



OGIS Web Client 2 (OWC2) – Neues aus dem Projekt

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SOURCEPOLE
Linux & Open Source Solutions





› Web-GIS & GDI

- › QGIS Web Client 2
- › qgiscloud.com



› QGIS

- › C++ Core Developers
- › QGIS Server, Plugins, ...
- › QGIS Enterprise Support

› Weitere OSGeo Projekte

- › Beiträge zu OGR/GDAL, PostGIS, MapServer, OpenLayers, ...

› Sprachen

- › JS, Python, C++, Rust, Ruby, ...





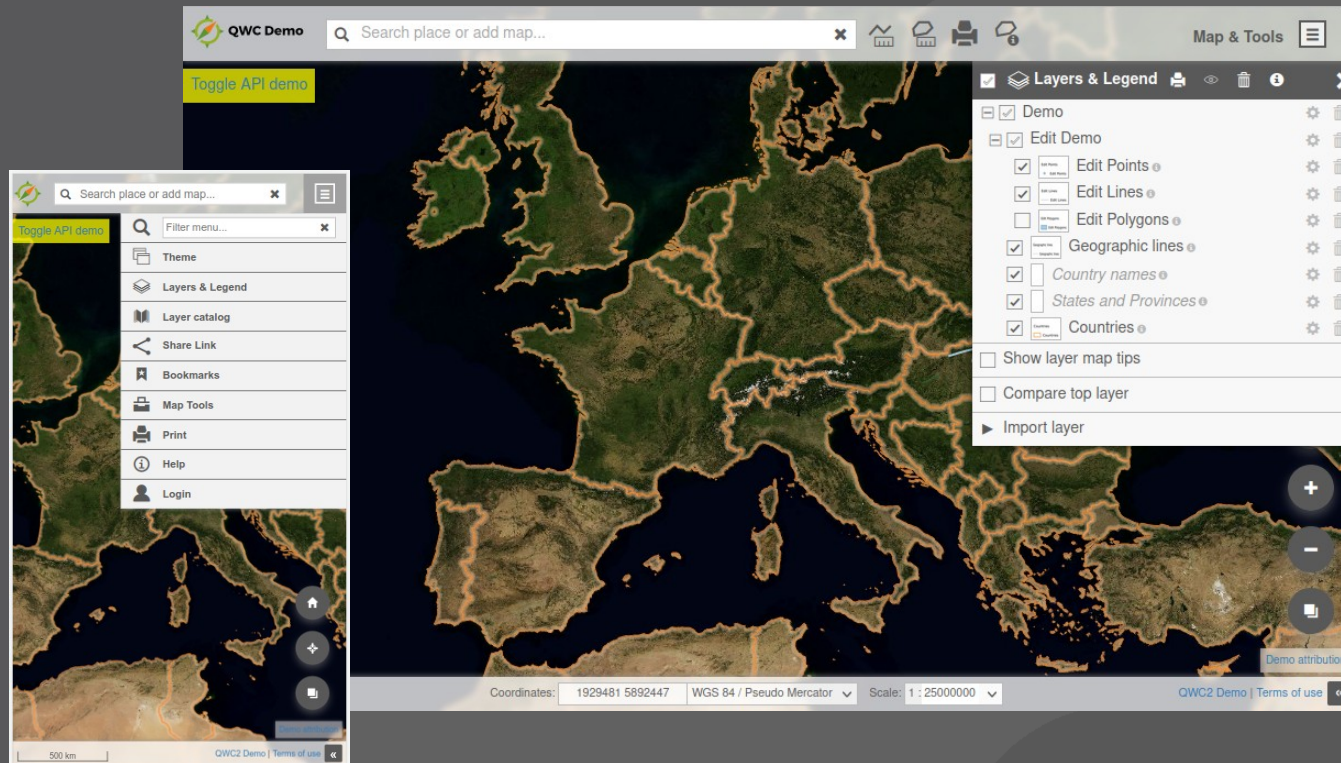
- › Einführung in den QWC2 und qwc-services
- › Neues aus dem Projekt
- › Ausblick





QGIS Web Client 2

- QWC2 ist eine Webanwendung zum Publizieren von QGIS Projekte im Web
 - Aktuelle Technologien (ReactJS, Openlayers 9)
 - Responsive
 - Erweiterbare Plugin-Architektur





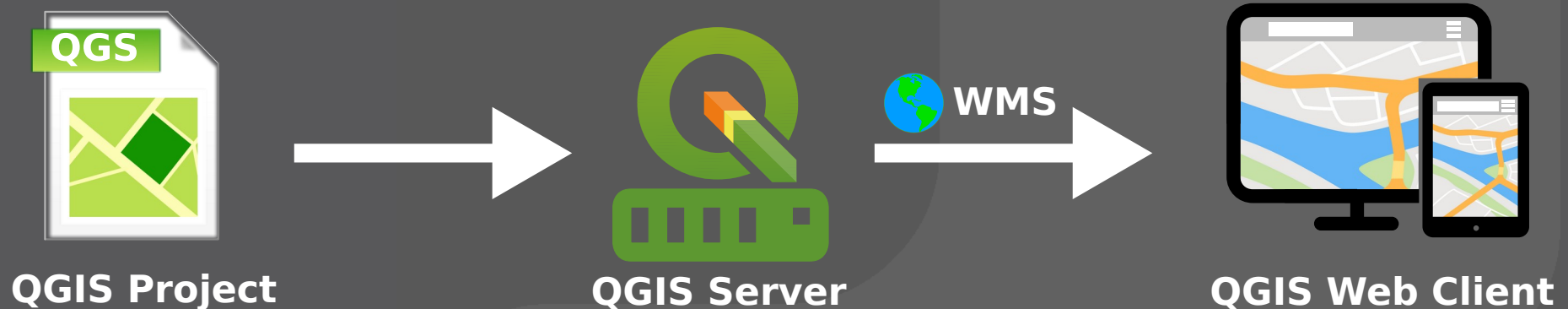
QGIS Web Client 2 – Workflow

1 Gestaltung der Karte in QGIS Desktop

- › Ebenen und Symbolisierung
- › Feldkonfiguration und Formulare
- › Druckvorlagen

2 Publikation des Projekts als WMS über QGIS Server

3 Darstellung im QGIS Web Client





QWC2 und qwc-services

- › **QWC2 kann als einfacher WMS-Client vor einem QGIS Server betrieben werden**
 - › Statische JS/HTML/CSS Anwendung
 - › Limitiert auf QGIS Server Funktionalität
- › **qwc-services: Dienste zur Erweiterung von QWC2**
 - › Ermöglicht u.A. Benutzerrechteverwaltung
 - › Schwach gekoppelte Microservices
 - › Kommunikation über HTTP/REST
 - › Hauptsächlich Python-Flask services





OWC2 Funktionen – Themenauswahl



- Ein Thema entspricht einem publizierten QGIS Projekt





QWC2 Funktionen – Karte

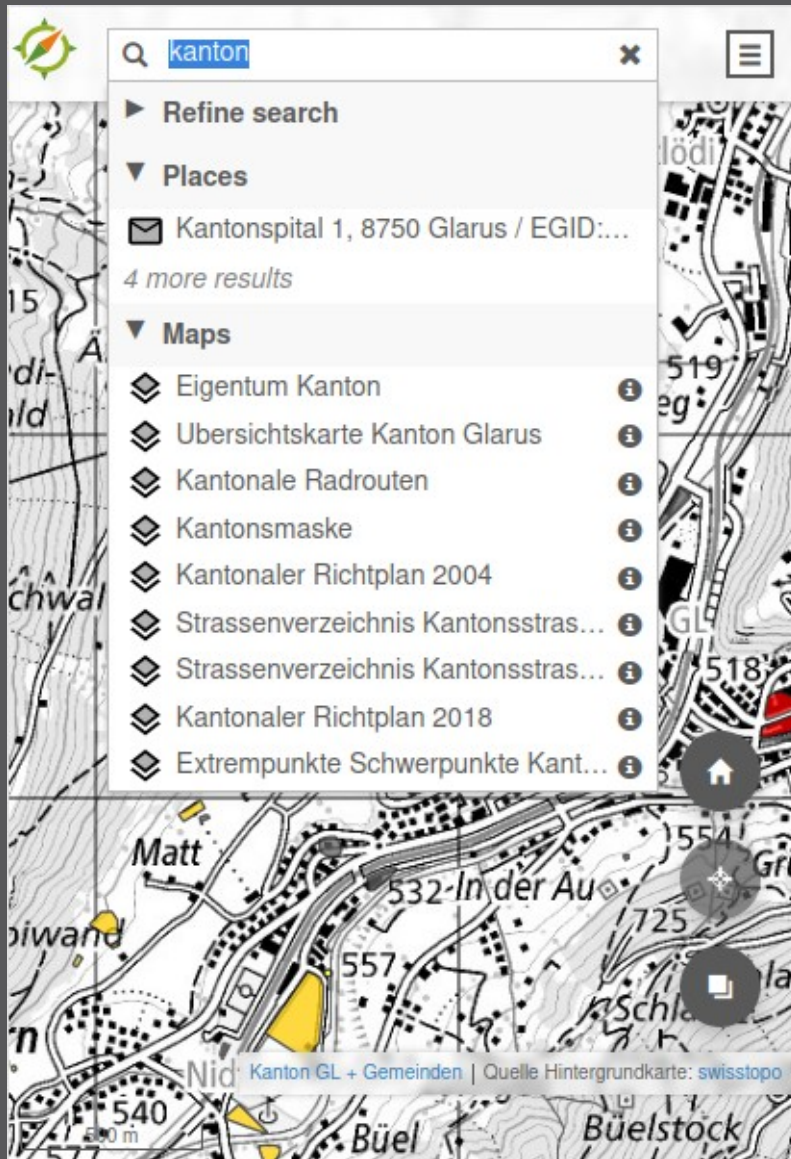
The screenshot displays the QWC2 web client interface. At the top left, there is a search bar with the text "bahnhofstrasse 12a". Below it, a "Places" dropdown menu shows search results. The main map area shows a topographic map with various layers overlaid. On the right side, the "Layers & Legend" panel is visible, listing layers like "Wald - Übersicht", "OV-Netz", and "OV-Haltestellen". Below this, there is an "Import layer" section with a URL field set to "wms.geo.admin.ch" and a "Connect" button. A "Filter..." field is also present. At the bottom left, the "Feature Info" panel shows details for a selected feature, including its type ("Waldplan") and station name ("Klus"). At the bottom right, the "Position" panel displays coordinates and elevation. The bottom status bar shows the scale (1:59198) and the source (Geoportal Kt. Solothurn).

