



# Cloud Native Microservices and Orchestration

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# Topics

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

# Cloud Native Applications

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

# Cloud Native Applications

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- Orchestration of applications
- Write once deploy on any cloud

# Cloud Native Development

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

# Microservices

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

# Micro-services in the Cloud

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

# Develop Micro Services

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



# Cloud Native Development

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- Patterns
  - Netflix OSS
  - Framework
    - Spring Cloud

# Spring Cloud Stream

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

# Spring Cloud Task

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- Short lived processes
- Batch processing scenario
- Event listeners

# Spring Cloud Scheduler

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

# Spring Cloud Deployer

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

# Spring Cloud Data Flow

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- 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

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# Demo

# Spring Cloud Skipper

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



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# Demo

# Spring Cloud Data Flow + Skipper

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

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# 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.

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