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# Cloud Native Java

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Platform Architecture  
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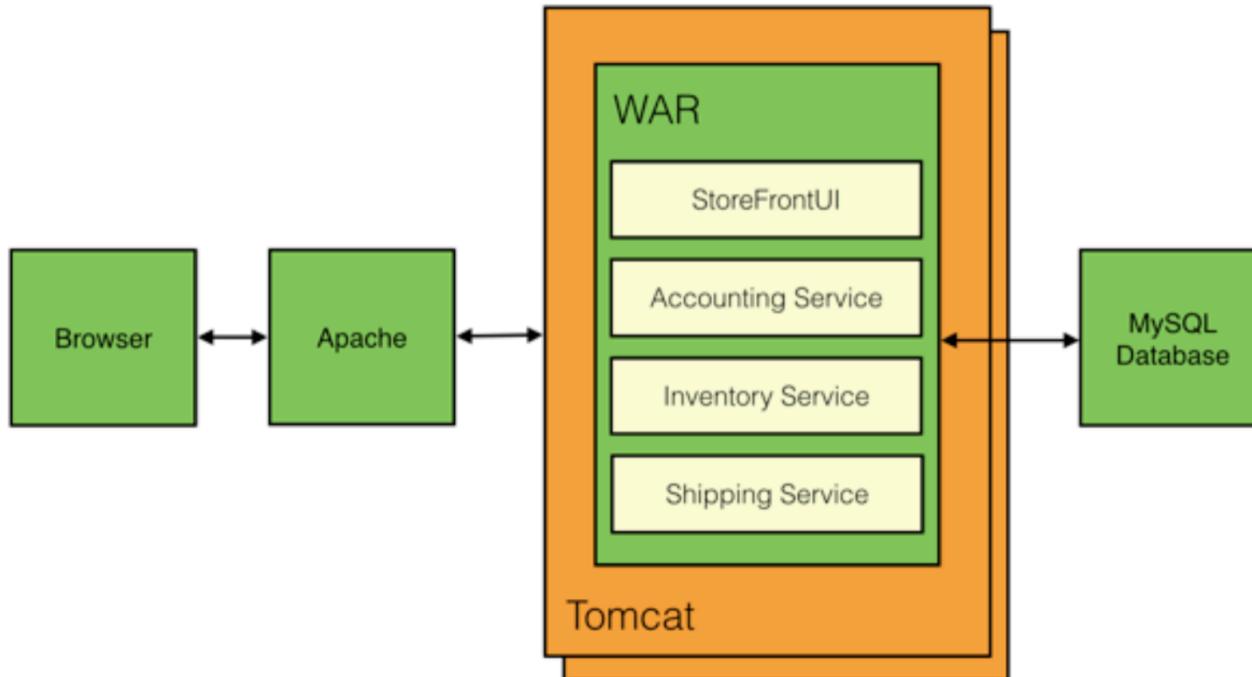
# Agenda

	Topics
1	What is Cloud Native Java
2	Spring Boot
3	Spring Cloud
4	Spring Cloud Data Flow
5	Where do we go from here?

# Cloud Native Java

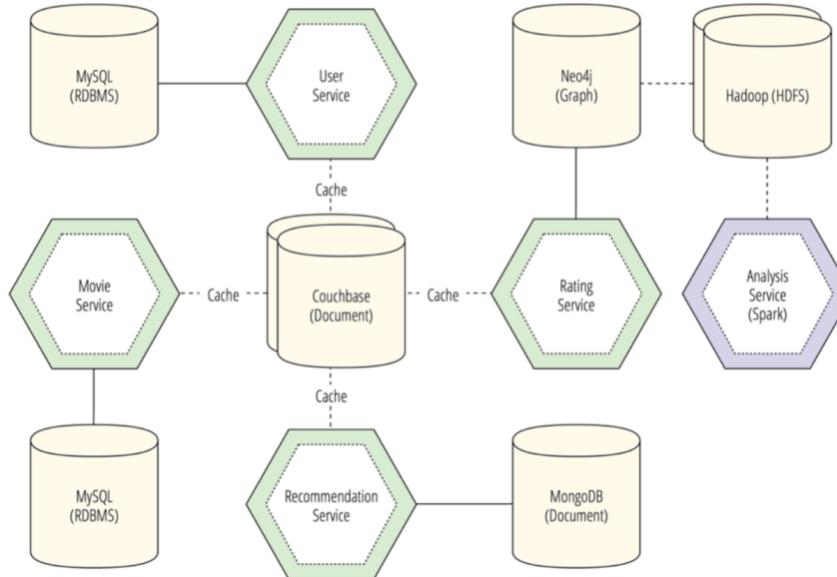
12-factor applications written in Java,  
ready to run anywhere, typically  
microservices

