

# **IUCLID 5**

## **Guidance and support**

### **Installation Guide**

### **Distributed Version**

**Windows - Apache Tomcat - PostgreSQL**



**June 2009**

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It can be accessed at the addresses:

<http://iuclid.echa.europa.eu>.

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# Table of Contents

Introduction .....	v
1. Prerequisites .....	v
1.1. Hardware requirements .....	v
1.2. Software requirements .....	v
1. Installation .....	1
1.1. Operating System .....	1
1.2. JAVA Development Kit .....	1
1.3. PostgreSQL .....	1
1.3.1. Creating the iuclid5 database user .....	2
1.3.2. Creating the Iiucld5 database .....	2
1.4. Tomcat .....	3
1.5. Deployment of IUCLID 5 .....	6
1.5.1. Deployment in Tomcat .....	6
1.5.2. Changing the database connection settings .....	7
2. Upgrade .....	9



# Introduction

IUCLID 5 can be installed as standalone or in a multi-user environment. This document describes how to install and configure the IUCLID 5 application in a distributed Microsoft® Windows® environment.

IUCLID 5 can be installed with the following open source components:

- JDK 1.5 (or newer). Installation packages can be downloaded from the Java download page [<http://java.sun.com/javase/downloads/index.jsp>].
- Tomcat 5.5.x or 6.0.x (where x is the latest version). Installation packages can be downloaded from Tomcat webpage [???
- PostgreSQL 8.2.x or 8.3.x (where x is the latest version). Installation packages can be downloaded from <http://www.postgresql.org>

For a IUCLID installation using commercial software, the following components can be used:

- JDK 1.5 or 1.6. Installation packages can be downloaded from <http://java.sun.com/javase/downloads/index.jsp>
- BEA WebLogic Server 9.0. <http://www.oracle.com/bea>
- Oracle® 10g. Installation packages can be downloaded from <http://www.oracle.com>

## 1. Prerequisites

### 1.1. Hardware requirements

The server hosting IUCLID 5 must have at least:

- RAM: 1 GB (recommended 2 GB)
- Hard disk space: 200 GB
- CPU: 2 GHz, 32 or 64 bit architecture
- Network adapter 100 Mbps (recommended 1Gbps)

### 1.2. Software requirements

- Windows 2003 Server. For installation instructions, please refer to the documentation of the manufacturer.
- Java Runtime Environment (JRE) or Java Software Development Kit (SDK) 6
- PostgreSQL 8.2 or 8.3
- Tomcat 5.5 or 6.0



# Chapter 1. Installation

## 1.1. Operating System

IUCLID 5 has been tested thoroughly using Windows server 2003. Other versions (2000, XP, 2008) may be used as well. In that case the file locations might be different from the ones used in this document. For installation instructions, please refer to the documentation of the manufacturer.

## 1.2. JAVA Development Kit

Download the JAVA Development Kit (JDK) 6 or JAVA Runtime Environment (JRE) 6 according to the architecture of your computer from <http://java.sun.com/javase/downloads/index.jsp>. Select the latest available update.

Run the installer and follow the instructions. The default parameters are appropriate for IUCLID 5. for more information please refer to the installation instructions <http://java.sun.com/javase/6/webnotes/install/index.html> [??].

## 1.3. PostgreSQL

PostgreSQL is the database management system (DBMS) used by IUCLID 5 to store all data.

Download the most recent version of PostgreSQL 8.2 or 8.3 from <http://www.postgresql.org/download/>.



### Note

In this document we use the pgInstaller package. The One click installer can also be used. In that case the user interface is different but the concept is the same.

Run the installer and follow the instructions on the screen. The default parameters are appropriate for IUCLID 5. Make sure that the "Initialize database cluster" option is selected.

PostgreSQL

Initialize database cluster

Initialize database cluster

Port number: 5432

Addresses:  Accept connections on all addresses, not just localhost

Locale: English, United States

Encoding (Server): UTF8 (Client): UTF8

Superuser name: postgres

Password: [masked]

Password (again): [masked]

This is the internal database username, and not the service account. For security reasons, the password should NOT be the same as the service account.

