

 免費電子書

學習

apache-camel

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#apache-
camel

.....	1
1: apache-camel	2
.....	2
Examples.....	2
.....	2
Maven.....	2
.....	2
.....	2
.....	2
2: Pub / SubCamel + Redis	4
.....	4
Examples.....	4
RedisPublisher.....	4
RedisSubscriber.....	4
.....	5
.....	5
ManagedCamel.....	5
3: Apache-CamelSpringDBUnit	8
.....	8
.....	8
.....	8
Examples.....	8
.....	8
Camel.....	9
Camel Integration.....	10
.....	13

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1: apache-camel

Apache Camel。 。 。 。

Apache CamelEIP。 JavaWildFlyTomcat。

1. Maven
- 2.
- 3.
4. Plain Old JAR。

Examples

Camel。

Maven

Apache CamelMaven。 MavenCamel。

```
<dependency>
  <groupId>org.apache.camel</groupId>
  <artifactId>camel-core</artifactId>
  <version>2.17.3</version>
</dependency>
```

Apache CamelGradle。 GradleCamel。

```
// https://mvnrepository.com/artifact/org.apache.camel/camel-core
compile group: 'org.apache.camel', name: 'camel-core', version: '2.17.3'
```

Camel 2.15 Apache CamelSpring Boot。 CamelCamel。

```
<dependency>
  <groupId>org.apache.camel</groupId>
  <artifactId>camel-spring-boot</artifactId>
  <version>${camel.version}</version> <!-- use the same version as your Camel core version -
->
</dependency>
```

CamelDSL CamelIntegration。 DSLXMLDSL。

CamelDSLJavaScalaGroovyXML。

- Java DSL

```
from("file:data/in").to("file:data/out");
```

- / Spring DSLXML

```
<route>  
  <from uri="file:data/inbox"/>  
  <to uri="file:data/out"/>  
</route>
```

- Scala DSL

```
from "file:data/inbox" -> "file:data/out"
```

apache-camel <https://riptutorial.com/zh-TW/apache-camel/topic/3511/apache-camel>

2: Pub / SubCamel + Redis

```
producerTemplate.asyncSendBody("direct:myprocedure", messageBody);
```

ManagedCamel“createProducer”producerTemplate。

Examples

RedisPublisher

```
public class RedisPublisher extends RouteBuilder {

    public static final String CAMEL_REDIS_CHANNEL = "CamelRedis.Channel";
    public static final String CAMEL_REDIS_MESSAGE = "CamelRedis.Message";

    @Value("${redis.host}")
    private String redisHost;
    @Value("${redis.port}")
    private int redisPort;
    @Value("${redis.channel.mychannel}")
    private String redisChannel;

    private String producerName;

    @Required
    public void setProducerName(String producerName) {
        this.producerName = producerName;
    }

    @Override
    public void configure() throws Exception {
        from(producerName)
            .log(String.format("Publishing with redis in channel: %s, message body: %s", redisChannel), redisChannel)
            .setHeader(CAMEL_REDIS_CHANNEL, constant(redisChannel))
            .setHeader(CAMEL_REDIS_MESSAGE, body())
            .to(String.format("spring-redis://%s:%s?command=PUBLISH&redisTemplate=#%s",
redisHost, redisPort, ManagedCamel.REDIS_TEMPLATE));
    }
}
```

RedisSubscriber

```
public class RedisSubscriber extends RouteBuilder {

    @Value("${redis.host}")
    private String redisHost;
    @Value("${redis.port}")
    private int redisPort;
    @Value("${redis.channel.mychannel}")
    private String redisChannel;

    private Object bean;
```

```

private String method;

@Required
public void setBean(Object bean) {
    this.bean = bean;
}

@Required
public void setMethod(String method) {
    this.method = method;
}

@Override
public void configure() throws Exception {
    from(String.format("spring-
redis://%s:%s?command=SUBSCRIBE&channels=%s&serializer=#%s", redisHost, redisPort,
redisChannel, ManagedCamel.REDIS_SERIALIZER))
        .log(String.format("Consuming with redis in channel: %s, message body:
${body}", redisChannel))
        .process(exchange -> {
            }).bean(bean, String.format("%s(${body})", method));
    }
}

