



# Kafka Event Producer Demo

# https://start.spring.io/



## Project

☒ Maven Project ☐ Gradle Project

## Language

☒ Java ☐ Kotlin ☐ Groovy

## Spring Boot

☐ 2.5.0 (SNAPSHOT) ☐ 2.5.0 (RC1) ☐ 2.4.6 (SNAPSHOT) ☒ 2.4.5  
☐ 2.3.11 (SNAPSHOT) ☐ 2.3.10

## Project Metadata

Group com.tld

Artifact demo-eventproducer

Name demo-eventproducer

Description Demo project for Spring Boot

Package name com.tld.eventproducer

Packaging ☒ Jar ☐ War

Java ☐ 16 ☒ 11 ☐ 8

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## Dependencies

ADD DEPENDENCIES... ⌘ + B

### Lombok

DEVELOPER TOOLS

Java annotation library which helps to reduce boilerplate code.

### Spring Web

WEB

Build web, including RESTful, applications using Spring MVC. Uses Apache Tomcat as the default embedded container.

### Spring for Apache Kafka

MESSAGING

Publish, subscribe, store, and process streams of records.

### Spring for Apache Kafka Streams

MESSAGING

Building stream processing applications with Apache Kafka Streams.

### Cloud Stream

SPRING CLOUD MESSAGING

Framework for building highly scalable event-driven microservices connected with shared messaging systems (requires a binder, e.g. Apache Kafka, RabbitMQ or Solace PubSub+).

# pom.xml

```
<dependency>
  <groupId>org.springframework.cloud</groupId>
  <artifactId>spring-cloud-stream-binder-kafka</artifactId>
</dependency>
<dependency>
  <groupId>org.springframework.cloud</groupId>
  <artifactId>spring-cloud-stream-binder-kafka-streams</artifactId>
</dependency>
```

# La classe à gérer

```
@Data
@NoArgsConstructor @AllArgsConstructor
@ToString
public class TrackedEvent {

    private Long id;
    private String infoToTrack;
    private Date sysDate;
}
```

# RestController monitoring

```
@RestController
public class OneRestController {

    @Autowired
    private StreamBridge streamBridge;


    @GetMapping("bookmark/{topic}/{infoToTrack}")
    public TrackedEvent bookmark(@PathVariable String topic, @PathVariable
String infoToTrack) {
        TrackedEvent logContent= new TrackedEvent(null, infoToTrack , new
Date());
        streamBridge .send(topic, logContent );
        //poursuite d'un traitement en vue de retourner une information
        return null ; //TODO return to change
    }
}
```

# Rappelez vous que ...

- Nous n'allons pas utiliser KafkaTemplate et KafkaListener
- Spring cloud Streams
  - Message channel (deprecated non utilisé)
  - spring Cloud Stream functions



StreamBridge



```
@RestController
public class OneRestController {

    @Autowired
    private StreamBridge streamBridge;

    @GetMapping("bookmark/{topic}/{infoToTrack}")
    public TrackedEvent bookmark(@PathVariable String topic, @PathVariable String
infoToTrack) {
        TrackedEvent logContent= new TrackedEvent(null, infoToTrack , new Date());
        streamBridge .send(topic, logContent );
        //poursuite d'un traitement en vue de retourner une information
        return logContent; //TODO return to change
    }
}
```



