



An Oracle White Paper

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# Fiorano ESB 2007 – Oracle Enterprise Gateway Integration Guide

## Disclaimer

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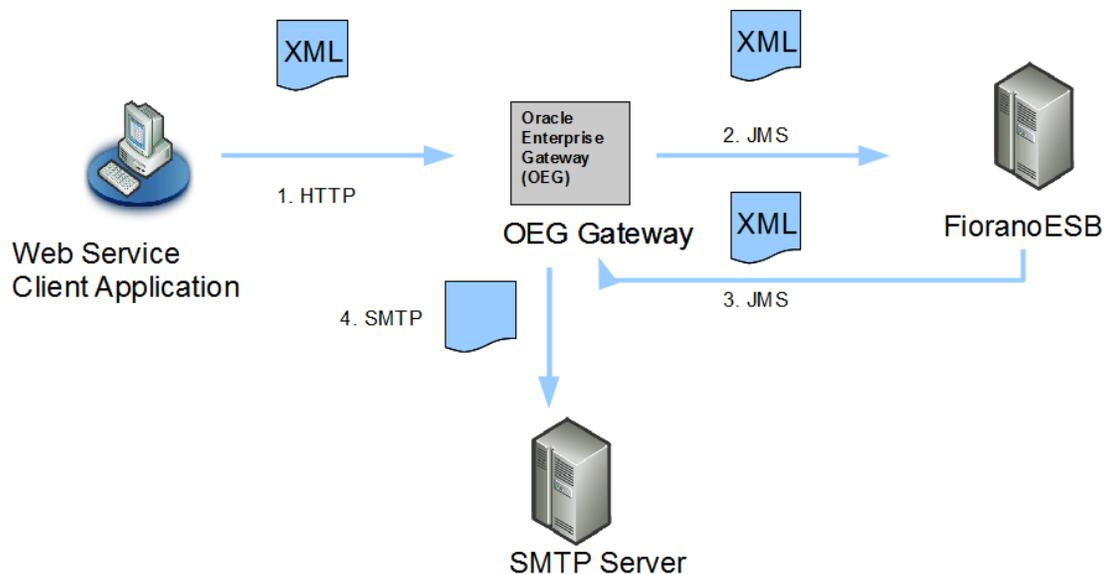
## 1. Introduction

### 1.1. Purpose

This document describes how to configure the Gateway to perform protocol translation. This will be demonstrated by the following:

1. The Gateway will listen for messages on a HTTP interface. Messages read from this interface will be placed on a message queue.
2. The Gateway will listen for messages on a message queue. Messages read from the queue will be sent to an email account via SMTP.

The message flow is as follows:



This guide applies to OEG software products, from version 6.x upwards.

In this guide the message queuing system that will be used is **Fiorano ESB 2007**.

## 1.2. JMS Architecture

The Gateway utilises JMS (Java Message Service) for sending and receiving messages from messaging systems. JMS API which was developed by Sun defines a common set of interfaces and associated semantics that allow the Gateway to communicate with various messaging applications in a standard way.

Messaging system products (IBM WebSphere MQ, JBossMQ, SonicMQ, TIBCO EMS, Fiorano, and OpenJMS) provide implementations of JMS which can be plugged into the Gateway.

The Gateway has been designed to allow 3rd party JMS providers to be "plugged in". To plug in new JMS providers, you must install the JMS provider on the Gateway machine.

The messaging system vendors can provide an implementation of the JMS provider which is normally in the form of jar files and configuration settings to be entered in the OEG Policy Studio.

## 1.3. Prerequisites

1. Fiorano ESB SOA 2007 is available from <http://www.fiorano.com>
2. OEG's Gateway Software available from <http://www.oracle.com>
3. Java Runtime Environment (JRE) 1.4.2 or above

## 1.4. Setup Used for this Guide:

- ▲ Fiorano ESB 2007 installed on Windows to D:\Fiorano\FioranoSOA2007SP4
- ▲ OEG Gateway 6.0 software installed to: C:\OEG\v6.0.1\OEGGateway on Windows

## 1.5. Configuration Steps

1. Download and install Fiorano ESB
2. Configure Fiorano ESB
3. Install OEG Gateway
4. Configure Gateway to send messages to Fiorano ESB
5. Configure Gateway to listen for messages from Fiorano ESB queue

---

## 6. Test Setup

### 2. Setting up the Fiorano ESB 2007 environment

#### 2.1. Download Fiorano ESB

Fiorano ESB (Enterprise System Bus) is available from <http://www.fiorano.com>

The version used in this guide is Fiorano ESB 2007 SP4.

