



# Data Pipelines in the Cloud

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[\*\*https://github.com/cppwfs/SD2017\*\*](https://github.com/cppwfs/SD2017)

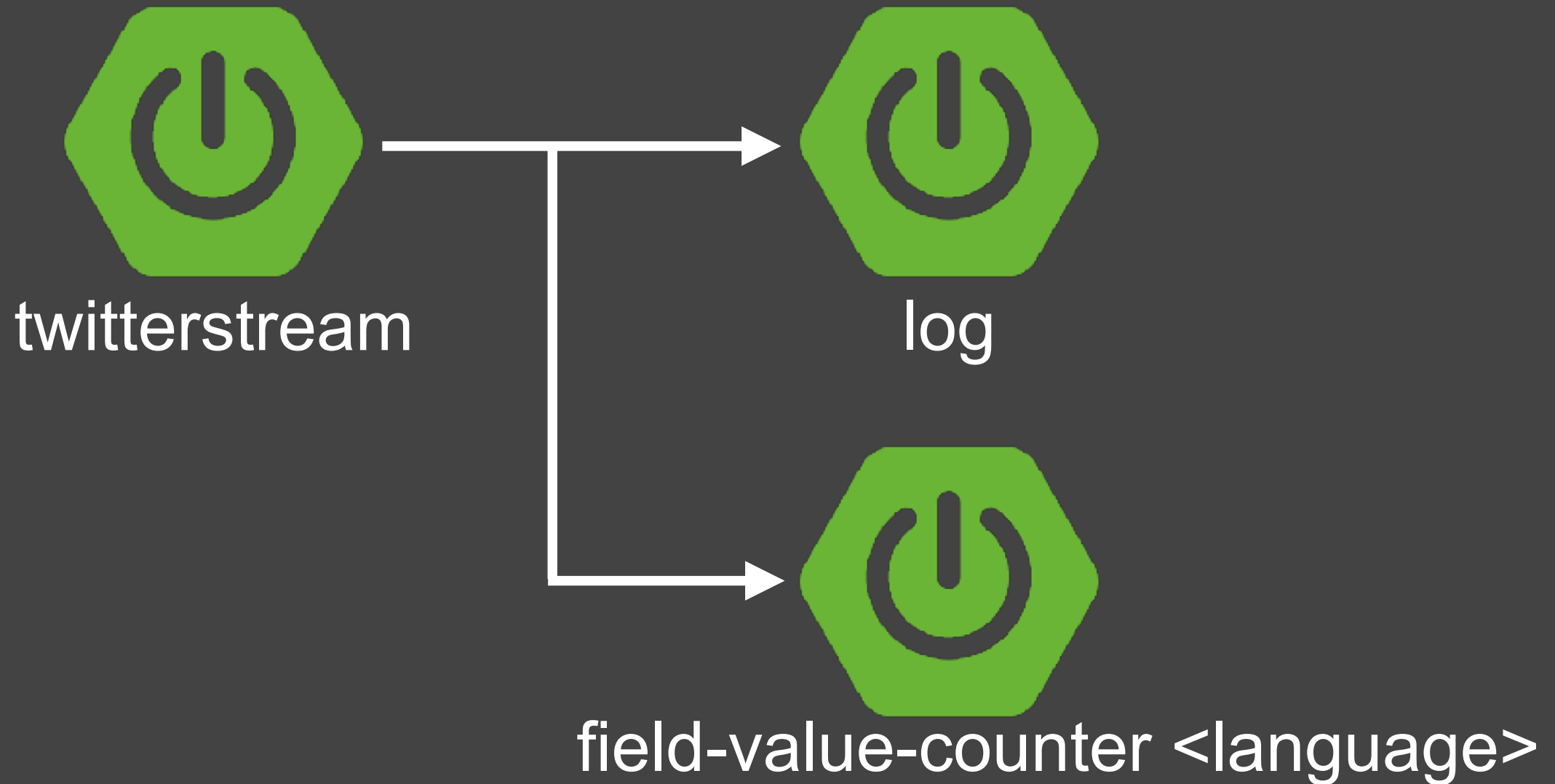
# Data Pipeline Story



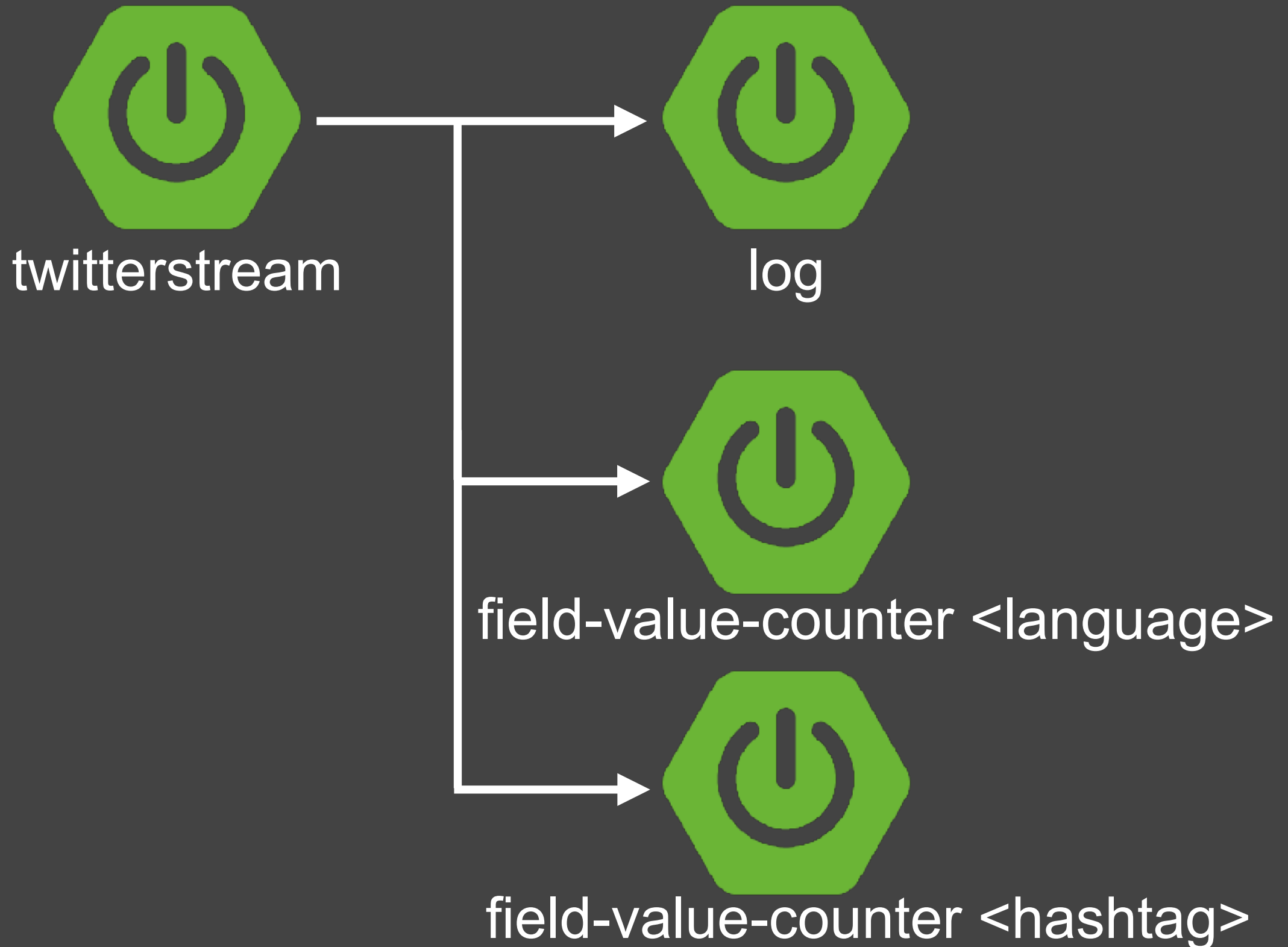
# Let's capture some stats



# Let's capture some stats



# Let's capture some stats





# A quick demo





Ok... Where did this good stuff  
come from?



# Two types of pipelines:

Event

Batch





# Two projects for pipelines:

## Spring Cloud Stream

## Spring Cloud Task



# Spring Cloud Stream

Spring Cloud Stream is a framework for building message-driven microservices.



