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# **SUPPORT ON THE IMPLEMENTATION OF THE URBAN WASTE WATER TREATMENT DIRECTIVE (91/271/EEC)**

**UWWTD SIIF NATIONAL TOOLBOX  
INSTALLATION AND CONFIGURATION  
ON A FULLY OPEN SOURCE SERVER  
WITH CENTOS - VERSION 2.1**

# **SUPPORT ON THE IMPLEMENTATION OF THE URBAN WASTE WATER TREATMENT DIRECTIVE (91/271/EEC) UWWTD SIIF NATIONAL TOOLBOX INSTALLATION AND CONFIGURATION ON A FULLY OPEN SOURCE SERVER WITH CENTOS - VERSION 2.1**

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## 1. INTRODUCTION

This document is presenting how to install the UWWTD SIIF Toolbox, version released in March 2020 on a national server with a fully Open source environment.

It is based on the documentation "**UWWTD-SIIF: installation and configuration guide, updated – version 2.0 of February 2016**" developed by OIEau and UmweltBundesAmt Austria for the previous versions of the UWWTD SIIF Toolbox, within *Specific contract n°07.0201/2014/SFRA/698614/ENV.C.2 implementing Framework Service Contract ENV.D.2/FRA/2012/0013: "Expanding the Urban Wastewater Structured Information and Implementation Framework (SIIF) via: Improvement of the SIIF IT toolbox and Extension of the Urban Waste Water Directive (UWWTD) SIIF approach to four new Member States."*

## 2. GENERAL INSTALLATION:

In order to install the UWWTD SIIF website in your own environment, you need six main modules:

- the database: Postgres 9.x with Postgis extension (version > 1.5) ,
- the web server: Apache 2.4 and PHP 7.x
- the website: Drupal 7,
- the map server: Geoserver,
- the catalogue: Geonetwork,
- the pdf generator: wkhtmltopdf

The machine which will be used to host the web portal as well as the webservice features, has the following configuration:

- The physical configuration should be at least (for evaluation): - disk: 20 Gbytes- RAM: 2Gbytes- CPU: 2 minimum- partition: 1. Ideally, you may install the webserver, the database server et map server on separates servers or increase the RAM to 4 Go and/or the number of CPU to 4.
- Linux (ideally centos 7 or 8, 64 bits) /Red Hat server with at least 2 Gbytes of RAM,
- an Apache 2.4 webserver- with PHP 7.1 (or more),
- the GeoPHP libraries,
- the installation kit with the website sources
- for the database management: postgres 9 and postgis 2
- Tomcat 8.0.12 webserver
- for the web services module (flat ones): Geoserver 2.5 (or 2.8)
- GeoNetwork
- for the pdf printing function: upload wkhtmltopdf module

### 2.1 Install package with command line and yum

At first, you have to install the database server. You will find all needed package at this URL: <http://yum.postgresql.org/repopackages.php#pg95> . For example, if you want to install postgres 9.5 on centos 6, 64 bits you can run followings command:

```
cd /home
wget https://download.postgresql.org/pub/repos/yum/9.5/redhat/rhel-6-x86\_64/pgdg-centos95-9.5-2.noarch.rpm
rpm -ivh pgdg-centos95-9.5-2.noarch.rpm
yum install postgresql95-server postgresql95-devel postgis2_95
```

You can also find some useful information on postgres wiki at: [https://wiki.postgresql.org/wiki/YUM\\_Installation](https://wiki.postgresql.org/wiki/YUM_Installation)

Then, you can install development tools, apache and php with this shell's command under "root" user:

```
yum groupinstall 'Development Tools'
yum install httpd php php-devel php-pear php-pgsql git
pecl install dbase
pecl install uploadprogress
```

For GeoPHP installation, you can use documentation available on official project repository:  
<https://github.com/phayes/geoPHP>

