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DIGIT  
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## **Access Point**

### **Administration Guide**

#### **Domibus 3.2.2**

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## 1. INTRODUCTION

This Administration Guide is intended for Server Administrators in charge of installing, managing and troubleshooting an eDelivery Access Point.

### 1.1. Purpose

The purpose of this guide is to provide detailed information on how to deploy and configure Domibus 3.2.2 on WebLogic, Tomcat and WildFly with MySQL or Oracle. It also provides detailed descriptions of related Security Configurations (Policies, Certificates), Message Filtering, PMode Configuration, Application Monitoring, Custom Plugins Registration, JMS Monitoring, Data Archiving, Troubleshooting and TLS Configuration.

### 1.2. References

| Ref.   | Document                                                                                                                                                                                          | Content outline                                                      |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| [REF1] | <a href="https://ec.europa.eu/cefdigital/artifact/#nexus-search:gav~eu.domibus~domibus-MSH~3.2.2~~">https://ec.europa.eu/cefdigital/artifact/#nexus-search:gav~eu.domibus~domibus-MSH~3.2.2~~</a> | Location of the release artefacts on the Nexus repository            |
| [REF2] | <a href="http://downloads.mysql.com/archives/c-j/">http://downloads.mysql.com/archives/c-j/</a>                                                                                                   | Location to download the MySQL JDBC driver from the Official website |
| [REF3] | <a href="http://www.oracle.com/technetwork/database/features/jdbc/default-2280470.html">http://www.oracle.com/technetwork/database/features/jdbc/default-2280470.html</a>                         | Location of the Oracle JDBC driver from the Official website         |
| [REF4] | <a href="http://downloads.mysql.com/archives/c-j/">http://downloads.mysql.com/archives/c-j/</a>                                                                                                   | Location to download the MySQL jar driver from the Official website  |
| [REF5] | <a href="http://www.oracle.com/technetwork/database/features/jdbc/default-2280470.html">http://www.oracle.com/technetwork/database/features/jdbc/default-2280470.html</a>                         | Location to download the Oracle jar driver from the Official website |

| Ref.    | Document                                                                                                                                                                                                                                                                                                                                                                    | Content outline                                                                                     |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| [REF6]  | <a href="https://docs.jboss.org/author/display/WFLY9/WildFly+9+Cluster+Howto">https://docs.jboss.org/author/display/WFLY9/WildFly+9+Cluster+Howto</a>                                                                                                                                                                                                                       | Location to the Official documentation on how to setup a cluster on WildFly 9                       |
| [REF7]  | <a href="https://ec.europa.eu/cefdigital/wiki/download/attachments/23003408/%28CEF%20eDelivery%29.%28PKI%29.%28SOD%29.%28v2.5%29.pdf?api=v2">https://ec.europa.eu/cefdigital/wiki/download/attachments/23003408/%28CEF%20eDelivery%29.%28PKI%29.%28SOD%29.%28v2.5%29.pdf?api=v2</a>                                                                                         | CEF Public Key Infrastructure (PKI) Service Offering Document                                       |
| [REF8]  | <a href="https://ec.europa.eu/cefdigital/wiki/x/eiZAAg">https://ec.europa.eu/cefdigital/wiki/x/eiZAAg</a>                                                                                                                                                                                                                                                                   | Location of the Domibus 3.2.2 release on the Single Web Portal                                      |
| [REF9]  | <a href="https://access.redhat.com/documentation/en-US/Red_Hat_JBoss_Fuse/6.0/html/XML_Configuration_Reference/files/cxf-http-conf-2_7_0_xsd_Element_http-conf_tlsClientParameters.html">https://access.redhat.com/documentation/en-US/Red_Hat_JBoss_Fuse/6.0/html/XML_Configuration_Reference/files/cxf-http-conf-2_7_0_xsd_Element_http-conf_tlsClientParameters.html</a> | RedHat page for the XML Configuration Reference of the <i>http-conf:tlsClientParameters</i> element |
| [REF10] | <a href="http://wiki.ds.unipi.gr/display/ESENSPILOTS/5.1.1+-+Architecture+and+Use+of+BBs+-+Dynamic+Discovery+In+AS4+Gateways">http://wiki.ds.unipi.gr/display/ESENSPILOTS/5.1.1+-+Architecture+and+Use+of+BBs+-+Dynamic+Discovery+In+AS4+Gateways</a>                                                                                                                       | Website describing further the Dynamic Discovery in AS4 Gateways                                    |
| [REF11] | <a href="http://wiki.ds.unipi.gr/display/ESENS/PR+-+SMP+-+1.7.0">http://wiki.ds.unipi.gr/display/ESENS/PR+-+SMP+-+1.7.0</a>                                                                                                                                                                                                                                                 | Space describing the SMP (Service Metadata Publisher)                                               |

### 1.3. Acronyms

| Acronym | Description |
|---------|-------------|
|         |             |
|         |             |
|         |             |

## 2. CONVENTIONS

The Commands and Configuration files listed in this document usually contain a mix of reserved words (commands, instructions and system related special words) and user defined words (chosen by the user) as well as comments and preferred values for certain variables. The conventions used in this document, to distinguish between them, are the followings:

- To keep this document release agnostic as much as possible, the strings "x-y-z" or "x.y.z" are intended to refer to the version of Domibus discussed in this version of the document, in the present case "Domibus 3.2.2".
- **Bold** is used for "reserved" words and commands
- *Normal italic* together with a short description of the argument, is used for user-defined names (chosen by yourself to designate items like users, passwords, database etc..). Normally contains at least 2 words separated by "\_".
- ***Bold and Italic*** is used for advisable values which can be changed by the user depending on their infrastructure.
- Comments are sometimes added to describe the purpose of the commands, usually enclosed in brackets ().

By default, non-OS specific paths will be described using Linux patterns.

### 2.1. Example 1: Sample Oracle Statement

```
create user edelivery_user identified by edelivery_password;
```

```
grant all privileges to edelivery_user;
```

(Where *edelivery\_user* and *edelivery\_password* are names chosen by the user)

### 2.2. Example 2: Sample Configuration file

```
jdbc.datasource.0.driver.name=com.mysql.jdbc.Driver
```

```
jdbc.datasource.0.driver.url=jdbc:mysql://localhost:3306/domibus_schema
```

```
jdbc.datasource.0.driver.password=edelivery_password
```

```
jdbc.datasource.0.driver.username=edelivery_user
```

(Where:

- *edelivery\_user*, *domibus\_schema* and *edelivery\_password* are names chosen by the user.

- *localhost:3306* represents hostname:port parameters of the MySQL database.)



## 3. PREREQUISITES

Please install the following software on the target system. For further information and installation details, we kindly advise you to refer to the software owner's documentation.

- Java runtime environment (JRE), version 7 or 8:  
<http://www.oracle.com/technetwork/java/javase/downloads/index.html>
- One of the supported Database Management Systems :
  - MySQL 5,6 or above
  - Oracle 10g+
- If you don't plan to deploy Domibus according to the Pre-Configured Single Server Deployment method, you must also install one of the supported application servers unless you are intending:
  - WebLogic 12c
  - WildFly 9
  - Apache Tomcat 8.0.x
- All Domibus 3.2.2 installation resources, including full distributions and documentation can be found on the Single Web Portal :  
<https://ec.europa.eu/cefdigital/wiki/x/eiZAAg>

### 3.1. Binaries repository

All the Domibus 3.2.2 artefacts can be directly download from the Nexus repository of CEF (cf.[REF1]).

## 4. DOMIBUS DEPLOYMENT

Remark:

The variable *cef\_edelivery\_path* referring to the folder where the package is installed will be used later in this document.

### 4.1. Database Configuration

For this step you will have to use the following resources (see section §3.1 - "Binaries repository" for the download location):

- **domibus-MSH-X.Y.Z-sql-scripts.zip**

A datasource must be configured to allow the application to access its Database.

#### 4.1.1. MySQL configuration

1. Unzip **domibus-MSH-X.Y.Z-sql-scripts.zip** in *cef\_edelivery\_path/sql-scripts*
2. Open a command prompt and navigate to this directory: *cef\_edelivery\_path/sql-scripts*.
3. (Optional) Storing messages in a database with payloads over 30 MB.

Domibus temporarily stores the messages in the database. They are not deleted before they are successfully transferred to the final recipient (see §6.3 – "PMode Configuration"). Therefore, it is required to increase the maximum allowed size of packets. Update the default properties of **my.ini** (Windows) or **my.cnf** (Linux).

- **max\_allowed\_packet** property

```
# The maximum size of one packet or any generated or intermediate string,
or any
# parameter sent by the
# mysql_stmt_send_long_data() C API function.
max_allowed_packet=512M
```

- **innodb\_log\_file\_size** property

```
# Size of each log file in a log group. You should set the combined size
# of log files to about 25%-100% of your buffer pool size to avoid
# unneeded buffer pool flush activity on log file overwrite. However,# note
that larger logfile size will increase the time needed for the recovery
process
innodb_log_file_size=5120M
```

- Restart MySQL service (Windows):

|                        |      |               |         |              |
|------------------------|------|---------------|---------|--------------|
| MSSQLServerADHelper100 |      | SQL Active... | Stopped | N/A          |
| MySQL56                | 2708 | MySQL56       | Running | N/A          |
| napagent               |      | Network A...  | Stopped | NetworkSe... |
| ...                    | ...  | ...           | ...     | ...          |

MySQL service

4. (Optional) For storing messages in a file system instead of a database see §5.2 – "*Domibus Properties*)
5. Execute the following MySQL commands at the command prompt :

*Remark:*

*User defined names like `root_password`, `domibus_schema` etc..., are in italic as described in the Convention section.*

```
mysql -h Localhost -u root_user --password=root_password -e "drop schema if
exists domibus_schema;create schema domibus_schema;alter database
domibus_schema charset=utf8 collate=utf8_bin; create user
edelivery_user@localhost identified by 'edelivery_password';grant all on
domibus_schema.* to edelivery_user@localhost;"
```

The above creates a schema (*domibus\_schema*) and a user (*edelivery\_user*) having all the privileges on the schema.

```
mysql -h Localhost -u root_user --password=root_password domibus_schema <
mysql5innoDb-3.2.2.ddl
```

The above creates the required tables in *domibus\_schema*.

*Remark:*

*If you are using Windows, make sure to have the parent directory of `mysql.exe` added to your `PATH` variable.*

#### **4.1.2. Oracle configuration**

1. Unzip **domibus-MSH-X.Y.Z-sql-scripts.zip** in *cef\_edelivery\_path/sql-scripts*
2. Open a command prompt and navigate to this directory: *cef\_edelivery\_path/sql-scripts*.
3. Open a command line session, log in and execute the following commands :

```
sqlplus sys as sysdba (password should be the one assigned during the Oracle
installation )
=====
Once logged in Oracle:
create user edelivery_user identified by edelivery_password;
grant all privileges to edelivery_user;
connect edelivery_user
show user; (should return : edelivery_user)
@oracle10g-3.2.2.ddl (run the scripts with the @ sign from the location of the
scripts)
exit
=====
```

## 4.2. Domibus on WebLogic 12.1.3

This section does not include the installation of WebLogic server 12.1.3. It is assumed that the WebLogic Server is installed and a Domain is created.

Hereafter the domain location will be referred as *DOMAIN\_HOME* (user defined name).

### 4.2.1. Single Server Deployment

For this step, you will have to use the following resources (see section §3.1 – "Binaries repository" for the download location):

- **domibus-MSH-X.Y.Z-weblogic.war**
- **domibus-MSH-X.Y.Z-weblogic-configuration.zip**
- **domibus-MSH-X.Y.Z-default-ws-plugin.zip (optional)**
- **domibus-MSH-X.Y.Z-default-jms-plugin.zip (optional)**

1. Download and unzip **domibus-MSH- X.Y.Z-weblogic-configuration.zip** in the directory *DOMAIN\_HOME/conf/domibus*

| Name                      | Size   |
|---------------------------|--------|
| internal                  | 1 416  |
| plugins                   | 92 756 |
| policies                  | 7 221  |
| scripts                   | 33 125 |
| domibus-configuration.xml | 5 178  |
| domibus-datasources.xml   | 4 888  |
| domibus-plugins.xml       | 2 000  |
| domibus-security.xml      | 5 053  |
| domibus-transactions.xml  | 1 109  |
| log4j.properties          | 1 482  |

2. Download the **domibus-distribution- X.Y.Z-weblogic.war** in the directory *DOMAIN\_HOME/conf/domibus*

3. Configure your Keystore based on section §5.1.2 – "Certificates"

4. Add the following lines in:

- For Windows: *DOMAIN\_HOME\bin\setDomainEnv.cmd*

- Locate the set DOMAIN\_HOME statement and add the following lines after:

```
...
set DOMAIN_HOME
# Added for Domibus *****
set EXTRA_JAVA_PROPERTIES="%EXTRA_JAVA_PROPERTIES% -
Ddomibus.config.location=%DOMAIN_HOME%/conf/domibus"
# *****
...
```

- For Linux : `DOMAIN_HOME/bin/setDomainEnv.sh`
- Locate the **export DOMAIN\_HOME** statement and add the following lines after:

```
...
export DOMAIN_HOME
# Added for Domibus *****
EXTRA_JAVA_PROPERTIES="$EXTRA_JAVA_PROPERTIES -
Ddomibus.config.location=$DOMAIN_HOME/conf/domibus"
export EXTRA_JAVA_PROPERTIES
# *****
...
```

5. Run the WebLogic Scripting Tool (WLST) in order to create the JMS resources and the Database datasources from the command line

- Download the WLST Package from the following location:  
<https://ec.europa.eu/cefdigital/artifact/content/repositories/eDelivery/eu/europa/ec/digit/ipcis/wslt-api/1.9.1/wslt-api-1.9.1.zip>

- Configure the WSLT API tool

- Unzip the **wslt-api-1.9.1.zip**

- Define the **WL\_HOME** as a system environment variable to point to the WebLogic 'wlsrver' directory as defined in the **DOMAIN\_HOME/bin/SetDomainEnv.[cmd|sh]**

e.g. `WL_HOME=/wls12130/wlsrver`

- Take the script **WeblogicSingleServer.properties** from **domibus-distribution-X.Y.Z-weblogic-configuration.zip** under the scripts directory and copy the **WeblogicSingleServer.properties** file into the **wslt-api-1.9.1** directory and adapt the following properties :

- Adapt the properties for connecting to the WebLogic domain

```
domain.loading.type=connect
domain.connect.url=t3://localhost:7001
domain.connect.username=weblogic_name
domain.connect.password=weblogic_password
domain.name=my_domain1
```

- Adapt the jdbc.datasource properties for the datasources

For Oracle database:

```
jdbc.datasource.0.name=eDeliveryDs
jdbc.datasource.0.driver.name=oracle.jdbc.xa.client.OracleXADataSource
jdbc.datasource.0.driver.url=jdbc:oracle:thin:@127.0.0.1:1521:xe
jdbc.datasource.0.driver.password=edelivery_password
jdbc.datasource.0.driver.username=edelivery_username
```

**Remark:**

MySQL configuration is commented by default. To enable MySQL, remove the comment (#) from the lines below. Don't forget to add the comment (#) for Oracle to disable it.

For MySQL:

```
jdbc.datasource.0.driver.name=com.mysql.jdbc.Driver
jdbc.datasource.0.driver.url=jdbc:mysql://localhost:3306/domibus_schema
jdbc.datasource.0.driver.password=edelivery_password
jdbc.datasource.0.driver.username=edelivery_username
jdbc.datasource.0.transaction.protocol=LoggingLastResource
jdbc.datasource.0.pool.connection.test.onreserv.sql=SQL SELECT 1
```

- Adapt the property for location of the filestore  
**persistent.filestore.0.location**

e.g.

```
persistent.filestore.0.location=DOMAIN_HOME/filestore
```

**Remark:**

Make sure that the path for the filestore contains forward slashes (/).

- Adapt if necessary the JMX security configuration

e.g.

```
#####
## Policy configuration
#####
security.policies.0.mode = CREATE
security.policies.0.resource = type=<jmx>, operation=invoke,
application=,
mbeanType=weblogic.management.runtime.JMSDestinationRuntimeMBean
security.policies.0.realm = myrealm
security.policies.0.authorizer = XACMLAuthorizer
security.policies.0.expression=
Rol(Admin)|Grp(Administrators)|Grp(JMSManagers)
security.policies.items = 1
#####
## Users configuration
#####
security.users.0.realm=myrealm
security.users.0.name=jmsManager
security.users.0.password=jms_Manager1
security.users.0.comment=
security.users.0.authenticator=DefaultAuthenticator
security.users.items=1
#####
## Groups configuration
#####
security.groups.0.realm=myrealm
security.groups.0.name=JMSManagers
security.groups.0.description=
security.groups.0.authenticator=DefaultAuthenticator
security.groups.items=1
#####
## Groups Membership configuration
#####
security.group.member.0.user=jmsManager
security.group.member.0.groups=JMSManagers
security.group.member.0.realm=myrealm
security.group.member.0.authenticator=DefaultAuthenticator
security.group.member.items=1
```

- Start the WebLogic domain from within *DOMAIN\_HOME*
  - For Windows  
**startWebLogic.cmd**
  - For Linux  
**startWebLogic.sh**
- Execute the following command from within the **wlstapi-1.9.1/bin** directory
  - For Windows  
**wlstapi.cmd ..\scripts\import.py --property ..\WeblogicSingleServer.properties**
  - For Linux  
**wlstapi.sh ../scripts/import.py --property ../WeblogicSingleServer.properties**

Expected Result:

```

Saving all your changes ...
Saved all your changes successfully.
Activating all your changes, this may take a while ...
The edit lock associated with this edit session is released
once the activation is completed.
Activation completed
Location changed to serverRuntime tree. This is a read-only tree with DomainMBean as the root.
For more help, use help('domainConfig')
Disconnected from weblogic server: AdminServer

```

## 6. Activate the use of the authorization providers to protect the JMX access

The screenshot shows the WebLogic Administration Console interface. At the top, there are navigation links: Home, Log Out, Preferences, Record, and Help. Below this, the breadcrumb path is 'Home > Summary of Security Realms > myrealm'. A message indicates that all changes have been activated, but one item must be restarted. The 'Settings for myrealm' section is visible, with tabs for Configuration, Users and Groups, Roles and Policies, Credential Mappings, Providers, and Migration. Under the 'Configuration' tab, there are sub-tabs for General, RDBMS Security Store, User Lockout, and Performance. The 'General' sub-tab is active. A 'Save' button is present. A note explains that if using JACC, the DD Only security model must be used. The 'Name' field is set to 'myrealm'. The 'Security Model Default' is set to 'DD Only'. The 'Combined Role Mapping Enabled' checkbox is checked. The 'Use Authorization Providers to Protect JMX Access' checkbox is also checked and highlighted with a red rectangle. Below this, there is an 'Advanced' section with another 'Save' button and a final instruction to click the 'Lock & Edit' button.

7. The database dialect is pre-configured to use the Oracle database. If you are using a MySQL database, you should adapt the dialect in *DOMAIN\_HOME/conf/domibus/domibus-datasources.xml* as highlighted in the example below:

```

../
<property name="jpaVendorAdapter">

```

```
<bean
class="org.springframework.orm.jpa.vendor.HibernateJpaVendorAdapter">
  <property name="showSql" value="false"/>
  <property name="generateDdl" value="false"/>
  <property name="databasePlatform"
value="org.hibernate.dialect.MySQL5InnoDBDialect"/>
</bean>
</property>
  <property name="jpaProperties">
    <props>
      <prop
key="hibernate.connection.driver_class">com.mysql.jdbc.Driver</prop>
      <prop
key="hibernate.dialect">org.hibernate.dialect.MySQL5InnoDBDialect</prop>
      <prop key="hibernate.format_sql">true</prop>
      <prop
key="transaction.factory_class">org.hibernate.engine.transaction.internal.j
ta.CMTTransactionFactory</prop>
      <prop
key="hibernate.transaction.manager_lookup_class">org.hibernate.transaction.
WebLogicTransactionManagerLookup</prop>
      <prop
key="hibernate.transaction.jta.platform">org.hibernate.service.jta.platform
.internal.WebLogicJtaPlatform</prop>
    </props>
  </property>
/..
```

8. Install the WS Plugin. For more details (see section §6.2.1.2 – "WebLogic").



## 9. Deploy domibus-MSH-X.Y.Z-weblogic.war

- Click **Install**

**ORACLE WebLogic Server Administration Console 12c**

Home Log Out Preferences Record Help

Welcome, domadmin Connected to: domibus

Home > Summary of Servers > eDelivery-Server-0 > Summary of Servers > Summary of Clusters > Summary of Servers > Summary of Deployments > Summary of Servers > Summary of Deployments > domibus-default-ws-plugin(3.1.3.1) > Summary of Deployments

**Summary of Deployments**

Control Monitoring

This page displays a list of Java EE applications and stand-alone application modules that have been installed to this domain. Installed applications and modules can be started, stopped, updated (redeployed), or deleted from the domain by first selecting the application name and using the controls on this page.

To install a new application or module for deployment to targets in this domain, click the Install button.

Customize this table

**Deployments**

Install Update Delete Start Stop Showing 1 to 1 of 1 Previous Next

| Name | State  | Health | Type    | Targets     | Deployment Order |
|------|--------|--------|---------|-------------|------------------|
|      | Active |        | Library | AdminServer | 100              |

Install Update Delete Start Stop Showing 1 to 1 of 1 Previous Next

- Navigate to the location of the **.war** file and click **Next**

**ORACLE WebLogic Server Administration Console 12c**

Home Log Out Preferences Record Help

Welcome, domadmin Connected to: domibus

Home > Summary of Servers > eDelivery-Server-0 > Summary of Servers > Summary of Clusters > Summary of Servers > Summary of Deployments > Summary of Servers > Summary of Deployments > domibus-default-ws-plugin(3.1.3.1) > Summary of Deployments

**Install Application Assistant**

Back Next Finish Cancel

**Locate deployment to install and prepare for deployment**

Select the file path that represents the application root directory, archive file, exploded archive directory, or application module descriptor that you want to install. You can also enter the path of the application directory or file in the Path field.

**Note:** Only valid file paths are displayed below. If you cannot find your deployment files, upload your file(s) and/or confirm that your application contains the required deployment descriptors.

**Path:** /home/wls12c1/Oracle/Middleware/Oracle\_Home/user\_projects/domains/domibus/cc

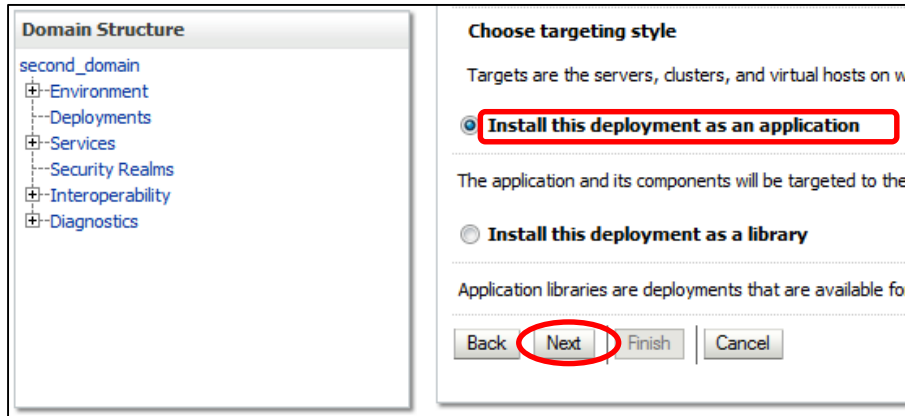
**Recently Used Paths:** /home/wls12c1/Oracle/Middleware/Oracle\_Home/user\_projects/domains/domibus/conf/domibus/plugins/lib  
/home/wls12c1/Oracle/Middleware/Oracle\_Home/user\_projects/domains/domibus/conf/domibus

**Current Location:** localhost / home / wls12c1 / Oracle / Middleware / Oracle\_Home / user\_projects / domains / domibus / conf / domibus

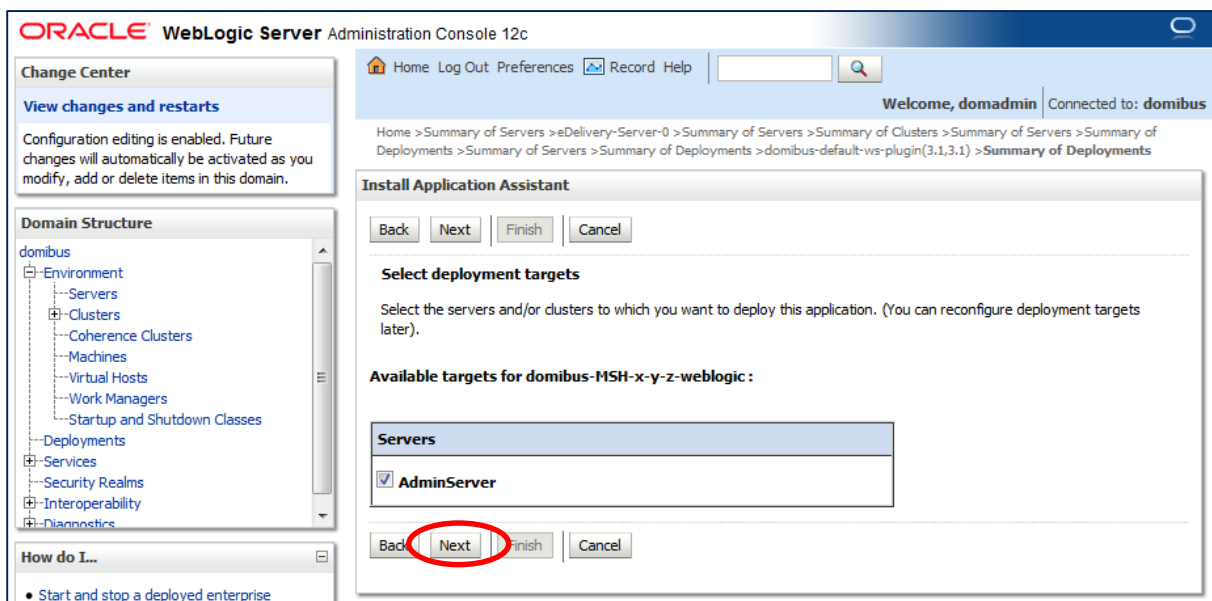
plugins  
scripts  
domibus-MSH-x-y-z-weblogic.war

Back Next Finish Cancel

- Choose **Install this deployment as an application** and click **Next**



- Select the following option and click **Next**



- Select the following options and click **Next**

**ORACLE WebLogic Server Administration Console 12c**

Home > Summary of Servers > eDelivery-Server-0 > Summary of Servers > Summary of Clusters > Summary of Servers > Summary of Deployments > Summary of Servers > Summary of Deployments > domibus-default-ws-plugin(3.1,3.1) > Summary of Deployments

Welcome, domadmin | Connected to: domibus

**Change Center**  
View changes and restarts  
Configuration editing is enabled. Future changes will automatically be activated as you modify, add or delete items in this domain.

**Domain Structure**  
domibus  
Environment  
Servers  
Clusters  
Coherence Clusters  
Machines  
Virtual Hosts  
Work Managers  
Startup and Shutdown Classes  
Deployments  
Services  
Security Realms  
Interoperability  
Diagnostics

**How do I...**  

- Start and stop a deployed enterprise application
- Configure an enterprise application
- Create a deployment plan
- Target an enterprise application to a server
- Test the modules in an enterprise application

**System Status**  
Health of Running Servers  

|                |
|----------------|
| Failed (0)     |
| Critical (0)   |
| Overloaded (0) |
| Warning (0)    |
| OK (1)         |

**Install Application Assistant**  
Back Next Finish Cancel

**Optional Settings**  
You can modify these settings or accept the defaults  
\* Indicates required fields

**General**  
What do you want to name this deployment?  
\* Name: domibus-MSH-x-y-z-weblogic

**Security**  
What security model do you want to use with this application?  
 **DD Only: Use only roles and policies that are defined in the deployment descriptors.**  
 Custom Roles: Use roles that are defined in the Administration Console; use policies that are defined in the deployment descriptor.  
 Custom Roles and Policies: Use only roles and policies that are defined in the Administration Console.  
 Advanced: Use a custom model that you have configured on the realm's configuration page.

**Source Accessibility**  
How should the source files be made accessible?  
 **Use the defaults defined by the deployment's targets**  
 Copy this application onto every target for me  
 I will make the deployment accessible from the following location  
 Location: /home/wls12c1/Oracle/Middleware/Oracle\_Home/user\_

Provide the location from where all targets will access this application's files. This is often a shared directory. You must ensure the application files exist in this location and that each target can reach the location.

**Plan Source Accessibility**  
How should the plan source files be made accessible?  
 **Use the same accessibility as the application**  
 Copy this plan onto every target for me  
 Do not copy this plan to targets  
 You must ensure the plan files exist in the shared location and that each target can reach the location.

Back Next Finish Cancel

- Select the following option and click **Finish**

The screenshot shows the Oracle WebLogic Server Administration Console 12c interface. The main window is titled "Install Application Assistant" and contains the following elements:

- Change Center:** View changes and restarts. Configuration editing is enabled.
- Domain Structure:** A tree view showing the domain structure for "domibus", including Environment, Servers, Clusters, Coherence Clusters, Machines, Virtual Hosts, Work Managers, Startup and Shutdown Classes, Deployments, Services, Security Realms, Interoperability, and Diagnostics.
- How do I...:** A list of tasks such as "Start and stop a deployed enterprise application", "Configure an enterprise application", "Create a deployment plan", "Target an enterprise application to a server", and "Test the modules in an enterprise application".
- System Status:** Health of Running Servers. A bar chart shows 0 Failed, 0 Critical, 0 Overloaded, 0 Warning, and 1 OK.
- Install Application Assistant:** A dialog box with "Back", "Next", "Finish", and "Cancel" buttons. It includes a "Review your choices and click Finish" section, an "Additional configuration" section with a question about reviewing configuration, and a "Summary" section with details for Deployment, Name, Staging Mode, Plan Staging Mode, and Security Model.

The "Additional configuration" section contains the following text: "In order to work successfully, this application may require additional configuration. Do you want to review this application's configuration after completing this assistant?"

Two radio button options are present:

- Yes, take me to the deployment's configuration screen.** (This option is circled in red in the image.)
- No, I will review the configuration later.

