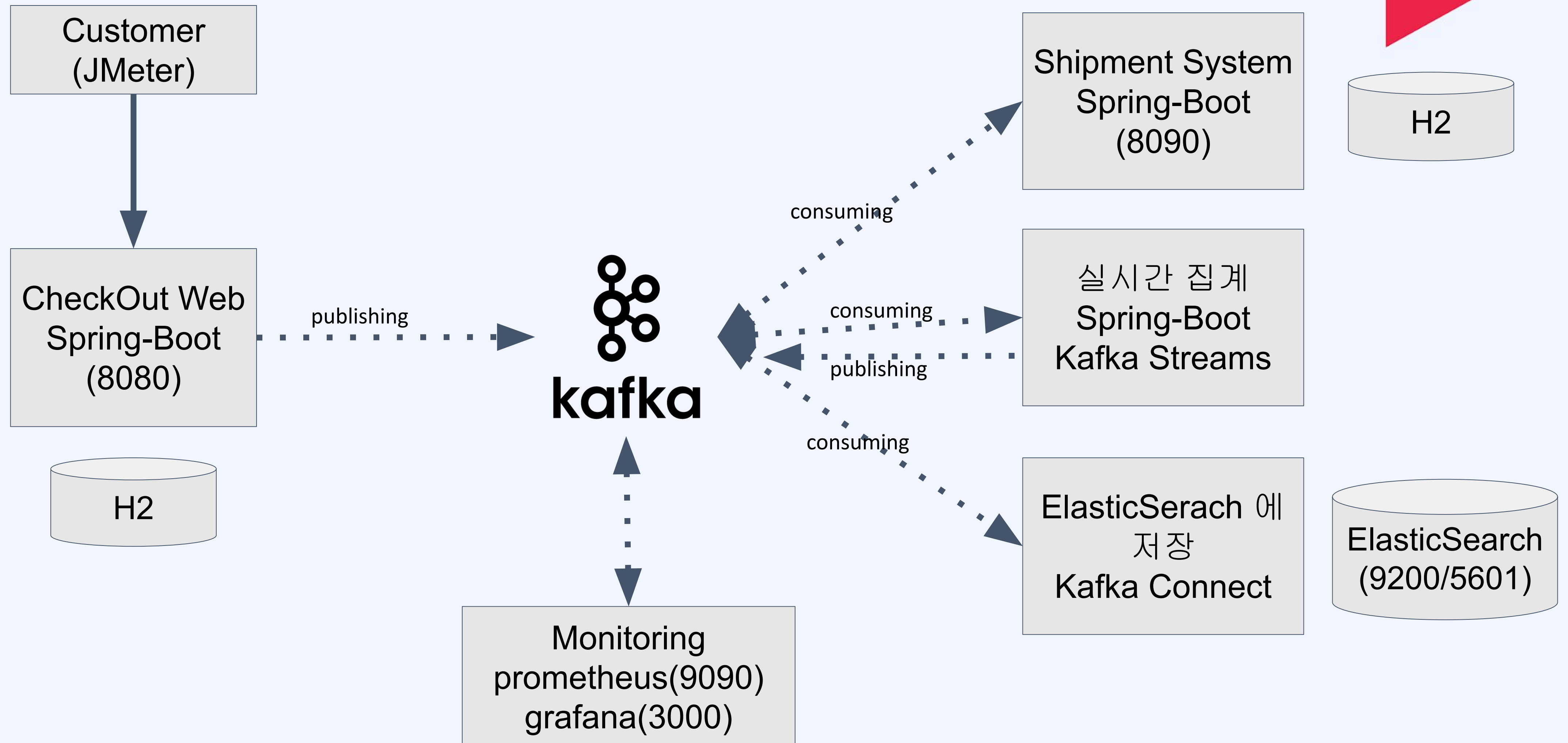


Kafka 프로젝트 실습

1 실습 프로젝트 아키텍처



Kafka 프로젝트 실습

2 Producer Web 프로젝트

start.spring.io

강의 폴더

Project

☒ Gradle - Groovy
☐ Gradle - Kotlin
☐ Maven

Language

☒ Java
☐ Kotlin
☐ Groovy

Spring Boot

☐ 3.0.3 (SNAPSHOT)
☐ 3.0.2
☐ 2.7.9 (SNAPSHOT)
☒ 2.7.8

Project Metadata

Group

com.example

Artifact

checkout

Name

checkout

Description

Demo project for Spring Boot

Package name

com.example.checkout

Packaging

☒ Jar
☐ War

Java

☐ 19
☐ 17
☐ 11
☒ 8

Lombok

DEVELOPER TOOLS

Java annotation library which helps to reduce boilerplate code.

Spring for Apache Kafka

MESSAGING

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

H2 Database

SQL

Provides a fast in-memory database that supports JDBC API and R2DBC access, with a small (2mb) footprint. Supports embedded and server modes as well as a browser based console application.

Spring Web

WEB

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

Spring Boot DevTools

DEVELOPER TOOLS

Provides fast application restarts, LiveReload, and configurations for enhanced development experience.

Thymeleaf

TEMPLATE ENGINES

A modern server-side Java template engine for both web and standalone environments. Allows HTML to be correctly displayed in browsers and as static prototypes.

Spring Data JPA

SQL

Persist data in SQL stores with Java Persistence API using Spring Data and

<https://start.spring.io/#!type=gradle-project&language=java&platformVersion=2.7.8&packaging=jar&jvmVersion=1.8&groupId=com.example&artifactId=checkout&name=checkout&description=Demo%20project%20for%20Spring%20Boot&packageName=com.example.checkout&dependencies=lombok,kafka,h2,web,devtools,thymeleaf,data-jpa>

application.properties