< Back Next > Cancel

It is recommended to set UTF-8 for encoding.



### Tip

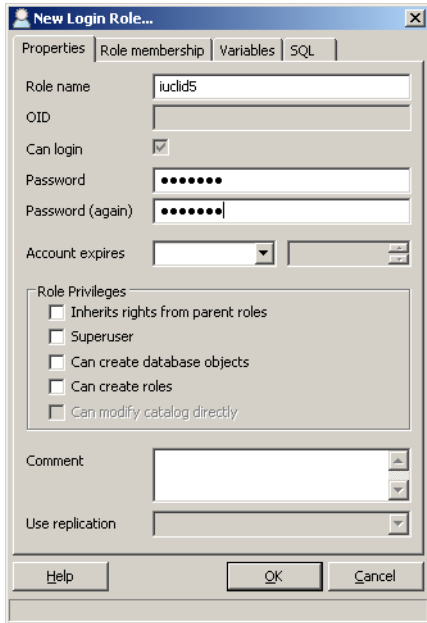
Take note of the name and password of the database Superuser; it might be needed later.

For more information please refer to the PostgreSQL documentation pages <http://www.postgresql.org/docs/>.

## 1.3.1. Creating the iuclid5 database user

The easiest way to create a new user and database is using the pgAdmin III application. Connect to the local database server by double clicking its name. Type the password of the user "postgres" when asked.

Right-click the Login Roles node and select New Login Role.



Type *iuclid5* as the Role Name and enter a password.



### Tip

IUCLID 5 is configured by default to connect to the database using username:*iuclid5* and password:*iuclid5*. It is convenient to specify the same password now, and change it later when the application is set up correctly.

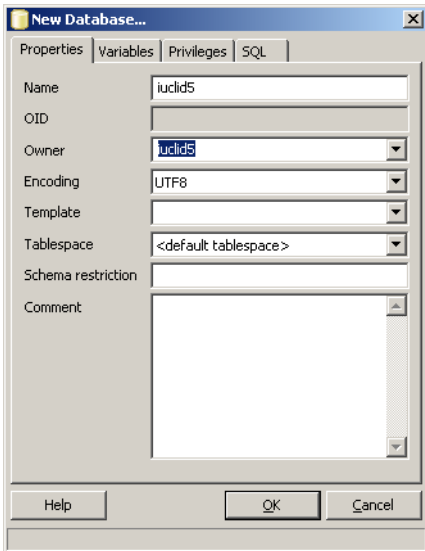


### Important

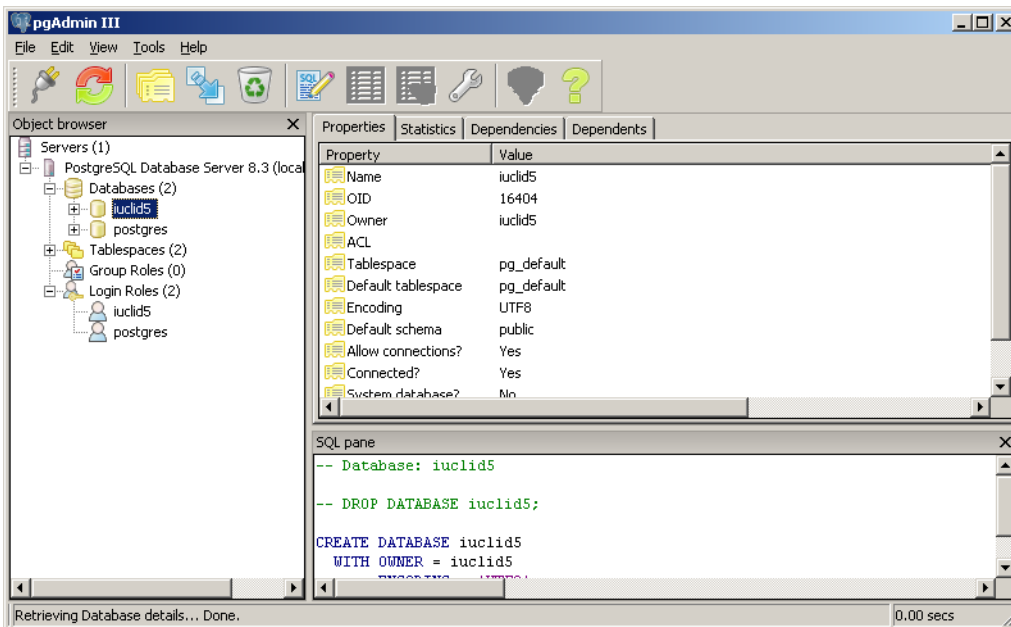
Take note of the password of this user. This user name and password will be needed later to connect IUCLID 5 to the database.

