Neusoft

Apache Camel

使用成果分享

谭初跃 2021-06

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Apache Camel概述

Introducing Apache Camel

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Apache camel

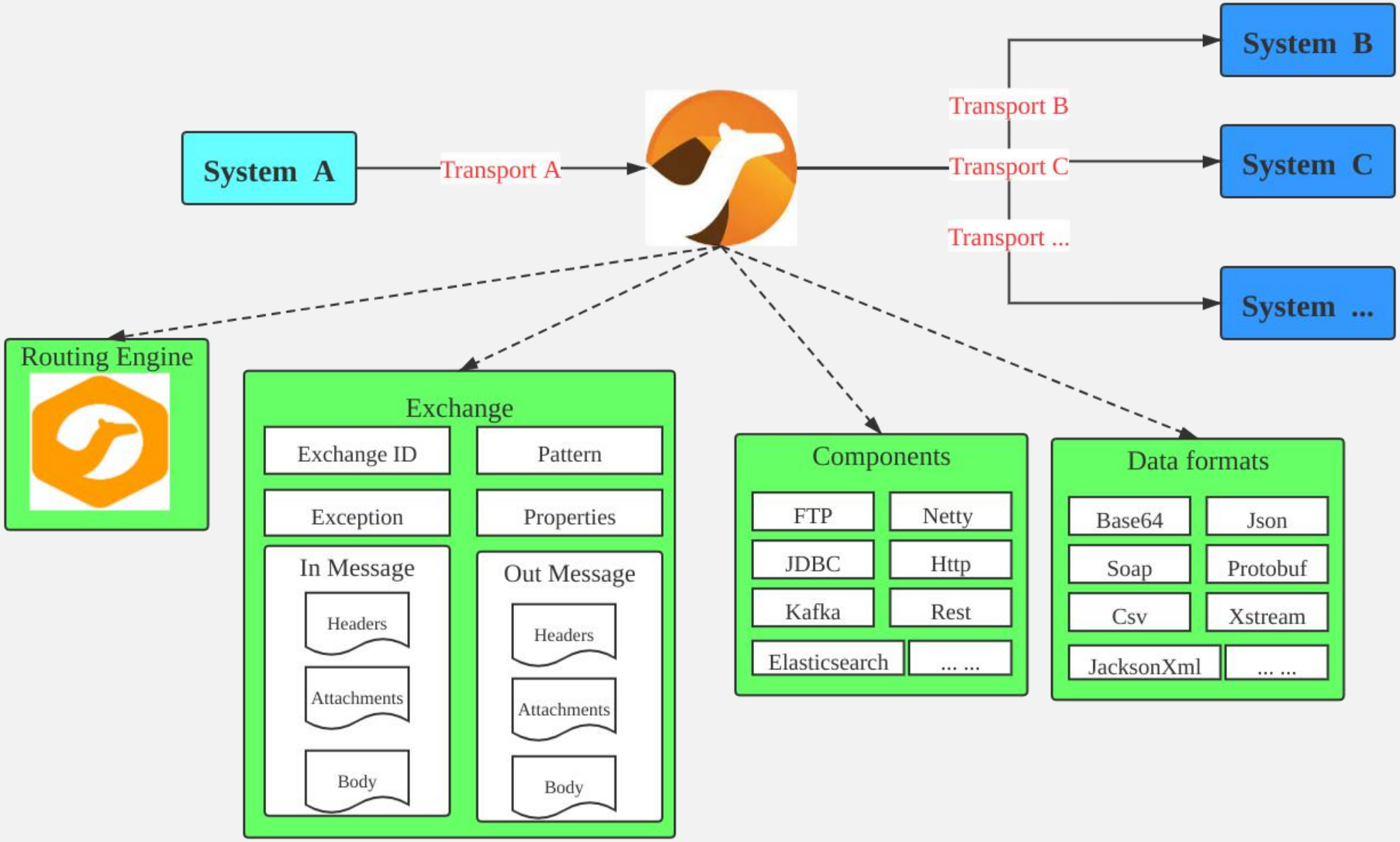
维基百科

Apache Camel是一个基于规则路由和中介引擎，提供企业集成模式的Java对象(POJO)的实现，通过应用程序接口（或称为陈述式的Java领域特定语言（DSL））来配置路由和中介的规则。领域特定语言意味着Apache Camel支持你在的集成开发工具中使用平常的，类型安全的，可自动补全的Java代码来编写路由规则，而不需要大量的XML配置文件。同时，也支持在Spring中使用XML配置定义路由和中介规则。

https://github.com/apache/camel

关键词：Endpoint 、 Routing、 Exchange、 Message、 Component、 Dataformat

逻辑视图


System A
Transport A
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Transport ...
System B
System C
System ...
Routing Engine
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Exchange ID
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Exception
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集成用例

