Migration Instructions for IUCLID 6

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European Chemicals Agency

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

Visiting address: Annankatu 18, Helsinki, Finland

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Changes to this document

Date	Modification
29/04/2016	First version
27/05/2016	Recommended that starting the migrator with a graphical interface is done using the script `i5db-ui-migrator.cmd`.
21/06/2016	More detail is given on how to verify the results of a migration from IUCLID 5.6 to IUCLID 6 Server. Java 7 is no longer supported by the ECHA Helpdesk for use with the migrator.

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1. Migration of data from IUCLID 5 to IUCLID 6

Migration of the data from any supported IUCLID 5.6 database to any supported IUCLID 6 database can be done by running a java software application, known as the migrator, that is available on the IUCLID 6 website in the migration tool package named:

```
iuclid6-migrator-1.0.2.zip
```

The migrator can be run either with or without a graphical interface, as described below. The graphical interface provides a wizard that guides the user through the migration process. The method without a graphical interface is designed for environments where it is preferable, or essential, to use only the command line.

The migrator also works for the IUCLID 6 Desktop. The migration functions are built-in to the installer of IUCLID 6 Desktop, therefore the migrator is not supplied as a separate application in the download package. IUCLID 5 databases that were used either in a desktop (standalone), or server (distributed) configuration, can be migrated for use in either the desktop, or server configuration of IUCLID 6.

The migrator requires Java 8 (JRE). OpenJRE/JDK works.

1.1.   Prerequisites for running the migrator tool

Before running the migration application, take the following points in to consideration.

1.1.1.   General checklist

1. The machine on which the migration application is run must have an installation of the Java SE Runtime Environment version 8. It is recommended to use the most recent version.
2. The migration application is available to download from the IUCLID 6 website.
3. You must know the location and authentication details of the IUCLID 5 database from which data will be migrated. This information is contained within the following properties files:
    Standalone: `<iuclid5 installation directory>\conf\workstation.properties`
    Distributed: `…\webapps\i5server\WEB-INF\classes\server.properties`
4. The migration application must have access to the IUCLID 5 database. Where PostgreSQL is used, in some cases it may be necessary to allow access by editing the settings file `pg_hba.conf` that is located in the data directory of the database cluster.
5. You must know the path to and authentication details of the IUCLID 6 installation to which data will be migrated. The default values for the authentication are both *IUCLID6*. The values are set in the following properties file:
    `…\glassfish\domains\domain1\config\domain.xml`
6. The IUCLID 6 application must contain a module for each legislation for which data are held in the IUCLID 5 database. For example, a IUCLID 5 Dossier of the template *BPR Active Substance* requires that IUCLID 6 contains the module for BPR. IUCLID 6 Server comes with all the currently required legislation modules built-in, so if none has been removed, there is no need to do anything about this before running the migration application.
7. During the migration, both the IUCLID 5 and IUCLID 6 applications must be switched off.
8. Both the databases must be accessible by the migration application.

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9. For migration from a IUCLID 5 workstation version, the service Postgresql Server must be running in Windows. If IUCLID 5 has been run successfully, and nothing has been changed since; the service will still be running.

10. Before running the migration application, the database of IUCLID 6 must have been initialised. The database is initialised when IUCLID 6 is first started, so as long as it has been run at least once, it will be in the correct state.

11. The migration tool does not touch data that is already in a IUCLID 6 database. The IUCLID 6 database can either be freshly initialised or, already contain data such as Substances and Users. If the data to be migrated is confidential, consider the access rights of the User that are already in the destination database of IUCLID 6. Such users are not over-written during the migration, and might have access to the migrated data.

    For example, if the database is newly initialised, it contains a user named *SuperUser* with the widely known and weak password of *root*. Therefore, before migrating confidential data, it is safest to log in to IUCLID 6, and then to change the password of *SuperUser* to something stronger than the default value of *root*.

12. There can be cases in which data to be migrated is not associated with a Legal entity in IUCLID 5, but in IUCLID 6, an association is required. The migration application fixes such cases by automatically associating a Legal entity from within the IUCLID 6 database. If you would like the association to me made to a particular Legal entity, it must already be in the IUCLID 6 database before the migration application is run. This version of IUCLID 6 comes with a built-in legal entity named *Predefined legal entity*. Therefore, if you have not added any Legal entities to the IUCLID 6 database, and you are not sure what to do about this, the migration can still be performed, using the legal entity named *Predefined legal entity*.

