# Summary

This document details the process of installing the NREL mediator service onto an OpenESB server. The service, as currently written, supports two methods: create mainenance order, and get maintenance orders. The service performs the following functions. It receives a request and splits it, sending it to two remote SOAP servers. It also outputs the requests to logfiles.

# Installation of OpenESB

## Downloading OpenESB:

1. Download OpenESB (<http://www.open-esb.net/>).
2. Unzip the file
3. Move the directory to /usr/local

## Starting the OpeneSB Server:

1. Start the server : /usr/local/OpenESB-SE-3.0.5/OE-Instance/bin/openesb.sh &
2. Server Console : <http://localhost:4848/plugin/webui>
3. Login : admin/admin

## Component Installation

OpenESB supports plugins. The mediator requires installation of the following components :

* BPEL SE – scalable orchestrator (Component) bpelse.jar
* FILE BC – provides interacting with files (Component) filebc.jar
* HTTP BC FULL – provides messaging over HTTP (Component) httpbc-full.jar
* Wsdlextlib.jar (Shared lib)
* Encoderlib.jar (Shared lib)

### Installing the 3 components

* Access web console : <http://localhost:4848/plugin/webui>
* Click on Components (on left menu)
* Click Install
* Click ‘Choose File’
* Select file : /usr/local/OpenESB-SE-3.0.5/OE-Components/**bpelse.jar**
* Click Install

Repeat process for **filebc.jar** and **httpbcfull.jar**

### Installing Shared Libraries

* Access web console : <http://localhost:4848/plugin/webui>
* Click on Shared Libraries (on left menu)
* Click Install
* Select file : /usr/local/OpenESB-SE-3.0.5/OE-Components/**encoderlib.jar**
* Click ‘Start upload’

Repeat process for **wsdlextlib.jar**

**Congratulations.**

# Installation of Mediator Application

* Access web console : <http://localhost:4848/plugin/webui>
* Click ‘Service Assemblies’ (left side menu)
* Click on ‘+ Deploy’ button
* Choose file : git/nrel/Epri3App/dist/Epri3App.zip
* Click ‘Start upload’
* Click ‘Start’ button on the service assembly page

# Endpoint Configuration

The mediator is configurable, in that the administrator selects the service endpoints. There are three end points :

* SERVICE\_ENDPOINT – This is the port that the mediator SOAP service listens on for requests. It logs the requests and sends them to the two remote services for execution
* REMOTE\_1 – EPRI SOAP service for create maint order, and get maint order
* REMOTE\_2 – EPRI Soap service (the second one) for create main order, and get maint order

The urls for these three addresses must be configured within the OpenESB web console.

Do the following in order for each of the three variables :

* Access web console : <http://localhost:4848/plugin/webui>
* Click on Components (left menu)
* Click on sun-http-binding item
* Click on ‘Application Variables’
* Do the following steps for the each variable :
  + Click ‘+ Add’
  + Application Configuration Name : SERVICE\_ENDPOINT <http://localhost:8081/epriConnect/MaintOrderServiceCreate>

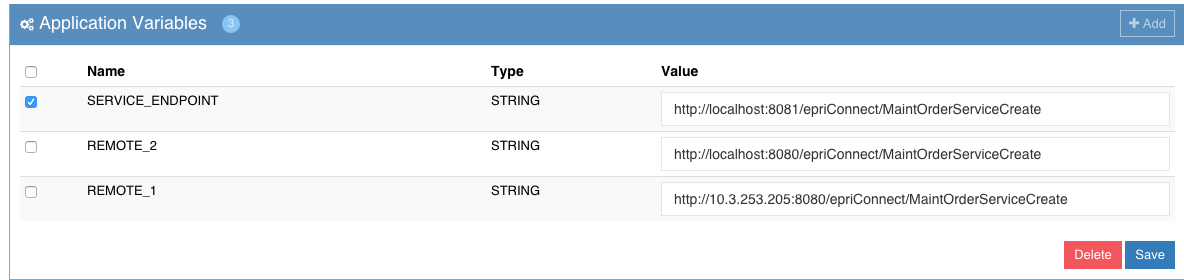


Figure : Configuration Variables

# Testing Mediator Application

### Set up SOAP UI Project to send create maintenance order

* Open Soapui – git/nrel/soapui/OPENWMS-CIM-CREATE-soapui-project.xml
* Select CreateMaintenanceOrders Test Case/Test Steps/CreateMaintenanceOrders
* Set url : <http://localhost:8081/epriConnect/MaintOrderServiceCreate> (This should be the url set for SERVICE\_ENDPOINT – See EndPointConfiguration)

