Cloud Microservices Programing Introduction

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Workshops Agenda

- Microservices introduction
- Spring boot and rest webservices
- Design patterns for microservices
- Config Servers
- Service Registry
- Client side & Centralized load balancing
- Circuit breaker
- Kafka and Redis Introduction
- Spring cloud streaming
- Service call tracing
- Security

Today is Microservices introduction

- What are microservices?
- What is domain driven design?
- Microservices based application architecture
- Run the sample demo
- Our workshops sample project

What are microservices?

- Breaking the application into smaller pieces which compose together
- Each component is continuously developed and separately maintained
- The application is then simply the sum of its constituent components
- In contrast to a traditional, "monolithic" application which is all developed all in one piece
- There are other benefits:
- There are other benefits:
  - **Developer independence**: Small teams work in parallel and can iterate faster than large teams.
  - **Isolation and resilience**: If a component dies, you spin up another while and the rest of the application continues to function.
  - **Scalability**: Smaller components take up fewer resources and can be scaled to meet increasing demand of that component only.
  - **Lifecycle automation**: Individual components are easier to fit into continuous delivery pipelines and complex deployment scenarios not possible with monoliths.
  - **Relationship to the business**: Microservice architectures are split along business domain boundaries, increasing independence and understanding across the organization.

How to break the application into smaller pieces

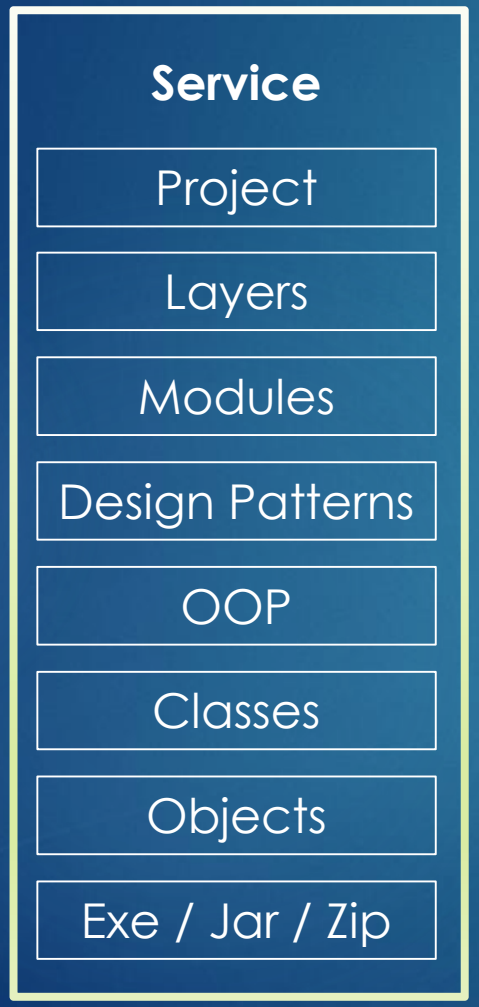
Domain Driven Design can be a good starting point

