



# Boundless

Workshop: introduction to QGIS Server

# QGIS Server

Written in C++ QGIS Server is an OGC compliant web map server based on QGIS libraries

QGIS Server supported services:

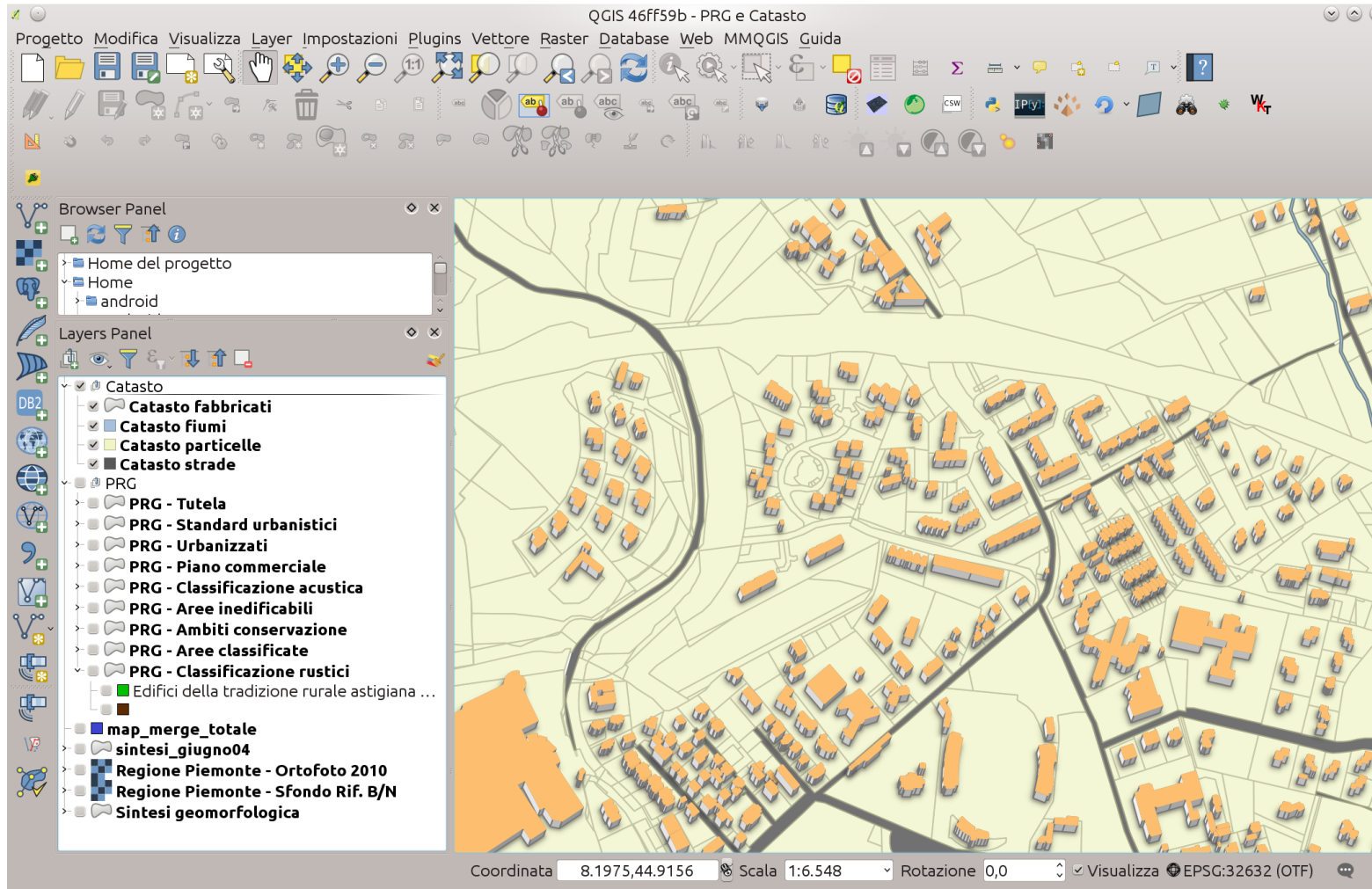
- WMS 1.3
- WFS 1.0.0
- WCS 1 1.1.1

Bonus:

- vendor parameters and methods
- export formats



# Pixel perfect rendering in QGIS Desktop



# Pixel perfect rendering in QGIS Server

SIT Comune di Asti - PRG e Catasto [Condizioni d'uso del servizio](#)

Info e strumenti

Cerca

Mappa

Layer

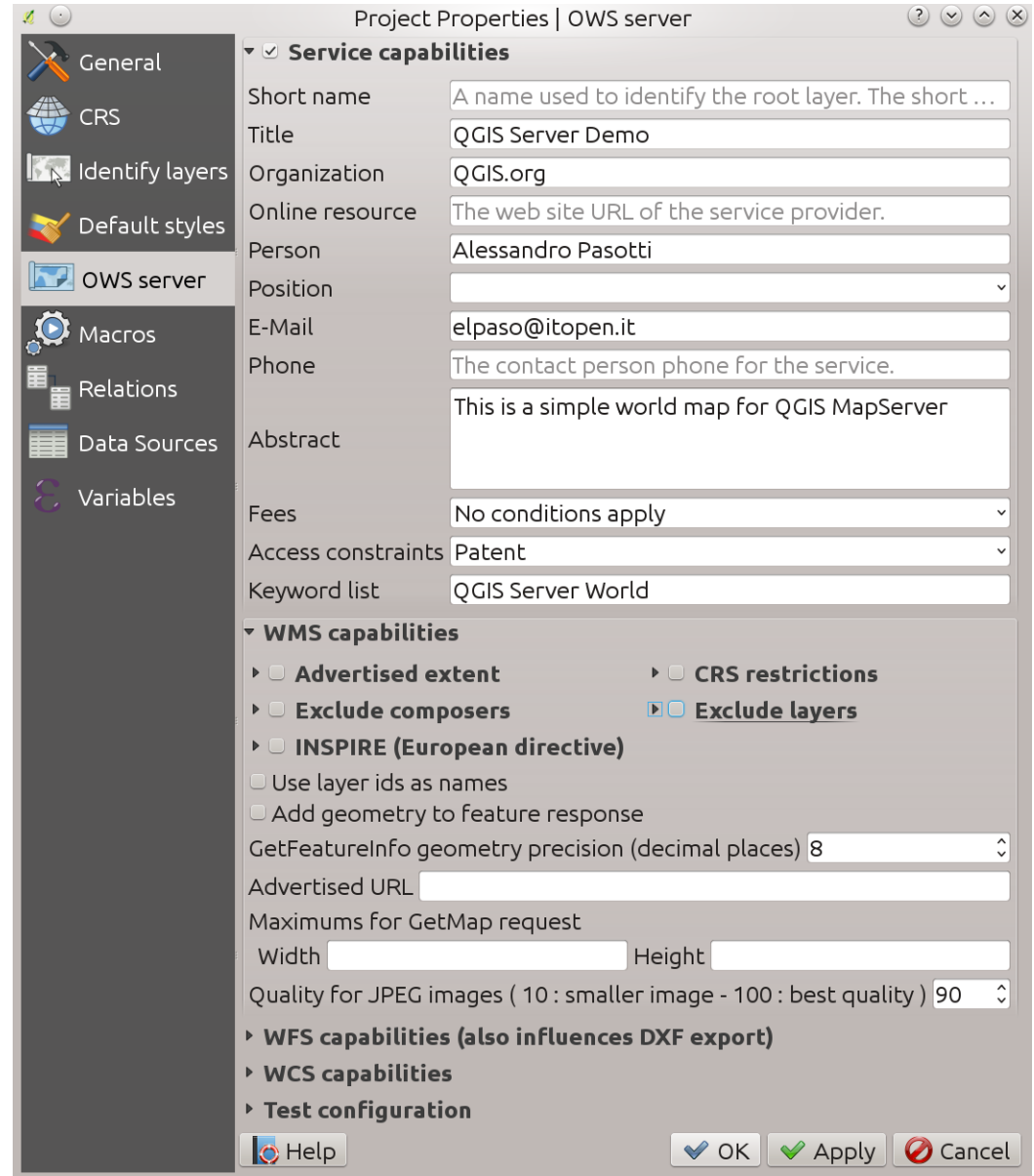
- PRG e Catasto
  - Catasto
    - Catasto fabbricati
    - Catasto fiumi
    - Catasto particelle
    - Catasto strade
  - PRG
    - PRG - Tutela
    - PRG - Standard urbanistici
    - PRG - Urbanizzati
    - PRG - Piano commerciale
    - PRG - Classificazione acustica
    - PRG - Aree inedificabili
    - PRG - Ambiti conservazione
    - PRG - Aree classificate
    - PRG - Classificazione rustici
  - map\_merge\_totale
  - sintesi\_giugno04
  - Regione Piemonte - Ortofoto 2011
  - Regione Piemonte - Sfondo Rif. E
  - Sintesi geomorfologica

