in the belly of the

Brought to you by...

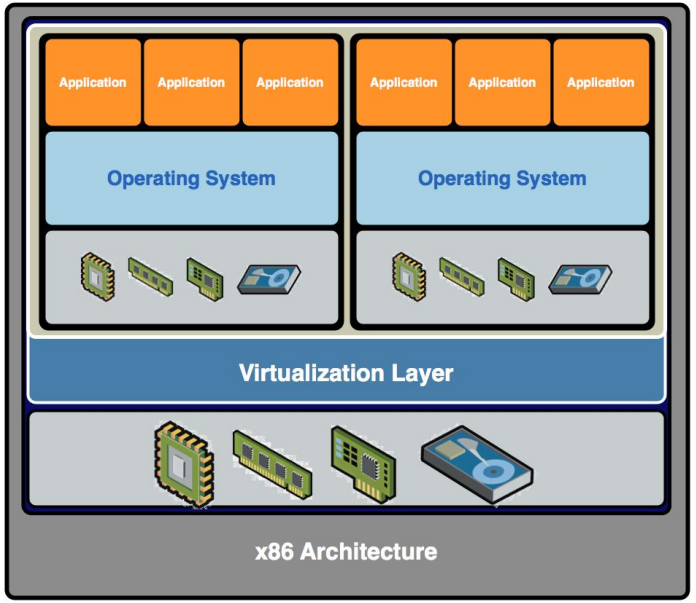
What is...

Server for running and managing Linux containers.

What are Linux containers?

Para-virtualized Linux instances.

Why not regular virtualization?



- slooooooow
- gigantic images
- aggressive resource allocation
- bad API

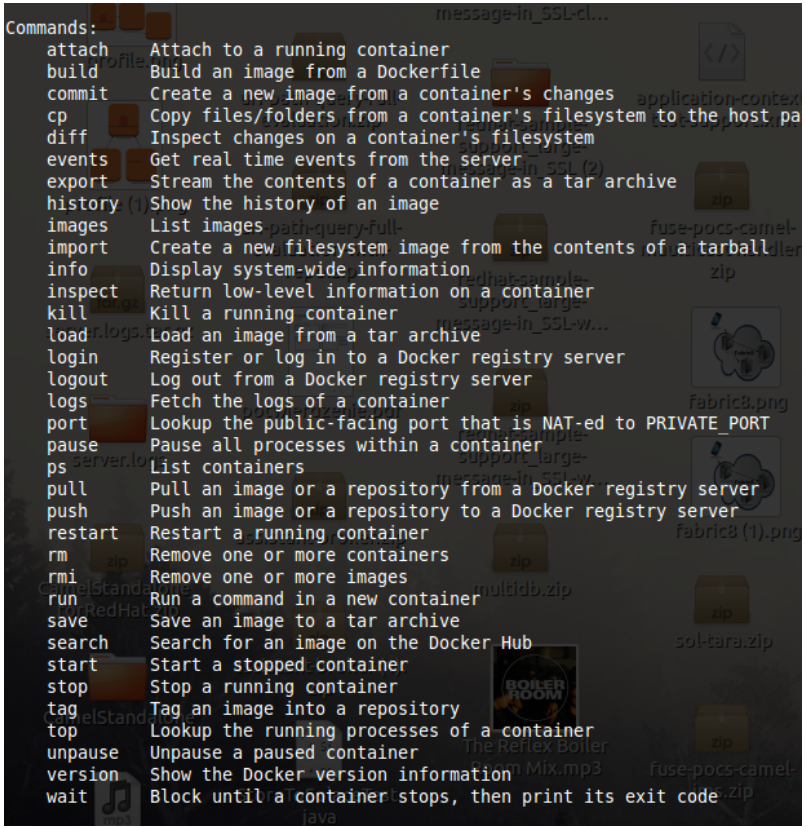
Key concepts

- image (immutable, no state)
- container (has state)

