Learn how to create Web Applications with Mapbender

Astrid Emde

FOSS4G 2022 Firenze (Italy)

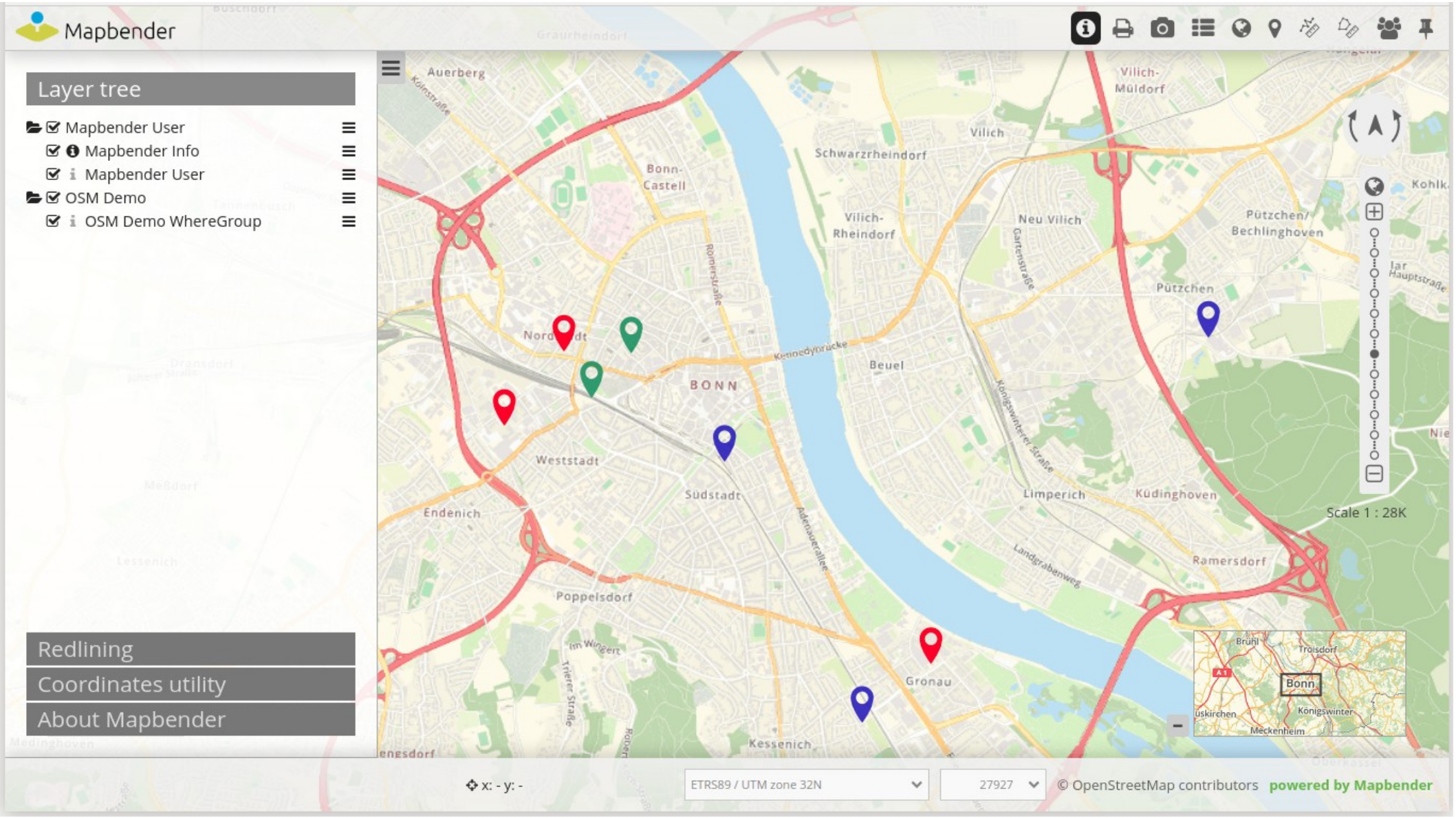
https://talks.osgeo.org/foss4g-2022-workshops/talk/PSVE7N/

Astrid Emde

- Mapbende Developer Team since 2004
- Mapbender PSC (Project Steering Committee)
- Project management and development, implementations
- Trainings for MapServer, PostgreSQL/PostGIS, Mapbender, GeoServer, QGIS
- Concept, Testing, Documentation
- OSGeoLive PSC since 2017
- OSGeo Board 2017-2021
- WhereGroup Bonn

WhereGroup

- > 40 employees - developers, consultants & geospatial experts
- Working with Open Source Software for more than 15 years
- Support for WebGIS, SDI, Datenbases, QGIS, Consulting, Training
- Company behind Mapbender, Metador & Mops
- Bonn – Berlin - Freiburg - Hamburg
- FOSSGIS e.V. member & OSGeo sponsor
- We are hiring!