# Spring Cloud Stream

```
@SpringBootApplication
@EnableBinding(Source.class)
public class StreamdemoApplication {

    public static void main(String[] args) {
        SpringApplication.run(
            StreamdemoApplication.class, args);
    }

    @Bean
    @InboundChannelAdapter(value = Source.OUTPUT)
    public MessageSource<String> timerMessageSource() {
        return () -> new GenericMessage<>(
            new SimpleDateFormat().format(new Date()));
    }

}
```



# Spring Cloud Task

Spring Cloud Task allows a user to develop and run short lived microservices.



Billing Run

# Spring Cloud Task

```
@SpringBootApplication
@EnableTask
public class ExampleApplication {

    @Bean
    public CommandLineRunner commandLineRunner() {
        return strings ->
            System.out.println("hello world");
    }

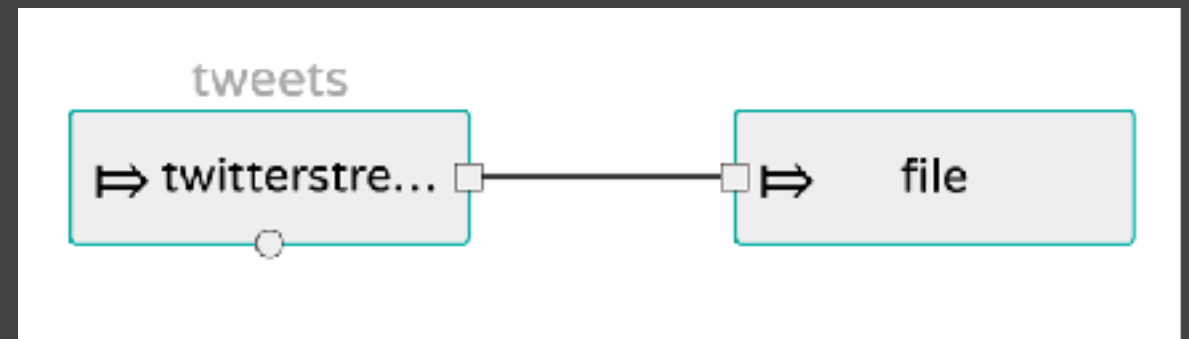
    public static void main(String[] args) {
        SpringApplication.run(
            ExampleApplication.class, args);
    }
}
```

Spring Cloud  
Data Flow is a  
Microservices  
toolkit for  
building **data  
integration  
and real-time  
data  
processing  
pipelines.**



