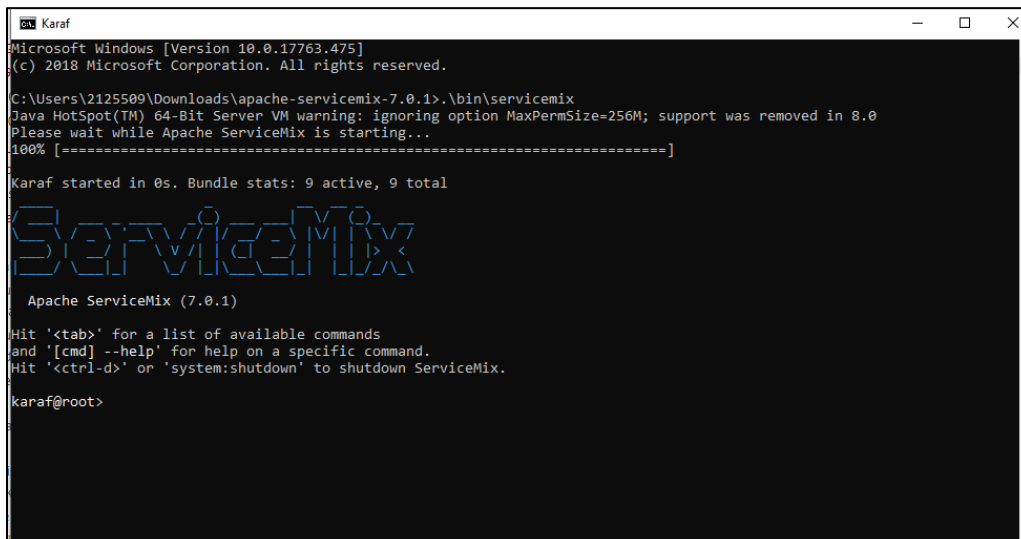


Taller de Patrones de Arquitectura-ESB

Objetivo

Este taller tiene como objetivo el manejo y uso de un ESB, para esto se utilizará ServiceMix, el cual es un servicio ESB de código abierto.

Primero se procede a Instalar ServiceMix y ejecutar el servicio



```
Microsoft Windows [Version 10.0.17763.475]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\2125509\Downloads\apache-servicemix-7.0.1>.bin\servicemix
Java HotSpot(TM) 64-Bit Server VM warning: ignoring option MaxPermSize=256M; support was removed in 8.0
Please wait while Apache ServiceMix is starting...
100% [=====]

Karaf started in 0s. Bundle stats: 9 active, 9 total

ServiceMix

Apache ServiceMix (7.0.1)

Hit '<tab>' for a list of available commands
and '[cmd] --help' for help on a specific command.
Hit '<ctrl-d>' or 'system:shutdown' to shutdown ServiceMix.

karaf@root>
```