1.1.2.   Missing references to attachments

There have been cases in the past in which the following types of problem have been observed with attachments in IUCLID 5:

1. Corrupted reference to an attachment document;
2. Attachment document is missing or is either corrupted or empty.

An example of one of these problems is that an attachment document can be opened via the *Information panel* under the tab *attachments*, but not by clicking on the link in the endpoint study record/endpoint summary. This problem can be fixed by saving the document, and then re-attaching it.

If you think that the IUCLID 5 database may contain such errors, it is recommended that it be checked before migrating it to IUCLID 6. This can be done automatically using a simple software application that is provided by ECHA. This application can also be set to fix errors automatically, in some cases simply by replacing the corrupted file with a default one. The application is available as an executable jar file named `attachmentReferencesCorrector.jar` included in the Migration Tool package that can be downloaded from the IUCLID 6 website. The package contains instructions on how to configure and run the application.

Before running the *attachmentReferencesCorrector*, make a backup of all the IUCLID 5 data at both the database and IUCLID level. Instructions are provided in the following FAQ entry on the IUCLID 5 website.

http://iuclid.eu/index.php?fuseaction=home.faq&type=public#216

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The application *attachmentReferencesCorrector* can work in either one of two modes, FIX_MODE or SCAN_MODE. In mode SCAN_MODE, it reads the data, and then creates the following reports:

a) auto_corrected_{raw,dossier}_data_<date>_<time>.txt

b) user_action_required_{raw,dossier}_data_<date>_<time>.txt

In mode FIX_MODE, it carries out the following changes to the IUCLID 5 data:

a) Attaches the correct files in the reported cases of type:
   auto_corrected_{raw,dossier}_data_<date>_<time>.txt

b) Fixes corrupted data by attaching dummy files to the reported cases of type:
   issues from user_action_required_{raw,dossier}_data_<date>_<time>.txt

It is recommend to run *attachmentReferencesCorrector* in mode SCAN_MODE first, and then to try to fix all the reported cases manually. However if a manual fix is not possible, for example because the data is read-only, such as for a Dossier, run *attachmentReferencesCorrector* in mode FIX_MODE.

1.2. Logging of the migration process

Log files are written during migration, as described in the following table.

Table 1: Logging of the migration

Name of log file	Content of log file
`migration-performance.log`	The periods required to do individual actions in the migration.
`migration-report.log`	A detailed report, in a more human readable form, on what documents were migrated. It contains the same output that the graphical wizard presents at the end of migration.
`migrator.log`	A list of actions and documents migrated.
`migrator-progress.log`	A sequential list of actions with the percentage of the whole process indicated per action.
`datasets-failed-iuclid61-upgrade.log`	An indicator of failures in the migration.

1.3. Performing the migration with the graphical wizard

After checking the prerequisites stated above in section 1.1, the migration application can be started. To use the graphical wizard, run the following script, for example by double-clicking on it.

`i5db-ui-migrator.cmd`

In Windows, do not close the command window that opens on running the script, until the migration has finished. It is advisable to start the migrator using this script rather than by running the jar file directly because the script allocates sufficient memory to the migrator.

1.3.1. Set the source and destination of the migration

On the first page of the application wizard, the locations and authentication details of the databases are entered, as shown in the example below.