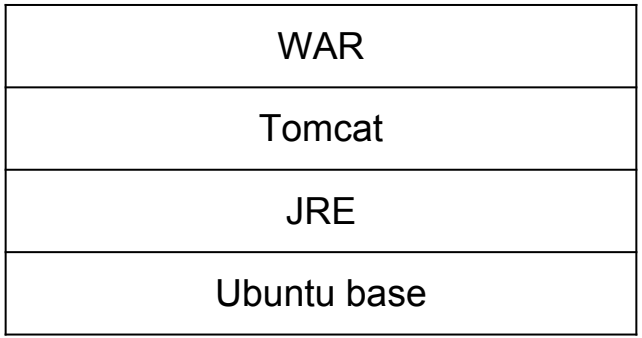
Container is the running ***image***.

Docker awesomeness #1

Commands.

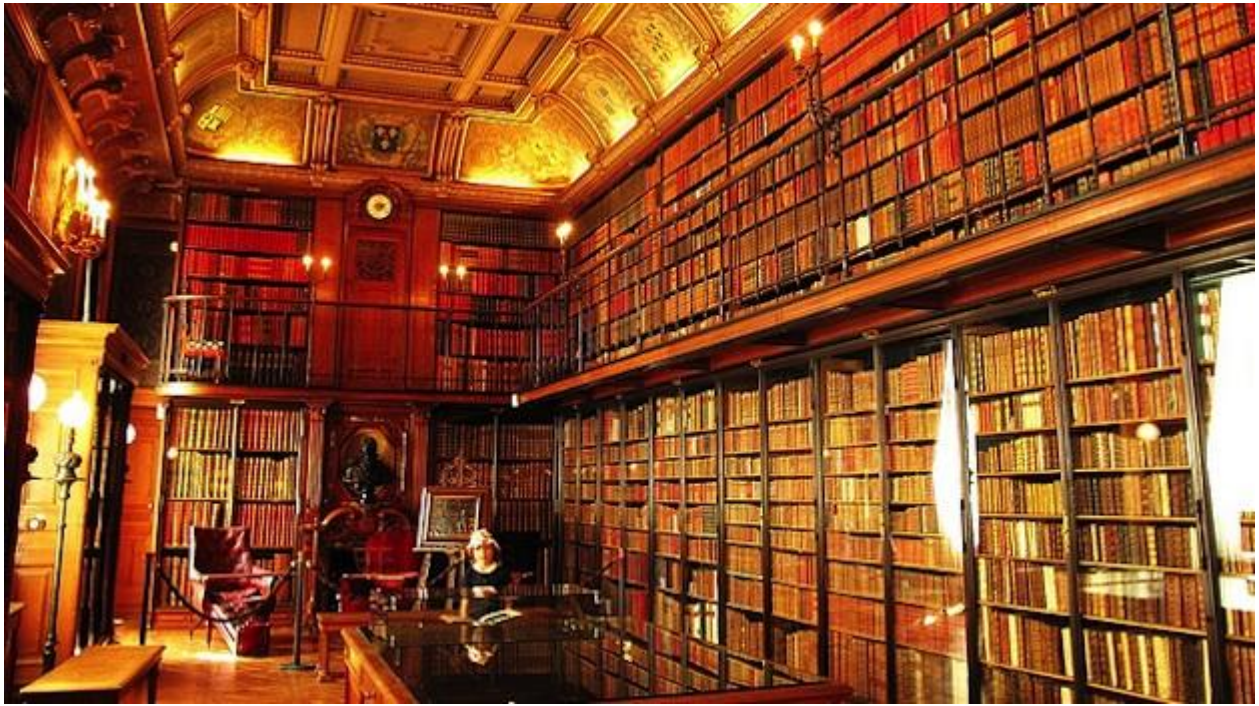


Docker awesomeness #2



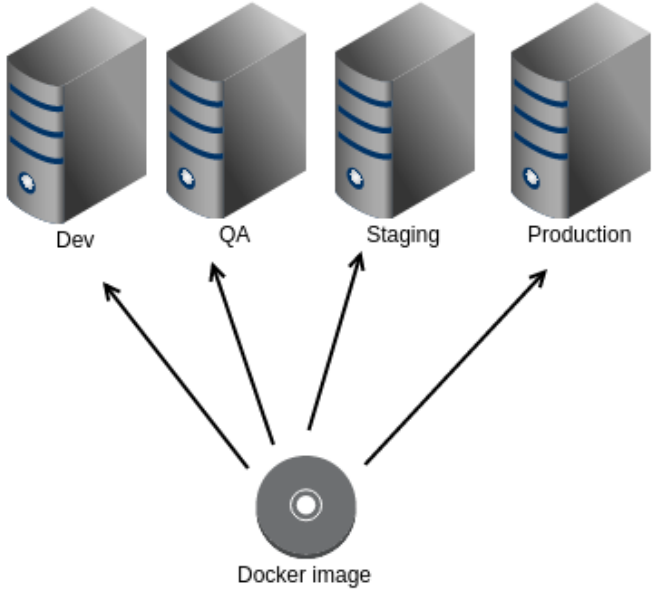
Layers.

Docker awesomeness #3



Registries.

Docker awesomeness #4



Build once. Deploy everywhere!