#### 2.2. Installation Fiorano ESB 2007

Once Fiorano ESB 2007 has been downloaded install it to a desired location

Please refer to Fiorano ESB documentation for more information on installing Fiorano ESB.

For the purpose of this guide default installation options were used on a Windows platform.

Fiorano ESB requires a licence file to be able to start which can be obtained from [www.fiorano.com](http://www.fiorano.com). Place the licence file in the following directory /Fiorano\_Install Location/Licenses which is by default /Fiorano/FioranoSOA2007SP4/licenses

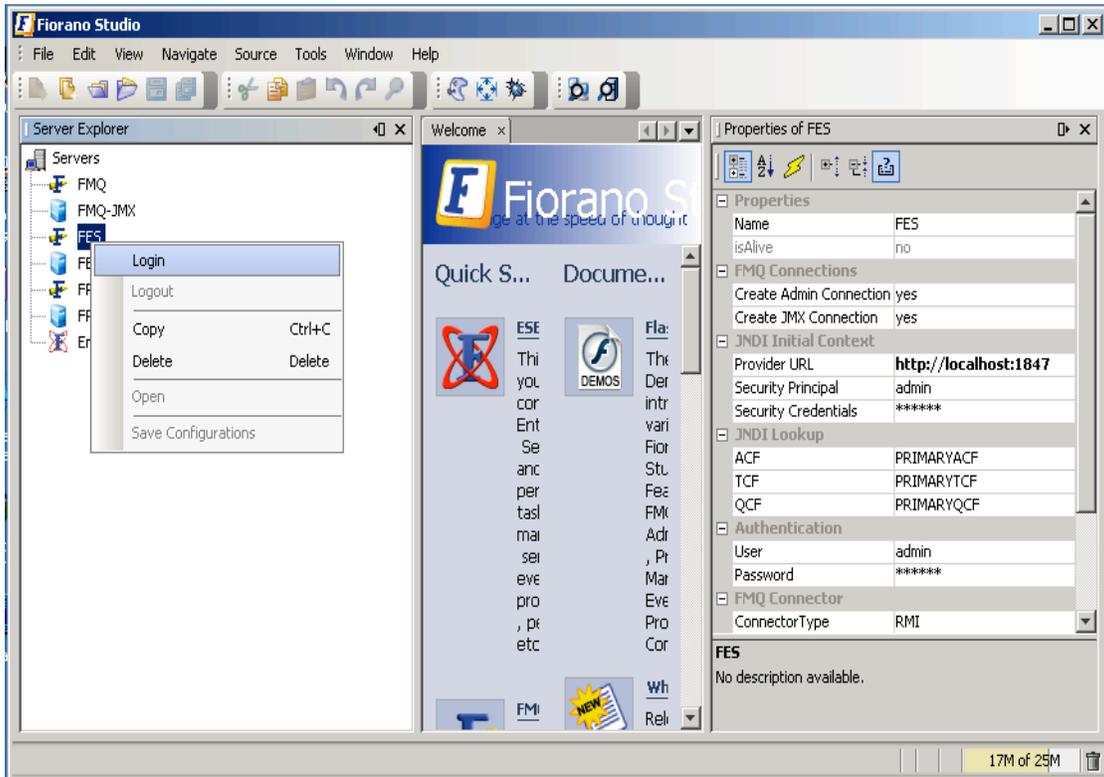
#### 2.3. Starting Fiorano ESB 2007 Server

To start Fiorano ESB Server:

1. Under Windows, this may be started using Start->Programs->Fiorano->Fiorano SOA 2007 Platform SP4->Fiorano Servers->Fiorano ESB Server
2. The ESB may also be started using the FES.bat file to be found at /Fiorano\_Install\_Location/FioranoSOA2007SP4/esb/fes/bin

#### 2.4. Starting Fiorano Studio

1. Launch the Fiorano Studio from the “Fiorano Tools” group under Fiorano in the Start Menu.
2. Next, right-click on the FES server and select “Login”, as shown below:



### 3. Setting up the OEG environment

#### 3.1. Download OEG Gateway software

OEG provides copies of Gateway software to partners, customers, and evaluators.