```
spring.h2.console.enabled=true  
spring.h2.console.path=/h2-console  
spring.datasource.generate-unique-name=false  
  
spring.jpa.show-sql=true  
spring.jpa.properties.hibernate.format_sql=true
```

kafka topic 생성

```
bin/kafka-topics.sh --create --topic checkout.complete.v1 --partitions 5 --bootstrap-server localhost:9092
```

```
bin/kafka-topics.sh --create --topic checkout.aggregated.v1 --partitions 5 --bootstrap-server localhost:9092
```


Kafka 프로젝트 실습

3 Consumer Web 프로젝트

start.spring.io

강의 폴더

Project

☒ Gradle - Groovy
 ☐ Gradle - Kotlin
 ☐ Maven

Language

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 ☐ Kotlin
 ☐ Groovy

Spring Boot

☐ 3.0.3 (SNAPSHOT)
 ☐ 3.0.2
 ☐ 2.7.9 (SNAPSHOT)
 ☒ 2.7.8

Project Metadata

Group

com.example

Artifact

shipment

Name

shipment

Description

Demo project for Spring Boot

Package name

com.example.shipment

Packaging

☒ Jar
 ☐ War

Java

☐ 19
 ☐ 17
 ☐ 11
 ☒ 8

Lombok

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application.properties

```
spring.h2.console.enabled=true
spring.h2.console.path=/h2-console
spring.datasource.generate-unique-name=false

spring.jpa.show-sql=true
spring.jpa.properties.hibernate.format_sql=true

server.port=8090
```


Kafka 프로젝트 실습

4 Kafka Streams 프로젝트

start.spring.io

spring initializr

Project

☒ Gradle - Groovy ☐ Gradle - Kotlin ☐ Maven

Language

☒ Java ☐ Kotlin ☐ Groovy

Spring Boot

☐ 3.0.3 (SNAPSHOT) ☐ 3.0.2 ☐ 2.7.9 (SNAPSHOT) ☒ 2.7.8

Project Metadata

Group

Artifact

Name

Description

Package name

Packaging ☒ Jar ☐ War

Java ☐ 19 ☐ 17 ☐ 11 ☒ 8

Dependencies ADD DEPENDENCIES... ⌘ + B

Lombok DEVELOPER TOOLS
Java annotation library which helps to reduce boilerplate code.