Figure 1: The first page of the migration application wizard with example values entered
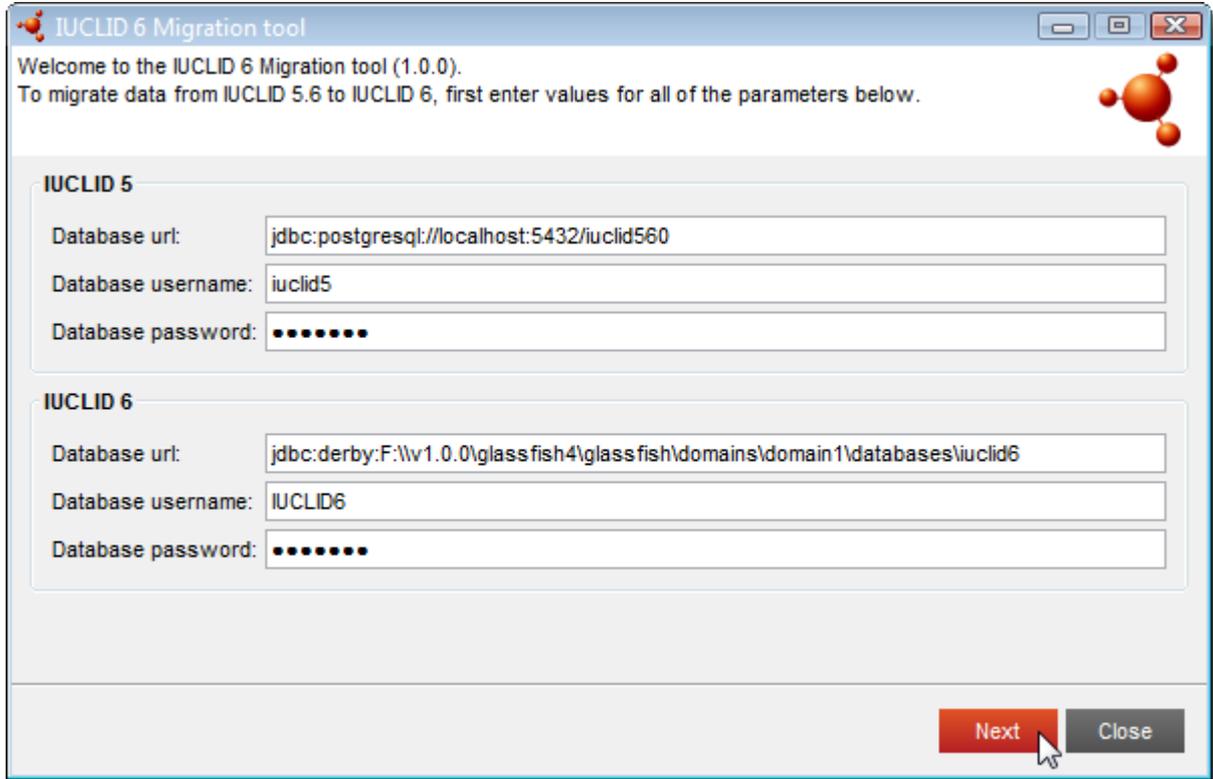
1.3.1.1. Database of IUCLID 5

For IUCLID 5, the required values are in the following properties files:

Desktop (standalone):`<iuclid5 installation directory>\conf\workstation.properties`

Server (distributed): `\webapps\i5server\WEB-INF\classes\server.properties`

The parameters in the properties files correspond to the fields in the migration application as follows.

Table 2: The location of the database for IUCLID 5

Field in migration application	Field in properties file
Database url	hibernate.connection.url
Database username	hibernate.connection.username
Database password	hibernate.connection.password

In the example shown in the screen shot above, the values are the defaults for IUCLID 5.6.0 with a PostgreSQL database, as shown below:

Database url = *jdbc:postgresql://localhost:5432/iuclid560*

Database username = *iuclid5*

Database password = *iuclid5*

1.3.1.2.   Database of IUCLID 6

For IUCLID 6, the form of the database URL depends on whether or not the database is running on a network server, as shown in the table below. If the database is on a server, the URL is derived from the URL of the server, and the name of the database. If the database is not on a server, as is the default for *IUCLID 6 Server* the URL of the database is derived from the path to the installation folder, again as shown in the table below. The authentication details are taken from the following properties file:

`<glassfish_installation>\glassfish\domains\domain1\config\domain.xml`

The parameters in the properties file correspond to the fields in the migration application as follows.

Table 3:   The location of the database for IUCLID 6

Field in migration application	Source and form of value
Database url (Derby embedded) IUCLID 6 Server	jdbc:derby:<glassfish_installation>\glassfish\domains\domain1\databases\iuclid6
Database url (Derby Network Server)	jdbc:derby:<url_database_server>/<database_name>
Database username	<User> in file `domain.xml` {default is *IUCLID6*}
Database password	<Password> in file `domain.xml` {default is *IUCLID6*}

Example for IUCLID 6 Server

In the example shown in the screen shot above, the value of `<glassfish_installation>` is:

`F:\\v1.0.0\glassfish4`

Therefore, the value of the database URL for migration is:

`jdbc:derby:F:\\v1.0.0\glassfish4\glassfish\domains\domain1\databases\iuclid6`

Tip:

When using the embedded derby database with IUCLID 6 Server, if you see the error message, "*Cannot connect to the IUCLID 6 database*", but you know the connection details are correct, check whether there is something else already connected to the database, for example, because either IUCLID 6 or another instance of the migrator are running. The command line window that opened on starting the IUCLID 6 Server must be closed before the migrator can connect.