Mapbender
Layer tree
Mapbender User
Mapbender Info
Mapbender User
OSM Demo
OSM Demo WhereGroup
Redlining
Coordinates utility
About Mapbender
Auerberg
Bonn-Castell
Schwarzrheindorf
Vilich
Vilich-Müldorf
Vilich-Rheindorf
Neu Vilich
Pützchen/Bechlinghoven
Pützchen
Beuel
BONN
Weststadt
Südstadt
Endenich
Poppelsdorf
Kessenich
Gronau
Limperich
Küdinghoven
Ramersdorf
Scale 1 : 28K
x: - y: -
ETRS89 / UTM zone 32N
27927
© OpenStreetMap contributors
powered by Mapbender

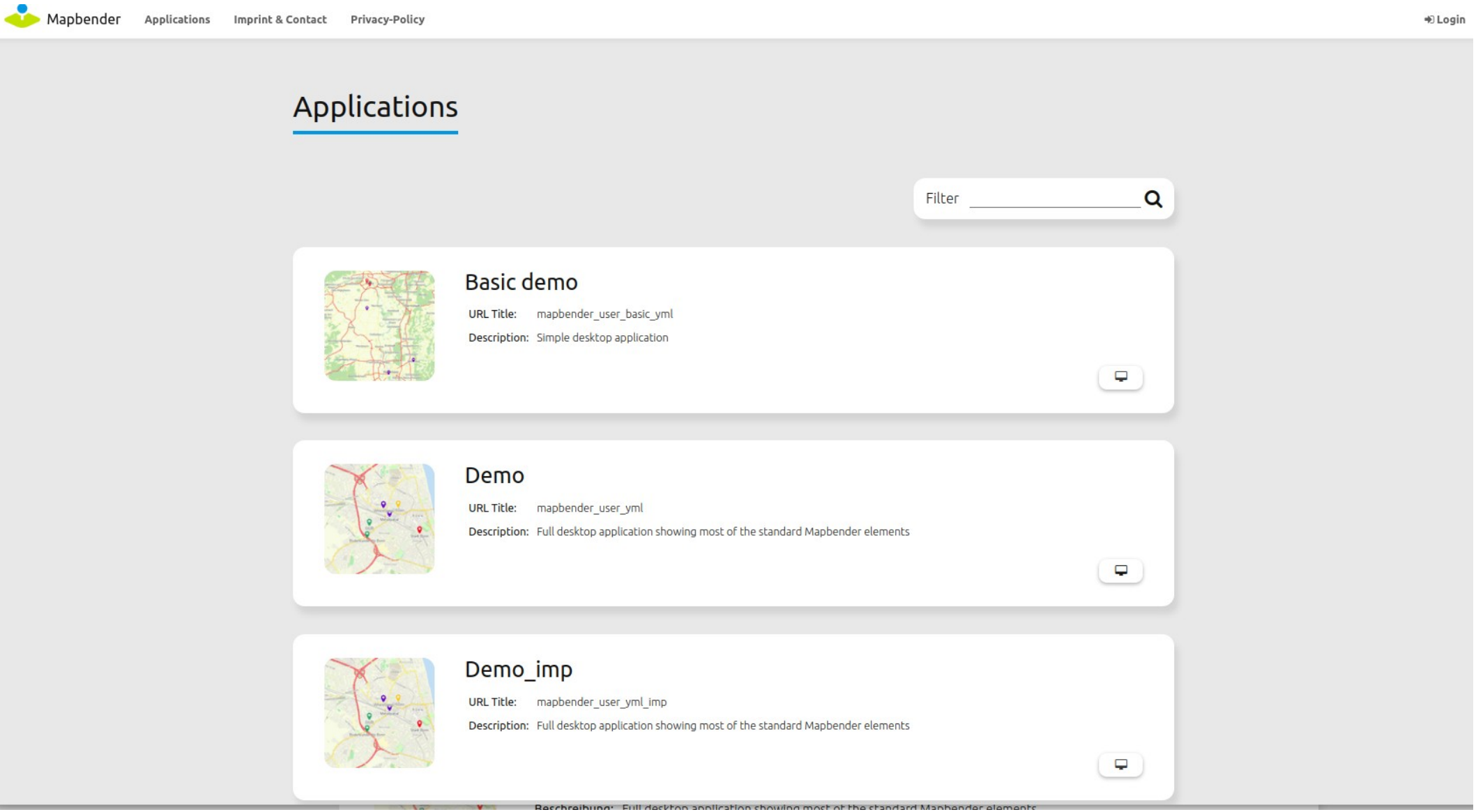
Workshop

- What does Mapbender do?
- Architecture and Installation
- Register Services
- Create your own application
- User and group security management
- Design adjustments, template printing
- Search module and digitizer

Workshop

- Mapbender Website https://mapbender.org
- Mapbender Galerie https://mapbender.org/en/showcase/
- Mapbender Functions https://mapbender.org/en/features/
- Mapbender Documentation https://doc.mapbender.org
- Mapbender on Github https://github.com/mapbender/