- Ebenensteuerung
- Hintergrundswitcher
- Infoabfrage
 - Objekt
 - Kartenposition
- Kartenvergleich
 - Oberste Ebene
- Layerimport
 - WM(T)S, WFS, KML, ...





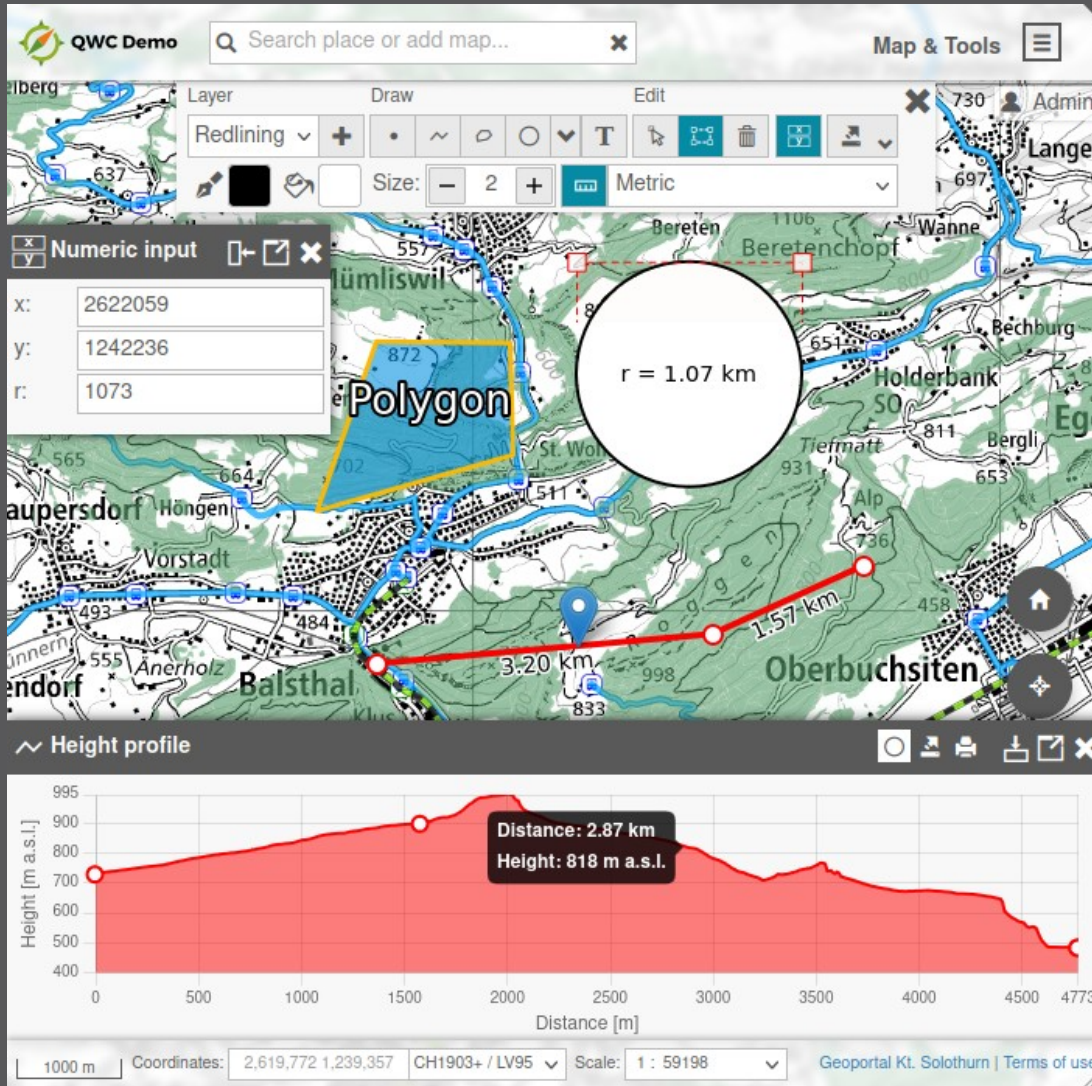
OWC2 Funktionen – Suche



- Suche mit konfigurierbaren Diensten
 - Orte
 - Karten / Ebenen
 - Themen
- Anbindung von externen Suchdiensten
- DB-Volltextsuche