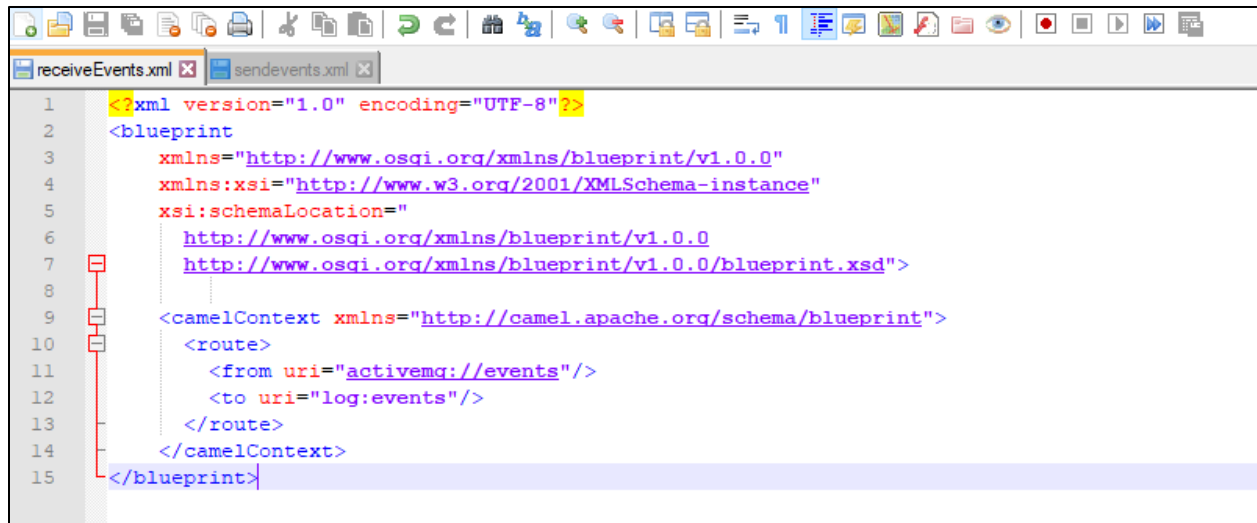
Ahora configuramos ServiceMix para que pase los mensajes de la cola de eventos a la cola de salida

Añadimos dos archivos .xml uno para que configure que los archivos ingresados a la carpeta input sean enviados a la carpeta output



```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <blueprint
3   xmlns="http://www.osgi.org/xmlns/blueprint/v1.0.0"
4   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
5   xsi:schemaLocation="
6     http://www.osgi.org/xmlns/blueprint/v1.0.0
7     http://www.osgi.org/xmlns/blueprint/v1.0.0/blueprint.xsd">
8
9   <camelContext xmlns="http://camel.apache.org/schema/blueprint">
10     <route>
11       <from uri="file:activemq/input"/>
12       <to uri="file:activemq/output"/>
13
14       <setBody>
15         <simple>
16           FileMovedEvent(file: ${file:name}, timestamp: ${date:now:hh:MM:ss.SSS})
17         </simple>
18       </setBody>
19       <to uri="activemq://events" />
20     </route>
21   </camelContext>
22 </blueprint>
```

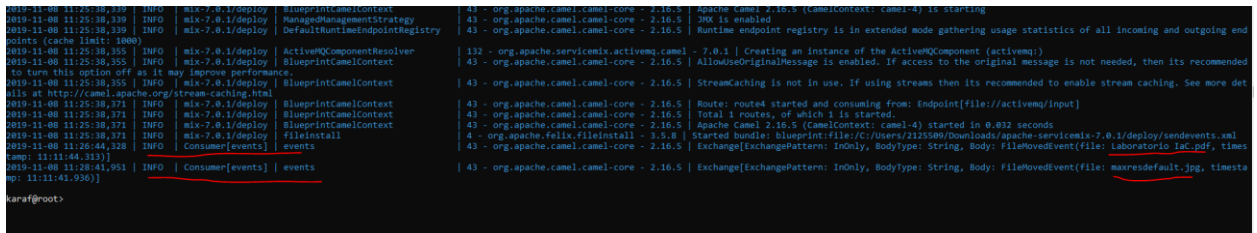
Para que los eventos sean recibidos se agrega el siguiente archivo .xml a la carpeta deploy.



```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <blueprint
3   xmlns="http://www.osgi.org/xmlns/blueprint/v1.0.0"
4   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
5   xsi:schemaLocation="
6     http://www.osgi.org/xmlns/blueprint/v1.0.0
7     http://www.osgi.org/xmlns/blueprint/v1.0.0/blueprint.xsd">
8
9   <camelContext xmlns="http://camel.apache.org/schema/blueprint">
10     <route>
11       <from uri="activemq://events"/>
12       <to uri="log:events"/>
13     </route>
14   </camelContext>
15 </blueprint>
```

Probamos añadiendo dos archivos en la carpeta input y después son enviados a la carpeta output.