1

User submits a DSL  
to SCDF



2

Parse the DSL; resolve  
(Spring Boot) App-bits



twitterstream



file

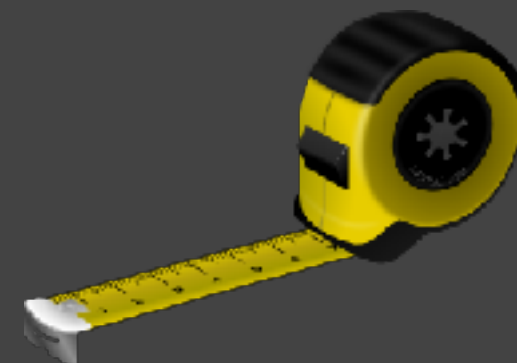
3

Push App-bits; bind  
services; stage;  
deploy



4

Operational metrics  
and monitoring



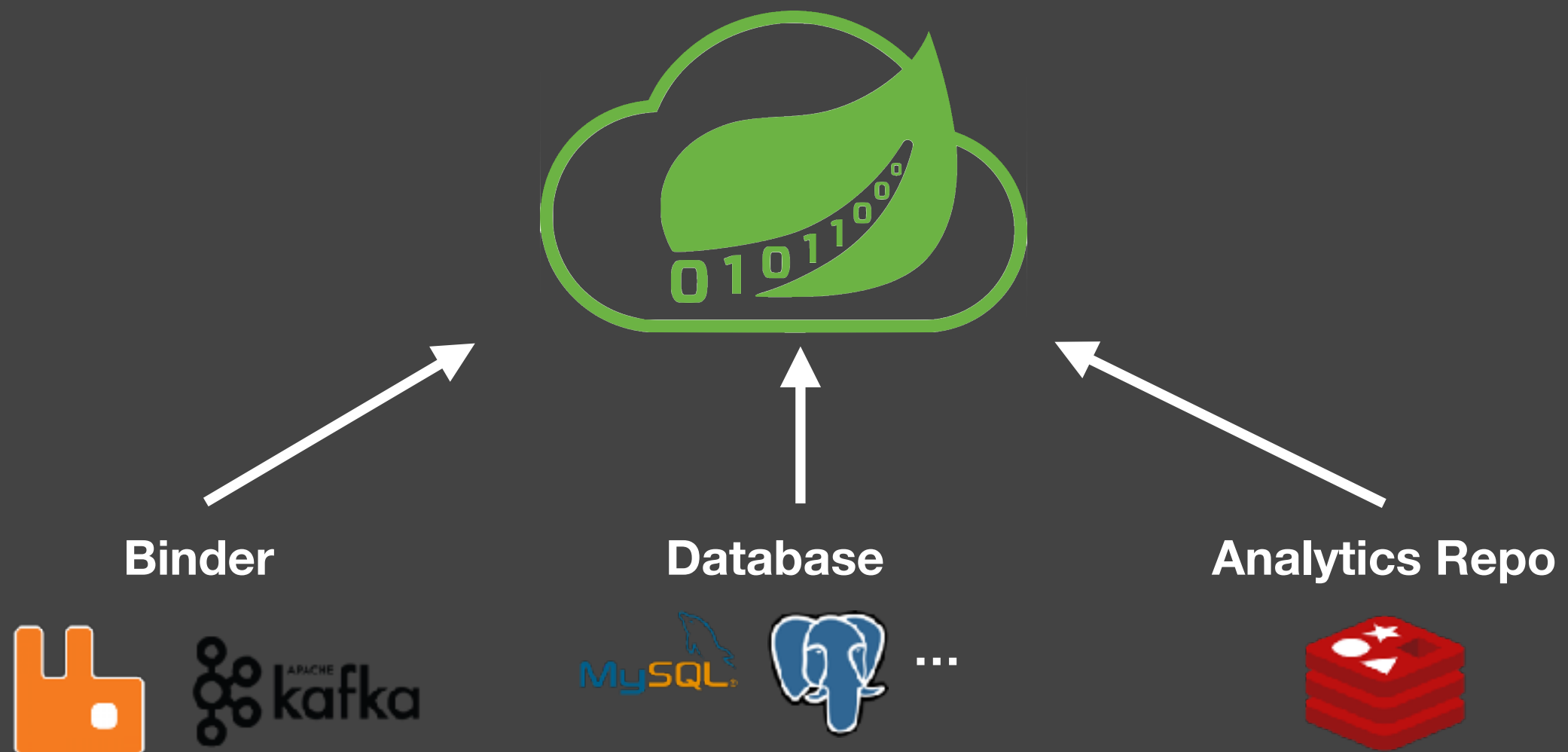
# Another quick demo





# Startup a Spring Cloud Data Flow Server

## Spring Cloud Data Flow Server

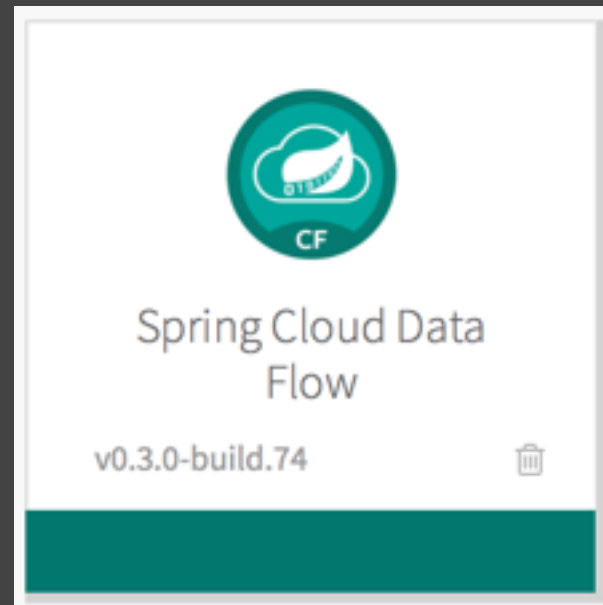




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**Cloud Foundry®**

