QGEP Documentation

Version 0.5

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Contents

QGEP is a wastewater management module for QGIS based on SIA 405 and developed closely to the QGIS application.

This document can also be downloaded as a single PDF document: QGEP.pdf  .

CHAPTER 1

Contents:

1.1 Guide d'installation de QGEP

Ce guide détaille les étapes pour la configurations des différentes applications et services pour le bon fonctionnement de QGEP.

Note: You also have the option of downloading a *Demo Virtual Machine* that has a working QGEP demo.

1.1.1 Configuration du serveur de base de données

Si vous souhaitez accéder aux données depuis plusieurs postes de travail, vous pouvez installer la base de données sur un serveur de votre réseau. Pour un accès local uniquement, elle peut être installée sur le même poste.

Logiciels requis

Installation du serveur

- Installer PostgreSQL (>=9.3)
  - Lien pour l'installation sous WIndows
- Installer PostGIS (>=2.1)

Note: In a single desktop environment (no network database server) you can setup your database to trust local connections.

This way, the database won't ask for a password if you're connecting from your local workstation while no password is written anywhere. You even can do with no database password at all.

This can be done by editing the database access configuration file pg_hba.conf and set the auth-options from `md5` to `trust`. A database service reload is required to activate changes.

1.1.2 Initilisation de la base de données

You can use *pgAdmin* to access and manage the database server.

Note: By clicking the link you can learn how to *Install pgAdmin*

Process

Dans PgAdminIII

- Se connecter au serveur de la base de données
- Create a new group role (preferably named *qgep*, but you are free to choose)
- Create a new login role (*qgepuser* for example) and make it a member of the *qgep* group

You can do this graphically or by simply opening a pgAdminIII *SQL query* window and type the following:

```
CREATE GROUP qgep;
CREATE ROLE qgepuser LOGIN;
GRANT qgep TO qgepuser;
```

- Create a new database (preferably named *qgep*, but you are free to choose)
  - Change to this database
- Créer un nouveau schéma *qgep*
- Open an *SQL query* Window and create the extensions (if they're not created yet)
  - `CREATE EXTENSION hstore;`
  - `CREATE EXTENSION postgis;`
- Télécharger les données de démonstration
  - https://github.com/QGEP/data/raw/demodata/qgep_demodata.backup
- Clic-droit sur le schéma *qgep*
  - Cliquer sur "restore"
  - Load your download of qgep.backup
  - Restore Options #2: Activate *Clean before restore*
  - Cliquer sur *Restore*
  - Cliquer sur *Annuler*
- Clic-droit sur la base de données et cliquer sur *Rafraîchir*
- Mettre à jour les privilèges pour la base de données
  - Clic-droit sur le schéma *qgep*
  - Click *Grant Wizard . . .*
  - Selection, click *Check All*
  - Privilèges
    - Groupe *QGEP*
    - Choose *ALL*

1.1.3 Configuration du poste de travail

Configuration de la base de données

To tell a workstation, where the database is (on the local system or on a network server) you will have to create some files initially on every device on which you will have QGIS/QGEP running. It is not required to do that on the server itself.

Ces étapes dépendent de votre système d'exploitation.

Windows

Créer un nouveau dossier où vous souhaitez enregister la configuration. Par exemple `pgconfig` dans vos documents. Ce dossier sera connu sous le nom de `PGSYSCONFDIR` dans ce guide.

Configurer la variable d'environnement `PGSYSCONFDIR` pour pointer sur le chemin de `PGSYSCONFDIR`

Dans ce dossier, vous trouverez deux fichiers

- `pg_service.conf`
- `pgpass` (si vous ne souhaitez pas entre le mot de passe à chaque connexion)

Attention: On Windows, you need to save `pg_service.conf` in Unix format in order to work. One way to do it is to open it with Notepad++ and `Edit --> EOL Conversion --> UNIX Format --> File save.`

Linux

Sous Linux, vous pourrez placer les fichiers `.pg_service.conf` et `.pgpass` sous le dossier home (habituellement `/home/[username]`)

Tous les systèmes

Placer les lignes suivantes dans le fichier `pg_service.conf` ou `.pg_service.conf`. Vous devrez peut-être apporter des modifications selon votre configuration.

```
[pg_qgep]
host=localhost
port=5432
dbname=qgep
user=qgepuser
```

Pour enregistrer le mot de passe sur votre système, vous pouvez utiliser le fichier pgpass.

```
localhost:5432:*:qgepuser:password
```

Note: Si la base de données n'est pas sur votre poste local, remplacer toutes les occurences de `localhost` par l'adresse réseau du serveur de base de données.