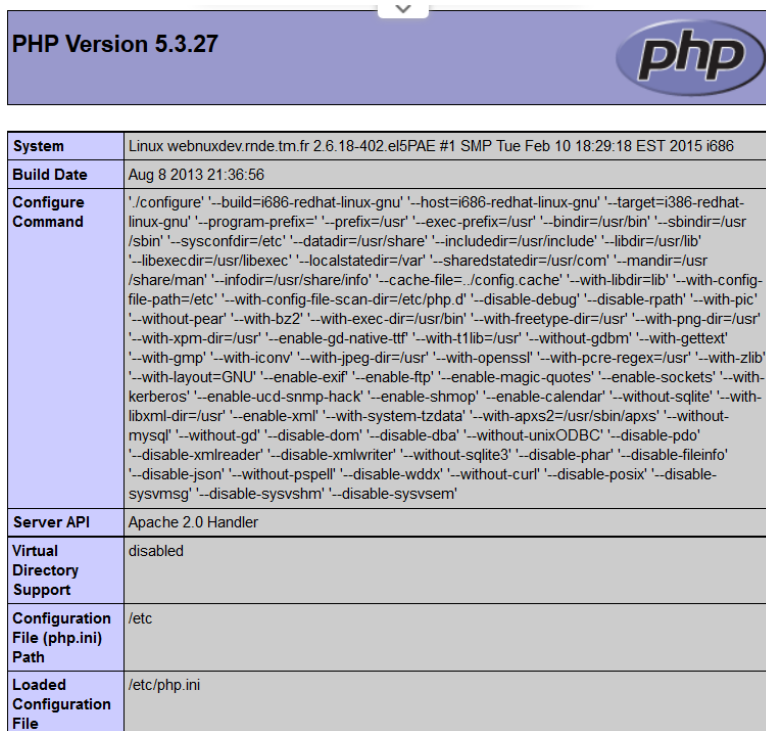
To start the apache service, you can use the following command under “root” user:

```
apachectl start
or service httpd start
```

For auto-starting the apache server on the server reboot, use this command:

```
chkconfig httpd on
```

If everything went well, you can access to the following page with your web browser (Google Chrome, Firefox, Opera) at this URL: [http://\[ip of your server\]/](http://[ip of your server]/)



<b>System</b>	Linux webnuxdev.mde.tm.fr 2.6.18-402.el5PAE #1 SMP Tue Feb 10 18:29:18 EST 2015 i686
<b>Build Date</b>	Aug 8 2013 21:36:56
<b>Configure Command</b>	./configure '--build=i686-redhat-linux-gnu' '--host=i686-redhat-linux-gnu' '--target=i386-redhat-linux-gnu' '--program-prefix=' '--prefix=/usr' '--exec-prefix=/usr' '--bindir=/usr/bin' '--sbindir=/usr/sbin' '--sysconfdir=/etc' '--datadir=/usr/share' '--includedir=/usr/include' '--libdir=/usr/lib' '--libexecdir=/usr/libexec' '--localstatedir=/var' '--sharedstatedir=/usr/com' '--mandir=/usr/share/man' '--infodir=/usr/share/info' '--cache-file=/config.cache' '--with-libdir=lib' '--with-config-file-path=/etc' '--with-config-file-scan-dir=/etc/php.d' '--disable-debug' '--disable-rpath' '--with-pic' '--without-pear' '--with-bz2' '--with-exec-dir=/usr/bin' '--with-freetype-dir=/usr' '--with-png-dir=/usr' '--with-xpm-dir=/usr' '--enable-gd-native-ttf' '--with-t1lib=/usr' '--without-gdbm' '--with-gettext' '--with-gmp' '--with-iconv' '--with-jpeg-dir=/usr' '--with-openssl' '--with-pcre-regex=/usr' '--with-zlib' '--with-layout=GNU' '--enable-exif' '--enable-ftp' '--enable-magic-quotes' '--enable-sockets' '--with-kerberos' '--enable-ucd-snmp-hack' '--enable-shmop' '--enable-calendar' '--without-sqlite' '--with-libxml-dir=/usr' '--enable-xml' '--with-system-tzdata' '--with-apxs2=/usr/sbin/apxs' '--without-mysql' '--without-gd' '--disable-dom' '--disable-dba' '--without-unixODBC' '--disable-pdo' '--disable-xmlreader' '--disable-xmlwriter' '--without-sqlite3' '--disable-phar' '--disable-fileinfo' '--disable-json' '--without-pspell' '--disable-wddx' '--without-curl' '--disable-posix' '--disable-sysvmsg' '--disable-sysvshm' '--disable-sysvsem'
<b>Server API</b>	Apache 2.0 Handler
<b>Virtual Directory Support</b>	disabled
<b>Configuration File (php.ini) Path</b>	/etc
<b>Loaded Configuration File</b>	/etc/php.ini

Figure 1: Test page of the apache server

**NOTA:** If it doesn't work, you can try to replace your ip by the server name. If it doesn't have effect, check if the 80 port is open on your server, your firewall and if the service “Apache” is running. For easing the database administration, you can also install PgAdmin 4 on your own computer or the phpPgAdmin (**NOTA:** phpPgAdmin is deprecated and it is recommended to use PgAdmin)

Then you have to install WKHTMLTOPDF tool. WKHTMLTOPDF is open source (LGPLv3) command line tools to render HTML into PDF and various image formats using the Qt WebKit rendering engine.