# Application.properties

application.properties



vide

# Lancer l'application springBoot ProduceEvent

```
demo-eventproducer - DemoEventproducerApplication [Spring Boot App] /Library/Java/JavaVirtualMachines/openjdk-11.0.2.jdk/Contents/Home/bin/java (13 mai 2021 à 23:02:38)

:: Spring Boot :: (v2.4.5)

2021-05-13 23:02:40.782 INFO 71663 --- [main] c.t.e.DemoEventproducerApplication : Starting DemoEventproducerApplication
2021-05-13 23:02:40.785 INFO 71663 --- [main] c.t.e.DemoEventproducerApplication : No active profile set, falling back to default profile: 'default'
2021-05-13 23:02:41.694 INFO 71663 --- [main] o.s.c.a.ConfigurationClassEnhancer : @Bean method FunctionConfigurationProperties$BeanPostProcessorChecker
2021-05-13 23:02:41.710 INFO 71663 --- [main] faultConfiguringBeanFactoryPostProcessor : No bean named 'errorChannel' has been registered
2021-05-13 23:02:41.717 INFO 71663 --- [main] faultConfiguringBeanFactoryPostProcessor : No bean named 'taskScheduler' has been registered
2021-05-13 23:02:41.721 INFO 71663 --- [main] faultConfiguringBeanFactoryPostProcessor : No bean named 'integrationHeaderChannelAdapter' has been registered
2021-05-13 23:02:41.782 INFO 71663 --- [main] trationDelegate$BeanPostProcessorChecker : Bean 'org.springframework.integration.channel.adaptationDelegate$BeanPostProcessorChecker' : Bean 'org.springframework.boot.autoconfigure.integration.integrationChannelAdapter' : Bean 'org.springframework.boot.autoconfigure.integration.integrationChannelAdapter' : Bean 'mbeanServer' of type [com.sun.management.MBeanServer] : Bean 'integrationChannelResolver' : Bean 'integrationDisposableAutoConfiguration' : Tomcat initialized with port(s): 8080 (http)
2021-05-13 23:02:41.808 INFO 71663 --- [main] trationDelegate$BeanPostProcessorChecker : Bean 'org.springframework.boot.autoconfigure.integration.integrationChannelAdapter' : Bean 'org.springframework.boot.autoconfigure.integration.integrationChannelAdapter' : Bean 'mbeanServer' of type [com.sun.management.MBeanServer] : Bean 'integrationChannelResolver' : Bean 'integrationDisposableAutoConfiguration' : Tomcat initialized with port(s): 8080 (http)
2021-05-13 23:02:41.813 INFO 71663 --- [main] trationDelegate$BeanPostProcessorChecker : Bean 'org.springframework.boot.autoconfigure.integration.integrationChannelAdapter' : Bean 'org.springframework.boot.autoconfigure.integration.integrationChannelAdapter' : Bean 'mbeanServer' of type [com.sun.management.MBeanServer] : Bean 'integrationChannelResolver' : Bean 'integrationDisposableAutoConfiguration' : Tomcat initialized with port(s): 8080 (http)
2021-05-13 23:02:41.837 INFO 71663 --- [main] trationDelegate$BeanPostProcessorChecker : Bean 'org.springframework.boot.autoconfigure.integration.integrationChannelAdapter' : Bean 'org.springframework.boot.autoconfigure.integration.integrationChannelAdapter' : Bean 'mbeanServer' of type [com.sun.management.MBeanServer] : Bean 'integrationChannelResolver' : Bean 'integrationDisposableAutoConfiguration' : Tomcat initialized with port(s): 8080 (http)
2021-05-13 23:02:41.838 INFO 71663 --- [main] trationDelegate$BeanPostProcessorChecker : Bean 'org.springframework.boot.autoconfigure.integration.integrationChannelAdapter' : Bean 'org.springframework.boot.autoconfigure.integration.integrationChannelAdapter' : Bean 'mbeanServer' of type [com.sun.management.MBeanServer] : Bean 'integrationChannelResolver' : Bean 'integrationDisposableAutoConfiguration' : Tomcat initialized with port(s): 8080 (http)
2021-05-13 23:02:42.156 INFO 71663 --- [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port(s): 8080 (http)
2021-05-13 23:02:42.169 INFO 71663 --- [main] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2021-05-13 23:02:42.169 INFO 71663 --- [main] org.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache/2.4.18 (Ubuntu)]
2021-05-13 23:02:42.251 INFO 71663 --- [main] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationContext
2021-05-13 23:02:42.251 INFO 71663 --- [main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed
2021-05-13 23:02:42.496 INFO 71663 --- [main] o.s.s.c.ThreadPoolTaskScheduler : Initializing ExecutorService 'taskScheduler'
2021-05-13 23:02:42.813 INFO 71663 --- [main] o.s.s.concurrent.ThreadPoolTaskExecutor : Initializing ExecutorService 'applicationTaskExecutor'
2021-05-13 23:02:43.131 INFO 71663 --- [main] c.f.c.c.BeanFactoryAwareFunctionRegistry : Can't determine default function for 'integrationChannelAdapter'
2021-05-13 23:02:43.334 INFO 71663 --- [main] o.s.i.monitor.IntegrationMBeanExporter : Registering MessageChannel errorChannel
2021-05-13 23:02:43.377 INFO 71663 --- [main] o.s.i.monitor.IntegrationMBeanExporter : Registering MessageChannel nullChannel
2021-05-13 23:02:43.386 INFO 71663 --- [main] o.s.i.monitor.IntegrationMBeanExporter : Registering MessageHandler _org.springframework.integration.channel.adaptationDelegate$BeanPostProcessorChecker
2021-05-13 23:02:43.428 INFO 71663 --- [main] o.s.i.endpoint.EventDrivenConsumer : Adding {logging-channel-adapter:_org.springframework.integration.channel.adaptationDelegate$BeanPostProcessorChecker} to channel 'application.errorChannel'
2021-05-13 23:02:43.428 INFO 71663 --- [main] o.s.i.endpoint.EventDrivenConsumer : Channel 'application.errorChannel' started
2021-05-13 23:02:43.428 INFO 71663 --- [main] o.s.i.endpoint.EventDrivenConsumer : started bean '_org.springframework.integration.channel.adaptationDelegate$BeanPostProcessorChecker'
2021-05-13 23:02:43.450 INFO 71663 --- [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port(s): 8080 (http)
2021-05-13 23:02:43.462 INFO 71663 --- [main] c.t.e.DemoEventproducerApplication : Started DemoEventproducerApplication
```