Dockerfiles

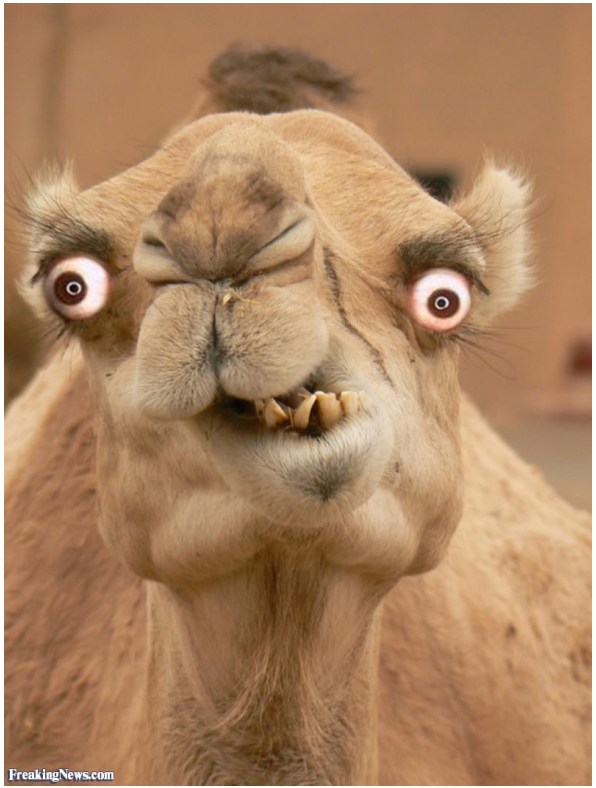
```
FROM ubuntu
EXPOSE 8080
RUN apt-get install java
RUN mkdir /jars
ADD target/app.jar /jars/
CMD ["java", "-jar", "/jars/app.jar"]
```

“Recipes” for the new images.

Create new image in the local repo

```
$ docker build -t com.me/app:1.0
$ docker run -t com.me/app:1.0
```

