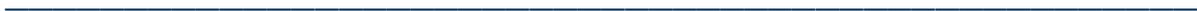




UNESCO-IHE

Institute for Water Education





Publishing data using Geoserver and GeoNode Tutorial.

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Learning Objective

After this tutorial you will be able to:

- Interact with Geoserver and Geonode while at the same time publish data on both platforms.

1. Introduction

This tutorial is meant to guide you through the steps of publishing data. The first part involves publishing data with Geoserver while the second part is publishing data with Geonode.

Note: This tutorial assumes that Geoserver and Geonode are running on <http://192.81.212.100:8080/geoserver/web> and <http://192.81.212.100> Respectively.

2. Publishing data with Geoserver

This step walks through the process of publishing a Shapefile with GeoServer.

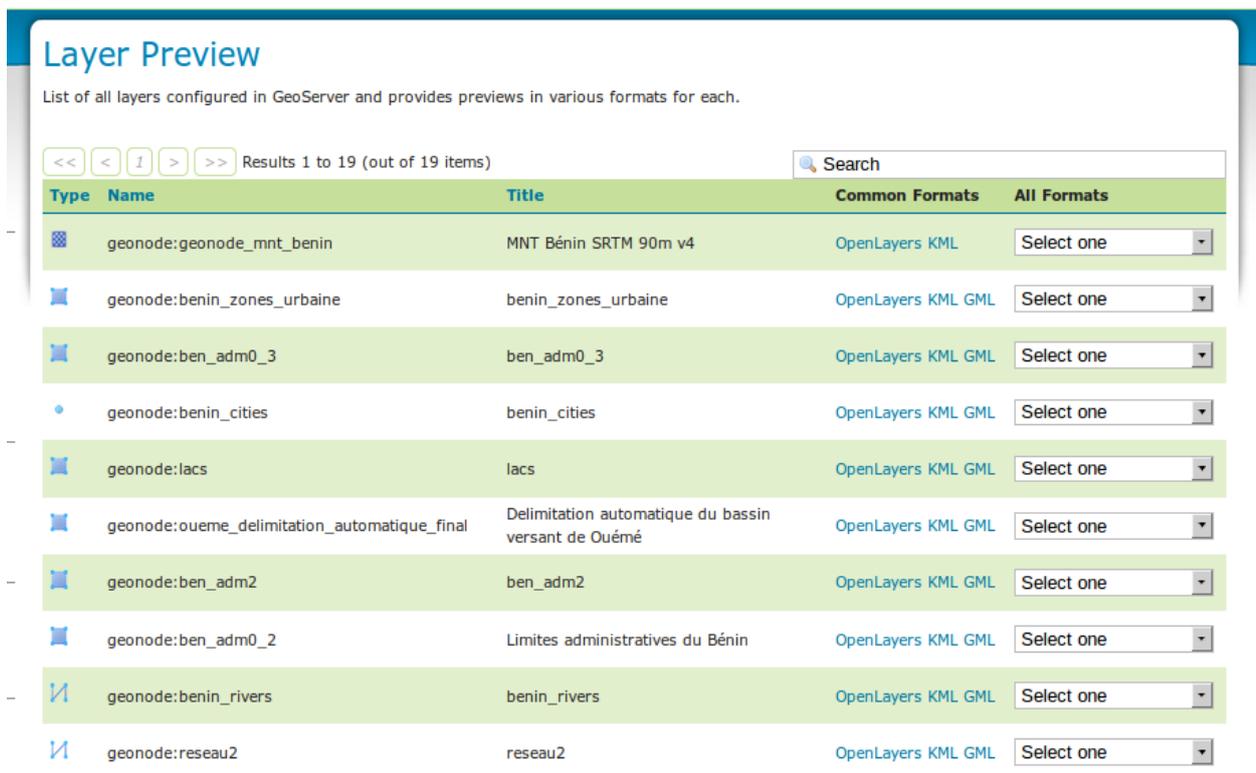


Figure 1.0: Layer Preview page

2.1 Getting Started

1. Copy the file `benin_rivers.zip` from the USB stick to the exercise folder. This archive contains a Shapefile of rivers for Benin that will be used during in this tutorial.
 2. Unzip the `benin_rivers.zip`. The extracted folder `benin_rivers` contains the following four files:
 - `benin_rivers.shp`
 - `benin_rivers.shx`
 - `benin_rivers.dbf`
 - `benin_rivers.prj`
- #. Move the `benin_rivers` folder into `:/usr/share/geoserver/data/`, where `<:/usr/share/geoserver/data/>` is the root of the GeoServer data directory.

2.2 Create a New Workspace

The first step is to create a workspace for the Shapefile. A workspace is a container used to group similar layers together.