# Je tente un get sur ce endpoint

← → ↻ 🏠 ⓘ localhost:8080/bookmark/jeuxvideo/mario

```
{  
  "id": null,  
  "infoToTrack": "mario",  
  "sysDate": "2021-05-13T21:37:05.320+00:00"  
}
```

Je désactive l'envoi  
Du message

```
@RestController  
public class OneRestController {  
  
    @Autowired  
    private StreamBridge streamBridge;  
  
    @GetMapping("bookmark/{topic}/{infoToTrack}")  
    public TrackedEvent bookmark(@PathVariable String topic, @PathVariable String  
infoToTrack) {  
        System.out.println("je suis le endpoint qui enverra un message asynchrone");  
        TrackedEvent logContent= new TrackedEvent(null, infoToTrack , new Date());  
        // streamBridge .send(topic, logContent );  
        return logContent; //TODO return to change  
    }  
}
```

# 2nd Test du controller (and kafka is On )

localhost:8080/bookmark/jeuxvideo/mario

```
{
  "id": null,
  "infoToTrack": "mario",
  "sysDate": "2021-05-13T21:37:05.320+00:00"
}
```

```
Problems Javadoc Declaration Console X
demo-eventproducer - DemoEventproducerApplication [Spring Boot App] /Library/Java/JavaVirtualMachines/openjdk-11.0.2.jdk/Contents/Home/bin/java (13 mai 2021 à 23:36:53)
2021-05-13 23:37:05.288 INFO 72852 --- [nio-8080-exec-1] o.s.web.servlet.DispatcherServlet : Initializing Servlet
2021-05-13 23:37:05.290 INFO 72852 --- [nio-8080-exec-1] o.s.web.servlet.DispatcherServlet : Completed initialization in 1
je suis le endpoint qui enverra un message asynchrone
2021-05-13 23:37:05.324 INFO 72852 --- [nio-8080-exec-1] o.s.c.s.binder.DefaultBinderFactory : Creating binder: ktale
2021-05-13 23:37:05.449 INFO 72852 --- [nio-8080-exec-1] o.s.c.s.binder.DefaultBinderFactory : Caching the binder: ktale
2021-05-13 23:37:05.449 INFO 72852 --- [nio-8080-exec-1] o.s.c.s.binder.DefaultBinderFactory : Retrieving cached binder: ktale
2021-05-13 23:37:05.450 INFO 72852 --- [nio-8080-exec-1] o.s.c.s.binder.DefaultBinderFactory : Creating binder: kafka
2021-05-13 23:37:05.541 INFO 72852 --- [nio-8080-exec-1] o.s.c.s.binder.DefaultBinderFactory : Caching the binder: kafka
2021-05-13 23:37:05.541 INFO 72852 --- [nio-8080-exec-1] o.s.c.s.binder.DefaultBinderFactory : Retrieving cached binder: kafka
2021-05-13 23:37:05.541 INFO 72852 --- [nio-8080-exec-1] o.s.c.s.binder.DefaultBinderFactory : Creating binder:
2021-05-13 23:37:05.589 INFO 72852 --- [nio-8080-exec-1] o.s.c.s.binder.DefaultBinderFactory : Caching the binder:
2021-05-13 23:37:05.589 INFO 72852 --- [nio-8080-exec-1] o.s.c.s.binder.DefaultBinderFactory : Retrieving cached binder:
2021-05-13 23:37:05.589 INFO 72852 --- [nio-8080-exec-1] o.s.c.s.binder.DefaultBinderFactory : Creating binder:
2021-05-13 23:37:05.640 INFO 72852 --- [nio-8080-exec-1] o.s.c.s.binder.DefaultBinderFactory : Caching the binder:
2021-05-13 23:37:05.640 INFO 72852 --- [nio-8080-exec-1] o.s.c.s.binder.DefaultBinderFactory : Retrieving cached binder:
2021-05-13 23:37:05.640 INFO 72852 --- [nio-8080-exec-1] o.s.c.s.binder.DefaultBinderFactory : Retrieving cached binder:
2021-05-13 23:37:05.713 INFO 72852 --- [nio-8080-exec-1] o.s.c.s.b.k.p.KafkaTopicProvisioner : Using kafka top
2021-05-13 23:37:05.716 INFO 72852 --- [nio-8080-exec-1] o.a.k.clients.admin.AdminClientConfig : AdminClientCont

bootstrap.servers = [localhost:9092]
client.dns.lookup = use_all_dns_ips
client.id =
connections.max.idle.ms = 300000
default.api.timeout.ms = 60000
metadata.max.age.ms = 300000
metric.reporters = []
```