The "Summary" section includes a "Target Summary" table:

| Components                 | Targets     |
|----------------------------|-------------|
| domibus-MSH-x-y-z-weblogic | AdminServer |

At the bottom of the dialog, the "Finish" button is circled in red.

- Here is an overview of the resulting settings, you can now click **Save**

**ORACLE WebLogic Server Administration Console 12c**

Home > eDelivery-Server-0 > Summary of Servers > Summary of Clusters > Summary of Servers > Summary of Deployments > Summary of Servers > Summary of Deployments > domibus-default-ws-plugin(3.1.3.1) > Summary of Deployments > domibus-MSH-x-y-z-weblogic

Welcome, domadmin | Connected to: domibus

**Settings for domibus-MSH-x-y-z-weblogic**

**Overview** | Deployment Plan | Configuration | Security | Targets | Control | Testing | Monitoring | Notes

**Save**

Use this page to view the installed configuration of a Web application.

**Name:** domibus-MSH-x-y-z-weblogic  
The name of this application deployment. [More Info...](#)

**Context Root:** /domibus-weblogic  
The specific path at which this Web application is found by a servlet. [More Info...](#)

**Path:** /home/wls12c1/Oracle/Middleware/Oracle\_Home/user\_projects/domains/domibus/conf/domibus/domibus-MSH-x-y-z-weblogic.war  
The path to the source of the deployable unit on the Administration Server. [More Info...](#)

**Deployment Plan:** (no plan specified)  
The path to the deployment plan document on the Administration Server. [More Info...](#)

**Staging Mode:** (not specified)  
Specifies whether an application's files are copied from a source on the Administration Server to the Managed Server's staging area during application preparation. [More Info...](#)

**Plan Staging Mode:** (not specified)  
Specifies whether a deployment plan's files are copied from a source on the Administration Server to the Managed Server's staging area during application preparation. [More Info...](#)

**Security Model:** DDOnly  
The security model specifies how this deployment should be secured. [More Info...](#)

**Deployment Order:** 100  
An integer value that indicates when this unit is deployed, relative to other deployable units on a server, during startup. [More Info...](#)

**Deployment Principal Name:**   
A string value that indicates the principal that should be used when deploying the file or archive during startup and shutdown. This principal will be used to set the current subject when calling out into application code for interfaces such as ApplicationLifecycleListener. If no principal name is specified, then the anonymous principal will be used. [More Info...](#)

**Save**

**Modules and Components** Showing 1 to 1 of 1 Previous | Next

| Name                       | Type            |
|----------------------------|-----------------|
| domibus-MSH-x-y-z-weblogic | Web Application |
| Web Services               |                 |
| None to display            |                 |

Showing 1 to 1 of 1 Previous | Next

The expected positive response to the deployment request should be the following:

Home > Summary of Deployments > domibus-default-jms-plugin(3.1.3.1) > domibus-weblogic > **Summary of Deployments**

**Messages**

- ✔ All changes have been activated. No restarts are necessary.
- ✔ The deployment has been successfully installed.

10. Verify the installation by navigating into your browser to <http://localhost:7001/domibus-weblogic/home>

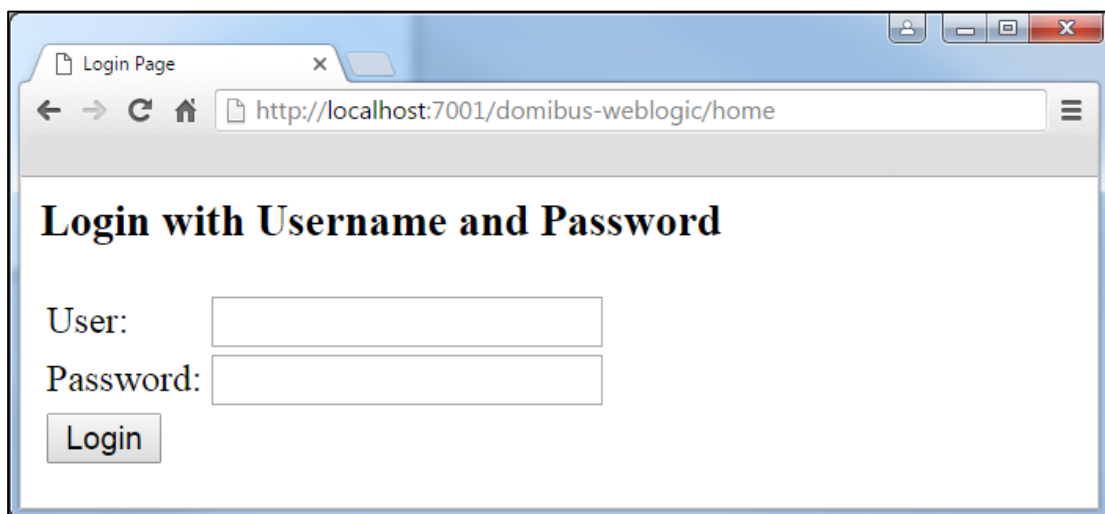
If you can access the page it means the deployment was successful.

(by default: User = **admin**; Password = **123456**)

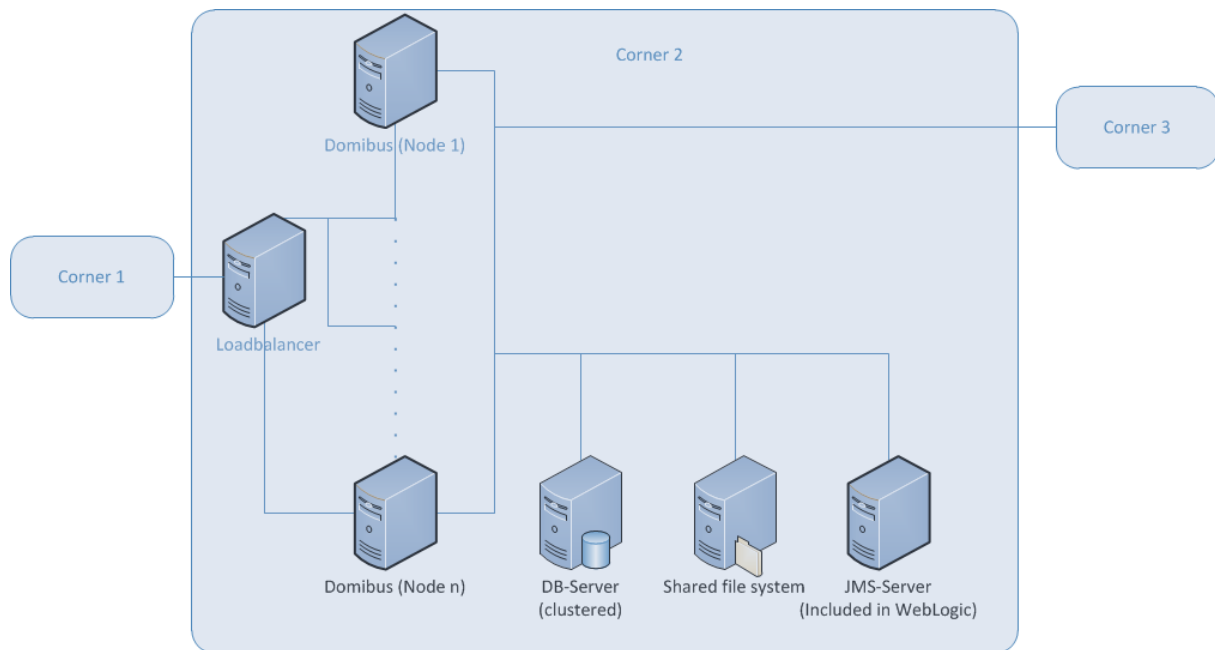
*Remark:*

*It is recommended to change the passwords for the default users. See §6.4.1 – "Administration Dashboard" for further information.*

Expected result:



### 4.2.2. Clustered Deployment



**Figure 1 - Diagram representing the Deployment of Domibus in a Cluster on WebLogic**

*Remark:*

*In this section we assume that a Domain and a WebLogic Cluster is already setup.*

For this step, you will have to use the following resources (see section §3.1 – "Binaries repository" for the download location):

- **domibus-MSH-X.Y.Z-weblogic.war**
- **domibus-MSH-X.Y.Z-weblogic-configuration.zip**
- **domibus-MSH-X.Y.Z-default-ws-plugin.zip (optional)**
- **domibus-MSH-X.Y.Z-default-jms-plugin.zip (optional)**

1. Follow steps **1, 2, 3** and **4** from §4.2.1 - "Single Server Deployment".
2. Run the WebLogic Scripting Tool (WLST) in order to create the necessary JMS resources and Database datasources from the command line
  - Download the WLST Package from the following location:  
<https://ec.europa.eu/cefdigital/artifact/content/repositories/eDelivery/eu/europa/ec/digit/ipcis/wslt-api/1.9.1/wslt-api-1.9.1.zip>
  - Configure the WSLT API tool
    - Unzip the **wslt-api-1.9.1.zip**
    - Define the WL\_HOME (SET or export command depending on your operating system) environment variable to point to the WebLogic **wlserver** directory  
 e.g. WL\_HOME=/wls12130/wlserver

- Take the script **WeblogicCluster.properties** from **domibus-distribution-X.Y.Z-weblogic-configuration.zip** under the scripts directory and copy the **WeblogicCluster.properties** file into the **wslt-api-1.9.1** directory and apply the following changes :

- Adapt the properties for connecting to the WebLogic domain

```
domain.loading.type=connect
domain.connect.url=t3://Localhost:7001
domain.connect.username=weblogic_user
domain.connect.password=weblogic_password
domain.name=mydomain1
```

- Adapt the jdbc.datasource properties for the datasources

For Oracle database:

```
jdbc.datasource.0.name= eDeliveryDs
jdbc.datasource.0.driver.name=oracle.jdbc.xa.client.OracleXADataSource
jdbc.datasource.0.driver.url=jdbc:oracle:thin:@127.0.0.1:1521:xe
jdbc.datasource.0.driver.password=edelivery_password
jdbc.datasource.0.driver.username=edelivery_username
jdbc.datasource.0.targets=cluster_name
```

For MySQL database:

*Remark:*

*MySQL configuration is commented by default. To enable MySQL, remove the comment (#) from the lines below. Don't forget to add the comment (#) for Oracle to disable it.*

```
jdbc.datasource.0.name= eDeliveryDs
jdbc.datasource.0.driver.name=com.mysql.jdbc.Driver
jdbc.datasource.0.driver.url=jdbc:mysql://localhost:3306/domibus_schema
jdbc.datasource.0.driver.password=edelivery_password
jdbc.datasource.0.driver.username=edelivery_username
jdbc.datasource.0.targets=cluster_name
jdbc.datasource.0.transaction.protocol=LoggingLastResource
jdbc.datasource.0.pool.connection.test.onreserv.sql=SQL SELECT 1
```

- Adapt the properties for target and location of the filestore

```
persistent.filestore.0.target=cluster_name
persistent.filestore.0.location=DOMAIN_HOME/filestores
```

*Remark:*

*If you are using Windows, make sure that the path for the filestore content forward slash (/).*

- Adapt if necessary the JMX security configuration

e.g.

```
#####
## Policy configuration
#####
security.policies.0.mode = CREATE
```



```

security.policies.0.resource = type=<jmx>, operation=invoke,
application=,
mbeanType=weblogic.management.runtime.JMSDestinationRuntimeMBean
security.policies.0.realm = myrealm
security.policies.0.authorizer = XACMLAuthorizer
security.policies.0.expression=
Rol(Admin)|Grp(Administrators)|Grp(JMSManagers)
security.policies.items = 1
#####
## Users configuration
#####
security.users.0.realm=myrealm
security.users.0.name=jmsManager
security.users.0.password=jms_Manager1
security.users.0.comment=
security.users.0.authenticator=DefaultAuthenticator
security.users.items=1
#####
## Groups configuration
#####
security.groups.0.realm=myrealm
security.groups.0.name=JMSManagers
security.groups.0.description=
security.groups.0.authenticator=DefaultAuthenticator
security.groups.items=1
#####
## Groups Membership configuration
#####
security.group.member.0.user=jmsManager
security.group.member.0.groups=JMSManagers
security.group.member.0.realm=myrealm
security.group.member.0.authenticator=DefaultAuthenticator
security.group.member.items=1

```

- Adapt the property for JMS Server

e.g.

```
jms.server.0.target=cluster_name
```

- Adapt the property for JMS Module

e.g.

```
jms.module.0.targets=cluster_name
```

- Start the WebLogic domain from within *DOMAIN\_HOME*

- For Windows

```
startWebLogic.cmd
```

- For Linux

```
startWebLogic.sh
```

- Execute the following command from within the **wlstapi-1.9.1/bin** directory

- For Windows

```
wlstapi.cmd ..\scripts\import.py --
property ..\WeblogicCluster.properties
```

- For Linux

```
wlstapi.sh ../scripts/import.py --
property ../WeblogicCluster.properties
```

### Expected Result:

```
Saving all your changes ...
Saved all your changes successfully.
Activating all your changes, this may take a while ...
The edit lock associated with this edit session is released
once the activation is completed.
Activation completed
Location changed to serverRuntime tree. This is a read-only tree with DomainMBean as the root.
For more help, use help('domainConfig')
Disconnected from weblogic server: AdminServer
```

### 3. Activate the use of the authorization providers to protect the JMX access

The screenshot shows the Oracle WebLogic Administration Console interface. The page title is 'Home > Summary of Security Realms > myrealm'. A message at the top states: 'All changes have been activated. However 1 items must be restarted for the changes to take effect.' The 'Settings for myrealm' section is active, with tabs for 'Configuration', 'Users and Groups', 'Roles and Policies', 'Credential Mappings', 'Providers', and 'Migration'. Under 'Configuration', there are sub-tabs for 'General', 'RDBMS Security Store', 'User Lockout', and 'Performance'. The 'General' tab is selected. A 'Save' button is visible. Below the instructions, the 'Name' is 'myrealm'. The 'Security Model Default' is set to 'DD Only'. The 'Combined Role Mapping Enabled' checkbox is checked. The 'Use Authorization Providers to Protect JMX Access' checkbox is checked and highlighted with a red rectangle. An 'Advanced' section is partially visible below.

### 4. The database dialect is pre-configured to use the Oracle database. If you are using the MySQL database you should adapt the dialect as highlighted in the text below in `DOMAIN_HOME/conf/domibus-datasources.xml` file :

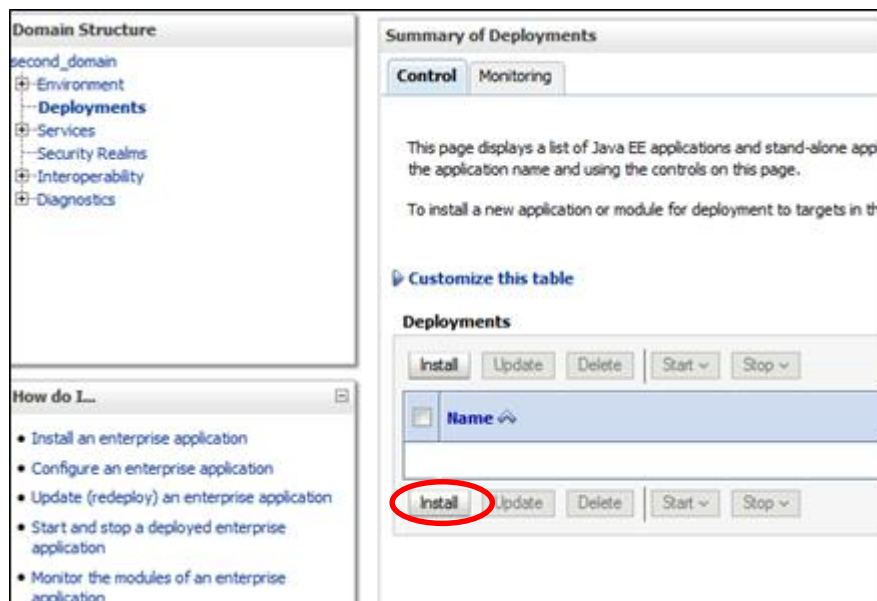
```
../
<property name="jpaVendorAdapter">
  <bean class="org.springframework.orm.jpa.vendor.HibernateJpaVendorAdapter">
    <property name="showSql" value="false"/>
    <property name="generateDdl" value="false"/>
    <property name="databasePlatform"
value="org.hibernate.dialect.MySQL5InnoDBDialect"/>
  </bean>
</property>
<property name="jpaProperties">
  <props>
    <prop key="hibernate.connection.driver_class">com.mysql.jdbc.Driver</prop>
    <prop
key="hibernate.dialect">org.hibernate.dialect.MySQL5InnoDBDialect</prop>
    <prop key="hibernate.format_sql">true</prop>
```

```

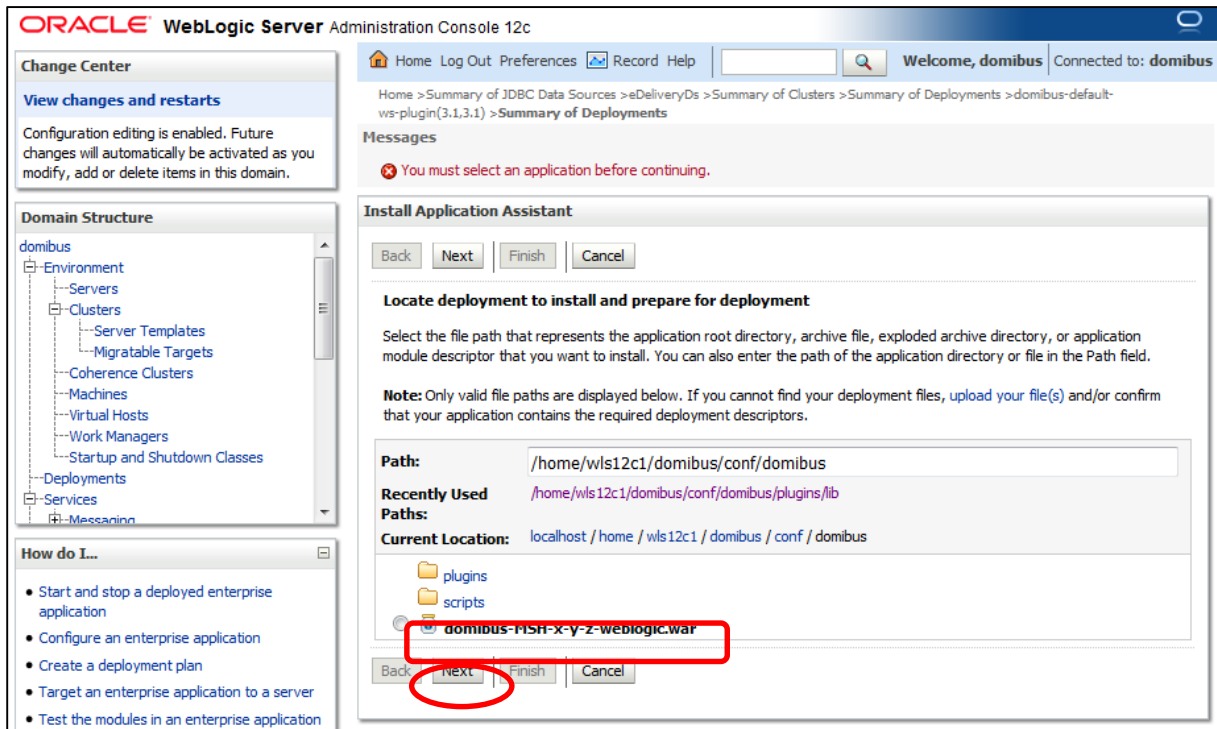
        <prop
key="transaction.factory_class">org.hibernate.engine.transaction.internal.jta.CMTTransactionFactory</prop>
        <prop
key="hibernate.transaction.manager_lookup_class">org.hibernate.transaction.WeblogicTransactionManagerLookup</prop>
        <prop
key="hibernate.transaction.jta.platform">org.hibernate.service.jta.platform.internal.WeblogicJtaPlatform</prop>
    </props>
</property>
/..

```

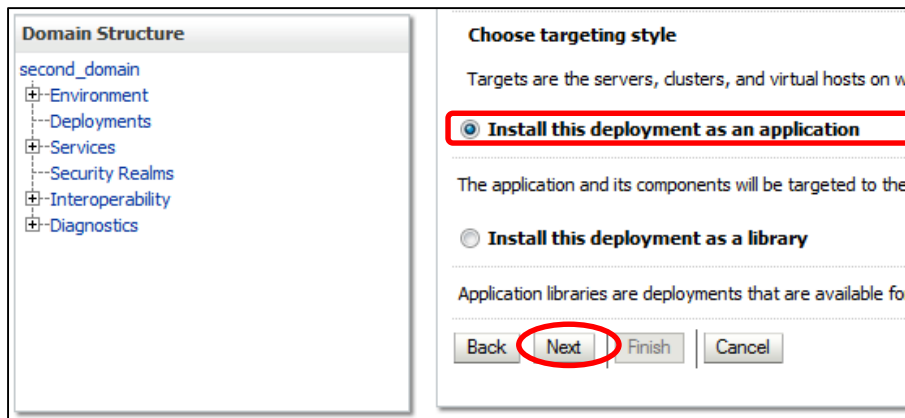
5. Install the WS plugin. For more details refer to chapter §6.2.1.2 – "WebLogic",
6. Deploy **domibus-MSH-X.Y.Z-weblogic.war**.
  - Click **Install**



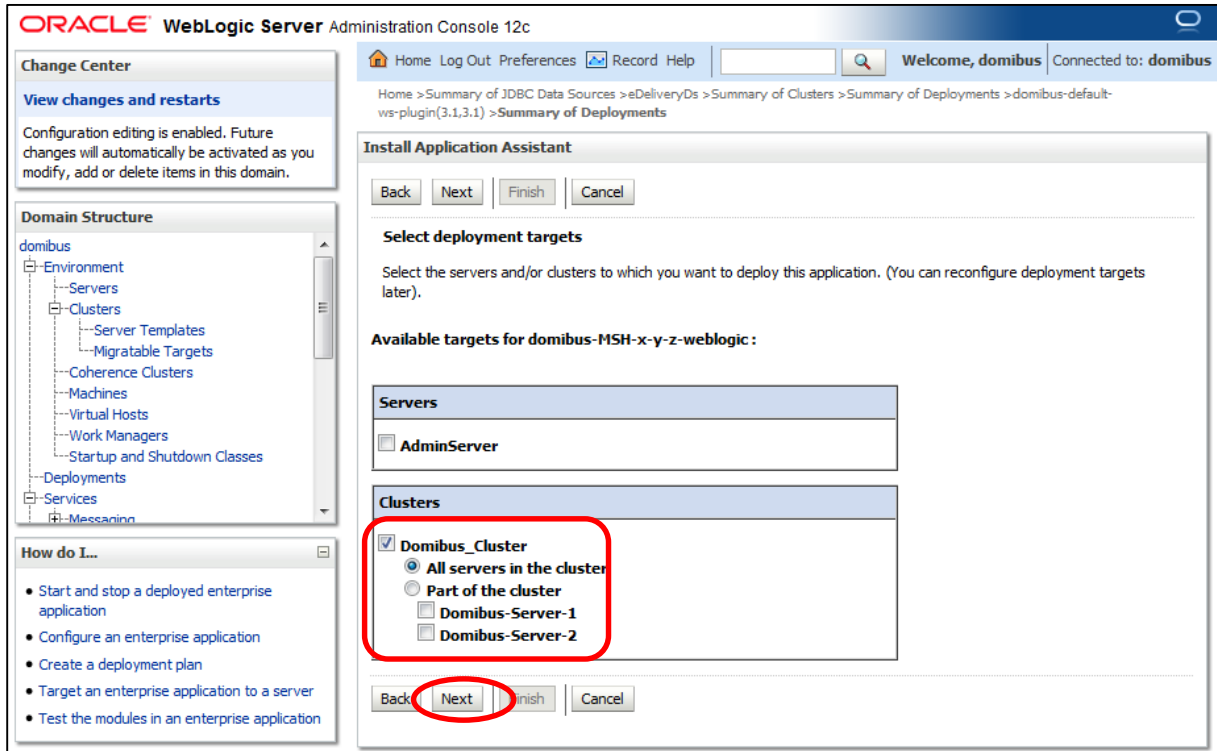
- Navigate to location **DOMAIN\_HOME/conf/domibus** where the **domibus-MSH-X.Y.Z-weblogic.war** file has been previously copied
- Select the **domibus-MSH-X.Y.Z-weblogic.war** file and click **Next**



- Choose **Install this deployment as an application** and click **Next**



- Select your cluster for the deployment target and click **Next**



- Select the following options and click **Next**

**ORACLE WebLogic Server Administration Console 12c**

Home > Summary of JDBC Data Sources > «DeliveryDs > Summary of Clusters > Summary of Deployments > domibus-default-ws-plugin(3.1.3.1) > Summary of Deployments

Welcome, domibus | Connected to: domibus

**Change Center**  
View changes and restarts  
Configuration editing is enabled. Future changes will automatically be activated as you modify, add or delete items in this domain.

**Domain Structure**  
domibus  
- Environment  
-- Servers  
- Clusters  
-- Server Templates  
-- Migratable Targets  
-- Coherence Clusters  
- Machines  
- Virtual Hosts  
- Work Managers  
- Startup and Shutdown Classes  
- Deployments  
- Services  
-- Messaging

**How do I...**  

- Start and stop a deployed enterprise application
- Configure an enterprise application
- Create a deployment plan
- Target an enterprise application to a server
- Test the modules in an enterprise application

**System Status**  
Health of Running Servers  

|                |
|----------------|
| Failed (0)     |
| Critical (0)   |
| Overloaded (0) |
| Warning (0)    |
| OK (3)         |

**Install Application Assistant**  
Back | Next | Finish | Cancel

**Optional Settings**  
You can modify these settings or accept the defaults  
\* Indicates required fields

**General**  
What do you want to name this deployment?  
\* Name: domibus-MSH-x-y-z-weblogic

**Security**  
What security model do you want to use with this application?  
 **DD Only: Use only roles and policies that are defined in the deployment descriptors.**  
 Custom Roles: Use roles that are defined in the Administration Console; use policies that are defined in the deployment descriptor.  
 Custom Roles and Policies: Use only roles and policies that are defined in the Administration Console.  
 Advanced: Use a custom model that you have configured on the realm's configuration page.

**Source Accessibility**  
How should the source files be made accessible?  
 **Use the defaults defined by the deployment's targets**  
 Copy this plan onto every target for me  
 During deployment, the plan files will be copied automatically to the Managed Servers to which the application is targeted.  
 Do not copy this plan to targets  
 You must ensure the plan files exist in the shared location and that each target can reach the location.

Back | Next | Finish | Cancel

- Select the following option and click **Finish**

The screenshot shows the Oracle WebLogic Server Administration Console interface. On the left, there are several panels: 'Change Center', 'Domain Structure' (showing a tree view of the domain 'domibus'), 'How do I...' (with a list of tasks), and 'System Status' (showing health of running servers). The main area displays the 'Install Application Assistant' dialog. At the top, there are navigation buttons: 'Back', 'Next', 'Finish', and 'Cancel'. Below this, the text reads 'Review your choices and click Finish'. Under the 'Additional configuration' section, there are two radio button options: 'Yes, take me to the deployment's configuration screen.' (which is selected and circled in red) and 'No, I will review the configuration later.'. Below this is a 'Summary' section with details for 'Deployment', 'Name', 'Staging Mode', 'Plan Staging Mode', and 'Security Model'. At the bottom, there is a 'Target Summary' table and another set of navigation buttons: 'Back', 'Next', 'Finish', and 'Cancel'. The 'Finish' button in this second set is also circled in red.

**Change Center**  
View changes and restarts  
Configuration editing is enabled. Future changes will automatically be activated as you modify, add or delete items in this domain.

**Domain Structure**  
domibus  
- Environment  
- Servers  
- Clusters  
- Coherence Clusters  
- Machines  
- Virtual Hosts  
- Work Managers  
- Startup and Shutdown Classes  
- Deployments  
- Services  
- Security Realms  
- Interoperability  
- Diagnostics

**How do I...**  

- Start and stop a deployed enterprise application
- Configure an enterprise application
- Create a deployment plan
- Target an enterprise application to a server
- Test the modules in an enterprise application

**System Status**  
Health of Running Servers  

- Failed (0)
- Critical (0)
- Overloaded (0)
- Warning (0)
- OK (1)

**Install Application Assistant**  
 Home Log Out Preferences Record Help  
 Welcome, domadmin Connected to: domibus  
 Home > Summary of Servers > eDelivery-Server-0 > Summary of Servers > Summary of Clusters > Summary of Servers > Summary of Deployments > Summary of Servers > Summary of Deployments > domibus-default-ws-plugin(3.1.3.1) > Summary of Deployments

Back Next Finish Cancel

**Review your choices and click Finish**  
Click Finish to complete the deployment. This may take a few moments to complete.

**Additional configuration**  
In order to work successfully, this application may require additional configuration. Do you want to review this application's configuration after completing this assistant?

Yes, take me to the deployment's configuration screen.  
 No, I will review the configuration later.

**Summary**  
**Deployment:** /home/wls12c1/Oracle/Middleware/Oracle\_Home/user\_projects/domains/domibus/conf/domibus/domibus-MSH-x-y-z-weblogic.war  
**Name:** domibus-MSH-x-y-z-weblogic  
**Staging Mode:** Use the defaults defined by the chosen targets  
**Plan Staging Mode:** Use the same accessibility as the application  
**Security Model:** DDOnly: Use only roles and policies that are defined in the deployment descriptors.

**Target Summary**

| Components                 | Targets     |
|----------------------------|-------------|
| domibus-MSH-x-y-z-weblogic | AdminServer |

Back Next Finish Cancel

- Here is an overview of the resulting settings, you can now click **Save**

**ORACLE WebLogic Server Administration Console 12c**

Home > eDelivery-Server-0 > Summary of Servers > Summary of Clusters > Summary of Servers > Summary of Deployments > Summary of Servers > Summary of Deployments > domibus-default-ws-plugin(3.1.3.1) > Summary of Deployments > domibus-MSH-x-y-z-weblogic

Welcome, domadmin | Connected to: domibus

**Settings for domibus-MSH-x-y-z-weblogic**

**Overview** | Deployment Plan | Configuration | Security | Targets | Control | Testing | Monitoring | Notes

**Save**

Use this page to view the installed configuration of a Web application.