1. In a web browser in the VM navigate to <http://192.81.212.100:8080/geoserver/web>.
2. Log into GeoServer username:admin password:geoserver.
3. Navigate to Data → Workspaces

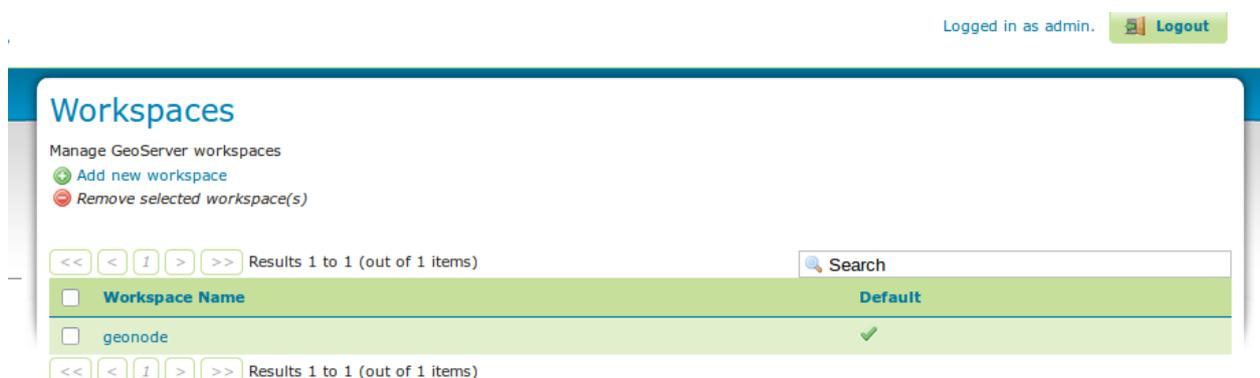


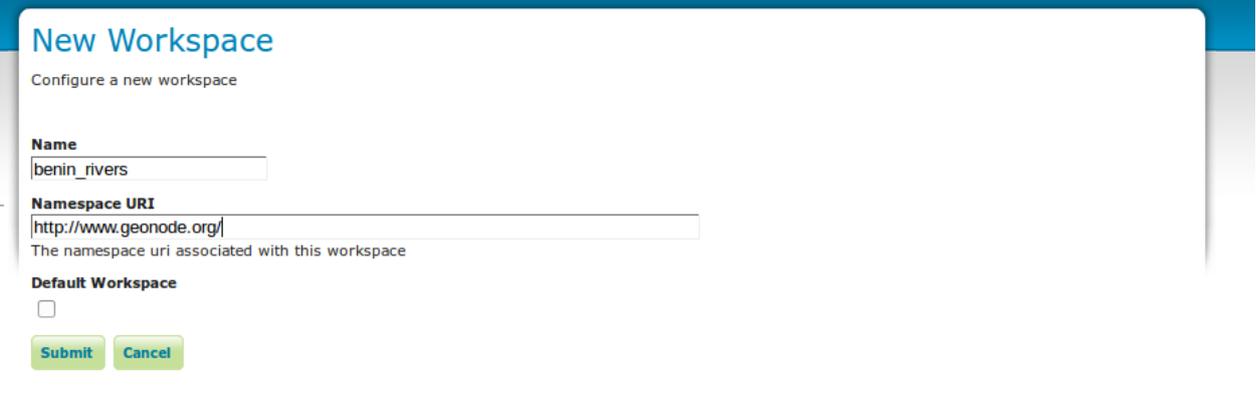
Figure 1.1: *Workspace page*

4. To create a new workspace click the *Add new workspace* button. You will be prompted to enter a workspace Name and Namespace URI.



Figure 1.2: *Configure a New Workspace*

5. Enter the Name as `benin_rivers` and the Namespace URI as `http://www.geonode.org/benin_rivers`. A workspace name is an identifier describing your project. It must not exceed ten characters or contain spaces. A Namespace URI (Uniform Resource Identifier) is typically a URL associated with your project, perhaps with an added trailing identifier indicating the workspace.
6. Click the *Submit* button. The `benin_rivers` workspace will be added to the Workspaces list.