What is domain driven design

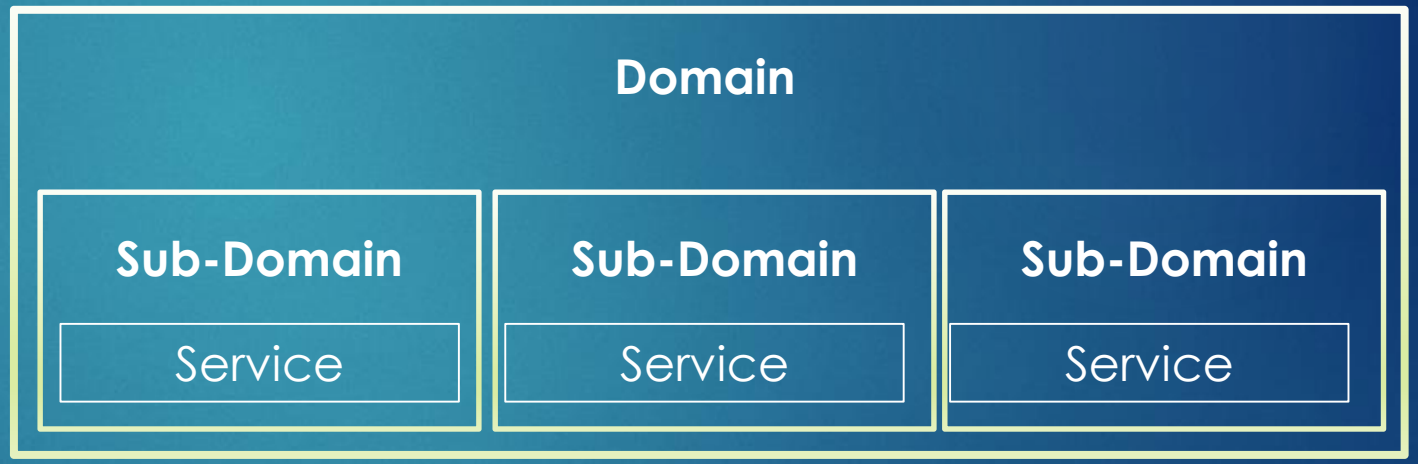
- A formal definition:
  - When we are developing a software our focus shouldn't be primarily on technology, it should be primarily on business or whatever activity we are trying to assist with the software, the domain.
  - Specifically we approach that by trying to develop models of that domain and make our software conformed to that.
- Domain driven design is a way of looking at software from top down

What is top down?

