01 March 2025

# Opentheso

## Opentheso v25.03.01

*Miled Rousset*

## Continue

# 1. Installation under Debian (installation carried out with Debian 12)

### Prerequisites for installing Opentheso :

- Java 17 and above
- Postgresql 15 and above

### Java installation

1. Install the latest version of

```
apt install default-jre
```

```
java -version
```

```
openjdk version "17.0.8" 2023-07-18
OpenJDK Runtime Environment (build 17.0.8+7-Debian-1deb12u1)
OpenJDK 64-Bit Server VM (build 17.0.8+7-Debian-1deb12u1, mixed mode, sharing)
```

### Installing Postgresql

2. Install the server

```
apt-get install postgresql
```

```
psql --version
```

*psql (PostgreSQL) 15.3 (Debian 15.3-0+deb12u1)*

3. Changing the Postgres password

   - passwd postgres
   - New password :
   - Enter it again:

1. Create the role and database: *(do not enter the text in green)*

   - su postgres
   - psql
   - postgres=# CREATE USER opentheso PASSWORD 'opentheso';
   - postgres=# create Database opentheso OWNER opentheso;
   - postgres=# ALTER USER opentheso WITH SUPERUSER;
   - \q
   - Ctrl + d

## Apache2

If Apache2 is not installed, you need to install it with the command :

- apt install apache2

## Apache settings (Virtual Host)

*(this is an example of the settings in /ect/apache2/sites-enabled/)*

You need to create a conf file specific to Opentheso. Here is an example following the installation described here:

- cd /etc/apache2/sites-enabled/
- vi opentheso.conf

```
<VirtualHost *:443>
    ServerAdmin moi@mondomaine.fr
    ServerName opentheso.mondomaine.fr

    ProxyPass /opentheso <http://localhost:8099/opentheso> timeout=3600
    ProxyPassReverse /opentheso <http://localhost:8099/opentheso>
timeout=3600

    # Add headers required for HTTPS
    RequestHeader set X-Forwarded-Proto https
    RequestHeader set X-Forwarded-Port 443

    ProxyPreserveHost On
    ProxyRequests Off
    SSLEngine On

    <Directory /opentheso>
        Order allow,deny
        Allow from all
    </Directory>
         ProxyPreserveHost On

         <Location "/META-INF/">
        deny from all
    </Location>
    <Location "/WEB-INF/">
        deny from all
    </Location>

        <IfModule mod_rewrite.c>
                RewriteEngine On
                RewriteRule ^/$ /opentheso/$1 [R]
    </IfModule>
</VirtualHost>
```

Activate the proxy, SSL and rewrite modules

- a2enmod proxy_http ssl headers rewrite

Restart apache

- systemctl restart apache2

## Installing Opentheso :

*Version 25.01.01 (this is the current version at the time of writing)*

- Create the opentheso folder in /opt/opentheso :
  - mkdir /opt/opentheso
- Retrieve the files needed to run Opentheso : https://github.com/miledrousset/Opentheso/releases/
  - **opentheso.jar**
  - **application-prod.yaml**
  - **logback-spring.xml**
- Copy files to

💡 *Check that the application-prod.yaml file contains the correct configuration for your environment, including database settings and ports. This file is crucial to the correct operation of Opentheso.*

- Create a folder for Handle certificates :
  - mkdir /opt/opentheso/certificates

💡 *If you are using perennial Handle identifiers based on a server, you need to copy the* `admpriv.bin` *file to this folder.*

- Adjust permissions on the /opt/opentheso folder :
    - cd /opt
    - chown miled -R opentheso/
    - chgrp miled -R opentheso/