New Workspace
Configure a new workspace

Name

Namespace URI

The namespace uri associated with this workspace

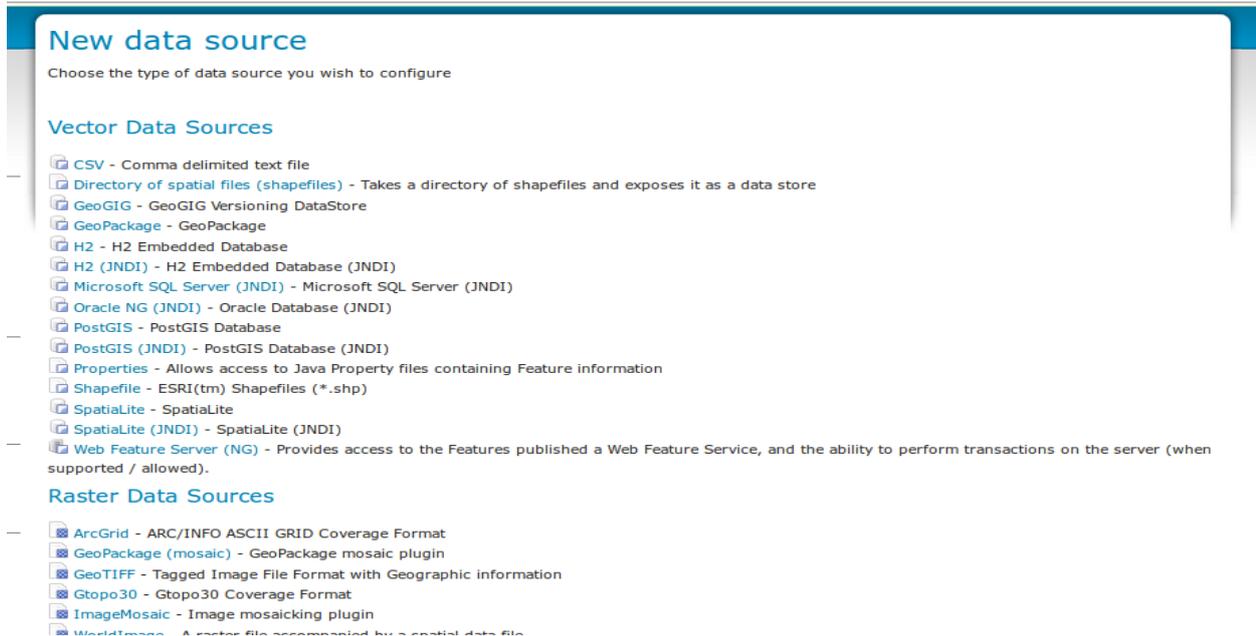
Default Workspace

Figure 1.3: *New Workspace*

2.3 Create a Data Store

1. Navigate to *Data → Stores*.

2. In order to add the `benin_rivers` Shapefile, you need to create a new Store. Click on the *Add new store* button. You will be redirected to a list of the



data sources supported by GeoServer.

Figure 1.4: *Data sources*

3. Select *Shapefile-ESRI(tm) Shapefiles (.shp)*. The New Vector Data Source page will display.

4. Begin by configuring the Basic Store Info. Select the workspace `benin_rivers` from the drop down menu. Enter the Data Source Name as `Benin Rivers` and enter a brief Description.

5. Under Connection Parameters specify the location URL of the Shapefile as `file:data/benin_rivers/benin_rivers.shp`.

New Vector Data Source
Add a new vector data source

Shapefile
ESRI(tm) Shapefiles (*.shp)

Basic Store Info

Workspace *
benin_rivers

Data Source Name *
Benin Rivers

Description
Rivers in Benin

Enabled

Connection Parameters

Shapefile location *
file:data/benin_rivers/benin_rivers.shp [Browse...](#)

DBF charset
ISO-8859-1

Create spatial index if missing/outdated

Use memory mapped buffers (Disable on Windows)

Cache and reuse memory maps (Requires Use Memory mapped buffers to be enabled)

[Save](#) [Cancel](#)

Figure 1.5: Basic Store Info and Connection Parameters

6. Click Save. You will be redirected to the New Layer chooser page in order to configure the benin_rivers layer.

2.4 Create a Layer

1. On the New Layer chooser page, select the layer benin_rivers.
2. The Edit Layer page defines the Data and Publishing parameters for a layer. Enter a short Title and an Abstract for the benin_rivers layer.

Edit Layer
Edit layer data and publishing

geonode:benin_rivers
Configure the resource and publishing information for the current layer

Data **Publishing** **Dimensions** **Tile Caching**

Basic Resource Info

Name
benin_rivers

Enabled

Advertised

Title
benin_rivers

Abstract
No abstract provided

Keywords

Current Keywords
features

Figure 1.6: *Basic Resource Information*

3. Generate the layer's bounding boxes by clicking the *Compute from data* and then *Compute from Native bounds*.

Bounding Boxes

Native Bounding Box

Min X	Min Y	Max X	Max Y
0.8906066235651	6.359305000000000	3.6009650462047	12.417423198442

[Compute from data](#)

Lat/Lon Bounding Box

Min X	Min Y	Max X	Max Y
0.8906066235651	6.359305000000000	3.6009650462047	12.417423198442

[Compute from native bounds](#)

Curved geometries control

Linear geometries can contain circular arcs

Linearization tolerance (useful only if your data contains curved geometries)

Feature Type Details

Property	Type	Nullable	Min/Max Occurrences
the_geom	MultiLineString	true	0/1
dissolve	String	true	0/1
scalerank	Double	true	0/1
featurecla	String	true	0/1

Figure 1.7: Generate Bounding Boxes

4. Set the layer's style by switching to the Publishing tab.
5. Select the line style from the Default Style drop down list.
6. Finalize the layer configuration by scrolling to the bottom of the page and clicking Save.