- Ease of Use
- Security
- Reliability
- Scalability

# Spring Cloud Data Flow tile

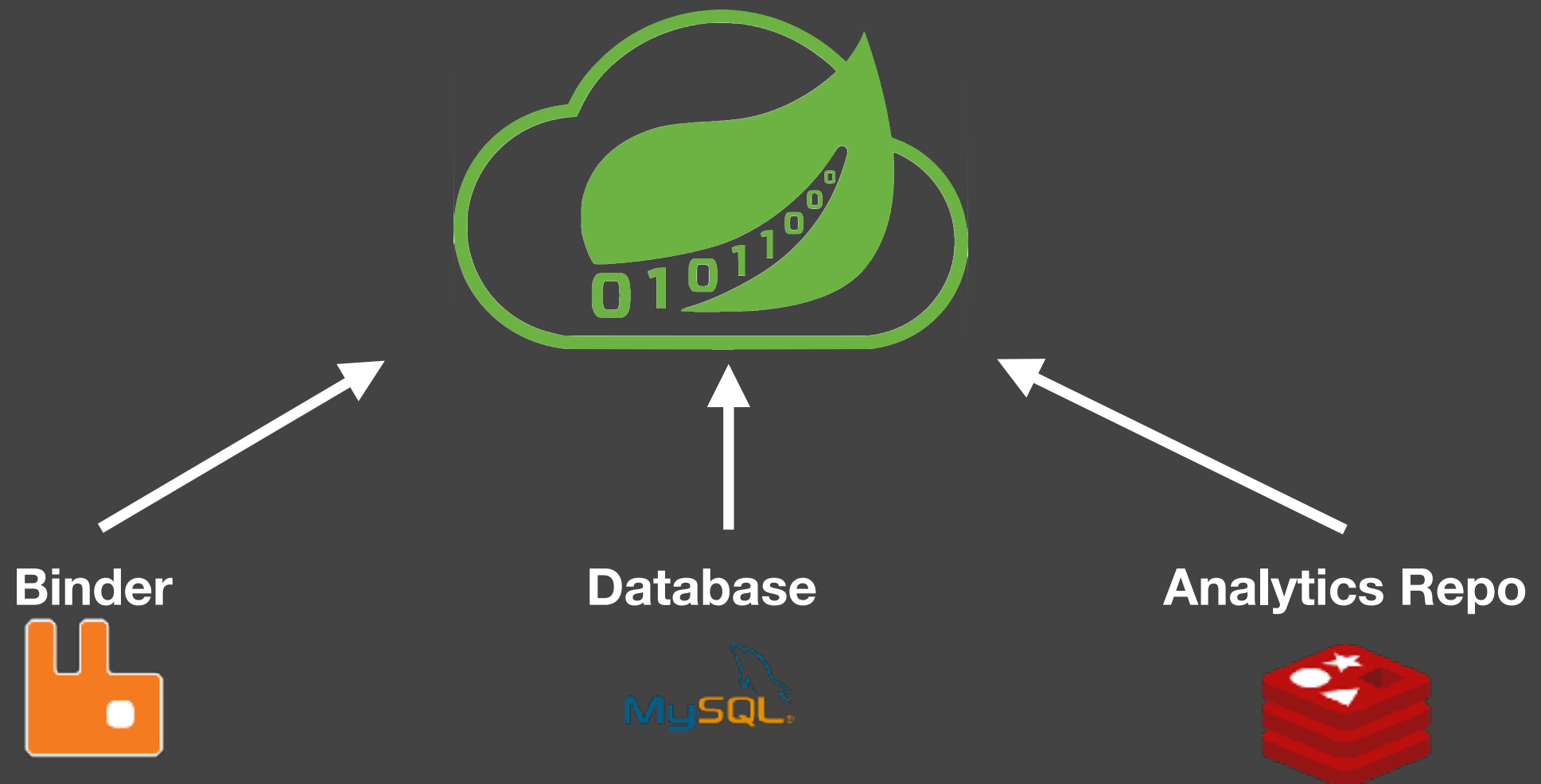


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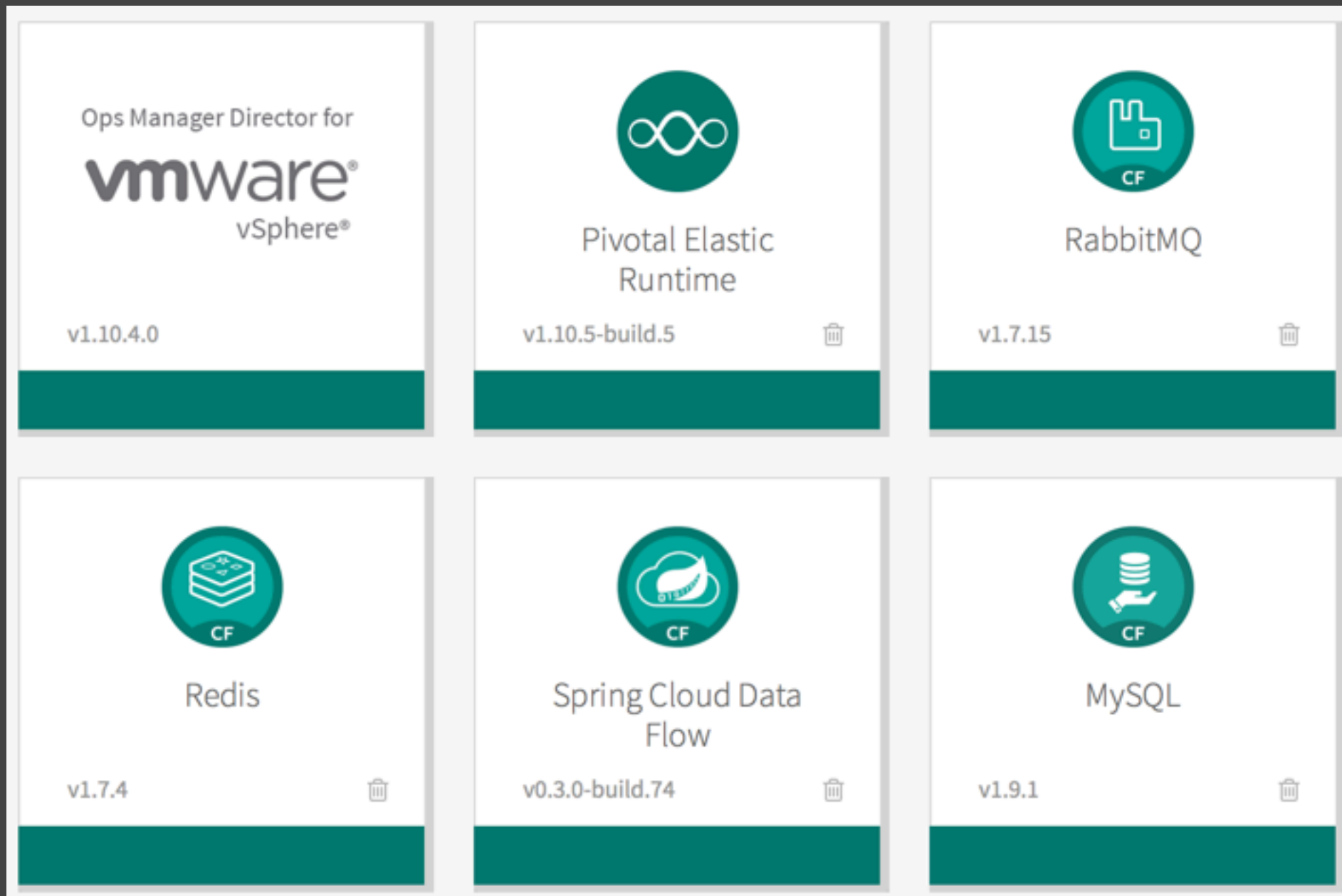
# Default Services