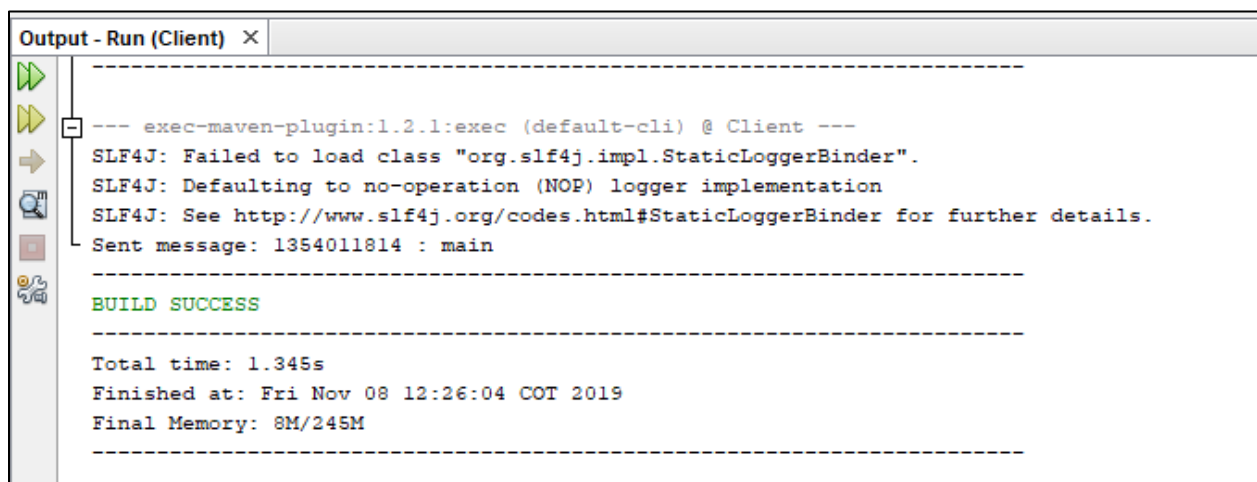
Como podemos ver en la consola podemos observar que el consumidor recibe los eventos de ambos archivos



```
2019-11-08 11:25:38,209 INFO mix-7.0.1/deploy BlueprintCamelContext 43 - org.apache.camel.camel-core - 2.16.5 | Apache Camel 2.16.5 (CamelContext: camel-4) is starting
2019-11-08 11:25:38,139 INFO mix-7.0.1/deploy ManagedManagementStrategy 43 - org.apache.camel.camel-core - 2.16.5 | JMX is enabled
2019-11-08 11:25:38,139 INFO mix-7.0.1/deploy DefaultRuntimeEndpointRegistry 43 - org.apache.camel.camel-core - 2.16.5 | Runtime endpoint registry is in extended mode gathering usage statistics of all incoming and outgoing end
points (cache limit: 1000)
2019-11-08 11:25:38,355 INFO mix-7.0.1/deploy ActiveMQComponentResolver 132 - org.apache.servicemix.activemq:camel - 7.0.1 | Creating an instance of the ActiveMQComponent (activemq)
2019-11-08 11:25:38,355 INFO mix-7.0.1/deploy BlueprintCamelContext 43 - org.apache.camel.camel-core - 2.16.5 | AllowUseOriginalMessage is enabled. If access to the original message is not needed, then its recommended
to turn this option off as it may improve performance.
2019-11-08 11:25:38,355 INFO mix-7.0.1/deploy BlueprintCamelContext 43 - org.apache.camel.camel-core - 2.16.5 | StreamCaching is not in use. If using streams then its recommended to enable stream caching. See more det
ails at http://camel.apache.org/stream-caching.html
2019-11-08 11:25:38,371 INFO mix-7.0.1/deploy BlueprintCamelContext 43 - org.apache.camel.camel-core - 2.16.5 | Route: route4 started and consuming from: Endpoint[file://activemq/input]
2019-11-08 11:25:38,371 INFO mix-7.0.1/deploy BlueprintCamelContext 43 - org.apache.camel.camel-core - 2.16.5 | Total 1 routes, of which 1 is started.
2019-11-08 11:25:38,371 INFO mix-7.0.1/deploy BlueprintCamelContext 43 - org.apache.camel.camel-core - 2.16.5 | Apache Camel 2.16.5 (CamelContext: camel-4) started in 0.932 seconds
2019-11-08 11:25:38,371 INFO mix-7.0.1/deploy file:install 4 - org.apache.felix.fileinstall - 3.5.4 | Started bundle: Blueprint[file:/C:/Users/2125589/Downloads/apache-servicemix-7.0.1/deploy/sendevents.xml
2019-11-08 11:26:44,128 INFO Consumer[events] 43 - org.apache.camel.camel-core - 2.16.5 | Exchange[ExchangePattern: InOnly, BodyType: String, Body: FileMovedEvent(file: Laboratorio 1ac.pdf, times
temp: 11:11:44.353)]
2019-11-08 11:26:44,951 INFO Consumer[events] | events 43 - org.apache.camel.camel-core - 2.16.5 | Exchange[ExchangePattern: InOnly, BodyType: String, Body: maxresdefault.jpg, times
mp: 11:11:41.936]
karaf@root>
```