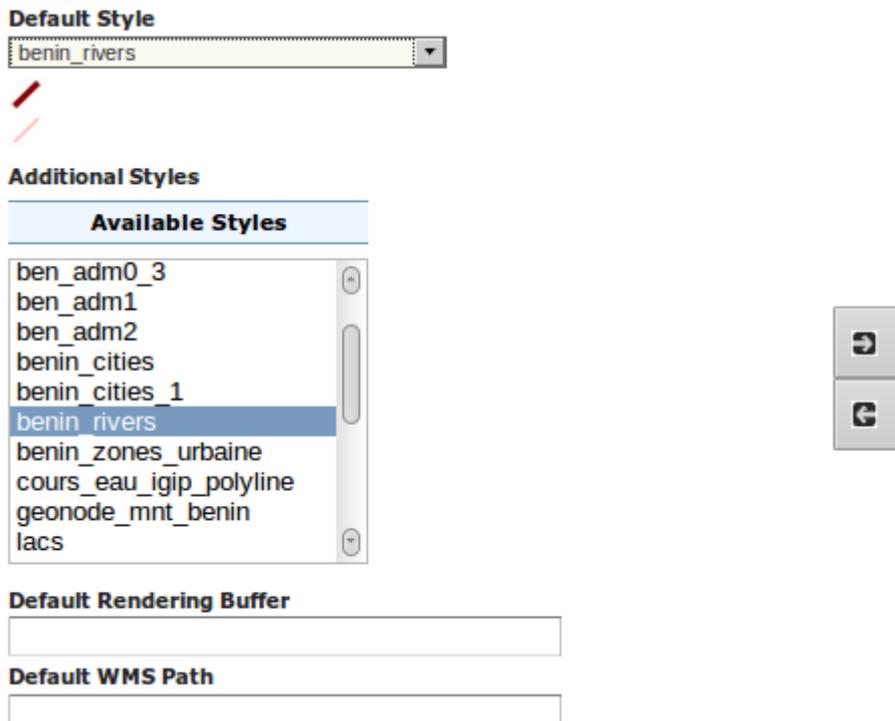


Figure 1.8: Select default style

2.5 Preview the Layer

1. In order to verify that the `benin_rivers` layer is published correctly you can preview the layer. Navigate to the Layer Preview screen and find the `geonode:benin_rivers` layer.
2. Click on the OpenLayers link in the Common Formats column.
3. Success! An OpenLayers map loads in a new page and displays the Shapefile data with the default line style. You can use the Preview Map to zoom and pan around the dataset, as well as display the attributes of features.

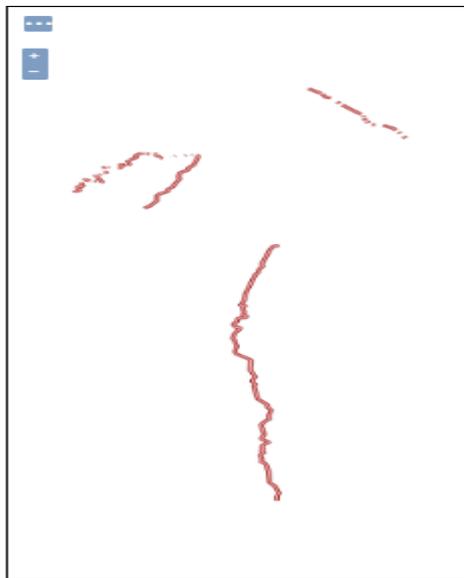
Layer Preview

List of all layers configured in GeoServer and provides previews in various formats for each.

<< < | > >> Results 1 to 19 (out of 19 items)

Type	Name	Title	Common Formats	All Formats
	geonode:geonode_mnt_benin	MNT Bénin SRTM 90m v4	OpenLayers KML	Select one
	geonode:benin_zones_urbaine	benin_zones_urbaine	OpenLayers KML GML	Select one
	geonode:ben_adm0_3	ben_adm0_3	OpenLayers KML GML	Select one
	geonode:benin_cities	benin_cities	OpenLayers KML GML	Select one
	geonode:lacs	lacs	OpenLayers KML GML	Select one
	geonode:oueme_delimitation_automatique_final	Delimitation automatique du bassin versant de Ouémé	OpenLayers KML GML	Select one
	geonode:ben_adm2	ben_adm2	OpenLayers KML GML	Select one
	geonode:ben_adm0_2	Limites administratives du Bénin	OpenLayers KML GML	Select one
	geonode:benin_rivers	benin_rivers	OpenLayers KML GML	Select one
	geonode:reseau2	reseau2	OpenLayers KML GML	Select one

Figure 1.9: Layer Preview



Scale = 1 : 4M
Click on the map to get feature info

Figure 1.10: Preview map of benin_rivers

3.Publishing data with Geonode

This second part involves steps of publishing a map with Geonode.

