

fission + java

- Add the stock Java env to your Fission deployment

- `$ fission environment create --name java --image fission/jvm-env --builder fission/jvm-builder`

```
~/Downloads fission environment list
NAME      IMAGE                BUILDER_IMAGE
go        fission/go-env-1.16  fission/go-builder-1.16
• java    fission/jvm-env      fission/jvm-builder
```

- A Java function that prints "hello world"

- `$ mkdir -p src/main/java/io/fission/`
- `$ curl -L https://raw.githubusercontent.com/fission/examples/main/java/hello-world/src/main/java/io/fission/HelloWorld.java \`
- `-o src/main/java/io/fission/HelloWorld.java`

- pom.xml contains dependencies for the function.

- `$ curl -LO https://raw.githubusercontent.com/fission/environments/master/jvm/examples/java/pom.xml`

```
└─ pom.xml
└─ src
    └─ main
        └─ java
            └─ io
                └─ fission
                    └─ HelloWorld.java
```

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- Upload your function code to fission via zip

- `$ zip java-src-pkg.zip -r src/ pom.xml`



- `$ fission package create --env java --src java-src-pkg.zip`

```
~/tmp/fission-java fission package create --env java --src java-src-pkg.zip
Warning: --name will be soon marked as required flag, see 'help' for details
Package 'java-src-pkg-zip-47ti' created
```

- 根据maven文件拉取依赖，并编译

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- **Wait for your source code to be built**, package status should be succeeded. This may take a few minutes.

- `$ fission pkg info --name java-src-pkg-zip-47ti`

```
~/tmp/fission-java fission pkg info --name java-src-pkg-zip-47ti
Name:      java-src-pkg-zip-47ti
Environment: java
Status:    running
Build Logs:
```

```
~/tmp/fission-java fission pkg info --name java-src-pkg-zip-47ti
Name:      java-src-pkg-zip-47ti
Environment: java
Status:    succeeded
Build Logs:
[INFO] Scanning for projects...
[INFO] -----< io.fission:hello-world >-----
[INFO] Building hello-world 1.0-SNAPSHOT
[INFO] -----[ jar ]-----
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-clean-plugin/2.5/maven-clean-plugin-2.5.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-clean-plugin/2.5/maven-clean-plugin-2.5.pom (3.9 kB at 1.5 kB/s)
```

```
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/tomcat/embed/tomcat-embed-core/8.5.29/tomcat-embed-core-8.5.29.jar (3.1 MB at 317 kB/s)
[INFO]
[INFO] --- maven-clean-plugin:2.5:clean (default-clean) @ hello-world ---
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-plugin-api/2.0.6/maven-plugin-api-2.0.6.pom
```


fission + java

- **Wait for your source code to be built**, package status should be succeeded. This may take a few minutes.

```
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-utils/3.0/plexus-utils-3.0.jar (226
kB at 276 kB/s)
[INFO]
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ hello-world ---
• Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-project/2.0.6/maven-project-2.0.6.pom
```

```
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-utils/2.0.5/plexus-utils-2.0.5.jar
(223 kB at 74 kB/s)
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory /packages/java-src-pkg-zip-47ti-lllwt1/src/main/resources
[INFO]
[INFO] --- maven-compiler-plugin:3.1:compile (default-compile) @ hello-world ---
• Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-plugin-api/2.0.9/maven-plugin-api-2.0.
9.pom
```

```
Downloaded from central: https://repo.maven.apache.org/maven2/com/google/collections/google-collections/1.0/google-collectio
ns-1.0.jar (640 kB at 162 kB/s)
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 1 source file to /packages/java-src-pkg-zip-47ti-lllwt1/target/classes
[INFO]
[INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ hello-world ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory /packages/java-src-pkg-zip-47ti-lllwt1/src/test/resources
[INFO]
[INFO] --- maven-compiler-plugin:3.1:testCompile (default-testCompile) @ hello-world ---
[INFO] No sources to compile
[INFO]
[INFO] --- maven-surefire-plugin:2.22.1:test (default-test) @ hello-world ---
• Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/surefire/maven-surefire-common/2.22.1/maven-
surefire-common-2.22.1.pom
```


fission + java

- **Wait for your source code to be built**, package status should be succeeded. This may take a few minutes.

```
Downloaded from central: https://repo.maven.apache.org/maven2/com/thoughtworks/qdox/qdox/2.0-M8/qdox-2.0-M8.jar (316 kB at 73 kB/s)
[INFO] No tests to run.
[INFO]
[INFO] --- maven-jar-plugin:2.4:jar (default-jar) @ hello-world ---
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-archiver/2.5/maven-archiver-2.5.pom
```

```
Downloaded from central: https://repo.maven.apache.org/maven2/commons-lang/commons-lang/2.1/commons-lang-2.1.jar (208 kB at 179 kB/s)
[INFO] Building jar: /packages/java-src-pkg-zip-47ti-lllwt1/target/hello-world-1.0-SNAPSHOT.jar
[INFO]
[INFO] --- maven-assembly-plugin:2.2-beta-5:single (make-assembly) @ hello-world ---
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-common-artifact-filters/1.1/maven-common-artifact-filters-1.1.pom
```

```
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-repository-builder/1.0-alpha-2/maven-repository-builder-1.0-alpha-2.jar (23 kB at 9.6 kB/s)
[INFO] Building jar: /packages/java-src-pkg-zip-47ti-lllwt1/target/hello-world-1.0-SNAPSHOT-jar-with-dependencies.jar
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 04:17 min
[INFO] Finished at: 2022-09-13T08:51:28Z
[INFO] -----
```