# Monolithic Architectures

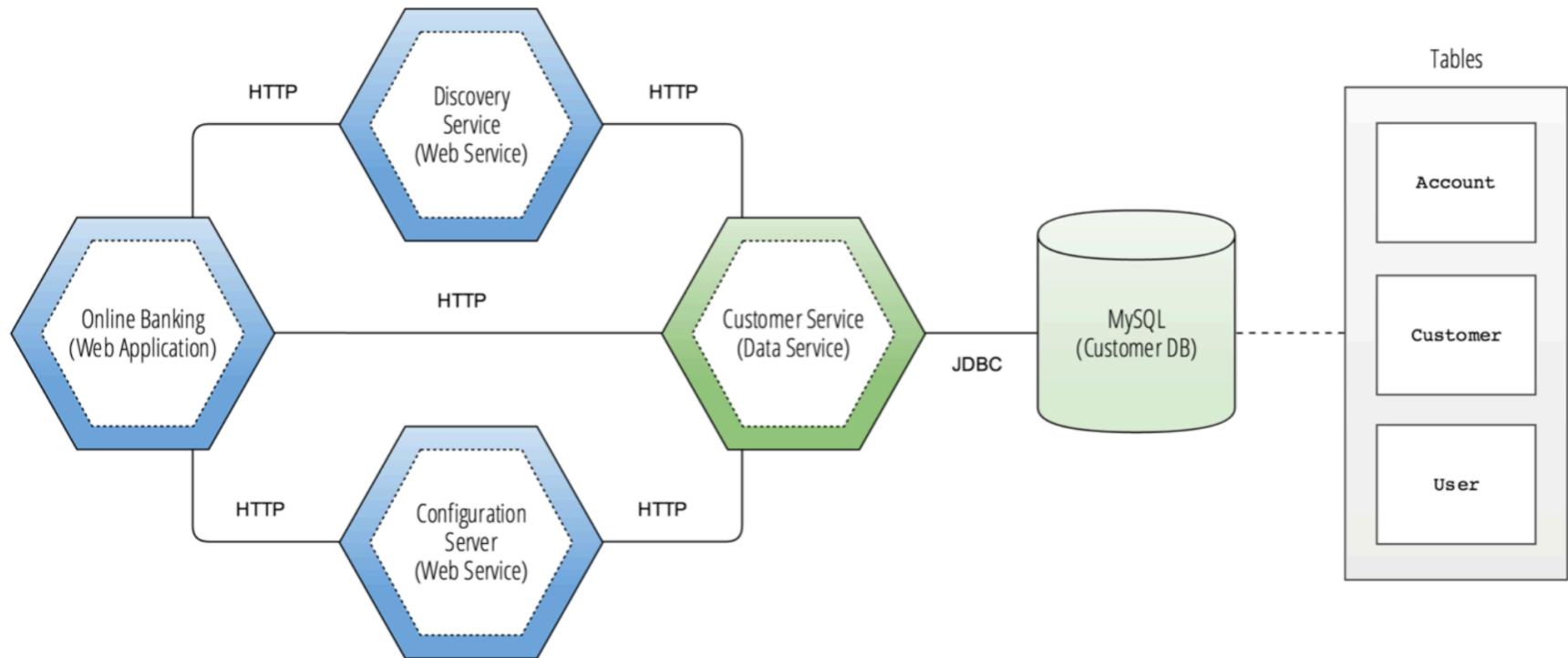


# Microservice Architecture

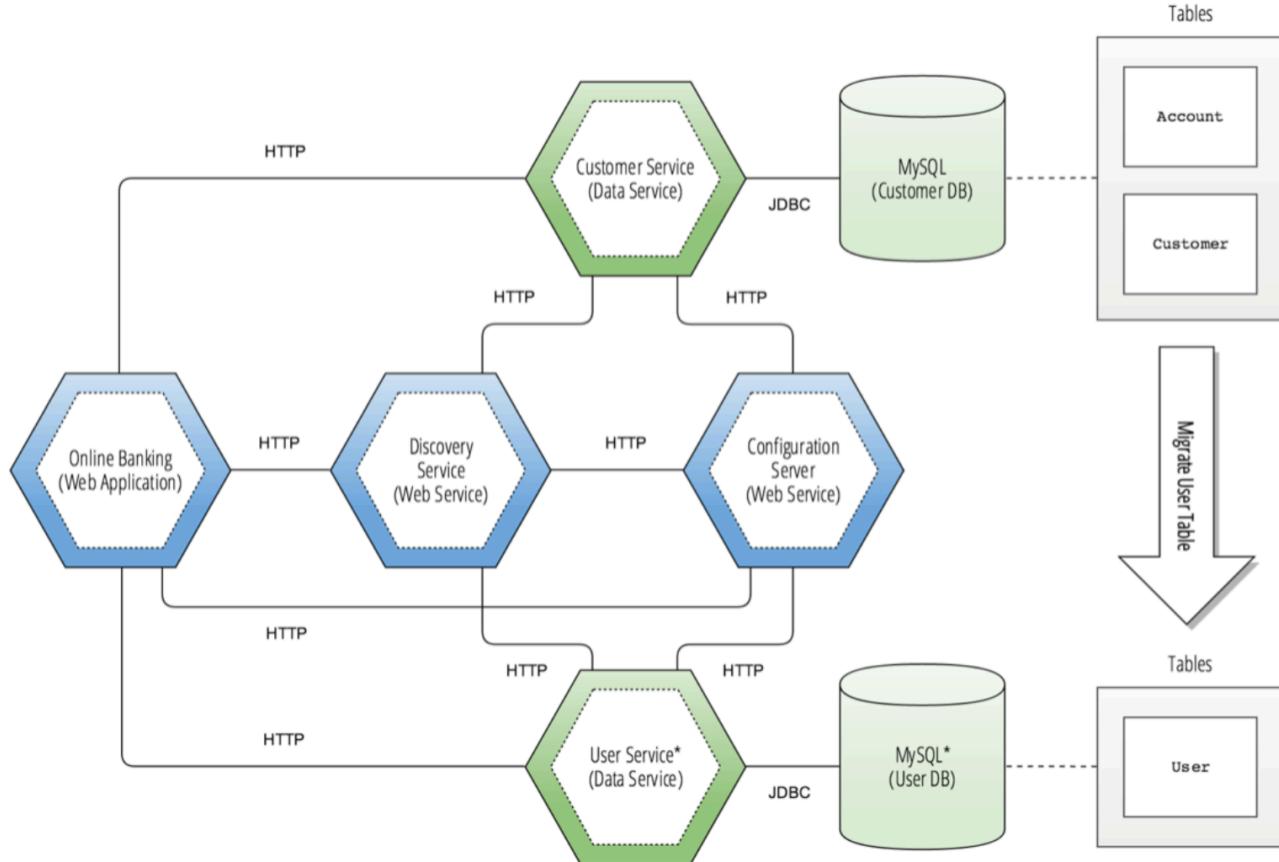
- One service, one database
- Shared caches provided by platform for consistency



# Monolithic to Microservice



# Monolithic to Microservice



# What is Spring Boot?

# Who doesn't like cake?



**Phil Webb**  
@phillip\_webb



Following

For those on [reddit.com/r/java/](https://www.reddit.com/r/java/) saying it's Spring Boot is "the framework for a framework" here's a diagram:



RETWEETS  
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7:54 PM - 8 Sep 2015

# Spring Boot

- Rapidly build production ready 12 Factor Apps
- Focus on the logic not the plumbing
- Get started quickly with start.spring.io



The screenshot shows the Spring Initializr web interface at [start.spring.io](http://start.spring.io). The title bar says "Spring Initializr" and the address bar shows "start.spring.io". The main heading is "SPRING INITIALIZR bootstrap your application now". Below it, a button says "Generate a [Maven Project] with Spring Boot 1.3.2".

**Project Metadata**

- Artifact coordinates: Group com.example, Artifact demo, Name demo
- Description: Demo project for Spring Boot
- Package Name: com.example
- Packaging: Jar
- Java Version: 1.8
- Language: Java

**Dependencies**

- Add Spring Boot Starters and dependencies to your application
- Search for dependencies: Web, Security, JPA, Actuator, Devtools...
- Selected Starters: Web, JPA, Security, Actuator, Rest Repositories

At the bottom, there is a note: "Too many options? Switch back to the simple version." and a "Generate Project" button.