```

beanMethod".

```

<bean id="managedCamel" class="com.pubsub.example.ManagedCamel" >
    <constructor-arg name="routes">
        <list>
            <ref bean="redisSubscriber"/>
        </list>
    </constructor-arg>
</bean>

<bean id="redisSubscriber" class="com.pubSub.example.RedisSubscriber" >
    <property name="bean" ref="myBean"/>
    <property name="method" value="process"/>
</bean>

```

```

<bean id="managedCamel" class="com.pubSub.example.ManagedCamel" >
    <constructor-arg name="routes">
        <list>
            <ref bean="redisPublisher"/>
        </list>
    </constructor-arg>
</bean>

<bean id="redisPublisher" class="com.pubSub.example.RedisPublisher" >
    <property name="producerName" value="direct:myprocedure"/>
</bean>

```

ManagedCamel

```

public class ManagedCamel implements Managed {

    public static final String REDIS_TEMPLATE = "redisTemplate";
    public static final String LISTENER_CONTAINER = "listenerContainer";
}

```

```

public static final String REDIS_SERIALIZER = "redisSerializer";
private DefaultCamelContext camelContext;

private List<RouteBuilder> routes;
@Value("${redis.host}")
private String redisHost;
@Value("${redis.port}")
private int redisPort;
@Value("${redis.password}")
private String redisPassword;

public ManagedCamel(List<RouteBuilder> routes) throws Exception {
    this.routes = routes;
}

@PostConstruct
private void postInit() throws Exception {
    JndiRegistry registry = new JndiRegistry();
    final StringRedisSerializer serializer = new StringRedisSerializer();
    RedisTemplate<String, Object> redisTemplate = getRedisTemplate(serializer);
    registry.bind(REDIS_TEMPLATE, redisTemplate);
    RedisMessageListenerContainer messageListenerContainer = new
RedisMessageListenerContainer();
    registry.bind(LISTENER_CONTAINER, messageListenerContainer);
    registry.bind(REDIS_SERIALIZER, serializer);

    camelContext = new DefaultCamelContext(registry);
    for (RouteBuilder routeBuilder : routes) {
        camelContext.addRoutes(routeBuilder);
    }
    start();
}

private RedisTemplate<String, Object> getRedisTemplate(StringRedisSerializer serializer) {
    RedisTemplate<String, Object> redisTemplate = new RedisTemplate<String, Object>();
    redisTemplate.setConnectionFactory(redisConnectionFactory());
    redisTemplate.setKeySerializer(new StringRedisSerializer());
    redisTemplate.setValueSerializer(serializer);
    redisTemplate.setEnableDefaultSerializer(false);
    redisTemplate.afterPropertiesSet();
    return redisTemplate;
}

private RedisConnectionFactory redisConnectionFactory() {
    final JedisConnectionFactory jedisConnectionFactory = new JedisConnectionFactory();
    jedisConnectionFactory.setHostName(redisHost);
    jedisConnectionFactory.setPort(redisPort);
    jedisConnectionFactory.setPassword(redisPassword);
    jedisConnectionFactory.afterPropertiesSet();
    return jedisConnectionFactory;
}

public void start() throws Exception {
    camelContext.start();
}

public void stop() throws Exception {
    camelContext.stop();
}

public ProducerTemplate createProducer() {

```



```
        return camelContext.createProducerTemplate();  
    }  
}
```

Pub / Sub Camel + Redis <https://riptutorial.com/zh-TW/apache-camel/topic/7105/pub---subcamel-plus-redis>

3: Apache-CamelSpringDBUnit

wikiApache Camel.

◦

Spring with xmlDBUnit. ◦

/	
CamelContext	◦
ProducerTemplate	/
AdviceWith	
WeaveById	<i>weaveByToString</i>
MockEndpoint	mockendpoint. weaveByIdmockEndpoint.