Le server réagit à l'envoi du message Quand la requête du client atteint le controleur, et qu'elle est traitée par celui ci et qu'un message est transmis au broker

....regardez les logs en console ...etc

```
ssl.truststore.location = null
ssl.truststore.password = null
ssl.truststore.type = JKS
transaction.timeout.ms = 60000
transactional.id = null
value.serializer = class org.apache.kafka.common.serialization.ByteArraySerializer

2021-05-13 23:37:06.240 INFO 72852 --- [nio-8080-exec-1] o.a.kafka.common.utils.AppInfoParser : Kafka version: 2.6.0
2021-05-13 23:37:06.240 INFO 72852 --- [nio-8080-exec-1] o.a.kafka.common.utils.AppInfoParser : Kafka commitId: 62abe01bee039651
2021-05-13 23:37:06.240 INFO 72852 --- [nio-8080-exec-1] o.a.kafka.common.utils.AppInfoParser : Kafka startTimeMs: 1620941826240
2021-05-13 23:37:06.247 INFO 72852 --- [ad | producer-2] org.apache.kafka.clients.Metadata : [Producer clientId=producer-2] Cluster ID:
```

# Le message a été posté

- Le message envoyé par l'application , à la réception d'une requête client qui a été interprété , d'un point de vue technique ou métier comme un évènement qui méritait qu'un message soit envoyé dans un topic Kafka afin que tous les abonnés à ce topic soient informé par ce message , afin que ce message soit transmis à tous les abonnés de ce topic



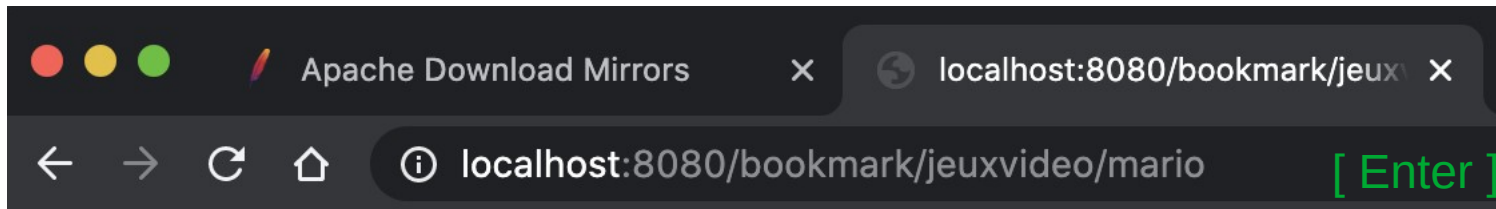
# Lancer une console consumer kafka

```
bin/kafka-console-consumer.sh --bootstrap-server localhost:9092 --topic jeuxvideo
```