## Let's see it action

- Download a spring boot starter from start.spring.io
- Import into IDE
- Add a REST Controller with Hello World Endpoint
- Integrate security
- Change endpoint to return logged-in user
- Profit \$\$\$



# What is Spring Cloud?

# Turn Spring Boot microservices into Distributed Applications



# Spring Cloud

- ✧ Service Discovery (Eureka)
- ✧ API Gateway (Zuul/Ribbon)
- ✧ Config Server
- ✧ Circuit Breakers (Hystrix, Turbine)
- ✧ Distributed Tracing (Zipkins)

# What is Spring Cloud Data Flow?

# Spring Boot Microservices into Data Microservices



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@phillip\_webb



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# What is Spring Cloud Data Flow?

a cloud native programming and operating  
model for composable data microservices  
on a structured platform



# Spring Cloud Data Flow

- ✧ The Artist Formerly Known as SpringXD
- ✧ Declarative data pipelines
- ✧ Scalable data services
- ✧ Automatic Fault Tolerance and Failover
- ✧ Enterprise Integration Patterns ready for the Cloud
- ✧ Use case: ETL, Real Time Analytics, Batch Processing, many more

## Quick view

- Deploy the Spring Cloud Data Flow Server
- Deploy two Data microservices to SCDF
- Connect to SCDF Server
- Deploy a stream to pipe messages to log
- Profit \$\$\$



## Quick view

Cloud Native Roadshow. Coming to a city near you!

<http://pivotal.io/event/pivotal-cloud-native-roadshow>

Want your own workshop? We like to travel!

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We have discount codes too.





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