



# Installation Instructions for Text Analytics

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## European Chemicals Agency

Mailing address: P.O. Box 400, FI-00121 Helsinki, Finland

Visiting address: Telakkakatu 6, FI-00150 Helsinki, Finland

## Changes to this document

Date	Modification
19/08/2020	TA version 3.4.0.
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18/12/2019	First official version for industry. TA version 3.2.1.

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## 1. Introduction

This document includes instructions on the steps that one needs to follow in order to install the Text analytics (TA) distributed version. The document covers both the configuration and installation of TA and the IUCLID Server.

From the integration point of view it's worth mentioning that the communication between IUCLID 6 and TA applications is performed at Web Services (HTTP) and Database (JDBC) levels. For the former a specific IUCLID Web Services URL is provided to the TA application. For the latter it is necessary to create database views at the IUCLID 6 schema that the TA database user will query to obtain the necessary data. The details for this configuration are covered below.

## 2. Prerequisites

The installation of a IUCLID Server is a prerequisite for the installation of TA. The document also provides the minimum steps required to install IUCLID 6 Server. The compatibility matrix for TA and IUCLID is given below.

**Table 1: Compatibility between TA and IUCLID**

TA version	IUCLID 6 compatible version	Oracle database version
2.2.0	6.2	12c
2.3.1	6.3	12c
3.2.1	6.4.2	12c
3.3.0	6.4.2	12c
3.4.0	6.4.14	12c

Moreover, the TA application has a dependency on Oracle for the database layer. The dependency applies to both the TA data, i.e. the database in which the TA data are stored, but also to the IUCLID data, i.e. the database that contains the actual Dossier data that are indexed and searched by the TA application.

### 2.1. Workspace setup

Before proceeding with any installation steps in the local workspace the following need to be also in place:

1. Install the latest version of Java JDK 8 64-bit. Preferably install the JDK in a path without spaces, e.g. C:\jdk.
2. Add the `JAVA_HOME` environment variable to point to the JDK installation directory (i.e. the directory that includes the `\bin` directory).
3. Append the `%JAVA_HOME%\bin` to the `PATH` environment variable.

## 3. Setup & Installation

### 3.1. IUCLID database Update & Server Application Installation

The full details on the IUCLID Server version installation are available on the IUCLID 6 website. To ease the process of installing TA, the particular points that requires update are highlighted.

#### 3.1.1. IUCLID DB

If the installation is performed from scratch (there is not already a IUCLID instance) the first thing that needs to be done is to create a database User for the IUCLID 6 application. This can be done by executing the following SQL script:

```
create user iuclid6user identified by password;
grant connect to iuclid6user;
grant resource to iuclid6user;
grant create view to iuclid6user;
```

If the TA application is to be connected to an existing IUCLID 6 database then the following permission needs to be granted to the IUCLID 6 database user. This permission is not required for IUCLID operation.

```
grant create view to iuclid6user;
```

#### 3.1.2. IUCLID Server Configuration

The following configuration updates need to be applied at the `domain.xml` file located at the directory of the IUCLID 6 installation folder.

Resource pool: This property needs to be configured to include the same name as the DB Connection Pool defined below. See the parameter named *IUCLID6\_OraclePool*.

```
<jdbc-resource pool-name="IUCLID6_OraclePool"
jndi-name="jdbc/iuclid6"></jdbc-resource>
```

DB Connection pool: the DB Connection string along with the server name, and IUCLID database username and password need to be configured.

```
<jdbc-connection-pool max-pool-size="96" driver-classname=""
datasource-classname="oracle.jdbc.xa.client.OracleXADataSource"
name="IUCLID6_OraclePool" description=""
res-type="javax.sql.XADataSource">
  <property name="URL"
value="jdbc:oracle:thin:@127.0.0.1:1521:XE"></property>
  <property name="networkProtocol" value="tcp"></property>
  <property name="serverName" value="127.0.0.1"></property>
  <property name="user" value="iuclid6user"></property>
  <property name="password" value="iuclid6user"></property>
</jdbc-connection-pool>
```