Installer QGIS

- Version minimum requise: 2.10
  - Nous vous recommandons l'utilisation des versions de développements de QGIS (appelées qgis-dev sous Windows). Elles offriront une meilleure expérience utilisateur avec QGEP.

Installer le plugin QGEP

- Ouvrir QGIS
- Go to Plugins (position *1* in the image below)
  - Manage and Install Plugins
  - Settings (position *3*)
    - Ajouter...

- Nom: QGEP
- URL: `http://qgis.vitu.ch/plugins/plugins.xml`

* Enable *Show also experimental plugins* (position 2)

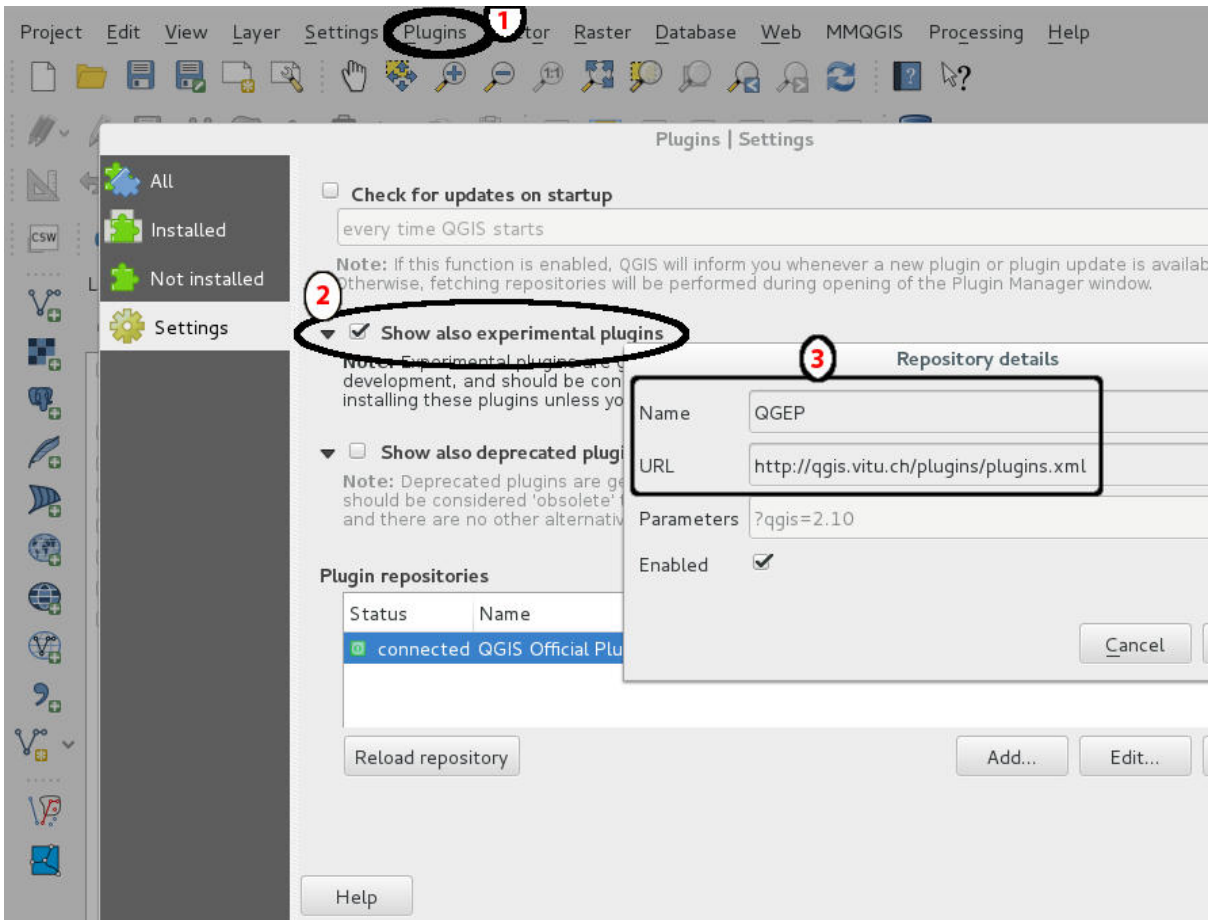

Figure 1.1: **Add the plugin repo**

Activate the plugin (see image below):

- Tous
  - Chercher *QGEP*
  - Cocher la case à côté

Installation du projet de démo

- Download https://github.com/QGEP/data/archive/demodata.zip
- Extraire le ficher
- Restore the file *qgep_demodata.backup* with pgAdminIII
- Open *project/qgep_en.qgs* with QGIS

1.2 pgAdmin

PgAdminIII is a Desktop tool that permits to access and manage the database server. This chapter represents a guide on how to do basic PostgreSQL management using pgAdmin.