3.1 Adding layers

1. Click the *Maps* link on the top toolbar. This will bring up the list of maps.

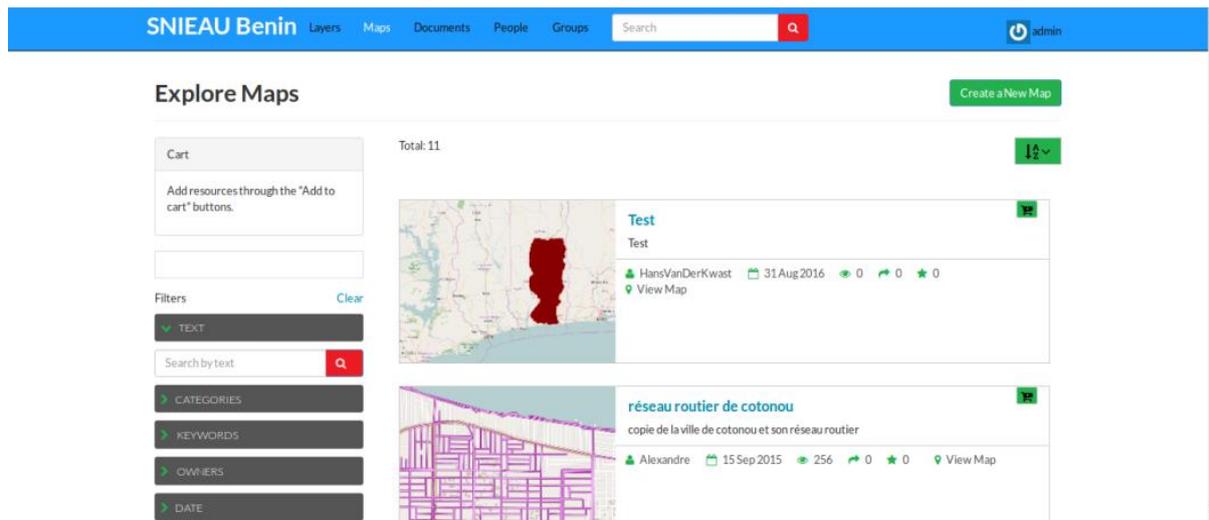


Figure 1.11: *Maps* page

2. Click the *Create a New Map* button.
3. A map composition interface will display.

Publishing data using GeoServer(2.7.4) and GeoNode(2.4)

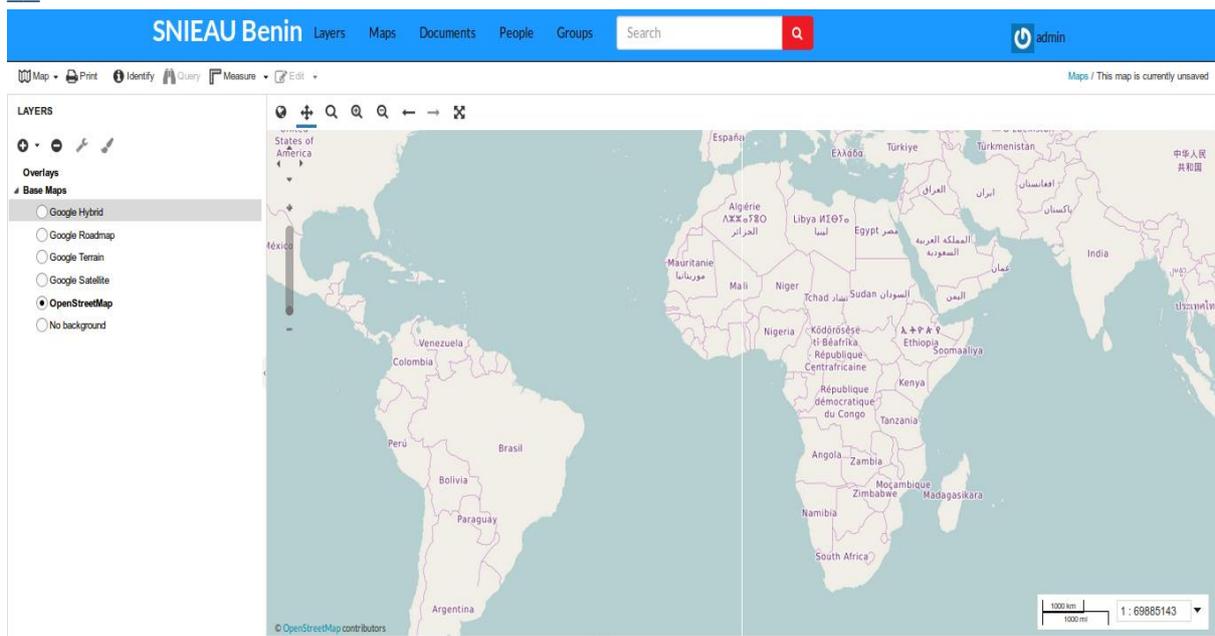


Figure 1.12: *Create maps interface*

In this interface there is a toolbar, layer list, and map window. The map window contains the OpenStreetMap layer by default. Also Google satellite, Google hybrid, Google terrain and Google roadmap base maps have been added.