Listening port: The property named *http-listener-1 port* defines the port that accepts HTTP connections. If required, it can be reconfigured to differ from the default value of 8080. In the example below it is 18080.

```
<network-listeners>
  <network-listener protocol="http-listener-1" port="18080" name="http-
listener-1"
thread-pool="http-thread-pool" transport="tcp"></network-listener>
  <network-listener protocol="http-listener-2" port="8181" name="http-
listener-2"
thread-pool="http-thread-pool" transport="tcp"></network-listener>
  <network-listener protocol="admin-listener" port="4848" name="admin-
listener"
thread-pool="admin-thread-pool" transport="tcp"></network-listener>
</network-listeners>
```

## 3.2. TA Application Installation

### 3.2.1. TA DB Setup

Text Analytics database will be created upon application's startup. But first of all it is necessary to create the TA database user before starting the application. In order to create a user run the following commands as Database 'system' user, where USERNAME is the username used for the TA application's DB user.

```
create user TA_USER identified by TA_USER_PASSWORD;
grant connect to TA_USER;
grant resource to TA_USER;
grant CREATE session TO TA_USER identified BY TA_USER_PASSWORD;
grant CREATE TABLE TO TA_USER;
grant CREATE VIEW TO TA_USER;
```

```
grant CREATE sequence TO TA_USER;
ALTER USER TA_USER quota unlimited ON system;
```

### 3.2.2. TA application setup

Having satisfied all the prerequisites for both IUCLID database, IUCLID Application and TA database, for the setup of the TA application the following needs to be applied:

1. Extract the zip file provided (e.g. "Text-Analytics.zip") in a directory of preference.
2. Open `application-properties.txt` and set all values according to the environment configuration performed in the previous steps.
3. Run `setup.bat`. This step will setup the necessary configurations according to `application-properties.txt`. In brief the following information needs to be configured:
  - a. Whether IUCLID 6 is configured with the Instance-based Security (IBS) featured enabled or not.
  - b. The IUCLID HTTP WS URL and the respective IUCLID Client URL
  - c. The IUCLID-TA Plugin deployment directory (See below)
  - d. The TA And IUCLID DB configuration properties
  - e. In Wildfly, the folder `access.log` and its relative path. If no changes have been done to the file `standalone.xml` in Wildfly, this should be left as is.
4. Start IUCLID6 Server if not done already.
5. After the completion of the above, run `startup-application.bat`. This starts the servers: Elastic search, Logstash, Filebeat and Wildfly.
6. After completion of the above run `deploy-application.bat` in order to deploy the TA application to the Wildfly Application Server. This step performs the following:
  - a. Creates the TA database (if not already created)
  - b. Creates the DB Views at the IUCLID 6 database (if not yet available)
  - c. Copies the TA application deployable war file to the proper directory of the TA Application server.

### 3.2.3. Setup of IUCLID6-TA plugin

The communication between the IUCLID Server and TA applications is performed by use of specific Web Services. The availability of these Web Services depends on the deployment of a specific plugin at the IUCLID Server, so called the IUCLID6-TA plugin. If the IUCLID Server and the TA applications are installed on the same host, then the deployment of the plugin can be automated with the use of the `setup.bat` script. In any case the plugin's deployment can be performed manually, which is the case when the two applications are deployed at different hosts.

If IUCLID is running on the same machine then open `application-properties.txt` and set the `glassfishDir` variable in order to copy the necessary plugin in GlassFish directory. The GlassFish directory is something like:

```
$IUCLID6_HOME\glassfish\domains\domain1\autodeploy\bundles
```

If IUCLID is running on another machine then leave the GlassFish directory variable as it is (null) and copy the jar file from plugins folder to the appropriate GlassFish directory manually. When you run the setup.bat a warning message will be shown informing you that the GlassFish path is not specified. You should ignore it only for this case.

## 4. Change default Wildfly connection port number

Changing the default Wildfly listen port requires editing the `standalone.xml` configuration file that is located at:

```
<SETUP_HOME>\apps\wildfly-13.0.0.Final\standalone\configuration
```

Look for:

```
<socket-binding name="http" port="{jboss.http.port:8080}"/>
```

Change the port number to one that is not used on that host, e.g. 28080.

## 5. How to remotely connect to WildFly application server

By default, Wildfly is configured to listen on the loopback address of 127.0.0.1. If you try to access your application server remotely as you would at the local machine using the server IP address, it will not work. For this you need to start Wildfly and bind "public" interface to your server IP address. This can be done by changing the configuration in the file `standalone.xml`. This file is located in the directory:

```
<SETUP_HOME>\apps\wildfly-13.0.0.Final\standalone\configuration
```

To do the configuration, replace 127.0.0.1 with the server IP address for the "public" interface, save the changes to the file, and then start the Wildfly server.

