JVM CLI Programs with GraalVM

Ed MacDonald

www.solutionstreet.com

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Ed MacDonald - emacdonald@solutionstreet.com

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Solving Real-World Business Problems with Generative AI

hosted by
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Tuesday, November 18th
6pm-8pm

Solution Street Office
505 Huntmar Park Dr.
Suite 325
Herndon, VA

Questions? Reach out to Katie at
kschuman@solutionstreet.com

RSVP on our
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Scott Day
Principal
Day Strategies

Emile Karam
Founder &
Managing Director
QuadSail

Lokesh Kumar
CTO
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Mohan Rao
Chief Product &
Technology Officer
Knownwell

Why the JVM?

- Reuse the JVM code already in your organization.
- Reuse the vast amount of Open Source JVM code.
- Language choices!
    - Java
    - Kotlin
    - Groovy
    - Scala
    - Clojure
    - Java + Kotlin Joint Compilation
    - Java + Scala Joint Compilation

Why GraalVM?

- You can be just as cool as the Go and Rust folks (native binaries).
- Faster startup (a must for CLI tools).

Gotchas

- GraalVM does static analysis, and gets rid of things it thinks aren't used.
- Static analysis doesn't find code called *only* via reflection. (Use hints[1])
- Graal team maintains a lot of metadata for popular frameworks.[2]
- Graal team maintains a JVM agent that will generate metadata for you.[3]

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[1] https://www.graalvm.org/latest/reference-manual/native-image/metadata/#reflection
[2] https://github.com/oracle/graalvm-reachability-metadata/tree/master/metadata
[3] https://www.graalvm.org/22.0/reference-manual/native-image/Agent/

CLI Rules (My Soapbox)

- Newline separated records
- ONLY records on STDOUT. No field headings. Nothing else.
- Whitespace separated fields
- No intra-field whitespace except in last column

OR...
Just output Json

Demo

Tech Stack (A true "Enterprise Grade"™ CLI)

- GraalVM
- Java
- Scala
- picocli
- Spring Boot
- Hibernate
- H2
- Liquibase
- AspectJ

GraalVM:

- Entire JVM Ecosystem
- Single Binary
- Fast Startup

Questions?

Other Resources

Peripheral tools I used – some of which warrant their own presentation

- LaTeX: https://www.latex-project.org
- Beamer: https://ctan.org/pkg/beamer
- Gradle: https://gradle.org

GitHub repo

- https://github.com/emacdona/jvmcliexample