4. Click on the *New Layers* button and select *Add Layers*.

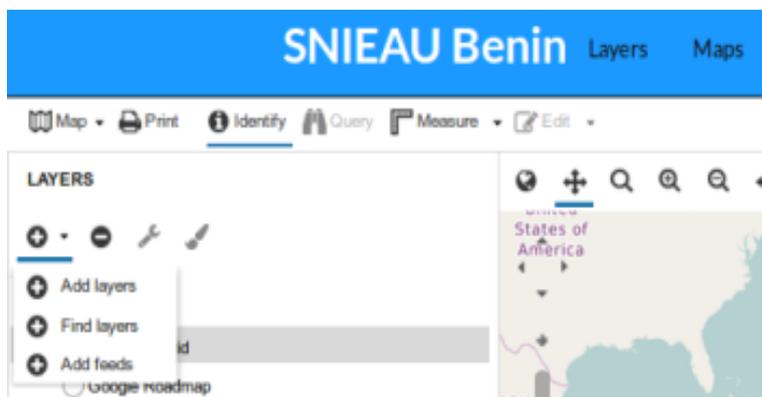


Figure 1.13: *Add layers link.*

5. Select `ben_adm1` layer by clicking the top entry. Click *Add Layers* to add the layer to the map.

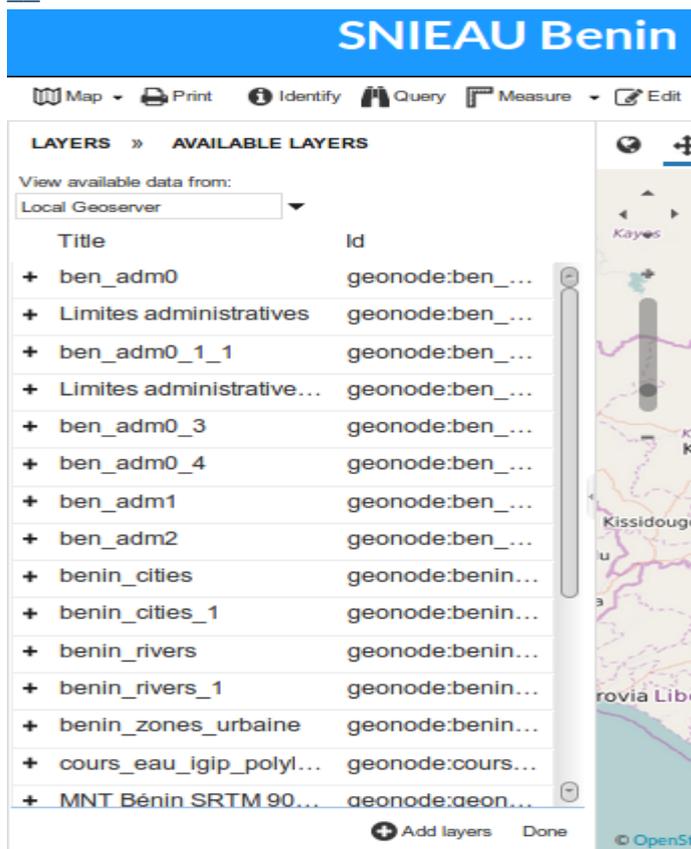


Figure 1.14: *Selecting layers.*

6. The layer will be added to the map. Click *Done* (right next to *Add Layers* at the bottom) to return to the main layer list.

Publishing data using GeoServer(2.7.4) and GeoNode(2.4)