Look for:

```
<interface name="public">
  <inet-address value="{jboss.bind.address:127.0.0.1}"/>
</interface>
```

Replace the address 127.0.0.1 by, for example, 192.168.1.1

If you want to allow remote access to the server from all computers, replace the IP address in `inet-address` to 0.0.0.0

## 6. How to restart the Wildfly application server or all TA tools

If you need to restart the Wildfly application server you can press CTRL+C in the window where `standalone.bat` is running (Wildfly) and then to start it again by typing, in the same window, `standalone.bat`.

You can also stop it by closing the window where `standalone.bat` is running. Note though that in this case you should close all CMD windows that popped up when running the `startup-application.bat`. And in order to restart it you just need to run again the `startup-application.bat`.

## 7. Reset installation

In order to reset the installation in case you want to change a value in application properties then you have to follow the steps below:

1. In directory `conf.d` there is the file `ta_properties-Original.xml`. Copy its content to `ta_properties.xml` and save.
2. In directory `apps\wildfly-13.0.0.Final\standalone\configuration` copy `standalone-original.xml` to `standalone.xml`
3. In directory `apps\wildfly-13.0.0.Final\bin` copy `standalone.conf-original.bat` to `standalone.conf.bat` (only if you move the whole application to another directory).
4. Repeat steps 5 and 6 from installation.

## 8. Redeploy of the TA application - update application war file but not environment configuration

In order to update the application place the new war file to wars folder and run `deploy-application.bat` while IUCLID and TA (both Wildfly and Elastic Search) servers are up and running.

## 9. TA Application access

The TA Industry application URL pattern is `http://server:port/ta`. If TA is accessed locally and the default Application Server port is used then the URL would be:

`http://localhost:28080/ta`

Note: TA server listens for connections at TCP port 28080. This has been explicitly configured in the distributed (Wildfly) server included in the zip file, as in the case of the TA server being co-located with IUCLID one under the same host, there is a conflict with the default IUCLID listening port.

## 10. Additional System configuration

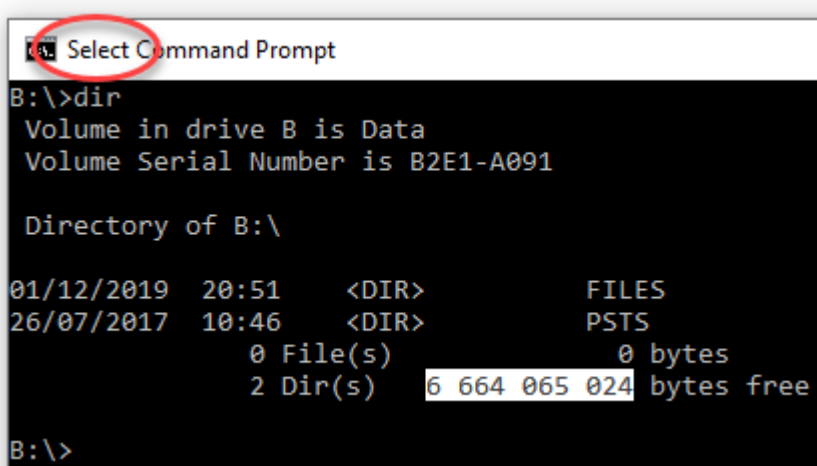
1. Ensure network access from Text Analytics system to IUCLID system (host:port) and to the IUCLID database server (host:port).
2. Ensure network access to Text Analytics system at ports 8080 (application server) and 9090 (management console).

## 11. Warning about unresponsive behaviour

If *Text Analytics* becomes unresponsive, check whether any of the CMD windows are in *Select* mode. This mode prevents output from being written to the console, and therefore under certain



circumstances freezes Text Analytics. To check the mode of the CMD window, look in the top left of the window for the word *Select*, as shown below.



*Select* mode is entered when any text in the window has been selected. To exit *Select* mode, click in the CMD window, and then press the *Enter* key. To prevent *Select* mode from being entered, untick the box for *QuickEdit* in the properties of the CMD window. These are accessed by right-clicking in the title bar of the window, as shown below.