## Spring Cloud Data Flow Server





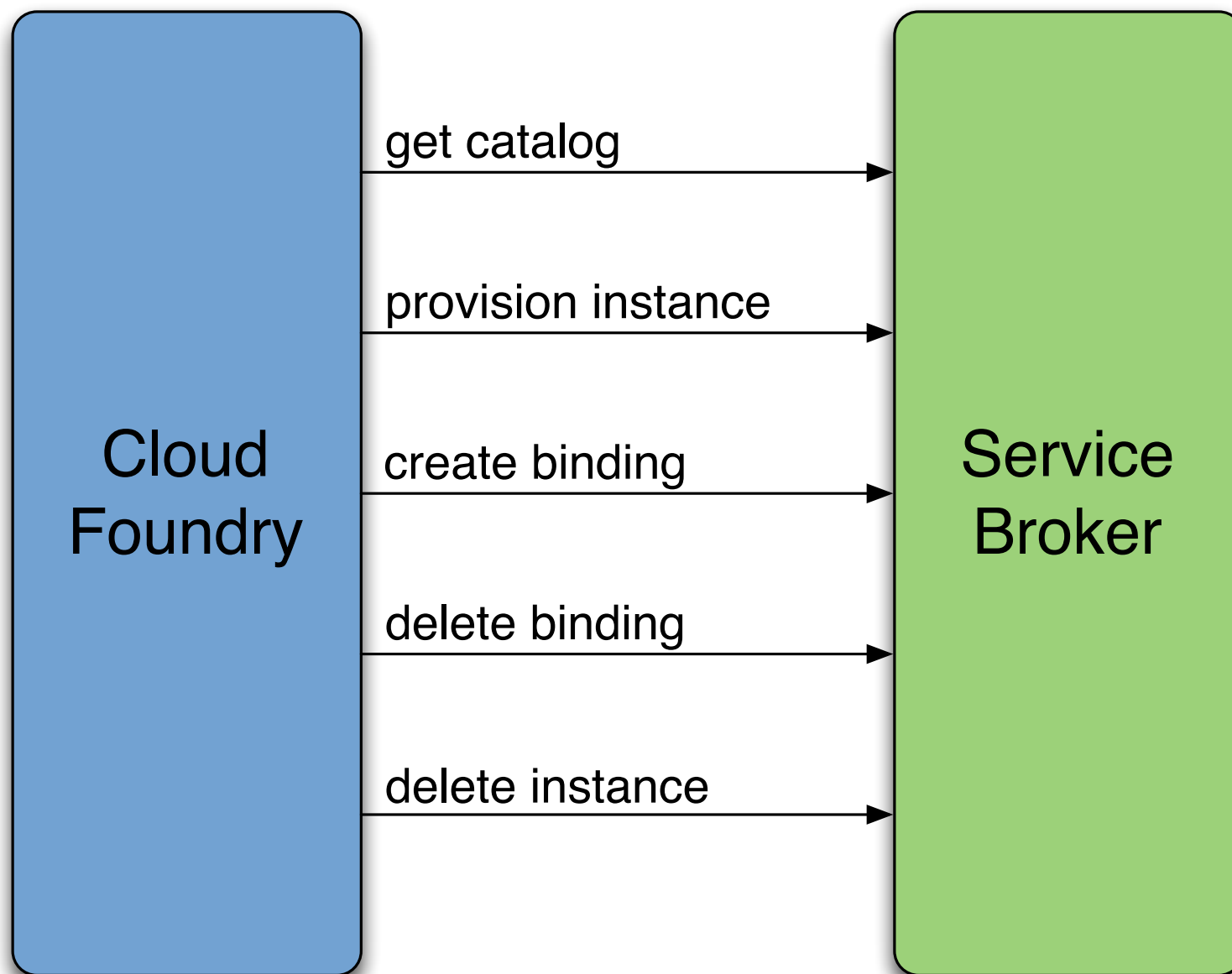
# SCDF on PCF



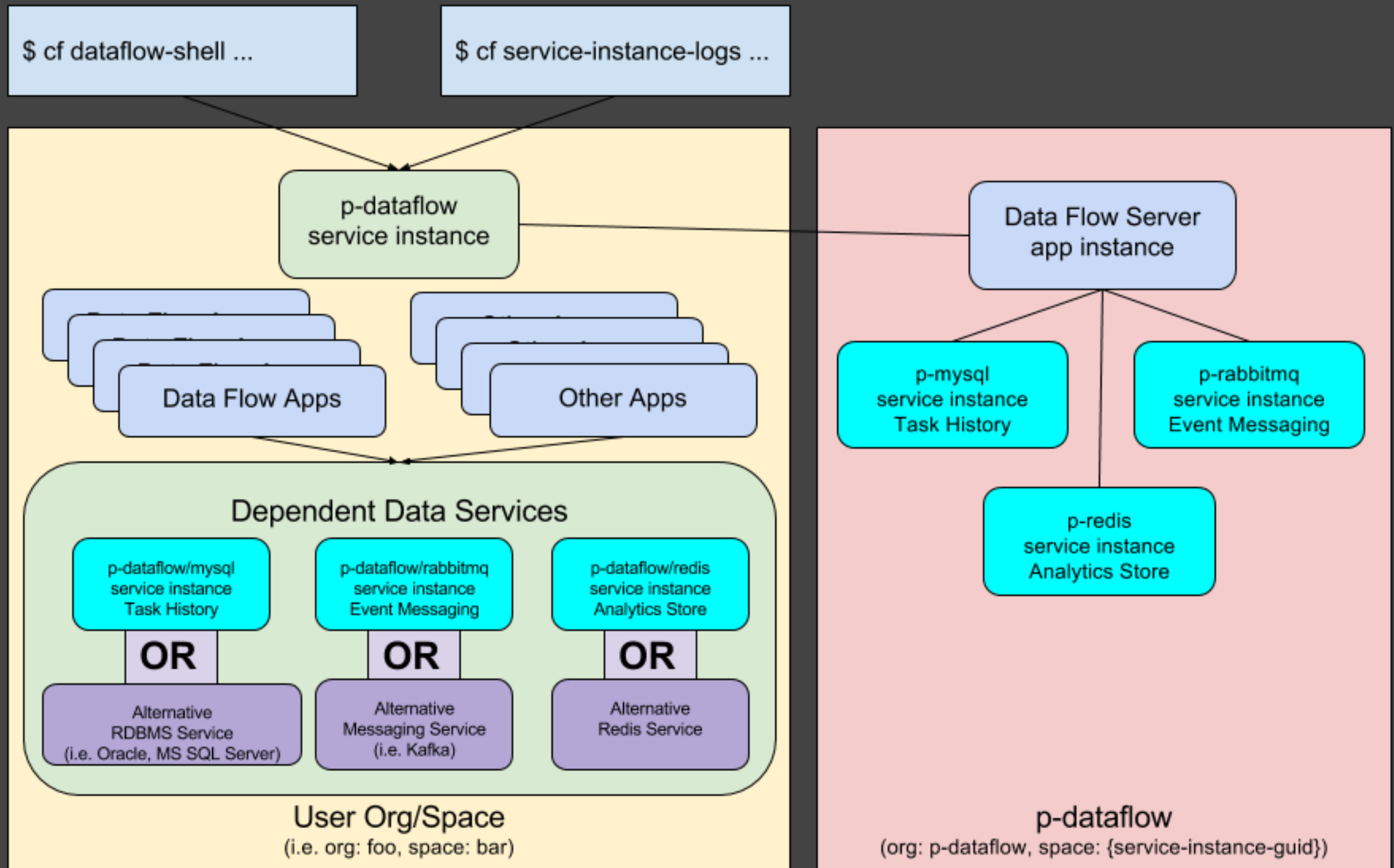
# Deploy

```
$ cf create-service p-dataflow standard df1
```

# Service Broker



# Architecture



# Demo





# Security

Authenticate using OAuth 2 and UAA

Authorize endpoints using the Cloud Foundry  
service instance permission model

# User-Provided Services

User-provided service instances enable developers to use services that are not available in the marketplace with their applications running on Cloud Foundry.

# User-Provided Services

## Spring Cloud Data Flow Server





**<https://github.com/cppwfs/SD2017>**

The background features several overlapping circles in two shades of green: a light sage green and a slightly darker, muted green. A thick, white, curved swoosh or arc sweeps across the middle of the image, passing behind the central text. The overall composition is clean and modern.

**THANKS!**