

Publishing Maps with QGIS Server

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Introduction

- Nina Jakobs
- GEO-Consultant & UI/UX Designer @GeoNovation
- BSc Geo Media & Design (HAS University, 's-Hertogenbosch)
- MA Data-Driven Design (HU University, Utrecht)

- GeoNovation is the developer of “KaartViewer” (mapviewer)
- We offer a SaaS solution for geo-related questions for organizations who work with GIS



Introduction

- From May 15 till May 31 we're having a roadshow through the Netherlands
- Interested? Visit <https://roadshow.kaartviewer.nl> for more information.

GEONOVATION

ON THE ROAD

15 t/m 31 mei 2023

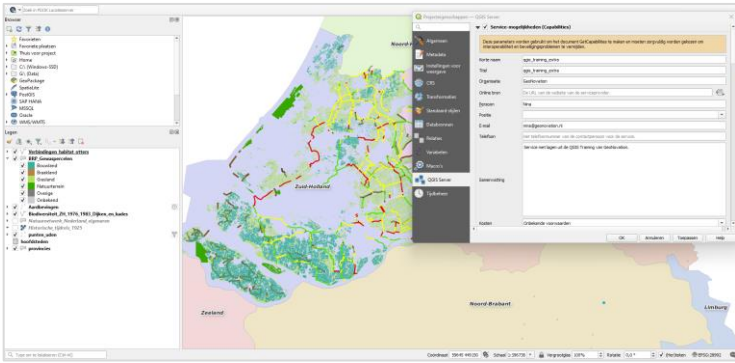
Uden - Ede - Breda - Wierden - Wolvega - Zaandam - Pijnacker

Why QGIS Server?

- About 20 clients are currently working with QGIS Server (and GeoServer)
- They use it to publish layers which are difficult to publish in GeoServer because of complicated styles
- And it's very easy when you're already familiar with QGIS.
- The results are directly visible on the mapviewer.

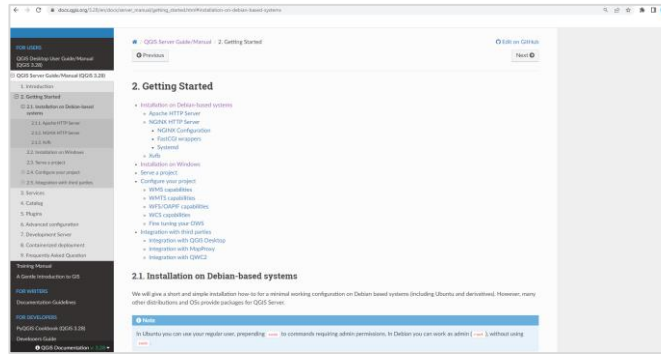
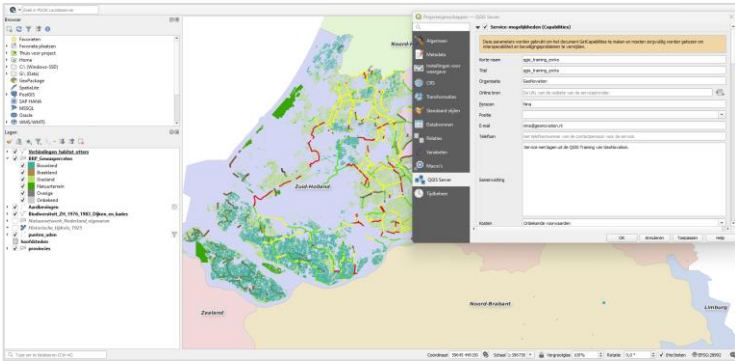


A technical story about QGIS Server



QGIS DESKTOP

- Creating a QGIS Project on the server provider
- Configuration of connections (files on the server provider)