These run entirely "headless" and do not require a display or display service. To start the installation, goes on <http://wkhtmltopdf.org/downloads.html> page and download the right package for your server. You can find usefull help on this webpage: <https://jaimegris.wordpress.com/2015/03/03/how-to-install-wkhtmltopdf-in-centos-6-5/>

## 2.2 Create a new PostgreSQL database

To correctly install the SIIF platform a PostgreSQL database must be used. Any database name can be used but we suggest using a name you can remember as you will need this information at a later stage like: "uwwtd\_siif". You can create the database, with followings command lines:

```
su postgres
createdb -E UTF8 -T template0 uwwtd_siif
```

Note you have to use a "postgres" user we recommend you to use the super user account "postgres"

## 2.3 Import the SQL structure to your database (only for prefill-installation)

If you want to install a new uwwtd siif plaform from scratch you can skip this step. However, if you want to install a prefilled dataset for Cyprus, Slovenia, Romania, Poland, Croatia, Lithuania or Ireland you can download a SQL dump on the git space: <https://github.com/OIEau/uwwtd/>.

The next step involves inserting the premade SQL structure to your platform with the following command line:

```
psql -U postgres - d uwwtd_siif -f uwwtd_structure.sql
```

Note: the postgresql server need to be running and you have create the "uwwtd\_siif" databse before. When the import has been completed, you have to run the following sql query (with phpPgAdmin or with the postgres console):

```
ALTER DATABASE uwwtd_siif SET bytea_output='escape';
```

## 2.4 Import RBD and NUTS layers in database (only for from scratch installation)

These two geographical layers are available on github at this URL: [https://github.com/OIEau/uwwtd/releases/download/V1.1/region\\_nuts\\_and\\_river\\_basin.zip](https://github.com/OIEau/uwwtd/releases/download/V1.1/region_nuts_and_river_basin.zip) . You have to download the zip file and unzip it on the root of the server.

```
psql -U postgres - d uwwtd_siif
create extension IF NOT EXISTS postgis
\i /path on your server/region_nuts_and_river_basin.sql
```

## 2.5 Webservice settings

At first, you need to make some modifications in your PHP settings. Edit your "php.ini" file (located in the /etc/php.ini), and change the following parameters:

- memory\_limit = 1024M
- max\_execution\_time = 600 #you can reduce this value to 30 seconds after the database initialization
- post\_max\_size = 100M
- file\_uploads = On
- upload\_max\_filesize = 100M
- allow\_url\_fopen = On
- date.timezone = "Europe/Paris" #Use your timezone

And at the end of the php.ini file copy/paste these lines (may not be needed):

- extension=dbase.so
- extension=uploadprogress.so

For debugging, but not in production mode, you can change these lines:

- error\_reporting = E\_ALL
- display\_errors = On

Save your php.ini file and then restart the Apache server with this command:

```
Apachectl restart  
  
OR  
  
service httpd restart
```

## 2.6 Website installation

### 2.6.1 Copy files to server directory

Now you have the database correctly setup we need to add all the source files to your server directory. You can download sources on github at this URL: <https://github.com/OIEau/uwwtd/archive/master.zip> and unzip it on your server or use the git command line. The better way is probably to use git command.

```
cd /var/www/html  
git clone https://github.com/OIEau/uwwtd/
```

### 2.6.2 Allow access to your public directory

Drupal, the CMS used by the platform SIIF, needs to access certain directories of your server to function correctly.



First you need to copy the "uwwtd" directory (in the website directory of the installation kit) into the root of your Apache server. On Centos server, the root directory of Apache server is "/var/www/html".

Then, you need to change write access to full access (read, write, execute) for 'apache' to the directory 'sites/default/files' and all of its children directories.

Drupal needs to have "write" access on the "sites" directory located at root of Drupal folder. You can do this with this command:

```
chown -R apache:apache /var/www/html/uwwtd/sites
chmod -R 777 /var/www/html/uwwtd/sites/default/files
```

### 2.6.3 Start the Drupal Install (only for installation from scratch)

If you have already imported a dump in point 2.3., you can skip this point. If you install the UWWTD SIIF platform from scratch, this point is mandatory.