Ahora probaremos nuestro ESB con dos programas un cliente que se encargará de enviar un mensaje al bus de servicios y un consumidor que leerá el mensaje recibido

Enviamos el mensaje con el cliente



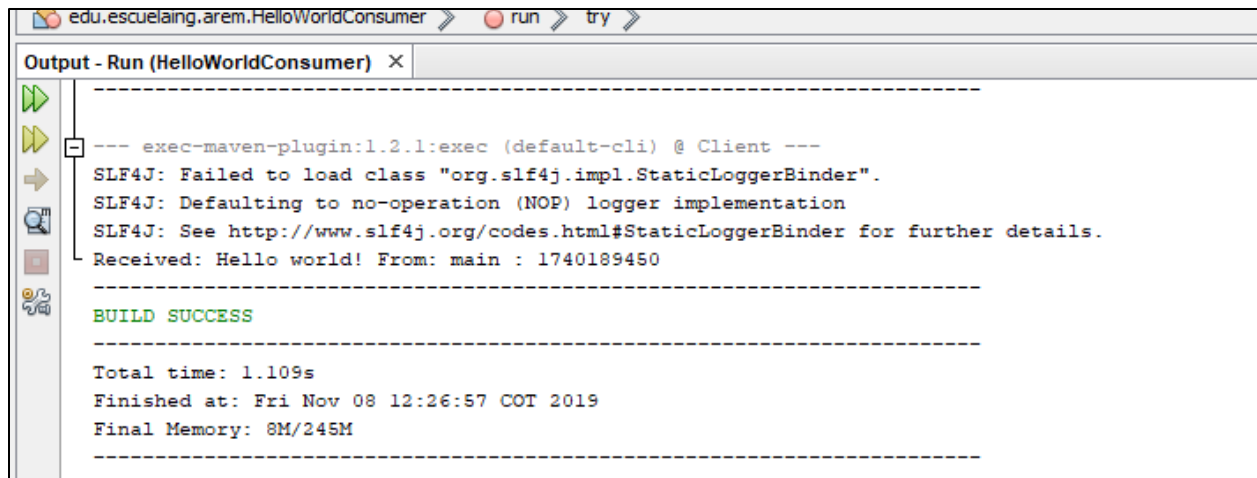
```
Output - Run (Client) X
--- exec-maven-plugin:1.2.1:exec (default-cli) @ Client ---
SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".
SLF4J: Defaulting to no-operation (NOP) logger implementation
SLF4J: See http://www.slf4j.org/codes.html#StaticLoggerBinder for further details.
Sent message: 1354011814 : main

BUILD SUCCESS

Total time: 1.345s
Finished at: Fri Nov 08 12:26:04 COT 2019
Final Memory: 8M/245M
```