QWC2 Funktionen – Zeichnen & Analyse

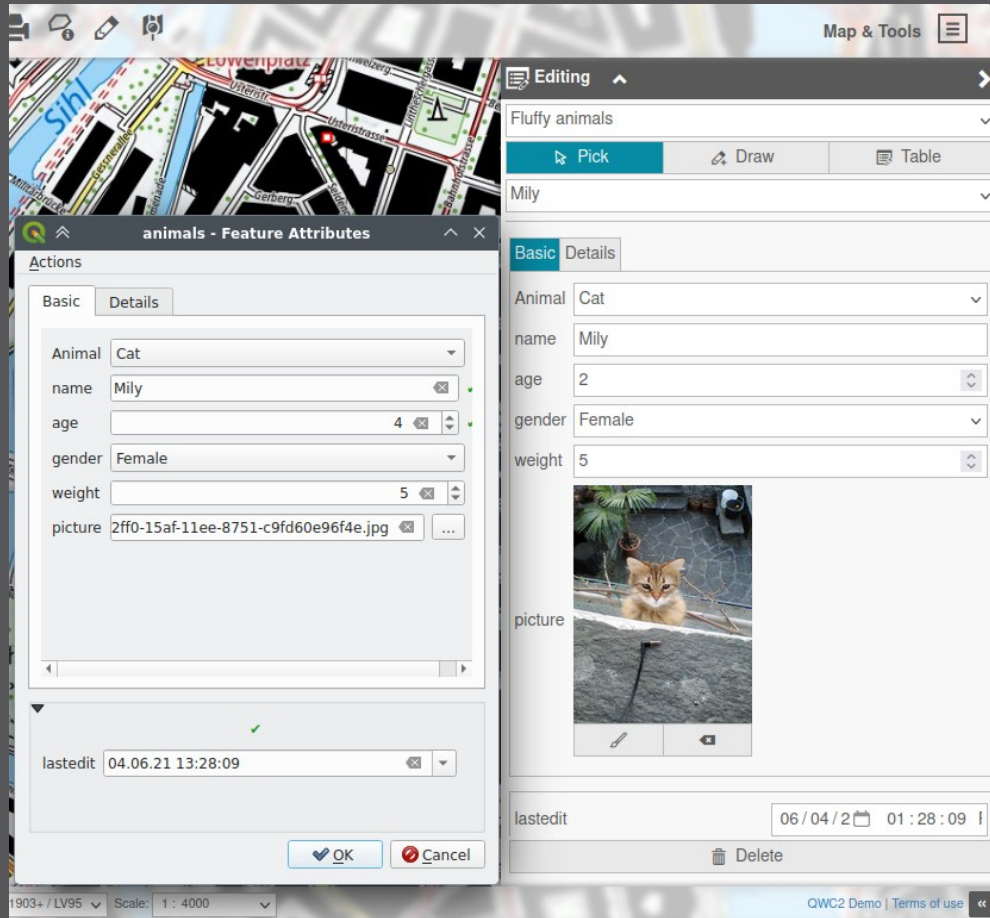


- Redlining
- Messen
- Höhenprofil





QWC2 Funktionen – Editieren



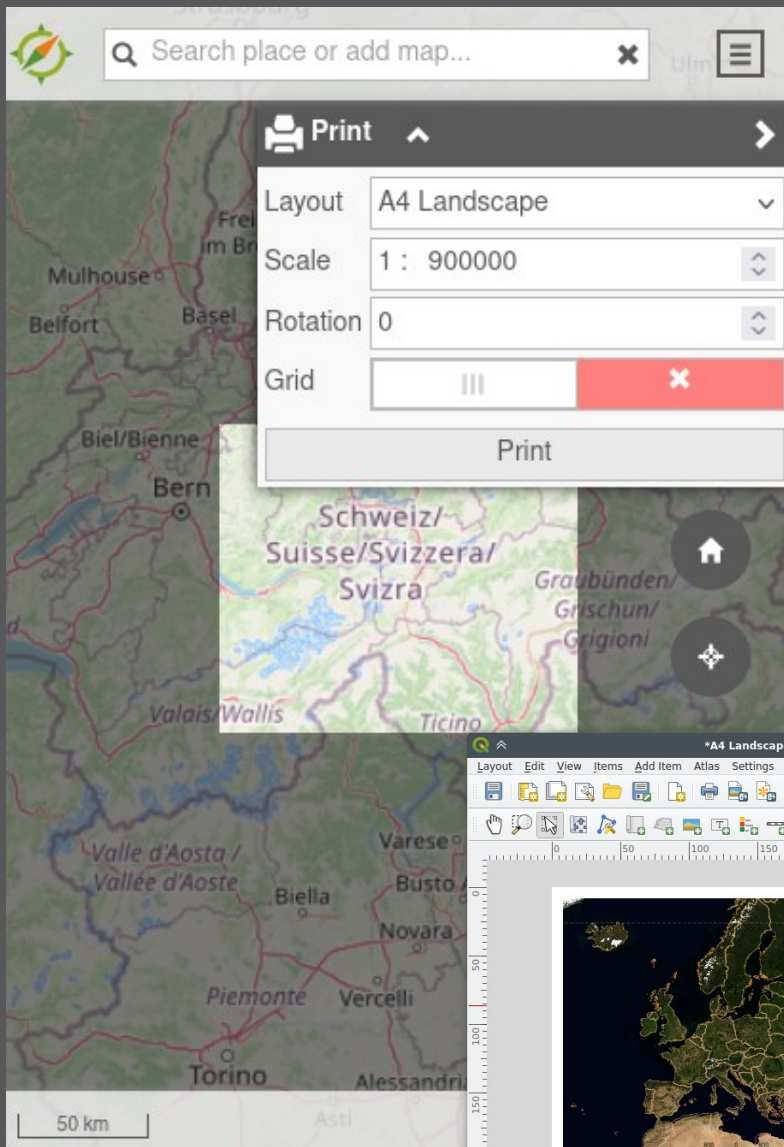
- Geometrien und Attribute editieren
 - QGIS Formulare
 - Datei-Uploads
 - Wertebeziehungen
 - 1:N Relationen
- Attributtabelle
 - Geometrieloze Tabellen

id	name	age	birthdate	size	hungry	sleepy	remarks	Animal	picture
2	Minni	0	04/25/2011	5	<input type="checkbox"/>	<input type="checkbox"/>		Cat	minni.jpg
1	Mily	2	02/13/2019	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Selec	11.jpg
3	asd	1	mm/dd/yyyy	6	<input type="checkbox"/>	<input type="checkbox"/>		Cat	Browse... ..





QWC2 Funktionen – Teilen & Exportieren



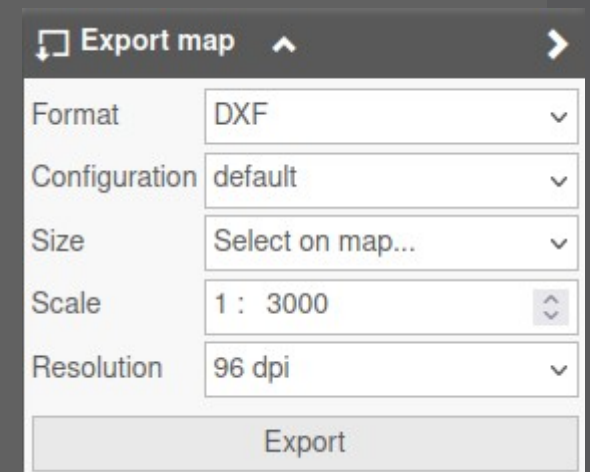
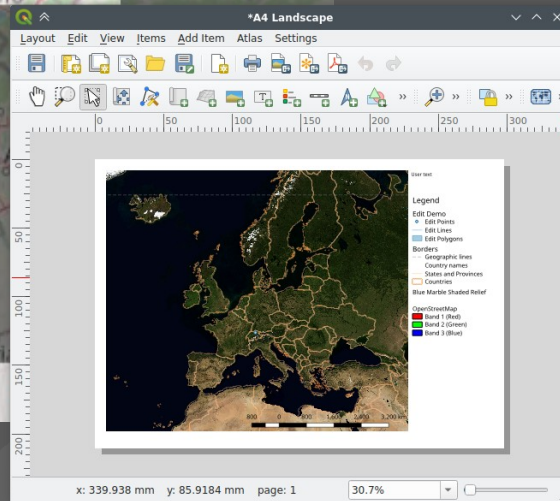
➤ Permalinks

➤ MapExport

➤ Kartenbereich in div. Formate

➤ PDF Druck

➤ QGIS Druckvorlagen





QWC2 Funktionen – Plugins!

- Routing
- TimeManager
- ...

The screenshot shows the QWC2 Routing plugin interface. At the top, there is a search bar with the text "Search place or add map...". Below it, the "Routing" panel is active, showing a "Route" tab and a "Reachability" tab. The "Route" tab is selected, and it displays a map with a blue route line. The route starts at "Tenero, Tenero-Contra, Circolo d" and ends at "Bellinzona, Circolo di Bellinzona, Dist". The route is 17.20 km long and takes 00:19:19. There are options for "Roundtrip" and "Add route point". A "Position" panel is also visible, showing coordinates (WGS 84 / Pseudo Mercator: 1003033, 5810276) and elevation (226 m). The map shows a road network with a blue route line and a 5 km scale bar.

The screenshot shows the QWC2 TimeManager plugin interface. At the top, there is a search bar with the text "Search place or add map...". Below it, the "Time manager" panel is active, showing a map with several markers (Name19, Name10, Name21) and a "Temporal navigation" panel. The "Temporal navigation" panel has a "Markers" checkbox checked and a "Timescale (non-linearity)" of 1.00. The map shows a road network with a blue route line and a 20 km scale bar.





OGC2 Funktionen – Benutzerverwaltung

Home Users Groups Roles Resources Permissions Logout

Permissions

+ New Permission Search Role Filter: All Type Filter: All

« 1 »

ID	Role	Resource type	Resource	Priority	Write	
31	admin	Attribute	Long name (<i>countries</i>)	0	False	Edit Remove
10	admin	Data	Hauptbahnhof (<i>test1</i>)	0	False	Edit Remove
32	admin	FeatureInfo layer	Orthofoto_2015_stdzh_0.5_jpeg (<i>test1</i>)	0	False	Edit Remove
8	public	Data	animal_names (<i>test1</i>)	0	False	Edit Remove
6	public	Data	animals (<i>test1</i>)	0	True	Edit Remove