Integration Example

第二章

集成用例

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- Json2SOAP用例演示
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Integration Example

代码解读
CamelMain

https://github.com/tanchy82/CamelExchange/blob/master/src/main/scala/com/oldtan/camel/CamelMain.scala

CamelMain.scala

```scala
/**
  * @Description: Camel Exchange Main Method
  * @Author: tanchuyue
  * @Date: 21-4-30
  */
object CamelMain extends App with LazyLogging {
  val camel = new DefaultCamelContext
  val config = new Yaml(new Constructor(classOf[RestConfig]))
    .load(Source.fromResource("application-rest.yml").bufferedReader).asInstanceOf[RestConfig]
  val mapper = new ObjectMapper
  val xmlMapper = new XmlMapper
  xmlMapper.configure(ToXmlGenerator.Feature.WRITE_XML_DECLARATION, state = true)

  implicit def aa(r: AnyRef) = r match {
    case o: ChoiceDefinition => o.asInstanceOf[ChoiceDefinition]
    case o: RouteDefinition => o.asInstanceOf[RouteDefinition]
  }

  def addSingleRoute(rDef: AnyRef, toUri: String, toMethod: String, bean: ExchangeBean, namespace:String) = {
    rDef.process(new Processor {
      override def process(exchange: Exchange):Unit = {
        exchange.getIn.setBody(mapper.writeValueAsString(exchange.getIn.getBody.asInstanceOf[util.LinkedHashMap[String,
        toMethod match {
          case "WS" => {
            bean.requestExchange(exchange)
```

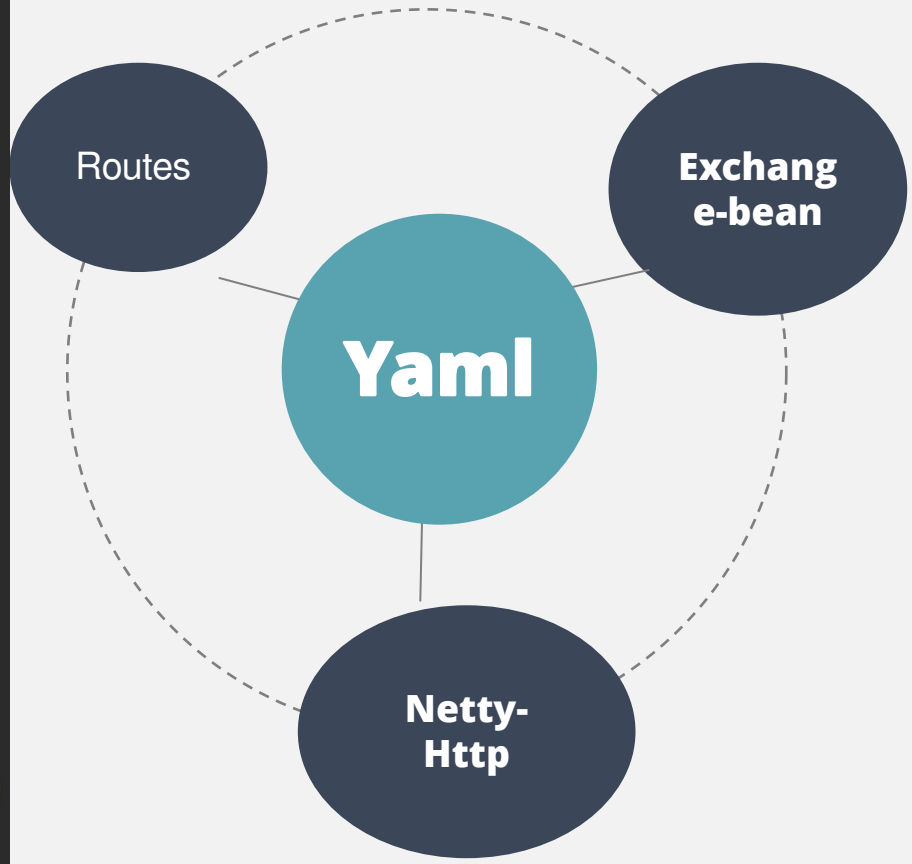
CamelMain

代码解读
Yaml

https://github.com/tanchy82/CamelExchange/blob/master/src/main/resources/application-rest.yml