Diego Alejandro Corredor Tolosa

Y el consumidor recibe nuestro mensaje

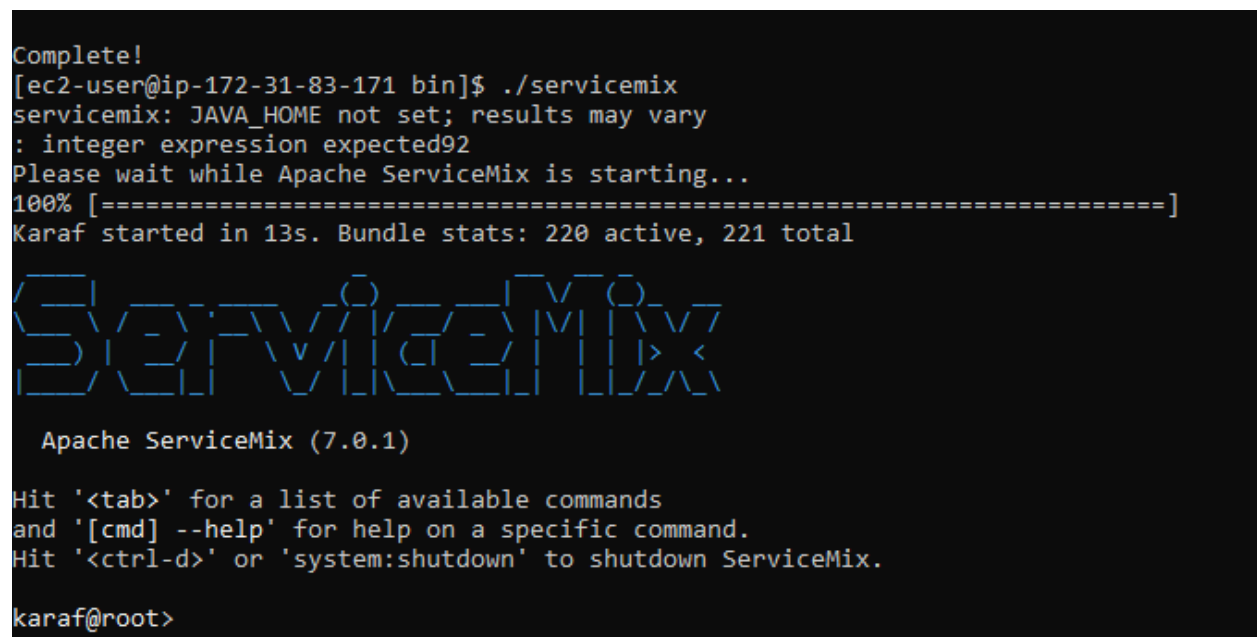


```
edu.esuelaing.arem.HelloWorldConsumer >> run >> try >>
Output - Run (HelloWorldConsumer) X
--- exec-maven-plugin:1.2.1:exec (default-cli) @ Client ---
SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".
SLF4J: Defaulting to no-operation (NOP) logger implementation
SLF4J: See http://www.slf4j.org/codes.html#StaticLoggerBinder for further details.
Received: Hello world! From: main : 1740189450
BUILD SUCCESS
Total time: 1.109s
Finished at: Fri Nov 08 12:26:57 COT 2019
Final Memory: 8M/245M
```

Ahora procedemos a colocar el servicio de ServiceMix en AWS.

