

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

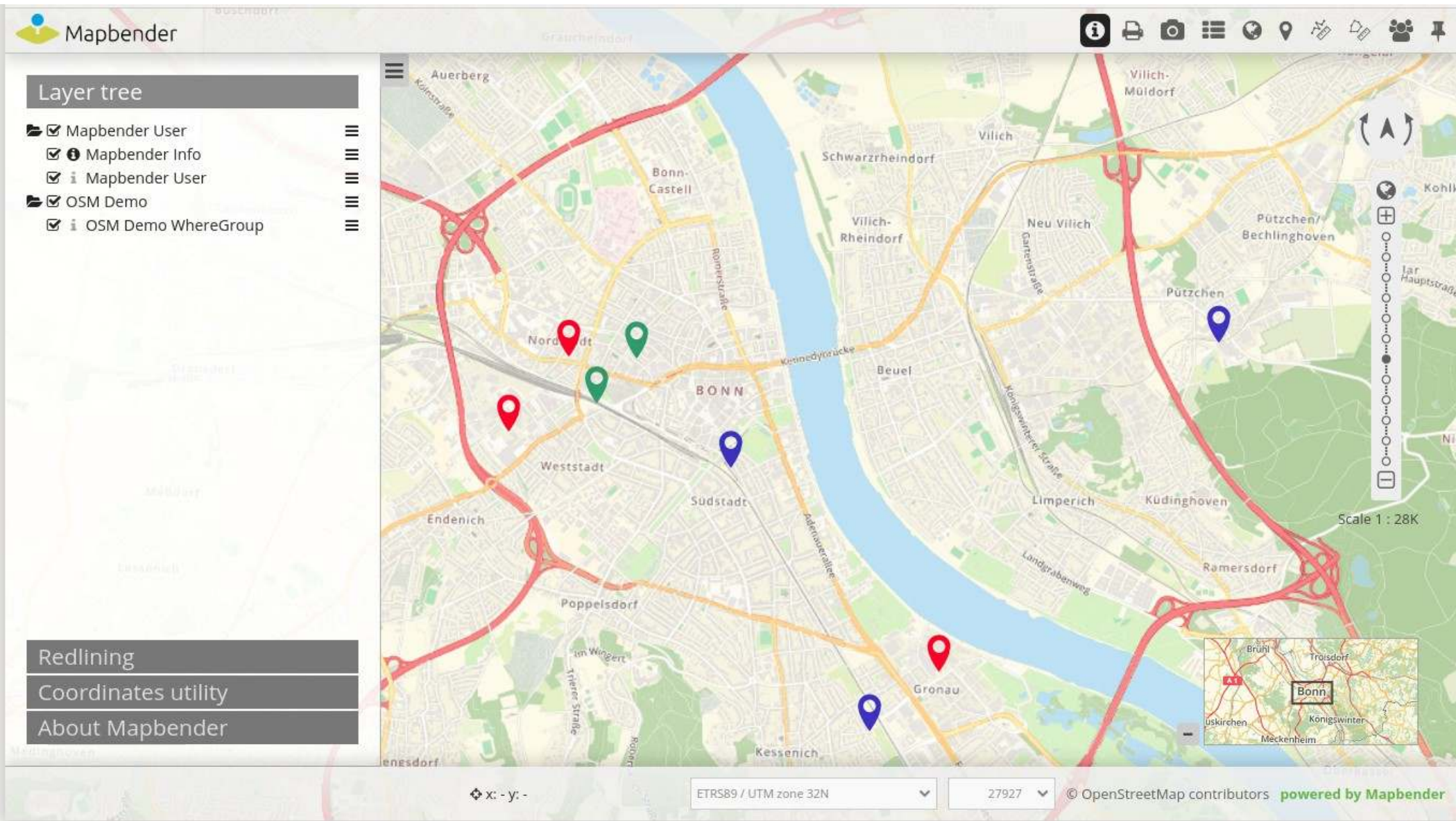
Redlining

Coordinates utility

About Mapbender

Scale 1 : 28K

© 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?