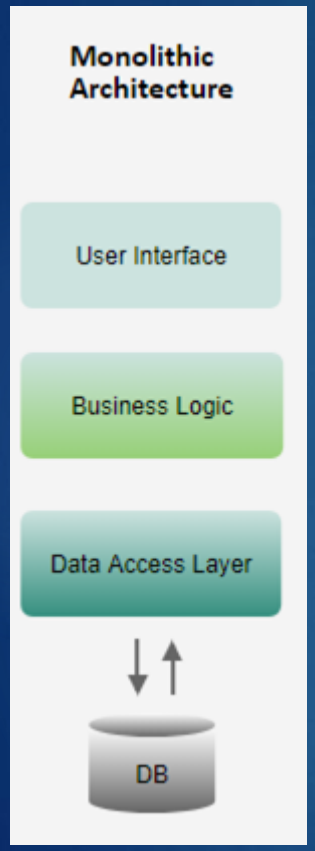
Tactical Design Tools

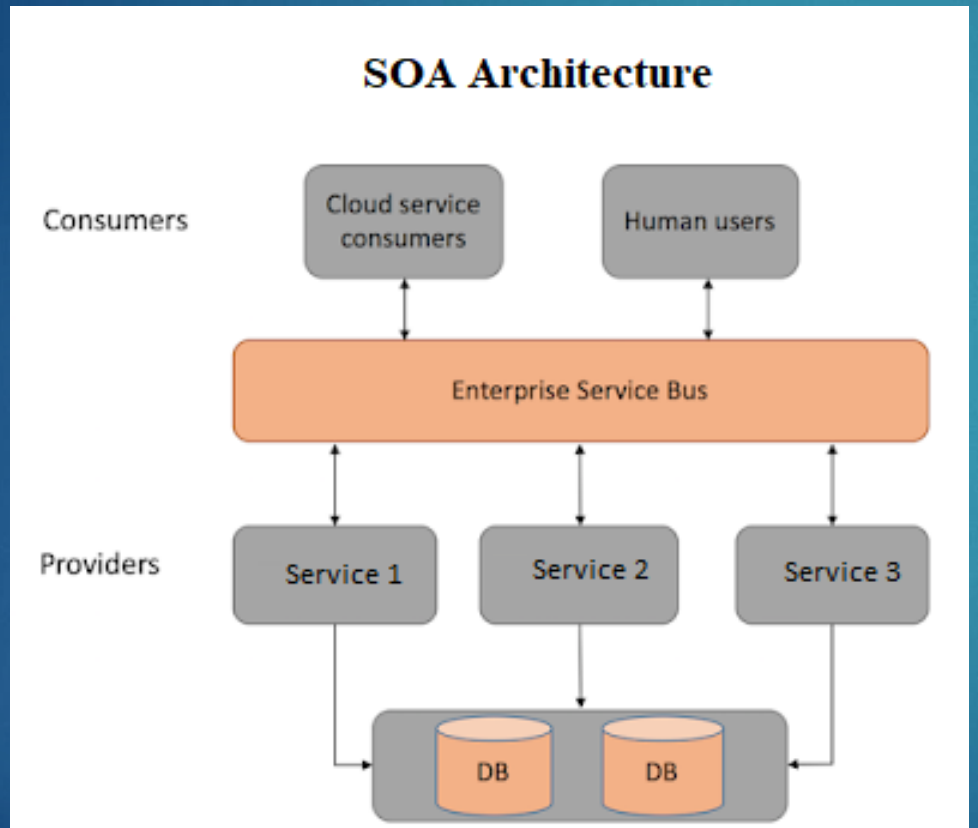


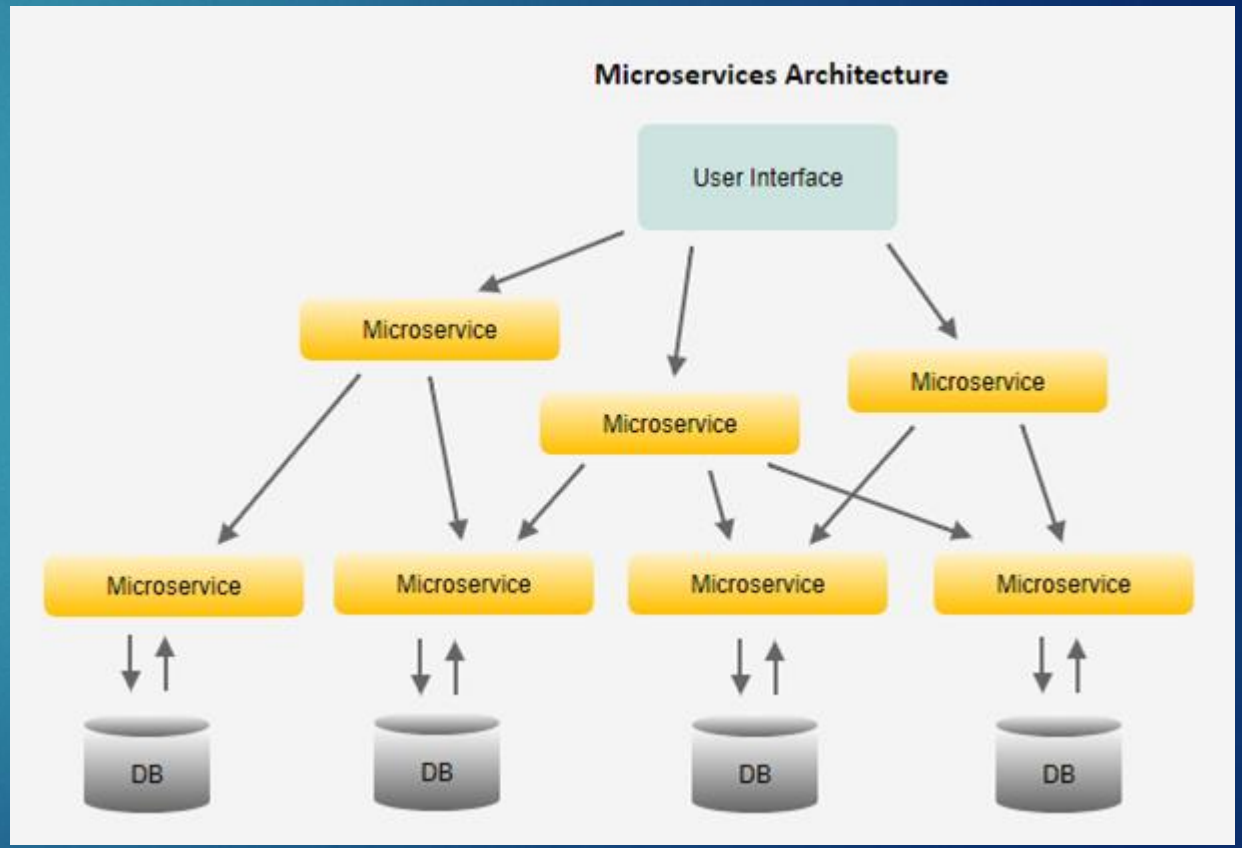