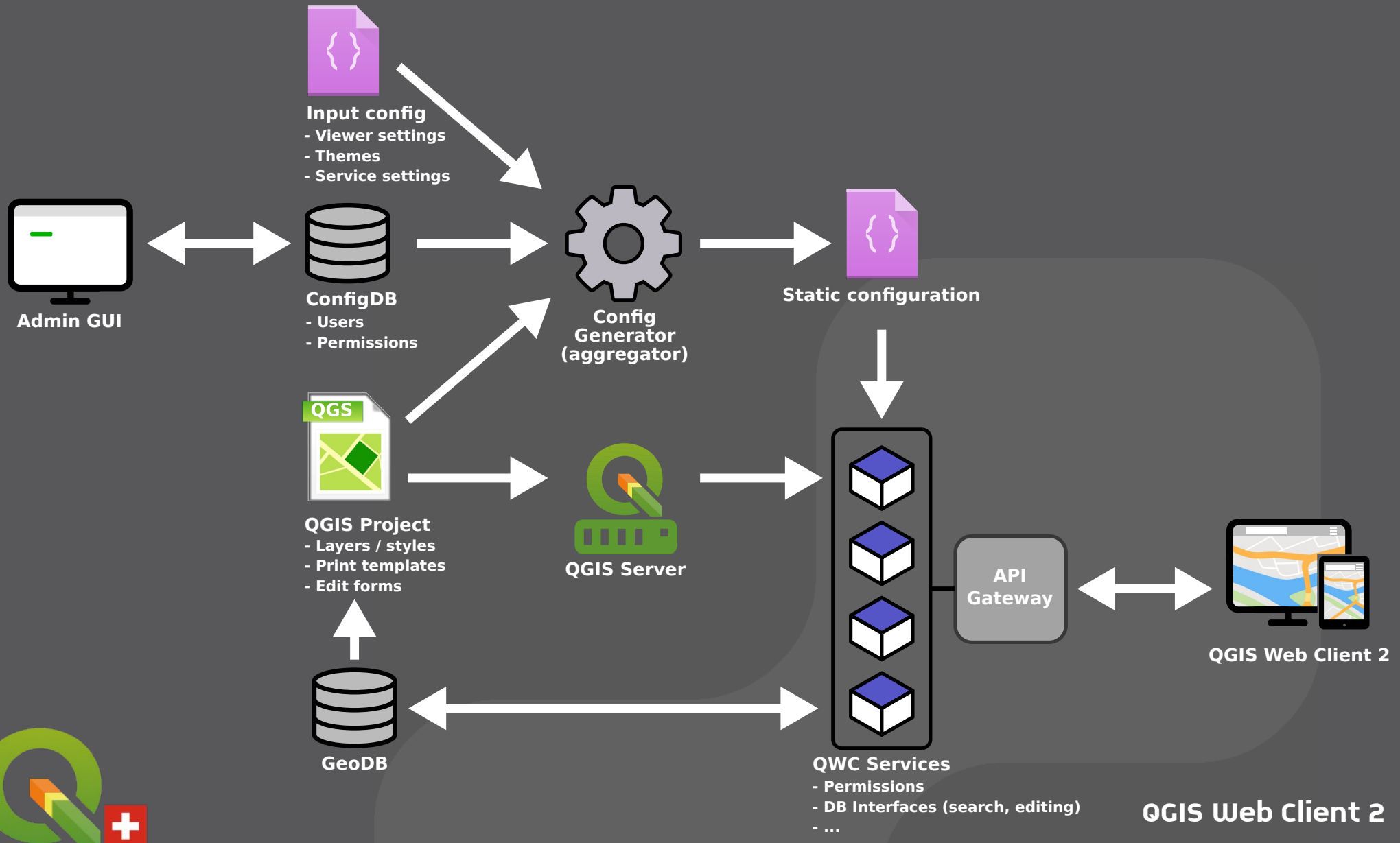
➤ Berechtigung von Ressourcen

- Karten
- Ebenen
- Attribute
-





qwc-services – Architektur

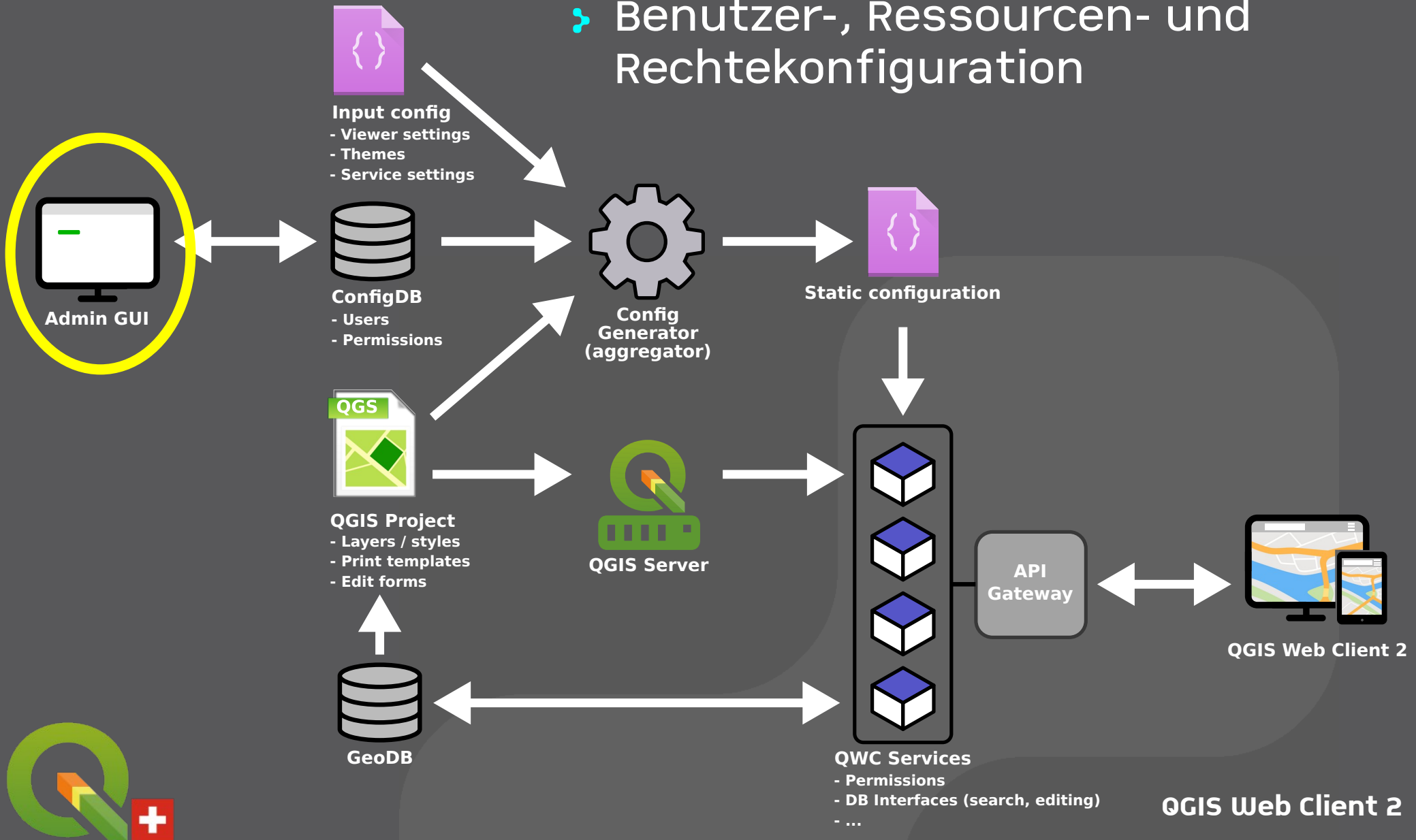




qwc-services – Architektur

Admin GUI

Benutzer-, Ressourcen- und Rechtekonfiguration

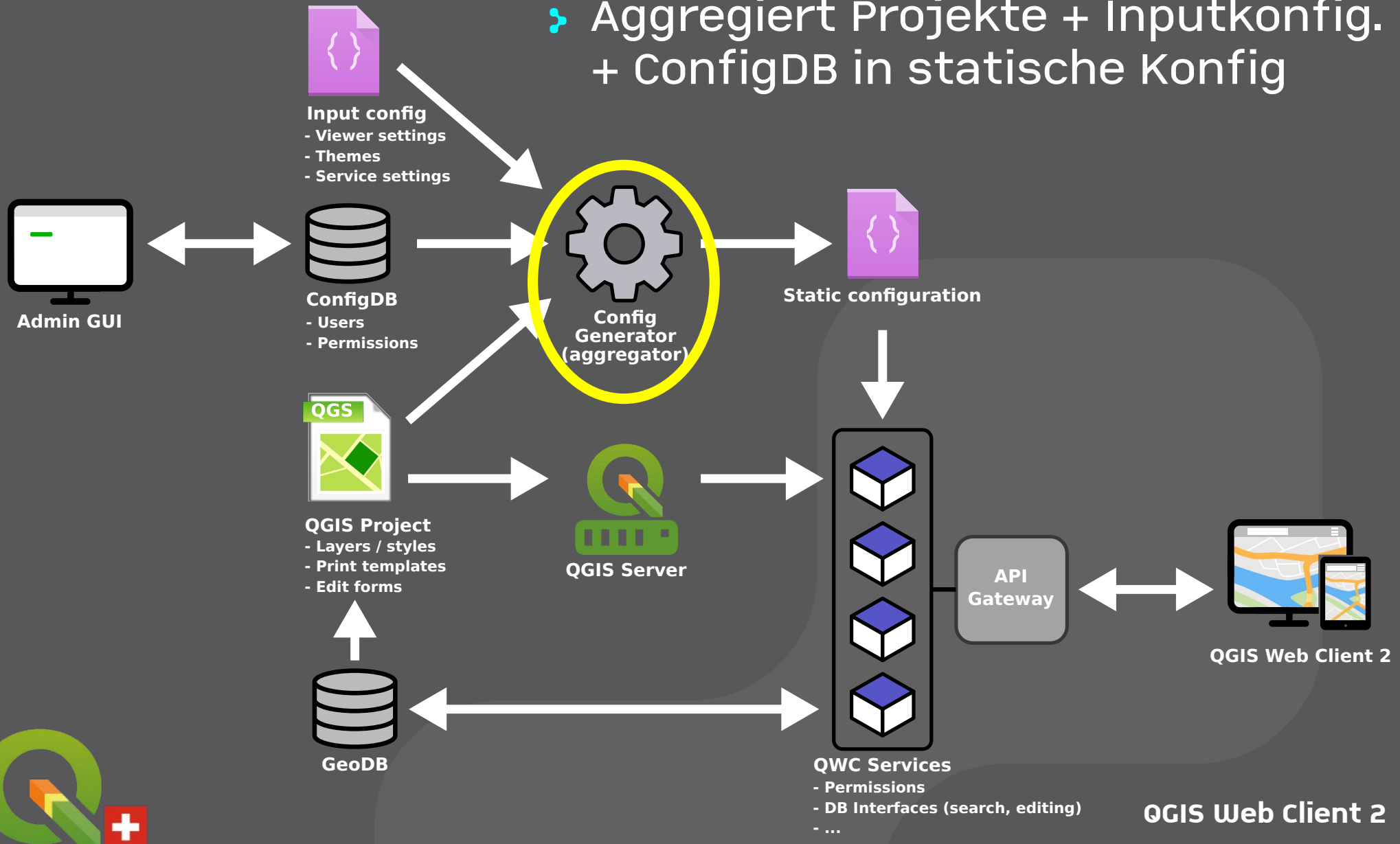




qwc-services – Architektur

➤ Config Generator

➤ Aggregiert Projekte + Inputkonfig. + ConfigDB in statische Konfig

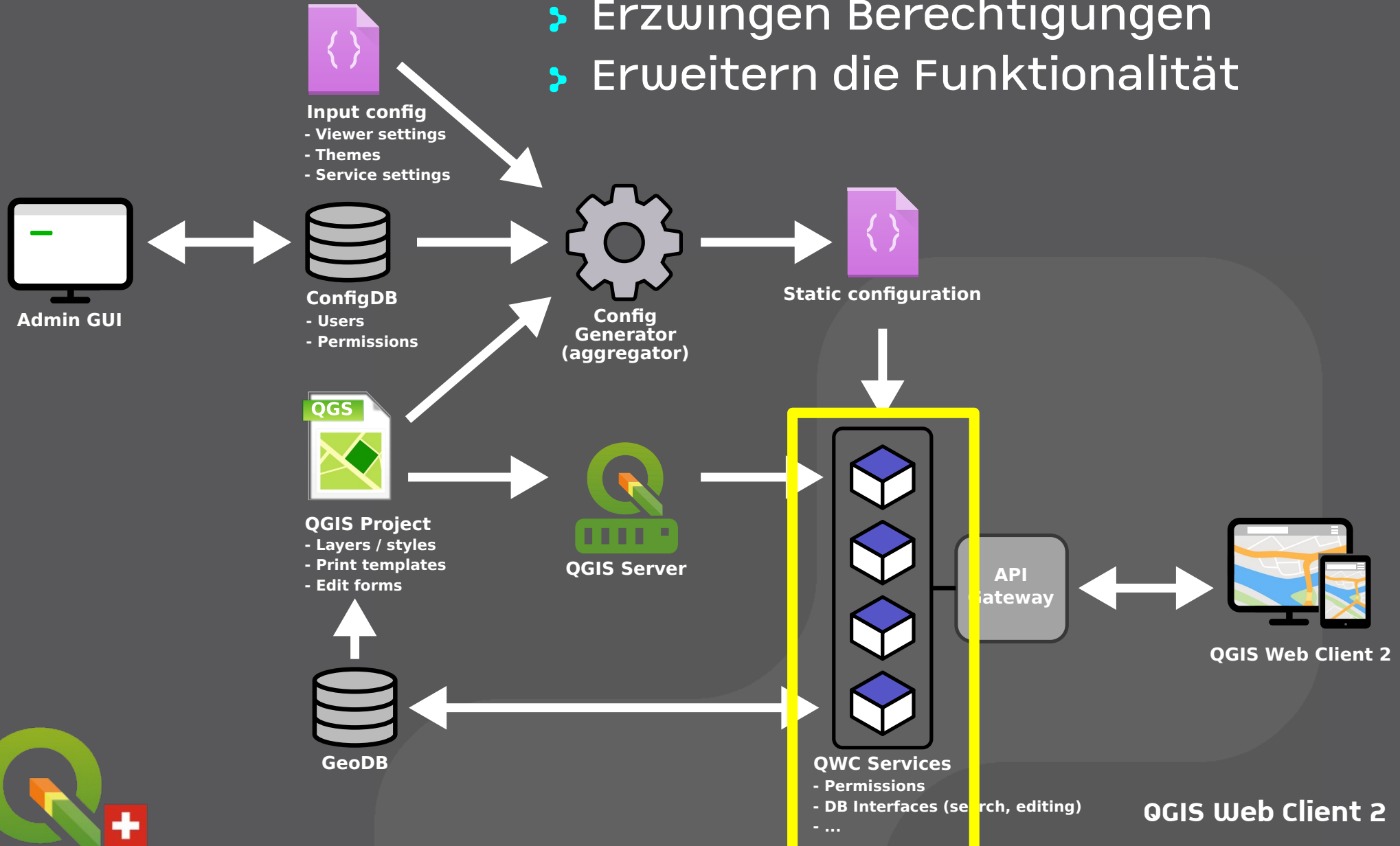




qwc-services – Architektur

Services

- Erzwingen Berechtigungen
- Erweitern die Funktionalität





qwc-services – Authentisierung

- › **Modulare Authentifizierungsdienste**
 - › Stellen JWT Tokens aus
- › **QWC DB Auth**
 - › Authentifizierung mit Benutzer-DB
- › **QWC OIDC Auth**
 - › Authentifizierung mit OpenID Connect
- › **und weitere (z.B. LDAP, SAML)**





qwc-services – Betrieb

- › **Einfaches Deployment als Dockeranwendung**
 - › <https://github.com/qwc-services/qwc-docker>
 - › Docker Images auf dockerhub.com verfügbar
 - › Long Term Release mit 1 Jahr Bugfixing
 - › Tags: v2024.x-lts
 - › Entwicklungsreleases
 - › Tags: vYYYY-MM-DD (z.B. v2024.06.11)
 - › Automatische Skalierung mit Kubernetes
- › **Personalisiertes Setup (z.B. Apache + mod WSGI)**
 - › Git Repositories
<https://github.com/qwc-services/>