Applications

Filter 



Basic demo

URL Title: `mapbender_user_basic.yml`

Description: Simple desktop application



Demo

URL Title: `mapbender_user.yml`

Description: Full desktop application showing most of the standard Mapbender elements



Demo_imp

URL Title: `mapbender_user.yml_imp`

Description: Full desktop application showing most of the standard Mapbender elements





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





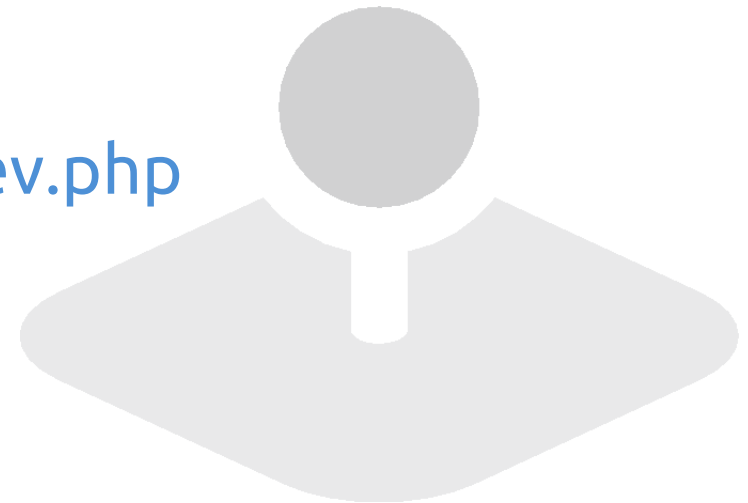
Start Mapbender

- Productive mode

<http://localhost/mapbender/>

- Developer mode

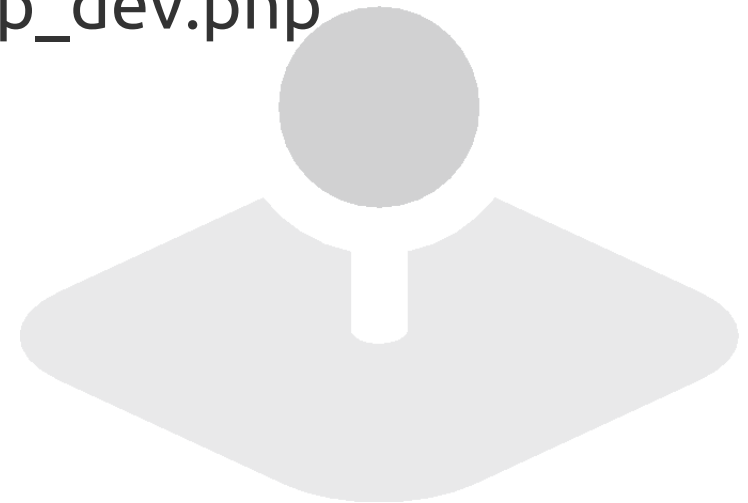
http://localhost/mapbender/app_dev.php





Find Mapbender on OSGeoLive?

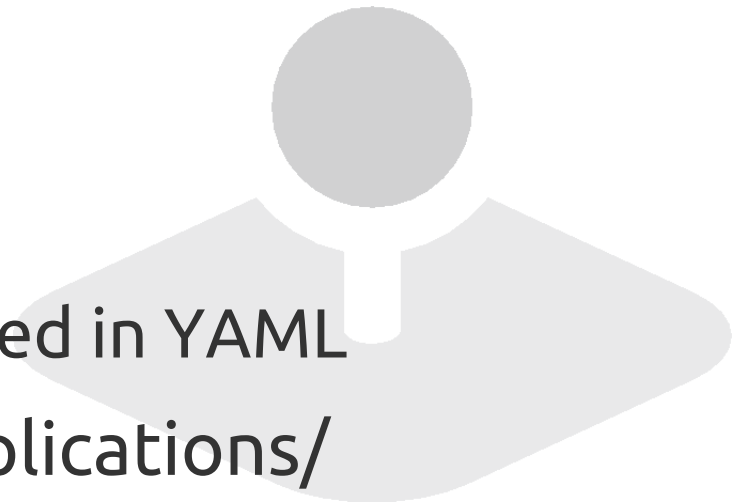
- ALIAS mapbender refers to:
`/var/www/html/mapbender/web/`
- `app_dev.php` → `mapbender/web/app_dev.php`





Enjoy YAML syntax!