In order to install Drupal and after you have realized 2.6.1 & 2.6.2 operations you can start the installation process. With your web-browser go to this URL: [http://localhost/uwwtd\\_siif/install.php](http://localhost/uwwtd_siif/install.php), and the following screen will appear:

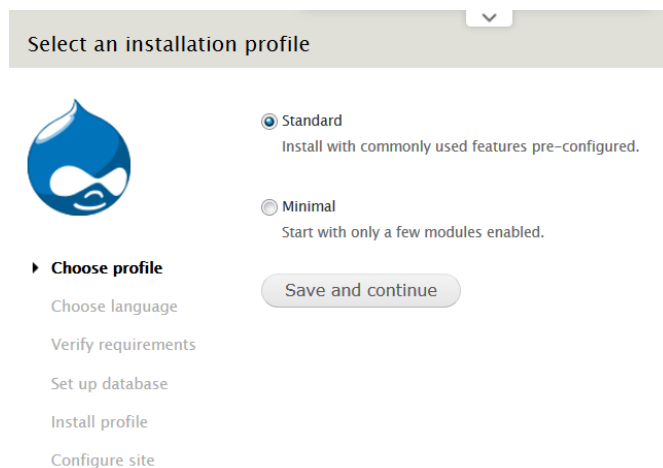



Figure 2: Install screen of Drupal

Select "standard" installation profile and click on "Save and continue".

On the next screen, select the default language (always English as this is the language of the file reported, you will be able to change the language settings in a next step) and click on "Save and continue".

Fill information for the database settings like the following screen and click on "Save and continue".

Database configuration



**Database type \***

☒ PostgreSQL

The type of database your Drupal data will be stored in. Your PHP configuration only supports a single database type, so it has been automatically selected.

**Database name \***

The name of the database your Drupal data will be stored in. It must exist on your server before Drupal can be installed.

**Database username \***

**Database password**

**ADVANCED OPTIONS**

These options are only necessary for some sites. If you're not sure what you should enter here, leave the default settings or check with your hosting provider.

**Database host \***

If your database is located on a different server, change this.

**Database port**

If your database server is listening to a non-standard port, enter its number.

**Table prefix**

If more than one application will be sharing this database, enter a table prefix such as *drupal\_* for your Drupal site here.

Save and continue

Figure 3: Drupal database configuration form

In the last screen, you have to enter your settings for the admin account and the site name. Fill all mandatory fields and click on "save". In theory, you'll be redirected to a default front page like the following:

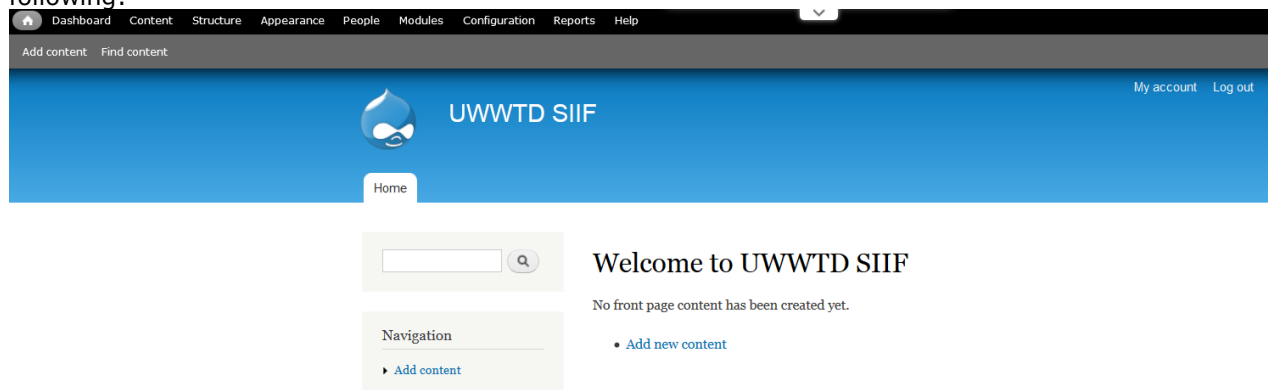


Figure 4: Default Front page of Drupal

### 2.6.4 Modify the settings.php file (for all install)

The settings.php file is used by Drupal for declare all required settings like database connection or alter some php settings. This file is located in this path `"/var/www/html/uwwtd_siif/sites/default/settings.php"` and you can edit it with a text editor (like notepad++).

Important: you have to pay attention to keep/use UTF8 encoding for the file

First, you need to check the database connection. If you installed your Postgres database on the same server as your website, your connection settings could be:

```
$databases = array (
  'default' =>
    array (
      'default' =>
        array (
          'database' => 'uwwtd_siif',
          'username' => 'postgres',
          'password' => 'postgres',
          'host' => 'localhost',
          'port' => '5432',
          'driver' => 'pgsql',
          'prefix' => 'drupal_',
        ),
      ),
    ),
);
```

PS: the use of “postgres” user for a production website is not recommended.