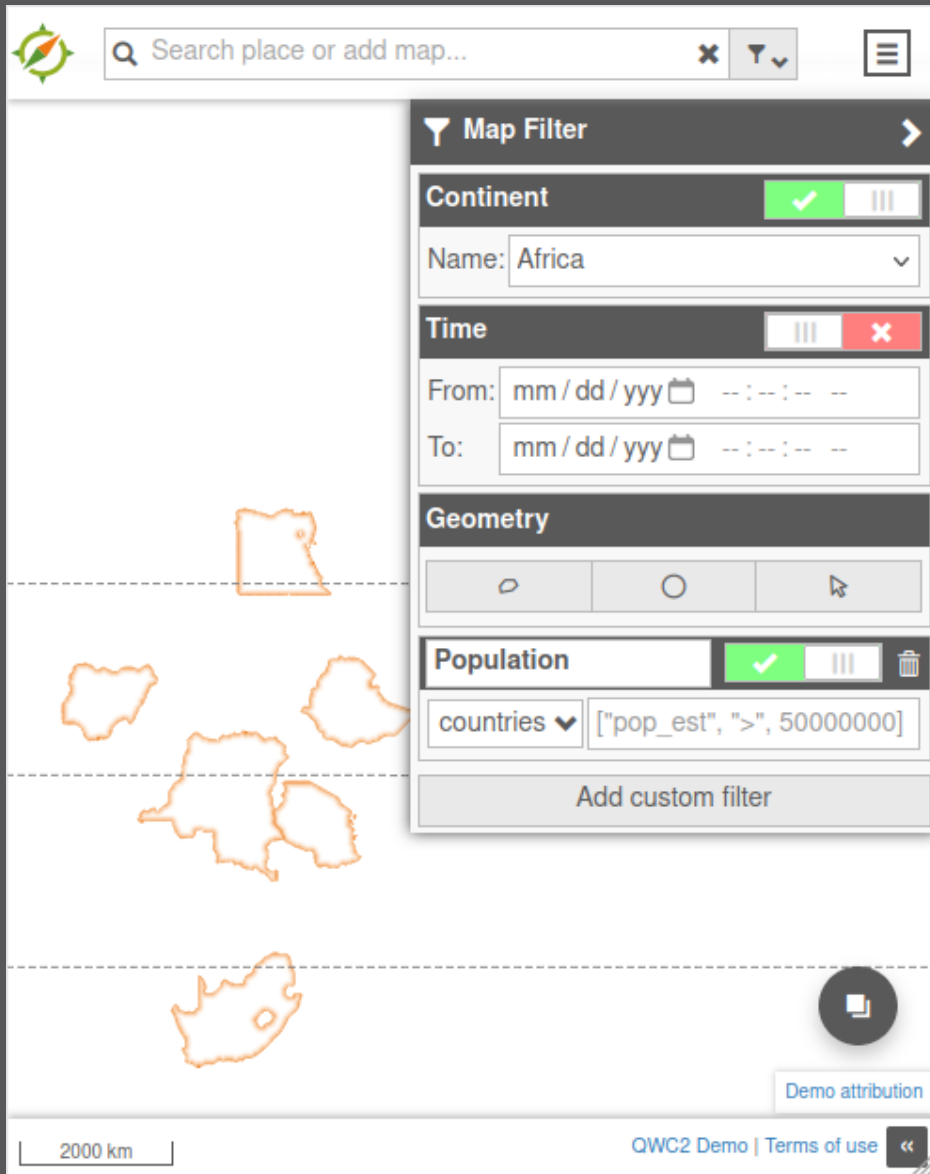


Neues aus dem Projekt





QWC2 News – Objektfilter



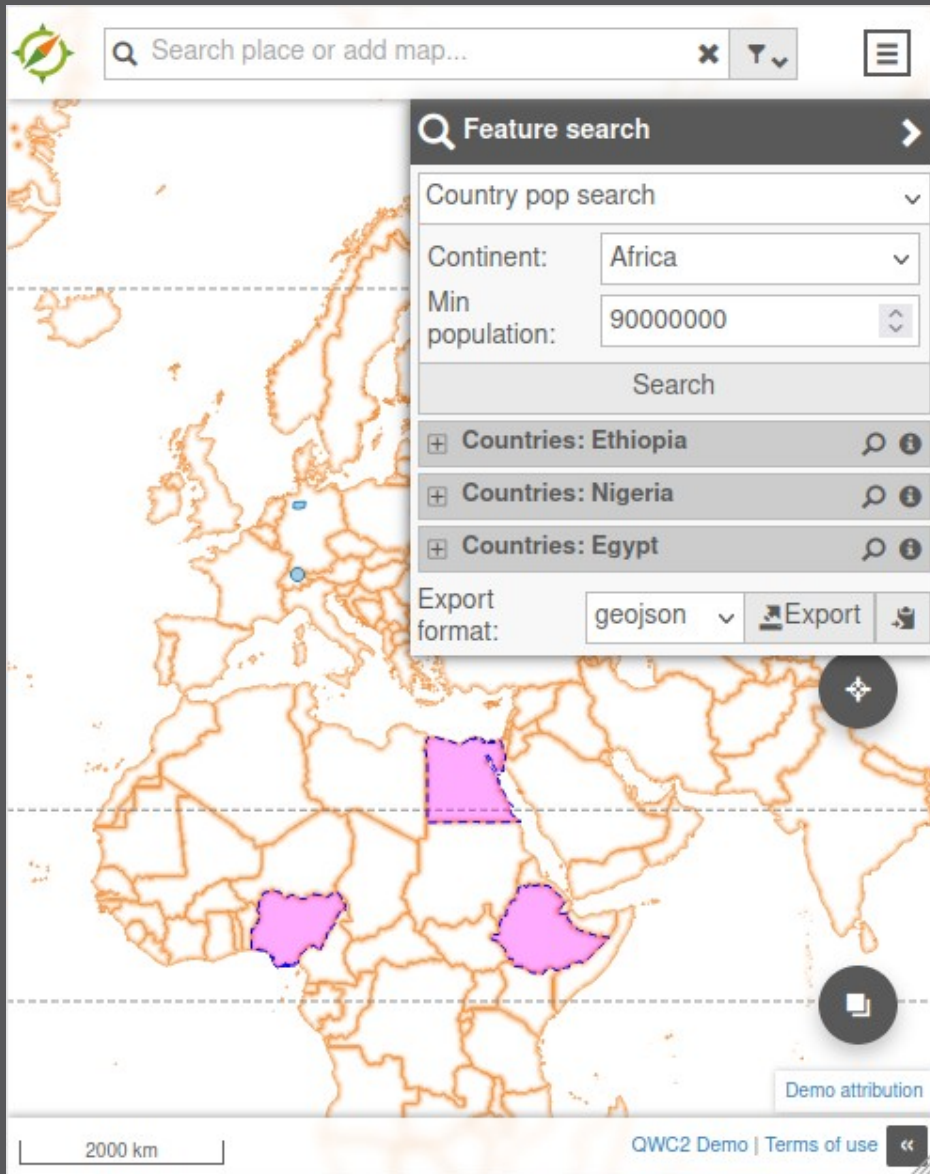
- Filter von Themenebenen via WMS FILTER
 - Vordefinierte Filter
 - Zeitfilter
 - Geometriefilter
 - Benutzerdefinierte Filter
- Kartendarstellung
- Druck + Export
- Editieren + Attributtabelle

Stadt Jena + Stadt Zürich





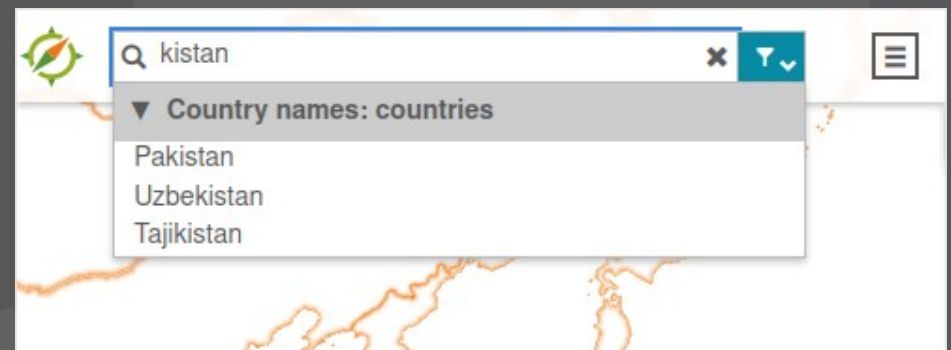
QWC2 News – QGIS Objektsuche



➤ QGIS Objektsuche über WMS GetFeatureInfo + Filter

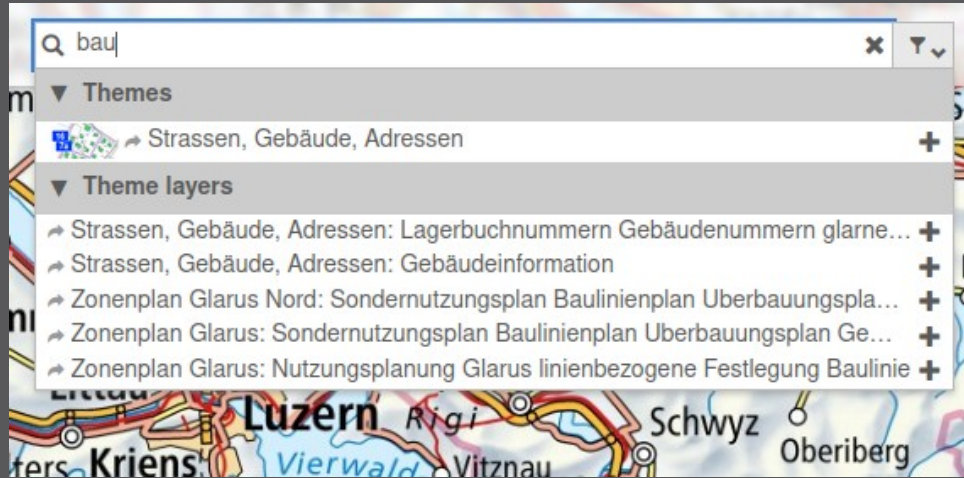
➤ Konfigurierbare Suchfelder

➤ Einfeldsuche auch über Suchleiste

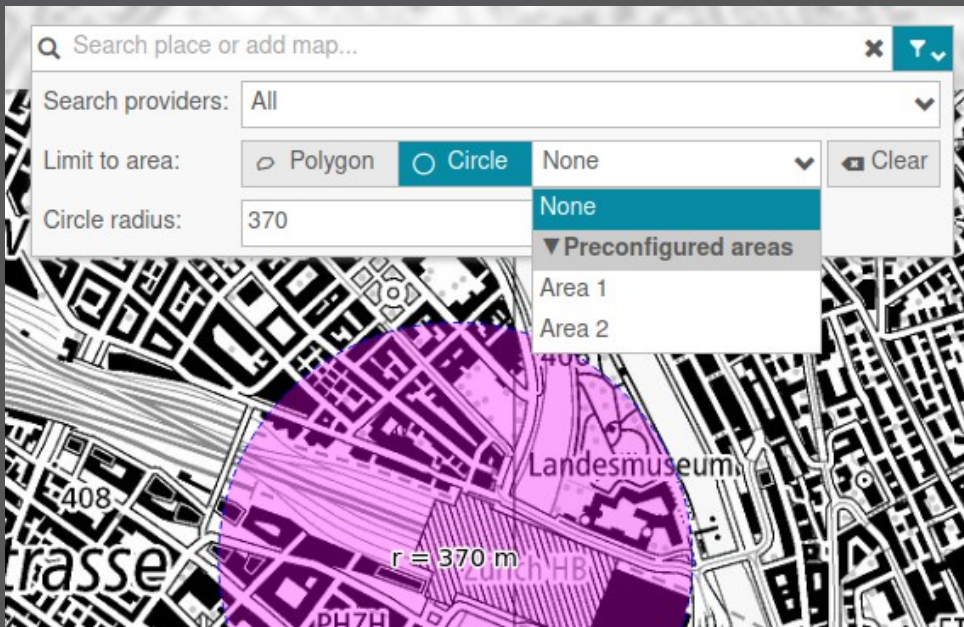


Stadtwerke Sindelfingen

QGIS Web Client 2



- Themenebenen-Suche
 - Ebene hinzufügen
 - In Thema wechseln
- Sucheinschränkung
 - Nach Provider
 - Freie Geometrie
 - Vordefinierte Geometrien