## 1.3.2. Creating the liuclid5 database

After having created the *iuclid5* role, create a new database owned by *iuclid5*. Enter *iuclid5* as the Name and select *iuclid5* as the Owner.



When finished both the new role and the new database are shown in pgAdmin III.



**Note**

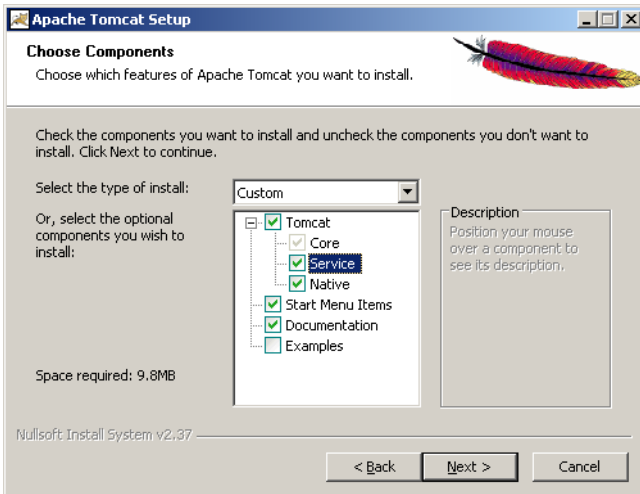
The Role (User) and the database have the same name - *iuclid5*.

The preparation of the database is now completed. IUCLID 5 will create the structure of the database (tables, indexes etc.) the first time it connects.

## 1.4. Tomcat

Download the Windows Service Installer of Tomcat 6.0 from <http://tomcat.apache.org/>.

At "Choose Components" step select also the "Service" and "Native" components.

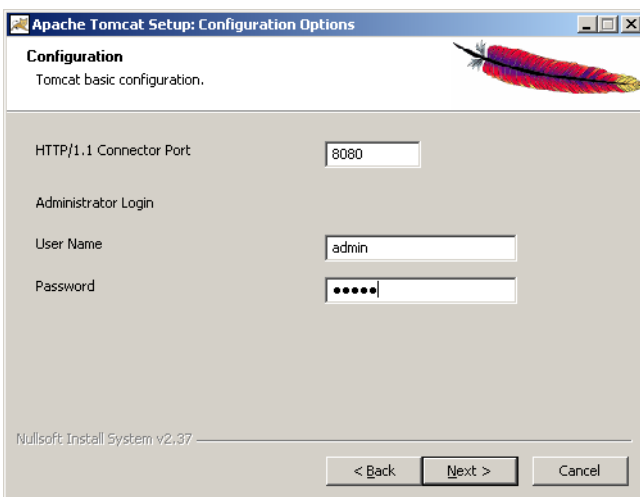


Type a name and password for the Tomcat administrator.