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1.3.2. Migration parameters

On the second page of the wizard, under *Migration parameters*, a Legal entity is selected that is assigned to any data that lacks a Legal entity where one is mandatory in IUCLID 6. See prerequisite (12) above for more information. The values in the drop-down menu are all the Legal entities in the installation of IUCLID 6. Unless you know that a different value is required, leave the value at the default, as shown below:

Figure 2: Select the Legal entity to use where one is missing in IUCLID 5, but required in IUCLID 6
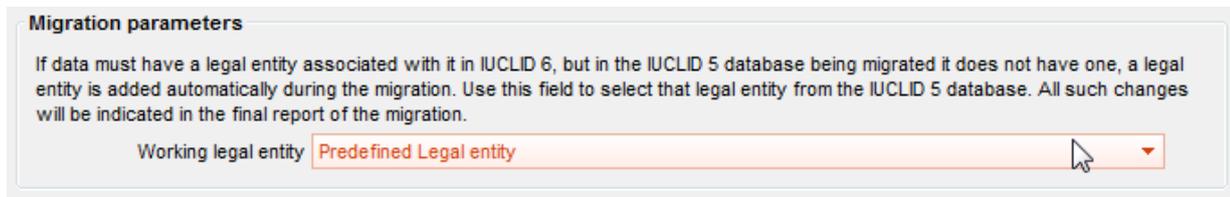
Migration parameters

If data must have a legal entity associated with it in IUCLID 6, but in the IUCLID 5 database being migrated it does not have one, a legal entity is added automatically during the migration. Use this field to select that legal entity from the IUCLID 5 database. All such changes will be indicated in the final report of the migration.

Working legal entity   Predefined Legal entity

1.3.3. Instance Based Security (IBS)

This block of fields is shown only when Instance Based Security (IBS) is active. By default, it is inactive. To turn it on, see the instructions in the installation manual for IUCLID 6 Server. For more information about Groups and access rights, see the IUCLID 6 Help System, under the section on IBS.

This section is used to select the Group and access rights for the migrated documents.

The field, *Group access*, contains a drop-down menu from which can be selected any one of the Groups in the installation of IUCLID 6, with one of the following sets of access permissions for that Group:
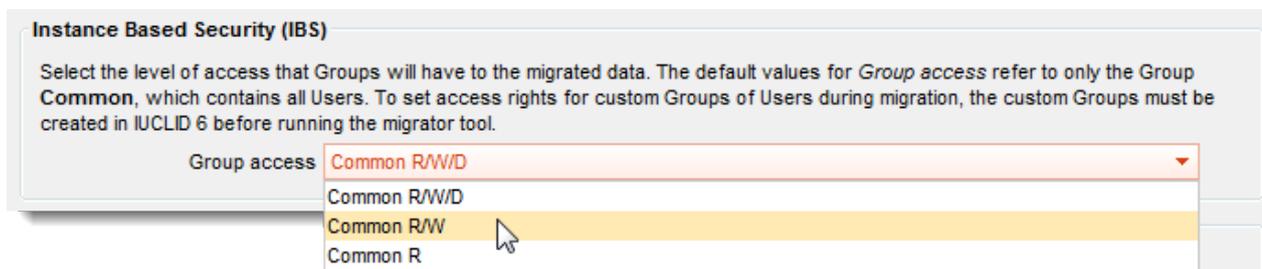
Read, Write and Delete (R/W/D)
Read and Write (R/W)
Read only (R)

If no Groups have been created in IUCLID 6, the default value of *Common* is shown, as below:

Figure 3: Setting the access to documents in the destination IUCLID 6

Instance Based Security (IBS)

Select the level of access that Groups will have to the migrated data. The default values for *Group access* refer to only the Group **Common**, which contains all Users. To set access rights for custom Groups of Users during migration, the custom Groups must be created in IUCLID 6 before running the migrator tool.

Group access   Common R/W/D

Common R/W/D
Common R/W
Common R

1.3.4. Users options

The field *Users options*, allows rules to be set for the migration of Users from IUCLID 5 to IUCLID 6. Users that are *suspended* can be *unsuspended* in IUCLID 6. In the example shown below, all the Users are migrated from IUCLID 5, set to a state of *suspended*, and given a new

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password, which is entered into the field *Default password*. All the Users then have the same password.

