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

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.


2. Publishing data with Geoserver

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

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 1.1: Workspace page

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](image)

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

Figure 1.6: *Basic Resource Information*
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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.
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.
Figure 1.9: Layer Preview

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.

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

Figure 1.14: *Selecting layers.*
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3.2 Saving map

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

Figure 1.15: Layer added to the map

Figure 1.16: Save map link
8. Enter a title and abstract for your map.

![Save map dialog](image)

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

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.