Strategic Design Tools



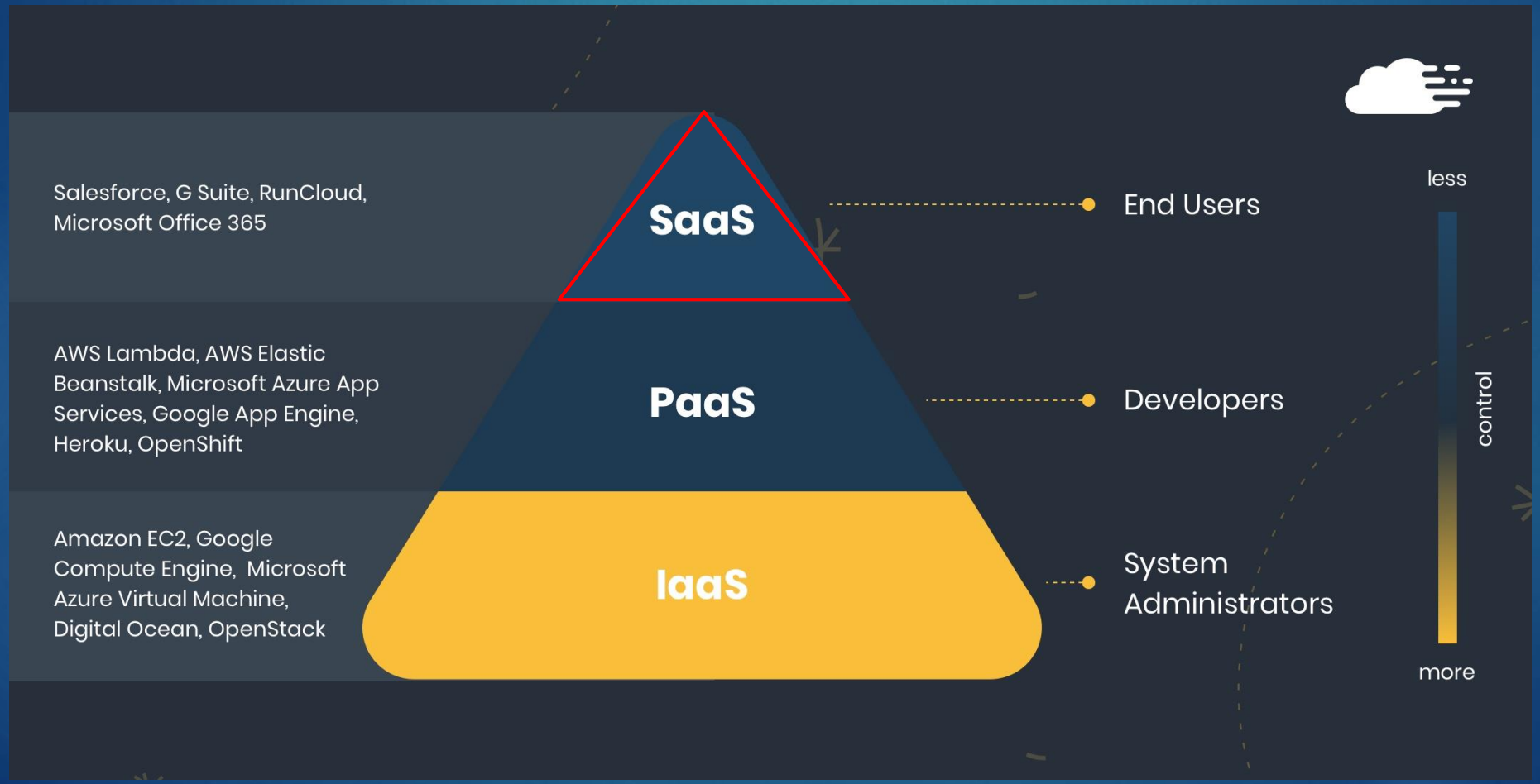
What will our application be like when we break into microservices?