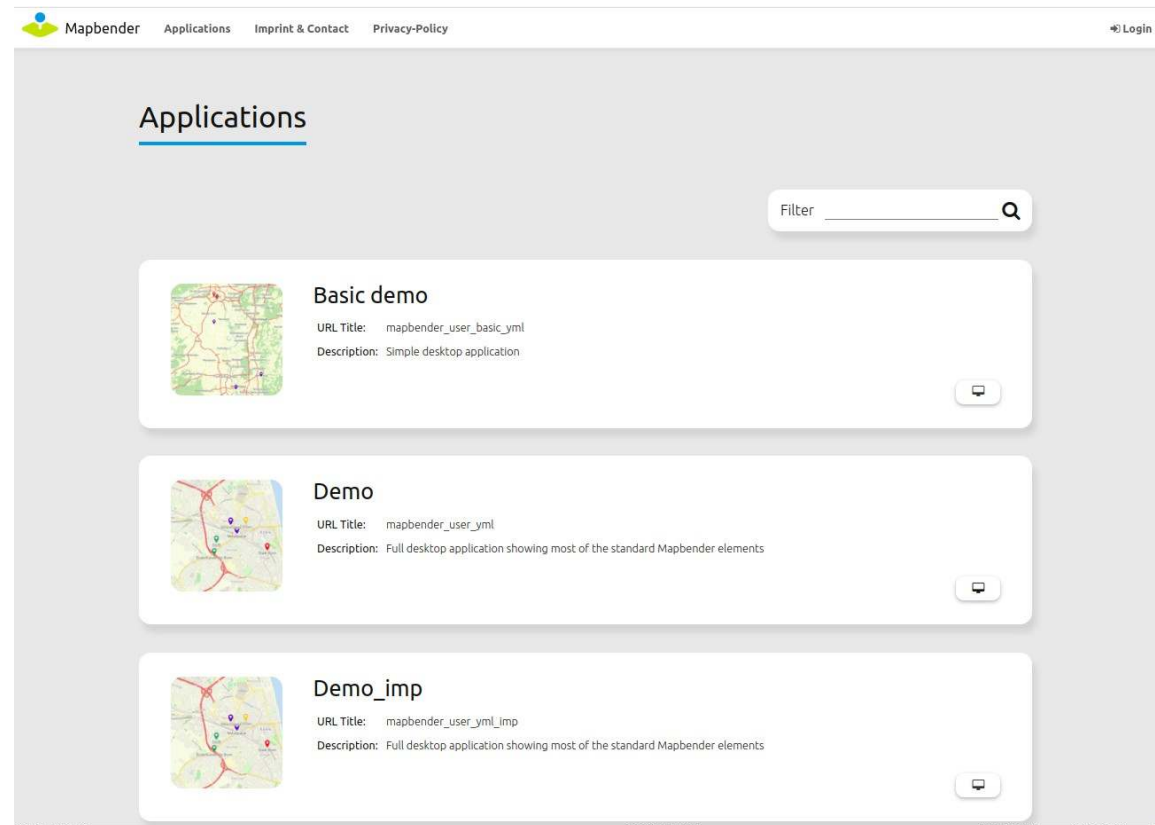
- Symfony configuration via YAML
- Mapbender configure database, language, mailer & more
 - parameters.yml
 - config.yml
- Mapbender application can be defined in YAML
 - mapbender/app/config/applications/
 - Define your application and services





Application Overview

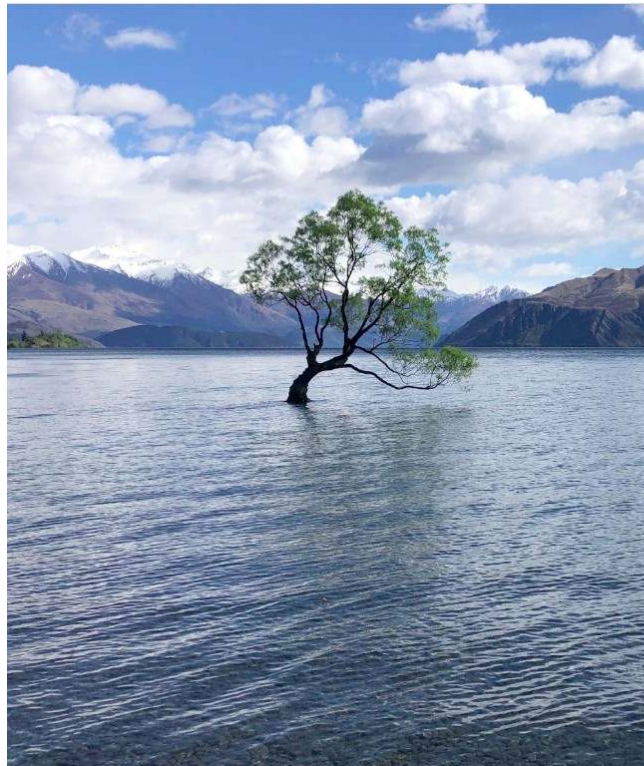
- Lists of available applications
- Start Application
- Login
- Add Links






Login

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



Imprint & Contact | Privacy-Policy



Login

User name *

Password *

▶ Forgot password?