En la maquina instalamos jdk 1.8 para que ServiceMix pueda correr

Le asignamos permisos de ejecución al archivo y finalmente corremos nuestro servicio.



```
Complete!
[ec2-user@ip-172-31-83-171 bin]$ ./servicemix
servicemix: JAVA_HOME not set; results may vary
: integer expression expected92
Please wait while Apache ServiceMix is starting...
100% [=====]
Karaf started in 13s. Bundle stats: 220 active, 221 total

ServiceMix

Apache ServiceMix (7.0.1)

Hit '<tab>' for a list of available commands
and '[cmd] --help' for help on a specific command.
Hit '<ctrl-d>' or 'system:shutdown' to shutdown ServiceMix.

karaf@root>
```

En nuestro cliente configuramos la ip para que envíe el mensaje a la ip de la máquina en aws

```
public void run() {
    CamelContext context = new DefaultCamelContext();
    //String brokerURL = args[0];
    ConnectionFactory connectionFactory = new ActiveMQConnectionFactory("tcp://54.159.118.232:61616?jms.useAsyncSend=true");
    try {
        // Create a Connection
        Connection connection = connectionFactory.createConnection("smx", "smx");
        connection.start();

        // Create a Session
        Session session = connection.createSession(false, Session.AUTO_ACKNOWLEDGE);

        // Create the destination (Topic or Queue)
        Destination destination = session.createQueue("test.foo");

        // Create a MessageProducer from the Session to the Topic or Queue
        MessageProducer producer = session.createProducer(destination);
        producer.setDeliveryMode(DeliveryMode.NON_PERSISTENT);

        // Create a messages
        String text = "Hello world! From: " + Thread.currentThread().getName() + " : " + this.hashCode();
        TextMessage message = session.createTextMessage(text);

        // Tell the producer to send the message
        System.out.println("Sent message: " + message.hashCode() + " : " + Thread.currentThread().getName());
        producer.send(message);
    }
}
```

Lo mismo con nuestro consumidor

```
public void run() {
    try {
        // Create a ConnectionFactory
        ConnectionFactory connectionFactory = new ActiveMQConnectionFactory("tcp://54.159.118.232:61616?jms.useAsyncSend=true");

        // Create a Connection
        Connection connection = connectionFactory.createConnection("smx", "smx");
        connection.start();

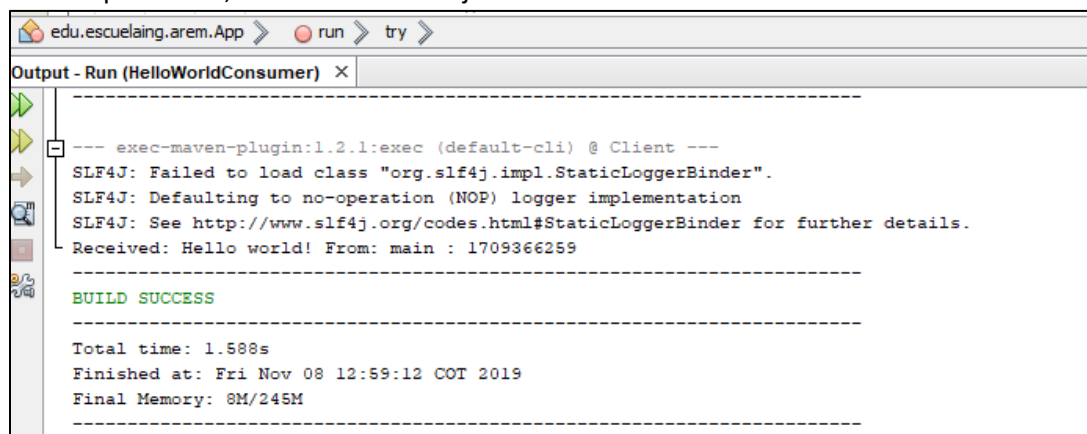
        connection.setExceptionListener(this);

        // Create a Session
        Session session = connection.createSession(false, Session.AUTO_ACKNOWLEDGE);

        // Create the destination (Topic or Queue)
        Destination destination = session.createQueue("test.foo");

        // Create a MessageConsumer from the Session to the Topic or Queue
        MessageConsumer consumer = session.createConsumer(destination);
    }
}
```