Ordine dei layer

Modalità: navigazione. Shift+rettangolo o rotella del mouse per zoomare. Coordinate: 436625,4974094 1: 4102

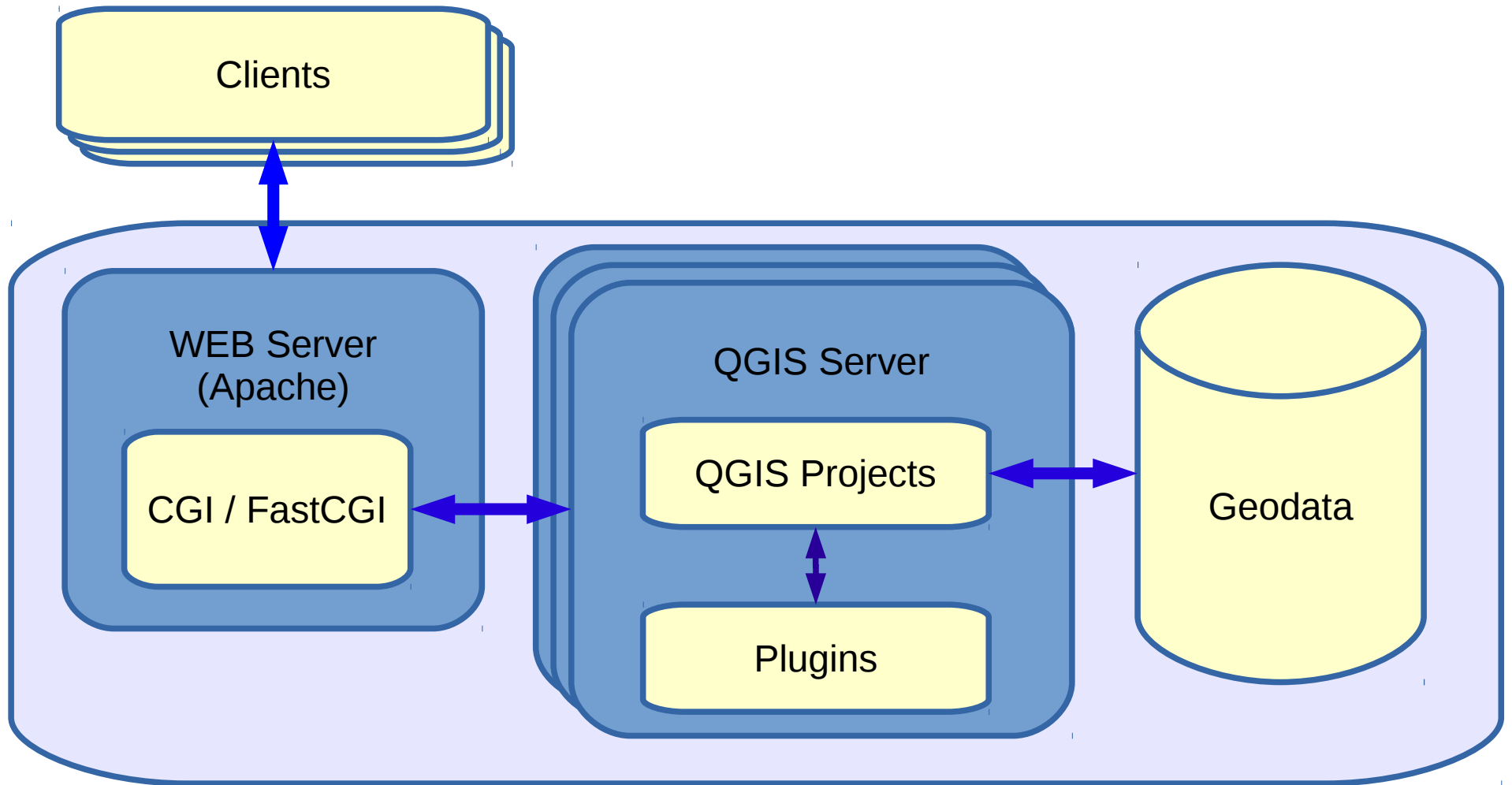
# Typical workflow

- Design your project in QGIS Desktop
- Options → OWS Settings
- Transfer your project to the server
- Transfer your geodata (shapefiles, rasters etc.) to the server or make sure they are accessible (database)
- Browse you project!



The screenshot shows the 'Project Properties | OWS server' dialog box. The left sidebar has 'OWS server' selected. The main area is divided into two sections: 'Service capabilities' and 'WMS capabilities'. The 'Service capabilities' section includes fields for Short name, Title (QGIS Server Demo), Organization (QGIS.org), Online resource, Person (Alessandro Pasotti), Position, E-Mail (elpaso@itopen.it), Phone, Abstract (This is a simple world map for QGIS MapServer), Fees (No conditions apply), Access constraints (Patent), and Keyword list (QGIS Server World). The 'WMS capabilities' section includes checkboxes for Advertised extent, Exclude composers, INSPIRE (European directive), CRS restrictions, and Exclude layers. It also has a checkbox for 'Use layer ids as names', a checkbox for 'Add geometry to feature response', a spinner for 'GetFeatureInfo geometry precision (decimal places)' set to 8, an 'Advertised URL' field, 'Maximums for GetMap request' fields for Width and Height, and a spinner for 'Quality for JPEG images' set to 90. At the bottom, there are buttons for Help, OK, Apply, and Cancel.