**Name:** domibus-MSH-x-y-z-weblogic The name of this application deployment. [More Info...](#)

**Context Root:** /domibus-weblogic The specific path at which this Web application is found by a servlet. [More Info...](#)

**Path:** /home/wls12c1/Oracle/Middleware/Oracle\_Home/user\_projects/domains/domibus/conf/domibus/domibus-MSH-x-y-z-weblogic.war The path to the source of the deployable unit on the Administration Server. [More Info...](#)

**Deployment Plan:** (no plan specified) The path to the deployment plan document on the Administration Server. [More Info...](#)

**Staging Mode:** (not specified) Specifies whether an application's files are copied from a source on the Administration Server to the Managed Server's staging area during application preparation. [More Info...](#)

**Plan Staging Mode:** (not specified) Specifies whether a deployment plan's files are copied from a source on the Administration Server to the Managed Server's staging area during application preparation. [More Info...](#)

**Security Model:** DDOnly The security model specifies how this deployment should be secured. [More Info...](#)

**Deployment Order:** 100 An integer value that indicates when this unit is deployed, relative to other deployable units on a server, during startup. [More Info...](#)

**Deployment Principal Name:** A string value that indicates the principal that should be used when deploying the file or archive during startup and shutdown. This principal will be used to set the current subject when calling out into application code for interfaces such as ApplicationLifecycleListener. If no principal name is specified, then the anonymous principal will be used. [More Info...](#)

**Save**

**Modules and Components** Showing 1 to 1 of 1 Previous | Next

| Name                       | Type            |
|----------------------------|-----------------|
| domibus-MSH-x-y-z-weblogic | Web Application |
| Web Services               |                 |
| None to display            |                 |

Showing 1 to 1 of 1 Previous | Next

The expected positive response to the deployment request should be the following:

Home > Summary of Deployments > domibus-default-jms-plugin(3.1.3.1) > domibus-weblogic > **Summary of Deployments**

**Messages**

- ✔ All changes have been activated. No restarts are necessary.
- ✔ The deployment has been successfully installed.



7. Verify the installation by navigating into your browser to <http://localhost:7001/domibus-weblogic/home>

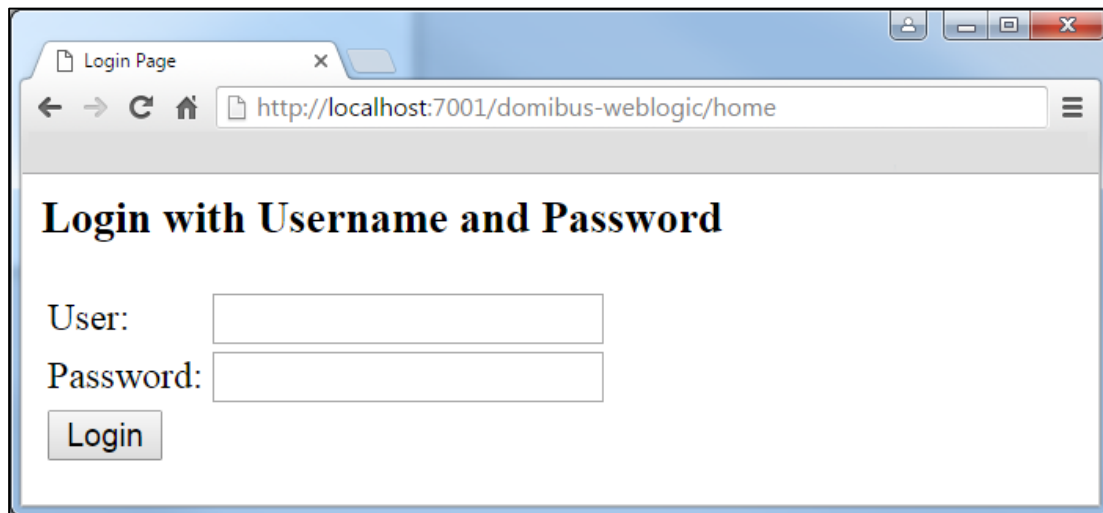
If you can access the page it means the deployment was successful.

(by default: User = **admin**; Password = **123456**)

*Remark:*

*It is recommended to change the passwords for the default users. See §6.4.1 - Administration Dashboard" for further information.*

Expected result:



## 4.3. Domibus on Tomcat

*Remark:*

*As Tomcat isn't a full Java EE application server and doesn't offer JMS capabilities by default, Domibus uses ActiveMQ as an in-memory JMS broker when deployed on a Tomcat servlet container. The configuration for the ActiveMQ JMS broker can be found in `cef_edelivery_path/domibus/internal/activemq.xml`.*

### 4.3.1. Pre-Configured Single Server Deployment

For this step, you will have to use the following resources (see section §3.1 – "Binaries repository" for the download location):

- **domibus-MSH-X.Y.Z-tomcat-full.zip**

1. Unzip the archive

- Unzip **domibus-MSH-X.Y.Z-tomcat-full.zip** to a location on your physical machine: `cef_edelivery_path`.

| Name             | Size       |
|------------------|------------|
| domibus          | 66 739 870 |
| sql-scripts      | 70 415     |
| changelog.txt    | 3 045      |
| upgrade-info.txt | 6 600      |

2. Prepare the database

- For MySQL database:

Add MySQL JDBC driver (available on MySQL official web site cf. [REF2]) in the folder `cef_edelivery_path/domibus/lib`.

*Remark:*

*The version of the JDBC driver has to be `mysql-connector-java-5.1.40.jar` or higher.*

Edit the xml file `cef_edelivery_path/domibus/conf/domibus/domibus-datasources.xml` and adjust the highlighted parts in the text below according to your environment:

```
<bean id="domibusJDBC-XADataSource" .....>
<property name="uniqueResourceName">
    <value>domibusJDBC-XA</value>
</property>
<property name="xaDataSourceClassName">
<value>com.mysql.jdbc.jdbc2.optional.MysqlXADataSource</value>
</property>
<property name="xaProperties">
<props>
    <prop key="serverName">db_host</prop>
    <prop key="port">db_port</prop>
    <prop key="user">edelivery_user</prop>
    <prop key="password">edelivery_password</prop>

```

```

        <prop
key="url">jdbc:mysql://db_host:db_port/domibus_schema?pinGlobalTxToPhysicalConn
ection=true</prop>
    </props>
</property>
.....
<property name="testQuery">
<value>select 1</value>
</property>
</bean>

<bean id="entityManagerFactory" .....>
<property name="jpaVendorAdapter">
<bean class="org.springframework.orm.jpa.vendor.HibernateJpaVendorAdapter">
<property name="databasePlatform"
value="org.hibernate.dialect.MySQL5InnoDBDialect"/>
        </bean>
    </property>
</bean>
.....

```

- For Oracle database:

Add the Oracle JDBC driver (e.g. **ojdbc7.jar**) (available on the Oracle official web site cf.[REF3]) in folder `cef_edelivery_path/domibus/lib`.

Edit the xml file `cef_edelivery_path/domibus/conf/domibus/domibus-datasources.xml` and adjust the highlighted parts in the text below according to your environment:

```

<bean id="domibusJDBC-XADataSource" .....>
    <property name="uniqueResourceName">
        <value>domibusJDBC-XA</value>
    </property>
    <property name="xaDataSourceClassName">
        <value>oracle.jdbc.xa.client.OracleXADataSource</value>
    </property>
    <property name="xaProperties">
        <props>
            <prop key="serverName">db_host</prop>
            <!--prop key="port">db_port</prop-->
            <prop key="user">edelivery_user</prop>
            <prop key="password">edelivery_password</prop>
            <prop
key="url">jdbc:oracle:thin:edelivery_user/edelivery_password@//localhost:1521/XE
            </prop>
        </props>
    </property>
.....
    <property name="testQuery">
        <value>SELECT 1 FROM DUAL</value>
    </property>
.....
</bean>
<bean id="entityManagerFactory" .....>
    <property name="jpaVendorAdapter">
<bean class="org.springframework.orm.jpa.vendor.HibernateJpaVendorAdapter">
    <property name="databasePlatform"
value="org.hibernate.dialect.Oracle10gDialect"/>
</bean>
    </property>

```

```
</bean>
```

3. Configure your Keystore based on section §5.1.2 – "Certificates".
4. Set JVM parameters

Domibus expects a single JVM parameter **\$domibus.config.location**, pointing towards the `cef_edelivery_path/domibus/conf/domibus` folder.

You can do this by editing the first command lines of `cef_edelivery_path\domibus\bin\catalina.bat` (Windows) or `cef_edelivery_path/domibus/bin/catalina.sh` (Linux). Set **CATALINA\_HOME** equal to the absolute path of the installation `cef_edelivery_path/domibus`

- **For Windows :** Edit `cef_edelivery_path\domibus\bin\catalina.bat` by adding the following:

```
...
set CATALINA_HOME=cef_edelivery_path\domibus
set JAVA_OPTS=%JAVA_OPTS% -Dfile.encoding=UTF-8 -Xms128m -Xmx1024m -
XX:PermSize=64m -XX:MaxPermSize=256m
set JAVA_OPTS=%JAVA_OPTS% -Ddomibus.config.location=%CATALINA_HOME%\conf\domibus
...
```

- **For Linux :** Edit `cef_edelivery_path/domibus/bin/catalina.sh` by adding the following:

```
...
export CATALINA_HOME=cef_edelivery_path/domibus
export JAVA_OPTS="$JAVA_OPTS -Xms128m -Xmx1024m -XX:MaxPermSize=256m"
export JAVA_OPTS="$JAVA_OPTS -
Ddomibus.config.location=$CATALINA_HOME/conf/domibus"
...
```

5. Launch the Domibus application:

- For Windows :

```
cd cef_edelivery_path\domibus\bin\
startup.bat
```

- For Linux :

```
cd cef_edelivery_path /domibus/bin/
chmod +x *.sh
./startup.sh
```

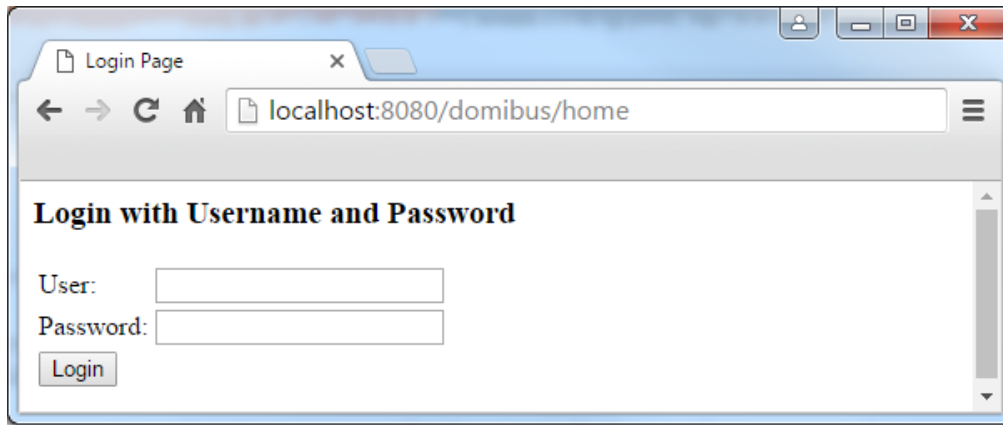
6. Display the Domibus home page on your browser: <http://localhost:8080/domibus/home> (by default: User = **admin**; Password = **123456**)

*Remark:*

*It is recommended to change the passwords for the default users. See §6.4.1 – "Administration Dashboard" for further information.*

If you can access the page it means the deployment was successful.

Expected result:



### 4.3.2. Single Server Deployment

For this step, you will have to use the following resources (see §3.1 – "Binaries repository" for the download location):

- **domibus-MSH-X.Y.Z-tomcat-configuration.zip**
- **domibus-MSH-X.Y.Z-tomcat.war**

We assume that an Apache Tomcat 8.0.x is already installed and the installation location is now considered as your *cef\_edelivery\_path/domibus*.

1. Download and unzip the artefact **domibus-MSH-X.Y.Z-tomcat-configuration.zip** into the directory *cef\_edelivery\_path/domibus/conf/domibus*
2. Configure the MySQL or Oracle datasource as indicated in §4.3.1 – "Pre-Configured Single Server Deployment"
3. Configure your Keystore based on §5.1.2 – "Certificates".
4. Execute *step 4* from §4.3.1 – "Pre-Configured Single Server Deployment"
5. Rename **domibus-MSH-X.Y.Z-tomcat.war** into **domibus.war** and deploy it to *cef\_edelivery\_path/domibus/webapps*.

| Name         | Size       |
|--------------|------------|
| docs         | 3 078 847  |
| examples     | 1 228 755  |
| host-manager | 29 787     |
| manager      | 64 099     |
| ROOT         | 161 238    |
| domibus.war  | 53 649 076 |

6. Launch the Domibus application:

- For Windows :

```
cd cef_edelivery_path\domibus\bin\
startup.bat
```

- For Linux :

```
cd cef_edelivery_path /domibus/bin/
chmod +x *.sh
./startup.sh
```

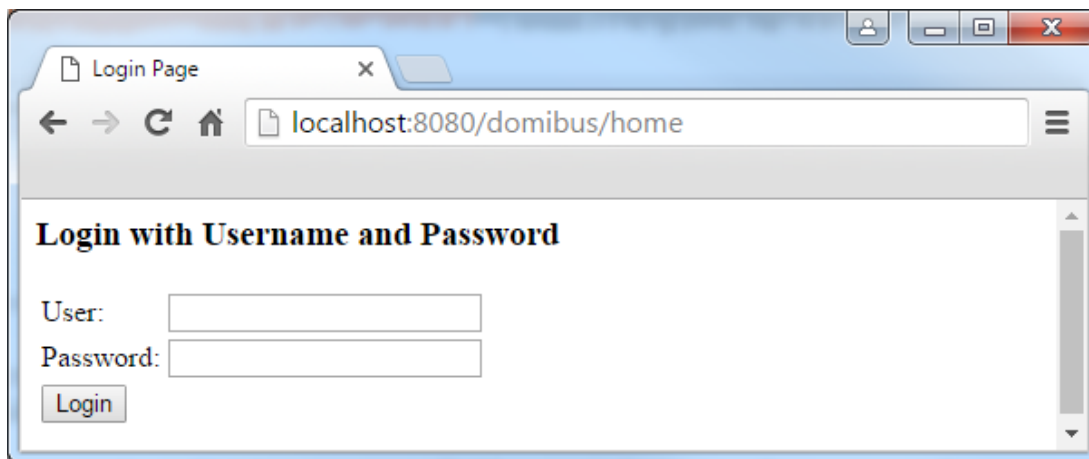
7. Display the Domibus home page on your browser: <http://localhost:8080/domibus/home> (by default: User = **admin**; Password = **123456**)

*Remark:*

*It is recommended to change the passwords for the default users. See §6.4.1 – "Administration Dashboard" for further information.*

If you can access the page it means the deployment was successful.

Expected result:



### 4.3.3. Clustered Deployment

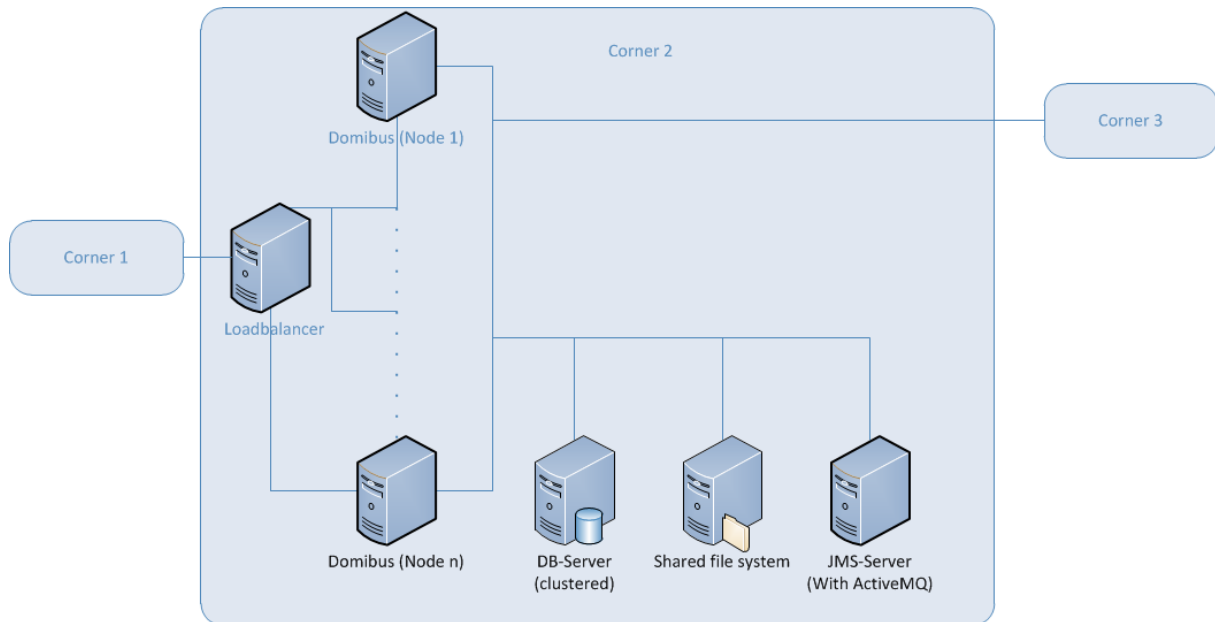


Figure 2 - Diagram representing the Deployment of Domibus in a Cluster on Tomcat

*Remark:*

*In this section we assume that a JMS Broker and a Loadbalancer are configured separately (e.g. httpd).*

For this step, you will have to use the following resources (see §3.1 – "Binaries repository" for the download location):

- **domibus-MSH-X.Y.Z-tomcat-full.zip**
- **domibus-MSH-X.Y.Z-tomcat.war**

1. Follow steps **1, 2, 3** and **4** from the §4.3.2 – "Single Server Deployment"
2. Set JVM parameters

Domibus expects a single JVM parameter **\$domibus.config.location**, pointing towards the *cef\_edelivery\_path/domibus/conf/domibus* folder.

You can do this by editing *cef\_edelivery\_path\domibus\bin\catalina.bat* (Windows) or *cef\_edelivery\_path/domibus/bin/catalina.sh* (Linux). Set **CATALINA\_HOME** equal to the absolute path of the installation *cef\_edelivery\_path/Domibus*

- **For Windows: Edit *cef\_edelivery\_path\domibus\bin\catalina.bat* by adding the following:**

*Remark:*

*your\_node\_id* refers to the installed node in the cluster which starts normally at 01 (then 02, etc.)

```
...
set CATALINA_HOME=cef_edelivery_path\domibus
set JAVA_OPTS=%JAVA_OPTS% -Dfile.encoding=UTF-8 -Xms128m -Xmx1024m -
XX:PermSize=64m -XX:MaxPermSize=256m
set JAVA_OPTS=%JAVA_OPTS% -Ddomibus.config.location=%CATALINA_HOME%\conf\domibus
set JAVA_OPTS=%JAVA_OPTS% -Ddomibus.node.id=your_node_id
...
```



- For Linux : Edit `cef_edelivery_path/domibus/bin/catalina.sh` by adding the following:

```
...
export CATALINA_HOME=cef_edelivery_path/domibus
export JAVA_OPTS=$JAVA_OPTS -Xms128m -Xmx1024m -XX:MaxPermSize=256m
export JAVA_OPTS="$JAVA_OPTS -
Ddomibus.config.location=$CATALINA_HOME/conf/domibus"
export JAVA_OPTS="$JAVA_OPTS -Ddomibus.node.id=your_node_id"
...
```

### 3. Integrate JMS Broker with Domibus nodes

- Modify `cef_edelivery_path/domibus/conf/domibus/internal/activemq.xml`

Set the uri to the running JMS-broker.

```
<transportConnector uri="tcp://your_ip:your_port" disableAsyncDispatch="true"/>
```

- Modify `cef_edelivery_path/domibus/conf/domibus/domibus-datasources.xml`

Set the broker to the running JMS-broker.

```
<amq:xaConnectionFactory id="xaJmsConnectionFactory" brokerURL="tcp://your_ip:your_port
" userName="admin_username" password="admin_password"/>
```

Remove the highlighted parts below:

```
<bean id="domibusJMS-XAConnectionFactory"
class="com.atomikos.jms.AtomikosConnectionFactoryBean" init-method="init"
destroy-method="close" depends-on="broker">
  <property name="uniqueResourceName" value="domibusJMS-XA"/>
  <property name="xaConnectionFactory" ref="xaJmsConnectionFactory"/>
  <property name="maxPoolSize" value="20"/>
</bean>
<!-- lets create an ActiveMQ Broker -->
<bean id="broker"
class="org.apache.activemq.xbean.BrokerFactoryBean">
  <property name="config"
value="Error! Hyperlink reference not valid."/>
</bean>
```

### 4. Change parameters in `cef_edelivery_path/domibus/conf/domibus/domibus-transactions.xml`

For clustered deployment:

Uncomment the following lines:

```
<prop>${domibus.work.location:${domibus.config.location}}/
work/transactions/${domibus.node.id}</prop>
<prop>${domibus.work.location:${domibus.config.location}}/
work/transactions/${domibus.node.id}/log</prop>
```

Comment the following line:

```
<prop>${domibus.work.location:${domibus.config.location}}/
work/transactions</prop>
<prop>${domibus.work.location:${domibus.config.location}}/
work/transactions/log</prop>
```

### 5. Follow step 6 and 7 from the §4.3.2 – "Single Server Deployment"

## 4.4. Domibus on WildFly

### 4.4.1. Pre-Configured Single Server Deployment

In this section we assume that WildFly is installed at the location `cef_edelivery_path/domibus`

For this step, you will have to use the following resources (see section 3.1 *Binaries repository* for the download location):

- **domibus-MSH-X.Y.Z-wildfly-full.zip**

1. Download and unzip the **domibus-MSH-X.Y.Z-wildfly-full.zip** archive in your `cef_edelivery_path` location.

| Name                     | Size        |
|--------------------------|-------------|
| domibus                  | 222 551 064 |
| sql-scripts              | 70 415      |
| changelog.txt            | 3 045       |
| upgrade-info.txt         | 6 600       |
| Wildfly_installation.pdf | 23 075      |

2. Configure the MySQL database (Option 1).

- Drivers:

Create the directory

`cef_edelivery_path/domibus/modules/system/layers/base/com/mysql/main` if it does not exist. Under this directory:

- Download and copy the MySQL jar driver. (Available on MySQL official web site [cf.\[REF4\]](#)) in the folder.

*Remark:*

*The version of the driver has to be `mysql-connector-java-5.1.40.jar` or higher.*

- Create or edit the file `cef_edelivery_path/domibus/modules/system/layers/base/com/mysql/main/module.xml` and copy the following module configuration. Make sure to put the name of the driver you are using as an argument of **resource-root** element. e.g. **`mysql-connector-java-5.1.40.jar`**:

```
<module xmlns="urn:jboss:module:1.1" name="com.mysql">
  <resources>
    <resource-root path="mysql-connector-java-5.1.40.jar"/>
  </resources>
  <dependencies>
    <module name="javax.api"/>
    <module name="javax.transaction.api"/>
  </dependencies>
</module>
```

- Add your DBMS driver metadata to the Drivers section of the `cef_edelivery_path/domibus/standalone/configuration/standalone-full.xml`

```
<subsystem xmlns="urn:jboss:domain:datasources:3.0">
  .....
  <datasources>
    .....
    <drivers>
      <driver name="com.mysql" module="com.mysql">
        <driver-class>com.mysql.jdbc.Driver</driver-class>
        <xa-datasource-class>
          com.mysql.jdbc.jdbc2.optional.MysqlXADataSource
        </xa-datasource-class>
      </driver>
    </drivers>
    .....
  </datasources>
  .....
</subsystem>
```

- Datasources
  - Add the datasources as indicated below to `cef_edelivery_path/domibus/standalone/configuration/standalone-full.xml`.

*Remark:*

*Please make sure you modify the connection details for the **MysqlXADS** datasource for MySQL according to your environment.*

```
<subsystem xmlns="urn:jboss:domain:datasources:3.0">
  <datasources>
    .....
    <xa-datasource jndi-name="java:/jdbc/cipaeDeliveryDs" pool-
      name="eDeliveryMysqlXADS" enabled="true" use-ccm="true" statistics-enabled="true">
      <xa-datasource-property name="ServerName">db_host</xa-datasource-property>
      <xa-datasource-property name="DatabaseName">domibus_schema</xa-
      datasource-property>
      <xa-datasource-
      class>com.mysql.jdbc.jdbc2.optional.MysqlXADataSource</xa-datasource-class>
      <driver>com.mysql</driver>
      <security>
        <user-name>edelivery_user</user-name>
        <password>edelivery_password</password>
      </security>
      <validation>
      <valid-connection-checker class-
      name="org.jboss.jca.adapters.jdbc.extensions.mysql.MySQLValidConnectionChecker"/>
      <background-validation>true</background-validation>
      <exception-sorter class-
      name="org.jboss.jca.adapters.jdbc.extensions.mysql.MySQLExceptionSorter"/>
      </validation>
      </xa-datasource>
    .....
  </datasources>
</subsystem>
```

### 3. Configure the Oracle Database (option 2)

- Drivers:

Create the directory `cef_edelivery_path/domibus/modules/system/layers/base/com/oracle/main` if it does not exist. Under this directory:

- Download and copy the Oracle jar driver. (e.g. **ojdbc7.jar**) (Available on the Oracle official web site cf.[REF5]) in the folder.
- Copy the file `cef_edelivery_path/domibus/modules/system/layers/base/com/mysql/main/module.xml` then copy it in the folder recently created.

Edit **module.xml** by copying the following module configuration. Make sure to put the name of the driver you are using as an argument of **resource-root** element. e.g. **ojdbc7.jar**:

```
<module xmlns="urn:jboss:module:1.1" name="com.oracle">
  <resources>
    <resource-root path="ojdbc7.jar"/>
  </resources>
  <dependencies>
    <module name="javax.api"/>
    <module name="javax.transaction.api"/>
  </dependencies>
</module>
```

- Add your DBMS driver metadata to the Drivers section in `cef_edelivery_path/domibus/standalone/configuration/standalone-full.xml` (Only change the items described below while replacing MYSQL configuration in the process).

```
<subsystem xmlns="urn:jboss:domain:datasources:3.0">
  <datasources>
    .....
    <xa-datasource jndi-name="java:/jdbc/cipaeDeliveryDs" pool-
name="eDeliveryOracleXADS" enabled="true" use-ccm="true">
      <xa-datasource-property
name="URL">jdbc:oracle:thin:edelivery_user/edelivery_password@//localhost:1521/
db1
    <driver>com.oracle</driver>
      <user-name>edelivery_user</user-name>
      <password>edelivery_password</password>
```

- Datasources
  - Add the datasources as indicated below to `cef_edelivery_path/domibus/standalone/configuration/standalone-full.xml`.

*Remark:*

*Please make sure you modify the connection details for the **eDeliveryOracleXADS** datasource for Oracle according to your environment.*

```
<valid-connection-checker class-
name="org.jboss.jca.adapters.jdbc.extensions.oracle.OracleValidConnectionChecker"/
>
  <exception-sorter class-
name="org.jboss.jca.adapters.jdbc.extensions.oracle.OracleExceptionSorter"/>

  <driver name="com.oracle" module="com.oracle">
    <xa-datasource-
class>oracle.jdbc.xa.client.OracleXADataSource</xa-datasource-class>
```

- Edit the configuration file `cef_edelivery_path/domibus/conf/domibus/domibus-datasources.xml` and configure the datasources as indicated below.

*Remark:*

Configure the database dialect as it is by default pre-configured for MySQL.

```
<property name="showSql" value="true"/>
<property name="generateDdl" value="true"/>
<property name="databasePlatform"
value="org.hibernate.dialect.Oracle10gDialect"/>
<prop
key="hibernate.connection.driver_class">oracle.jdbc.driver.OracleDriver</prop>
<prop
key="hibernate.dialect">org.hibernate.dialect.Oracle10gDialect</prop>
```

4. Configure your Keystore based on §5.1.2 – "Certificates".
5. Run the standalone server:
  - For Windows under `cef_edelivery_path\domibus\bin\`
  - **standalone.bat --server-config=standalone-full.xml**
  - For Linux under `cef_edelivery_path/domibus/bin/`

```
standalone.sh --server-config=standalone-full.xml
```

6. Display the Domibus home page on your browser: <http://localhost:8080/domibus-wildfly/home>  
(by default: User = **admin**; Password = **123456**)

*Remark:*

*It is recommended to change the passwords for the default users. See §6.4.1 – "Administration Dashboard" for further information.*

If you can access the page it means the deployment was successful.

Expected result:

#### 4.4.2. Single Server Deployment

In this section we assume that WildFly is installed at the location `cef_edelivery_path/domibus`

For this step, you will have to use the following resources (see §3.1 – "Binaries repository" for the download location):

- **domibus-MSH-X.Y.Z-wildfly.war**
  - **domibus-MSH-X.Y.Z-wildfly-configuration.zip**
1. Follow steps **2** (MySQL) or **3** (Oracle) from the §4.4.1 – "Pre-Configured Single Server Deployment"
  2. Configure the environment variables under `cef_edelivery_path/domibus/bin/standalone.conf`:

```

.....
JAVA_OPTS="-Xms128m -Xmx1024m -XX:MaxPermSize=256m -
java.net.preferIPv4Stack=true"
JAVA_OPTS="$JAVA_OPTS -Ddomibus.config.location=$JBOSS_HOME/conf/domibus
.....