- Mapbender Workshop-Package https://github.com/mapbender/mapbender-workshop/
- OSGeoLive https://live.osgeo.org

What does Mapbender do?



WebGIS Client Suite
with administration web interface

Create a geoportal without writing a single line of code!

Create and maintain an OWS repository

Distribute configured services among applications

Grant users and groups access to applications and services

Mapbender Components

- Symfony as PHP framework
  - Doctrine, Twig, Monolog, Bootstrap...
  - Bundles
- OpenLayers6
- jQuery
- Administrative database: SQLite, PostgreSQL, MySQL, Oracle database

Installation

- Read about Mapbender Installation
- Download https://mapbender.org/en/download/
- Or use the code from GitHub https://github.com/mapbender/mapbender-starter
- Or docker image

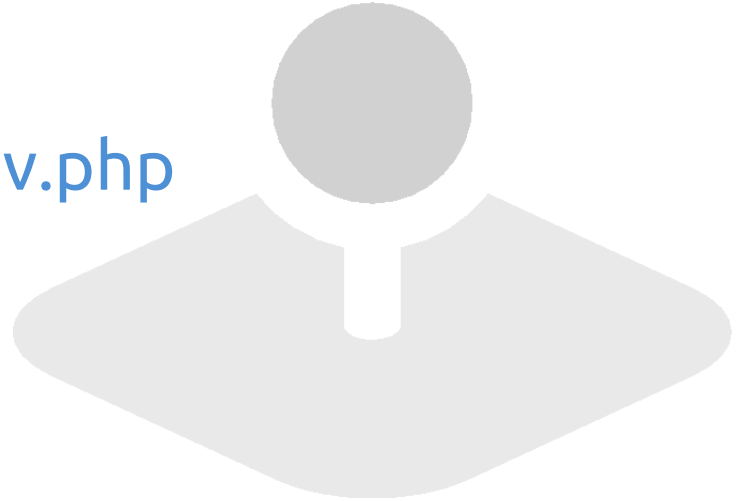
Start Mapbender

- Productive mode

  http://localhost/mapbender/

- Developer mode

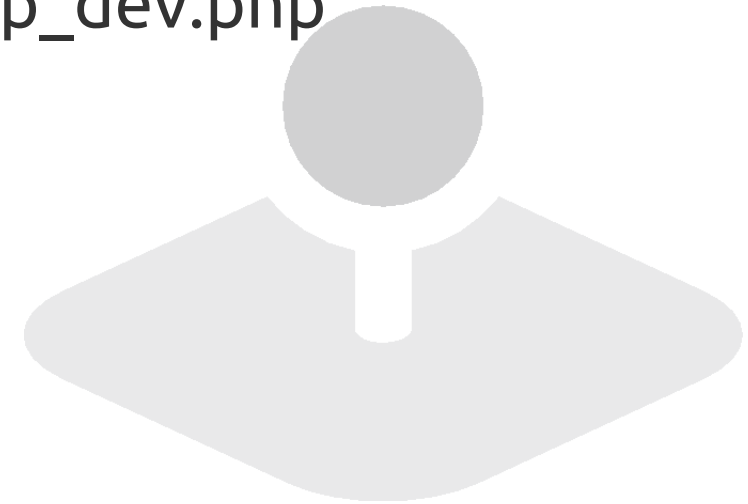
  http://localhost/mapbender/app_dev.php



Find Mapbender on OSGeoLive?