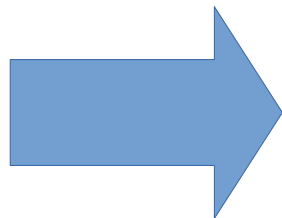
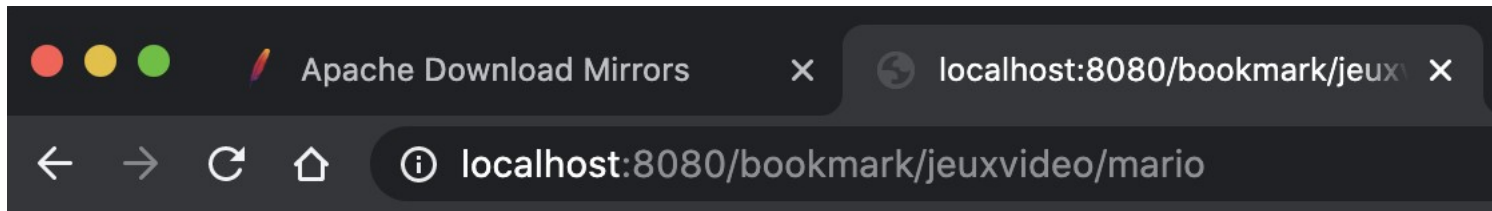
Depuis kafka\_dir:(ici sous MacOS)

```
bin/kafka-console-consumer.sh --bootstrap-server localhost:9092 --topic jeuxvideo
```

Le consumer est maintenant en attente en console de test  
Zookeeper est démarré  
Kafka fonctionne aussi  
L'appli est lancée  
Je simule une requête client (GET pour activer le endpoint et l'envoi du message )



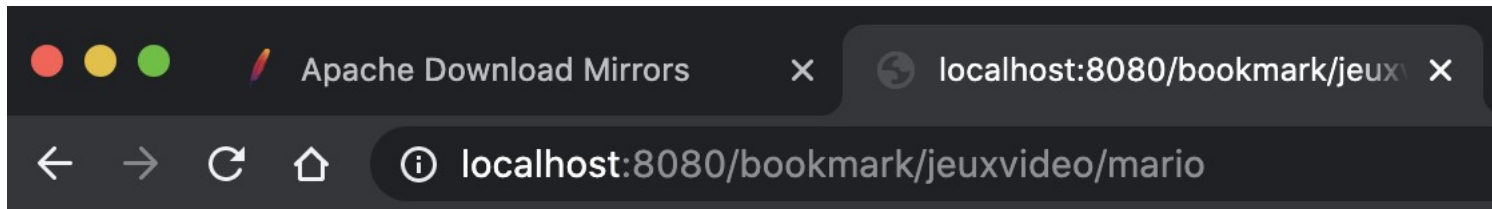
```
kafka_2.13-2.8.0 — java -Xmx512M -server -XX:+UseG1GC -XX:MaxGCPauseMilli...
.../Users/chri kafka.tools.ConsoleConsumer --bootstrap-server localhost:9092 --topic jeuxvideo
Last login: Thu May 13 23:35:15 on ttys002
[christian@MacBook-Pro kafka_2.13-2.8.0 % pwd
/Users/christian/kafka_2.13-2.8.0
[christian@MacBook-Pro kafka_2.13-2.8.0 % bin/kafka-console-consumer.sh --bootstr
ap-server localhost:9092 --topic jeuxvideo
```



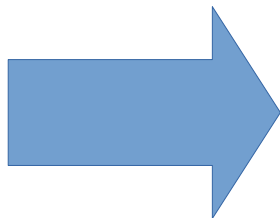
```
kafka_2.13-2.8.0 — java -Xmx512M -server -XX:+UseG1GC -XX:MaxGCPauseMilli...
.../Users/chri kafka.tools.ConsoleConsumer --bootstrap-server localhost:9092 --topic jeuxvideo
Last login: Thu May 13 23:35:15 on ttys002
christian@MacBook-Pro kafka_2.13-2.8.0 % pwd
/Users/christian/kafka_2.13-2.8.0
christian@MacBook-Pro kafka_2.13-2.8.0 % bin/kafka-console-consumer.sh --bootstr
ap-server localhost:9092 --topic jeuxvideo
{"id":null,"infoToTrack":"mario","sysDate":"2021-05-13T21:57:53.980+00:00"}