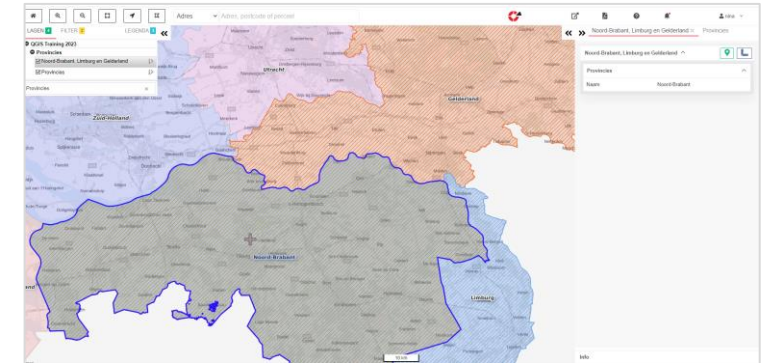
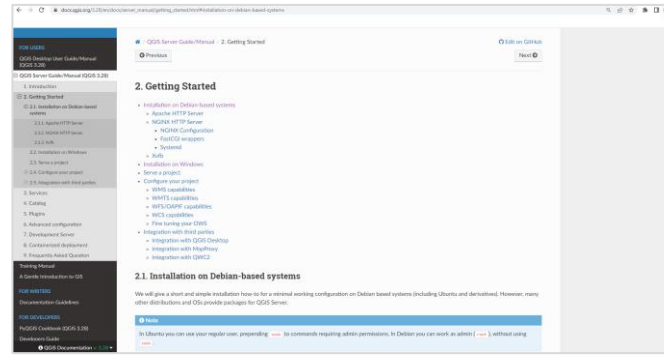
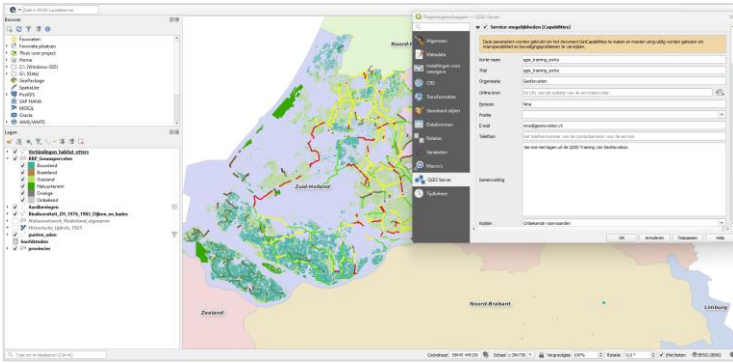
QGIS DESKTOP



QGIS SERVER

- Creating a QGIS Project on the server provider
- Configuration of connections (files on the server provider)

- Installation of QGIS Server on the webserver
- Create additional folders (projects etc.)
- Add security to the server



QGIS
DESKTOP



QGIS
SERVER



WMS
URL

- Creating a QGIS Project on the server provider
- Configuration of connections (files on the server provider)

- Installation of QGIS Server on the webserver
- Create additional folders (projects etc.)
- Add security to the server

- The output of the QGIS Project as a URL, served by QGIS Server
- Result: the map is published via the WMS in KaartViewer!

Supported formats

- Web Map Service (WMS)
- Web Feature Service (WFS)
- OGC API – Features
- Web Content Service (WCS)
- Web Map Tile Service (WMTS)

What are the benefits?