Stadt Jena / Stadt Wolfsburg



QWC2 News – Portal & News Popup

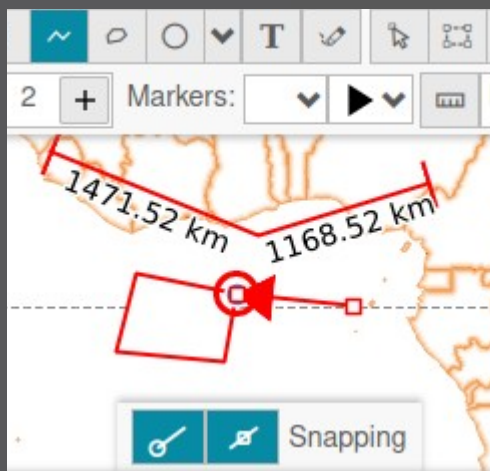
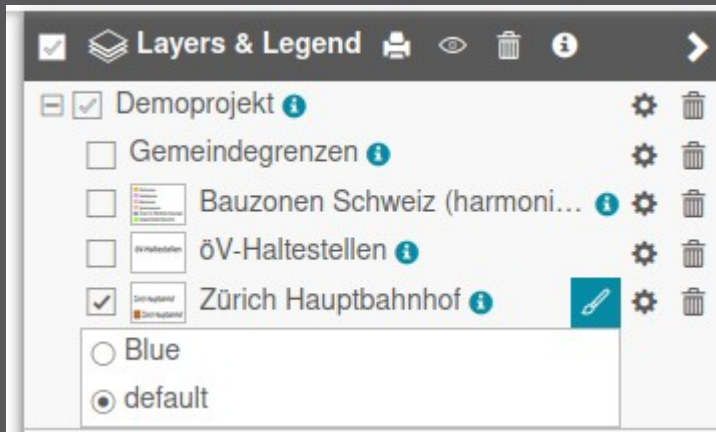
The screenshot shows the QWC2 Demo Portal interface. At the top left, there is a logo and the text "QWC2 Demo Portal" next to a search bar labeled "Filter themes...". Below this is a grid of 12 map themes, each with a thumbnail and a title: "Basiskarte", "Wanderwege, Velorouten", "Strassen, Gebäude, Adressen", "Kantonaler Richtplan", "Zonenplan Glarus Nord", "Zonenplan Glarus", "Zonenplan Glarus Süd", "Natur- und Landschaftsschutz", "Umweltschutz, KbS", "Gewässerschutz", "Denkmalschutz, ISOS, KGS", and "Naturgefahren". To the right of the grid is a sidebar menu with a "Menu" button and a list of items: "Help", "External Link", "Another link", "Map Tools", and "Logout". At the bottom left, the user is identified as "admin", and at the bottom right, there are links for "Example.com" and "Test.com".

The screenshot shows a "News" popup window. At the top, there is a search bar labeled "Search place or add map...". The main content of the popup is a news article titled "Lorem Ipsum" in a large, stylized font. Below the title is a quote: "Neque porro quisquam est qui dolorem ipsum quia dolor sit amet, consectetur, adipisci velit..." followed by a paragraph: "There is no one who loves pain itself, who seek after it and wants to have it, simply because it i pain...". Below the text is a section titled "What is Lorem Ipsum?" with a paragraph: "Lorem Ipsum is simply dummy text of printing and typesetting industry. Lor". At the bottom of the popup, there are two buttons: "Close" and "Don't show again". The background of the popup is semi-transparent, showing the map interface behind it.





QWC2 News – Karte und Ebenen



Stadt Jena / Stadt Wolfsburg / Stadt Dornbirn

➤ Ebenen

- WMS Styleauswahl
- Gruppentransparenz
- GeoPDF Import

➤ Snapping

- Auf Knoten/Kanten
- Auch auf Redlining, WFS, importierte Vektorebenen

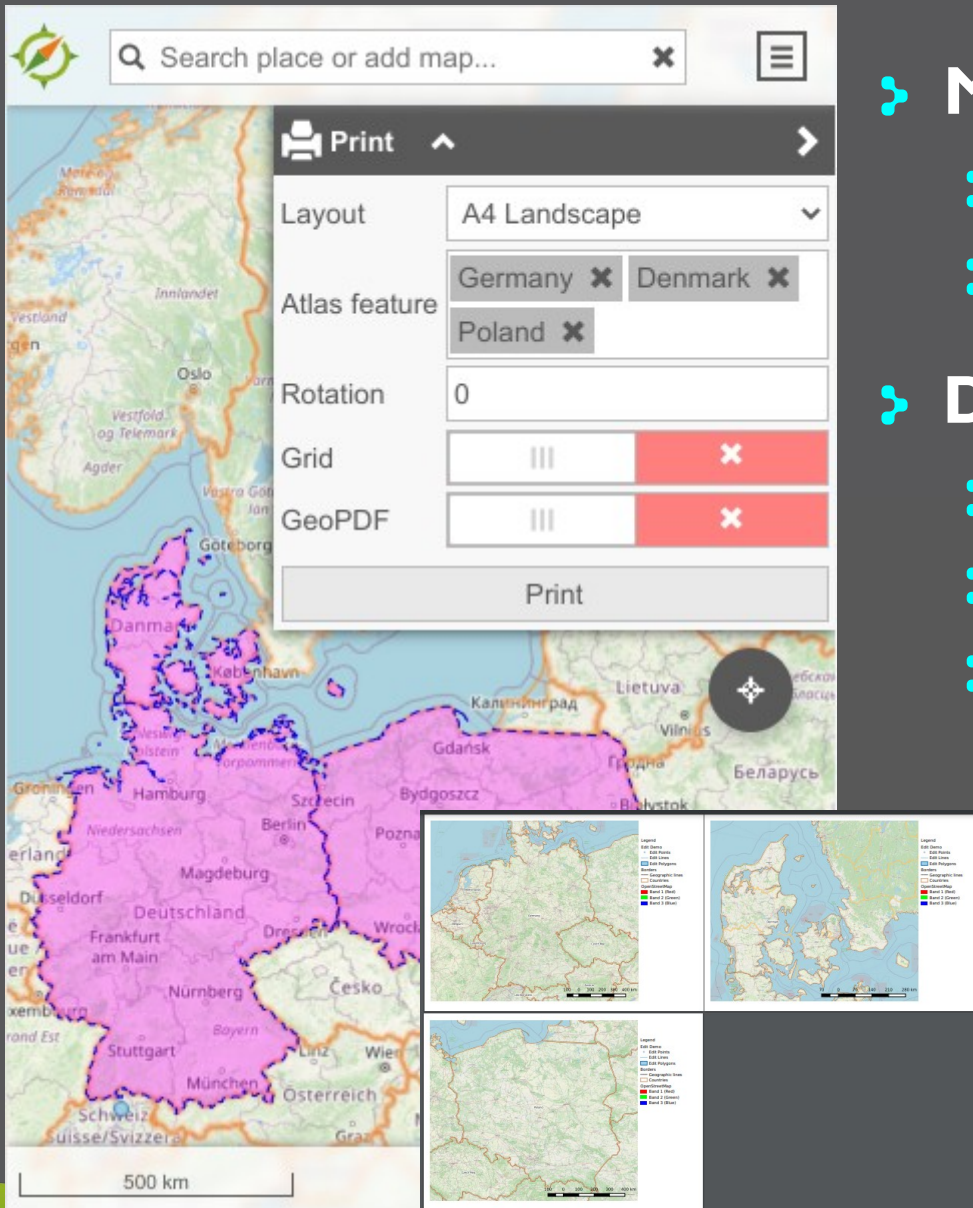
➤ Redlining

- Linien Pfeilspitzen





QWC2 News – Export & Drucken



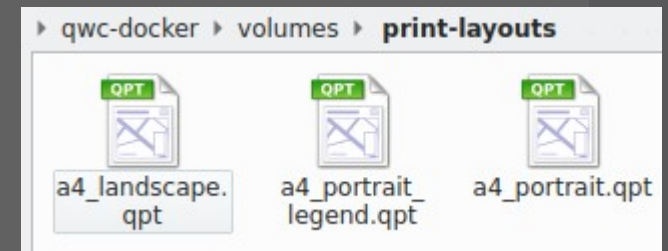
Stadt Frankfurt / Augprien

➤ Map Export

- GeoPDF (ab QGIS 3.36)
- GeoTIFF (mit Server Plugin)