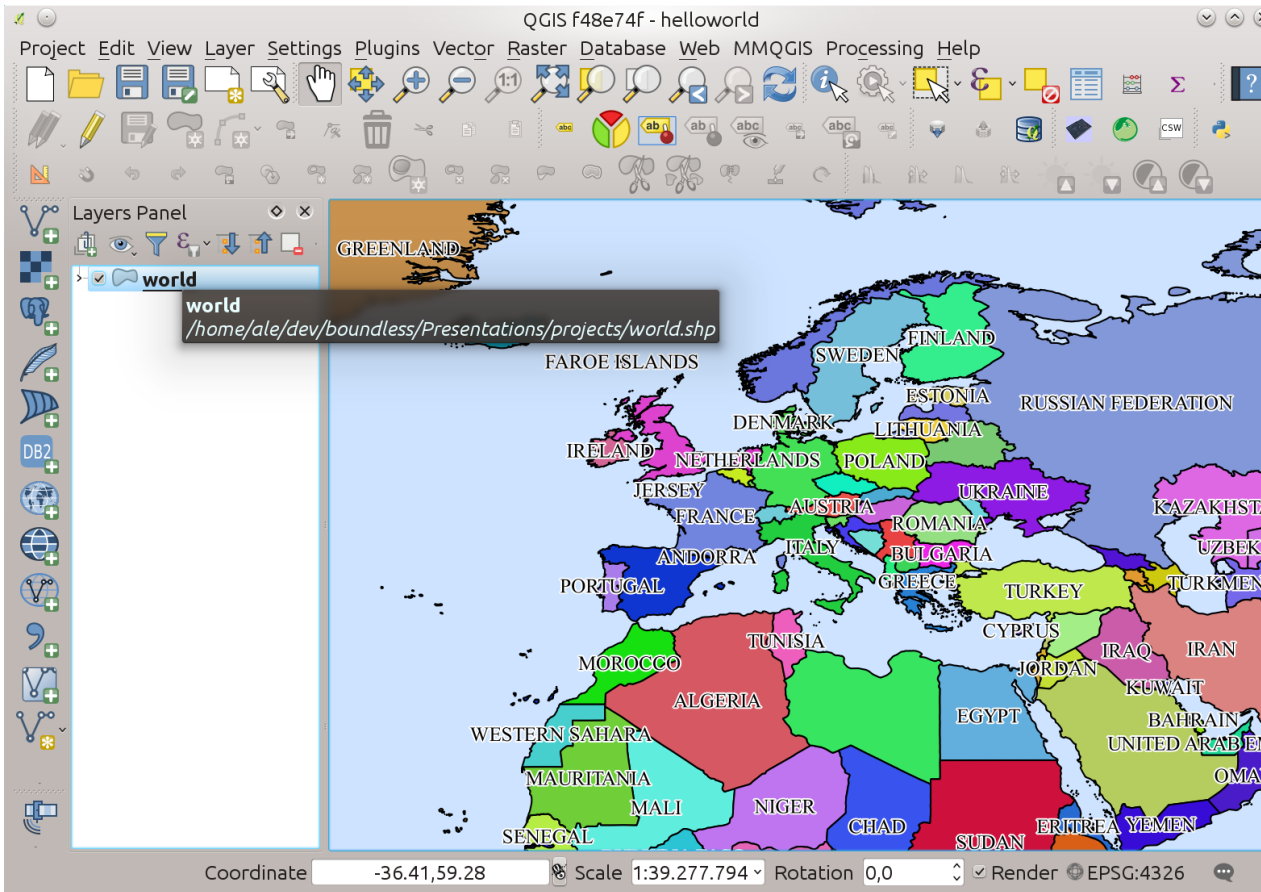
# System overview



# Installation plan on Ubuntu Linux with Apache

- Add repositories
- Install the web server's packages (Apache)
- (optionally install xvfb if your templates use HTML formatting)
- Install QGIS Server
- Configure the Apache web server
- Transfer an example project to the server
- Test OWS services
- Install a WebGIS on the server
- Test the WebGIS

# Sample Project



Make sure your geodata are either stored with a relative path or accessible through the same database connection on the target machine.

Check symbol paths!

Check project properties!



# Test QGIS Server OGC services

Test the endpoint:

```
http://127.0.0.1:8080/cgi-bin/qgis_mapserv.fcgi?map=/opt/qgis-server/projects/world.qgs&SERVICE=WMS&REQUEST=GetCapabilities
```

Test in QGIS, by adding  
a new WMS server.