Apache Camel

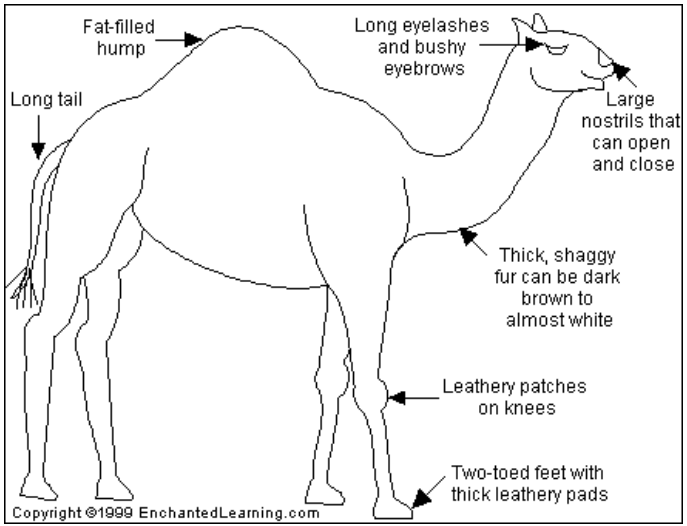


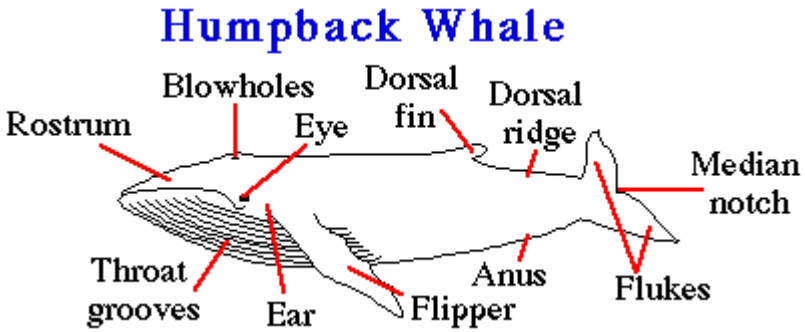
Framework that routes messages like crazy.

How to deploy Camel?

- Karaf (JBoss Fuse, ServiceMix, Talend ESB)
- Tomcat
- WildFly (JBoss EAP)
- standalone/embeded
- Akka plugin
- Grails plugin
- **Spring Boot**