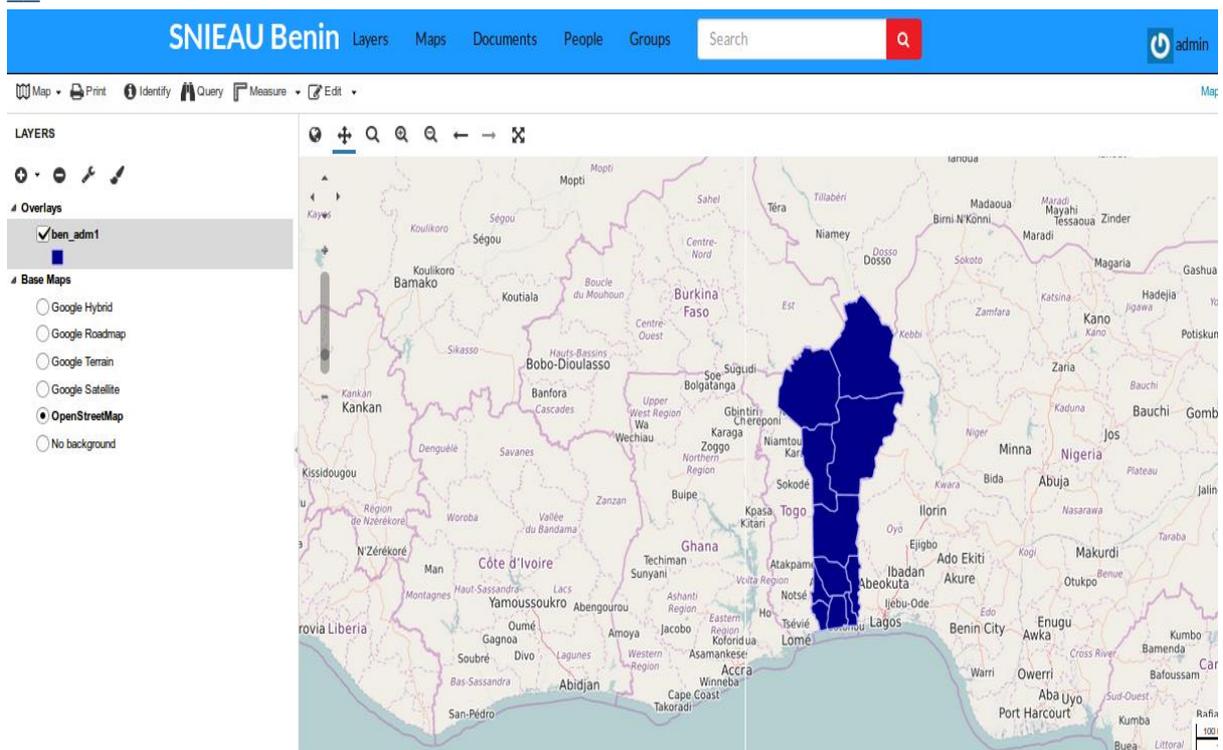


Figure 1.15: Layer added to the map

3.2 Saving map

7. Click on the *Map* button in the toolbar, and select *Save Map*.

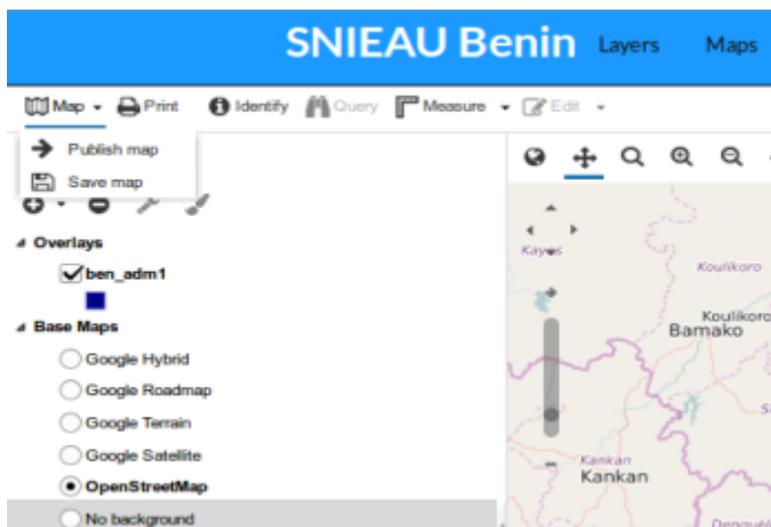


Figure 1.16: Save map link

8. Enter a title and abstract for your map.

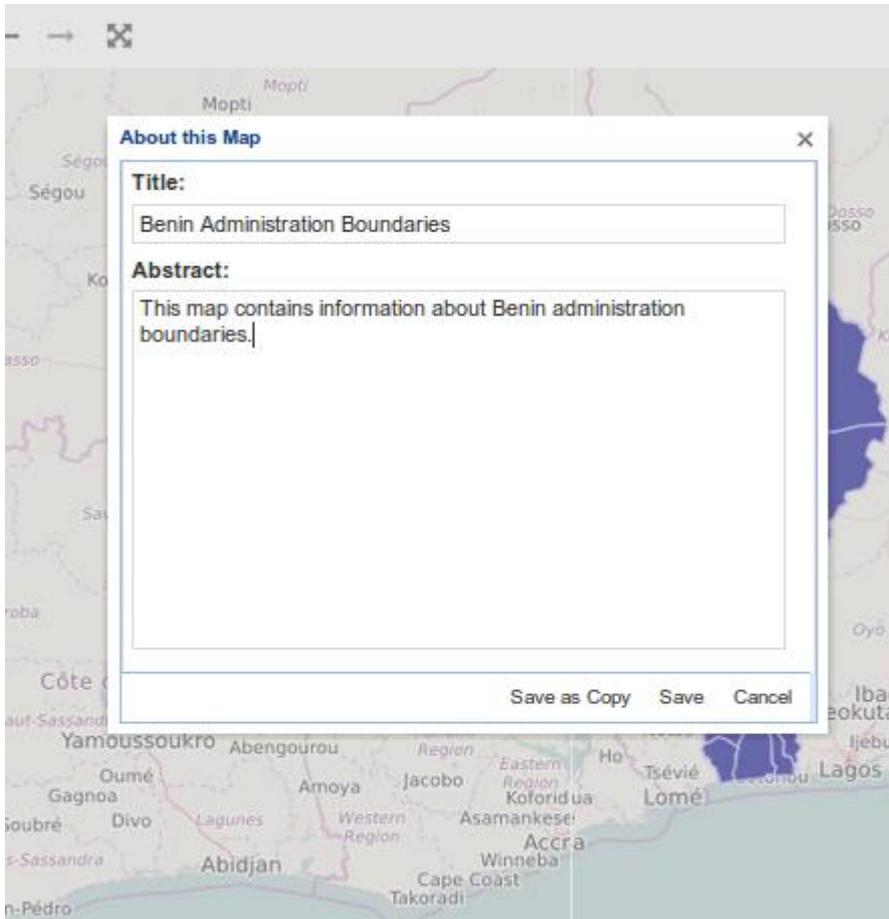


Figure 1.17: *Save map dialog*

9. Click Save.

3.3 Publishing the map

10. Make any final adjustments to the map composition as desired, including zoom and pan settings.

Publishing data using GeoServer(2.7.4) and GeoNode(2.4)