```





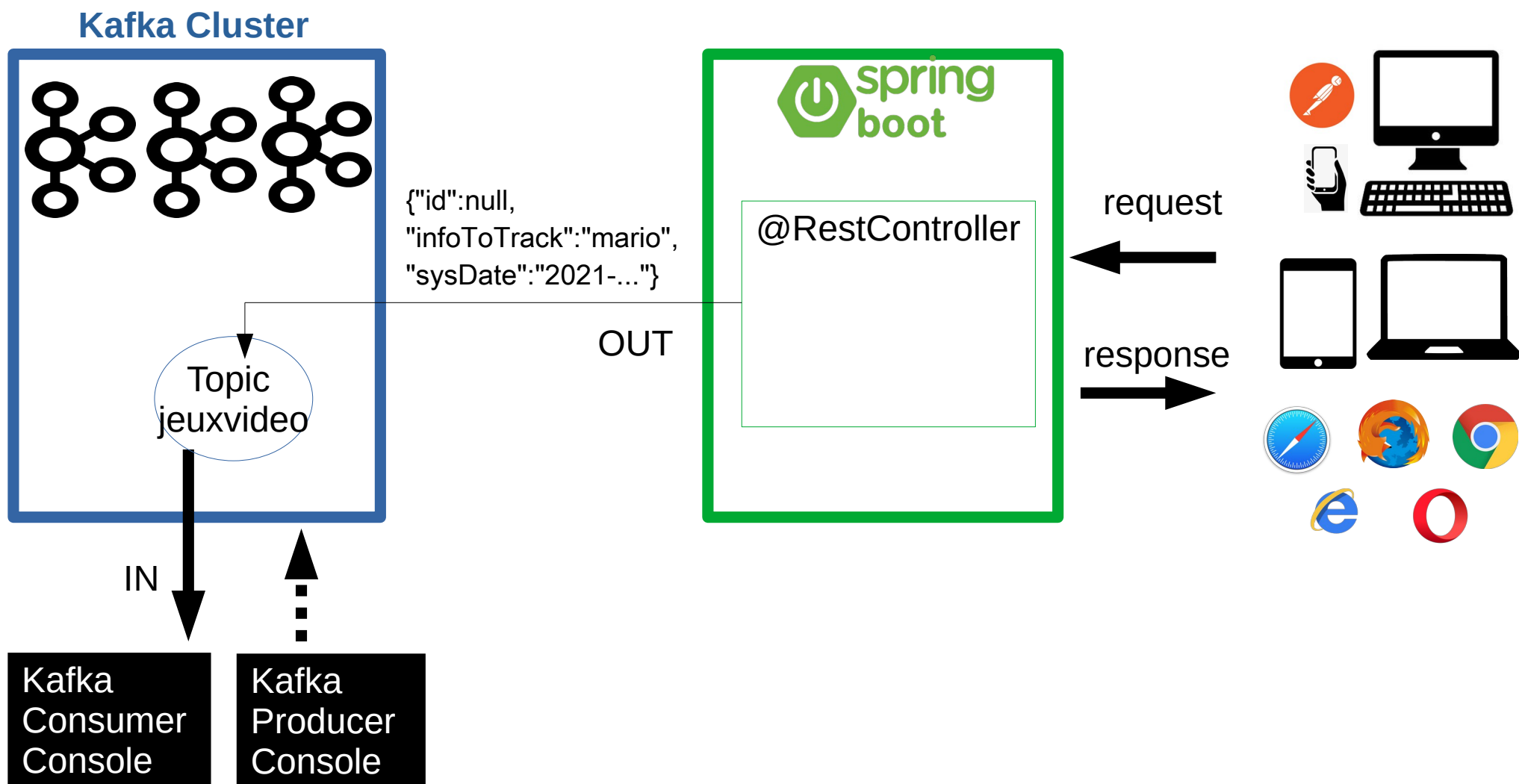
```
{
  "id": null,
  "infoToTrack": "mario",
  "sysDate": "2021-05-13T21:57:53.980+00:00"
}
```



```
kafka_2.13-2.8.0 — java -Xmx512M -server -XX:+UseG1GC -XX:MaxGCPauseMilli...
.../Users/chri kafka.tools.ConsoleConsumer --bootstrap-server localhost:9092 --topic jeuxvideo
Last login: Thu May 13 23:35:15 on ttys002
christian@MacBook-Pro kafka_2.13-2.8.0 % pwd
/Users/christian/kafka_2.13-2.8.0
christian@MacBook-Pro kafka_2.13-2.8.0 % bin/kafka-console-consumer.sh --bootstr
an-server localhost:9092 --topic jeuxvideo
{"id":null,"infoToTrack":"mario","sysDate":"2021-05-13T21:57:53.980+00:00"}

```

# Schéma producer (I)



# Schéma producer (I)