- Modification of the "application-prod.yaml" file :

```
server:
  port: 8099
  forward-headers-strategy: native
  servlet:
    context-path: /
    session:
      timeout: 120m
  error:
    path: /errorPages/error500.xhtml
    whitelabel:
      enabled: false

primefaces:
  uploader: native

spring:
  servlet:
    multipart:
      enabled: true
      max-file-size: 100MB #Defines the maximum size of the file to be
downloaded
      max-request-size: 100MB # Total max request size
  datasource:
    url: jdbc:postgresql://localhost:5432/opentheso
    password: opentheso
    username: opentheso
  jpa:
 show-sql: true
 generate-ddl: true
    hibernate:
      ddl-auto: validate
    properties:
      hibernate:
        format_sql: true
        dialect: org.hibernate.dialect.PostgreSQLDialect
  liquibase:
    enabled: true
    change-log: classpath:/changelog/db.changelog.xml

graphql:
  path: /graphql # GraphQL API path
  graphiql:
    enabled: true # Enables the graphiql interface for testing queries
    path: /graphiql # Path to the graphiql interface
  schema:
    printer:
      enabled: false # Enables schema printing at startup

settings:
  workLanguage: fr
```

```
certificates:
  admpriv: ./certificates/admpriv.bin
  cacerts2: ./certificates/cacerts2
  key: ./certificates/key.p12

smpt:
  protocol: smtp
  hostname: smtprelay.mondomaine.fr
  portNumber: 25
  authorization: false
  mailFrom: opentheso@ mondomaine.fr
  transportMail: smtp


neo4j:
  serverName: localhost
  serverPort: 7687
  databaseName: neo4j
  user: neo4j
  password: neo4j1234

ldap:
  security:
    authentication: simple
  server:
    url: ldapr3.mondomaine.fr
  initial:
    context:
      factory: com.sun.jndi.ldap.LdapCtxFactory
  key:
    store:
      password: changeit
      path: /usr/lib/jvm/java-11-openjdk-amd64/lib/security/cacerts
    trust:
      password: changeit
      path: /usr/lib/jvm/java-11-openjdk-amd64/lib/security/cacerts
```

- Start Opentheso :
  - java -jar -Dlogging.config=./logback-spring.xml opentheso.jar --spring.profiles.active=prod --spring.config.additional-location=application-prod.yaml

*If all goes well, you will see log messages explaining what is happening. At the end, the database will be created automatically and the programme launched*
*Default account: user=admin pass=admin*

- Connecting to Opentheso using a Web browser :
  https://opentheso.mondomaine.fr:9099/opentheso
  https://opentheso.mondomaine.fr/opentheso

## Create a systemd service file

To start and stop Opentheso automatically, you need to create a service file.

1. Open a terminal and run the following command to create a new service file in /etc/systemd/system/ :
   - sudo nano /etc/systemd/system/opentheso.service

2. Add the following lines to the opentheso.service file :

```
[Unit]
Description=Opentheso Java Application
After=network.target
Service]
# User under which the service will be run
User=miled
# Work directory
WorkingDirectory=/opt/opentheso
# Command to be executed
ExecStart=java -jar -Dlogging.config=./logback-spring.xml opentheso.jar
--spring.profiles.active=prod --spring.config.additional-
location=application-prod.
# Restart automatically if the service crashes
Restart=always
RestartSec=10
[Install]
WantedBy=multi-user.target
```

3. User: Replace username with the user under which you wish to run the service. If you want this to be the root user, you can leave this line out, but it is often preferable to use a dedicated user for security reasons.
4. WorkingDirectory: Replace /path/to/the/folder/of/your/application with the path to the .jar file and the application-prod.yaml file.

## Update and activate the service

1. Save the file and close the editor (for `nano`, press `Ctrl + X`, then `Y` and `Enter`).
2. Reload `systemd` so that it takes the new service file into account:
   - sudo systemctl daemon-reload

3. Enable the service so that it starts automatically when the system is booted:
   - sudo systemctl enable opentheso.service

4. Start the service immediately to check that it is working correctly:
   - sudo systemctl start opentheso.service

## Check service status

Check that the service works correctly with this command:

```
sudo systemctl status opentheso.service
```

If all goes well, we should see :

```
opentheso.service - Opentheso Java Application Loaded: loaded
(/etc/systemd/system/opentheso.service; enabled; vendor preset: enabled) Active:
active (running) since ... Main PID: ... Tasks: ... Memory: ... ...
```

## Other useful commands

- **Stop the service** :

```
sudo systemctl stop opentheso.service
```

- **Restart the service** :

```
sudo systemctl restart opentheso.service
```

- **Disable automatic start** :

```
sudo systemctl disable opentheso.service
```

# 2. Update

## To update Opentheso :

Download the latest version of the JAR on GitHub :

https://github.com/miledrousset/Opentheso/releases/

Stop the Openheso service :

- sudo systemctl stop opentheso.service

Replace the old opentheso.jar file with the new opentheso.jar file

Restart the Opentheso service:

- sudo systemctl start opentheso.service