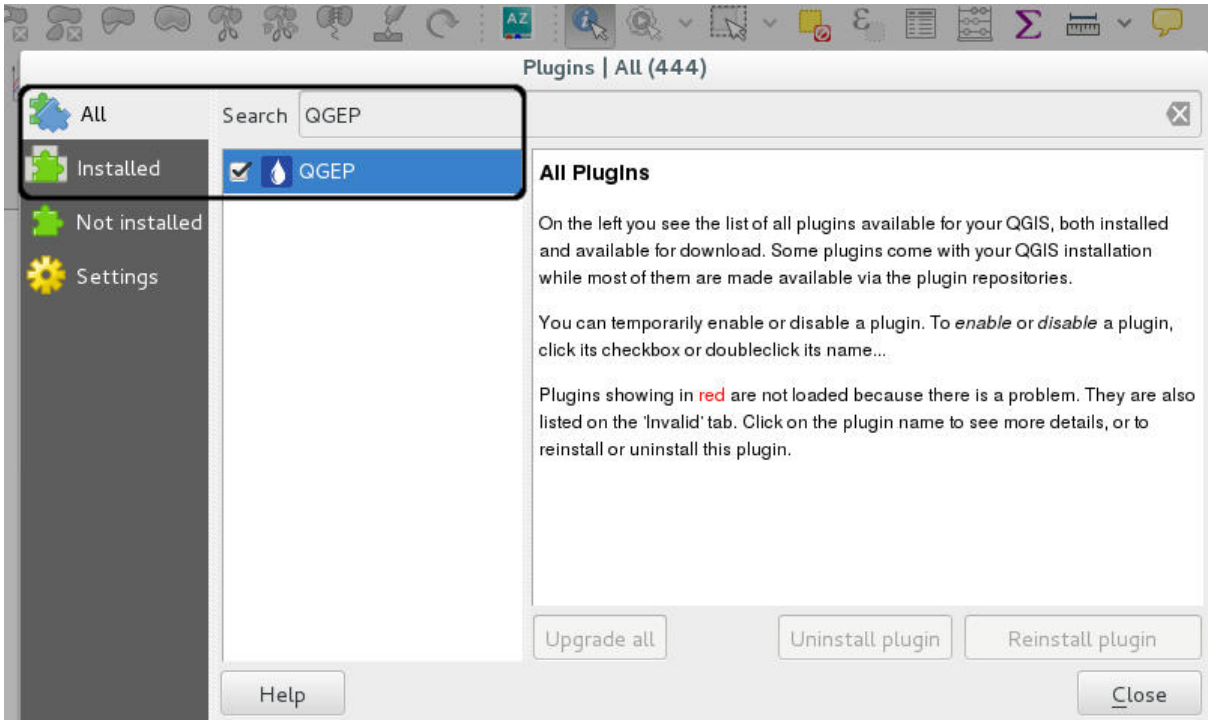

Figure 1.2: **Add the QGEP plugin**

1.2.1 Install pgAdmin

Windows

pgAdmin should be automatically installed if you used the EnterpriseDB installer.

Linux

Debian/Ubuntu based distros

You can install pgAdmin by running the following command:

```
sudo apt-get install pgadmin3
```

Fedora based distros

```
sudo yum install pgadmin3
```

Suse based distros

```
sudo zypper install pgadmin3
```

Note: All the commands presented above assume that you are logged in as a user with sudo (admin) privileges. On certain systems it may be required to use the command `su` to become the *root* user and then issue the above command without the `sudo` prefix.