#### 3.2. Insert the Fiorano JMS Provider into the OEG Gateway

Fiorano provides a particular JMS provider which is used to connect to the Fiorano ESB. The JMS provider takes the form of Java JAR files (.jar). Third-parties such as Oracle do not have licensing rights to distribute these Fiorano product components to end customers directly. But, once a customer has a valid license for the Fiorano ESB, it is a simple matter to insert the Fiorano JMS provider into the OEG Gateway. The procedure is as follows:

1. Create a "Fiorano" directory in the OEG Gateway root installation folder.

2. Copy the following directories and their contents directories from the Fiorano installation locating into the "Fiorano" directory created at Step 1.
  - /Fiorano\_Installation\_Location/FioranoSOA2007SP4/framework
  - /Fiorano\_Installation\_Location/FioranoSOA2007SP4/fmq/lib/client

#### 1Instructions for Software install

1. Browse to
  - /Fiorano\_Installation\_Location/FioranoSOA2007SP4/framework
  - /Fiorano\_Installation\_Location/FioranoSOA2007SP4/fmq/lib/client
2. Copy the following the "framework" and "client" directories
3. Browse to the /oeg\_install\_dir and create a folder called "Fiorano" in the root of the Oracle installation directory.
4. Copy the "framework" and "client" directories into the "Fiorano" directory
  - /oracle/oeg\_product\_dir/Fiorano

### 3.3. Add JAR file classpath reference to JVM.xml

For the Fiorano classpaths to load first the JVM.xml file located in the following directory would need to be modified:

**For Windows:** /oracle/oeg\_product\_dir/system/conf

**For Appliance:** /opt/oracle/oeg\_product\_dir/system/conf

Open the JVM.xml file and edit it as follows:

Add the following two entries to the JVM.xml file as shown below:

```
<ClassPath name="fiorano/client/all/fmq-client.jar"/>
```

```
<ClassPath name="fiorano/framework/lib/all/fiorano-framework.jar"/>
```

```
-----
```

```
<!--
```

```
  JVMSettings
```

```
    Required before any Java-using components.
```

```
-->
```

```
<JVMSettings classloader="com.vordel.boot.ServiceClassLoader">
  <!-- Need our class loader to be on system classpath -->
  <VMArg name="-Djava.class.path=system/lib/system/boot.jar"/>
  <!-- Load these Jars first, to override duplicate APIs -->
  <ClassPath name="Fiorano/client/all/fmq-client.jar" />
  <ClassPath name="Fiorano/framework/lib/all/fiorano-framework.jar"/>
  <ClassPath name="system/lib/system/wSDL_patch.jar" />
  <ClassPath name="system/lib/system/iaik_jce.jar" />
```

---

## 4. Configuring the Gateway to place messages on

### Fiorano ESB Queue

The gateway will be configured to place messages it receives on a queue (i.e. destination) named “primaryQueue” in Fiorano ESB 2007.

#### 4.1. Creating a JMS Session:

1. Start the **Gateway** and **Policy Studio** (for more details refer to Getting Started in the Help Configuration Guide.)
2. Click on the **External Connections** navigation panel in Policy Studio
3. Right click on **JMS Services** and click on **Add a JMS Service**
4. Configure the following fields for the **JMS Service**
  - ▲ Name: Fiorano
  - ▲ Provider URL: http://IP\_OF\_HOST:1847
  - ▲ Initial Context Factory:  
fiorano.jms.runtime.naming.FioranoInitialContextFactory
  - ▲ Connection Factory: primaryQCF
  - ▲ Username: admin
  - ▲ Password: passwd
5. Right click on the JMS Service and add a JMS Session. Select not to allow duplicates.

The JMS Session configuration for Windows:

Name	Value

#### 4.2. Create a “Route to Fiorano” Policy

1. Create a small test policy to route messages on to the Fiorano ESB queue by completing the following steps:
2. Open **Policy Studio** and select **Policies** navigation pane. Create a new Policy titled by right clicking on **Policies** and select **Add Policy**, titled “Route to Fiorano”.
3. Create a new relative path on the Gateway Process called **/ToFiorano** by selecting **Services** navigation button, then expand **OEG Gateway** and right click on **Default Services** to **Add Relative Path**.
4. Map the **/ToFiorano** path to the policy called “Route to Fiorano”. This means that when a message is received by the Gateway on the path “/ToFiorano”, it will be passed to the “Route to Fiorano” policy, which will then process the message.