Or test WFS by adding  
a new WFS(-T)  
endpoint

Crea una nuova WMS connessione

**Dettagli connessione**

Nome: VM

URL: http://127.0.0.1:8080/cgi-bin/qgis\_mapserv.fcgi?map=/opt/qgis-server/projects/world.qgs

Authentication: Configurations

Se il servizio richiede un'autenticazione semplice, inserisci un nome utente e una password opzionale

Username:

Password:

Riferimento:

Modalità DPI: tutto

- Ignora la URI GetMap/GetTitle riportata nelle capabilities
- Ignora la URI GetFeatureInfo riportata nelle capabilities
- Ignora orientamento assi (WMS 1.3/WMTS)
- Inverti l'orientazione degli assi
- Trasformazione con allisciamento

Help OK Cancel

# Printing composer templates

- List templates in **GetProjectSettings**

```
<ComposerTemplates>  
  <ComposerTemplate width="297" height="210" name="Printable World">  
    <ComposerMap width="283.208" height="176" name="map0"/>  
  </ComposerTemplate>  
</ComposerTemplates>
```

<http://localhost:8080/wms/world?&SERVICE=WMS&VERSION=1.1.1&REQUEST=GetPrint&TEMPLATE=Printable%20World&CRS=EPSG%3A4326&map0:EXTENT=-10,32,4,47&FORMAT=jpg&LAYERS=world>

FORMAT can be any of PDF, JPG, PNG

See also: [DXF Export](#)

# Server Plugins

- Place your plugins in

```
QGIS_PLUGINPATH "/opt/qgis-server/plugins"
```

```
$ mkdir /opt/qgis-server/plugins
```

A useful plugin: QGIS Server Browser

<http://plugins.qgis.org/plugins/ServerSimpleBrowser/>

```
$ cd /opt/qgis-server/plugins
```

```
$ wget -O tmp.zip
```

```
http://plugins.qgis.org/plugins/ServerSimpleBrowser/version/1.2/download/
```

```
$ unzip tmp.zip; rm tmp.zip; sudo service apache2 reload
```

# Server Plugins

Test your new plugin:

[http://127.0.0.1:8080/cgi-bin/qgis\\_mapserv.fcgi?map=/opt/qgis-server/projects/world.qgs&SERVICE=WMS&REQUEST=GetProjectSettings](http://127.0.0.1:8080/cgi-bin/qgis_mapserv.fcgi?map=/opt/qgis-server/projects/world.qgs&SERVICE=WMS&REQUEST=GetProjectSettings)



## QGIS Server Explorer

### QGIS Server Demo

This is a simple world map for QGIS MapServer

Name	Title	
helloworld	helloworld	<input type="button" value="View"/>
world	world	<input type="button" value="View"/>

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### helloworld



# Web Clients

- QWC: original “Official” QGIS Web Client
- QWC 2: new “Official” QGIS Web Client
- Lizmap
- ... many other OGC compliant web clients

# QGIS Web Client

Web site: <https://github.com/qgis/QGIS-Web-Client>

# Download && Install

```
$ wget -O qwc.zip https://github.com/qgis/QGIS-Web-Client
```

```
$ unzip qwc.zip && cd QGIS-Web-Client-master/
```

```
$ cp -r data/ /opt/qgis-server/
```

```
$ cp -r projects/* /opt/qgis-server/projects
```

```
$ sudo ./install.sh /opt/qgis-server/projects qgis.server true
```