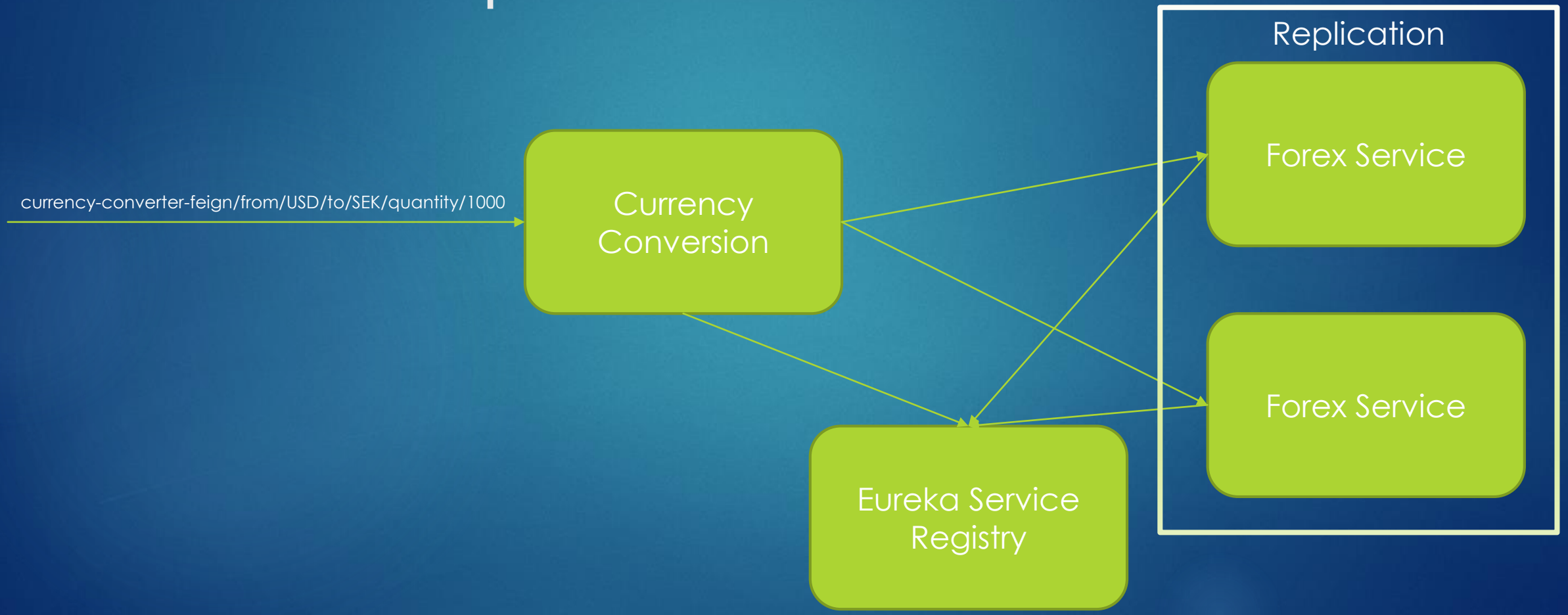




Cloud Pyramid



Run sample demo



Our workshops sample project