---

## Configuring the Messaging System Filter

When a policy that routes to a JMS provider (such as Fiorano ESB) is created, the policy must contain a Messaging System filter, which can be found under the Routing category of filters in the Policy Studio. To configure this filter, complete the following steps:

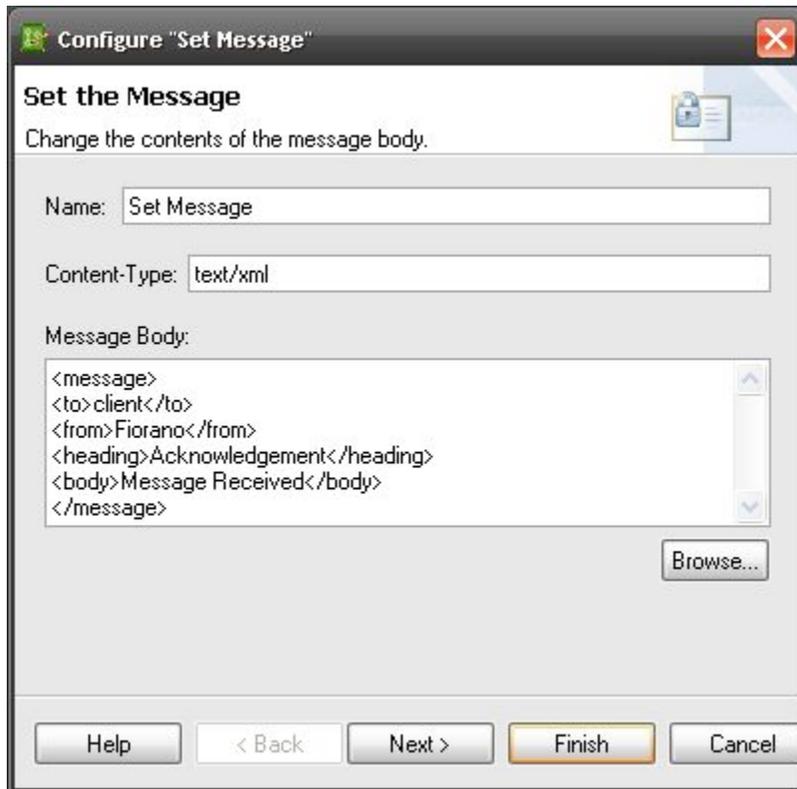
**NOTE:** Make sure that the JMS Service has been configured already (see section 4.1) as the available JMS service will need to be referred to when configuring the Messaging System Filter

1. Drag a Messaging System filter from the “Routing” group located in the palette on the right of the Policy Studio.
2. Under the Request tab select the JMS Service that has been configured above (titled “Fiorano”) from the JMS Session dropdown.
3. Set the Destination to: primaryQueue
4. The Message Type should be specified. Change this to “Use content.body attribute to create a message in the format specified in the ‘SOAP OVER Java Message Service’”.
5. All other settings may be left at default.
6. Click on the Response tab and select ‘No Response’
7. Click on Ok

### To complete the test policy create the following flow:

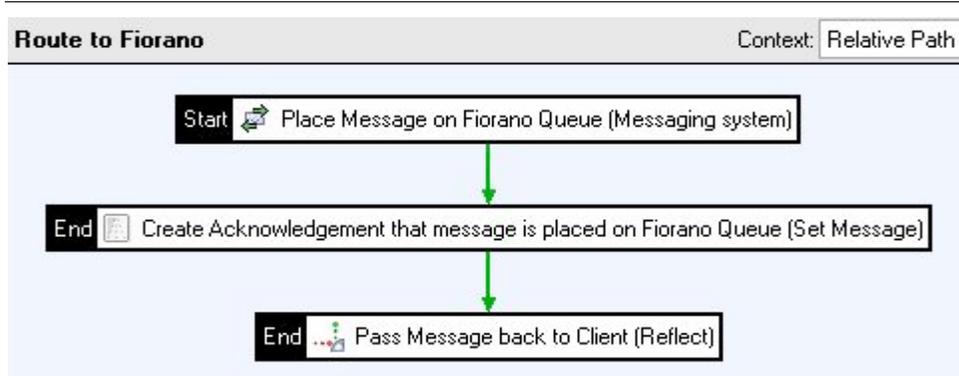
1. Messaging System Filter: Located in the “Routing” group. This filter should be configured as described above. This is a mandatory filter in the policy.
2. Set Message Filter: Located in the “Conversion” group. Used to set the content of an XML response message that can be returned to the client to acknowledge that the message has been placed on the Fiorano ESB queue. This step is not mandatory, but generates an acknowledgement of the message placed on the queue.