```

3. Download and unzip **domibus-MSH-X.Y.Z-wildfly-configuration.zip** in the directory `cef_edelivery_path/domibus/conf/domibus`
4. Configure your Keystore based on §5.1.2 – "Certificates".
5. Configure the JMS resources

Configure the JMS resources in the configuration file `cef_edelivery_path/domibus/standalone/configuration/standalone-full.xml` by adding the **jms-connection-factories** and **jms-queues**.

```

<address-settings>
  <!--default for catch all-->
  <address-setting match="#">
    <dead-letter-address>jms.queue.DLQ</dead-letter-address>
    <expiry-address>jms.queue.ExpiryQueue</expiry-address>
    <max-size-bytes>10485760</max-size-bytes>
    <page-size-bytes>2097152</page-size-bytes>
    <message-counter-history-day-limit>10</message-counter-history-day-limit>
  </address-setting>
  <address-setting match="jms.queue.DomibusSendMessageQueue">
    <dead-letter-address>jms.queue.DomibusDLQ</dead-letter-address>
    <expiry-address>jms.queue.ExpiryQueue</expiry-address>
    <redelivery-delay>1000</redelivery-delay>
    <max-delivery-attempts>1</max-delivery-attempts>
  </address-setting>
  <address-setting match="jms.queue.DomibusBusinessMessageOutQueue">
    <dead-letter-address>jms.queue.DomibusDLQ</dead-letter-address>
    <expiry-address>jms.queue.ExpiryQueue</expiry-address>
    <redelivery-delay>300000</redelivery-delay>
    <max-delivery-attempts>10</max-delivery-attempts>
  </address-setting>
  <address-setting match="jms.queue.DomibusNotifyBackendJmsQueue">
    <dead-letter-address>jms.queue.DomibusDLQ</dead-letter-address>
    <expiry-address>jms.queue.ExpiryQueue</expiry-address>
    <redelivery-delay>300000</redelivery-delay>
    <max-delivery-attempts>10</max-delivery-attempts>
  </address-setting>
</address-settings>

```

```

<address-setting match="jms.queue.DomibusErrorNotifyConsumerQueue">
  <dead-letter-address>jms.queue.DomibusDLQ</dead-letter-address>
  <expiry-address>jms.queue.ExpiryQueue</expiry-address>
  <redelivery-delay>300000</redelivery-delay>
  <max-delivery-attempts>10</max-delivery-attempts>
</address-setting>
<address-setting match="jms.queue.DomibusErrorNotifyProducerQueue">
  <dead-letter-address>jms.queue.DomibusDLQ</dead-letter-address>
  <expiry-address>jms.queue.ExpiryQueue</expiry-address>
  <redelivery-delay>300000</redelivery-delay>
  <max-delivery-attempts>10</max-delivery-attempts>
</address-setting>
<address-setting match="jms.queue.DomibusBusinessMessageInQueue">
  <dead-letter-address>jms.queue.DomibusDLQ</dead-letter-address>
  <expiry-address>jms.queue.ExpiryQueue</expiry-address>
  <redelivery-delay>300000</redelivery-delay>
  <max-delivery-attempts>10</max-delivery-attempts>
</address-setting>
<address-setting match="jms.queue.DomibusPluginToBackendQueue">
  <dead-letter-address>jms.queue.DomibusDLQ</dead-letter-address>
  <expiry-address>jms.queue.ExpiryQueue</expiry-address>
  <redelivery-delay>300000</redelivery-delay>
  <max-delivery-attempts>10</max-delivery-attempts>
</address-setting>
<address-setting match="jms.queue.DomibusNotifyBackendWebServiceQueue">
  <dead-letter-address>jms.queue.DomibusDLQ</dead-letter-address>
  <expiry-address>jms.queue.ExpiryQueue</expiry-address>
  <redelivery-delay>300000</redelivery-delay>
  <max-delivery-attempts>10</max-delivery-attempts>
</address-setting>
<address-setting match="jms.queue.DomibusUnknownReceiverQueue">
  <dead-letter-address>jms.queue.DomibusDLQ</dead-letter-address>
  <expiry-address>jms.queue.ExpiryQueue</expiry-address>
  <redelivery-delay>300000</redelivery-delay>
  <max-delivery-attempts>10</max-delivery-attempts>
</address-setting>
<address-setting match="jms.queue.DomibusNotifyBackendQueue">
  <dead-letter-address>jms.queue.DomibusDLQ</dead-letter-address>
  <expiry-address>jms.queue.ExpiryQueue</expiry-address>
  <redelivery-delay>300000</redelivery-delay>
  <max-delivery-attempts>10</max-delivery-attempts>
</address-setting>
<address-setting match="jms.queue.DomibusClusterCommandTopic">
  <dead-letter-address>jms.queue.DomibusDLQ</dead-letter-address>
  <expiry-address>jms.queue.ExpiryQueue</expiry-address>
  <redelivery-delay>10000</redelivery-delay>
  <max-delivery-attempts>3</max-delivery-attempts>
</address-setting>
</address-settings>
.....
<subsystem xmlns="urn:jboss:domain:messaging:3.0">
  <hornetq-server>
    <jmx-management-enabled>>true</jmx-management-enabled>
    <jms-connection-factories>
.....
      <connection-factory name="edeliveryConnectionFactory">
        <connectors>
          <connector-ref connector-name="in-vm"/>
        </connectors>
        <entries>

```



```

        <entry name="java:/jms/ConnectionFactory"/>
    </entries>
    <compress-large-messages>>false
    </compress-large-messages>
    <failover-on-initial-connection>>false
    </failover-on-initial-connection>
    <use-global-pools>>true</use-global-pools>
</connection-factory>
.....
</jms-connection-factories>
<jms-destinations>
.....
<jms-queue name="DomibusBusinessMessageOutQueue">
    <entry name="java:/jms/domibus.backend.jms.outQueue"/>
    <entry name="java:/jms/queue/DomibusBusinessMessageOutQueue"/>
        <durable>>true</durable>
</jms-queue>
<jms-queue name="DomibusNotifyBackendJmsQueue">
    <entry name="java:/jms/domibus.notification.jms"/>
    <entry name="java:/jms/queue/DomibusNotifyBackendJmsQueue"/>
< durable>true</durable>
</jms-queue>
<jms-queue name="DomibusErrorNotifyConsumerQueue">
    <entry name="java:/jms/domibus.backend.jms.errorNotifyConsumer"/>
    <entry name="java:/jms/queue/DomibusErrorNotifyConsumerQueue"/>
        < durable>true</durable>
</jms-queue>
<jms-queue name="DomibusErrorNotifyProducerQueue">
    <entry name="java:/jms/domibus.backend.jms.errorNotifyProducer"/>
    <entry name="java:/jms/queue/DomibusErrorNotifyProducerQueue"/>
        < durable>true</durable>
</jms-queue>
<jms-queue name="DomibusBusinessMessageInQueue">
    <entry name="java:/jms/domibus.backend.jms.inQueue"/>
    <entry name="java:/jms/queue/DomibusBusinessMessageInQueue"/>
        < durable>true</durable>
</jms-queue>
<jms-queue name="DomibusPluginToBackendQueue">
    <entry name="java:/jms/domibus.backend.jms.replyQueue"/>
    <entry name="java:/jms/queue/DomibusPluginToBackendQueue"/>
        < durable>true</durable>
</jms-queue>
<jms-queue name="DomibusSendMessageQueue">
    <entry name="java:/jms/domibus.internal.dispatch.queue"/>
    <entry name="java:/jms/queue/DomibusSendMessageQueue"/>
        < durable>true</durable>
</jms-queue>
<jms-queue name="DomibusNotifyBackendWebServiceQueue">
    <entry name="java:/jms/domibus.notification.webservice"/>
    <entry name="java:/jms/queue/DomibusNotifyBackendWebServiceQueue"/>
        < durable>true</durable>
</jms-queue>
<jms-queue name="DomibusUnknownReceiverQueue">
    <entry name="java:/jms/domibus.internal.notification.unknown"/>
    <entry name="java:/jms/queue/DomibusUnknownReceiverQueue"/>
        < durable>true</durable>
</jms-queue>
<jms-queue name="DomibusNotifyBackendQueue">
    <entry name="java:/jms/domibus.internal.notification.queue"/>
    <entry name="java:/jms/queue/DomibusNotifyBackendQueue"/>

```



```

        < durable>true</durable>
    </jms-queue>
    <jms-queue name="DLQ">
        <entry name="java:/jms/domibus/ DLQ"/>
        <entry name="java:/jms/queue/DLQ"/>
        < durable>true</durable>
    </jms-queue>
    <jms-topic name="DomibusClusterCommandTopic">
        <entry name="java:/jms/domibus.internal.command"/>
        <entry name="java:/jms/topic/DomibusClusterCommandTopic"/>
    </jms-topic>
    .....
    </jms-destinations>
</hornetq-server>
</subsystem>

```

*Remark:*

*Please note also the JMX management has to be enabled so the JMS resources can be monitored in the JMS Monitoring screen.*

## 6. Configure the executor services

Configure the executor's services in the configuration file

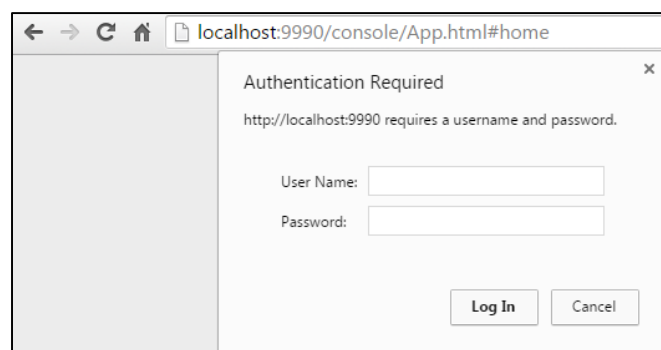
`cef_edelivery_path/domibus/standalone/configuration/standalone-full.xml`

```

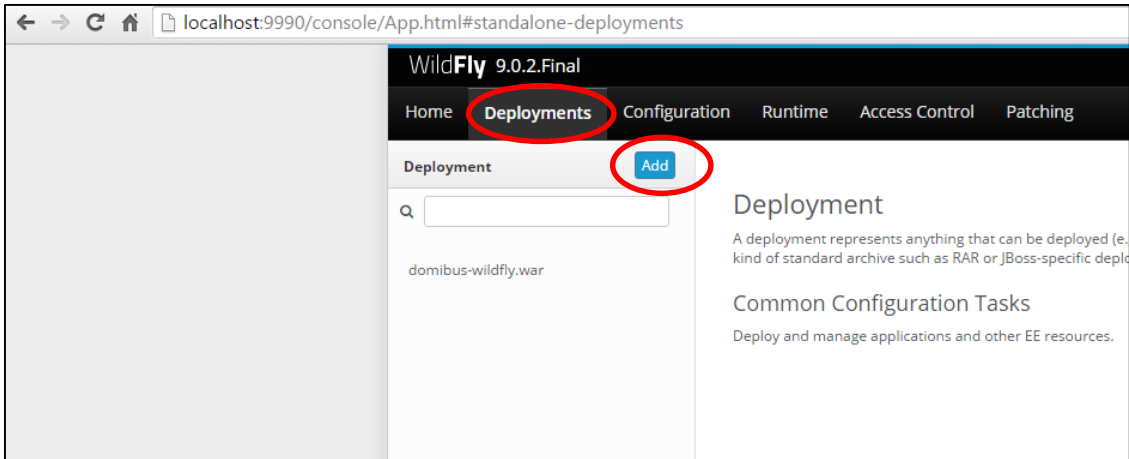
<subsystem xmlns="urn:jboss:domain:ee:3.0">
    .....
    <concurrent>
        .....
        <managed-executor-services>
            <managed-executor-service name="domibusExecutorService" jndi-
name="java:jboss/ee/concurrency/executor/DomibusExecutorService" context-
service="default" hung-task-threshold="60000" core-threads="5" max-threads="25"
keepalive-time="5000"/>
        </managed-executor-services>
        <managed-executor-services>
            <managed-executor-service name="quartzExecutorService" jndi-
name="java:jboss/ee/concurrency/executor/QuartzExecutorService" context-
service="default" hung-task-threshold="0" long-running-tasks="true" core-
threads="5" max-threads="25" keepalive-time="5000"/>
        </managed-executor-services>
        .....
    </concurrent>
    .....
</subsystem xmlns="urn:jboss:domain:ee:3.0">

```

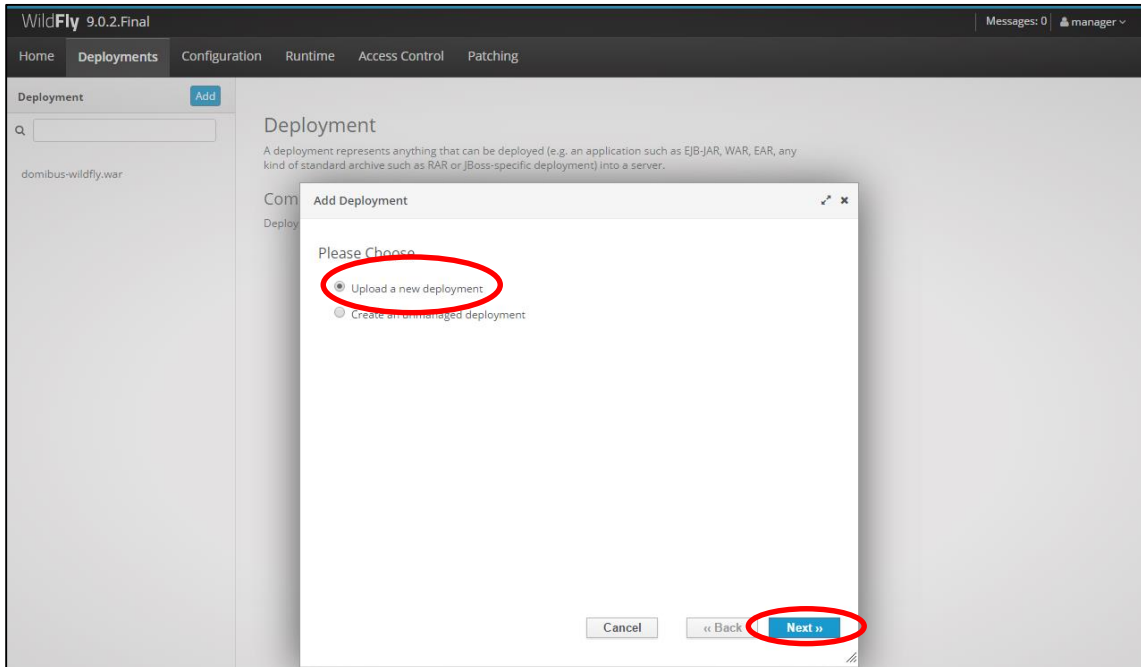
## 7. Connect to the Admin Console of WildFly at <http://localhost:9990/console>



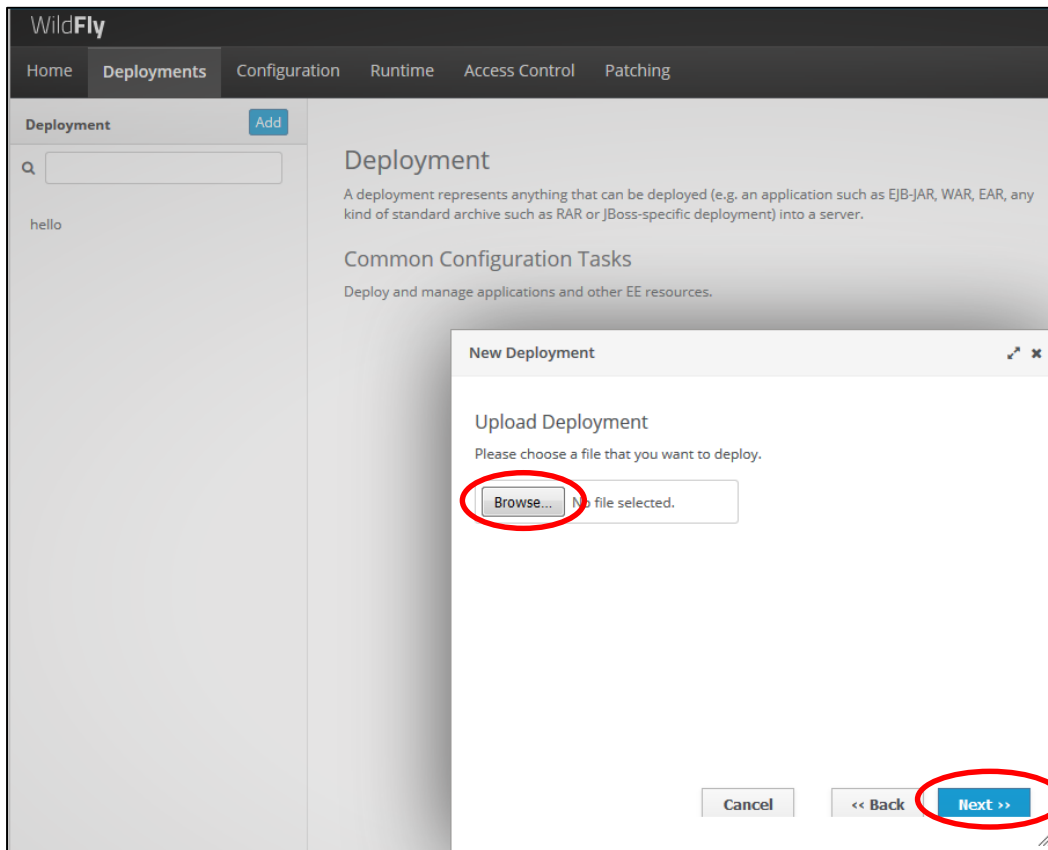
8. Click on **Deployments** in the console menu then click on **Add**



9. Select **Upload a new deployment** then click **Next**

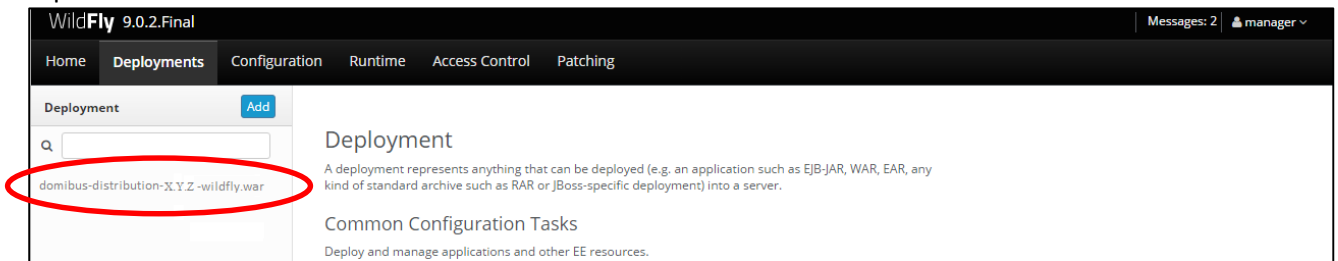


- 10. Browse to the location of the **domibus-distribution-X.Y.Z-wildfly.war** file, select it and click **Next**



- 11. The deployment is successful when the name of the .war file appears in the Deployment column.

Expected Result:

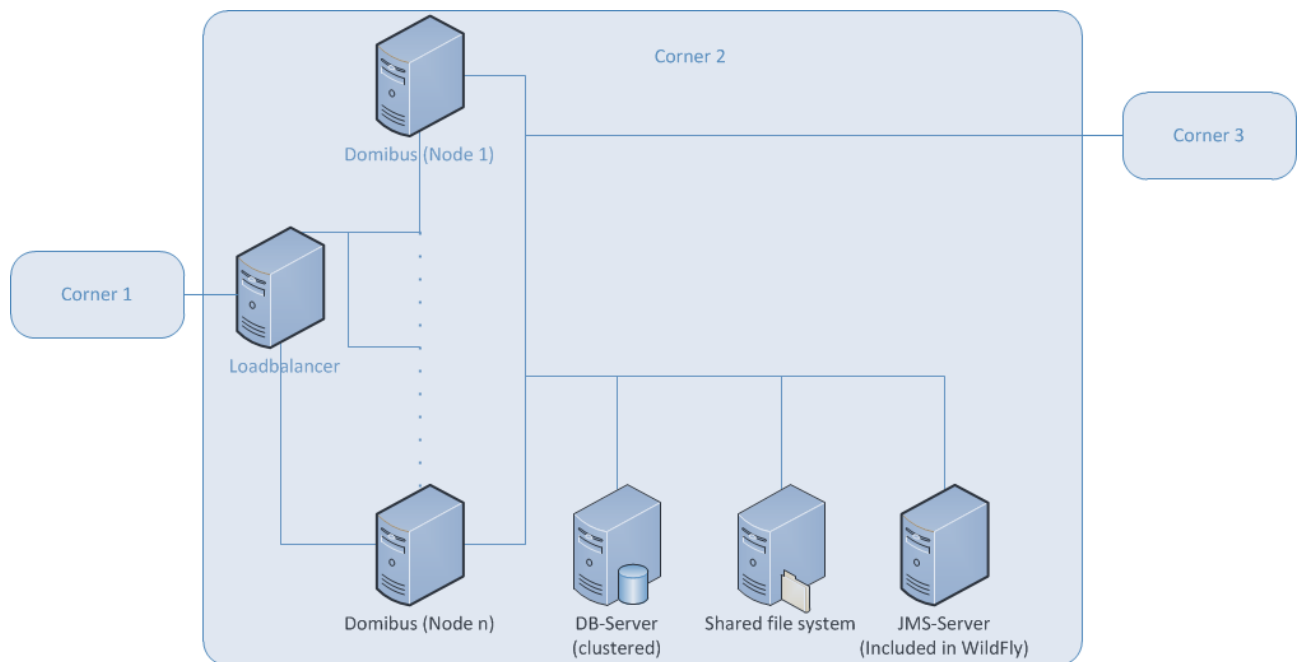


### 4.4.3. Clustered Deployment

For this step, you will have to use the following resources (see §3.1 – "Binaries repository" for the download location):

- **domibus-MSH-X.Y.Z-wildfly-configuration.zip**
- **domibus-MSH-X.Y.Z-wildfly.war**

In this section we assume that the setup of WildFly 9 in domain mode has already been done and that the cluster has been enabled as described in the official documentation. For more details on how to perform an installation of Wildfly 9 in domain mode please refer to the official documentation cf.[REF6].



**Figure 3 - Diagram representing the Deployment of Domibus in a Cluster on WildFly**

In order to install Domibus in a WildFly cluster please follow the steps below:

1. Download and unzip **domibus-MSH-X.Y.Z-wildfly-configuration.zip** in a shared location that is accessible by all the nodes from the cluster. We will refer to this directory as *cef\_shared\_edelivery\_path/Domibus*
2. Follow steps **2** (MySQL) or **3** (Oracle) from the §4.4.1 – "Pre-Configured Single Server Deployment"

*Remarks:*

- *This step needs to be performed on all the nodes from the cluster*
  - *In the following 2 steps we will edit the profile **full-ha** from the configuration file **domain/configuration/domain.xml** located in the master node*
3. Configure the JMS queues and topics as indicated in §4.4.2 point 5 – "Configure the JMS resources"
  4. Configure the database dialect as indicated in §4.4.1 point 3 – "Edit the configuration file *cef\_edelivery\_path/domibus/conf/domibus/domibus-datasources.xml*"

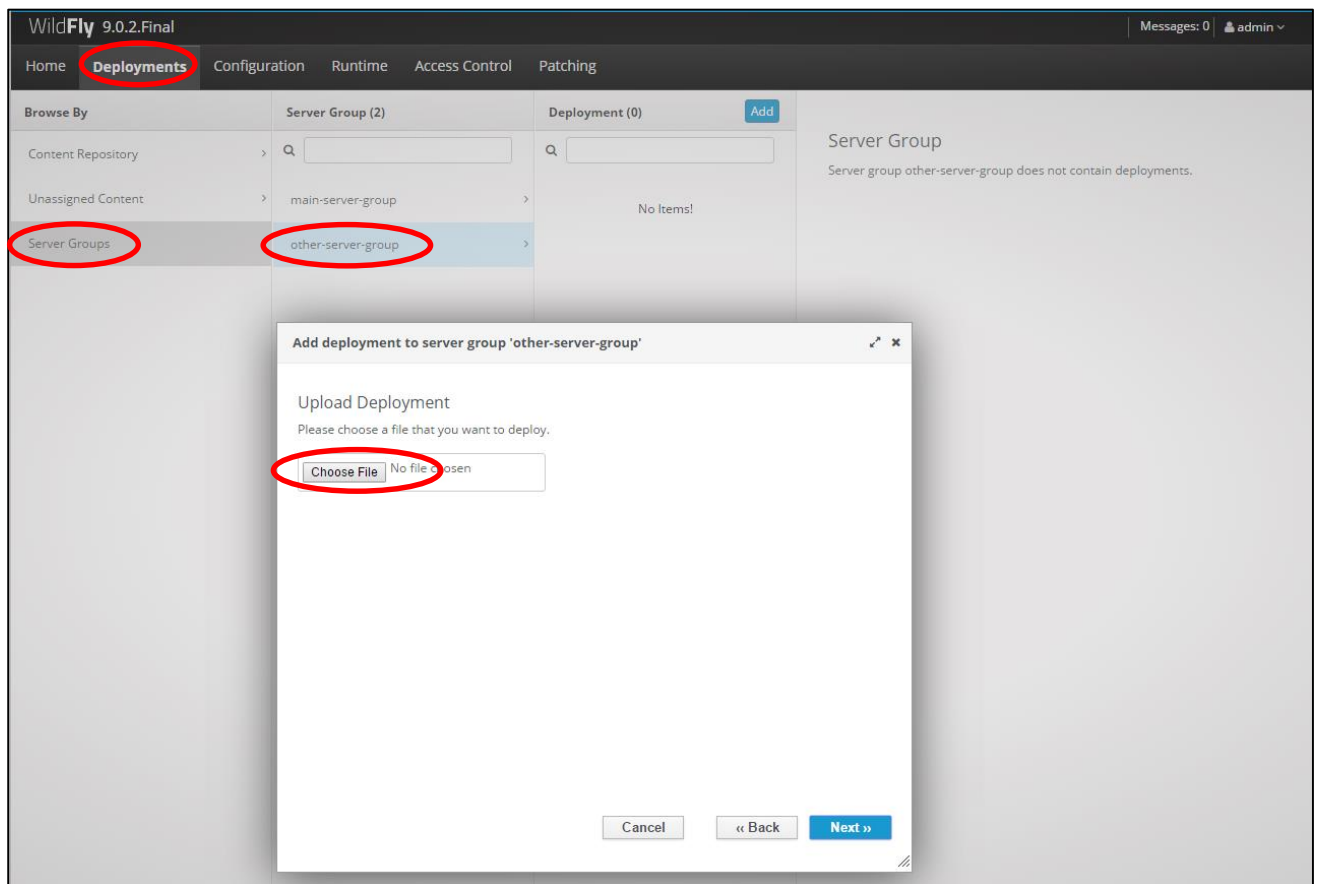
## 5. Configure the environment variables in the file **bin/domain.conf**

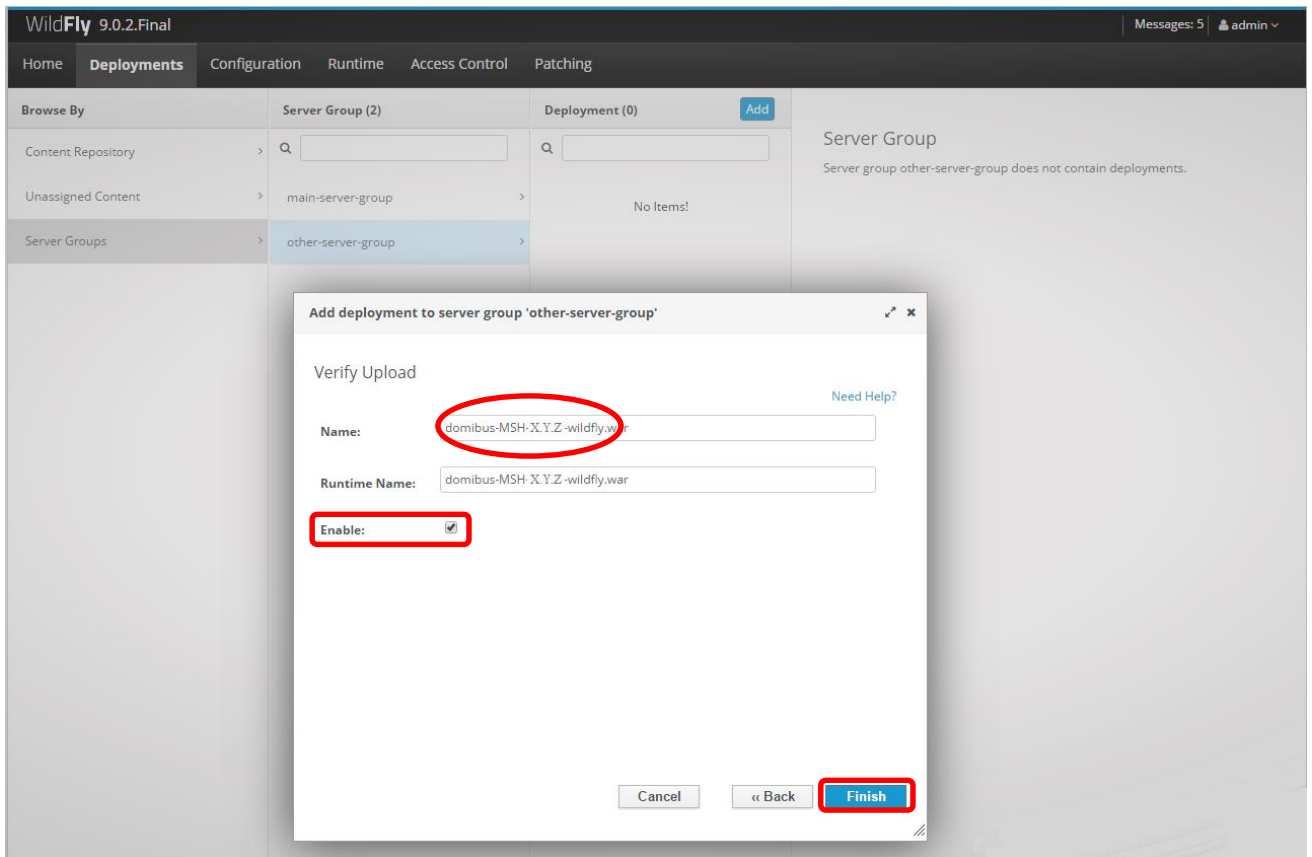
### Remark:

*bin/domain.conf is located in each WildFly node. The environment variable setting needs to be performed in every node from the cluster.*

```
.....  
JAVA_OPTS="-Xms128m -Xmx1024m -XX:MaxPermSize=256m -  
java.net.preferIPv4Stack=true"  
JAVA_OPTS="$JAVA_OPTS -  
Ddomibus.config.location=cef_shared_edelivery_path/conf/domibus  
.....
```

6. Deploy the **domibus-MSH-X.Y.Z-wildfly.war** to the cluster. We will use the WildFly Administration console for performing the deployment. We will deploy the application on the **other-server-group** cluster which is configured step by step in the official documentation cf.[REF6]..