Spring for Apache Kafka MESSAGING
Publish, subscribe, store, and process streams of records.

GENERATE ⌘ + ↵ EXPLORE CTRL + SPACE SHARE...

<https://start.spring.io/#!type=gradle-project&language=java&platformVersion=2.7.8&packaging=jar&jvmVersion=1.8&groupId=com.example&artifactId=kafkstreams&name=kafkstreams&description=Demo%20project%20for%20Spring%20Boot&packageName=com.example.kafkstreams&dependencies=lombok,kafka>

Kafka 프로젝트 실습

5 ElasticSearch Connector 프로젝트

ElasticSearch 7.17 + Kibana 설치

<https://www.elastic.co/kr/downloads/past-releases/elasticsearch-7-17-8>

<https://www.elastic.co/kr/downloads/past-releases/kibana-7-17-8>

ElasticSearch 접속 - <http://localhost:9200/>

Kibana 접속 - <http://localhost:5601/>

kafka-to-elasticsearch connector 설치

<https://www.confluent.io/hub/confluentinc/kafka-connect-elasticsearch>

kafka-to-elasticsearch 의 설정 옵션

https://docs.confluent.io/kafka-connectors/elasticsearch/current/configuration_options.html#connector

config/checkout-complete.properties

```
name=checkout.complete.sink
connector.class=io.confluent.connect.elasticsearch.ElasticsearchSinkConnector
tasks.max=1
topics=checkout.complete.v1
key.ignore=true
connection.url=http://localhost:9200
type.name=kafka-logs
schema.ignore=true
schemas.enable=false
transforms=TimestampRouter
transforms.TimestampRouter.type=org.apache.kafka.connect.transforms.TimestampRouter
transforms.TimestampRouter.topic.format=log-checkout.complete-${timestamp}
transforms.TimestampRouter.timestamp.format=YYYYMM
flush.synchronously=true
```

config/connect-standalone.properties 에서 plugin.path 에 다운로드 받은 connector 의 lib 폴더를 plugin.path 로 설정

```
plugin.path=/Users/ocg/Downloads/kafka-elasticsearch/lib
```

```
# CLASSPATH 에 connector lib 폴더 추가
export CLASSPATH=/Users/ocg/Downloads/kafka-elasticsearch/lib/*
# standalone connect 실행
bin/connect-standalone.sh config/connect-standalone.properties config/quickstart-elasticsearch.properties
```


config/checkout-aggregate.properties

```
name=checkout.aggregated.sink
connector.class=io.confluent.connect.elasticsearch.ElasticsearchSinkConnector
tasks.max=1
topics=checkout.productId.aggregated.v1
key.ignore=true
connection.url=http://localhost:9200
type.name=kafka-logs
schema.ignore=true
schemas.enable=false
transforms=TimestampRouter
transforms.TimestampRouter.type=org.apache.kafka.connect.transforms.TimestampRouter
transforms.TimestampRouter.topic.format=log-checkout.productId.aggregated-#{timestamp}
transforms.TimestampRouter.timestamp.format=YYYYMM
flush.synchronously=true
```

```
# standalone connect 실행, 두개의 설정을 한꺼번에 실행시키는 경우
bin/connect-standalone.sh config/connect-standalone.properties config/checkout-complete.properties
config/checkout-aggregate.properties
# connector 상태 조회할 수 있는 RestAPI
http://localhost:8083/connectors?expand=status&expand=info
```

Kafka 프로젝트 실습

6 Jmeter Demo

JMeter 설치

https://jmeter.apache.org/download_jmeter.cgi

UI version 실행
bin/jmeter