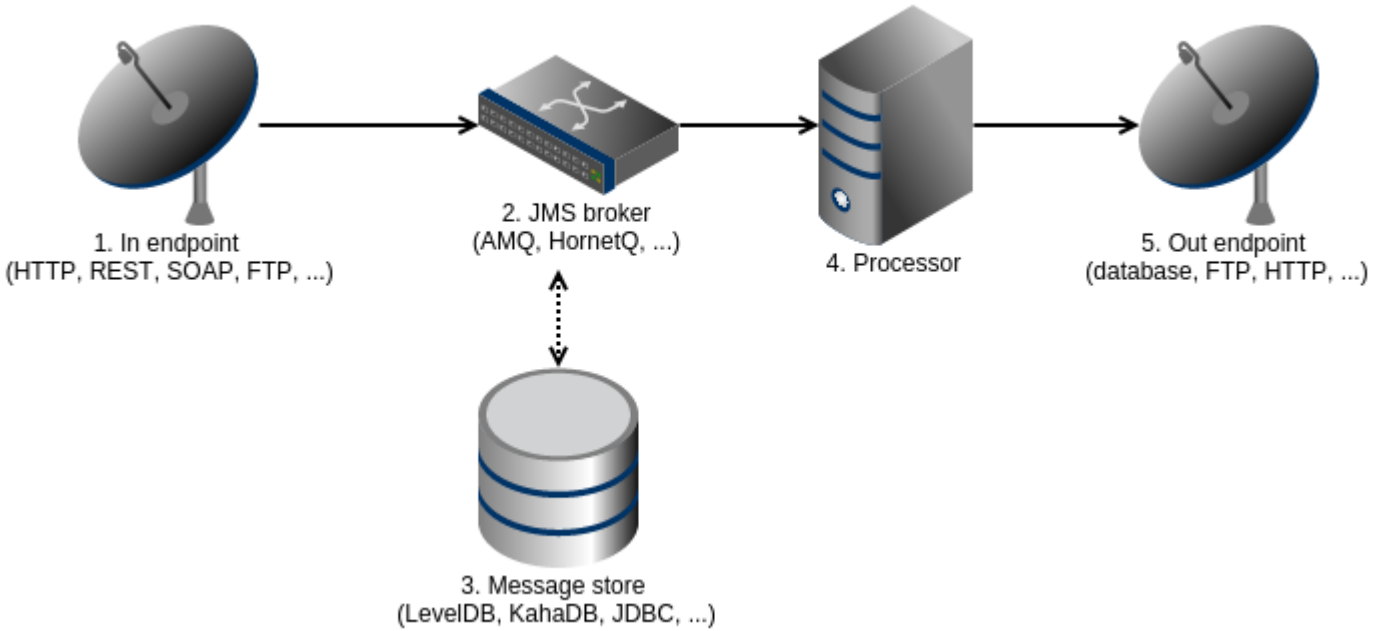
Camel and Docker



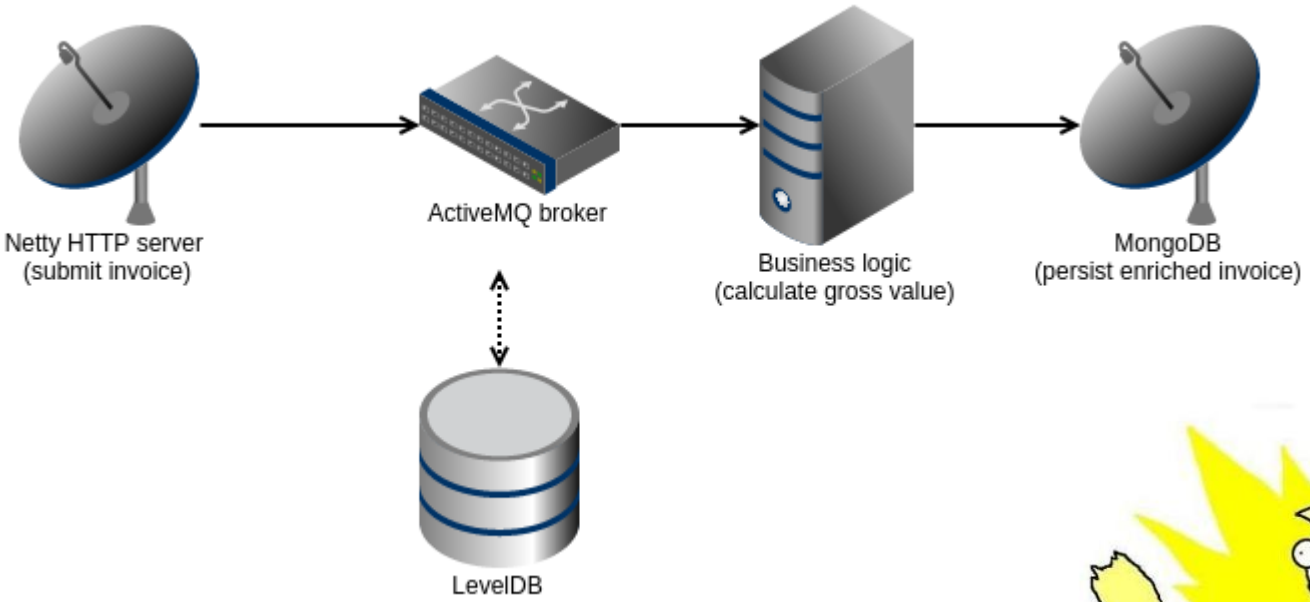


How to split it? What should I dockerize?