fission + java

- Test your function. This takes about 100msec the first time.
 - `$ fission function create --name hello-java --env java --pkg hello-pkg --entrypoint io.fission.HelloWorld`

```
~/tmp/fission-java fission function create --name hello-java --env java  
sion.HelloWorld  
function 'hello-java' created
```

- `$ fission function test --name hello-java`
- Hello World!

```
Error: error executing HTTP request: Get "http://127.0.0.1:57552/fission-function/hello-java": context deadline exceeded
```

- 运行java function以后k8s不稳定，经常断联，出现错误(api server);

Fission + go

- Add the stock Go env to your Fission deployment

- `$ fission env create --name go --image fission/go-env-1.16 --builder fission/go-builder-1.16`

- A Go function that prints "hello world"

- `$ curl -LO https://raw.githubusercontent.com/fission/examples/main/go/hello-world/hello.go`

- Upload your function code to fission

- `$ fission function create --name hello-go --env go --src hello.go --entrypoint Handler`

```
package main

import (
    "net/http"
)

// Handler is the entry point for this fission function
func Handler(w http.ResponseWriter, r *http.Request) {
    msg := "Hello, world!\n"
    w.Write([]byte(msg))
}
```

- ```
~/tmp/fission-go fission function create --name hello-go --env go
point Handler
Package 'hello-go-05ed5319-f159-49d1-b6af-c998b5496ce1' created
function 'hello-go' created
```


- ```
~/tmp/fission-go fission pkg list | grep hello-go
hello-go-05ed5319-f159-49d1-b6af-c998b5496ce1 running go 13 Sep 22 15:49 CST
```



Fission + go

- **Wait for your source code to be built**, package status should be succeeded. This may take a few minutes.

- `$ fission pkg list | grep hello-go`

- `hello-go-8bb933b5-b12b-499b-a951-ee2245c8f1b5 succeeded go 23 Nov 21 10:55 IST`

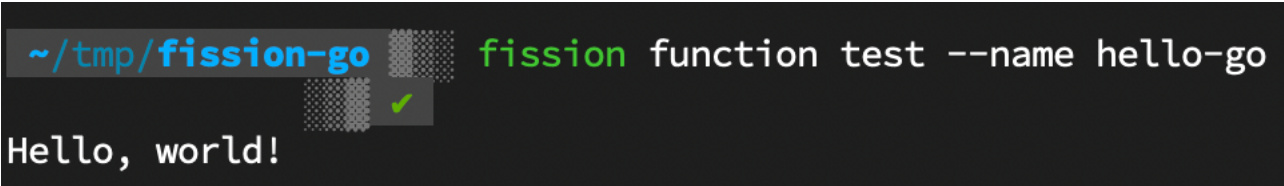
- A terminal window showing the command `fission pkg list | grep hello-go`. The output shows a package `hello-go-05ed5319-f159-49d1-b6af-c998b5496ce1` with status `running` and timestamp `go 13 Sep 22 15:49 CST`. A green checkmark icon is visible in the top right corner of the terminal window.

- A terminal window showing the command `fission pkg list | grep hello-go`. The output shows a package `hello-go-05ed5319-f159-49d1-b6af-c998b5496ce1` with status `succeeded` and timestamp `go 13 Sep 22 15:49 CST`. A green checkmark icon is visible in the top right corner of the terminal window.

- Test your function. This takes about 100msec the first time.

- `$ fission function test --name hello-go`

- Hello, world!

- A terminal window showing the command `fission function test --name hello-go`. The output is `Hello, world!`. A green checkmark icon is visible in the top right corner of the terminal window.

fission + python

- build log

- ```
~/Documents/Programs/fission+wasm fission pkg info --name hello-py-d88b950d-4900-40bd-99d-23e37e809440
Name: hello-py-d88b950d-4900-40bd-9c9d-23e37e809440
Environment: python
Status: succeeded
Build Logs:
```

- run

- ```
~ fission function test --name hello-py
Hello, world!
```

Wasm 编译语言

- 没有统一的编译器；
 - 不同语言有不同的编译器；
- wasm runtime
 - wasmedge

尝试将wasm文件运行在k8s的wasmedge上

- 创建wasmedge env
- 将wasm文件上传到fission
- 创建package
- 创建函数
- 运行函数