In the settings file, you also have to set the country code (please use ISO 3136 codes in two positions) (ex: si, cy, pl, ro, fr, ie, lt, hr...). You can add this information to the end of the file with the following line

```
$conf['siif_eru_country_code'] = 'si'; //for Slovenia
```

Now, in theory you can access to your website, with a web browser with this url:  
http://[ip.of.the.server]/ uwwtd\_siif /

### 2.6.5 Activate specific modules for MS SIIF node (only for from scratch installation)

The “uwwtd” module contain all specific component for the UWWTD SIIF platform. You have to activate this module in the Drupal administration interface. You can find this setting option in admin/modules path.

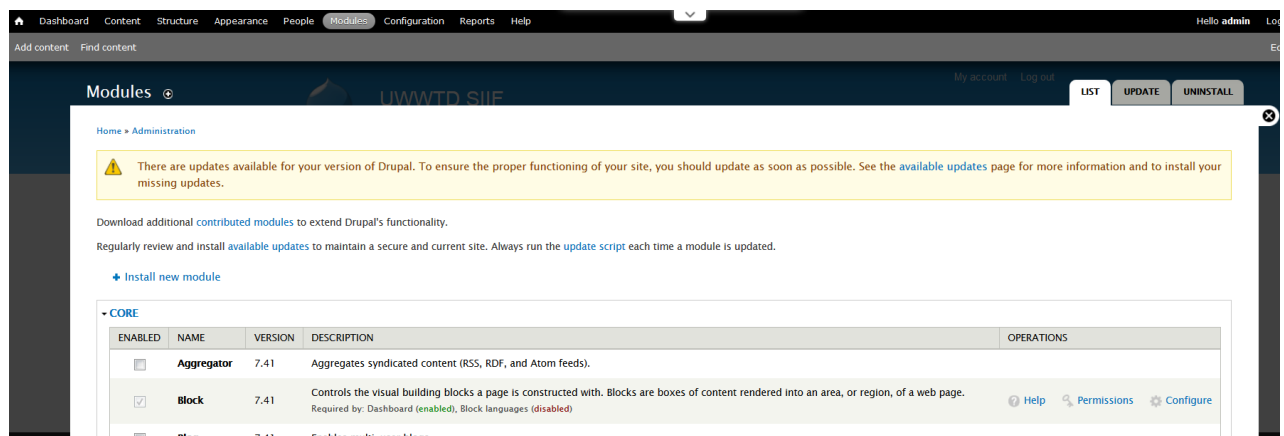


Figure 5: Drupal module list

And check the UWWTD line and then click on “save configuration” on the bottom of the screen.

After the install process, the front page of your website will take this look:

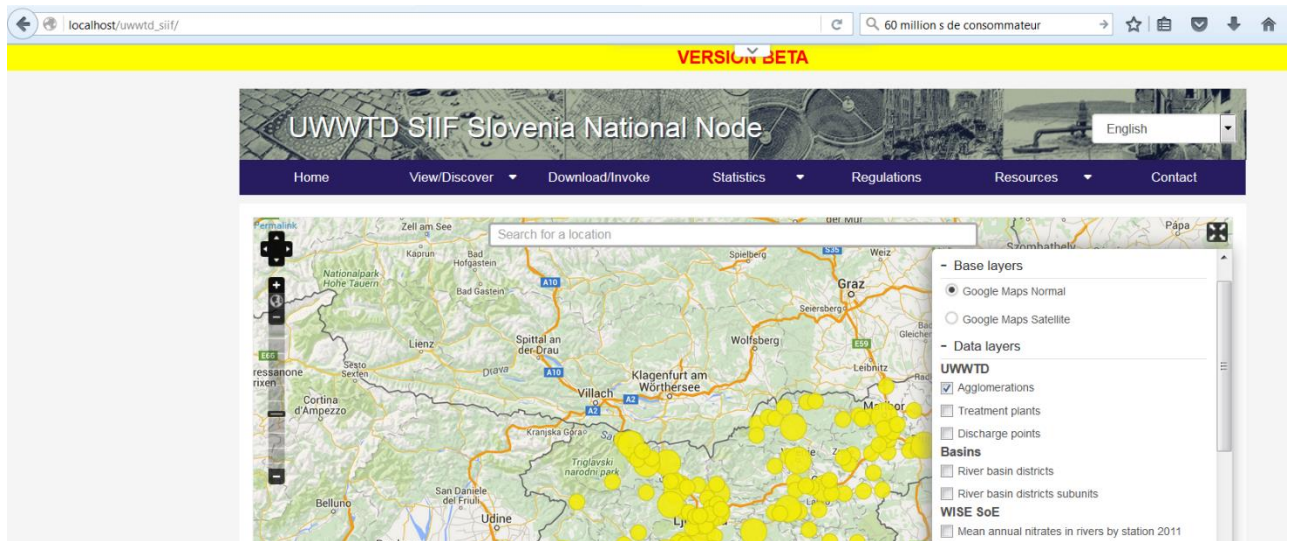


Figure 6: Front page

### 2.6.6 Activate specific modules for EU SIIF node

The UWWTD EU SIIF node requires additional modules. For a full set system you need to install “UWWTD EU” and the “UWWTD sync” modules.

It is also recommended to not activate specific modules of MS SIIF node like “**UWWTD Article 17**”, “**Statistics for UWWTD**”, “**Views for UWWTD**” or “**Maps & print map**”

For an easier approach, we recommend however to use an SQL dump of the official website. The SQL dump file can be asked with the contact form at: <https://uwwtd.eu/contact>

### 2.6.7 Customize the domain name of your website

You can customise the Apache configuration of your website to allow for URL rewriting and setup your domain name. We recommend you to create a file, eg “uwwtd.conf” in the /etc/httpd/conf.d directory and add the following content (you have to change the ip and the domain name):

```
<VirtualHost 192.168.1.40:80>
ServerName uwwtd.domain.eu
ServerAdmin contact@domain.eu
DocumentRoot /var/www/html/uwwtd_siif

<Directory "/var/www/html/uwwtd_siif">
    AllowOverride All
    Options indexes
    IndexOptions FancyIndexing IconsAreLinks FoldersFirst HTMLTable
</Directory>

</VirtualHost>
```

Save your uwwtd.conf file and then restart the Apache server with this command:

```
apachectl restart  
  
OR  
  
service httpd restart
```

Your website is ready and can be reached with your own domain name, such as: <http://uwwtd.domain.eu>

The next step is to link the files to your newly created database. You will need to edit the settings.php file located in the relative directory '*sites/default/settings.php*'.

Once opened find the uncommented line with the following code:

```
$databases = array (  
  'default' =>  
    array (  
      'default' =>  
        array (  
          'database' => 'uwwtd_siif',  
          'username' => username,  
          'password' => 'password',  
          'host' => '192.168.1.2',  
          'port' => '5432',  
          'driver' => 'pgsql',  
          'prefix' => 'drupal_',  
        ),  
      ),  
    ),  
);
```

You will now need to replace all of the information contained in this php array by your database characteristics. 'database' is the name of your new database, 'username' is your PostgreSQL admin username, 'password' is your PostgreSQL admin password, 'host' is the IP address of your PostgreSQL server, 'port' is the port of your PostgreSQL server, 'driver' is the type of database used (do not modify) and 'prefix' is the prefix for your PostgreSQL tables (do not modify).

### **2.6.8 Log in to your site and empty any cache (for prefilled installation)**

The next step is to log into your SIIF platform by entering the URL to your website followed by the path /user (ex: [www.YOURWEBSITE.com/user](http://www.YOURWEBSITE.com/user)) into your browser. Once on the page please enter your login and password, as this is your first time on the platform your login is 'admin' and your password is 'password'.

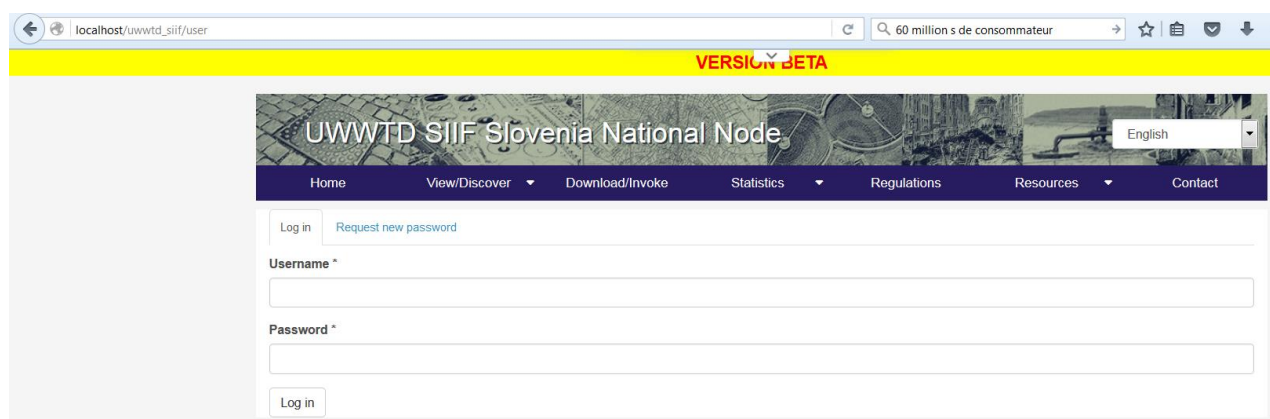


Figure 7: login page

PLEASE CHANGE THESE AS SOON AS POSSIBLE.