## 5. DOMIBUS CONFIGURATION

Domibus application has one main webservice:

- `services/msh`: The Message Service Handler is the URL of your AS4 Access Point endpoint. This interface has to be exposed on the internet and should be reachable by your correspondent Access Point(s).

Domibus has also one optional webservice:

- `services/backend`: The URL of the backend webservice. This interface should ONLY be exposed to your backend client(s) within your internal network. This uses the default WS plugin (§6.1.2 – "WS Plugin")

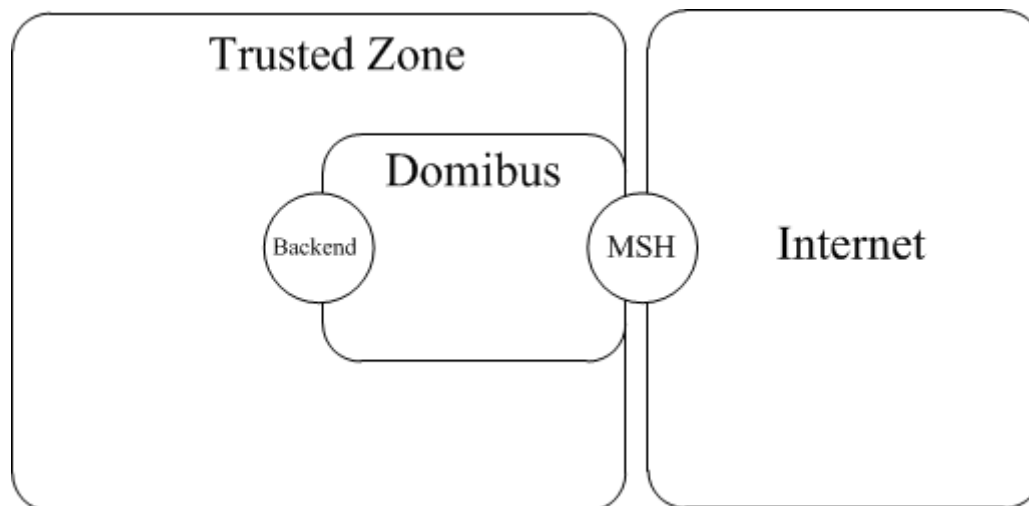


Figure 4 - Message Service Handler diagram

## 5.1. Security Configuration

### 5.1.1. Policies

Domibus uses a security policy which mandatory to be fully conformant with the e-SENS AS4 profile. It is used for the configuration of WS-Security. The policy is referenced in the PMode configuration file in §6.3 – "PMode Configuration". The policy definition can be found under `cef_edelivery_path/domibus/conf/domibus/policies/eDeliveryPolicy.xml`. For more information related to the AS4 e-SENS profile, please refer to <http://wiki.ds.unipi.gr/display/ESENS/PR++AS4>

### 5.1.2. Certificates

Domibus Access Point uses certificates for the encryption, for the signature of the AS4 messages and for establishing trust with other Access Points.

The certificates need to be configured in the keystore and truststore JKS files defined in **domibus-security.xml** configuration file.

The keystore contains the certificate of the Access Point which includes its private and public keys. The truststore contains the public keys of the trusted Access Points.

Modify the file `cef_edelivery_path/domibus/conf/domibus/domibus-security.xml` as defined in the box below:

```
<property_name="password_store">
<util:map><entry value="your_privatekey_password" key="your_keystore_alias"/>
</util:map>
</property>
...
<!-- The password used to load the keystore -->
<prop
key="org.apache.ws.security.crypto.merlin.keystore.password">your_keystore_passw
ord</prop>
<!-- The keystore alias to use for decryption and signing. -->
<prop
key="org.apache.ws.security.crypto.merlin.keystore.alias">your_keystore_alias</p
rop>
...
<!-- The password used to load the truststore -->
<prop key="org.apache.ws.security.crypto.merlin.truststore.password">
your_truststore_password</prop>
...
<!-- The location of the keystore -->
<prop
key="org.apache.ws.security.crypto.merlin.file">${domibus.config.Location}/keys
tores/your_keystore.jks</prop>
...
<!-- The location of the truststore -->
<prop
key="org.apache.ws.security.crypto.merlin.truststore.file">${domibus.config.Loca
tion}/keystores/your_truststore.jks</prop>
```

1. Create, if not present, a folder `cef_edelivery_path/domibus/conf/domibus/keystores`



2. Get your key pair from an external provider. (Self-signed certificates should only be used for testing purposes, not production). If you are interested in using the CEF Public Key Infrastructure Solution, cf.[REF7].
3. Create, if not present, the public and private keys containers (e.g. *truststore.jks* and *keystore.jks*)
4. Import your private key into your keystore

*Remarks:*

- *Your private key and your keystore should always stay secret. Please never share them.*
- *The keystore alias has to be the same as the party ID defined in the §6.3 – "PMode Configuration". It is strongly recommended to put your key pair (private and public key) and the public key of the other participants you trust in two separate containers.*

## 5.2. Domibus Properties

Edit *cef\_edelivery\_path/conf/domibus/domibus-configuration.xml* and set:

| Configuration Property                          | Default value                   | Purpose                                                                                                                                                                                                                  |
|-------------------------------------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domibus.msh.messageid.suffix                    | domibus.eu                      | This Property is used to generate the random Message id with a fixed suffix which is set by default to "domibus.eu".<br>The resulting format will be UUID@\$domibus.msh.messageid.suffix.<br>This property is mandatory. |
| domibus.msh.retry.cron                          | 0/5 * * * *                     | It is the retry cron job to send the messages. It is set by default to every 5 seconds.<br>This property is mandatory                                                                                                    |
| domibus.msh.retry.tolerance                     | 10000                           | Timeout tolerance for retry messages (ms). Should be set to double of the retry worker execution interval.<br>This property is mandatory                                                                                 |
| domibus.dispatch.ebms.error.unrecoverable.retry | true                            | This property should be set to true if Domibus needs to retry sending the failed messages.<br>This property is mandatory                                                                                                 |
| domibus.smlzone                                 | acc.edelivery.tech.ec.europa.eu | Set the SMLZone if Domibus needs to be used under Dynamic discovery model. This property is only mandatory if an SML is used.                                                                                            |
| domibus.backend.jmsInQueue                      | domibus.backend.jms.inQueue     | This queue is the entry point for messages to be sent by the sending MSH. This property is only mandatory if the JMS plugin is used.                                                                                     |
| domibus.deployment.clustered                    | false                           | If true the quartz scheduler jobs are clustered. This property is mandatory, it should be set to true if the deployment of Domibus is done in a cluster.                                                                 |
| message.retention.downloaded.max.delete         | 50                              | This property is used to tweak the maximum downloaded messages to be deleted by the retention worker                                                                                                                     |
| message.retention.not_downloaded.max.delete     | 50                              | This property is used to tweak the maximum not-downloaded messages to be deleted by the retention worker                                                                                                                 |

|                                      |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domibus.attachment.storage.location  | -               | <p>It is possible to configure Domibus to save the message payloads on the file system instead of the database. This setting is recommended when exchanging payloads bigger than 30MB.</p> <p>In order to enable the file system storage please add the following property to :</p> <p><b><i>cef_edelivery_path/conf/domibus/domibus-configuration.xml</i></b></p> <p><i>domibus.attachment.storage.location=your_file_system_location</i></p> <p>where <i>your_file_system_location</i> is the location on the file system where the payloads will be saved.</p> <p><b>Remark:</b><br/>In a cluster configuration the file system storage needs to be accessible by all the nodes from the cluster.</p> |
| domibus.jmx.user                     | jmsManager      | WebLogic specific: The user that will be used to access the queues via JMX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| domibus.jmx.password                 | jmaManager1     | WebLogic specific: The associated password of the configured domibus.jmx.user                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| domibus.sendMessage.messageIdPattern | ^[\x20-\x7E]*\$ | <p>When an initiator backend client submits messages to Domibus for transmission, with the message id field populated, then the message id should be RFC2822 compliant. The pattern specified here ensures this validation.</p> <p>This field is optional. In case the existing client does not match this message id pattern during submission, then this property can be omitted to skip the validation.</p>                                                                                                                                                                                                                                                                                           |
| domibus.listPendingMessages.maxCount | 500             | <p>This property specifies the maximum number of messages that would be served when the 'listPendingMessages' operation is invoked. Setting this property is expected to avoid timeouts due to huge resultsets being served.</p> <p>A value of 0 would return all the pending messages.</p> <p>This property is optional. Omitting this property would default the resultset size to 500.</p>                                                                                                                                                                                                                                                                                                            |
| domibus.dispatcher.connectionTimeout | 240000          | For connection between the access points – C2 & C3. Specifies the amount of time, in milliseconds, that the consumer will attempt to establish a connection before it times out. 0 is infinite.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| domibus.dispatcher.receiveTimeout    | 240000          | For connection between the access points – C2 & C3. Specifies the amount of time, in milliseconds, that the consumer will wait for a response before it times out. 0 is infinite.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Configuration Property      | Default value | Purpose                                                                                         |
|-----------------------------|---------------|-------------------------------------------------------------------------------------------------|
| <b>Proxy Settings</b>       |               | In case your Access Point has to use a proxy server you can configure it with these properties. |
| domibus.proxy.enabled       | false         | true/false depending on whether you need to use proxy or not.                                   |
| domibus.proxy.http.host     | -             | Host name of the proxy server                                                                   |
| domibus.proxy.http.port     | -             | Port of Proxy server                                                                            |
| domibus.proxy.user          | -             | Username for authentication on the proxy server                                                 |
| domibus.proxy.password      | -             | Password                                                                                        |
| domibus.proxy.nonProxyHosts | -             | Indicates the hosts that should be accessed without going through the proxy.                    |

**Table 1 - Domibus Properties**

## 6. PLUGIN MANAGEMENT

This section describes the different types of plugins and their registration process.

### 6.1. Default Plugins

Domibus comes with two default plugins. The two Interface Control Documents (ICD) describe these two plugins (JMS and WS) cf.[REF8].

#### 6.1.1. JMS Plugin

For the JMS plugin, you will have to use the following resource (see section 3.1 *Binaries repository* for the download location):

- **domibus-MSH-X.Y.Z-default-jms-plugin.zip**

#### 6.1.2. WS Plugin

For the WS plugin, you will have to use the following resource (see section 3.1 *Binaries repository* for the download location):

- **domibus-MSH-X.Y.Z-default-ws-plugin.zip**

##### 6.1.2.1. *Domibus authentication*

The default web service plugin for Domibus 3.2.2 includes an example of how to implement authentication and authorization. By default this feature is disabled to insure backwards compatibility with older versions of Domibus.

The documentation below answers the question "*how to enable and use the authentication in the WS plugin?*"

The default WS plugin supports:

- Basic Authentication
- X509Certificates Authentication
- Blue Coat Authentication

*Remark:*

*Blue Coat is the name of the reverse proxy at the commission. It forwards the request in HTTP with the certificate details inside the request ("Client-Cert" header key).*

When more than one authentication method is used, the Basic Authentication takes precedence on both http and https.

When no Basic Authentication is provided, X509 Certificates are expected on https requests.

When no Basic Authentication is provided, Blue Coat certificates are expected on http requests.

### 6.1.2.2. Domibus Authorization

For convenience reasons, the WS plugin uses exactly the same database as configured for Domibus core to store the users/passwords and certificate ids. To learn more about authorization (and authentication), read the plugin cookbook cf.[REF8].

There are two default users already inserted in the database (make sure you already ran the migration scripts),

- *admin* and *user* both with **123456** as password.
- *admin* has the role `ROLE_ADMIN` and *user* has the role `ROLE_USER`

#### **Roles:**

**ROLE\_ADMIN** has the right to call:

- `sendMessage` with any value for `originalSender` property
- `downloadMessage` (any message among messages notified to this plugin)
- `listPendingMessages` will list all pending messages for this plugin
- `getMessageStatus` and `getMessageErrors`

**ROLE\_USER** has the right to call:

- `sendMessage` with `originalSender` equal to the `originalUser`
- `downloadMessage`, only if `finalRecipient` equals the `originalUser`
- `listPendingMessages`, only messages with `finalRecipient` equal to the `originalUser`

### 6.1.2.3. Enable the authentication in Domibus

To enable the authentication at Domibus level the following steps must be configured:

1. In `conf/domibus/domibus-configuration.xml` and set the property "`domibus.auth.unsecureLoginAllowed`" to false.

```
<util:properties>
.....
  <!-- To disable unsecureLogin, set this to false -->
  <prop key="domibus.auth.unsecureLoginAllowed">false</prop>
</util:properties>
```

2. The application server must be configured to allow https requests and pass the authentication credentials to Domibus.

## 6.2. Custom Plugin

Users can develop their own plugins. Please refer to the Plugin Cookbook cf.[REF8] for more details.

### 6.2.1. Plugin registration

*Remark:*

*Please refer to section 6.4.5 Message Filtering for the routing of the specific plugin after registering the plugin on your specific Application Server.*

#### 6.2.1.1. Tomcat

*Remark:*

*CATALINA\_HOME is the folder where the Tomcat is installed.*

1. Stop Tomcat server
2. Copy the custom plugin jar file to the plugins folder  
**CATALINA\_HOME/conf/domibus/plugins/lib**
3. Copy the custom plugin XML configuration file to  
**CATALINA\_HOME/conf/domibus/plugins/config**
4. Start Tomcat server

#### 6.2.1.2. WebLogic

*Remark:*

*DOMAIN\_HOME is the folder corresponding to the WebLogic domain.*

1. Stop the WebLogic server
2. Copy the custom plugin jar file to the plugins folder  
**DOMAIN\_HOME/conf/domibus/plugins/lib**
3. Copy the custom plugin XML configuration file to  
**DOMAIN\_HOME/conf/domibus/plugins/config**
4. Start the WebLogic server

#### 6.2.1.3. WildFly

In order to install a custom plugin please follow the steps:

1. Stop the WildFly server
2. Copy the custom plugin jar file to the plugins folder *cef\_edelivery\_path*  
**/conf/domibus/plugins/lib**
3. Copy the custom plugin XML configuration file to *cef\_edelivery\_path*  
**/conf/domibus/plugins/config**
4. Start the WildFly server

## 6.3. PMode Configuration

Processing Modes (PModes) are used to configure Access Points. The PMode parameters are loaded into the Access Point via an XML file.

The following features described in the PMode file are, Security, Reliability, Transport, Business Collaborations, Error Reporting, Message Exchange Patterns (MEPs) and Message Partition Channels (MPCs).

As different messages maybe subject to various types of processing or, as different business domains may have several requirements, Access Points commonly support several PModes. Some PMode parameters are mandatory, others are optional. For more information please refer to the [Access Point Component Offering Document](#).

### 6.3.1. Configuration

In Domibus, PMode are XML files, you can create one or edit the existing PMode files: `cef_edelivery_path/domibus/conf/pmodes/domibus-gw-sample-pmode-party_id_name1.xml` and `cef_edelivery_path/domibus/conf/pmodes/domibus-gw-sample-pmode-party_id_name2.xml`, by replacing `party_id_name1` with your party name and `party_id_name2` with your correspondent's party name in the file's names and in the files themselves as shown below. The partyID must match the alias of the certificate in the keystore and the endpoint must be the external access link to your own instance.

*Remark:*

*This step could be managed by a PMode Configuration Manager known by your Business Owner.*

```
<party name="party_id_name2"
  endpoint="http:// party_id_name2_hostname:8080/domibus/services/msh"
  allowChunking="false">
  <identifier partyId="party_id_name2_1"
    partyIdType="partyTypeUrn"/>
</party>
<party name="party_id_name1"
  endpoint="http:// party_id_name1_hostname:8080/domibus/services/msh"
  allowChunking="false">
  <identifier partyId="party_id_name1_1" partyIdType="partyTypeUrn"/>
</party>
```

Figure 5 - PMode view

### 6.3.2. Adding a new participant

If a new participant's Access Point is joining your network, you need to edit your PMode accordingly and to re-upload it like mentioned in §6.3.5 – "Upload new Configuration".

- Add a "new\_party" element

```
<party name="new_party_name"
  endpoint="http://new_party_msh"
  allowChunking="false">
  <identifier partyId="new_party_id" partyIdType="partyTypeUrn"/>
</party>
```

- Add your "new\_party\_name" as initiator

The party with the role of initiator will be the sender of the messages

```
<initiatorParties>
  ...
  <initiatorParty name="new_party_name"/>
</initiatorParties>
```

- Add your "new\_party\_name" as responder

The party with the role of responder will be the receiver of the messages

```
<responderParties>
  ...
  <responderParty name="new_party_name"/>
</responderParties>
```

### 6.3.3. Sample PMode file

Processing modes (PModes) describe how messages are exchanged between AS4 partners (in this case *Access Points blue\_gw and red\_gw*). These files contain the identifiers of each AS4 Access Point (identified as *parties* in the PMode file below).

Sender Identifier and Receiver Identifier represent the organizations that send and receive the business documents. They are both used in the authorization process (PMode). Therefore, adding, modifying or deleting a participant implies modifying the corresponding PMode files.

Here is an example of the content of a PMode XML file:

*Remark:*

*In this setup we have allowed each party (blue\_gw or red\_gw) to initiate the process. If only blue\_gw is supposed to send messages, we need to put only blue\_gw in <initiatorParties> and red\_gw in <responderParties>.*

```
<?xml version="1.0" encoding="UTF-8"?>
<db:configuration xmlns:db="http://domibus.eu/configuration" party="blue_gw">
  <mpcs>
    <mpc name="defaultMpc"
      qualifiedName="http://docs.oasis-open.org/ebxml-
msg/ebms/v3.0/ns/core/200704/defaultMPC"
      enabled="true"
      default="true"
      retention_downloaded="0"
      retention_undownloaded="14400"/>
  </mpcs>
  <businessProcesses>
    <roles>
      <role name="defaultInitiatorRole"
        value="http://docs.oasis-open.org/ebxml-
msg/ebms/v3.0/ns/core/200704/initiator"/>
      <role name="defaultResponderRole"
        value="http://docs.oasis-open.org/ebxml-
msg/ebms/v3.0/ns/core/200704/responder"/>
    </roles>
    <parties>
      <partyIdTypes>
        <partyIdType name="partyTypeUrn"
value="urn:oasis:names:tc:ebcore:partyid-type:unregistered"/>
      </partyIdTypes>
```



```

        <party name="red_gw"
endpoint="http://<red_hostname>:8080/domibus/services/msh"
        allowChunking="false">
            <identifier partyId="domibus-red"
partyIdType="partyTypeUrn"/>
        </party>
        <party name="blue_gw"

            endpoint="http://<blue_hostname>:8080/domibus/services/msh"
                allowChunking="false">
                    <identifier partyId="domibus-blue"
partyIdType="partyTypeUrn"/>
                </party>
        </parties>
    </meps>
    <meps>
        <mep name="oneway" value="http://docs.oasis-open.org/ebxml-
msg/ebms/v3.0/ns/core/200704/oneWay"/>
        <mep name="twoway" value="http://docs.oasis-open.org/ebxml-
msg/ebms/v3.0/ns/core/200704/twoWay"/>
        <binding name="push" value="http://docs.oasis-open.org/ebxml-
msg/ebms/v3.0/ns/core/200704/push"/>
        <binding name="pushAndPush" value="http://docs.oasis-
open.org/ebxml-msg/ebms/v3.0/ns/core/200704/push-and-push"/>
    </meps>
    <properties>
        <property name="originalSenderProperty"
            key="originalSender"
            datatype="string"
            required="true"/>
        <property name="finalRecipientProperty"
            key="finalRecipient"
            datatype="string"
            required="true"/>
        <propertySet name="ecodexPropertySet">
            <propertyRef property="finalRecipientProperty"/>
            <propertyRef property="originalSenderProperty"/>
        </propertySet>
    </properties>
    <payloadProfiles>
        <payload name="businessContentPayload"
            cid="cid:message"
            required="true"
            mimeType="text/xml"/>
        <payload name="businessContentAttachment"
            cid="cid:attachment"
            required="false"
            mimeType="application/octet-stream"/>
        <payloadProfile name="MessageProfile"
            maxSize="40894464">
            <attachment name="businessContentPayload"/>
            <attachment name="businessContentAttachment"/>
        </payloadProfile>
    </payloadProfiles>
    <securities>
        <security name="eDeliveryPolicy"
            policy="eDeliveryPolicy.xml"
            signatureMethod="RSA_SHA256" />
        <security name="noSigNoEnc"
            policy="doNothingPolicy.xml"

```

```

signatureMethod="RSA_SHA256"/>
  <security name="eSensPolicy"
    policy="eSensPolicy.xml"
    signatureMethod="RSA_SHA256"/>
</securities>
<errorHandlings>
  <errorHandling name="demoErrorHandling"
    errorAsResponse="true"
    businessErrorNotifyProducer="false"
    businessErrorNotifyConsumer="false"
    deliveryFailureNotifyProducer="false"/>
</errorHandlings>
<agreements>
<agreement name="agreement1" value="A1" type=""/>
<agreement name="agreement2" value="A2" type=""/>
<agreement name="agreement3" value="A3" type=""/>
</agreements>
<services>
  <service name="testService1" value="bdx:noprocess" type="tc1"/>
</services>
<actions>
  <action name="tc1Action" value="TC1Leg1"/>
  <action name="tc2Action" value="TC2Leg1"/>
</actions>
<as4>
  <receptionAwareness name="receptionAwareness"
retry="12;4;CONSTANT" duplicateDetection="true"/>
  <reliability name="AS4Reliability" nonRepudiation="true"
replyPattern="response"/>
  <reliability name="noReliability" nonRepudiation="false"
replyPattern="response"/>
</as4>
<legConfigurations>
  <legConfiguration name="pushTestcase1tc1Action"
    service="testService1"
    action="tc1Action"
    defaultMpc="defaultMpc"
    reliability="AS4Reliability"
    security="eDeliveryPolicy"
    receptionAwareness="receptionAwareness"
    propertySet="ecodexPropertySet"
    payloadProfile="MessageProfile"
    errorHandling="demoErrorHandling"
    compressPayloads="true"/>
  <legConfiguration name="pushTestcase1tc2Action"
    service="testService1"
    action="tc2Action"
    defaultMpc="defaultMpc"
    reliability="AS4Reliability"
    security="eSensPolicy"
    propertySet="ecodexPropertySet"
    payloadProfile="MessageProfile"
    errorHandling="demoErrorHandling"
    compressPayloads="true"/>
</legConfigurations>
<process name="tc1Process"
  agreement=""
  mep="oneway"
  binding="push"

```

```
    initiatorRole="defaultInitiatorRole"
    responderRole="defaultResponderRole">
  <initiatorParties>
    <initiatorParty name="blue_gw"/>
    <initiatorParty name="red_gw"/>
  </initiatorParties>
  <responderParties>
    <responderParty name="blue_gw"/>
    <responderParty name="red_gw"/>
  </responderParties>
  <legs>
    <leg name="pushTestcase1tc1Action"/>
    <leg name="pushTestcase1tc2Action"/>
  </legs>
</process>
  </businessProcesses>
</db:configuration>
```

### 6.3.4. Domibus PMode configuration to ebMS3 PMode Mapping

The following table provides additional information concerning the Domibus PMode configuration files.

| Domibus PMode Configuration  | EbMS3 Specification [ebMS3CORE] [AS4-Profile]                                                                                                                                                                | Description                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MPCs                         | -                                                                                                                                                                                                            | Container which defines the different MPCs (Message Partition Channels).                                                                                                                                                                                                                                                                                                                                                               |
| MPC                          | PMode[1].BusinessInfo.MPC:<br>The value of this parameter is the identifier of the MPC (Message Partition Channel) to which the message is assigned. It maps to the attribute <b>Messaging / UserMessage</b> | Message Partition Channel allows the partition of the flow of messages from a <i>Sending MSH</i> to a <i>Receiving MSH</i> into several flows, each of which is controlled separately. An MPC also allows merging flows from several <i>Sending MSHs</i> into a unique flow that will be treated as such by a <i>Receiving MSH</i> .<br><br>The value of this parameter is the identifier of the MPC to which the message is assigned. |
| MessageRetentionDownloaded   | -                                                                                                                                                                                                            | Retention interval for messages already delivered to the backend.                                                                                                                                                                                                                                                                                                                                                                      |
| MessageRetentionUnDownloaded | -                                                                                                                                                                                                            | Retention interval for messages not yet delivered to the backend.                                                                                                                                                                                                                                                                                                                                                                      |
| Parties                      | -                                                                                                                                                                                                            | Container which defines the different PartyIdTypes, Party and Endpoint.                                                                                                                                                                                                                                                                                                                                                                |
| PartyIdTypes                 | maps to the attribute <b>Messaging/UserMessage/ PartyInfo</b>                                                                                                                                                | Message Unit bundling happens when the Messaging element contains multiple child elements or Units (either User Message Units or Signal Message Units).                                                                                                                                                                                                                                                                                |
| Party ID                     | maps to the element <b>Messaging/UserMessage/ PartyInfo</b>                                                                                                                                                  | The ebCore Party ID type can simply be used as an identifier format and therefore as a convention for values to be used in configuration and – as such – does not require any specific solution building block.                                                                                                                                                                                                                        |

|                                                                                    |                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Endpoint                                                                           | maps to<br><b>PMode[1].Protocol.Address</b>                                                                                                                                                                                                                                                                                                              | The endpoint is a party attribute that contains the link to the MSH. The value of this parameter represents the address (endpoint URL) of the <i>Receiver MSH</i> (or <i>Receiver Party</i> ) to which Messages under this PMode leg are to be sent. Note that a URL generally determines the transport protocol (e.g. if the endpoint is an email address, then the transport protocol must be SMTP; if the address scheme is "http", then the transport protocol must be HTTP).                                               |
| AS4                                                                                | -                                                                                                                                                                                                                                                                                                                                                        | Container                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Reliability [@Nonrepudiation] [@ReplyPattern]                                      | Nonrepudiation maps to <b>PMode[1].Security.SendReceipt.NonRepudiation</b><br>ReplyPattern maps to <b>PMode[1].Security.SendReceipt.ReplyPattern</b>                                                                                                                                                                                                     | PMode[1].Security.SendReceipt.NonRepudiation : value = 'true' (to be used for non-repudiation of receipt), value = 'false' (to be used simply for reception awareness).<br>PMode[1].Security.SendReceipt.ReplyPattern: value = 'Response' (sending receipts on the HTTP response or back-channel).<br>PMode[1].Security.SendReceipt.ReplyPattern: value = 'Callback' (sending receipts use a separate connection.)                                                                                                              |
| ReceptionAwareness [@retryTimeout] [@retryCount] [@strategy] [@duplicateDetection] | retryTimeout maps to <b>PMode[1].ReceptionAwareness.Retry=true</b><br>PMode[1].ReceptionAwareness.Retry.Parameters<br>retryCount maps to <b>PMode[1].ReceptionAwareness.Retry.Parameters</b><br>strategy maps to <b>PMode[1].ReceptionAwareness.Retry.Parameters</b><br>duplicateDetection maps to <b>PMode[1].ReceptionAwareness.DuplicateDetection</b> | These parameters are stored in a composite string. <ul style="list-style-type: none"> <li>• <i>retryTimeout</i> defines timeout in seconds.</li> <li>• <i>retryCount</i> is the total number of retries.</li> <li>• <i>strategy</i> defines the frequency of retries. The only <i>strategy</i> available as of now is <i>CONSTANT</i>.</li> <li>• <i>duplicateDetection</i> allows to check duplicates when receiving twice the same message. The only <i>duplicateDetection</i> available as of now is <i>TRUE</i>.</li> </ul> |
| Securities                                                                         | -                                                                                                                                                                                                                                                                                                                                                        | Container                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Security                                                                           | -                                                                                                                                                                                                                                                                                                                                                        | Container                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Policy                                                                             | PMode[1].Security.* NOT including<br>PMode[1].Security.X509.Signature.Algorithm                                                                                                                                                                                                                                                                          | The parameter in the pconf file defines the name of a WS-SecurityPolicy file.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| SignatureMethod                                                                    | PMode[1].Security.X509.Signature.Algorithm                                                                                                                                                                                                                                                                                                               | This parameter is not supported by WS-SecurityPolicy and therefore it is defined separately.                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| BusinessProcessConfiguration                                                       | -                                                                                                                                                                                                                                                                                                                                                        | Container                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

|                   |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Agreements        | maps to eb:Messaging/<br>UserMessage/<br>CollaborationInfo/<br>AgreementRef          | This OPTIONAL element occurs zero times or once. The <i>AgreementRef</i> element is a string that identifies the entity or artifact governing the exchange of messages between the parties.                                                                                                                                                                                                                                                                               |
| Actions           | -                                                                                    | Container                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Action            | maps to <b>Messaging/<br/>UserMessage/<br/>CollaborationInfo/Action</b>              | This REQUIRED element occurs once. The element is a string identifying an operation or an activity within a Service that may support several of these                                                                                                                                                                                                                                                                                                                     |
| Services          | -                                                                                    | Container                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| ServiceTypes Type | maps to <b>Messaging/<br/>UserMessage/<br/>CollaborationInfo/<br/>Service[@type]</b> | This REQUIRED element occurs once. It is a string identifying the service that acts on the message and it is specified by the designer of the service.                                                                                                                                                                                                                                                                                                                    |
| MEP [@Legs]       | -                                                                                    | An ebMS MEP defines a typical choreography of ebMS User Messages which are all related through the use of the referencing feature (RefToMessageId). Each message of an MEP Access Point refers to a previous message of the same Access Point, unless it is the first one to occur. Messages are associated with a label (e.g. <i>request</i> , <i>reply</i> ) that precisely identifies their direction between the parties involved and their role in the choreography. |
| Bindings          | -                                                                                    | Container                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Binding           | -                                                                                    | The previous definition of ebMS MEP is quite abstract and ignores any binding consideration to the transport protocol. This is intentional, so that application level MEPs can be mapped to ebMS MEPs independently from the transport protocol to be used.                                                                                                                                                                                                               |
| Roles             | -                                                                                    | Container                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

|                 |                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Role            | <p>maps to <b>PMode.Initiator.Role</b> or <b>PMode.Responder.Role</b> depending on where this is used. In ebMS3 message this defines the content of the following element:</p> <ul style="list-style-type: none"> <li>• For Initiator: <b>Messaging/UserMessage/PartyInfo/From/Role</b></li> <li>• For Responder: <b>Messaging/UserMessage/PartyInfo/To/Role</b></li> </ul> | <p>The required role element occurs once, and identifies the authorized role (<i>fromAuthorizedRole</i> or <i>toAuthorizedRole</i>) of the Party sending the message (when present as a child of the <i>From</i> element), or receiving the message (when present as a child of the <i>To</i> element). The value of the role element is a non-empty string, with a default value of <i>http://docs.oasis-open.org/ebxml-msg/ebms/v3.0/ns/core/200704/defaultRole</i>. Other possible values are subject to partner agreement.</p>                                                                                                                                                                                                                                                                |
| Processes       | -                                                                                                                                                                                                                                                                                                                                                                           | Container                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| PayloadProfiles | -                                                                                                                                                                                                                                                                                                                                                                           | Container                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Payloads        | -                                                                                                                                                                                                                                                                                                                                                                           | Container                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Payload         | <p>maps to <b>PMode[1].BusinessInfo.PayloadProfile</b></p>                                                                                                                                                                                                                                                                                                                  | <p>This parameter allows specifying some constraint or profile on the payload. It specifies a list of payload parts.</p> <p>A payload part is a data structure that consists of five properties:</p> <ol style="list-style-type: none"> <li>1. <b>name</b> (or Content-ID) that is the <b>part identifier</b>, and can be used as an index in the notation <i>PayloadProfile</i>;</li> <li>2. <b>MIME data type</b> (text/xml, application/pdf, etc.);</li> <li>3. <b>name of the applicable XML Schema file</b> if the MIME data type is text/xml;</li> <li>4. <b>maximum size in kilobytes</b>;</li> <li>5. <b>Boolean</b> string indicating whether the part is <b>expected</b> or <b>optional</b>, within the User message.</li> </ol> <p>The message payload(s) must match this profile.</p> |
| ErrorHandlings  | -                                                                                                                                                                                                                                                                                                                                                                           | Container                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| ErrorHandling   | -                                                                                                                                                                                                                                                                                                                                                                           | Container                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

|                               |                                                                             |                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ErrorAsResponse               | maps to <b>PMode[1].ErrorHandling.Report.AsResponse</b>                     | This Boolean parameter indicates (if <i>true</i> ) that errors generated from receiving a message in error are sent over the back-channel of the underlying protocol associated with the message in error. If <i>false</i> , such errors are not sent over the back-channel.                                                              |
| ProcessErrorNotifyProducer    | maps to <b>PMode[1].ErrorHandling.Report.ProcessErrorNotifyProducer</b>     | This Boolean parameter indicates whether (if <i>true</i> ) the Producer (application/party) of a User Message matching this PMode should be notified when an error occurs in the Sending MSH, during processing of the <i>User Message to be sent</i> .                                                                                   |
| ProcessErrorNotifyConsumer    | maps to <b>PMode[1].ErrorHandling.Report.ProcessErrorNotifyProducer</b>     | This Boolean parameter indicates whether (if <i>true</i> ) the Consumer (application/party) of a User Message matching this PMode should be notified when an error occurs in the Receiving MSH, during processing of the <i>received User message</i> .                                                                                   |
| DeliveryFailureNotifyProducer | maps to <b>PMode[1].ErrorHandling.Report.DeliveryFailuresNotifyProducer</b> | When sending a message with this reliability requirement ( <i>Submit</i> invocation), one of the two following outcomes shall occur:<br>- The Receiving MSH successfully delivers ( <i>Deliver</i> invocation) the message to the Consumer.<br>- The Sending MSH notifies ( <i>Notify</i> invocation) the Producer of a delivery failure. |
| Legs                          | -                                                                           | Container                                                                                                                                                                                                                                                                                                                                 |



|         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Leg     | - | Because messages in the same MEP may be subject to different requirements - e.g. the reliability, security and error reporting of a response may not be the same as for a request – the PMode will be divided into <i>legs</i> . Each user message label in an ebMS MEP is associated with a PMode leg. Each PMode leg has a full set of parameters for the six categories above (except for <i>General Parameters</i> ), even though in many cases parameters will have the same value across the MEP legs. Signal messages that implement transport channel bindings (such as PullRequest) are also controlled by the same categories of parameters, except for <i>BusinessInfo group</i> . |
| Process | - | In <i>Process</i> everything is plugged together.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