Example of the configuration of the Set Message filter:



3. Reflect Filter: Routes the customized response back to the client if necessary. The Reflect filter can be found under the Utility category of filters.

Once configured, the "Route to Fiorano" policy will appear as follows:



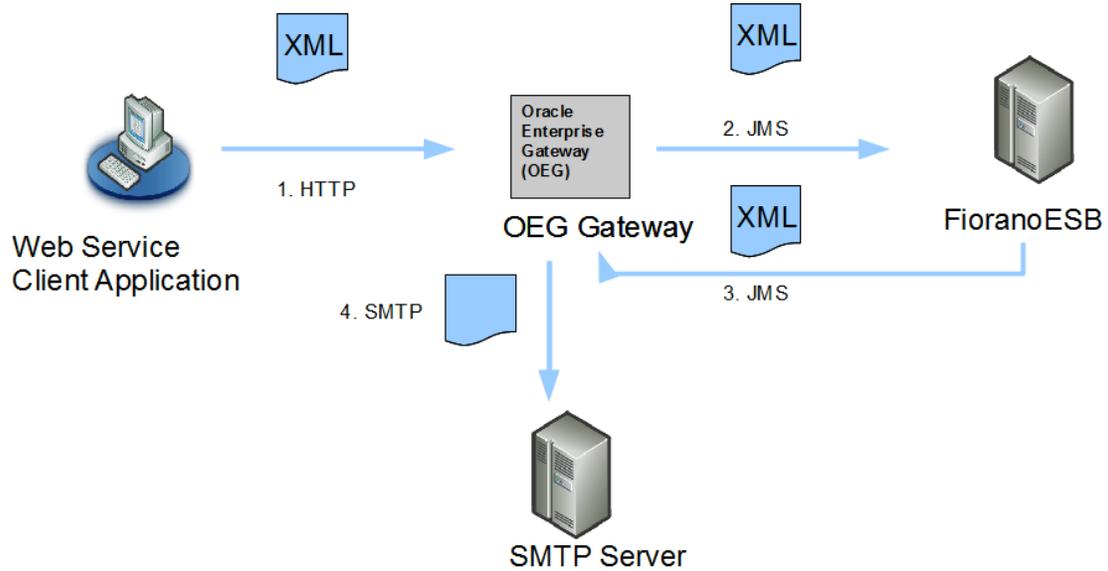
#### 4.3. Ensure policies are updated on the Gateway

- ⤴ Open the Policy Studio.
- ⤴ Click on Settings.
- ⤴ Select “Refresh Server” to ensure that the changes made are propagated to the live Gateway.

#### 4.4. Test the configuration to place message on Fiorano ESB Queue

OEG Service Explorer will be used as the client to test the integration. The entire transaction will be tested from the client, through the Gateway, and on to the Fiorano ESB queue.

The following diagram shows the solution architecture:



#### 4.5. Using OEG Service Explorer to send a message to Fiorano ESB queue

Load a sample XML message into OEG Service Explorer. Ensure that the URL field in OEG Service Explorer points to the Gateway and in particular to the “ToFiorano” path on the Gateway.