Beautiful visualizations

Basemaps



Basemaps

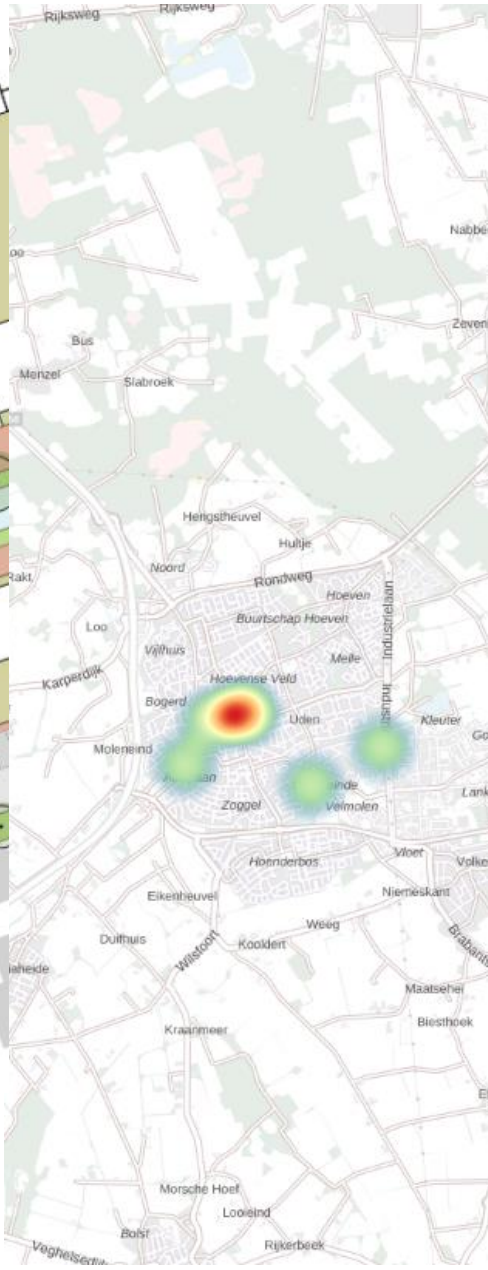


AutoCAD

Basemaps



Heatmaps

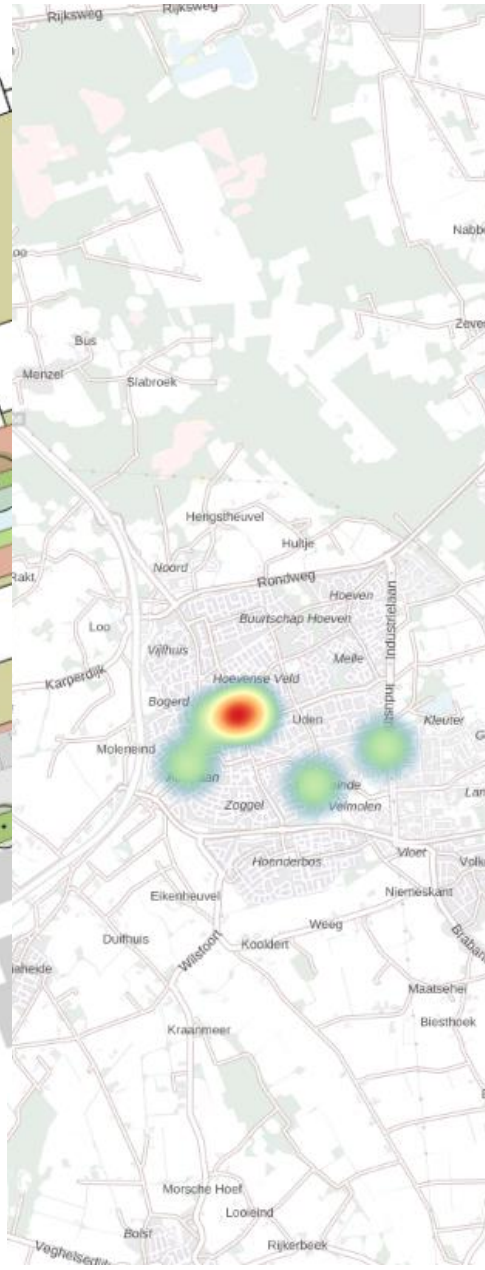


AutoCAD

Basemaps



Heatmaps



AutoCAD



Patterns & more





```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <StyledLayerDescriptor xmlns="http://www.opengis.net/sld" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.opengis.net/sld
http://schemas.opengis.net/sld/1.1.0/StyledLayerDescriptor.xsd" xmlns:xlink="http://www.w3.org/1999/xlink" version="1.1.0" xmlns:se="http://www.opengis.net/se" xmlns:ogc="http://www.opengis.net/ogc">
3 <NamedLayer>
4 <se:Name>Lent_energie</se:Name>
5 <UserStyle>
6 <se:Name>Lent_energie</se:Name>
7 <se:FeatureTypeStyle>
8 <se:Rule>
9 <se:Name>A</se:Name>
10 <se:Description>
11 <se:Title>A</se:Title>
12 </se:Description>
13 <ogc:Filter xmlns:ogc="http://www.opengis.net/ogc">
14 <ogc:PropertyIsEqualTo>
15 <ogc:PropertyName>energieklasse</ogc:PropertyName>
16 <ogc:Literal>A</ogc:Literal>
17 </ogc:PropertyIsEqualTo>
18 </ogc:Filter>
19 <se:PointSymbolizer>
20 <se:Graphic>
21 <se:Mark>
22 <se:WellKnownName>circle</se:WellKnownName>
23 <se:Fill>
24 <se:SvgParameter name="fill">#2b83ba</se:SvgParameter>
```

