

Installation Guide for the openMDM5(R) web application

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1 Introduction

This document serves as an installation guide for the openMDM5 web application. The application is build and the artefacts to ready to deploy.

Please note: this guide describes the deployment only, for installing the application in a company infrastructure, please contact your administrators to support you with firewalls and proxy configurations, grant permissions, etc..

Interesting links:

- openMDM website: <https://www.openmdm.org/>
- Eclipse project page: https://projects.eclipse.org/projects/technology_mdmb1
- The openMDM Working group mailing list:
<https://dev.eclipse.org/mailman/listinfo/open-measured-data-wg>
- JIRA:
<https://openmdm.atlassian.net/secure/BrowseProjects.jspx?selectedCategory=all&selectedProjectType=software>
- JIRA REQU Issues:
<https://openmdm.atlassian.net/secure/RapidBoard.jspa?rapidView=57&projectKey=REQU&view=planning&selectedIssue=REQU-48>

For any questions please contact us via the mailinglist:

<https://dev.eclipse.org/mailman/listinfo/mdmb1-dev>

Report a bug via:

<https://bugs.eclipse.org/bugs/buglist.cgi?quicksearch=mdmb1>

To build the application from the code base, please follow this documentation:

https://wiki.eclipse.org/images/e/e0/GettingStarted_mdmb1.pdf

Note: this document is written in Google Docs, location

https://docs.google.com/document/d/1uF0MhmcefNHbeJOw6abLRyaY_9E-DPKgmAloecdf1CM/edit?usp=sharing

2 Prerequisites

In your infrastructure you need to have installed:

- Java 8 (JDK1.8.0_45 or higher):
<http://www.oracle.com/technetwork/java/javase/downloads/>
- Glassfish 4.1.2 : <https://javaee.github.io/glassfish/download>
please see section [6.2](#)

You need a running ASAM ODS Server with a compliant database configured with an ASAM Application Mode. E.g.

- Peak Solutions: <http://www.peak-solution.de/de/produkte-leistungen/versuchs-messdatenmanagemer/softwareloesungen/peak-ods-server/>
- HiQSoft: <https://www.highqsoft.com/de/avalon-asam-ods-server/>

Or another compliant data source (e.g. PAK adapter).

3 Download Application Artefacts

Download zip file with artefacts from

<http://git.eclipse.org/c/mdmbl/org.eclipse.mdmbl.git/plain/Releases/V0.x/>

File: openMDM_application.zip

4 Installation

Unpack the zip file “openMDM_application.zip”, you will find the following structure:

- org.eclipse.mdm.realm.login.glassfish-1.0.0.jar
- org.eclipse.mdm.nucleus.war
- configuration/
- schema/

4.1 Setup User Preference Service Database

4.1.1 Setup default schema / user (openMDM)

The Preference service stores its data to a relational database. The default name for the schema / user is “openMDM”. For changing the default name please see section [4.1.3 Setup with another schema name](#).

At the moment there are two database products supported and tested:

- Apache Derby DB: Download it from <https://db.apache.org/derby/releases/release-10.13.1.1.cgi>
- Postgres DB: <https://www.postgresql.org/>

Create a schema / user “openMDM” on your database and use the scripts provided in the zip file to create the table:

```
schema/org.eclipse.mdm.preferences/*.sql
```

Other database products supported by EclipseLink may also work, but are neither tested nor supported by the mdmbl project.

4.1.2 Configure the JDBC resource and its dependent JDBC Connection in your Glassfish

The database connection is looked up by JNDI. The default JNDI name for the JDBC resource is set to jdbc/openMDM.

The JDBC resource and its dependent JDBC Connection Pool have be created and configured within the Glassfish web administration console or through asadmin command line tool.

Configuration:

- start your database
- start Glassfish
- go to your Glassfish web administration console:
if your Glassfish installation is on your machine the URL is normally:
<http://localhost:4848/>
- Menu Item: JDBC-> JDBC Connection Pools -> new
 - poolname: <mypool_name>
 - Resource Type: javax.sql.DataSource
 - Database Driver Vendor: Derby or Postgresql
 - -> next
 - set properties: User, DatabaseName to openMDM, set password
 - -> finish
 - check it: open Connection Pool, try the ping button
- Menu item JDBC -> JDBC Resources -> new
 - JNDI NAME: jdbc/openMDM
 - Pool Name: <mypool_name>
- stop Glassfish

4.1.3 Setup with another schema name

“openMDM” is the default schema name, if you have to change it you have to change it in the configuration and rebuild the code. Please look at the following documentation:

https://wiki.eclipse.org/images/e/e0/GettingStarted_mdmbl.pdf

Note: this will be changed in one of the following releases

4.2 Install ElasticSearch

ElasticSearch can be downloaded at <https://www.elastic.co/products/elasticsearch>.
use a version 2.x., e.g.