Figure 4: An example of the migration of Users
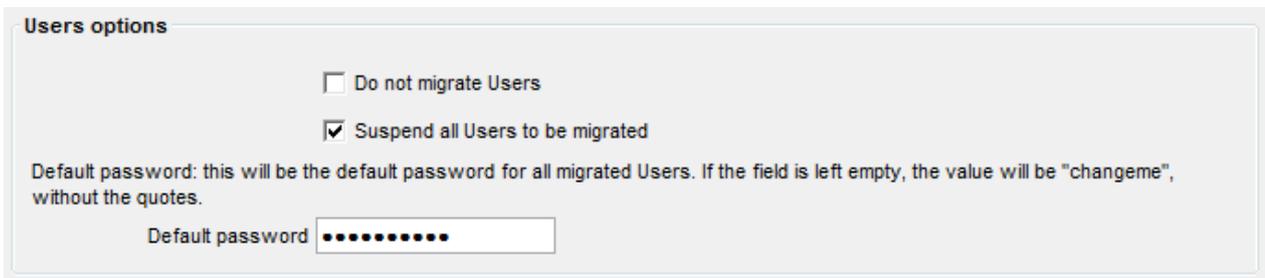
1.3.5. Advanced

The field *Advanced* is used to control the number of threads used in the migration. This can affect the speed of the process. The default is the number of processors.

**Figure 5: Set the number of threads used by the computer used to carry out the migration**

1.3.6. The migration in progress

On page two of the wizard, if all the required values have been entered, the migration of data can be started by clicking on the button *Next*.