1.2.2 Using Pgadmin

SQL query

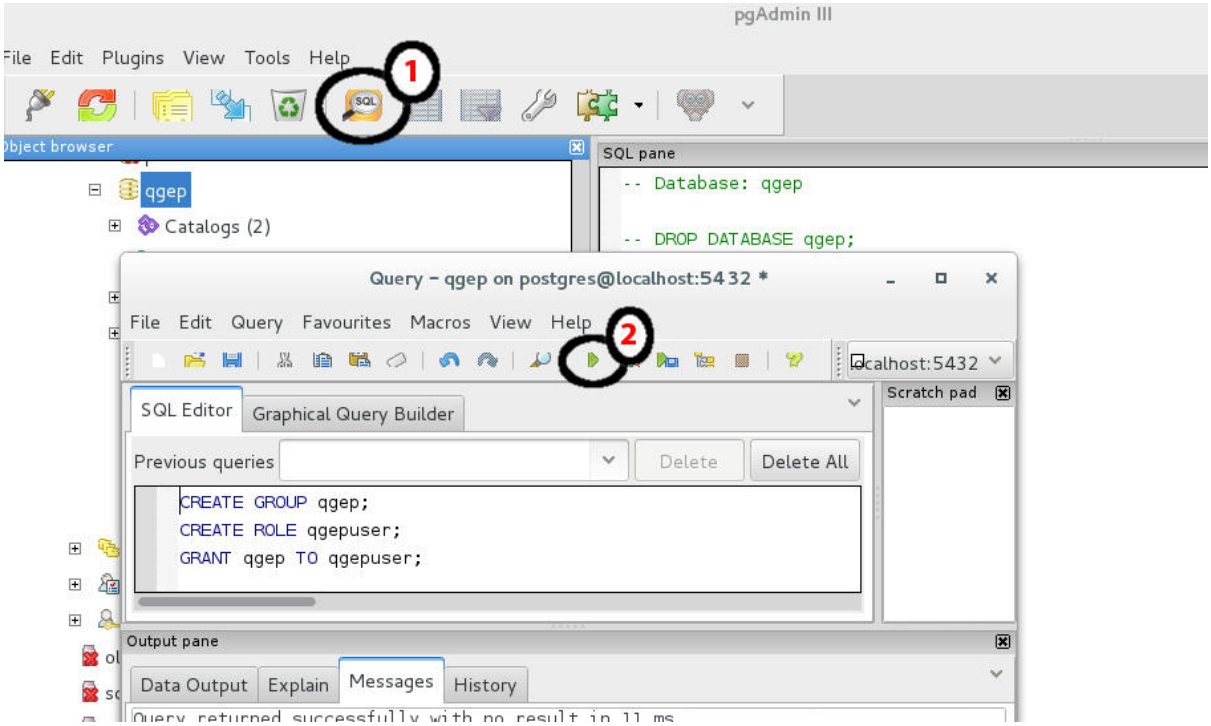

Figure 1.3: **Running SQL commands in PgAdminIII**

Note:

- Clicking the highlighted icon at location *1* opens the SQL Window. The SQL icon is active only when you're connected to a database.
- Clicking the icon at *2* runs the written SQL commands.

1.3 Demo Virtual Machine

This represents a guide on how to download and install a virtual machine (VM) that has a working QGEP installation with a preinstalled demo dataset.

1.3.1 About

The VM is based on Debian Jessie with Cinnamon Desktop.

Installed software:

- PostgreSQL 9.4.4 with Postgis 2.1.7
- QGIS Master 2.11

Settings that are changed from a default software install:

- `pg_hba.conf` has **trust** for local connections
- QGIS is setup with multithreaded rendering enabled
- QGIS is setup with postgres server side expression compiler enabled

Note: The users `web` and `root` have the password `qgis`

Note: If you decide to use the VM in production, it is recommended to:

- change the passwords
- regenerate the ssh keys by running in a terminal `sudo rm /etc/ssh/ssh_host_* && sudo dpkg-reconfigure openssh-server`

1.3.2 Install

Download

Download the vm from here

Note: The size of the VM is around 2GB compressed and around 7GB uncompressed.

Extract

The virtual disk is archived using XZ compression.

To extract the archive:

- **Windows:** you can use 7-Zip to extract the archive.
- **Linux:** cd to the download directory and run `xz -d qgisplatform.vdi.xz`

You can run the VM as you would do with any VirtualBox VM.

Note: As the VM is based on Linux it is fairly simple to convert the image to a raw disk and put it on a USB stick (minimum 8GB) or a faster storage. This would enable you to run the app without the virtualization penalty and enjoy the full speed of your hardware.

1.3.3 QGIS Server

The VM has working installations of QGIS Server and QGIS Web Client (QWC).