➤ Drucken

- Atlasdruck
- GeoPDF (ab QGIS 3.32)
- Gemeinsame Drucklayouts für alle Themen





QWC2 News – Editieren

Nachführung bearbeiten

Nachführung

Fixpunkt Nr: 10873470

Identifikation und Geometrie Beschreibung Bilder Administration

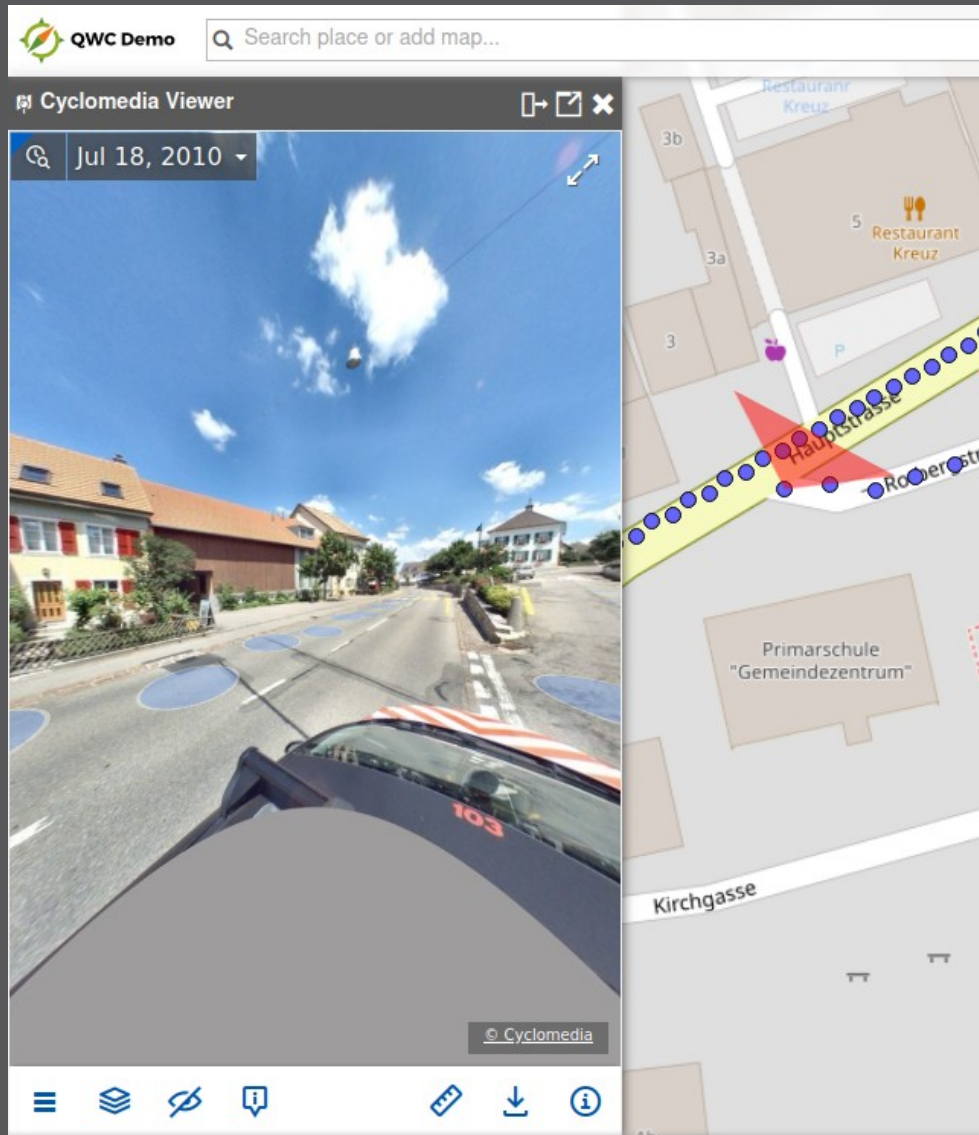
Art:	LFP2	Verknüpfte Nachführung:	2023012
NBIdent:	CH0300001087	LK:	1087
Lagegeometrie [m]:	E: 2608066.258 N: 1242342.921	Koordinatenbestimmung:	gemessen (L)
<input type="checkbox"/> TSP		Höhegeometrie [m]:	885.949
Genauigkeit Lage [m]:	0.030	Genauigkeit Höhe [m]:	0.040
Zuverlässigkeit Lage:	ja	Zuverlässigkeit Höhe:	ja

Schliessen

Abschliessen Schliessen

- Verschachtelte Formulare
- Berücksichtigung von QGIS Joinkonfiguration
- Initiale Unterstützung für QGIS Expressions
 - Default-Werte
 - Ausdruckbasierte Sichtbarkeit
- ReCAPTCHA Prüfung





➤ Integration vom Cyclomedia Panorama Viewer

- Basis für weitere Panorama-Bildbetrachter



↳ Vereinfachte multi-tenant Konfiguration mit Basistemplate

config-in/tenantConfig.template.json

```
{
  "config": {
    "qwc2_path": "/qwc2/",
    "auth_service_url": "/${tenant$}/auth/",
    "data_service_url": "/${tenant$}/api/v1/data/",
    "#document_service_url": "/${tenant$}/api/v1/document/",
    "elevation_service_url": "/${tenant$}/elevation/",
    "info_service_url": "/${tenant$}/api/v1/featureinfo/",
    "legend_service_url": "/${tenant$}/api/v1/legend/",
    "mapinfo_service_url": "/${tenant$}/api/v1/mapinfo/",
    "ogc_service_url": "/${tenant$}/ows/",
    "permalink_service_url": "/${tenant$}/api/v1/permalink/",
    "print_service_url": "/${tenant$}/api/v1/print/",
    "search_service_url": "/${tenant$}/api/v2/search/",
    "search_data_service_url": "/${tenant$}/api/v2/search/geom/"
  }
},
{
  "name": "featureInfo",
  "config": {
    "default_qgis_server_url": "http://qwc-qgis-server/ows/",
    "skip_empty_attributes": true
  }
},
}
```

config-in/example/tenantConfig.json

```
{
  "template": "../tenantConfig.template.json",
  "config": {
    "tenant": "example"
  },
  "themesConfig": "../themesConfig.json"
}
```





OWC2 News – Konfiguration

```
{
  "id": "web_services",
  "title": "Web Services",
  "url": "/ows/web_services",
  "mapCrs": "EPSG:2056",
  "backgroundLayers": ["osm"],
  "config": {
    "plugins": {
      "LayerTree": {
        "showLegendIcons": true
      }
    },
    "mobile": {
      "plugins": {
        "StartupMarker": {
          "removeMode": "onpan"
        }
      }
    }
  }
},
```

- Globale config.json Einstellungen nach mobile/desktop
- Pluginkonfiguration pro Thema
- Projekte aus Postgres

```
{
  "id": "dbproject",
  "title": "DB Project",
  "url": "/ows/pg/schemaname/projectname",
  "mapCrs": "EPSG:3857",
  "backgroundLayers": []
},
```





QWC2 News – Pluginschnittstelle

- **Zusätzliche Plugins per API-Schnittstelle**
 - Im index.html als `<script>`
 - Kein Custom-Build der QWC2 App erforderlich

```
window.addEventListener("QWC2ApiReady", () => {
  const {React} = window.qwc2.libs;

  class MyPlugin extends React.Component {
    render() {
      return React.createElement(
        "div", {}, "Hello World");
    }
  }

  window.qwc2.addPlugin("MyPlugin", MyPlugin);
});
```





Ausblick – Finanzierung gesucht

› 3D

› Sensordaten (OGC SensorThings API)

› Dashboard-Plugin

› Statistiken im Kartenausschnitt

› Dokumentverwaltung

› Verwaltung von PDFs die über mehrere Themen oder Ebenen genutzt werden





» qwc-services.github.io

The screenshot shows the documentation page for QWC2. The left sidebar contains a navigation menu with the following items: QWC2, Home, Quick start, General configuration (Themes, Viewer, Resources and permissions, Services), and Selected topics (Search, Feature info, Printing). The main content area is titled 'Quick start' and 'Running QWC2 as part of qwc-services'. It explains that qwc-services is a collection of micro-services for extending QWC2 and provides instructions on how to run them using Docker. The instructions include installing Docker and Docker Compose, and following the steps provided in the links.

QWC2 - 2024.02.28-Its
2024-Its

Search docs

QWC2
Home
Quick start

General configuration
Themes
Viewer
Resources and permissions
Services

Selected topics
Search
Feature info
Printing

« Previous Next »

» QWC2 » Quick start

Quick start

Running QWC2 as part of qwc-services

`qwc-services` is a collection of loosely coupled micro-services for extending QWC2. The services communicate with each other via HTTP/Rest, and are mostly written in Python.

The easiest way to run `qwc-services` is to use the readily available docker images, using the sample setup at [qwc-docker](#).

To be able to run `qwc-docker`, first install `docker` and `docker compose`:

- Docker: <https://docs.docker.com/engine/install/>
- docker-compose: <https://docs.docker.com/compose/install/>

Then, follow these steps:





› GitHub Repositories

- › <https://github.com/qgis/qwc2-demo-app>
- › <https://github.com/qwc-services/qwc-docker>

› Beispiele

- › <https://qwc2.sourcepole.ch>
- › <https://qgiscloud.com>
- › <https://map.geo.gl.ch>
- › <https://geo.so.ch/map/>





Danke!



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