### Start both epricConnect services

* Start two copies of tomcat (instructions for running two versions of tomcat on the same server are included below)
* Drop the epriConnect.war file to your tomcat/webapps directory
* Verify that the your SOAP services are by doing the following :
  + Browse to the url you entered as REMOTE\_1, appending ‘?wsdl’ to it, eg: <http://localhost:8080/epriConnect/MaintOrderServiceCreate?wsdl>
  + Browse to the url for REMOTE\_2, appending ‘?wsdl’ to it,  
    eg: <http://localhost:8085/epriConnect/MaintOrderServiceCreate?wsdl>

### Start Mediator Service

* Access web console : <http://localhost:4848/plugin/webui>
* Click Service Assemblies
* Start Epri3App
* Browse to the url you set during configuration, appending ‘?wsdl’ to the url, eg: <http://localhost:8081/epriConnect/MaintOrderServiceCreate?wsdl>

### Executing Basic Test

This test will send a create maint order message through the mediator, to the SOAP services designated by REMOTE\_1, REMOTE\_2, and log the request and response to xml files.

* Execute the SOAP UI Test (Set up SOAP UI Project to send create maintenance order)
* Set the End Point in SOAP ui to the URL you set for SERVICE\_ENDPOINT (eg: <http://localhost:8081/epriConnect/MaintOrderServiceCreate>)

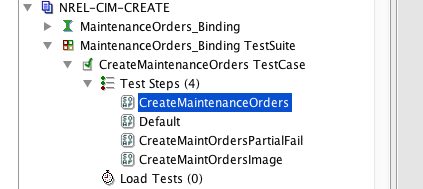


Figure : Soap UI Test Case

* Execute!

Verify results :

* Check output in /tmp/loginput.xml – contains the message sent
* Check output in /tmp/logoutput1.xml – contains response from REMOTE\_1
* Check output in /tmp/logoutput2.xml – contains response from REMOTE\_2
* Check the output in SOAPUI – shows proper response from REMOTE\_1

## Mediator Flow

The following represents the flow of the mediator.

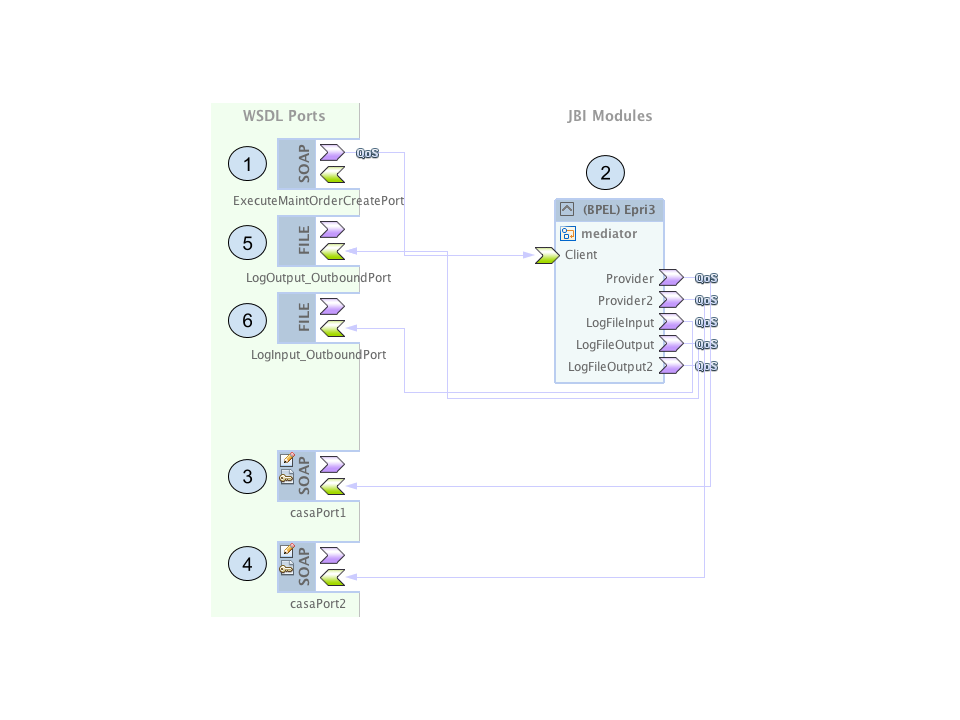


Figure : Mediator Flow

1. Mediator Service Port – Port defined by SERVICE\_ENDPOINT application variable
2. Mediator Service – Routes soap messages
3. EpriConnect service endpoint – REMOTE\_1
4. EpriConnect service endpoint 2 – REMOTE\_2
5. Log output file for SOAP Message sent, and message received from REMOTE\_1
6. Log output file for SOAP Message received back from REMOTE\_2

# Appendix A – Creating a Second Tomcat Instance on a Server