**Table 2 - Domibus PMode configuration to ebMS3 mapping**

### 6.3.5. Upload new Configuration

Upload the PMode file on both Access Points:

*Remark:*

*In case the configuration is updated on one Access Point, all access points are informed about this change (via JMS topic).*

1. To update the PMode configuration and/or Truststore, connect to the administration dashboard using your credentials (by default: User = **admin**; Password = **123456**) to <http://localhost:8080/domibus/home>

*Remark:*

*It is recommended to change the passwords for the default users.  
See §6.4.1 – "Administration Dashboard" for further information.*

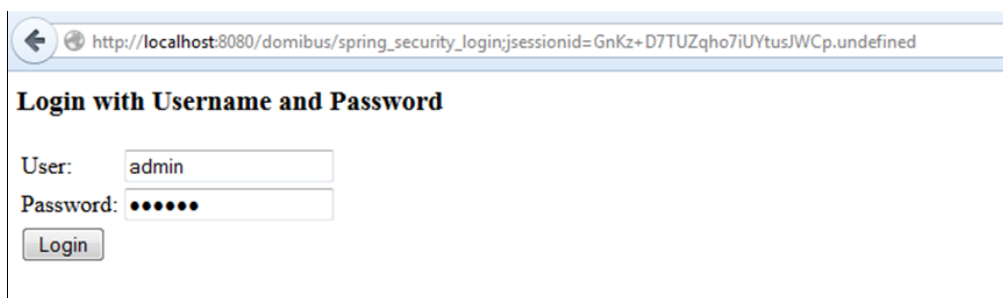


Figure 6 - Login to administration dashboard

2. Click on the **Configuration upload** tab:

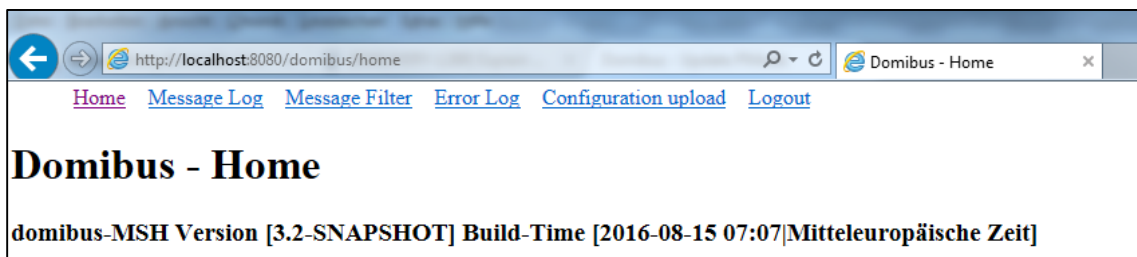


Figure 7 - Configuration upload

3. Select the PMode file that has been edited by pressing **Browse...** then **Press here to upload the Pmode xml file**:

*Remark:*

*Each time a PMode is updated, the truststore is reloaded into the access point from the filesystem.*

4. Select the Truststore file that needs to be uploaded by pressing **Browse...** then **Press here to upload the truststore jks file**

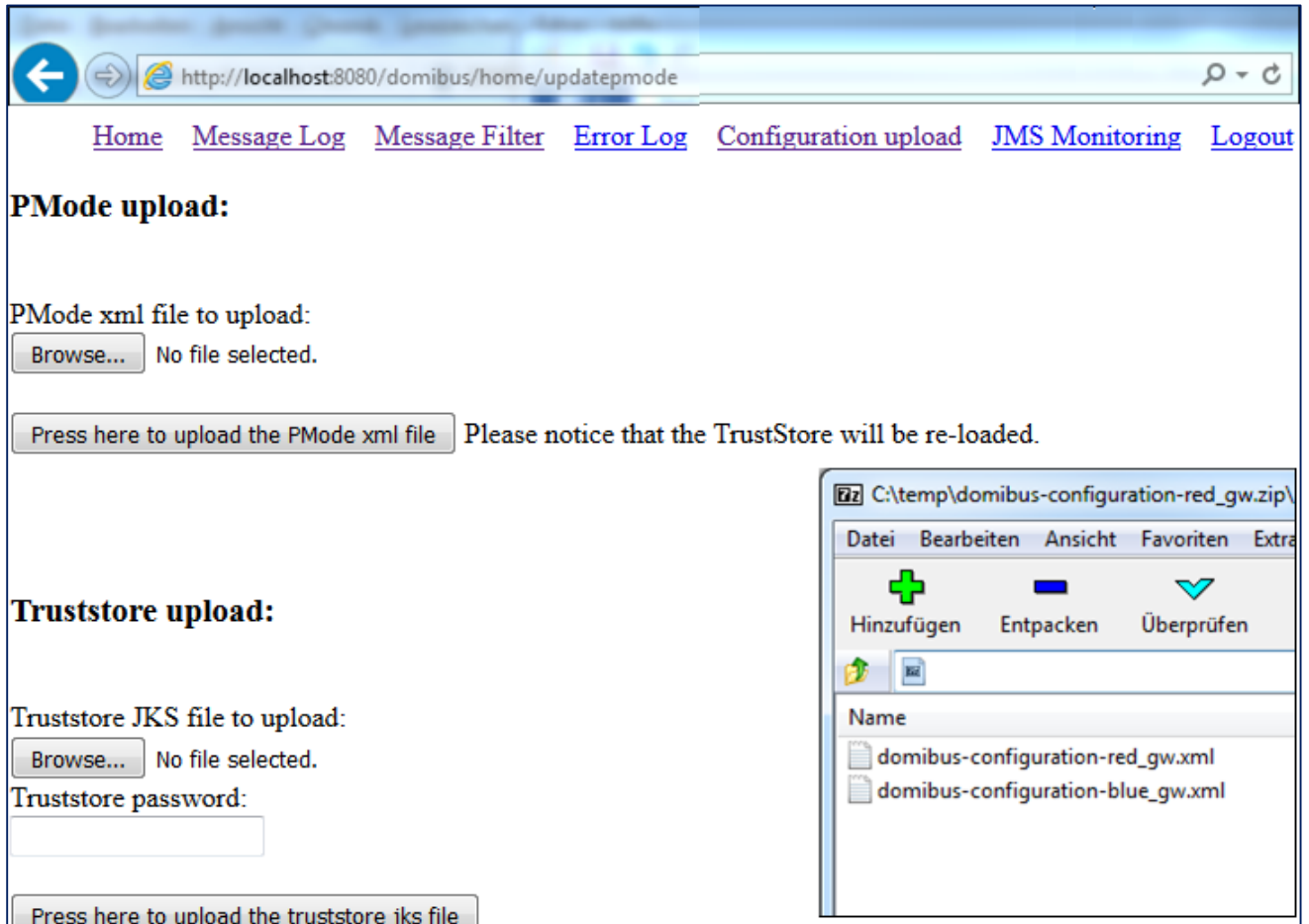


Figure 8 - PMode uploading

## 6.4. Administration Tools

### 6.4.1. Administration Dashboard

It is recommended to change the passwords for the default users which have access to the Domibus Administration page: **admin** and **user**.

In order to change the password, please use a BCrypt strong hashing algorithm to generate your custom password. You can use an online BCrypt password generator (e.g. <https://www.bcrypt-generator.com/>)

Once you have the hashed password please modify the passwords for the default users (**admin** and **user**) in the file `cef_edelivery_path/domibus/conf/domibus/domibus-security.xml`:

```
<sec:authentication-manager>
  <sec:authentication-provider>
    <sec:password-encoder ref="bcryptEncoder"/>
    <sec:user-service>
      <sec:user name="user" password="your_custom_user_password"
        authorities="ROLE_USER"/>
      <sec:user name="admin" password="your_custom_admin_password"
        authorities="ROLE_USER,ROLE_ADMIN"/>
    </sec:user-service>
  </sec:authentication-provider>
</sec:authentication-manager>
```

Remark:

*In February 2014 a new revision of the bcrypt algorithm was published which now generates bcrypt hashes that are not yet supported by the Spring Security version used by Domibus. (<https://github.com/spring-projects/spring-security/issues/3320>). You need then to take the generated hash and change the prefix of the generated value from \$2y\$10\$ to \$2a\$10\$.*

Other user credentials than **admin** and **user** can be added. In some big companies, security policies disallow to use share or generic accounts. It could be useful to clearly identify who as updated that PMode file.

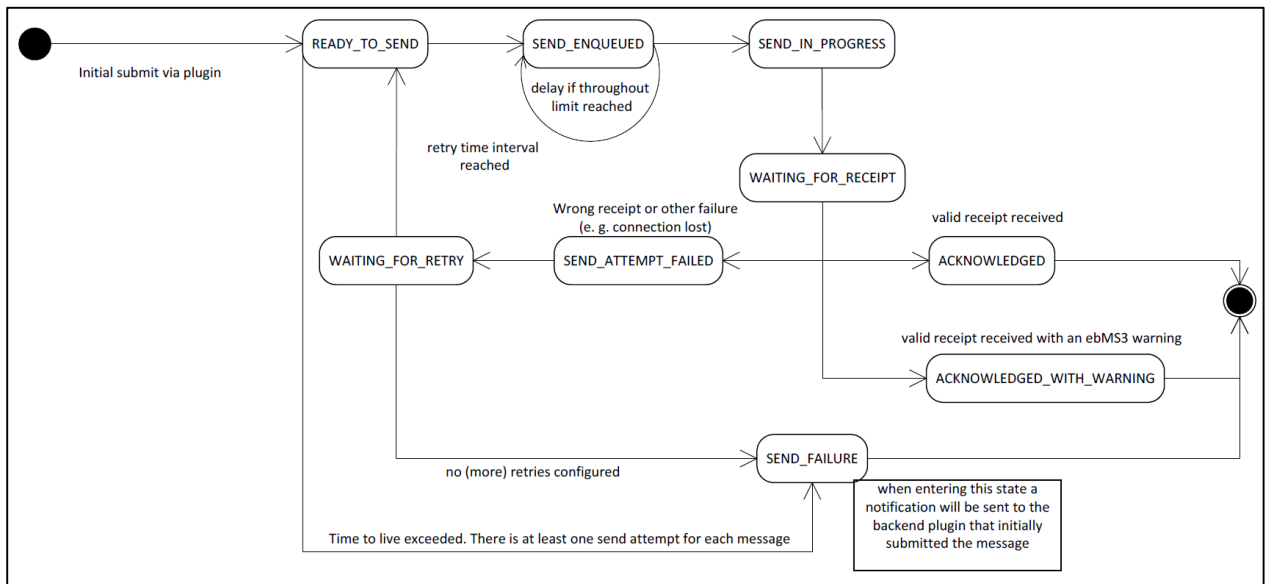
e.g:

We can access the Domibus Web Console using the username **user2** by adding the credentials as follow:

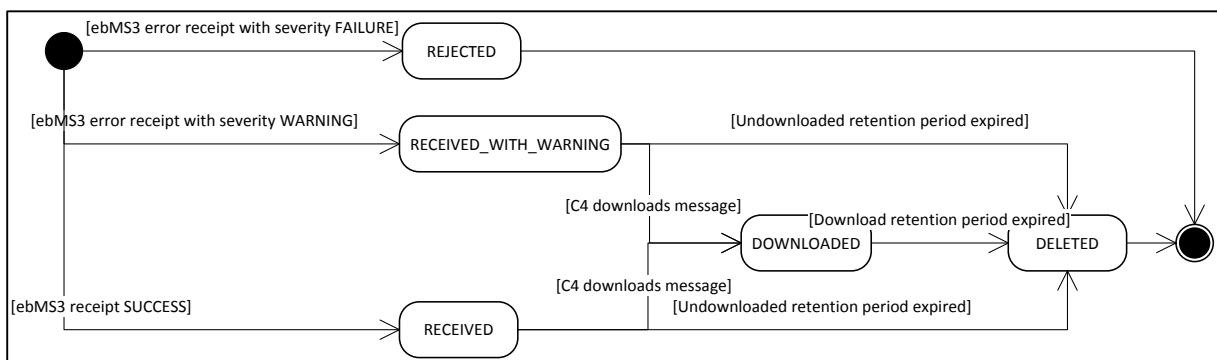
```
<sec:user-service>
  <sec:user name="user"
    password="$2a$10$uhZqXZdgBKMzWLaMI.rFGeOIwpT0kt4CfZ9rYQPC12rGKWe3Q8MKe"
    authorities="ROLE_USER"/>
  <sec:user name="admin"
    password="$2a$10$ZfMUsy7BD49181xUHN0bb018yvw8/Fwt/NqGTdNffb9z7t8mq1Sxq"
    authorities="ROLE_USER, ROLE_ADMIN"/>
  <sec:user name="user2"
    password="$2a$10$ZfMUsy7BD49181xUHN0bb018yvw8/Fwt/NqGTdNffb9z7t8mq1Sxq"
    authorities="ROLE_USER, ROLE_ADMIN"/>
</sec:user-service>
```

Domibus administration dashboard includes a message logging page that gives the administrator information related to send messages, received messages and their status (SENT, RECEIVED, FAILED, ACKNOWLEDGE...)

The following state machines illustrate the evolution of the processing of messages according to the encountered events:



**Figure 9 - State machine of Corner 2 (sending access point)**



**Figure 10 - State machine of Corner 3 (receiving access point)**

[Home](#)
[Message Log](#)
[Message Filter](#)
[Error Log](#)
[Configuration upload](#)
[JMS Monitoring](#)
[Logout](#)

## Domibus - Messages Log:

**Filter:**

MessageId:  Message Type:  Message Status:

**Received:**

From:  To:

[Clear filters](#)

Row:

| MessageId ▲ \ ▼                                 | MessageStatus ▲ \ ▼ | NotificationStatus ▲ \ ▼ |
|-------------------------------------------------|---------------------|--------------------------|
| f777591c-a143-4c21-8e75-4ad39361969a@domibus.eu | RECEIVED            |                          |
| 0e3ba3c6-0270-43f2-82ed-0a2259bc49c2@domibus.eu | RECEIVED            |                          |
| d9366a73-935b-493f-8cab-a196c8709ecd@domibus.eu | RECEIVED            |                          |
| 1cfe9e9d-94ad-4fe1-8580-329fdb600ffd@domibus.eu | RECEIVED            |                          |
| e1acf355-10cb-4661-91e0-07b9a924169b@domibus.eu | SEND_ENQUEUED       | NOT_REQUIRED             |
| 1f041100-b09d-41a3-865b-43f94cedf7db@domibus.eu | RECEIVED            |                          |
| 8f546647-e63a-4e77-a926-211fece62600@domibus.eu | RECEIVED            |                          |
| 014ab3dd-4bc3-4a5d-84f5-95ad8043f094@domibus.eu | RECEIVED            |                          |
| fdcb7946-4305-48c4-bc24-e3bf8bc3644f@domibus.eu | RECEIVED            |                          |
| 0210fa6d-77f8-4061-b2b8-3d8b58353e31@domibus.eu | SEND_FAILURE        | NOT_REQUIRED             |

Figure 11 - Domibus Message Log

Remark:

The administration dashboard is reachable via the URL:  
[http://your\\_server:your\\_port\\_number/domibus/home](http://your_server:your_port_number/domibus/home) (Tomcat)  
[http://your\\_server:your\\_port\\_number/domibus-wildfly/home](http://your_server:your_port_number/domibus-wildfly/home) (WildFly)  
[http://your\\_server:your\\_port\\_number/domibus-weblogic/home](http://your_server:your_port_number/domibus-weblogic/home) (WebLogic)

### 6.4.2. Application Logging

#### 6.4.2.1. Domibus log file

The file `cef_edelivery_path/domibus/logs/domibus.log` contains errors encountered by the application. The file contains information related to internal errors thrown if the application fails to process an incoming or an outgoing message.

| Name                                 | Date modified    | Type              | Size     |
|--------------------------------------|------------------|-------------------|----------|
| atomikos.log                         | 27/04/2016 15:38 | LOG File          | 601 KB   |
| domibus.log                          | 27/04/2016 15:38 | LOG File          | 1,977 KB |
| localhost_access_log..2016-04-20.txt | 20/04/2016 16:59 | Notepad++ Docu... | 1 KB     |
| localhost_access_log..2016-04-21.txt | 21/04/2016 16:39 | Notepad++ Docu... | 4 KB     |
| localhost_access_log..2016-04-22.txt | 22/04/2016 10:21 | Notepad++ Docu... | 8 KB     |
| localhost_access_log..2016-04-25.txt | 25/04/2016 17:04 | Notepad++ Docu... | 14 KB    |
| localhost_access_log..2016-04-26.txt | 26/04/2016 10:29 | Notepad++ Docu... | 2 KB     |
| localhost_access_log..2016-04-27.txt | 27/04/2016 10:40 | Notepad++ Docu... | 0 KB     |

**Remark:**

*The response of the application to your client's request might also contain information about the errors encountered, depending on the root cause of the issue (e.g. if the header of the request is not compliant with your PMode the message error will be included in the soap response. On the other hand if the error is related to the security protocol, the information will be included in Domibus.log only).*

**6.4.2.2. Logging properties**

It is possible to modify the configuration of the logs by editing the logging properties in the file `cef_edelivery_path/domibus/conf/domibus/log4j.properties`:

| Name                      | Date modified    | Type            | Size |
|---------------------------|------------------|-----------------|------|
| internal                  | 20/04/2016 10:38 | File folder     |      |
| keystores                 | 25/04/2016 16:13 | File folder     |      |
| plugins                   | 20/04/2016 10:38 | File folder     |      |
| policies                  | 20/04/2016 10:38 | File folder     |      |
| temp                      | 27/04/2016 10:41 | File folder     |      |
| work                      | 20/04/2016 16:44 | File folder     |      |
| domibus-configuration.xml | 26/04/2016 10:11 | XML File        | 5 KB |
| domibus-datasources.xml   | 20/04/2016 15:31 | XML File        | 6 KB |
| domibus-plugins.xml       | 19/04/2016 10:26 | XML File        | 2 KB |
| domibus-security.xml      | 19/04/2016 10:26 | XML File        | 5 KB |
| domibus-transactions.xml  | 19/04/2016 10:26 | XML File        | 4 KB |
| log4j.properties          | 19/04/2016 10:26 | PROPERTIES File | 2 KB |
| persistence.xml           | 19/04/2016 10:26 | XML File        | 2 KB |

In the example below, you can see the contents of the **log4j.properties** file:

```
# Direct log messages to stdout
log4j.appender.stdout=org.apache.log4j.ConsoleAppender
log4j.appender.stdout.Target=System.out
log4j.appender.stdout.layout=org.apache.log4j.PatternLayout
log4j.appender.stdout.layout.ConversionPattern=%d{ABSOLUTE} %5p %c{1}:%L - %m%n

log4j.appender.file=org.apache.log4j.FileAppender
log4j.appender.file.file=${catalina.home}/logs/domibus.log
log4j.appender.file.layout=org.apache.log4j.PatternLayout
log4j.appender.file.layout.ConversionPattern=%d{ABSOLUTE} %5p %c{1}:%L - %m%n

log4j.appender.atomikos=org.apache.log4j.FileAppender
log4j.appender.atomikos.file=${catalina.home}/logs/atomikos.log
log4j.appender.atomikos.layout=org.apache.log4j.PatternLayout
log4j.appender.atomikos.layout.ConversionPattern=%d{ABSOLUTE} %5p %c{1}:%L - %m%n

# In order to enable logging of request/responses please change the loglevel to INFO
log4j.logger.org.apache.cxf=WARN
# Root logger option
log4j.rootLogger=INFO, file, stdout

log4j.logger.com.atomikos=WARN, atomikos
```

Figure 12 - log4j.properties

- In red: these parameters can be edited to modify the location of the log file, and the layout.
- In green: these parameters can be edited to change the level of logging (3 levels defined: INFO, WARN, and ERROR).

6.4.2.3. Error Log page

This option lists all the error logs related to Message Transfers and includes the **ErrorSignalMessageId**, **ErrorDetail** and **Timestamp**. The messages can be sorted by clicking on the up and down arrows which helps to search for specific messages.

[Home](#) [Message Log](#) [Message Filter](#) [Error Log](#) [Configuration upload](#) [JMS Monitoring](#) [Logout](#)

### Domibus - Error Log:

**Filter:**

ErrorSignalMessageId:  MshRole:  messageInErrorId:  ErrorCode:  ErrorDetail:

**Timestamp:**

From:  To:

**Notified:**

From:  To:

[Clear filters](#)

Rows:

| ErrorSignalMessageId ▲ ▼                        | MshRole ▲ ▼ | MessageInErrorId ▲ ▼                                            | ErrorCode ▲ ▼ | ErrorDetail ▲ ▼                                                            |
|-------------------------------------------------|-------------|-----------------------------------------------------------------|---------------|----------------------------------------------------------------------------|
|                                                 | SENDING     | <a href="#">37a6e18f-116e-4a19-ac4e-e1ae1a3891db@domibus.eu</a> | EBMS_0005     | error dispatching message to http://13.94.158.29:8080/domibus/services/msh |
|                                                 | SENDING     | <a href="#">f3714335-7830-4ce6-9128-f93dde0f1860@domibus.eu</a> | EBMS_0005     | error dispatching message to http://13.94.158.29:8080/domibus/services/msh |
|                                                 | SENDING     | <a href="#">142d4bb4-87d2-499e-af98-b96d4af74c75@domibus.eu</a> | EBMS_0005     | error dispatching message to http://13.94.158.29:8080/domibus/services/msh |
|                                                 | SENDING     | <a href="#">37a6e18f-116e-4a19-ac4e-e1ae1a3891db@domibus.eu</a> | EBMS_0005     | error dispatching message to http://13.94.158.29:8080/domibus/services/msh |
|                                                 | SENDING     | <a href="#">37a6e18f-116e-4a19-ac4e-e1ae1a3891db@domibus.eu</a> | EBMS_0005     | error dispatching message to http://13.94.158.29:8080/domibus/services/msh |
| 3cc82601-7dce-4c3f-8c67-f23a7440dfc5@domibus.eu | SENDING     | <a href="#">37a6e18f-116e-4a19-ac4e-e1ae1a3891db@domibus.eu</a> | EBMS_0003     | No matching party found                                                    |
|                                                 | SENDING     | <a href="#">37a6e18f-116e-4a19-ac4e-e1ae1a3891db@domibus.eu</a> | EBMS_0005     | error dispatching message to http://13.94.158.29:8080/domibus/services/msh |
|                                                 | SENDING     | <a href="#">37a6e18f-116e-4a19-ac4e-e1ae1a3891db@domibus.eu</a> | EBMS_0005     | error dispatching message to http://13.94.158.29:8080/domibus/services/msh |
| 9474d5b9-c5ce-452c-b2c3-df2405aa0e46@domibus.eu | SENDING     | <a href="#">842b163a-4621-4357-b24b-37869fde72aa@domibus.eu</a> | EBMS_0003     | No matching party found                                                    |
|                                                 | SENDING     | <a href="#">842b163a-4621-4357-b24b-37869fde72aa@domibus.eu</a> | EBMS_0005     | error dispatching message to http://13.94.158.29:8080/domibus/services/msh |

Figure 13 - Domibus – Error Log page



### 6.4.3. Queue Monitoring

Domibus uses JMS queues to handle the messages:

| Destination type | JNDI name                                   | Comment                                                                   | Description                                                                                                                                                                                                                       |
|------------------|---------------------------------------------|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Queue            | jms/domibus.internal.dispatch.queue         | No redelivery because redelivery of MSH messages is handled via ebMS3/AS4 | This queue is used for scheduling messages for sending via the MSH                                                                                                                                                                |
| Queue            | jms/domibus.internal.notification.unknown   |                                                                           | Notifications about received messages (by the MSH) that do not match any backend routing criteria will be sent to this queue. In production environment this queue should be monitored in order to handle those messages manually |
| Topic            | jms/domibus.internal.command                |                                                                           | This topic is used for sending commands to all nodes in a cluster. For example, it is used after a PMode was uploaded in order to notify all nodes to update their PMode cache (in case caching is enabled)                       |
| Queue            | jms/domibus.backend.jms.replyQueue          |                                                                           | This queue is used for sending replies back to the sender of a message. Replies contain: a correlationId, ebMS3 messageId (if possible), error messages (if available)                                                            |
| Queue            | jms/domibus.backend.jms.outQueue            |                                                                           | Messages received by the MSH (that match the routing criteria for the JMS plugin) will be sent to this queue                                                                                                                      |
| Queue            | jms/domibus.backend.jms.inQueue             |                                                                           | This queue is the entry point for messages to be sent by the sending MSH                                                                                                                                                          |
| Queue            | jms/domibus.backend.jms.errorNotifyConsumer |                                                                           | This queue is used to inform the receiver of a message that an error occurred during the processing of a received message                                                                                                         |
| Queue            | jms/domibus.backend.jms.errorNotifyProducer |                                                                           | This queue is used to inform the sender of a message that an error occurred during the processing of a message to be sent                                                                                                         |

|              |                                         |  |                                                                                                                                            |
|--------------|-----------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Queue</b> | jms/domibus.notification.jms            |  | Used for sending notifications to the configured JMS plugin                                                                                |
| <b>Queue</b> | jms/domibus.internal.notification.queue |  | This queue is used to notify the configured plugin about the status of the message to be sent                                              |
| <b>Queue</b> | jms/domibus.notification.webservice     |  | Used for sending notifications to the configured WS plugin                                                                                 |
| <b>Queue</b> | jms/domibus.DLQ                         |  | This is the Dead Letter Queue of the application. The messages from other queues that reached the retry limit are redirected to this queue |

**Table 3 - Queue Monitoring**

All these queues can be monitored and managed using the **JMS Monitoring** page.

**Figure 14 - Domibus – JMS Monitoring page**

In the **Source** field, we have all the queues listed along with the number of messages pending in each queue.