You will now be presented with a menu at the top of the screen. This menu is the admin menu and will allow you to alter your entire platform to your wishes.

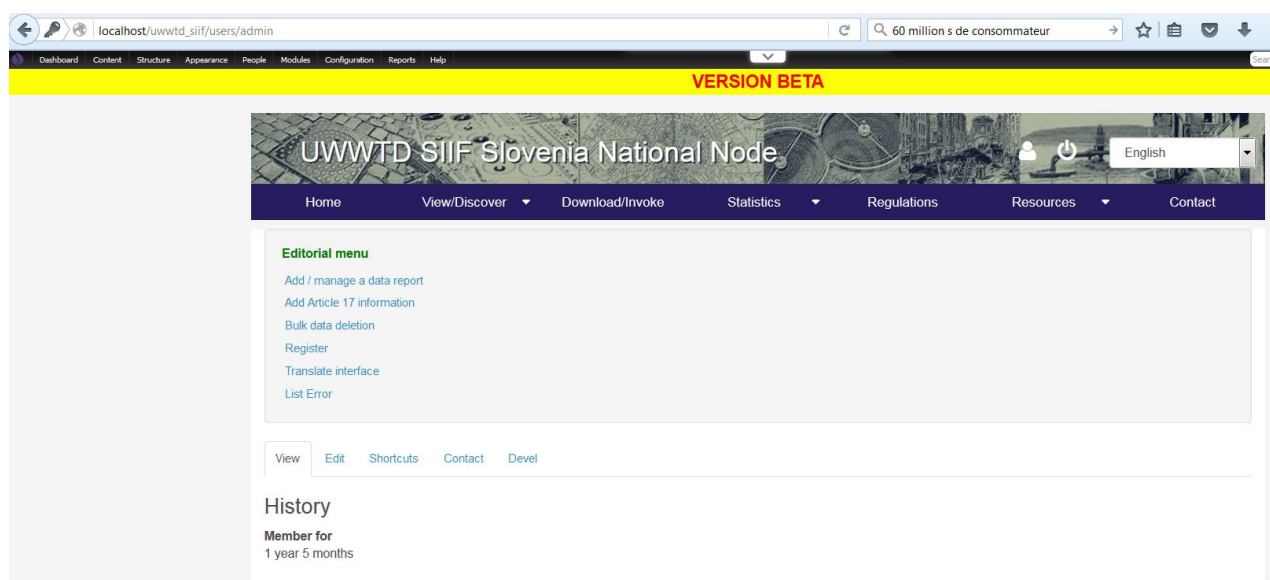


Figure 8: Log on page

To clear all the cached data on your platform please hover your mouse over the Drupal logo situated to the far left of the admin menu and click on 'flush all caches'.

**NOTA:** If you encounter a white screen after connecting to your website for the first time, please go to [www.YOURWEBSITE.com/data](http://www.YOURWEBSITE.com/data), click the update page then perform the updates. Your platform should function correctly afterwards.

### 2.6.9 Change the name of your SIIF platform

To change the name of your SIIF platform go to the following page: [www.YOURWEBSITE.com/admin/config/system/site-information](http://www.YOURWEBSITE.com/admin/config/system/site-information). Once on the page to change the name of your platform edit the field named 'Site name' and click 'save configuration'.

### 2.6.10 Change the logo of your SIIF platform

To change the logo of your SIIF platform go to the following page: [www.YOURWEBSITE.com/admin/appearance/settings/uwwtd](http://www.YOURWEBSITE.com/admin/appearance/settings/uwwtd). Once on the page you will notice a few tabs on the left side of the page. Choose '*logo image settings*' uncheck the checkbox '*Use the default logo*' and enter the path to your file or choose to upload it directly.

To remove the logo completely return to the page: [www.YOURWEBSITE.com/admin/appearance/settings/uwwtd](http://www.YOURWEBSITE.com/admin/appearance/settings/uwwtd), choose the tab '*toggle display*' and uncheck the checkbox '*logo*'. When you have finished your modifications please click the button '*Save configuration*'.