Whilst the migration is in progress, a screen is shown like the one below that indicates what data is being processed. The period required to perform the migration depends on the amount of data, and the system resources available. During the migration process, do not close the migration tool, or interrupt it in any way.
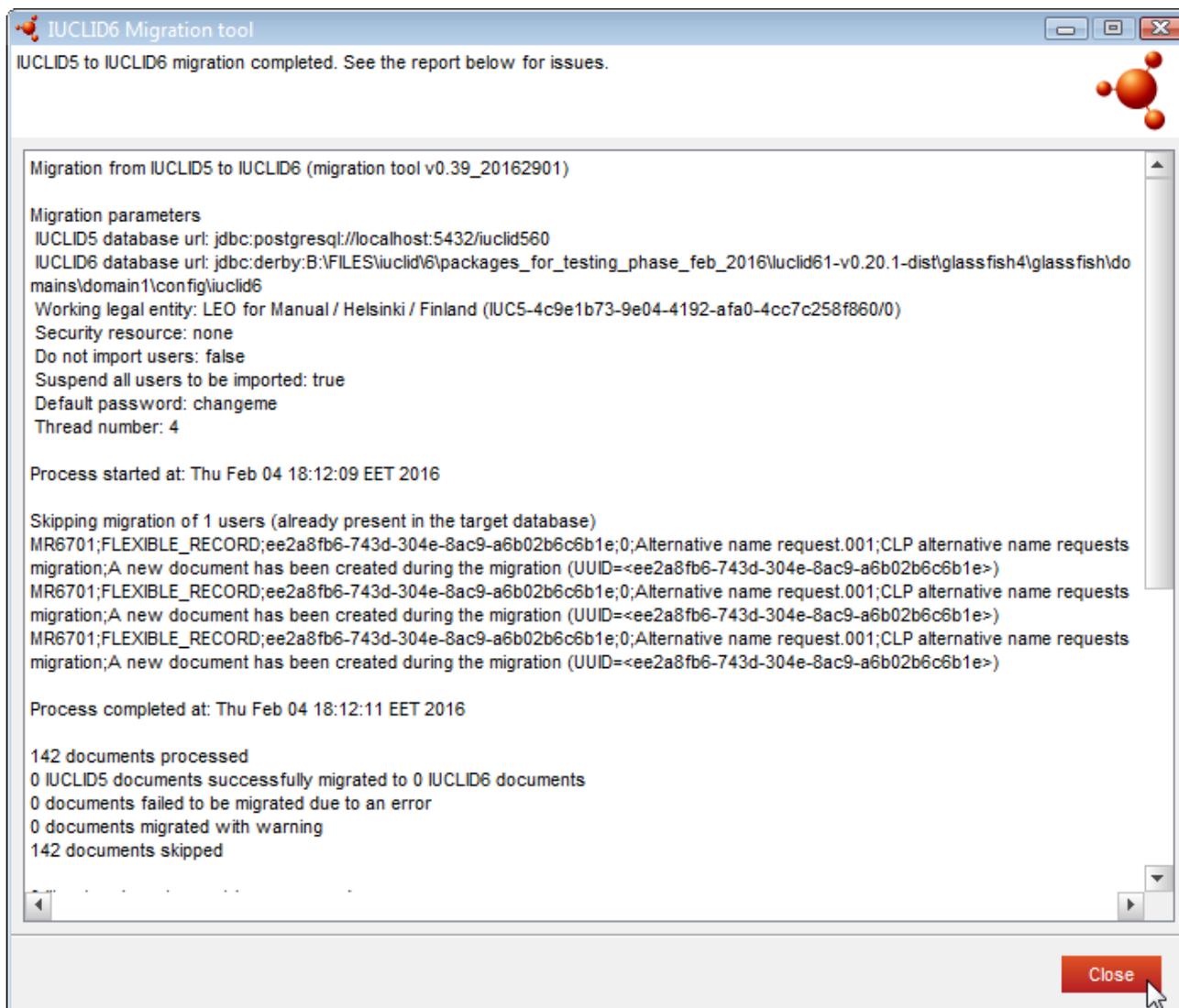
Figure 6: The migration in progress
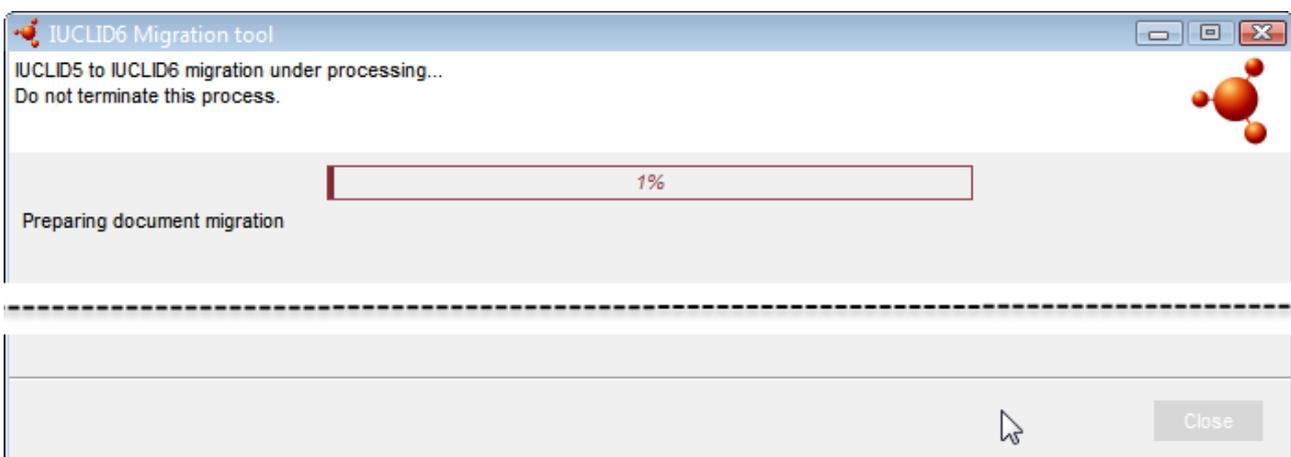
1.3.7. Results of the migration

After the migration has finished, the wizard shows a report on what happened, as shown in the screenshot below.

Figure 7: An example of the results of migration

To close the wizard, click on the button *Close*.

It is important that the migration be now verified, as described in section *1.5 Verifying a migration*.

1.4. Performing the migration with no graphical wizard

After checking the prerequisites stated above in section 1.1, the migration application can be started. The migration application can be run without a graphical wizard from the command line, in which case the values of the parameters must be entered into a settings file. The scripts and the setting file are supplied in the zip archive named:

```
iuclid6-migrator-1.0.2.zip
```

The settings file, is located in a directory named `config` and has the name:

`I5DBMigratorConf.properties`

The settings file contains the same parameters that are set in the graphical wizard. An example is given below for migration from a IUCLID 5 PostgreSQL database to that for IUCLID 6 Server with GlassFish.