If a queue is used internally by the application core, its name will start with **[internal]**. A regular expression is used to identify all the internal queues. The value for this regular expression can be adapted in the property **domibus.jms.internalQueue.expression** from the file *cef\_edelivery\_path/conf/domibus/domibus-configuration.xml*

In the **JMS Monitoring** page the following operations can be performed:

1. Inspecting and filtering the messages from a queue based on the following fields:
  - a. Source: the source queue of the messages
  - b. Period: time interval that will filter the messages based on the send date
  - c. JMS type: the JMS header **JMSType**
  - d. Selector: the JMS message selector expression

*Remark:*

*For more info on the JMS message headers and on the JMS message selector, please check the official documentation <https://docs.oracle.com/cd/E19798-01/821-1841/bnces/index.html>*

2. Move message

a. Move a message from the DLQ to the original queue:

- Select a JMS message from the DLQ and press the **Move** button

Home Message Log Message Filter Error Log Configuration upload JMS Monitoring Logout

### Domibus - JMS Monitoring

Source: [Internal] DomibusDLQ ( 2 )

Period: 2016-09-03 14:49:2 - 2016-10-04 14:49:2

JMS type:

Selector:

Search 2 results

**Move** Remove

| <input type="checkbox"/>            | Id                                               | JMS type | Time                    | Content | Custom properties                                                                                                                                                                                                                  | JMS properties                                                                                                            |
|-------------------------------------|--------------------------------------------------|----------|-------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | <a href="#">ID:&lt;11263.1475241417338.0&gt;</a> |          | 2016-09-30 15:16:57.338 |         | {MESSAGE_ID=e9fb4fb9-82ed-41c3-b3bc-82255f4762a3@domibus.eu, finalRecipient=urn:oasis:names:tc:ebcore:partyid-type:unregistered:C4, NOTIFICATION_TYPE=MESSAGE_RECEIVED, originalQueue=JmsModule!DomibusNotifyBackendEtrustexQueue} | {JMSXDeliveryCount=1, JMSMessageID=ID:<11263.1475241417338.0>, JMS_BEA_DeliveryFailureReason, JMSTimestamp=1475241417338} |

- The message details are displayed and the original queue where the message came from is pre-selected
- Press the **Move** button and the message will be move to the original queue

http://localhost...me/jmsmessage

localhost:7001/domibus-weblogic/home/jmsmessage

JMS type:

Properties:

|                               |                            |
|-------------------------------|----------------------------|
| JMSXDeliveryCount             | 1                          |
| JMSMessageID                  | ID:<11263.1475241417338.0> |
| JMS_BEA_DeliveryFailureReason | 2                          |
| JMSTimestamp                  | 1475241417338              |

{MESSAGE\_ID=e9fb4fb9-82ed-41c3-b3bc-82255f4762a3@domibus.eu, finalRecipient=urn:oasis:names:tc:ebcore:partyid-type:unregistered:C4, NOTIFICATION\_TYPE=MESSAGE\_RECEIVED, originalQueue=JmsModule!DomibusNotifyBackendEtrustexQueue}

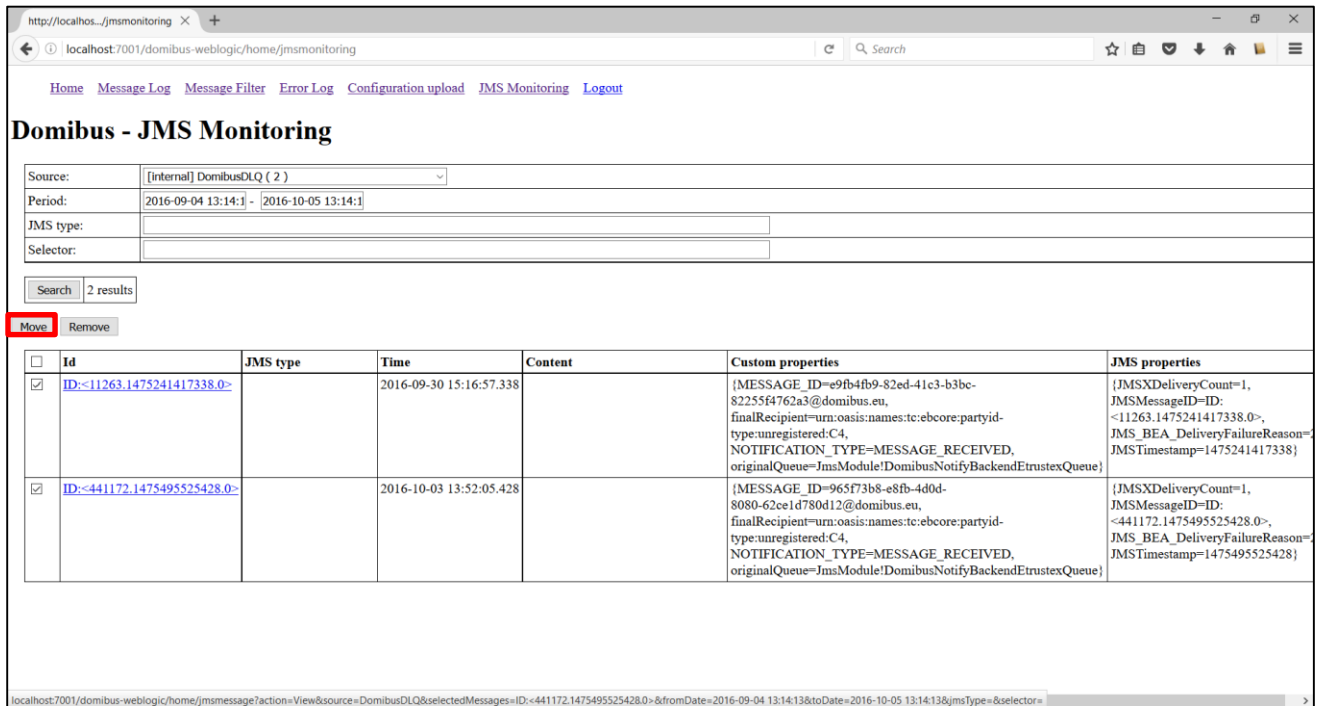
Content:

destination: JmsModule!DomibusNotifyBackendEtrustexQueue

**move**

[Return to JMS Monitoring](#)

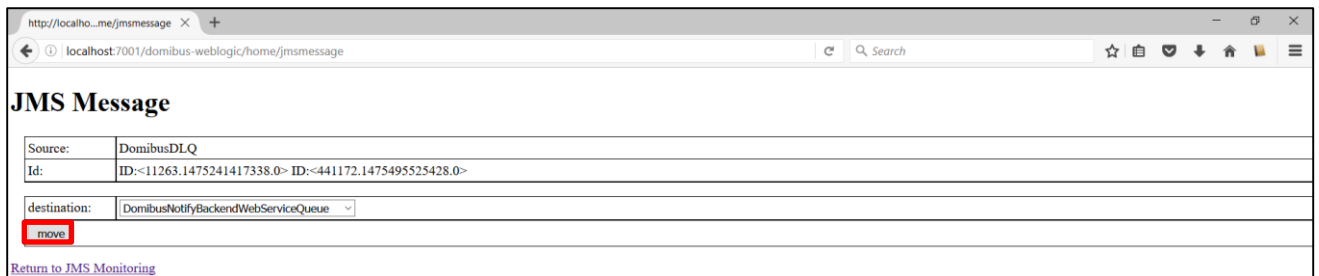
- b. Move multiple messages from the DLQ to the original queue
  - Select multiple JMS message from the DLQ and press the **Move** button



- The messages ID are displayed in the "Id:" field and all the available queues are displayed for selection in a drop down list in the "destination" field;
- Select the destination queue from the dropdown list and press **move**. All the previously selected JMS messages will be moved to the selected destination queue

**Remark:**

*Please make sure that all the selected messages came from the same source queue. Use the filtering capabilities to ensure this.*



### 3. Delete message

#### a. Delete a message from a queue:

- Select a JMS message from the source queue and press the **Remove** button

The screenshot shows the 'Domibus - JMS Monitoring' web application. At the top, there are search filters for Source, Period, JMS type, and Selector. Below these is a 'Search' button and a '2 results' indicator. A 'Move' button is also visible, with the 'Remove' option highlighted in red. The main content is a table with the following data:

| <input type="checkbox"/>            | Id                                                | JMS type | Time                    | Content | Custom properties                                                                                                                                                                                                                 | JMS properties                                                                                                               |
|-------------------------------------|---------------------------------------------------|----------|-------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | <a href="#">ID:&lt;11263.1475241417338.0&gt;</a>  |          | 2016-09-30 15:16:57.338 |         | {MESSAGE_ID=e9fb4fb9-82ed-41c3-b3bc-82255f4762a3@domibus.eu, finalRecipient=urn:osis:names:tc:ebcore:partyid-type:unregistered:C4, NOTIFICATION_TYPE=MESSAGE_RECEIVED, originalQueue=JmsModule!DomibusNotifyBackendEtrustexQueue} | {JMSXDeliveryCount=1, JMSMessageID=ID:<11263.1475241417338.0>, JMS_BE_A_DeliveryFailureReason=, JMSTimestamp=1475241417338}  |
| <input type="checkbox"/>            | <a href="#">ID:&lt;441172.1475495525428.0&gt;</a> |          | 2016-10-03 13:52:05.428 |         | {MESSAGE_ID=965f73b8-e8fb-4d0d-8080-62ce1d780d12@domibus.eu, finalRecipient=urn:osis:names:tc:ebcore:partyid-type:unregistered:C4, NOTIFICATION_TYPE=MESSAGE_RECEIVED, originalQueue=JmsModule!DomibusNotifyBackendEtrustexQueue} | {JMSXDeliveryCount=1, JMSMessageID=ID:<441172.1475495525428.0>, JMS_BE_A_DeliveryFailureReason=, JMSTimestamp=1475495525428} |

- The message details are displayed
- Press the **Remove** button to remove it

The screenshot shows the 'Domibus - JMS Message' details page. It displays the following information:

- Timestamp: 2016-09-30 15:16:57.338
- JMS type: [Empty field]
- Properties:
  - JMSXDeliveryCount: 1
  - JMSMessageID: ID:<11263.1475241417338.0>
  - JMS\_BE\_A\_DeliveryFailureReason: 2
  - JMSTimestamp: 1475241417338
  - [MESSAGE\_ID=e9fb4fb9-82ed-41c3-b3bc-82255f4762a3@domibus.eu, finalRecipient=urn:osis:names:tc:ebcore:partyid-type:unregistered:C4, NOTIFICATION\_TYPE=MESSAGE\_RECEIVED, originalQueue=JmsModule!DomibusNotifyBackendEtrustexQueue]
- Content: [Empty text area]

At the bottom left, a 'remove' button is highlighted in red. Below it is a link 'Return to JMS Monitoring'.

- b. Delete multiple messages from a queue:
  - Select multiple JMS message from the source queue and press the **Remove** button

**Domibus - JMS Monitoring**

Source: [Internal] DomibusDLQ ( 2 )

Period: 2016-09-03 14:49:2 - 2016-10-04 14:49:2

JMS type:

Selector:

Search 2 results

Move **Remove**

| <input type="checkbox"/>            | Id                                                | JMS type | Time                    | Content | Custom properties                                                                                                                                                                                                                  | JMS properties                                                                                                              |
|-------------------------------------|---------------------------------------------------|----------|-------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | <a href="#">ID:&lt;11263.1475241417338.0&gt;</a>  |          | 2016-09-30 15:16:57.338 |         | {MESSAGE_ID=e9fb4fb9-82ed-41c3-b3bc-822554762a3@domibus.eu, finalRecipient=urn:oasis:names:tc:ebcore:partyid-type:unregistered:C4, NOTIFICATION_TYPE=MESSAGE_RECEIVED, originalQueue=JmsModule!DomibusNotifyBackendEtrustexQueue}  | {JMSXDeliveryCount=1, JMSMessageID=ID:<11263.1475241417338.0>, JMS_BEA_DeliveryFailureReason=, JMSTimestamp=1475241417338}  |
| <input checked="" type="checkbox"/> | <a href="#">ID:&lt;441172.1475495525428.0&gt;</a> |          | 2016-10-03 13:52:05.428 |         | {MESSAGE_ID=965f73b8-e8fb-4d0d-8080-62ce1d780d12@domibus.eu, finalRecipient=urn:oasis:names:tc:ebcore:partyid-type:unregistered:C4, NOTIFICATION_TYPE=MESSAGE_RECEIVED, originalQueue=JmsModule!DomibusNotifyBackendEtrustexQueue} | {JMSXDeliveryCount=1, JMSMessageID=ID:<441172.1475495525428.0>, JMS_BEA_DeliveryFailureReason=, JMSTimestamp=1475495525428} |

- The messages ID to be removed are displayed
- Press the **Remove** button to remove them

**JMS Message**

Source: DomibusDLQ

Id: ID:<11263.1475241417338.0> ID:<441172.1475495525428.0>

**remove**

[Return to JMS Monitoring](#)

#### 6.4.4. Configuration of the queues

Queues should be configured appropriately and according to the backend system needs and re-delivery policy.

##### 6.4.4.1. Tomcat

Domibus uses ActiveMQ as JMS broker. The various queues are configured in the `cef_edelivery_path/domibus/conf/domibus/internal/activemq.xml` file.

Please see [ActiveMQ redelivery policy](#) and configure the parameters below:

```
<redeliveryPlugin fallbackToDeadLetter="true"
  sendToDlqIfMaxRetriesExceeded="true">
  <redeliveryPolicyMap>
    <redeliveryPolicyMap>
      <redeliveryPolicyEntries>
        <redeliveryPolicy queue="sendMessageQueue"
          maximumRedeliveries="0"/>
        <redeliveryPolicy queue="*"
          maximumRedeliveries="10" redeliveryDelay="300000"/>
      </redeliveryPolicyEntries>
    </redeliveryPolicyMap>
  </redeliveryPolicyMap>
</redeliveryPlugin>
</redeliveryPolicyMap>
</redeliveryPlugin>
```

Access to the JMS messaging subsystem is protected by a username and password in clear text in the `cef_edelivery_path/domibus/conf/domibus/internal/activemq.xml` and `cef_edelivery_path/domibus/conf/domibus/domibus-datasources.xml` files.

It is recommended to change the password for the default user:

*Remark:*

*If you change the default password, it needs to be changed in both `activemq.xml` and `Domibus-datasources.xml`.*

In the `cef_edelivery_path/domibus/conf/domibus/internal/activemq.xml`:

```
<simpleAuthenticationPlugin anonymousAccessAllowed="false">
  <users>
    <authenticationUser username="domibus" password="changeit" groups="users"/>
    <authenticationUser username="admin" password="123456" groups="admins,users"/>
  </users>
</simpleAuthenticationPlugin>
```

In the `cef_edelivery_path/domibus/conf/domibus/domibus-datasources.xml`:

```
<amq:xaConnectionFactory id="xaJmsConnectionFactory"
  brokerURL="tcp://localhost:63616" userName="domibus" password="changeit">
  <!-- do not remove this! otherwise the redeliveryPolicy configured in activemq.xml
  will be ignored -->
  <amq:redeliveryPolicy>
    <amq:redeliveryPolicy />
  </amq:redeliveryPolicy>
</amq:xaConnectionFactory>
```

##### 6.4.4.2. WebLogic

Please use the admin console of WebLogic to configure the re-delivery limit and delay.

### 6.4.4.3. WildFly

Please use the admin console of WildFly to configure the re-delivery limit and delay.

### 6.4.5. [Message Filtering](#)

In case there are multiple plugins registered, Domibus will route the incoming message to the first plugin in the list.

The screenshot shows the 'Domibus - Message Filter: Routing Criteria' page. At the top, there are navigation links: Home, Message Log, Message Filter, Error Log, Configuration upload, JMS Monitoring, and Logout. The main heading is 'Domibus - Message Filter: Routing Criteria'. Below the heading, there is a form with a 'Name' field containing 'backendWebservice'. To the left of the name field are up and down arrow buttons. Below the name field is a '+' button. At the bottom left of the form is a 'save' button.

Figure 15 - Domibus – Message filter page

In the configuration above, the incoming message will be routed to the **backendWebservice** (default name of the default WS Plugin). A plugin can be configured to treat a subset of incoming messages according to 4 criteria: **action**, **service**, **to** and **from**.

Plugins must be configured properly to ensure that these criteria will ensure that all messages are treated and that not more than one plug-in can consume the same message.

This screenshot shows the same 'Domibus - Message Filter: Routing Criteria' page, but with additional configuration options. The 'Name' field still contains 'backendWebservice'. Below the '+' button, there are four rows of configuration options, each consisting of a dropdown menu and a text input field with a '-' button on the right:
 

- ACTION
- SEVICE
- TO
- FROM

 The 'save' button is still present at the bottom left.

There are four fields that are available for the plugin to perform the match against an incoming message received by Domibus (**Action**, **Service**, **From**, **To**). The following parameters can be set in the wanted filtering configuration:



e.g.

- **Action** : *TC1Leg1*
- **Service** : *bdx:noprocess*
- **From** : *domibus-party\_id\_name1:urn:oasis:names:tc:ebcore:partyid-type:unregistered*
- **To** : *domibus-party\_id\_name2:urn:oasis:names:tc:ebcore:partyid-type:unregistered*

That information can be found in the incoming message received by Domibus (e.g. see below)

```
<ns:PartyInfo>
  <ns:From>
    <ns:PartyId type="urn:oasis:names:tc:ebcore:partyid-
type:unregistered">party_id_name1</ns:PartyId>
    <ns:Role>http://docs.oasis-open.org/ebxml-
msg/ebms/v3.0/ns/core/200704/initiator</ns:Role>
  </ns:From>
  <ns:To>
    <ns:PartyId type="urn:oasis:names:tc:ebcore:partyid-
type:unregistered">party_id_name2</ns:PartyId>
    <ns:Role>http://docs.oasis-open.org/ebxml-
msg/ebms/v3.0/ns/core/200704/responder</ns:Role>
  </ns:To>
</ns:PartyInfo>
<ns:CollaborationInfo>
  <ns:Service type="tc1">bdx:noprocess</ns:Service>
  <ns:Action>TC1Leg1</ns:Action>
</ns:CollaborationInfo>
```

## 7. DATA ARCHIVING

### 7.1. What's archiving?

Data archiving is the method of moving message that have been processed successfully or unsuccessfully by the access point to an external storage location for long-term retention.

Archiving data involves older data that have been processed at the communication level by the access points but that is still significant to the business and may be needed for future reference, or data that must be retained for legal constraints.

Data archives are indexed and searchable to allow easy retrieval,

It is not recommended to use Domibus as an archiving solution. Nevertheless, if it is really needed to keep the data, it is possible to set the Data Retention Policy so the data can be extracted from the database through the webservices or by an external archiving tool.

### 7.2. Data Retention Policy

A data retention policy is a business's established procedure for continuous information storage for operational, legal or compliance reasons

The data retention policy needs to be defined based on the business needs and constraints.

In Domibus, the data retention policy can be found here in the PMode file:

```
<mpcs>
  <mpc name="defaultMpc"
    qualifiedName="http://docs.oasis-open.org/ebxml-
msg/ebms/v3.0/ns/core/200704/defaultMPC"
    enabled="true"
    default="true"
    retention_downloaded="0"
    retention_undownloaded="14400"/>
</mpcs>
```

In the sample PMode configuration of Domibus, the data retention policy is set to **14400 seconds** (4 hours) if the message is not downloaded. This means that if the message is not downloaded, it will be deleted then only the metadata containing the information of the receiver and the acknowledgement.

The data retention policy is also set to **0 seconds** if the message is downloaded. This means that the message will be instantaneously deleted as soon as it is downloaded. Those two parameters can be configured to meet the needs of the business.

### 7.3. Data Extraction

In order to keep the metadata and the payload of the message for a defined amount of time, that exceeds the one set in the PMode, it is recommended to extract it to an external storage. As long as the retention worker does not delete it, data can be extracted through the webservices or through an external archiving tool.

For more information, please refer to the Data Model provided in the [Domibus Software Architecture Document](#).

## 8. TROUBLESHOOTING

### 8.1. Failed to obtain DB connection from datasource

```
SEVERE: Exception sending context initialized event to listener instance of class
org.springframework.web.context.ContextLoaderListener
org.springframework.beans.factory.BeanCreationException: Error creating bean with
name 'org.springframework.scheduling.quartz.SchedulerFactoryBean#0' defined in
ServletContext resource [/WEB-INF/msh-config.xml]: Invocation of init method
failed; nested exception is org.quartz.JobPersistenceException: Failed to obtain
DB connection from datasource
'springTxDataSource.org.springframework.scheduling.quartz.SchedulerFactoryBean#0':
com.atomikos.jdbc.AtomikosSQLException: Failed to grow the connection pool [See
nested exception: com.atomikos.jdbc.AtomikosSQLException: Failed to grow the
connection pool]
    at
org.springframework.beans.factory.support.AbstractAutowireCapableBeanFactory.initi
alizeBean(AbstractAutowireCapableBeanFactory.java:1578)
    at
org.springframework.beans.factory.support.AbstractAutowireCapableBeanFactory.doCre
ateBean(AbstractAutowireCapableBeanFactory.java:545)
    at
org.springframework.beans.factory.support.AbstractAutowireCapableBeanFactory.creat
eBean(AbstractAutowireCapableBeanFactory.java:482)
    at
org.springframework.beans.factory.support.AbstractBeanFactory$1.getObject(Abstract
BeanFactory.java:305)
    at
org.springframework.beans.factory.support.DefaultSingletonBeanRegistry.getSingleto
n(DefaultSingletonBeanRegistry.java:230)
    at
org.springframework.beans.factory.support.AbstractBeanFactory.doGetBean(AbstractBe
anFactory.java:301)
SEVERE: One or more listeners failed to start. Full details will be found in the
appropriate container log file
May 11, 2016 10:12:43 AM org.apache.catalina.util.SessionIdGeneratorBase
createSecureRandom
INFO: Creation of SecureRandom instance for session ID generation using [SHA1PRNG]
took [13,256] milliseconds.
May 11, 2016 10:12:43 AM org.apache.catalina.core.StandardContext startInternal
SEVERE: Context [/domibus] startup failed due to previous errors
May 11, 2016 10:12:43 AM org.apache.catalina.core.ApplicationContext log
INFO: Closing Spring root WebApplicationContext
May 11, 2016 10:12:43 AM org.apache.catalina.core.ApplicationContext log
INFO: Shutting down log4j
```

***Solution:** Setup the password properly in the `domibus-datasources.xml`*

## 8.2. Exception sending context initialized event to listener instance of class

```
SEVERE: Exception sending context initialized event to listener instance of class
org.springframework.web.context.ContextLoaderListener
org.springframework.beans.factory.BeanCreationException: Error creating bean with
name 'entityManagerFactory' defined in URL
[file:///home/edelivery/domibusf1/conf/domibus/domibus-datasources.xml]: Cannot
resolve reference to bean 'domibusJDBC-XADataSource' while setting bean property
'dataSource'; nested exception is
org.springframework.beans.factory.BeanCreationException: Error creating bean with
name 'domibusJDBC-XADataSource' defined in URL
[file:///home/edelivery/domibusf1/conf/domibus/domibus-datasources.xml]:
Invocation of init method failed; nested exception is
com.atomikos.jdbc.AtomikosSQLException: The class
'com.mysql.jdbc.jdbc2.optional.MysqlXADataSource' specified by property
'xaDataSourceClassName' could not be found in the classpath. Please make sure the
spelling is correct, and that the required jar(s) are in the classpath.
```

*Solution:* Add MySQL connector in domibus/lib folder

## 8.3. Neither the JAVA\_HOME nor the JRE\_HOME environment variable is defined

Neither the JAVA\_HOME nor the JRE\_HOME environment variable is defined  
At least one of these environment variable is needed to run this program

*Solution:* Set JAVA\_HOME variable or/and JRE\_HOME

## 8.4. Cannot access Admin Console

[http://your\\_server:your\\_port\\_number/domibus/home](http://your_server:your_port_number/domibus/home)  
No SEVER errors in logs but no admin option in browser under

*Solution:* Check if the firewall is open for port\_no (e.g. 8080).

## 8.5. Handshake Failure

Full stack trace below:

```
org.apache.cxf.interceptor.Fault: Could not write attachments.
at
org.apache.cxf.interceptor.AttachmentOutInterceptor.handleMessage(AttachmentOutInt
erceptor.java:74)
at
org.apache.cxf.phase.PhaseInterceptorChain.doIntercept(PhaseInterceptorChain.java:
308)
at org.apache.cxf.endpoint.ClientImpl.doInvoke(ClientImpl.java:514)
at org.apache.cxf.endpoint.ClientImpl.invoke(ClientImpl.java:423)
at org.apache.cxf.endpoint.ClientImpl.invoke(ClientImpl.java:324)
```

```
at org.apache.cxf.endpoint.ClientImpl.invoke(ClientImpl.java:277)
at org.apache.cxf.endpoint.ClientImpl.invokeWrapped(ClientImpl.java:312)
at org.apache.cxf.jaxws.DispatchImpl.invoke(DispatchImpl.java:327)
at org.apache.cxf.jaxws.DispatchImpl.invoke(DispatchImpl.java:246)
at eu.domibus.ebms3.sender.MSHDispatcher.dispatch(MSHDispatcher.java:126)
at
eu.domibus.ebms3.sender.MSHDispatcher$$FastClassBySpringCGLIB$$105974a1.invoke(<generated>)
at org.springframework.cglib.proxy.MethodProxy.invoke(MethodProxy.java:204)
at
org.springframework.aop.framework.CglibAopProxy$CglibMethodInvocation.invokeJoinpoint(CglibAopProxy.java:717)
at
org.springframework.aop.framework.ReflectiveMethodInvocation.proceed(ReflectiveMethodInvocation.java:157)
at
org.springframework.transaction.interceptor.TransactionInterceptor$1.proceedWithInvocation(TransactionInterceptor.java:99)
at
org.springframework.transaction.interceptor.TransactionAspectSupport.invokeWithinTransaction(TransactionAspectSupport.java:281)
at
org.springframework.transaction.interceptor.TransactionInterceptor.invoke(TransactionInterceptor.java:96)
at
org.springframework.aop.framework.ReflectiveMethodInvocation.proceed(ReflectiveMethodInvocation.java:179)
at
org.springframework.aop.framework.CglibAopProxy$DynamicAdvisedInterceptor.intercept(CglibAopProxy.java:653)
at
eu.domibus.ebms3.sender.MSHDispatcher$$EnhancerBySpringCGLIB$$da53e95a.dispatch(<generated>)
at eu.domibus.ebms3.sender.MessageSender.sendMessage(MessageSender.java:116)
at eu.domibus.ebms3.sender.MessageSender.onMessage(MessageSender.java:195)
at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:57)
at
sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:43)
at java.lang.reflect.Method.invoke(Method.java:606)
at
org.springframework.aop.support.AopUtils.invokeJoinpointUsingReflection(AopUtils.java:302)
at
org.springframework.aop.framework.ReflectiveMethodInvocation.invokeJoinpoint(ReflectiveMethodInvocation.java:190)
at
org.springframework.aop.framework.ReflectiveMethodInvocation.proceed(ReflectiveMethodInvocation.java:157)
at
org.springframework.transaction.interceptor.TransactionInterceptor$1.proceedWithInvocation(TransactionInterceptor.java:99)
at
org.springframework.transaction.interceptor.TransactionAspectSupport.invokeWithinTransaction(TransactionAspectSupport.java:281)
at
org.springframework.transaction.interceptor.TransactionInterceptor.invoke(TransactionInterceptor.java:96)
```

```
at
org.springframework.aop.framework.ReflectiveMethodInvocation.proceed(ReflectiveMet
hodInvocation.java:179)
at
org.springframework.aop.framework.JdkDynamicAopProxy.invoke(JdkDynamicAopProxy.jav
a:207)
at com.sun.proxy.$Proxy163.onMessage(Unknown Source)
at
org.springframework.jms.listener.AbstractMessageListenerContainer.doInvokeListener
(AbstractMessageListenerContainer.java:746)
at
org.springframework.jms.listener.AbstractMessageListenerContainer.invokeListener(A
bstractMessageListenerContainer.java:684)
at
org.springframework.jms.listener.AbstractMessageListenerContainer.doExecuteListene
r(AbstractMessageListenerContainer.java:651)
at
org.springframework.jms.listener.AbstractPollingMessageListenerContainer.doReceive
AndExecute(AbstractPollingMessageListenerContainer.java:315)
at
org.springframework.jms.listener.AbstractPollingMessageListenerContainer.receiveAn
dExecute(AbstractPollingMessageListenerContainer.java:233)
at
org.springframework.jms.listener.DefaultMessageListenerContainer$AsyncMessageListe
nerInvoker.invokeListener(DefaultMessageListenerContainer.java:1150)
at
org.springframework.jms.listener.DefaultMessageListenerContainer$AsyncMessageListe
nerInvoker.executeOngoingLoop(DefaultMessageListenerContainer.java:1142)
at
org.springframework.jms.listener.DefaultMessageListenerContainer$AsyncMessageListe
nerInvoker.run(DefaultMessageListenerContainer.java:1039)
at java.lang.Thread.run(Thread.java:745)
Caused by: javax.net.ssl.SSLHandshakeException: Received fatal alert:
handshake_failure
at sun.security.ssl.Alerts.getSSLException(Alerts.java:192)
at sun.security.ssl.Alerts.getSSLException(Alerts.java:154)
at sun.security.ssl.SSLSocketImpl.recvAlert(SSLSocketImpl.java:1979)
at sun.security.ssl.SSLSocketImpl.readRecord(SSLSocketImpl.java:1086)
at sun.security.ssl.SSLSocketImpl.performInitialHandshake(SSLSocketImpl.java:1332)
at sun.security.ssl.SSLSocketImpl.startHandshake(SSLSocketImpl.java:1359)
at sun.security.ssl.SSLSocketImpl.startHandshake(SSLSocketImpl.java:1343)
at sun.net.www.protocol.https.HttpsClient.afterConnect(HttpsClient.java:563)
at
sun.net.www.protocol.https.AbstractDelegateHttpsURLConnection.connect(AbstractDele
gateHttpsURLConnection.java:185)
at
sun.net.www.protocol.http.HttpURLConnection.getOutputStream(HttpURLConnection.java
:1092)
at
sun.net.www.protocol.https.HttpsURLConnectionImpl.getOutputStream(HttpsURLConnection
Impl.java:250)
at
org.apache.cxf.transport.http.URLConnectionHTTPConduit$URLConnectionWrappedOutputS
tream.setupWrappedStream(URLConnectionHTTPConduit.java:236)
at
org.apache.cxf.transport.http.HTTPConduit$WrappedOutputStream.handleHeadersTrustCa
ching(HTTPConduit.java:1302)
at
org.apache.cxf.transport.http.HTTPConduit$WrappedOutputStream.onFirstWrite(HTTPCon
duit.java:1262)
```

```
at
org.apache.cxf.transport.http.URLConnectionHTTPConduit$URLConnectionWrappedOutputS
tream.onFirstWrite(URLConnectionHTTPConduit.java:267)
at
org.apache.cxf.io.AbstractWrappedOutputStream.write(AbstractWrappedOutputStream.java:47)
at
org.apache.cxf.io.AbstractThresholdOutputStream.write(AbstractThresholdOutputStrea
m.java:69)
at
org.apache.cxf.io.AbstractWrappedOutputStream.write(AbstractWrappedOutputStream.java:60)
at
org.apache.cxf.io.CacheAndWriteOutputStream.write(CacheAndWriteOutputStream.java:8
9)
at
org.apache.cxf.attachment.AttachmentSerializer.writeProlog(AttachmentSerializer.java:172)
at
org.apache.cxf.interceptor.AttachmentOutInterceptor.handleMessage(AttachmentOutInt
erceptor.java:72)
... 43 more
```

*Solution: If you receive this error, then it's likely that you configured the client with TLSv1.1 while the server only accepts TLSv1.2.*

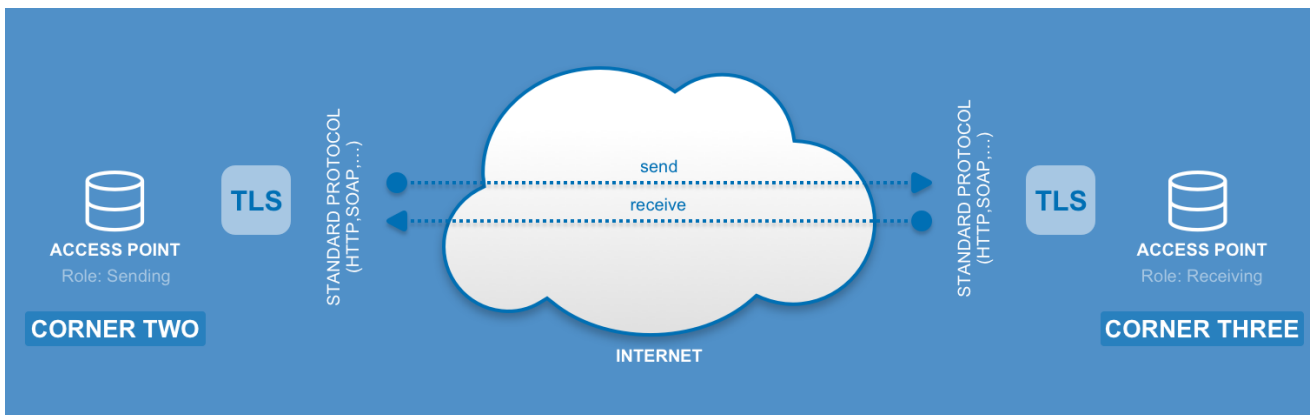
## 9. ANNEX 1 – TLS CONFIGURATION

### 9.1. TLS Configuration

#### 9.1.1. Transport Layer Security in Domibus

One way of implementing TLS for AS4 e-Sens is to use the TLS in the Domibus Message Handler (MSH) described below, otherwise this would have to be handled at a higher level (e.g. Application Server, Proxy, etc...)

