



FUSION REGISTRY

FUSION REGISTRY VERSION 9

Oracle 12c Deployment Notes

This document provides guidance on installing and configuring Fusion Registry 9 with Oracle 12c

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1 Overview

Fusion Registry 9.3 supports Oracle 12c services for its main operational database, in addition to MySQL and Microsoft SQL Server.

The operational database is used for:

- Storage of the SDMX Structural Metadata
- Persistence of observation data that has been loaded into the 'Fusion Data Store' in-memory data
- Software configuration settings
- Audit information

2 Oracle JDBC Driver

Driver Requirements

Fusion Registry 9.3 supports the 'ojdbc8' Thin JDBC Driver with Java JRE versions 1.8 or 1.10.

Note that JRE 1.9 is not supported.

The driver consists of a single 'jar' file: 'ojdbc8.jar'.

The 'jar' file is not included as part of the Fusion Registry distribution so must be obtained and installed separately prior to starting the application.

'ojdbc8.jar' can be downloaded from Oracle at:

<https://www.oracle.com/technetwork/database/features/jdbc/jdbc-ucp-122-3110062.html>

Driver Installation

The 'ojdbc8.jar' must be placed in the Java CLASSPATH.

The recommended option is to add the filesystem location of the 'ojdbc8.jar' to the CLASSPATH of the application server. If using Apache Tomcat, this can be done by setting the CLASSPATH environment in the Tomcat ~/bin/setenv.sh script.

For example:

```
CLASSPATH=/home/oracle/jdbc/ojdbc8.jar
```

..where /home/oracle/jdbc is the directory containing the 'ojdbc8.jar' file.

An alternative option is to copy 'ojdbc8.jar' into Fusion Registry's deployment FusionRegistry/WEB-INF/lib directory. If using Tomcat, this can be found in the webapps folder. For instance:

```
/home/tomcat/webapps/FusionRegistry/WEB-INF/lib
```

This approach is not recommended because the 'ojdbc8.jar' file will be deleted every time a new version of the Fusion Registry web application is deployed.

3 Configuring the Oracle Connection

When performing a fresh installation, Fusion Registry 9 requires information about what database service to use for its operational database, and how to connect to it.

Figure 1 shows an example.

The Fusion Registry can connect to multiple data stores for data storage and retrieval. This step, to define the database connection, is required.

Database Type	Oracle
Server	localhost
Port	1521
Schema	orcl
UserId	fusion_registry
Password	Please enter the password

Apply Settings

Figure 1 Fusion Registry Installation - Database Configuration

Database Type	Select 'Oracle'
Server	Supply a resolvable hostname or IP address for the Oracle 12c database server
Port	The IP port of the Oracle 12c database service – 1521 is the default
Schema	The Oracle 'Service Name'
UserId	The id of a pre-existing Oracle user with sufficient privileges to create and delete tables, and insert, update and delete data
Password	The password for the names Oracle user

4 Oracle Connection String

Fusion Registry uses the database configuration information supplied at install to construct a JDBC connection string which is stored in a configuration properties file.

If problems are experienced attempting to establish a connection to the Oracle database service, administrators are advised, as part of the fault-finding process, to examine the connection string and verify that it is as expected.

Location of the Properties File Containing the Connection String

From release 9.3, the Fusion Registry properties file is, by default, placed under a `MetadataTechnology` directory in the home directory of the user that owns the web application server.

For example, in an Apache Tomcat installation, the path to the properties file could be:

```
/home/tomcat/MetadataTechnology/FusionRegistry/fusion_registry.properties
```

..where `/home/tomcat` is the home directory of the 'tomcat' user which owns the application server.

What to Look for in the Properties File

The properties relating to the Oracle database should look similar to the following example:

```
database.password=8VpAqQJWqZl\  
database.url=jdbc\:oracle\:thin\:@localhost\:1521/orcl  
database.username=fusion_registry
```

`database.url` The `database.url` property holds the Oracle connection string and should be structured to the Oracle specification. Colons and other characters with special meanings in the URL syntax are escaped using a backslash.

`database.password` Note that the database user password is encrypted using a one-way hash so it cannot be changed by editing the properties file.