◦

- *AdviceWithweaveByIdApache*
- *ProducerTemplate*
- Camel [Enterprise Integration Patterns](#)

◦ ◦

Examples

- **ImportDocumentProcess**
- **ImportDocumentTraitement** ImportDocumentProcess

```
@Component
public class TestExampleRoute extends SpringRouteBuilder {

    public static final String ENDPOINT_EXAMPLE = "direct:testExampleEndpoint";

    @Override
    public void configure() throws Exception {
        from(ENDPOINT_EXAMPLE).routeId("testExample")
            .bean(TestExampleProcessor.class,
"getImportDocumentProcess").id("getImportDocumentProcess")
            .bean(TestExampleProcessor.class,
"createImportDocumentTraitement").id("createImportDocumentTraitement")
            .to("com.pack.camel.routeshowAll=true&multiline=true");
    }
}
```

```
}  
  
}
```

idbean. *id*.

Camel

◦ Java Bean ◦ *Processor*

```
@Component("testExampleProcessor")  
public class TestExampleProcessor {  
  
    private static final Logger LOGGER = LogManager.getLogger(TestExampleProcessor.class);  
  
    @Autowired  
    public ImportDocumentTraitementServiceImpl importDocumentTraitementService;  
  
    @Autowired  
    public ImportDocumentProcessDAOImpl importDocumentProcessDAO;  
  
    @Autowired  
    public ImportDocumentTraitementDAOImpl importDocumentTraitementDAO;  
  
    // ---- Constants to name camel headers and bodies  
    public static final String HEADER_ENTREPRISE = "entreprise";  
  
    public static final String HEADER_UTILISATEUR = "utilisateur";  
  
    public static final String HEADER_IMPORTDOCPROCESS = "importDocumentProcess";  
  
    public void getImportDocumentProcess(@Header(HEADER_ENTREPRISE) Entreprise entreprise,  
Exchange exchange) {  
        LOGGER.info("Entering TestExampleProcessor method : getImportDocumentProcess");  
  
        Utilisateur utilisateur = SessionUtils.getUtilisateur();  
        ImportDocumentProcess importDocumentProcess =  
importDocumentProcessDAO.getImportDocumentProcessByEntreprise(  
            entreprise);  
  
        exchange.getIn().setHeader(HEADER_UTILISATEUR, utilisateur);  
        exchange.getIn().setHeader(HEADER_IMPORTDOCPROCESS, importDocumentProcess);  
    }  
  
    public void createImportDocumentTraitement(@Header(HEADER_ENTREPRISE) Entreprise  
entreprise,  
        @Header(HEADER_UTILISATEUR) Utilisateur utilisateur,  
        @Header(HEADER_IMPORTDOCPROCESS) ImportDocumentProcess importDocumentProcess,  
Exchange exchange) {  
        LOGGER.info("Entering TestExampleProcessor method : createImportDocumentTraitement");  
  
        long nbImportTraitementBefore =  
this.importDocumentTraitementDAO.countNumberOfImportDocumentTraitement();  
        ImportDocumentTraitement importDocumentTraitement =  
this.importDocumentTraitementService.createImportDocumentTraitement(  
            entreprise, utilisateur, importDocumentProcess, "md5_fichier_example_test",  
"fichier_example_test.xml");  
        long nbImportTraitementAfter =
```

```

this.importDocumentTraitementDAO.countNumberOfImportDocumentTraitement ();

        exchange.getIn().setHeader("nbImportTraitementBefore",
Long.valueOf(nbImportTraitementBefore));
        exchange.getIn().setHeader("nbImportTraitementAfter",
Long.valueOf(nbImportTraitementAfter));
        exchange.getIn().setHeader("importDocumentTraitement", importDocumentTraitement);
    }
// Rest of the code contains getters and setters for imported dependencies
}

```

◦ ◦

Camel Integration

camelspring camel◦ maven

```

<dependency>
  <groupId>org.apache.camel</groupId>
  <artifactId>camel-test</artifactId>
  <version>${camel.version}</version>
  <scope>test</scope>
</dependency>
<dependency>
  <groupId>org.apache.camel</groupId>
  <artifactId>camel-test-spring</artifactId>
  <version>${camel.version}</version>
  <scope>test</scope>
</dependency>