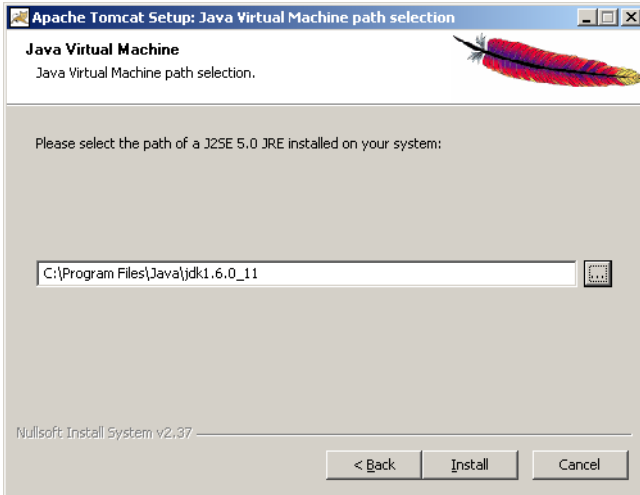


### Important

Take note of this settings because they are required to access the Tomcat Manager to deploy and remove applications.

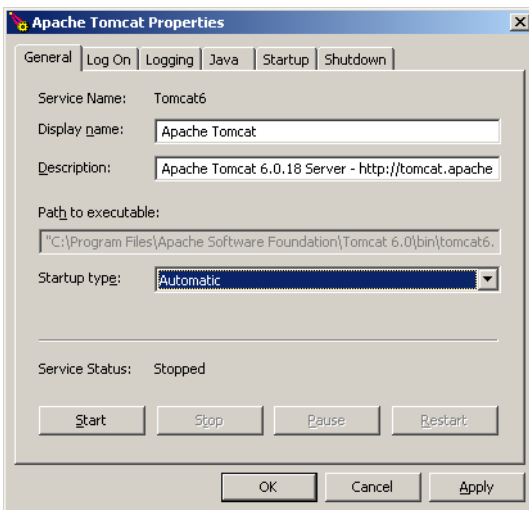


Select the folder of the previously installed Java Virtual Machine

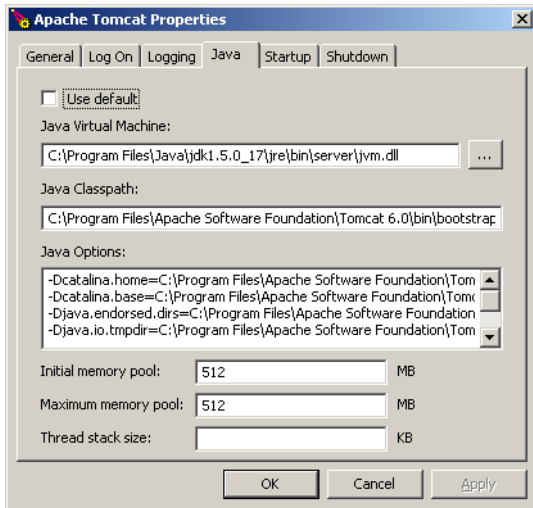


When the installation process is finished a new icon appears in the system tray for Tomcat (right-bottom corner of your screen). Right-click on the icon and select Configure...

On the General tab set Automatic startup type.



On the Java tab type 512 MB for both Initial memory pool and Maximum memory pool.



Restart Service by right-clicking on the tray icon and selecting Stop Service then Start Service.

Open the <http://localhost:8080/manager/html/> page in your browser, enter the username and password you gave to the Tomcat administrator and check the memory settings currently set for Tomcat. The Max memory in the JVM section of the Server Status page should be at least 500 MB.

## 1.5. Deployment of IUCLID 5

Before downloading IUCLID 5 you need to register as a IUCLID user on the IUCLID website [<http://iuclid.eu/>]. The application itself is packaged into the `iuclid5_server_yyyy-mm-dd.zip` file.

### 1.5.1. Deployment in Tomcat

Deployment is the term used for the process of installing a web application into the Tomcat server.

