



Pivotal®

Cloud Native Microservices and Orchestration

Ilayaperumal Gopinathan
Software Engineer @ Spring team
Pivotal

Topics

- Cloud Native Microservices
- Orchestration - Spring Cloud Data Flow
- Continuous Delivery - Spring Cloud Skipper

Cloud Native Applications

- Designed for Cloud Computing Environments
 - Efficient resource utilization
 - Resource isolation
 - Resilient

Cloud Native Applications

- Orchestration of applications
- Write once deploy on any cloud

Cloud Native Development

- Process (Monolith -> Microservices)
- Software Delivery Lifecycle
 - Continuous Delivery/Upgrade
 - Devops
 - Assumes capabilities of the cloud
 - Develop -> Deploy -> Manage

Microservices

- Self contained applications
 - Can be individually
 - Replaced
 - Upgraded
 - Scaled
- Size doesn't matter

Micro-services in the Cloud

- Typical Distributed Systems
 - Cloud Native capabilities
 - Failover
 - Scalability
 - Isolation
 - Continuous Deployment
 - Operational Control

Develop Micro Services

- Using Spring Boot
 - Quick and easy
 - Avail out of the box features
 - Auto configuration
 - Actuator endpoints
 - Configuration Management

Cloud Native Development

- Patterns
 - Netflix OSS
 - Framework
 - Spring Cloud

Spring Cloud Stream

- Message Driven microservices
 - Stream Oriented
 - Connected to message broker
 - Builtin resiliency
 - Cloud Native

Spring Cloud Task

- Short lived processes
- Batch processing scenario
- Event listeners

Spring Cloud Scheduler

- Scheduler for Spring Cloud Task applications
- Use of Platform schedulers

Spring Cloud Deployer

- SPI for deploying applications into modern runtimes
- Deploying Spring Cloud Stream/Task applications
 - Local
 - Cloud Foundry
 - Kubernetes

Spring Cloud Data Flow

- Portable Orchestration Layer for Stream/Task applications
- Stream and Task DSL
- REST API
- REST Client
 - Shell
 - Web UI
- OOTB Spring Cloud Stream/Task applications
 - for common integration use-cases

PIVOTAL PRESENTATION THEME

Demo

Spring Cloud Skipper

- Package Manager for Spring Boot applications
- Continuous Delivery
 - Install
 - Upgrade
 - Rollback
 - Delete
 - History
- REST API
- REST Client
 - Shell

PIVOTAL PRESENTATION THEME

Demo

Spring Cloud Data Flow + Skipper

- Orchestrate and Continuous Deliver
- Stream Deploy
- Stream Upgrade
- Stream Rollback
- Stream History

PIVOTAL PRESENTATION THEME

Demo

The background of the slide is a teal-colored image of the Golden Gate Bridge, viewed from a low angle looking up at one of the towers. The bridge's cables and structure are visible against a lighter teal sky.

Pivotal®

Transforming How The World Builds Software