Login



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>





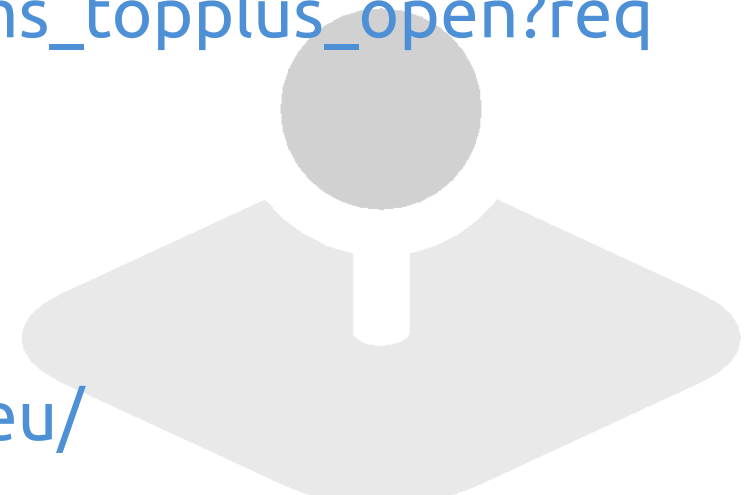
Load WMS

OSM WMS

- <https://osm-demo.wherogroup.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.wherogroup.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

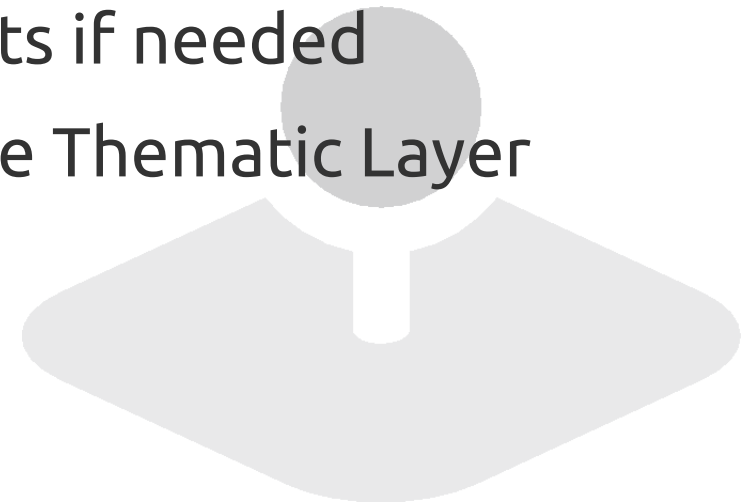
- Switch to tab Layersets
- Create a layerset for the Orthophotos and a layerset for different topics like Geology or Infrastructure
- Add WMS to your layersets
- If necessary configure the services





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

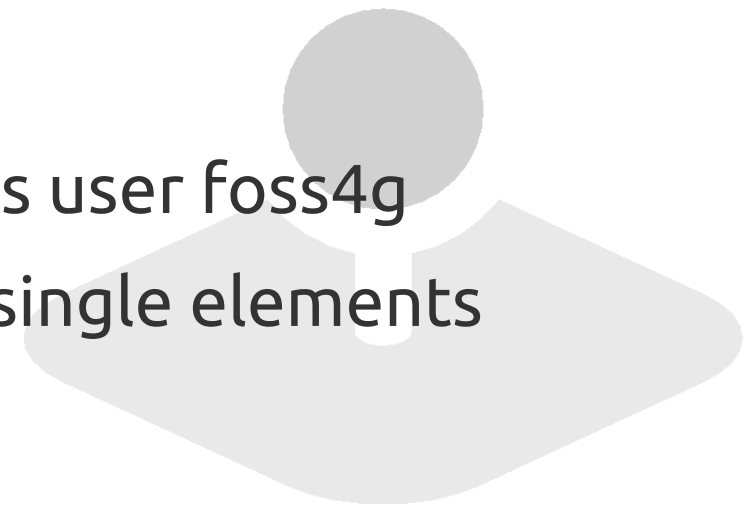
- Create user foss4g
- User control → User → New User
- Define user name, email and password





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 digitize 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@wherogroup.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

