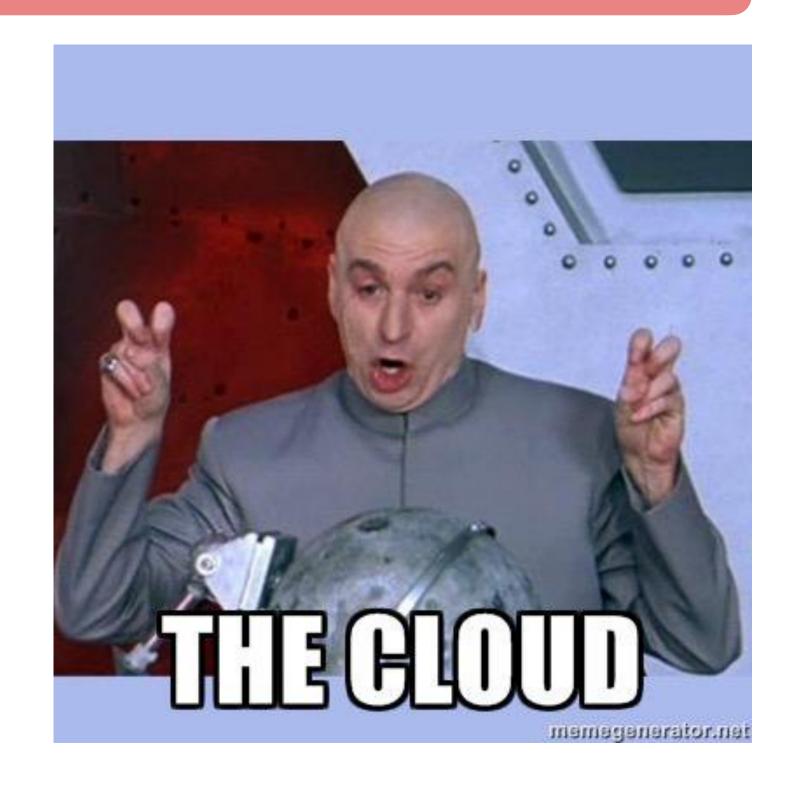
Beginner to Guru

What is the Cloud?
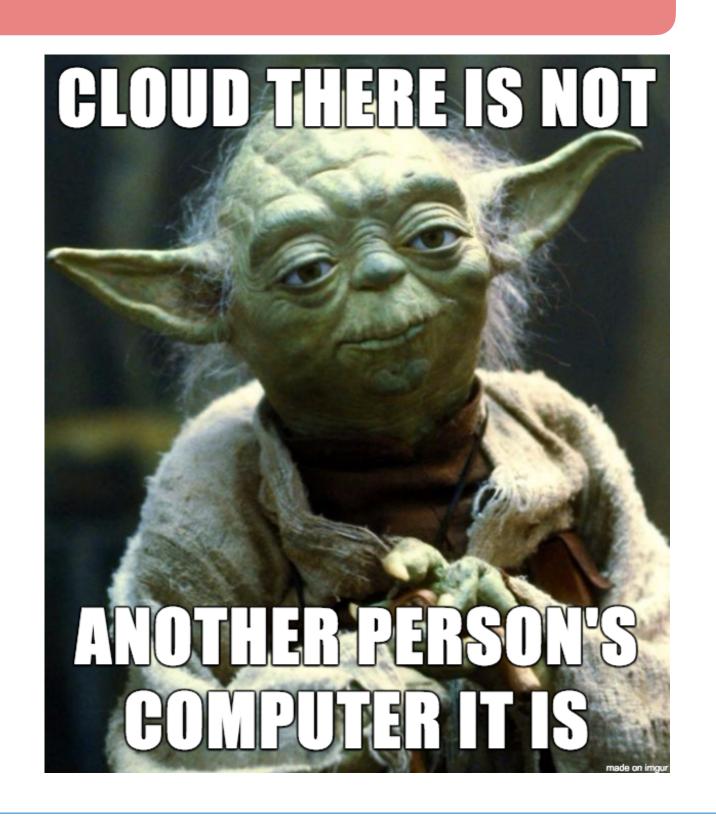
What is the Cloud?

- The 'Cloud'?

- The Cloud is not a physical object, but more of a concept.

- The 'Cloud' allows you to use virtual servers and services.

- The 'Cloud' abstracts the physical underlying hardware and services

- Amazon Web Services for example:

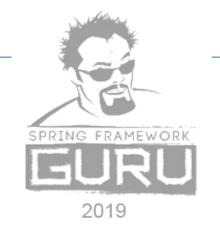 - Allows provisioning in zones - a physical region made of many data centers, appearing as one

Cloud != Virtual Machines

- Virtual Machines are easy to provision in cloud environments

- SFG Website runs on a AWS Virtual Machine

- This is not 'Cloud' Computing

- Virtualization is not Cloud Based Architecture

- Subject of heated debates!

CLOUD THERE IS NOT

ANOTHER PERSON'S
COMPUTER IT IS

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Cloud Based Architectures

- Microservices are a key aspect of Cloud Based Architectures

- Cloud based architectures focus on abstraction, redundancy, and avoidance of single point of failures

- For example saving a file to AWS S3

  - File is copied to multiple servers, and in multiple data centers before the 'save' is confirmed.

  - Thus protected from server failure, and even loss of a data center.

Microservices in Cloud Based Architectures

- Typically multiple instances of microservices are deployed in a cloud environment

- Important to reliability of the application as a whole

  - If a service instance is terminated, another running instance can assume the workload

- Netflix as a tool called Chaos Monkey who's job is to randomly terminate components to ensure there are no single points of failure

Common Microservice Deployment Tools

- This is very large and diverse area!

- AWS Beanstalk

- AWS ECS / EKS

- Kubernetes

- Docker Swarm

- Red Hat OpenShift

- Cloud Foundry

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