The screenshot below shows a sample SOAP Request loaded in the OEG Service Explorer:



Having sent the SOAP request, the response will be displayed in the SOAP Response panel, as displayed in the screenshot below:



#### 4.6. Send Message and check Fiorano ESB Queue

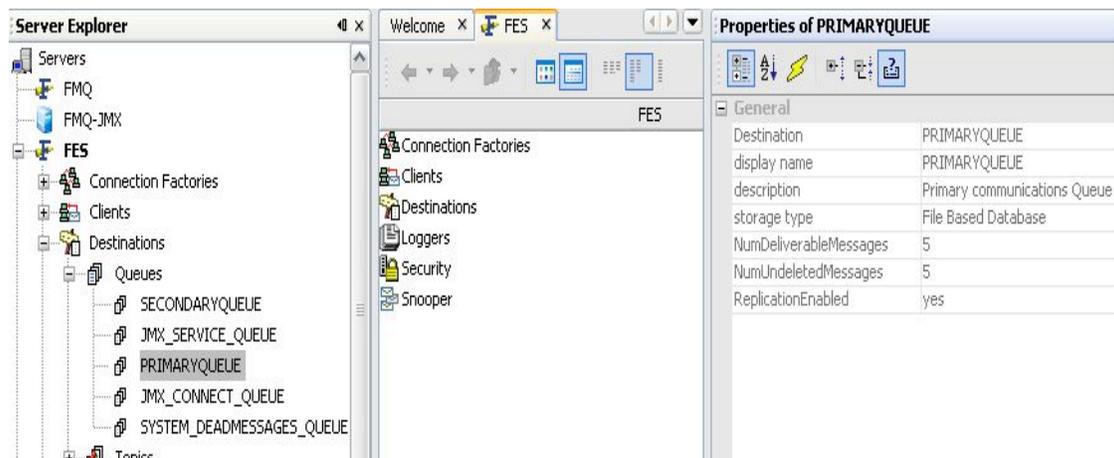
By sending messages using OEG Service Explorer, the Gateway will route the messages to the Fiorano ESB queue, in this case: queue.sample.

Once test messages have been sent, open Fiorano Studio and expand Destinations, then expand Queues and select the queue configured to receive messages which is "primaryQueue".

To check the queue in Fiorano ESB:

1. Open Fiorano Studio
2. Right Click on FES under Servers and click on connect (if this has not already been done.)
3. Expand FES
4. Expand Destinations
5. Expand Queues
6. Click on PRIMARYQUEUE
7. This will display information on the right hand side of the Studio in the general section and display the number of messages received next to NumDeliverableMessages and NumUndeletedMessages

Example of Fiorano ESB queue after 5 messages has been sent from OEG Service Explorer. 5 messages can be seen next the NumDeliverableMessages and NumUndeletedMessages value.



## 5. Configuring the Gateway to read from a Fiorano ESB queue

The Gateway will be configured to read the messages from: primaryQueue

### 5.1. Create Policy that will be invoked with message read from Fiorano ESB queue

1. To create the second policy that the JMS consumer will point to:
2. Right click on Policies.

3. Click Add Policy and create a new policy titled “Read from Fiorano Queue”.
4. Click on the newly created Policy.
5. Drag an SMTP filter from the “Routing” group located in the palette on the right of the Policy Studio.
6. Configure the filter with credentials and settings of a mail server and account that can be used to send emails to and set it as the Start Filter.

SMTP Filter settings used for test:

The screenshot shows a dialog box titled "Configure a new 'SMTP' filter" with a close button (X) in the top right corner. The main title is "Send message via SMTP" and there is a lock icon in the top right. Below the title, the text "Send message via SMTP" is repeated. The dialog is divided into sections:

- Name:** A text field containing "SMTP".
- Settings:** A section containing a dropdown menu for "SMTP Server" with "Vordel Mail Server" selected. Below this are three buttons: "Add", "Edit", and "Delete".
- Message settings:** A section containing three text fields: "To:" with "kingsofsoa@gmail.com", "From:" with "dev\_test@vordel.com", and "Subject:" with "A message from the Fiorano EBS queue has arrived".

At the bottom of the dialog, there are five buttons: "Help", "< Back", "Next >", "Finish" (highlighted in yellow), and "Cancel".