application-rest.yml

```yaml
host: localhost
port: 7777
property: connectTimeout:5,compression:true
routes:
  - from: /his
    from_method: post
    model: Serial    # model have Serial、choice two route running model,default model is Serial
    to: localhost:8282/demo
    to_method: post
    exchange_bean: com.oldtan.camel.processor.DefaultExchangeBean
  ## If you set to uri contain path variable, then set follow the below
  #  destination endpoint uri is:  http://localhost:8282/demo222/{id}
  ## If you set more uri sort, then set follow the below
  #  set to/to_method/exchange_bean properties sort by slip ','
  - from: /demo222/{id}
    from_method: post
    model: Serial
    to: localhost:8282,localhost:8282/demo
    to_method: post,post
    exchange_bean: com.oldtan.camel.processor.DefaultExchangeBean,com.oldtan.camel.processor.DefaultExchangeBean
  ## If destination endpoint is web SOAP service, then set to_method attributes value 'ws' and must have 'namespace'
  - from: /tows
    from_method: post
    model: Serial
```



代码解读
ExchangeBean

https://github.com/tanchy82/CamelExchange/blob/master/src/main/java/com/oldtan/camel/processor/DefaultExchangeBean.java

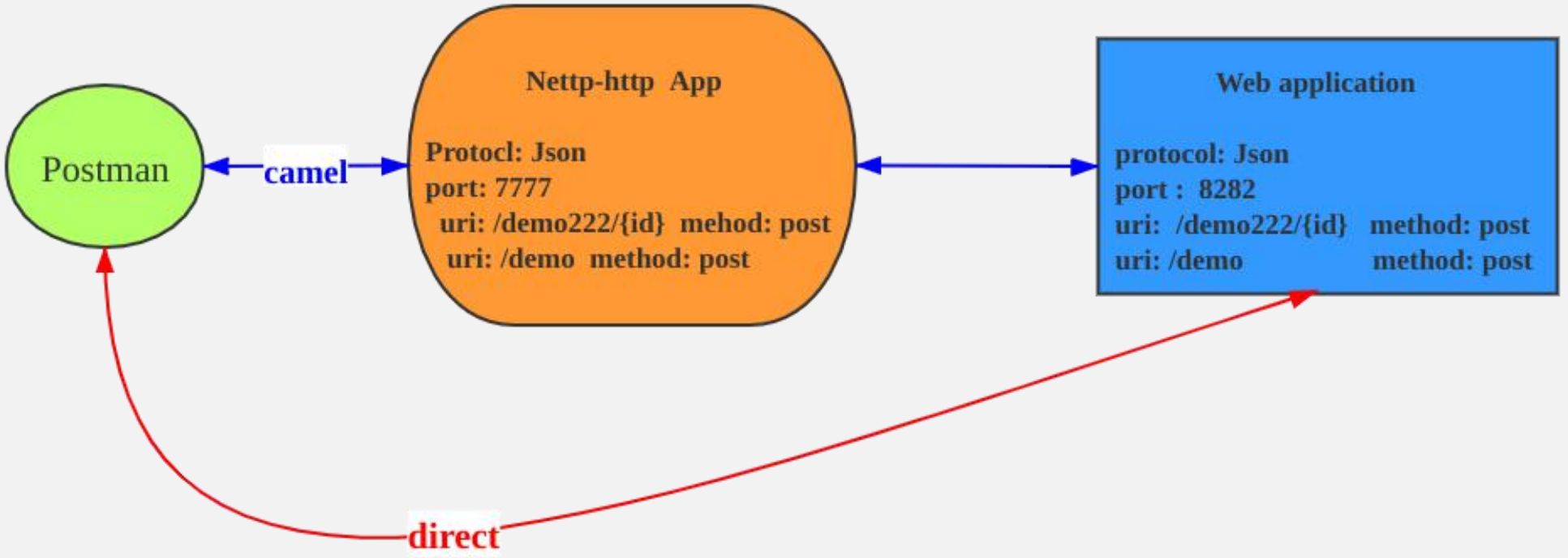
DefaultExchangeBean.java

```java
/**
 * @Description: Exchange data default bean
 * @Author: tanchuyue
 * @Date: 21-4-30
 */
public class DefaultExchangeBean implements ExchangeBean {

    private ObjectMapper mapper = new ObjectMapper();

    /**
     * Request exchange data handler method Integration Example
     * @param exchange
     */
    @Override
    public void requestExchange(Exchange exchange){...}

    /**
     * Response exchange data handler method Integration Example
     * @param exchange
     */
    @Override
    public void responseExchange(Exchange exchange){...}

}
```