```

◦ **DBUnit**◦

Camel Integration Test

```

@RunWith (CamelSpringRunner.class)
@BootstrapWith (CamelTestContextBootstrapper.class)
@ContextConfiguration(locations = { "classpath:/test-beans.xml" })
@DbUnitConfiguration(dataSetLoader = ReplacementDataSetLoader.class)
@TestExecutionListeners({ DependencyInjectionTestExecutionListener.class,
  DirtiesContextTestExecutionListener.class,
    DbUnitTestExecutionListener.class })
@DirtiesContext (classMode = ClassMode.AFTER_EACH_TEST_METHOD)
public abstract class AbstractCamelTI {

}

```

DAO◦ DBUnit◦

@DirtiesContext (classMode = ClassMode.AFTER_EACH_TEST_METHOD) ◦ *camel* ◦ ◦ *remove* ◦ ◦ ◦

```

@DatabaseSetup(value = { "/db_data/dao/common.xml",
"/db_data/dao/importDocumentDAOCommonTest.xml" })
public class TestExampleProcessorTest extends AbstractCamelTI {

```

```

@Autowired
protected CamelContext camelContext;

@EndpointInject(uri = "mock:catchTestEndpoint")
protected MockEndpoint mockEndpoint;

@Produce(uri = TestExampleRoute.ENDPOINT_EXAMPLE)
protected ProducerTemplate template;

@Autowired
ImportDocumentTraitementDAO importDocumentTraitementDAO;

// -- Variables for tests
ImportDocumentProcess importDocumentProcess;

@Override
@Before
public void setUp() throws Exception {
    super.setUp();

    importDocumentProcess = new ImportDocumentProcess();
    //specific implementation of your choice
}
}

```

mockEndpoint *ImportDocumentProcess*

```

@Test
public void processCorrectlyObtained_getImportDocumentProcess() throws Exception {
    camelContext.getRouteDefinitions().get(0).adviceWith(camelContext, new
AdviceWithRouteBuilder() {

        @Override
        public void configure() throws Exception {
            weaveById("getImportDocumentProcess").after().to(mockEndpoint);
        }
    });

    // -- Launching the route
    camelContext.start();
    template.sendBodyAndHeader(null, "entreprise", company);

    mockEndpoint.expectedMessageCount(1);
    mockEndpoint.expectedHeaderReceived(TestExampleProcessor.HEADER_UTILISATEUR, null);
    mockEndpoint.expectedHeaderReceived(TestExampleProcessor.HEADER_IMPORTDOCPROCESS,
importDocumentProcess);
    mockEndpoint.assertIsSatisfied();

    camelContext.stop();
}

```

```

@Test
public void traitementCorrectlyCreated_createImportDocumentTraitement() throws Exception {
    camelContext.getRouteDefinitions().get(0).adviceWith(camelContext, new
AdviceWithRouteBuilder() {

        @Override
        public void configure() throws Exception {
            weaveById("createImportDocumentTraitement").after().to(mockEndpoint);
        }
    });
}

```

```

    }
});

// -- Launching the route
camelContext.start();

Exchange exchange = new DefaultExchange(camelContext);
exchange.getIn().setHeader(TestExampleProcessor.HEADER_ENTREPRISE, company);
exchange.getIn().setHeader(TestExampleProcessor.HEADER_UTILISATEUR, null); // No user in
this case
exchange.getIn().setHeader(TestExampleProcessor.HEADER_IMPORTDOCPROCESS,
importDocumentProcess);

long numberOfTraitementBefore =
this.importDocumentTraitementDAO.countNumberOfImportDocumentTraitement();

template.send(exchange);

mockEndpoint.expectedMessageCount(1);
mockEndpoint.assertIsSatisfied();

camelContext.stop();

long numberOfTraitementAfter =
this.importDocumentTraitementDAO.countNumberOfImportDocumentTraitement();
assertEquals(numberOfTraitementBefore + 1L, numberOfTraitementAfter);
}

```

◦ mockEndpoint ◦ ◦

adviceWith

```

camelContext.getRouteDefinitions().get(0).adviceWith(camelContext, new
AdviceWithRouteBuilder() { [...] });

```

ID

```

camelContext.getRouteDefinition("routeId").adviceWith(camelContext, new
AdviceWithRouteBuilder() { [...] });

```

Apache-CamelSpringDBUnit <https://riptutorial.com/zh-TW/apache-camel/topic/10630/apache-camelspring-dbunit->

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