To enable secure communication at the transport layer (TLS) between a sending and a receiving MSH (Access Point), both the client and the server need to be configured accordingly.



The client is used in the initiator MSH to send the request and is therefore configured via CXF while the server is configured at container/application server level.

#### 9.1.2. Client side configuration (One Way SSL)

The `tlsClientParameters` are configured in `cef_edelivery_path/conf/domibus/clientauthentication.xml` file:

```
<http-conf:tlsClientParameters disableCNCheck="true"
secureSocketProtocol="TLSv1.2"
  xmlns:http-
conf="http://cxf.apache.org/transport/http/configuration"
  xmlns:security="http://cxf.apache.org/configuration/security">
  <security:trustManagers>
    <security:keyStore type="JKS" password="your_trustore_password"
      file="${domibus.config.location}/keystores/your_trustore_ssl.jks"/>
  </security:trustManagers>
</http-conf:tlsClientParameters>
```

*Remark:*

*your\_trustore\_ssl is used at the transport layer (SSL) while your\_trustore, described in §5.1.2 – "Certificates" is used by Domibus to encrypt and sign (WS-Security)*

When the `clientauthentication.xml` file is present and the endpoint of the receiving MSH is `https://`, the TLS parameters are added via the CXF framework to the send request.



The version of the TLS must be specified by setting **secureSocketProtocol="TLSv1.2"**.

If you use self-signed certificates you need to set **disableCNCheck="true"**.

The attribute **disableCNCheck** specifies if JSSE should omit checking if the host name specified in the URL matches that of the Common Name (CN) on the server's certificate. Default is false; this attribute should not be set to true during production use cf.[REF9].

*Remark:*

*TLSv1.2 is mandatory for AS4 e-Sens Profile.*

### 9.1.3. Client side configuration (Two Way SSL)

The same as *One Way SSL* but the **tlsClientParameters** gets configured with both *trustManagers* and *keystoreManagers*. The **clientauthentication.xml** file should look like this:

```
<http-conf:tlsClientParameters disableCNCheck="true"
secureSocketProtocol="TLSv1.2"
  xmlns:http-conf="http://cxf.apache.org/transports/http/configuration"
  xmlns:security="http://cxf.apache.org/configuration/security">
  <security:trustManagers>
    <security:keyStore type="JKS" password="your_trustore_password"
      file="{domibus.config.location}/keystores/your_trustore_ssl.jks"/>
  </security:trustManagers>
  <security:keyManagers keyPassword="your_keystore_password">
    <security:keyStore type="JKS" password="your_keystore_password"
      file="{domibus.config.location}/keystores/your_keystore_ssl.jks"/>
  </security:keyManagers>
</http-conf:tlsClientParameters>
```

*Remark:*

*your\_trustore\_ssl and your\_keystore\_ssl are used at the transport layer (SSL) while your\_trustore and your\_keystore, described in §5.1.2 - Certificates" are used by Domibus to encrypt and sign (WS-Security)*

Two Way SSL is optional based on the AS4 e-Sens Profile.

## 9.1.4. Server side configuration

### 9.1.4.1. Tomcat 8

In Server.xml, add a new connector having **SSLEnabled** attribute set to true:

```
<Connector SSLEnabled="true"
  protocol="org.apache.coyote.http11.Http11NioProtocol"
  port="8443" maxThreads="200"
  scheme="https" secure="true"
  keystoreFile="${domibus.config.location}/keystores/your_keystore
_ssl.jks" keystorePass="your_keystore_password"
  clientAuth="false" sslProtocol="TLS" />
```

The keystore jks location and password must be specified, otherwise the default one will be considered.

TLS version can also be specified.


The above connector has **clientAuth="false"** this means that only the server has to authenticate himself (One Way SSL). To configure Two Way SSL, which is optional based on the *AS4 e-Sens* Profile, in Server.xml, set **clientAuth="true"** and provide the location of the *your\_truststore\_ssl.jks* so that the server can verify the client:

```
<Connector SSLEnabled="true"
  protocol="org.apache.coyote.http11.Http11NioProtocol"
  port="8443" maxThreads="200"
  scheme="https" secure="true"
  keystoreFile="${domibus.config.location}/keystores/your_keystore
_ssl.jks" keystorePass="your_keystore_password"
  truststoreFile="${domibus.config.location}/keystores/your_trusts
tore_ssl.jks" truststorePass="your_truststore_password"
  clientAuth="true" sslProtocol="TLS" />
```

### 9.1.4.2. WebLogic

1. Specify the use of SSL on default port 7002

Go to Servers → select server name → Configuration → General then **click on Client Cert Proxy Enabled**

|                                                                                                                    |                                   |
|--------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>SSL Listen Port:</b>                                                                                            | <input type="text" value="7002"/> |
|  <b>Client Cert Proxy Enabled</b> |                                   |

2. Add keystore and truststore:

Go to Servers → select server name → Configuration → Keystores and SSL tabs and use **Custom Identity and Custom Trust** then set keystore and truststore jks.

#### To disable basic authentication at WebLogic level:

By default WebLogic performs its own basic authentication check before passing the request to Domibus. Instead, we want basic authentication to be performed by Domibus so we disable it at application server level.

In **DOMAIN\_HOME/config/config.xml** add:

```
<enforce-valid-basic-auth-credentials>false</enforce-valid-basic-auth-credentials>
```

### 9.1.4.3. Wildfly 9

In file `cef_edelivery_path/domibus/standalone/configuration/standalone-full.xml`:

- add the keystore and trustore jks to the ApplicationRealm:

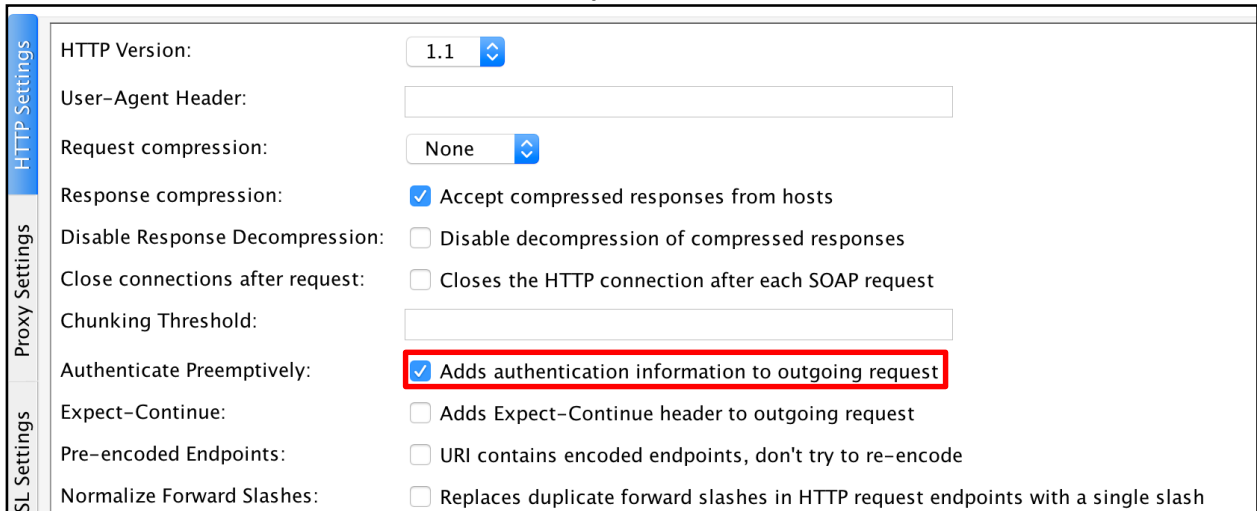
```
<security-realm name="ApplicationRealm">
  <server-identities>
    <ssl>
      <keystore path="../conf/domibus/keystores/gateway_keystore.jks"
relative-to="jboss.server.base.dir" keystore-password="test123"
alias="blue_gw" key-password="test123"/>
    </ssl>
  </server-identities>
  <authentication>
    <truststore path="../conf/domibus/keystores/gateway_truststore.jks"
relative-to="jboss.server.base.dir" keystore-password="test123" />
    ...
  </authentication>
```

- add https-listener to default-server:

```
<subsystem xmlns="urn:jboss:domain:undertow:2.0">
  <buffer-cache name="default"/>
  <server name="default-server">
    <http-listener name="default" socket-binding="http" redirect-
socket="https"/>
    <https-listener name="default_https" socket-binding="https"
security-realm="ApplicationRealm" verify-client="REQUIRED"/>
  </server>
</subsystem>
```

#### 9.1.4.4. Configure Basic and Certificates authentication in SoapUI

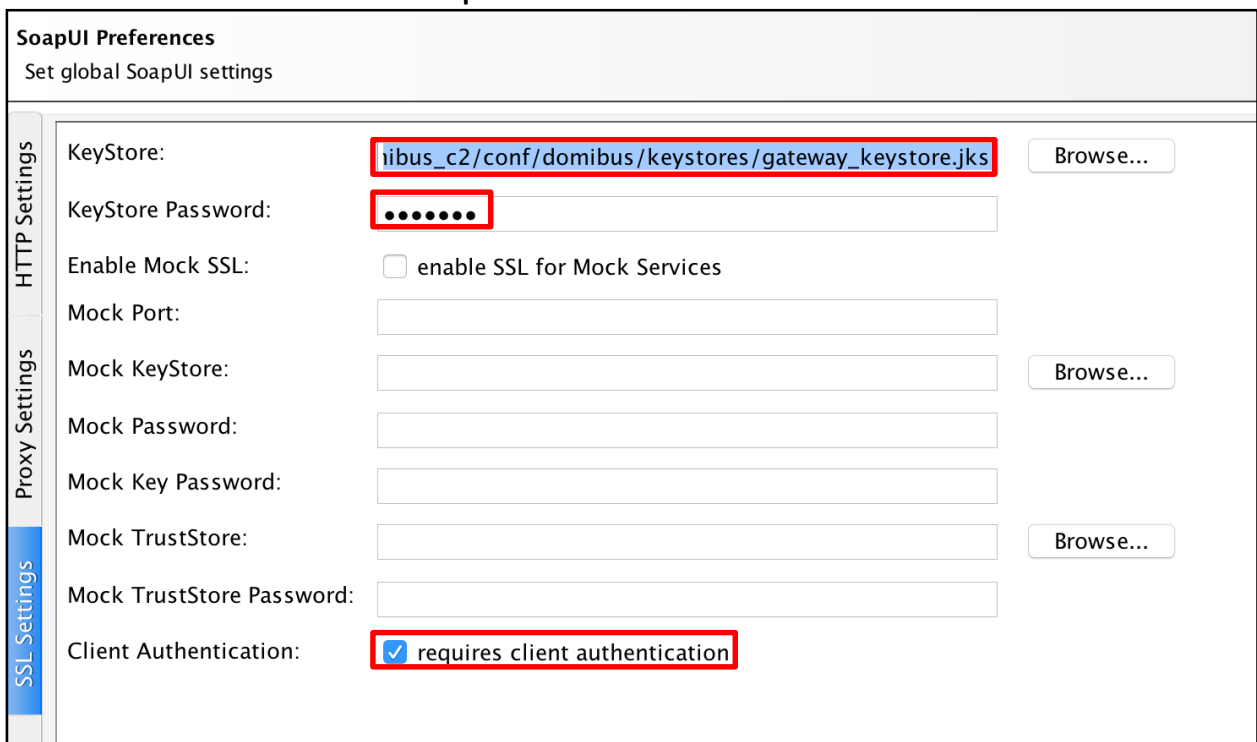
Go to File → Preferences → HTTP Settings and check **Adds authentication information to outgoing requests**



The screenshot shows the 'HTTP Settings' tab in the SoapUI Preferences dialog. The 'Authenticate Preemptively' checkbox is checked and highlighted with a red box, with the text 'Adds authentication information to outgoing request' also highlighted. Other settings include HTTP Version (1.1), Request compression (None), and various compression and connection options.

|                                  |                                                                                                           |
|----------------------------------|-----------------------------------------------------------------------------------------------------------|
| HTTP Version:                    | 1.1                                                                                                       |
| User-Agent Header:               |                                                                                                           |
| Request compression:             | None                                                                                                      |
| Response compression:            | <input checked="" type="checkbox"/> Accept compressed responses from hosts                                |
| Disable Response Decompression:  | <input type="checkbox"/> Disable decompression of compressed responses                                    |
| Close connections after request: | <input type="checkbox"/> Closes the HTTP connection after each SOAP request                               |
| Chunking Threshold:              |                                                                                                           |
| Authenticate Preemptively:       | <input checked="" type="checkbox"/> Adds authentication information to outgoing request                   |
| Expect-Continue:                 | <input type="checkbox"/> Adds Expect-Continue header to outgoing request                                  |
| Pre-encoded Endpoints:           | <input type="checkbox"/> URI contains encoded endpoints, don't try to re-encode                           |
| Normalize Forward Slashes:       | <input type="checkbox"/> Replaces duplicate forward slashes in HTTP request endpoints with a single slash |

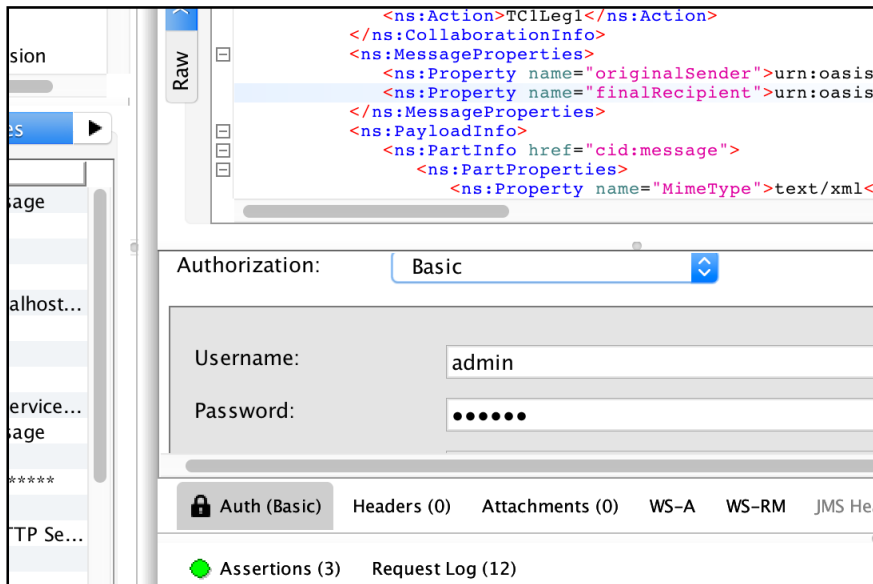
Go to File → Preferences → SSL Settings and add the **KeyStore, KeyStore Password** and check the **requires client authentication**



The screenshot shows the 'SSL Settings' tab in the SoapUI Preferences dialog. The 'KeyStore' field contains the path 'iibus\_c2/conf/domibus/keystores/gateway\_keystore.jks' and is highlighted with a red box. The 'KeyStore Password' field contains a masked password and is also highlighted with a red box. The 'Client Authentication' checkbox is checked and highlighted with a red box, with the text 'requires client authentication' also highlighted. Other settings include 'Enable Mock SSL' (unchecked), 'Mock Port', 'Mock KeyStore', 'Mock Password', 'Mock Key Password', and 'Mock TrustStore'.

|                           |                                                                    |           |
|---------------------------|--------------------------------------------------------------------|-----------|
| KeyStore:                 | iibus_c2/conf/domibus/keystores/gateway_keystore.jks               | Browse... |
| KeyStore Password:        | .....                                                              |           |
| Enable Mock SSL:          | <input type="checkbox"/> enable SSL for Mock Services              |           |
| Mock Port:                |                                                                    |           |
| Mock KeyStore:            |                                                                    | Browse... |
| Mock Password:            |                                                                    |           |
| Mock Key Password:        |                                                                    |           |
| Mock TrustStore:          |                                                                    | Browse... |
| Mock TrustStore Password: |                                                                    |           |
| Client Authentication:    | <input checked="" type="checkbox"/> requires client authentication |           |

To pass Basic Authentication, in the Auth tab, click Add New Authorization and select Basic. Enter user and password (e.g: Username = **admin**; Password = **123456**)



#### 9.1.4.5. PMode update

If you enable HTTPS then your PMode Configuration Manager needs to make sure that all other endpoint PModes are modified accordingly.

With the SSL connector configured as above, the MSH endpoint is now:

**https://your\_domibus\_host:8443/domibus/services/msh**

The PMode needs to be updated accordingly and uploaded via the Admin Console:

Example:

```
<party name="party_id_name1"
endpoint=
"https://
party_id_name1_hostname:8443/domibus/services/msh" allowChunking="false">
```

## 10. DYNAMIC DISCOVERY OF UNKNOWN PARTICIPANTS

### 10.1. Overview

In a dynamic discovery setup, the sender and/or the receiver parties and their capabilities are not configured in advance.

The sending Access Point will dynamically retrieve the necessary information for setting up an interoperability process from the Service Metadata Publisher (SMP). The SMP stores the interoperability metadata which is a set of information on the end entity recipient (its identifier, supported business documents and processes in which it accepts those documents) and AP (metadata which includes technical configuration information on the receiving endpoint, such as the transport protocol and its address) cf.[REF10].

The receiving AP registers its metadata in the SMP and configures the PMode to be able to accept messages from trusted senders that are not previously configured in the PMode. The receiving AP will have to configure one process in its PMode for each SMP entry.

The mapping between the PMode process and the SMP entry is defined in §10.6 – "Message format

When dynamic discovery is used, the "to" field should not be statically configured in the PMode (the "to" field may even be omitted in the message). The lookup is performed by C2 based on the "finalRecipient" message property.

Example of message using the **finalRecipient** for dynamic discovery:

```
<ns:UserMessage>
  <ns:PartyInfo>
    <ns:From>
      <ns:PartyId type="urn:oasis:names:tc:ebcore:partyid-
type:unregistered">senderalias</ns:PartyId>
      <ns:Role>http://docs.oasis-open.org/ebxml-
msg/ebms/v3.0/ns/core/200704/initiator</ns:Role>
    </ns:From>
    <ns:To>
    </ns:To>
  </ns:PartyInfo>
  <ns:CollaborationInfo>
    <ns:Service type="cenbii-procid-
ubl">urn:www.cenbii.eu:profile:bii05:ver2.0</ns:Service>
      <ns:Action>urn:oasis:names:specification:ubl:schema:xsd:CreditNote-
2::CreditNote##urn:www.cenbii.eu:transaction:biitrns014:ver2.0:extended:urn:www.pe
ppol.eu:bis:peppol5a:ver2.0::2.1</ns:Action>
    </ns:CollaborationInfo>
    <ns:MessageProperties>
      <ns:Property name="originalSender">urn:oasis:names:tc:ebcore:partyid-
type:unregistered:C1</ns:Property>
      <ns:Property name="finalRecipient" type="iso6523-actorid-
upis">0007:9340033829test1</ns:Property>
    </ns:MessageProperties>
  </ns:UserMessage>
```

SMP entry".

Please note that the sender does not have to register in the SMP and the receiver merely extracts its identifier from the received message.

The following sections describe how to configure Domibus AP in order to use Dynamic Discovery (PMode configuration, Policy and certificates).



## 10.2. Domibus configuration

To enable the integration with the SMP/SML components, Domibus requires two changes in the configuration file, **domibus-configuration.xml**:

1. Set the property "**domibus.smlzone**", e.g. "[acc.edelivery.tech.ec.europa.eu](http://acc.edelivery.tech.ec.europa.eu)"
2. The bean "**pModeProvider**" must be configured with "**eu.domibus.ebms3.common.dao.DynamicDiscoveryPModeProvider**"

```
<bean id="pModeProvider"  
class="eu.domibus.ebms3.common.dao.DynamicDiscoveryPModeProvider" />
```

## 10.3. PMode configuration

### 10.3.1. Sender PMode

In a dynamic process the receiver of the messages is not known beforehand, consequently the *PMode.Responder* parameter SHOULD NOT be set.

## 10.4. The dynamic process must include a leg which maps the configured entry (action, service and service type – cf. 10.6 – "Message format

When dynamic discovery is used, the "to" field should not be statically configured in the PMode (the "to" field may even be omitted in the message). The lookup is performed by C2 based on the "finalRecipient" message property.

Example of message using the **finalRecipient** for dynamic discovery:

```
<ns:UserMessage>
  <ns:PartyInfo>
    <ns:From>
      <ns:PartyId type="urn:oasis:names:tc:ebcore:partyid-
type:unregistered">senderalias</ns:PartyId>
      <ns:Role>http://docs.oasis-open.org/ebxml-
msg/ebms/v3.0/ns/core/200704/initiator</ns:Role>
    </ns:From>
    <ns:To>
    </ns:To>
  </ns:PartyInfo>
  <ns:CollaborationInfo>
    <ns:Service type="cenbii-procid-
ubl">urn:www.cenbii.eu:profile:bii05:ver2.0</ns:Service>
    <ns:Action>urn:oasis:names:specification:ubl:schema:xsd:CreditNote-
2::CreditNote##urn:www.cenbii.eu:transaction:biitrns014:ver2.0:extended:urn:www.pe
ppol.eu:bis:peppol5a:ver2.0::2.1</ns:Action>
  </ns:CollaborationInfo>
  <ns:MessageProperties>
    <ns:Property name="originalSender">urn:oasis:names:tc:ebcore:partyid-
type:unregistered:C1</ns:Property>
    <ns:Property name="finalRecipient" type="iso6523-actorid-
upis">0007:9340033829test1</ns:Property>
  </ns:MessageProperties>
</ns:UserMessage>
```

SMP entry") of the Receiver in the SMP.

The security policy to be used in the leg is (see §5.1.1 – "Policies" in for more information):

```
security="eDeliveryPolicy_CA"
```

**Sample configuration extract:**

```
...
<services>
  <service name="testService1"
    value="urn:www.cenbii.eu:profile:bii05:ver2.0"
    type="cenbii-procid-ubl"/>
</services>
<actions>
  <action name="tc1Action"
    value="urn:oasis:names:specification:ubl:schema:xsd:CreditNote-
2::CreditNote##urn:www.cenbii..."/>
</actions>
<securities>
  <security name="eDeliveryPolicy"
    policy="eDeliveryPolicy.xml"
    signatureMethod="RSA_SHA256"/>
  <security name="eDeliveryPolicy_CA"
    policy="eDeliveryPolicy_CA.xml"
    signatureMethod="RSA_SHA256"/>
</securities>
<legConfigurations>
  <legConfiguration name="pushTestcase1tc1Action"
    service="testService1"
    action="tc1Action"
    defaultMpc="defaultMpc"
    reliability="AS4Reliability"
    security="eDeliveryPolicy_CA"
    receptionAwareness="receptionAwareness"
    propertySet="ecodexPropertySet"
    payloadProfile="MessageProfile"
    errorHandling="demoErrorHandling"
    compressPayloads="true"/>
</legConfigurations>
<process name="tc1Process"
  agreement="agreementEmpty"
  mep="oneway"
  inding="push"
  initiatorRole="defaultInitiatorRole"
  responderRole="defaultResponderRole">
  <initiatorParties>
    <initiatorParty name="senderalias"/>
  </initiatorParties>
  <!-- no responderParties element -->
  <legs>
    <leg name="pushTestcase1tc1Action"/>
  </legs>
</process>
...
```

### 10.4.1. Receiver PMode

Dynamic configuration of the receiver is similar to the configuration of the sender, except the roles are swapped: the sender of the messages is not known beforehand, consequently the *PMode.Initiator* parameter SHOULD NOT be set.

```
...
<process name="tc1Process"
  agreement="agreementEmpty"
  mep="oneway"
  binding="push"
  initiatorRole="defaultInitiatorRole"
  responderRole="defaultResponderRole">
  <responderParties>
    <responderParty name="receiveralias"/>
  </responderParties>
  <!-- no initiatorParties element -->
  <legs>
    <leg name="pushTestcase1tc1Action"/>
  </legs>
</process>
...
```

## 10.5. Policy and certificates

The receiver must include the certificate of the trusted authority(ies) in his trustore. He will accept only messages that were signed with certificates issued by these trusted authority(ies).

## 10.6. Message format

When dynamic discovery is used, the "to" field should not be statically configured in the PMode (the "to" field may even be omitted in the message). The lookup is performed by C2 based on the "finalRecipient" message property.

Example of message using the **finalRecipient** for dynamic discovery:

```
<ns:UserMessage>
  <ns:PartyInfo>
    <ns:From>
      <ns:PartyId type="urn:oasis:names:tc:ebcore:partyid-
type:unregistered">senderalias</ns:PartyId>
      <ns:Role>http://docs.oasis-open.org/ebxml-
msg/ebms/v3.0/ns/core/200704/initiator</ns:Role>
    </ns:From>
    <ns:To>
    </ns:To>
  </ns:PartyInfo>
  <ns:CollaborationInfo>
    <ns:Service type="cenbii-procid-
ubl">urn:www.cenbii.eu:profile:bii05:ver2.0</ns:Service>
    <ns:Action>urn:oasis:names:specification:ubl:schema:xsd:CreditNote-
2::CreditNote##urn:www.cenbii.eu:transaction:biitrns014:ver2.0:extended:urn:www.pe
ppol.eu:bis:peppol5a:ver2.0::2.1</ns:Action>
  </ns:CollaborationInfo>
  <ns:MessageProperties>
    <ns:Property name="originalSender">urn:oasis:names:tc:ebcore:partyid-
type:unregistered:C1</ns:Property>
    <ns:Property name="finalRecipient" type="iso6523-actorid-
upis">0007:9340033829test1</ns:Property>
  </ns:MessageProperties>
</ns:UserMessage>
```

## 10.7. SMP entry

The following table describes the mapping between the PMode static configuration and the dynamic SMP records structure:

| SMP Endpoint registration record                                                              | PMode attributes                    |
|-----------------------------------------------------------------------------------------------|-------------------------------------|
| ServiceMetadata/ServiceInformation/DocumentIdentifier                                         | PMode[1].BusinessInfo.Service       |
| ServiceInformation/Processlist/Process/ProcessIdentifier/<br>@scheme                          | PMode[1].BusinessInfo.Service/@Type |
| ServiceMetadata/ServiceInformation/DocumentIdentifier                                         | Pmode[1].BusinessInfo.Action        |
| ServiceInformation/Processlist/Process/ServiceEndpointList/Endpoint/EndpointReference/Address | Pmode[1].Protocol.Address           |

**Table 4 - SMP Entry Mapping**

The Service Metadata Record provides also the receiving end's certificate. This certificate can be used to encrypt the message to be sent to the receiver. The certificate can also provide the name of the gateway for this PMode, by using the Certificate's CNAME as the PMode identifier cf.[REF11].

# 11. ANNEX 1 – DOCUMENT PARTS

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## 14. CONTACT INFORMATION

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