# Database url for IUCLID 5
source.connection.url=jdbc:postgresql://localhost:5432/iuclid560
source.connection.user=iuclid5
source.connection.passwordiuclid5

# Database url for IUCLID 6
target.connection.url=jdbc:derby://localhost:1527/iuclid6
target.connection.user=IUCLID6
target.connection.password=IUCLID6

Note that if you are migrating under Windows to a database with a static path, the separator for directories in the path must be double backslashes "\\". Thus for *IUCLID 6 Server*, the default URL would be:

```
jdbc:derby:<installation_dir>\\IUCLID6_Server\\Iuclid6-
Server\\glassfish4\\glassfish\\domains\\domain1\\config\\iuclid6
```

# Pre-defined legal entity
working.legal.entity=4f88bc7f-395c-4d0b-997b-14e8c9aef605

# Users
do.not.import.users=false
suspend.all.users=false
default.password=changeme
security.resource.pool=Common R/W/D
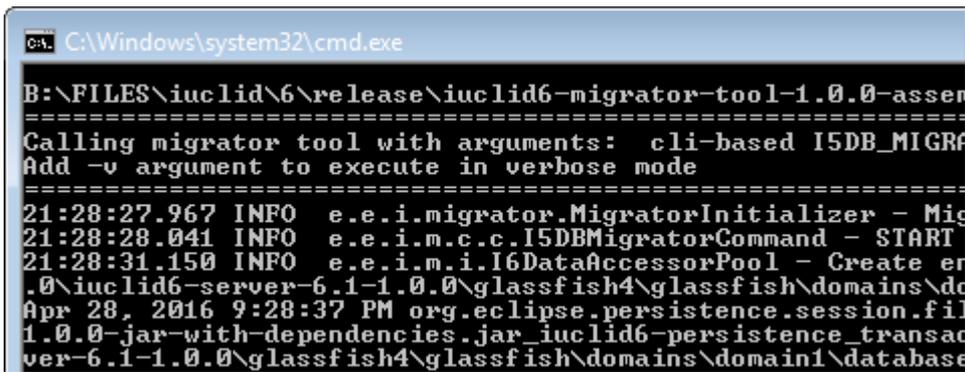

# Advanced
# 0=use number of available processors
# 1=disable parallellization of tasks
thread.number=0

Start the migration by running one of the appropriate scripts below, which are in a directory named `bin`:

Windows: `i5db-cli-migrator.cmd`

Linux: `i5db-cli-migrator.sh`

Whilst the migration is running, do not interrupt it in any way. Its progress can be followed from the command window, and from the logs described in section 1.1.2. An example of the command line output on starting the migration is shown below.

Figure 8: An example of the command line output for migration in Windows with no graphical wizard

It is important that the migration be now verified, as described in section *1.5 Verifying a migration*.

1.5.   Verifying a migration

Before starting and logging in to IUCLID 6 Server, it is highly recommended that you go through the logs checking for any unexpected behaviour, as described below.

If there were any problems related to system resources, such as running out of memory, try to address the problem and then run the migrator again.

Look in the log file `migration-report.log`. Check the entries that begin with MR (Migration Rule). Is everything as expected? Next, look in the file `datasets-failed-iuclid61-upgrade.log`. If there are any UUIDs in the file, the corresponding data has not been migrated. Next, perform a case-insensitive search for the words *error* and *exception* within the files `migration-report.log` and `migrator.log`. If you find something in the logs that you think should and can be addressed in IUCLID 5.6, make the required changes in IUCLID 5.6, and then run the migrator again.

More information about how to read and analyse the log files is given in FAQ Q34 on the IUCLID 6 website. If you find a problem that you cannot correct in IUCLID 5.6, contact the IUCLID team via the web form at the address below. Remember to attach the log files.

http://echa.europa.eu/contact/helpdesk-contact-form

1.6.   Merging multiple databases

The introduction of Instance Based Security (IBS) in IUCLID 6 allows data to be migrated and/or imported from different IUCLID 5 databases into one merged IUCLID 6 database in which access to the data is partitioned between Users and groups of Users. Before attempting to merge IUCLID 5 databases, familiarise yourself thoroughly with the IBS functionality and consider what action to take. Some common scenarios are described in Q33 of the FAQ on the IUCLID 6 web site.

If you need advice on the best way to proceed, you are welcome to contact the IUCLID team via the following web form:

http://echa.europa.eu/contact/helpdesk-contact-form

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