Valideren Opslaan Apply Annuleren



```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <StyledLayerDescriptor xmlns="http://www.opengis.net/sld" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.opengis.net/sld
http://schemas.opengis.net/sld/1.1.0/StyledLayerDescriptor.xsd" xmlns:xlink="http://www.w3.org/1999/xlink" version="1.1.0" xmlns:se="http://www.opengis.net/se" xmlns:ogc="http://www.opengis.net/ogc">
3   <NamedLayer>
4     <se:Name>Lent_energie</se:Name>
5     <UserStyle>
6       <se:Name>Lent_energie</se:Name>
7       <se:FeatureTypeStyle>
8         <se:Rule>
9           <se:Name>A</se:Name>
10          <se:Description>
11            <se:Title>A</se:Title>
12          </se:Description>
13          <ogc:Filter xmlns:ogc="http://www.opengis.net/ogc">
14            <ogc:PropertyIsEqualTo>
15              <ogc:PropertyName>energieklasse</ogc:PropertyName>
16              <ogc:Literal>A</ogc:Literal>
17            </ogc:PropertyIsEqualTo>
18          </ogc:Filter>
19          <se:PointSymbolizer>
20            <se:Graphic>
21              <se:Mark>
22                <se:WellKnownName>circle</se:WellKnownName>
23                <se:Fill>
24                  <se:SvgParameter name="fill">#2b83ba</se:SvgParameter>
```

No SLD/CSS styling codes
needed

Valideren Opslaan Apply Annuleren

How does this work?
Let's take a closer look...

<https://clipchamp.com/watch/9IMbhVXW1yD>



QGIS Server versus GeoServer

Case: "I want to publish an AutoCAD layer"

Use QGIS Server when...

- You want to save time (no SLD/CSS style needed)

Use GeoServer when...

- You like to write SLD/CSS codes for the styles

Case: "I want to configure the security of the layers "

Use QGIS Server when...

- You're okay with a Basic Authentication for the whole QGIS Server

Use GeoServer when...

- You want full control over the authorization. GeoServer provides many options for this (e.g., secure a layer (group) for a specific role)

Case: "I want to use a WFS service in CRS of the Netherlands (RD)"

Use QGIS Server when...

- Only when you don't need to use WFS/geoJSON. The Dutch CRS (RD) is not supported in QGIS Server.

Use GeoServer when...

- You want to use the WFS service or geoJSON. GeoServer supports the Dutch CRS.

Case: "I want to create a clean structure for my layers"

Use QGIS Server when...

- You can create a clean structure within the folders which are located on the QGIS Server in which the QGIS projectnames can be seen as the name of the workspace.

Use GeoServer when...

- You want to control the workspaces with a structured UI for sources and layers.

WHO IS THE WINNER?

GeoServer

- More options for the configuration of the authorization
- Supports the CRS of the Netherlands (RD)
- Easier to structure the workspace
- Possibilities for SQL view

QGIS Server

- Authorization via Basic Authentication
- Doesn't support RD
- Other ways to structure workspaces
- Geometric filters etc. must be applied within QGIS

One last tip!

- Be aware of the fact that the QGIS Project is used as the source for the WMS service.
- For example: when you're using a spatial database connection in your project, you need to be careful with storing the username, password etc. on a save place (e.g., "pg_service.conf" file with the credentials)



Watch this presentation again



Thank you for your attention!

Visit www.geonovation.nl

GeoNovation on the road - May 15 till May 31

<https://roadshow.kaartviewer.nl>

LinkedIn: [Nina Jakobs](#) | [GeoNovation](#)