### 2.6.11 Add a national language

To add a new language to your website go to the following page: [www.YOURWEBSITE.com/admin/config/regional/language](http://www.YOURWEBSITE.com/admin/config/regional/language). This page displays all the active languages for your platform which you can choose to remove or set as the default language. To add a new language click the link '*Add language*' choose from the dropdown menu '*Language name*' then click the button '*Add language*'.

## 2.7 Install GeoServer and create the webservice

The software is available on Geoserver website (<http://geoserver.org/>). The setting up procedure is detailed <http://docs.geoserver.org/stable/en/user/installation/index.html>.

Depending on the server configuration used to host the software, some adjustments may be required. Geoserver may run with Apache-Tomcat (<http://tomcat.apache.org/>),

In order to install the software, it is necessary to get the latest version of Geoserver in WAR format <http://geoserver.org/release/stable/> (v2.6.2).

If Tomcat is used the archive containing the WAR installing files, has to be stored in the directory: Tomcat /WebApps.

In order to extract the files and install, open a navigator and type in

[http://\[ServerAddress\]:\[port\]/geoserver/](http://[ServerAddress]:[port]/geoserver/).

(e.g.: <http://localhost:8082/geoserver/> )

Some useful links

- The user manual on geoserver website  
<http://docs.geoserver.org/stable/en/user/>
- Overall introduction of the interface  
<http://docs.geoserver.org/stable/en/user/gettingstarted/web-admin-quickstart/index.html>
- Main functionalities  
<http://docs.geoserver.org/stable/en/user/gettingstarted/index.html>
- To secure the software  
<http://docs.geoserver.org/stable/en/user/webadmin/security/index.html>

The default access information for the software is:

- login: admin
- password: geoserver

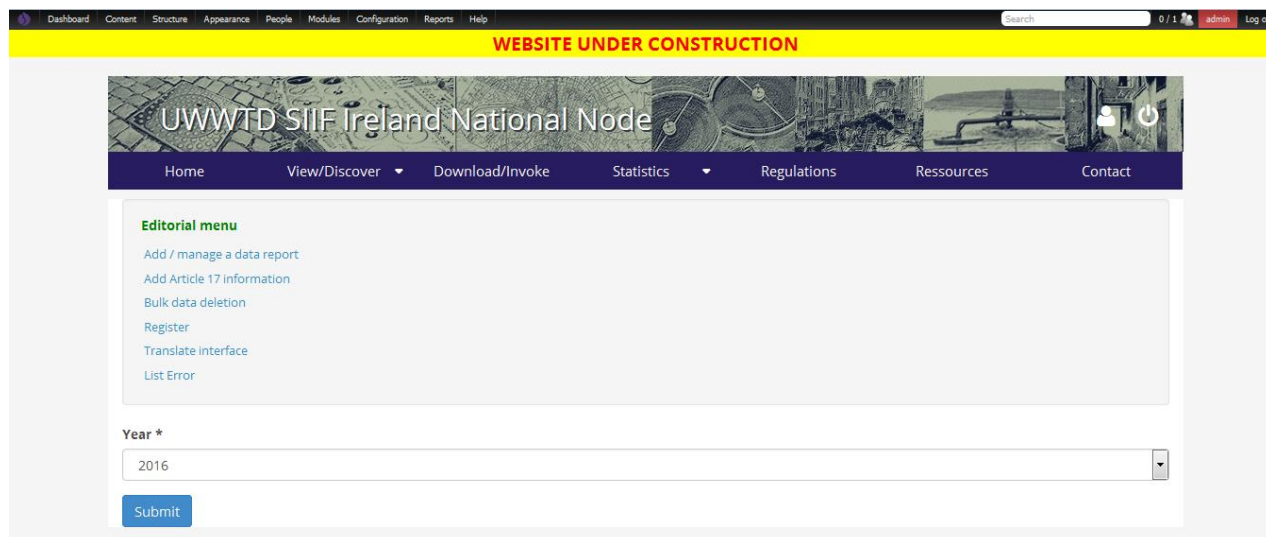
## **2.8 Install GeoNetwork**

The software is available on GeoNetwork website (<http://geonetwork-opensource.org/>). The setting up procedure is detailed in the documentation (<http://geonetwork-opensource.org/manuals/2.10.4/eng/users/quickstartguide/installing/index.html>).



### 3. DATA SUBMISSION AND CALCULATIONS

Once the platform is installed, you can start importing datasets. You need first to be logged in as administrator with all the necessary rights. You arrive then to an Editorial menu where you can manage datasets and launch specific calculations.



For a detailed description of this, please refer to the administration guide also available on the GitHub platform.