- ALIAS mapbender refers to:
  /var/www/html/mapbender/web/

- app_dev.php → mapbender/web/app_dev.php

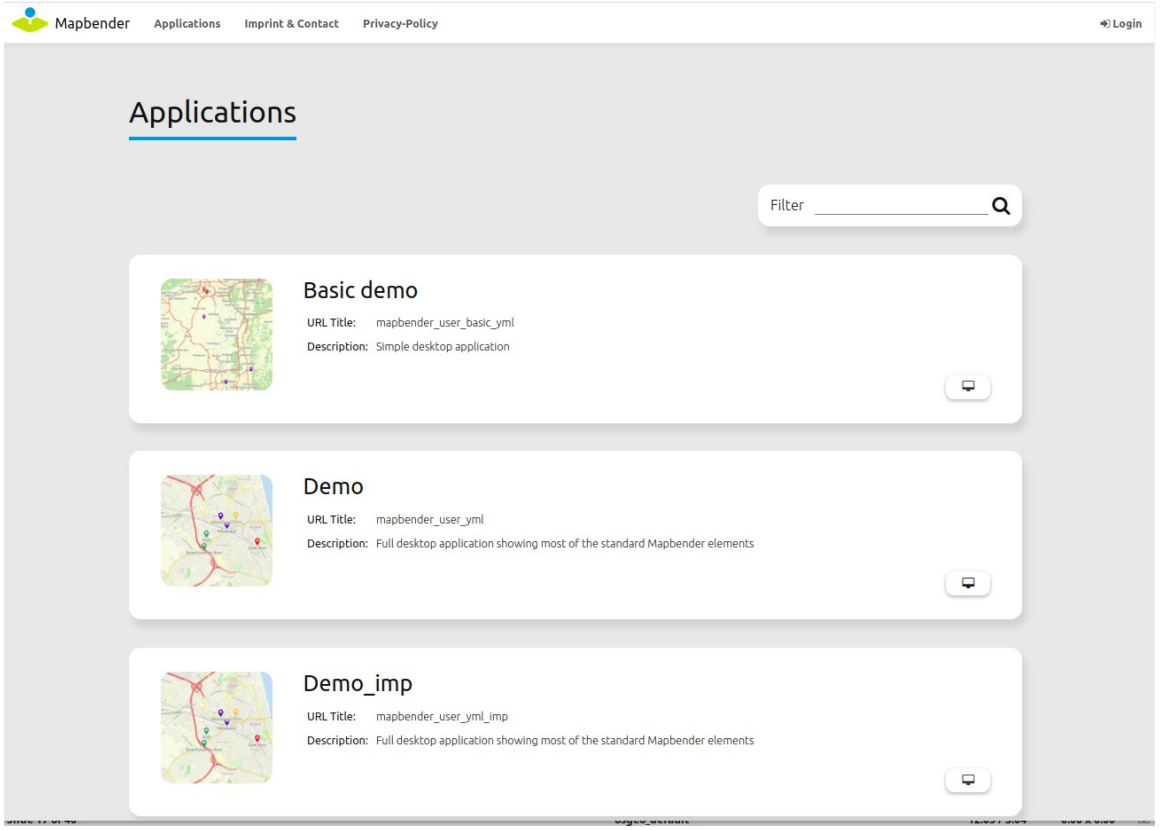


Enjoy YAML syntax!

- Symfony configuration via YAML
- Mapbender configure database, language, mailer & more
  - parameters.yml
  - config.yml
- Mapbender application can be defined in YAML
    - mapbender/app/config/applications/
    - Define your application and services