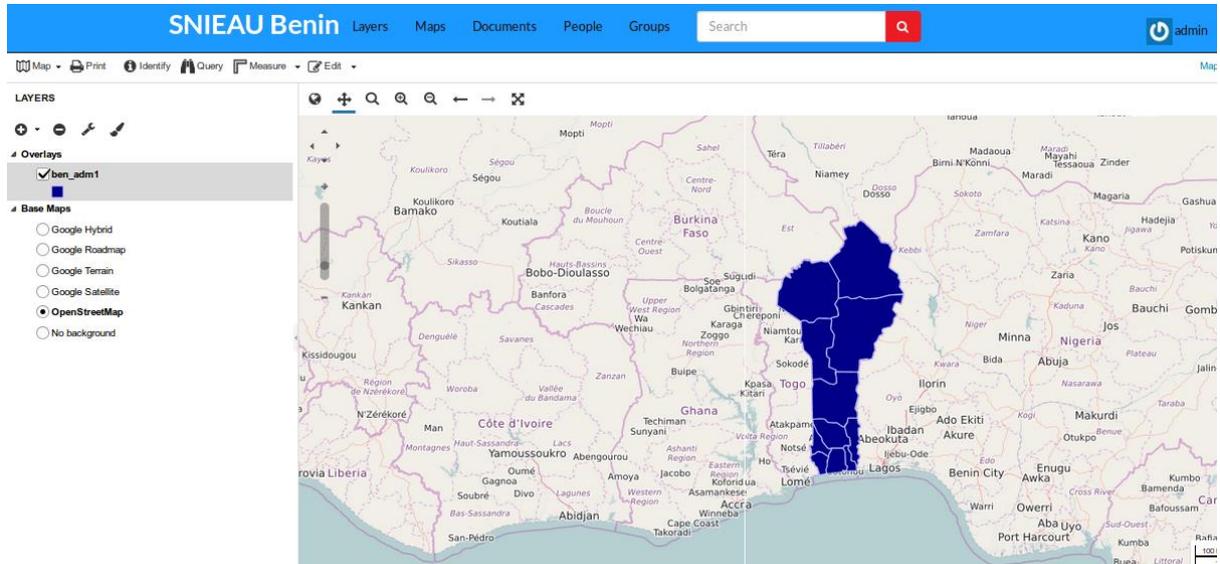


Figure 1.18: Adjusting map composition

11. Click the *Map* button in the toolbar, and then click *Publish Map*.

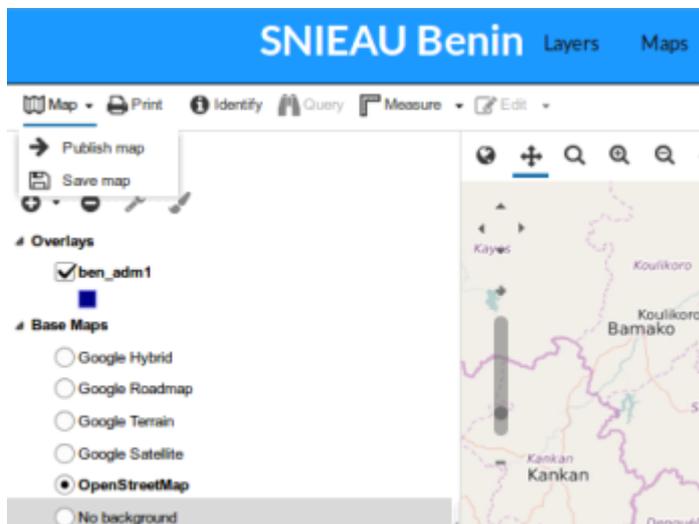


Figure 1.19: Publish map link

12. The title and abstract as previously created should still be there. Make any adjustments as necessary, and click *Save*.

13. A new dialog will appear with instructions on how to embed this map in a webpage, including a code snippet. You can adjust the parameters as necessary.

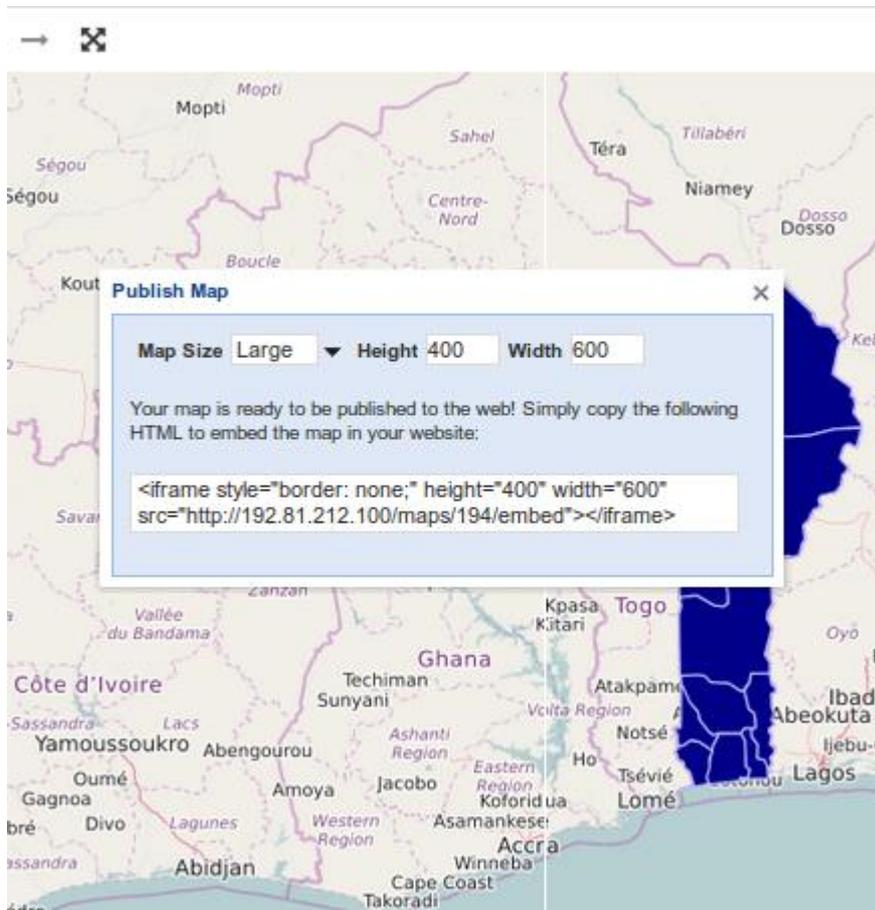


Figure 1.20: Map publishing options

Your map is now published and can now be shared.