SMTP Server Settings:



SMTP Server settings

Name: Vordel Mail Server

Hostname: mail.vordel.com

Port: 25

User name: dev\_test@vordel.com

Password: \*\*\*\*\*

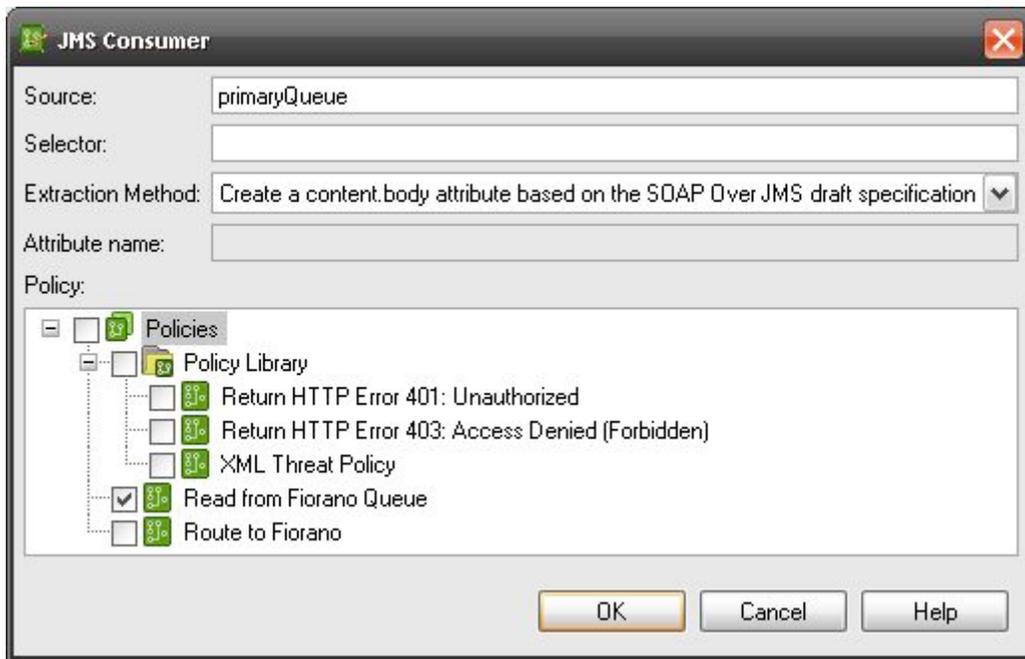
OK Cancel Help

## 5.2. Creating a JMS Session:

**NOTE:** If a JMS Session has already been created as per section 4.1, skip to number 3 below to add a JMS consumer to the existing JMS Session.

1. Right click on the “OEG Gateway” process and configure a JMS Service by configuring the following fields:
  - ⤴ Name: Fiorano
  - ⤴ Provider URL: `http://IP_OF_HOST:1847`
  - ⤴ Initial Context Factory: `fiorano.jms.runtime.naming.FioranoInitialContextFactory`
  - ⤴ Connection Factory: `primaryQCF`
  - ⤴ Username: `admin`
  - ⤴ Password: `passwd`
2. Right click on the JMS Service and add a JMS Session. Select not to allow duplicates.
3. Right click on the JMS Session and add a JMS Consumer and configure as follows:
  - ⤴ Destination: `primaryQueue`
  - ⤴ Extraction Method: For simplicity, select "Create a content body attribute based on the SOAP Over JMS draft specification".
  - ⤴ Point the JMS Consumer to the “Read from Fiorano Queue” policy.

The JMS Consumer configuration window:



### 5.3. Ensure policies are updated on the Gateway

Complete the following steps to refresh the policies:

1. Open the Policy.
2. Studio Click on Settings.
3. Select “Refresh Server” to ensure that the changes made are propagated to the live Gateway.