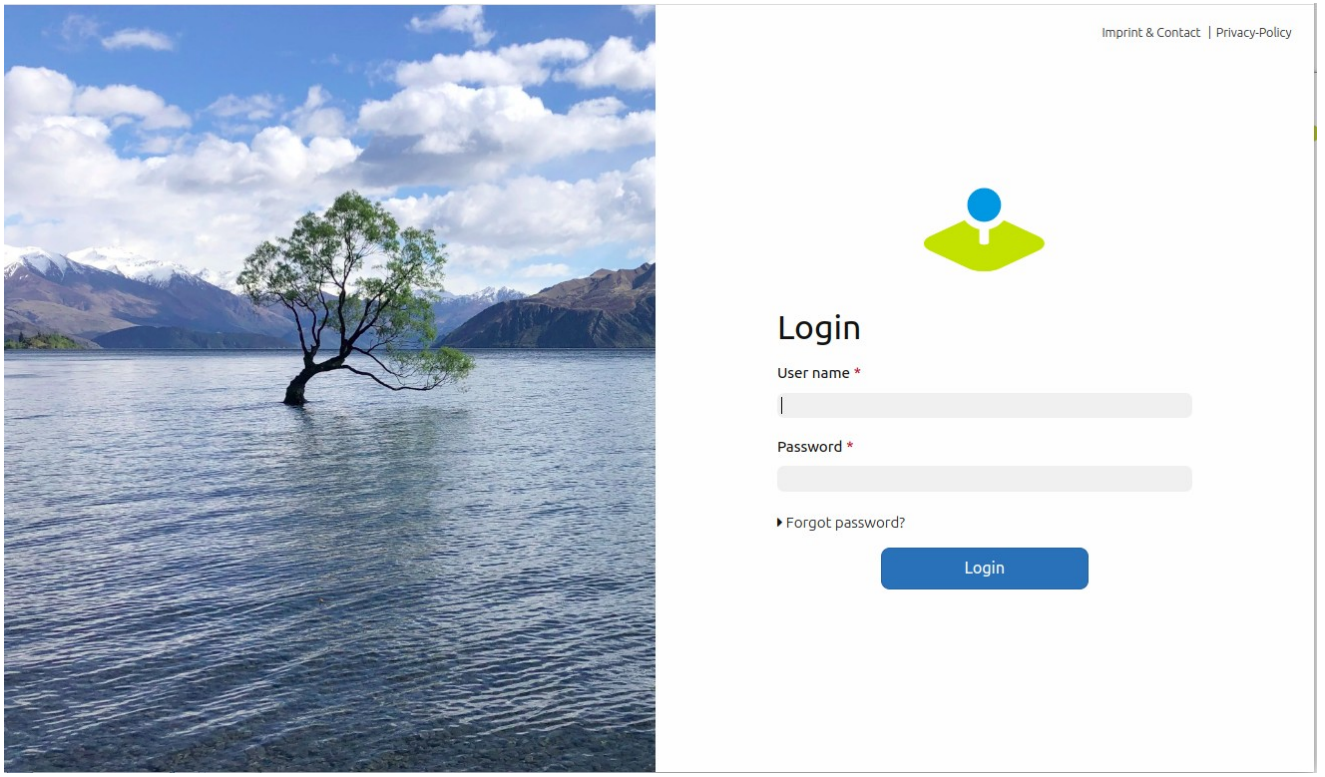
Application Overview

- Lists of available applications
- Start Application
- Login
- Add Links



Login

- root user is created on installation
- You can provide Register and Forgot password functionality



Hands on

Hands on – Part I

- Explore with Mapbender
- Load OGC WMS
- Create your own Application
- Populate application with Services
- Get elements for your application
- Create user and groups
- Assign application to user and groups
- Assign element access to user and groups

Hands on – Part II

- Print
- Define an individual Design
- Create your own bundle
- Setup a Search module
- Setup a Digitizer module

Mapbender Documentation

- Mapbender Quickstart
  https://doc.mapbender.org/en/quickstart.html

- Element documentation

  https://doc.mapbender.org/en/functions.html

Load WMS

OSM WMS

- https://osm-demo.wheregroup.com/service?REQUEST=GetCapabilities&Service=WMS&Version=1.3.0
- http://localhost/cgi-bin/qgis_mapserv.fcgi?map=/usr/local/share/qgis/QGIS-NaturalEarth-Example.qgz&SERVICE=WMS&VERSION=1.3.0&REQUEST=GetCapabilities
- https://sgx.geodatenzentrum.de/wms_topplus_open?request=GetCapabilities&service=wms

Find a WMS Server for you needs

- https://inspire-geoportal.ec.europa.eu/
- https://inspire-geoportal.ec.europa.eu/results.html?country=it