实现接口com.oldtan.ExchangeBean

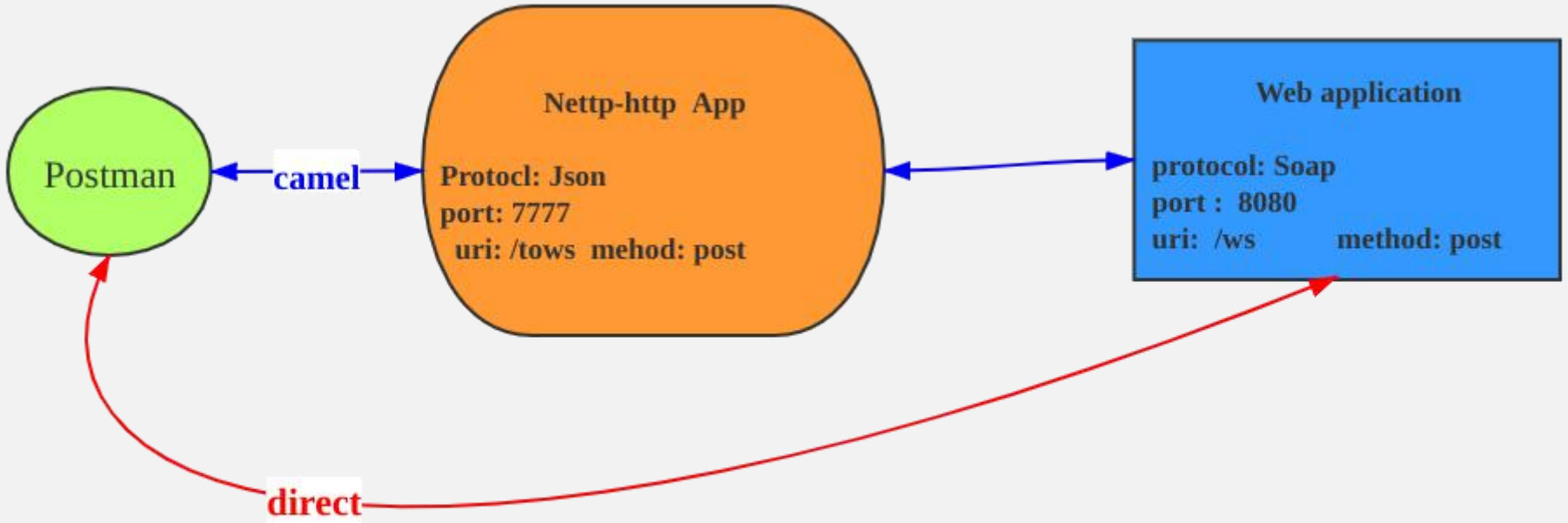
Json2Json

调用逻辑视图



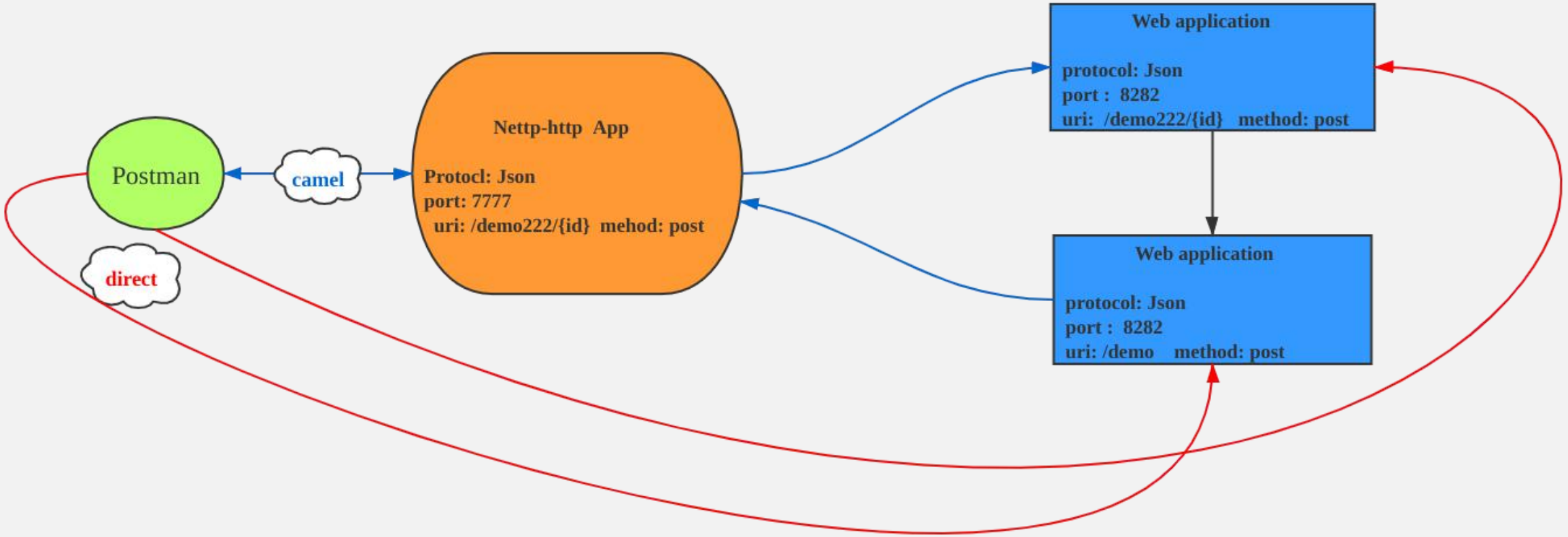
Json2SOAP

调用逻辑视图



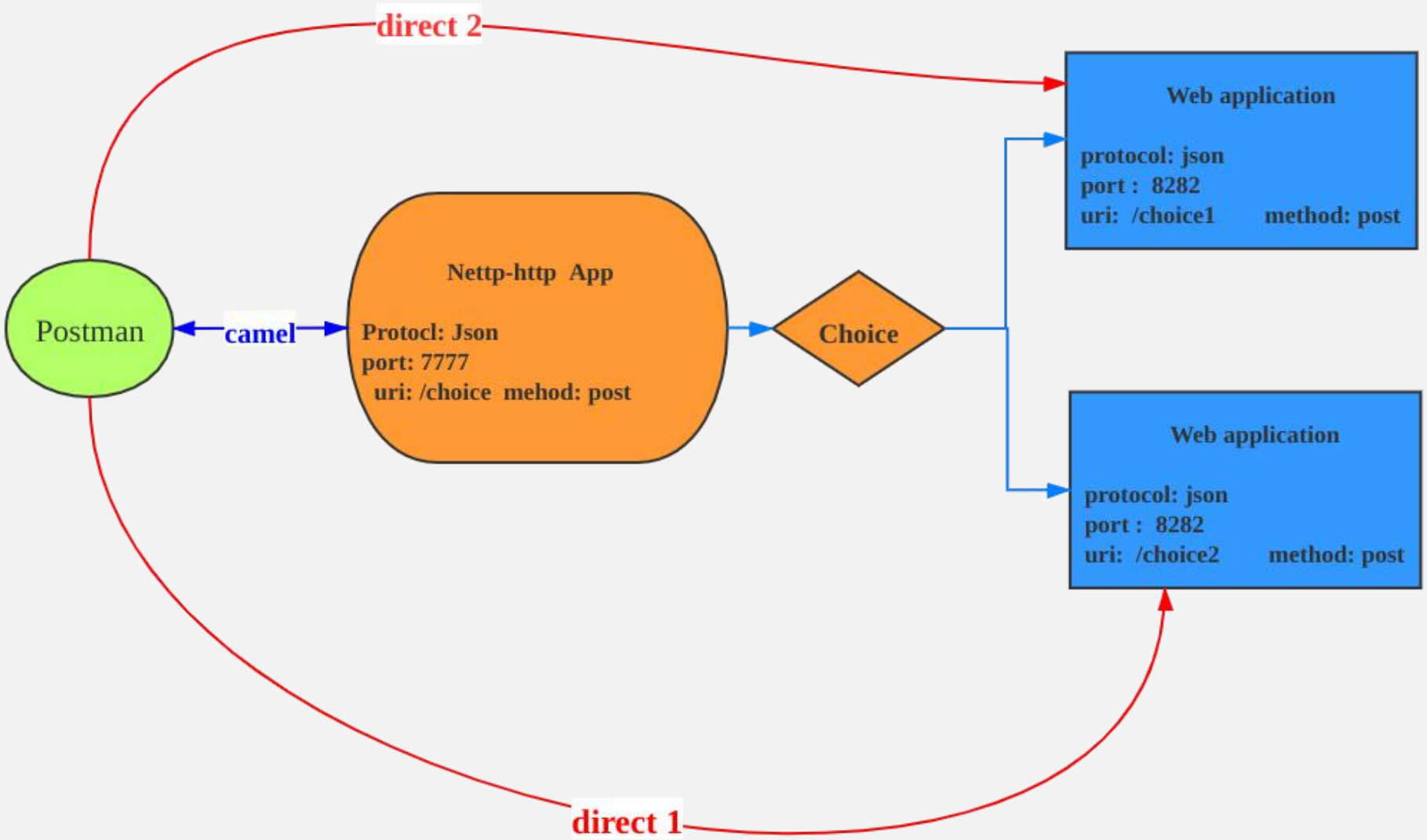
多资源串行

调用逻辑视图



多资源选择

调用逻辑视图



成果使用和需求定制

communication

第三章

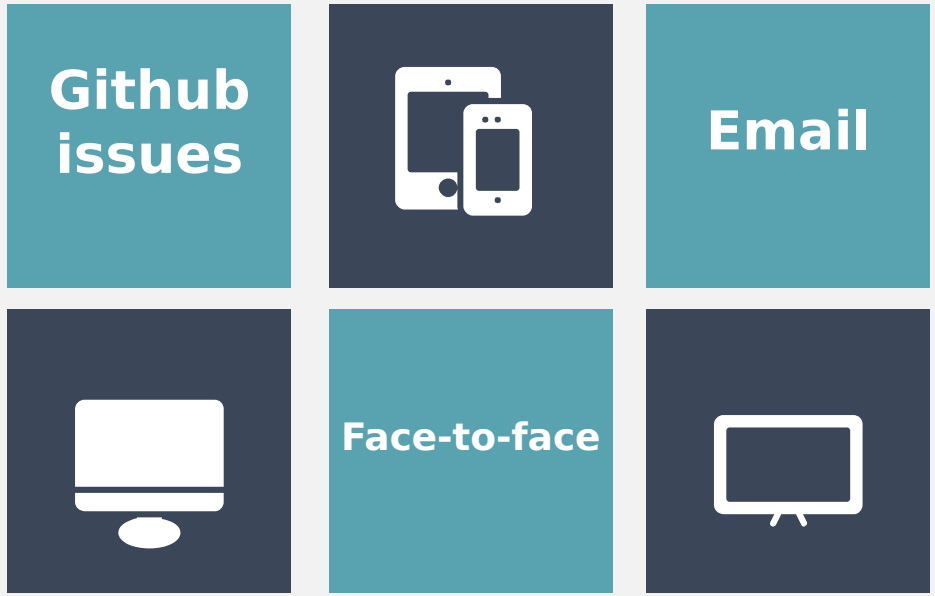
业务场景多样化

需求定制

Apache camel 是一个非常实用的规则引擎库，能够用来处理来自于不同源的事件和信息。你可以在使用不同的协议比如VM，HTTP，FTP，JMS甚至是文件系统中来传递消息，并且让你的操作逻辑和传递逻辑保持分离，这能够让你更专注于消息的内容。

Camel的定位是轻量级的ESB，使用场景可大可小，即可嵌入到Springboot中当成jar使用，亦搭建成单独的微服务使用。本次所分享的用例仅仅是冰山一角，更多用例需要基于业务场景及大家共同努力来分享、完善。

- 关于Camel的更多官方文档详见 https://camel.apache.org/
- 如遇到类似业务场景时如有需要可参考或直接拉取Github代码
- 如需要进行业务定制可通过Github issues、Email、Face-to-face等沟通方式相互探讨。
- 在转载、修改、使用Github代码亦请遵循GNU General Public License v3.0协议，坚持开放、开源、共享的开源精神。
- Github: https://github.com/tanchy82/CamelExchange
- Email: tanchy@neusoft.com



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谢谢！

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