### 5.4. Testing to read messages from a queue

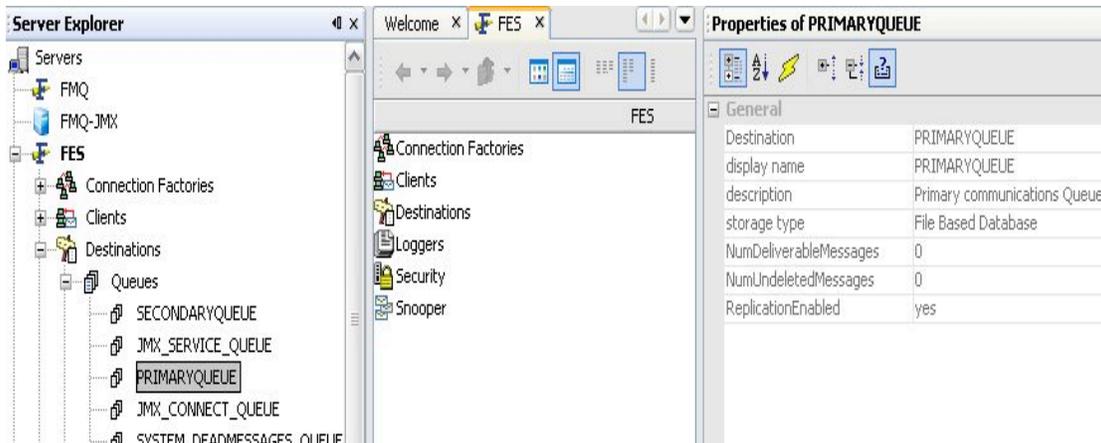
The Gateway has also been configured to let the JMS service consume the message on the queue and to forward it to a mail client via SMTP.

By creating the JMS consumer and the policy that it pointed to (i.e. “Read from Fiorano Queue”) that contains a SMTP filter, the messages have been read from “queue.sample” and sent to a mail client as configured in the SMTP filter.

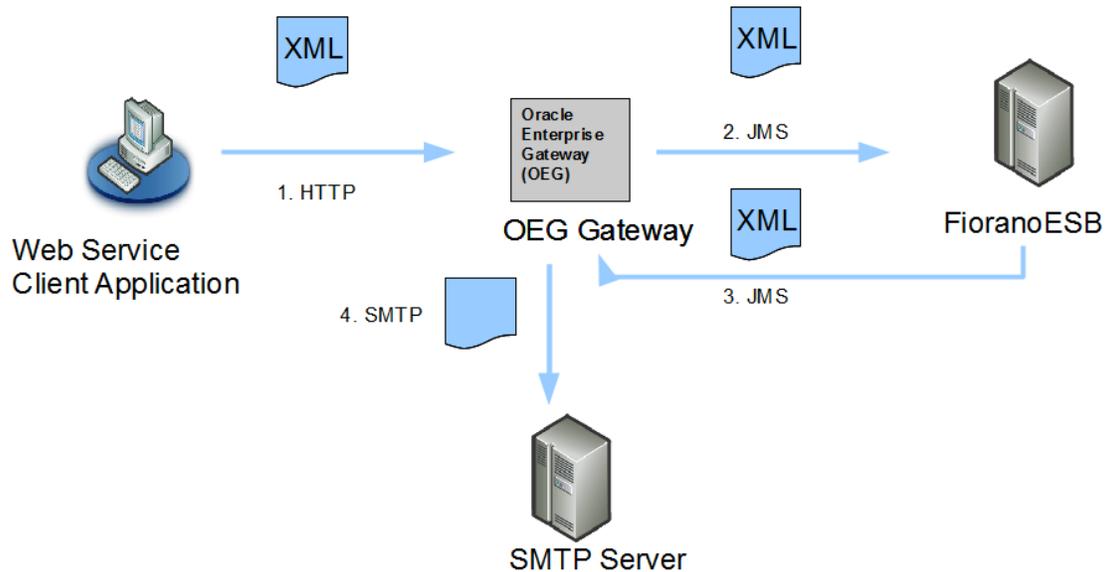
To check the queue in Fiorano ESB:

1. Open Fiorano Studio
2. Right Click on FES under Servers and click on connect (if this has not already been done.)
3. Expand FES
4. Expand Destinations
5. Expand Queues
6. Click on PRIMARYQUEUE
7. This will display information on the right hand side of the Studio in the general section and display the number of messages received next to NumDeliverableMessages and NumUndeletedMessages

The messages have now been “consumed” from the Fiorano queue and the value next to NumDeliverableMessages and NumUndeletedMessages is 0



The following diagram shows the flow of the message from the client through the Gateway to Fiorano ESB:



The screenshot below shows the inbox of the email recipient that is configured in the SMTP filter that reads all messages off the queue and sends it over SMTP:



## 6. Conclusion

This guide applies to OEG software products, from version 6.x upwards.

This configuration can be part of a larger policy, including features such as XML threat detection and conditional routing, features which are out of the scope of this document but are covered in other documents which can be obtained from the Oracle at <http://www.oracle.com>.



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