무료 전자 책

배우기

apache-camel

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Stack Overflow contributors.

#apache-camel

1: apache-camel

Apache Camel . . () . .

Apache Camel , , EIP ( ) . Java , WildFly Tomcat .

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1.
2.
3.
4. JAR .

Examples

Camel .

Maven

Apache Camel Maven . Maven Camel .

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

Apache Camel Gradle . Gradle Camel .

```
// 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 Camel Spring Boot . Camel (Camel) .

```
<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>
```

Camel DSL (Domain Specific Language) Camel . XML DSL DSL .

Camel Java, Scala, Groovy XML DSL .

- Java DSL

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

- / DSL (XML)

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

- DSL

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

apache-camel : https://riptutorial.com/ko/apache-camel/topic/3511/apache-camel-

2: Apache-Camel Spring (DBUnit)

wiki Apache Camel .

, ( ) .

xml DBUnit Spring . .

/	
CamelContext	camel .
ProducerTemplate	/
AdviceWith	.
	, (*weaveByToString*).
MockEndpoint	mockendpoint . weaveById mockEnpoint . , ...

. .

- *AdviceWith* *weaveById* ( ) apache-camel .
- *ProducerTemplate* :
- : Entreprise Integration Pattern

. .

Examples

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

.

```
@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");
    }

}
```

ID . *ID* .

. Java Bean. .

.

```
@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

. 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)` . . . , , *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` `mockEndpoint` . Exchange .

: `adviceWith` .

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

ID .

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

. .

Apache-Camel Spring (DBUnit) : https://riptutorial.com/ko/apache-camel/topic/10630/apache-camel--spring---dbunit-------

3: Camel + Redis Pub / Sub

:

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

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, massage body:
${body}", 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, massage body:
${body}", redisChannel))
                .process(exchange -> {
                }).bean(bean, String.format("%s(${body})", method));
    }
}
```

" .

```
<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();
    }

}
```

Camel + Redis Pub / Sub : https://riptutorial.com/ko/apache-camel/topic/7105/camel-plus-redis--pub---sub

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