Messaging architecture in a nutshell

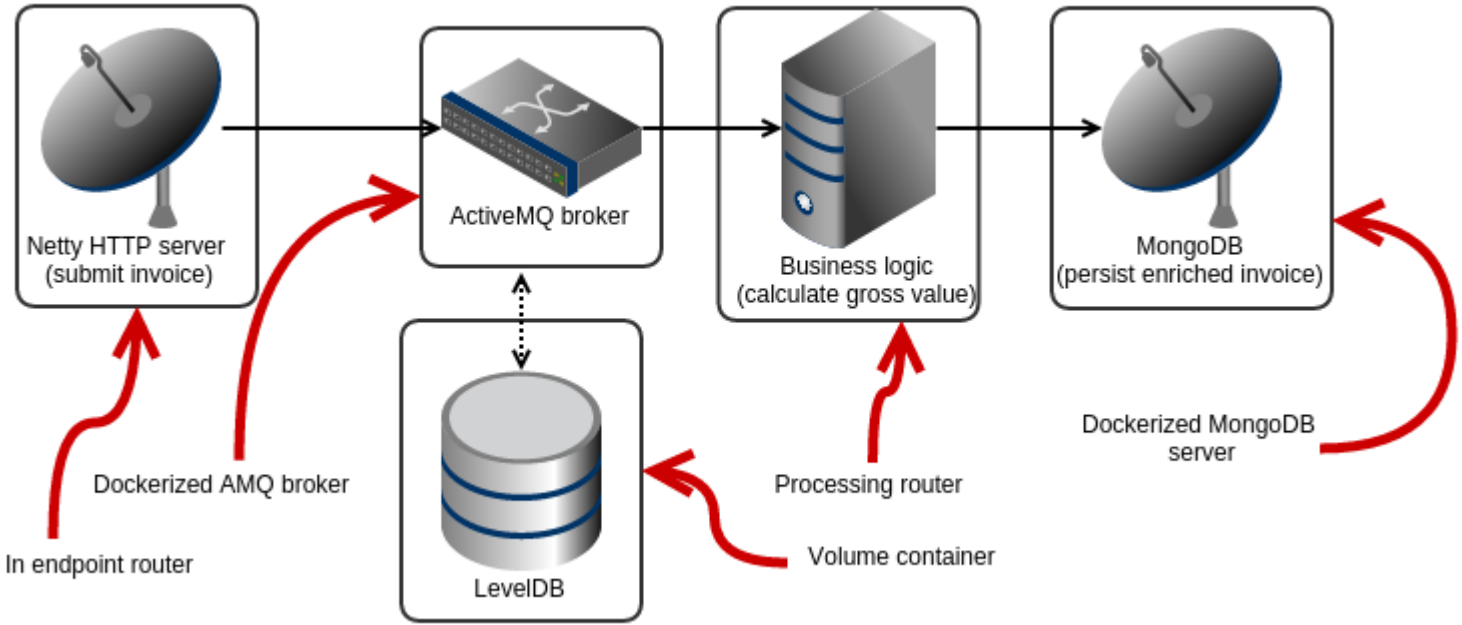


Concrete messaging architecture




I DON'T DOCKERIZE OFTEN
BUT WHEN I DO, I DOCKERIZE EVERYTHING
imgflip.com

Dockerized example



In-endpoint route

```
from(“netty-http:http://0.0.0.0:18080”).
  setBody(randomUUID()).
  inOnly("jms:invoices");

...

new ActiveMQConnectionFactory("tcp://amqbroker:6162")
```

Processing route

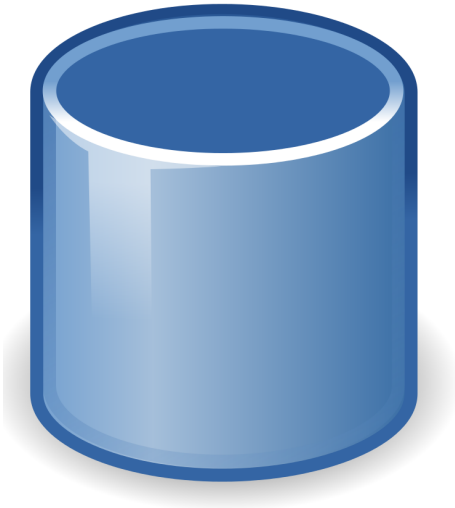
```
from("jms:invoices").
  setBody().
  groovy("new Invoice(request.body,currentTimeMillis())").
  to("mongodb:mongo?...operation=insert");


...


new ActiveMQConnectionFactory("tcp://amqbroker:6162");
...
new MongoClient("mongodb");
```