# Merge the new vhost conf into our previous vhost

```
$ vim ...
```

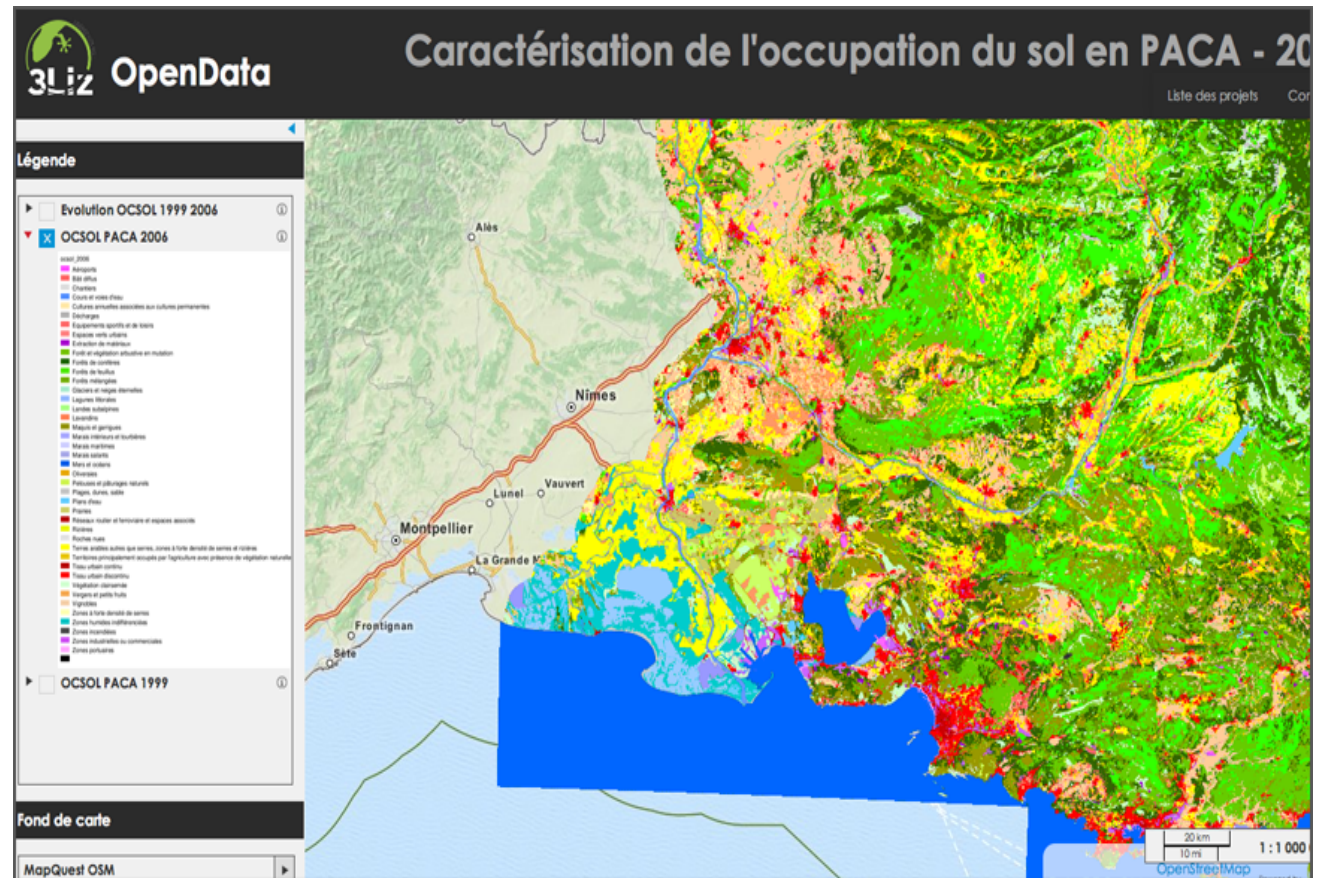
Browse: <http://127.0.0.1:8080/>

# QGIS Web Client configuration

- Configuration
  - QGIS-Web-Client-master/site/js/GlobalOptions.js
  - gis-project\_listing.xsl

# Lizmap

- [www.3liz.com](http://www.3liz.com)





## Useful links

- Official Manual:  
[http://docs.qgis.org/testing/en/docs/user\\_manual/working\\_with\\_ogc/ogc\\_server\\_support.html](http://docs.qgis.org/testing/en/docs/user_manual/working_with_ogc/ogc_server_support.html)
- Various articles about server plugins:  
<http://www.itopen.it/category/gis/qgis/qgis-server/>
- Bug tracker: <http://hub.qgis.org/issues/>
- Docker: <https://github.com/elpaso/qgis-server-docker>
- Vagrant workshop 2017: <https://github.com/elpaso/qgis2-server-vagrant>



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