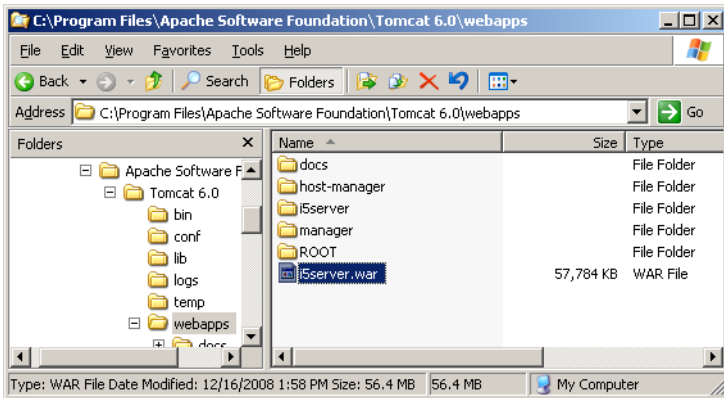
Web application deployment may be accomplished in two ways.

- Statically - the web application is set up before Tomcat is started
- Dynamically - in conjunction with the Tomcat Manager web application or manipulating already deployed web applications

You can find more information about how to deploy a web application on tomcat on the Tomcat deployment [<http://tomcat.apache.org/tomcat-5.5-doc/deployer-howto.html>] web page.

In this document only the Dynamic deployment is described. However also the static deployment may be used.

The deployment of IUCLID 5 actually consists of copying the `i5server.war` archive into the `webapps` directory of Tomcat.



**Note**

When IUCLID 5 is started the first time it creates new tables in the database which might take up to 30 seconds.

## 1.5.2. Changing the database connection settings

If the username and password of the database are both *iuclid5*, the application will start normally, otherwise it cannot connect to the database and the database settings have to be adjusted.

Open the `server.properties` file in the `webapps/i5server/WEB-INF/classes` directory.

The `server.properties` file is the configuration of the IUCLID 5 server. In order to connect to the database correctly it is necessary to modify the `server.properties` configuration file. The default configuration file contains settings in order to connect to a PostgreSQL database on the same computer. Usually it is sufficient to specify the database password.

```
#
# Settings for using PostgreSQL
#
hibernate.connection.url=jdbc:postgresql://localhost:5432/iuclid5
hibernate.connection.username=iuclid5
hibernate.connection.password=iuclid5
hibernate.connection.driver_class=org.postgresql.Driver
hibernate.dialect=org.hibernate.dialect.PostgreSQLDialect
```

If your database server is running on another computer or database name, username are different, modify the settings accordingly. For example your database server's name is `dbserver`, PostgreSQL is accepting connections on port `12345`, the database name is `chemdb` and the user is `joe` with password `xxxx`, then your configuration is:

```
hibernate.connection.url=jdbc:postgresql://dbserver:12345/chemdb
hibernate.connection.username=joe
hibernate.connection.password=xxxx
```



**Important**

Make sure that there are no spaces after the username and password values in the properties file.

The IUCLID 5 server registers the activities into a log file which helps the system administrator. The configuration file setting the logging is `i5server.logging.properties` in the `WEB-INF/classes` directory.

Start Tomcat using the Tomcat server icon.

The installation is completed. You can connect to the application with your browser by typing the address `http://your_server:8080/i5server`.

## Chapter 2. Upgrade

Upgrading IUCLID 5 to version 5.1.1 from a previous version consists of replacing the application's program files while keeping the current configuration and database.

1. Close all IUCLID 5 client applications.

2. Shut down Tomcat

3. Copy the following configuration files to a backup directory

```
<Tomcat>/webapps/i5server/WEB-INF/classes/server.properties  
<Tomcat>/webapps/i5server/WEB-INF/classes/i5server.logging.properties (if exists)
```

4. Delete i5server from <Tomcat>/webapps. (or undeploy the application using the manager)

5. Deploy the new version of IUCLID 5 (as described in the section "Deployment in Tomcat")

6. Replace the previously saved configuration files into the <Tomcat>/webapps/i5server/WEB-INF/classes directory.

7. Start Tomcat