How can I get database images?

```
docker run -d -p 27017:27017
--name mongodb dockerfile/mongodb
```

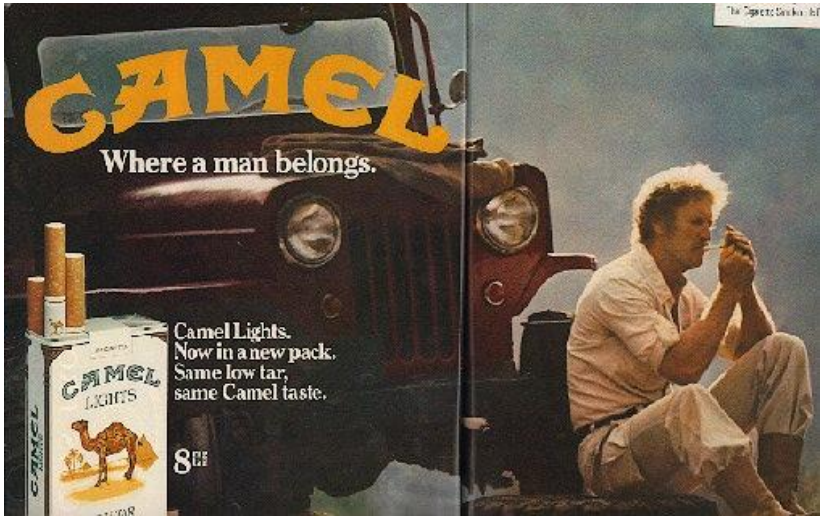


Provided by database community/vendor.

How can I put fresh jar into image?

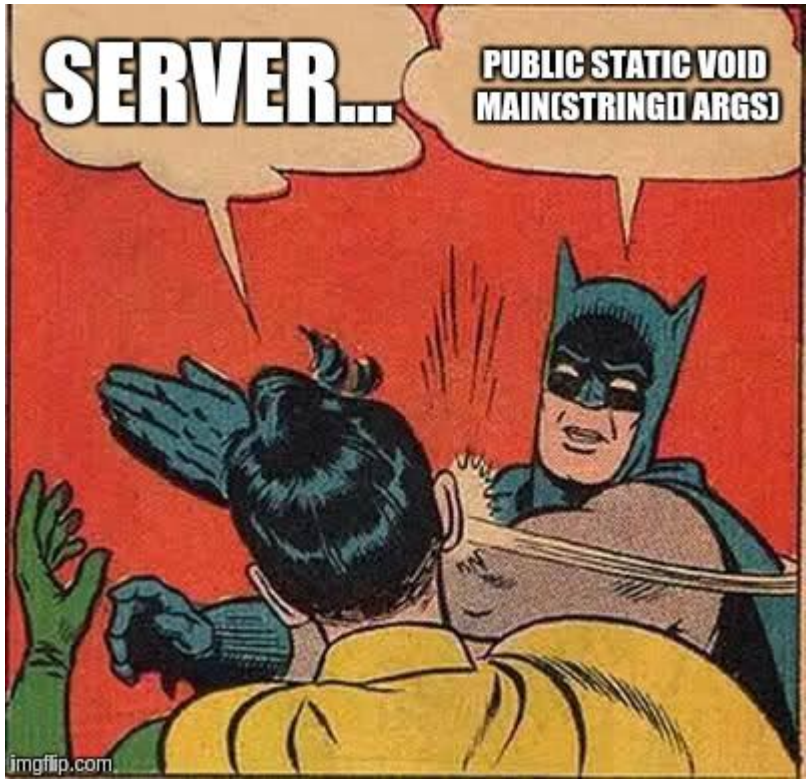
Docker Maven plugin by Roland ‘Jolokia’ Huß

How to bootstrap Camel?



