

# Java Buildpack in 2017

Ben Hale
Cloud Foundry Java Experience, Lead

# Cloud Foundry Haiku

Here is my source code
Run it on the cloud for me
I do not care how

### Java Buildpack

Buildpacks define how to run applications

- Java Buildpack cares about 3 things
  - JRE and memory management
  - Container to run application in
  - Zero-touch integration with services

#### **JREs**

- OpenJDK (Improved)
- Oracle
- Azul Zulu (New)
- IBM (PR #427)

#### Containers

- Dist ZIP
- Groovy
- Java Main
- Ratpack
- Spring Boot
- Spring Boot CLI
- Tomcat

#### Service Integration (APMs)

- AppDynamics (Improved)
- Dynatrace Appmon (New)
- Dynatrace OneAgent (Improved)
- Fusion Reactor (PR #409)
- Introscope
- New Relic

### Service Integration (Developer)

- JVM Debugger
- Google Stack Driver Debugger (New)
  - Analyzing Pets and Live Debugging Colleen Briant
- JRebel
- JMX
- YourKit

### Service Integration (HSMs)

- Dyadic EKM Security Provider (New)
- Luna Security Provider (Improved)
- ProtectApp Security Provider (New)

### Service Integration (Application)

- Apache Geode Session Cache (PR #437)
- Contrast Security Framework (PR #446)
- Spring Boot Metrics Writer (v3.18)



# Container Security Provider

## Container Security Provider

- BOSH Trusted Certificates
  - /etc/ssl/certs/ca-certificates.crt

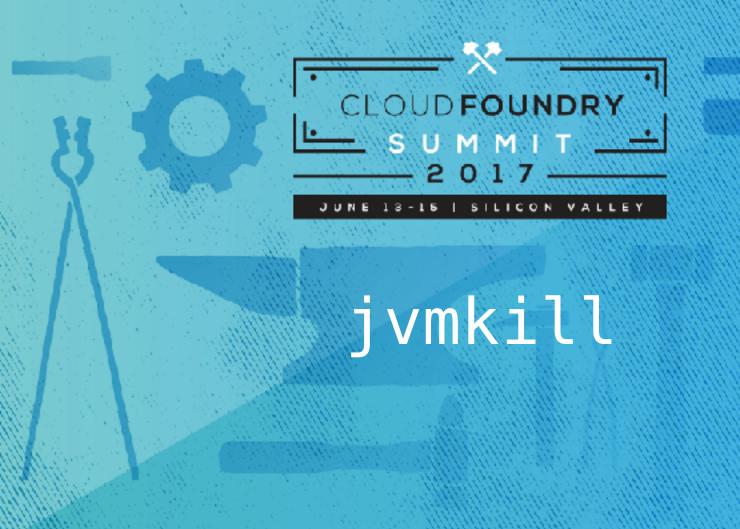
- Diego Identity
  - \$CF\_INSTANCE\_CERT
  - \$CF\_INSTANCE\_KEY



Memory Calculator

### Memory Calculator

- Covers more memory regions
  - Heap, Metaspace, Thread Stacks, ReservedCodeCache,CompressedClassSpace Direct Memory
- Configurable with standard Java flags
- "Incompatible" with some previous configurations
  - 4.x is opt in (now!)



# jvmkill

- Resource Exhaustion
  - Heap, Metaspace, Stacks, Threads

- Behaviors
  - Histogram
  - Memory Region Summary
  - Heap Dump (if Volume Service mounted)

## Java Buildpack 2017

 Additions (or pending additions) of new JREs and new Service Integrations

- Java Buildpack 4.x (opt in now!)
  - New Memory Calculator
  - New Resource Exhaustion Behavior



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