OGC WMS Italy

- http://www.pcn.minambiente.it/mattm/en/view-service-wms/
- http://wms.pcn.minambiente.it/ogc?map=/ms_ogc/WMS_v1.3/Vettoriali/Carta_geologica.map&service=wms&request=getCapabilities&version=1.3.0
- http://wms.pcn.minambiente.it/ogc?map=/ms_ogc/WMS_v1.3/Vettoriali/Rete_ferroviaria.map&service=wms&request=getCapabilities&version=1.3.0
- http://wms.pcn.minambiente.it/ogc?map=/ms_ogc/WMS_v1.3/raster/ortofoto_bn_94.map
- http://wms.pcn.minambiente.it/ogc?map=/ms_ogc/WMS_v1.3/Vettoriali/ZPE.map&service=wms&request=getCapabilities&version=1.3.0
- http://wms.pcn.minambiente.it/ogc?map=/ms_ogc/WMS_v1.3/servizi-LiDAR/LIDAR_TOSCANA.map&service=wms&request=getCapabilities&version=1.3.0

Load Services to the Mapbender Repository

- Sources → Add Source
- Load WMS
  https://osm-demo.wheregroup.com/service?REQUEST=GetCapabilities&Service=WMS&Version=1.3.0

  https://sgx.geodatenzentrum.de/wms_topplus_open?request=GetCapabilities&service=wms
- Load other Services from Italy

Easy way to create an application

- Copy an existing application
- Reorder elements and delete everything you do not need
- Add your own services

Create your own Application

- Create application FOSS4G (copy Demo)
- Switch to tab Layout
- Edit Map-Element (region content)
  - SRS EPSG:4326
  - MAX EXTENT Italy lower left 6.649 35.5
    upper right 13.701 47.625
  - Start Extent Firenze lower left 11.217 43.747
    upper right 11.296 43.801
  - Add some more scales
  - Add some EPSG Codes 3004, 32632, 3263

    https://epsg.io

Populate application with Services

- Switch to tab Layersets
- Create a layerset for the Orthophotos and a layerset for different topics like Geology or Infrastructure
- Add WMS to your layersets
- If necessary configure the services

Activate Layersets in Map-Element

- Go back to layout to your map-Element
- Choose the layerset/s you would like to display in the main map
- Change the ordering for the layersets if needed
- Go to the element Layertree activate Thematic Layer

Configure elements for your application

You find information about the elements in the documentation

- https://doc.mapbender.org/en/functions.html

Try to integrate some more Elements

- HTML – add a notice about FOSS4G
- Share URL
- View Manager
- BaseSourceSwitcher
- Application Switcher

Create user

- Create user foss4g
- User control → User → New User
- Define user name, email and password

Assign application to user

- Application → pen → Application Security
- + → Select user → Give permission **view**
- **Access Control List**

- Test the permission by registering as user foss4g
- Note: You also can assign access to single elements

Create a group

- Create a group called **workshop**
- User control → Groups → New Group
- Add your user **foss4g** to the group **workshop**
- Assign an application to your group **workshop**

CSS Editor

- Default style can be overwritten
- Switch to tab css-Editor
- Define a different button color
- Examples:
- https://doc.mapbender.org/en/customization/css.html

Try the workshop bundle

- Find the workshop bundle at https://github.com/mapbender/mapbender-workshop
- https://doc.mapbender.org/en/customization/templates.html

Search with SearchRouter (PostgreSQL)

- Define search with SearchRouter
- SQL Search using PostgreSQL
- https://doc.mapbender.org/en/functions/search/search_router.html

- Setup a database connection in parameters.yml and config.yml
- Define the search form as YAML definition

Search with Element SimpleSearch

- Solr, Nominatim, Photon, OGC API Features
- https://doc.mapbender.org/en/functions/search/simplesearch.html

Digitizer

- Define digitze functionality
- Edit directly on a database table
- https://doc.mapbender.org/en/functions/editing/digitizer.html

How can I participate?

- Testing
- Reporting Feedback and Bugs
- Documentation
- Programming
- Mailing lists
- Translation

Join us during the FOSS4G Community Sprint on Saturday!
FOSS4G 2022 Community Sprint

Thanks you for your attention!

Question? Please contact us

Astrid Emde astrid.emde@wheregroup.com

or

mapbender-users@list.osgeo.org

https://talks.osgeo.org/foss4g-2022-workshops/talk/PSVE7N/

With the kind support of

WhereGroup

Creative Commons Share Alike License 4.0