- no Karaf bundle activators
- no server (Tomcat, etc.)
- how can we start CamelContext?

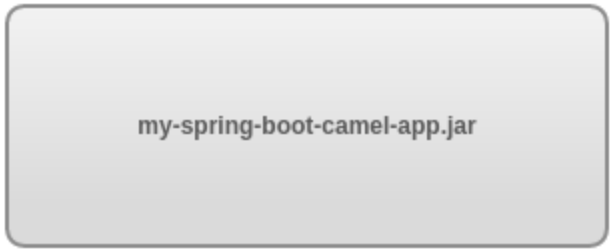
Custom class with the main method



Spring Boot for Camel

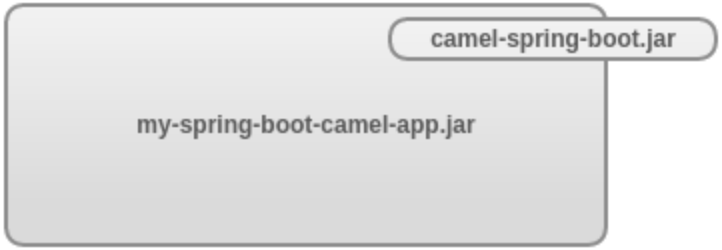
http://projects.spring.io/spring-boot

Camel + Spring Boot: step #1



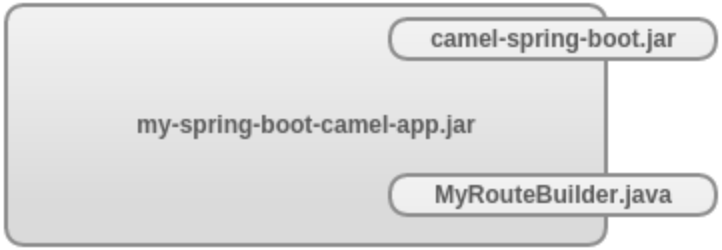
Take a Spring Boot fat jar.

Camel + Spring Boot: step #2



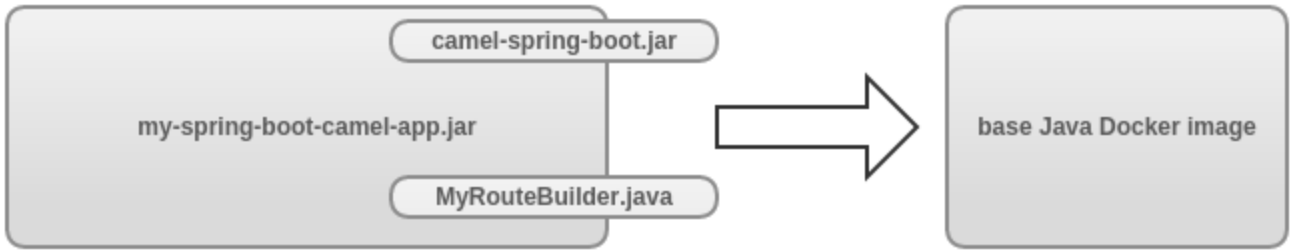
Add camel-spring-boot jar to your classpath.

Camel + Spring Boot: step #3



Add Camel route to your classpath.

Camel + Spring Boot: step #4



Dockerize your fat jar and run it!

ENV-centric runtime configuration

```
# override endpoint definition via ENV variable
docker run -e FROM=jms:queue -it my-springboot-camel-app



# run with the given Spring profile
docker run -e spring.profiles.active=production -it my-
springboot-camel-app
```

Monitoring

Expose JMX via REST with the Jolokia base image.

Kubernetes

- orchestration of many Docker containers
- ...and many Docker servers!
- logical container groups (pods)
- auto-scaling
- wiring your Docker stuff together

Thank you!