Y ahora probamos, enviando el mensaje



```
edu.escuelaing.arem.App > run > try >
Output - Run (HelloWorldConsumer) X
--- exec-maven-plugin:1.2.1:exec (default-cli) @ Client ---
SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".
SLF4J: Defaulting to no-operation (NOP) logger implementation
SLF4J: See http://www.slf4j.org/codes.html#StaticLoggerBinder for further details.
Received: Hello world! From: main : 1709366259

BUILD SUCCESS

Total time: 1.588s
Finished at: Fri Nov 08 12:59:12 COT 2019
Final Memory: 8M/245M
```

Y vemos el mensaje recibido

```
53      Message message = consumer.receive(1000);
edu.escuelaing.arem.HelloWorldConsumer > run > try >
Output - Run (HelloWorldConsumer) x
--- exec-maven-plugin:1.2.1:exec (default-cli) @ Client ---
SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".
SLF4J: Defaulting to no-operation (NOP) logger implementation
SLF4J: See http://www.slf4j.org/codes.html#StaticLoggerBinder for further details.
Received: Hello world! From: main : 1709366259
BUILD SUCCESS
Total time: 1.588s
Finished at: Fri Nov 08 12:59:12 COT 2019
Final Memory: 8M/245M
```

Diagrama de despliegue de la aplicación construida

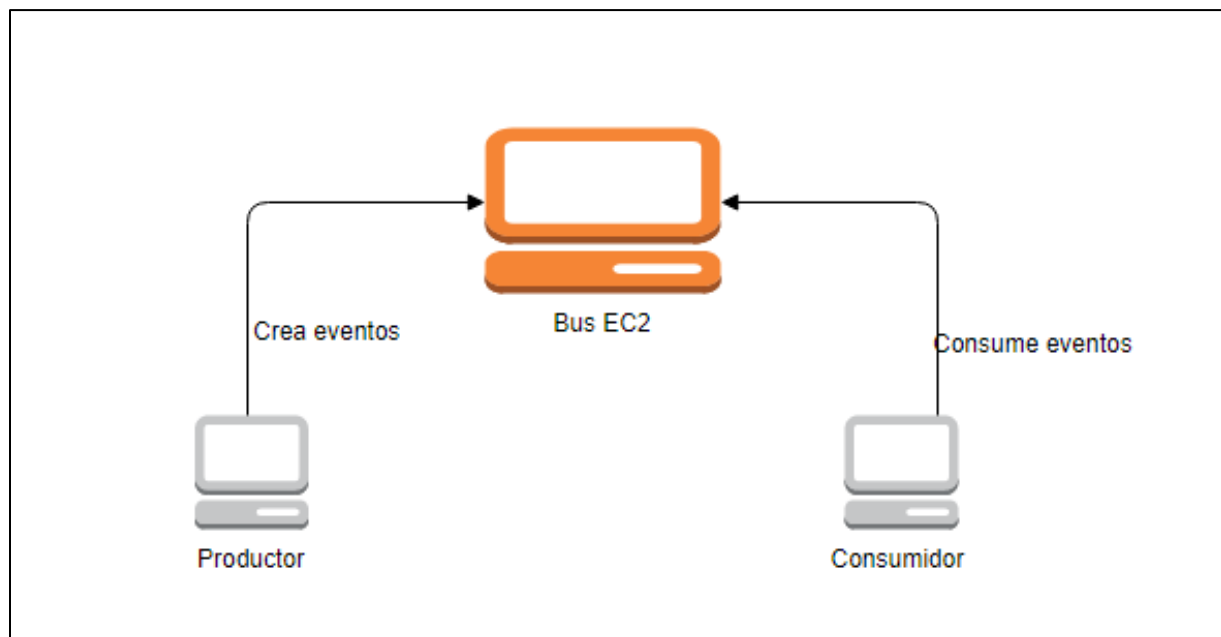


Diagrama de service mix