<https://www.elastic.co/de/downloads/past-releases/elasticsearch-2-4-2>

Upgrade to version 5.x is planned, see:

https://bugs.eclipse.org/bugs/show_bug.cgi?id=520297

For testing purpose, it can be simply started by executing `bin/run.bat`

For Peak ODS Server add the following line to

```
$odsserver_root/cfg/server.properties:  
JMS_FORWARDER.PORT=8089
```

For disabling the ElasticSearch feature, see section [4.4 Configure property files](#)

4.3 Deploy web application to glassfish

Deploy the application (`org.eclipse.mdm.nucleus.war`, included in the zip file) on your running Glassfish server

=> do it e.g. via the admin console at <http://localhost:4848/>

4.4 Configure property files

- start your Glassfish server
- copy the content of the extracted `/configuration` folder to `$GLASSFISH_ROOT/domains/domain1/config`
- edit the `org.eclipse.mdm.connector/service.xml` file to configure the data sources, look into your ODS Server log file to determine the corba URL.
e.g. for the Peak ODS Server with embedded Derby Database use:

```
<service  
entityManagerFactoryClass="org.eclipse.mdm.api.odsadapter.ODSEntityManagerFactory">  
  <param name="nameservice">corbaloc:iiop:127.0.0.1:2809/NameService</param>  
  <param name="servicename">MDMNVH.ASAM-ODS</param>  
</service>
```
- There is a config parameter to enable / diable the elsticsearch in `$GLASSFISH_ROOT/domains/domain1/config/org.eclipse.mdm.property`
Parameter: `freetext.active=[true|false]`
- stop your Glassfish server

4.5 Install and configure Glassfish Login Realm

- copy the jar file `org.eclipse.mdm.realm.login.glassfish-1.0.0.jar`, included in the `openMDM_application.zip`, to
`$GLASSFISH4_ROOT/glassfish/domains/domain1/lib`
- open the Glassfish login configuration file
`$GLASSFISH4_ROOT/glassfish/domains/domain1/config/login.conf`
- add the MDM realm module entry to this config file

```
MDMLoginRealm {
    org.eclipse.mdm.realm.login.glassfish.LoginRealmModule required;
};
```
- start your Glassfish server and open administration console (e.g. `localhost:4848`)
- open site: `Configurations/server-config/Security/Realms`
- create new realm ("New" Button):
 - Name: `MDMLoginRealm`
 - Class Name: `org.eclipse.mdm.realm.login.glassfish.LoginRealm`
(choose a specific class name with radio button)
 - add Property:
 - Name: `jaas-context`
 - Value: `MDMLoginRealm`
- activate single sign on at `Configurations/server-config/Virtual Servers/server`
(SSO = Enabled)
- save and restart the Glassfish application server

5 Start application

- start ORB (`$JAVA_HOME/bin/orbd -ORBInitialPort 2809`) (skip this if your ODS Server is starting this implicitly, e.g. you are using Peak ODS Server with no `NAMESERVICE` specified in the `server.properties` or another)
- start the database for the ODS Server (if necessary)
- start the ODS server
- start Elasticsearch
- start database for the User Preference Service
- start Glassfish

Change to your browser URL is e.g. `http://localhost:8080/org.eclipse.mdm.nucleus`.
You should see the openMDM `LoginPage`. Look for `user/ password` in the database in the `userXX` table, e.g. `sa/sa` and `login`.

6 Problems and Solutions

6.1 Glassfish - Inconsistent Module State

- `org.glassfish.deployment.common.DeploymentException: Error in linking security policy for org.eclipse.mdm.nucleus -- Inconsistent Module State`
 - Deployment went wrong
 - delete
`$glassfish_root/glassfish/domains/domain1/applications/org.eclipse.mdm.nucleus`
 - delete `$glassfish_root/glassfish/domains/domain1/generated`
 - restart Glassfish

6.2 Glassfish - `java.lang.ClassNotFoundException`

If you run into "java.lang.ClassNotFoundException: javax.xml.parsers.ParserConfigurationException not found by org.eclipse.persistence.moxy" this is a bug described in https://bugs.eclipse.org/bugs/show_bug.cgi?id=463169 and <https://java.net/jira/browse/GLASSFISH-21440>.

This solution is to replace

`GLASSFISH_HOME/glassfish/modules/org.eclipse.persistence.moxy.jar` with this:

<http://central.maven.org/maven2/org/eclipse/persistence/org.eclipse.persistence.moxy/2.6.1/org.eclipse.persistence.moxy-2.6.1.jar>

7 Troubleshooting

Look into the Logfiles:

- Glassfish:
`$glassfish_root/domains/domain1/logs/server.log`
- Derby DB for User Preference Service:
`$glassfish_root/databases/derby.log`
- Postgres DB Logfiles
- Peak ODS Server:
`$peakodsserver_root/logs/`