Access the Web Services

The Apache server is setup to respond to requests pointing to the *http://qgisplatform.demo*. Accessing the above link with the Internet Browser of the VM will take you to the starting page of QWC depicted in the above image.

If you want to access the web services outside the VM, you need to edit the `hosts` file on your machine and point `qgisplatform.demo` to the IP of the VM.

Note: If you've setup the VM with the network adapter in NAT mode only the VM host will be able to access the services. If you want all the devices on your LAN to do it, you need to setup the network adapter in bridge mode.

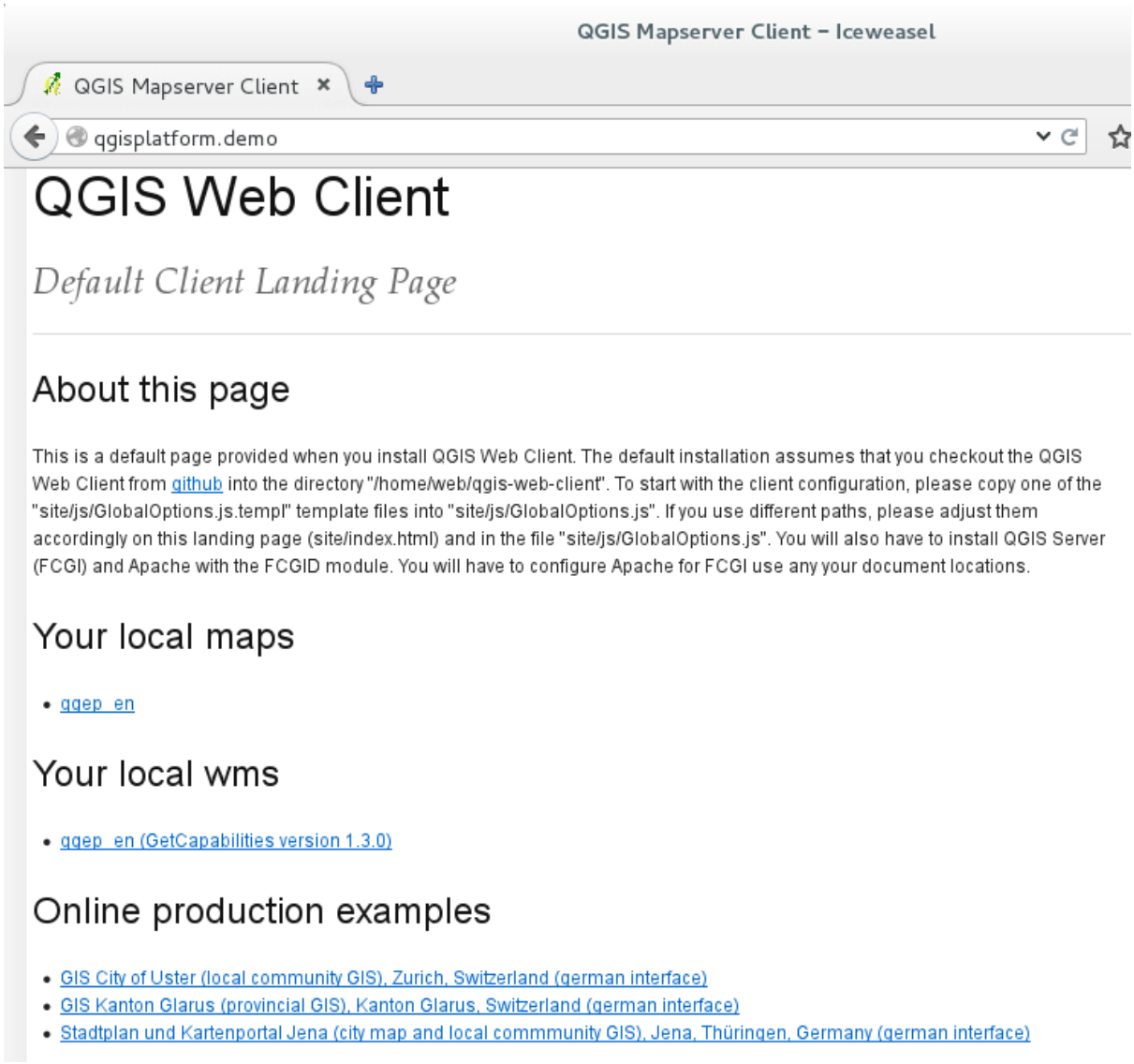

Figure 1.4: **QGIS Web client starting page**

CHAPTER 2

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