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# **GeoNode Documentation**

***Release 2.10***

**GeoNode Development Team**

**26.06.2019**





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Welcome to GeoNode's Documentation.

GeoNode is an Open Source, Content Management System (CMS) for geospatial data. It is a web-based application and platform for developing geospatial information systems (GIS) and for deploying spatial data infrastructures (SDI).



### **1.1 What is GeoNode**

### **1.2 Current Version and Features**

### **1.3 Get in touch with the community**

### **1.4 GeoNode Basics**

### **1.5 Supported Browser**

### **1.6 Online Demo**

### **1.7 Quick Installation Guide**

#### **1.7.1 Introduction**

#### **1.7.2 OSGEO Live CD**

#### **1.7.3 Install via Ansible**

### **1.8 Accounts and User Profile**

In GeoNode many contents are public so unregistered users have read-only access to public maps, layers and documents. In order to create maps, add layers or documents, edit the data and share these resources with other users, you need to sign in.

GeoNode is primarily a *social* platform, thus a primary component of any GeoNode instance is the user account.

This section will guide you through account registration, updating your account information and preferences, connections with social networks and email addresses.

### 1.8.1 Creating a New Account

To take full advantage of all the GeoNode features you need an user account. Follow these step to create a new one.

1. From any page in the web interface, you will see a *Register* link. Click that link, and the register form will appear

---

**Bemerkung:** The registrations in GeoNode must be open, in case you don't see the register link then it's not possible to register unless the administrator of the site does that for you.

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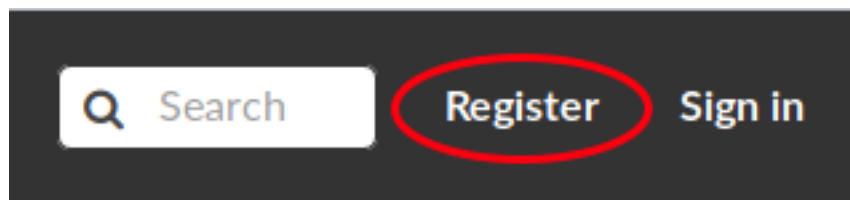


Abb. 1: Sign in screen

2. On the next page, fill out the form. Enter a user name and password in the fields. Also, enter your email address for verification.

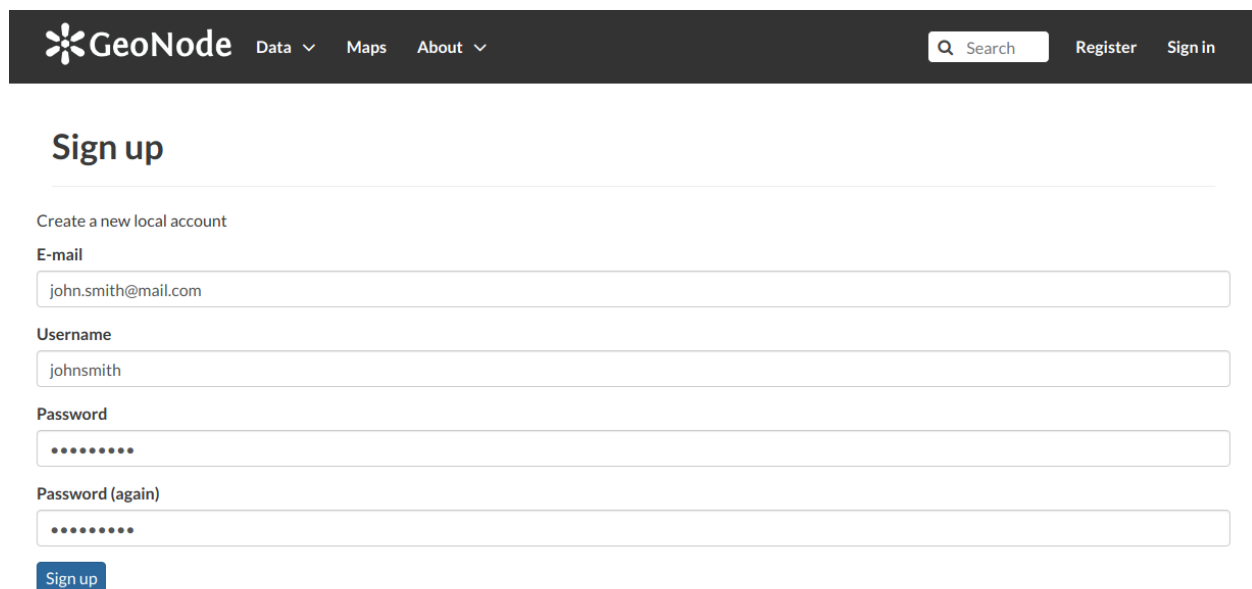
A screenshot of the 'Sign up' form in the GeoNode web interface. The form is titled 'Sign up' and includes a sub-header 'Create a new local account'. It contains four input fields: 'E-mail' (with the example 'john.smith@mail.com'), 'Username' (with the example 'johnsmith'), 'Password' (masked with dots), and 'Password (again)' (also masked with dots). A blue 'Sign up' button is located at the bottom left of the form. The top of the page shows the GeoNode logo and navigation links: 'Data', 'Maps', and 'About'.

Abb. 2: Registering for a new account

3. You will be automatically logged in and redirected to the Profile page. An email will be sent confirming that you have signed up. If no errors occur during the registration, the following alerts will appear on the screen:



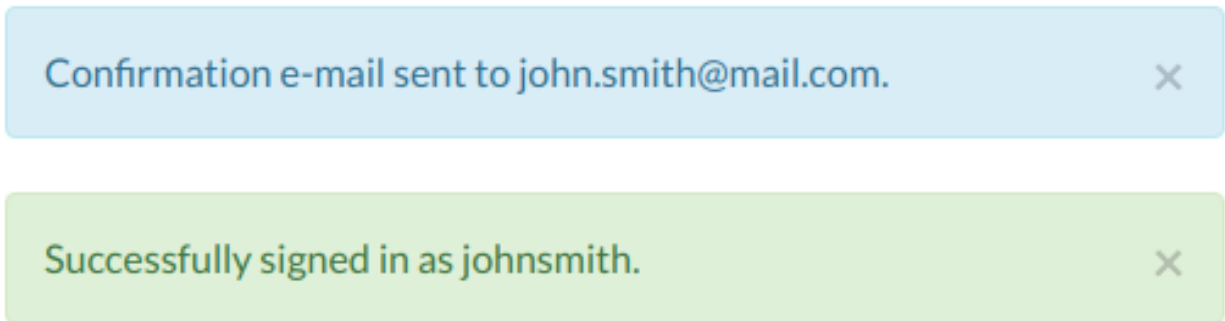


Abb. 3: Alerts

To logout click on the *Log out* link of the user menu.

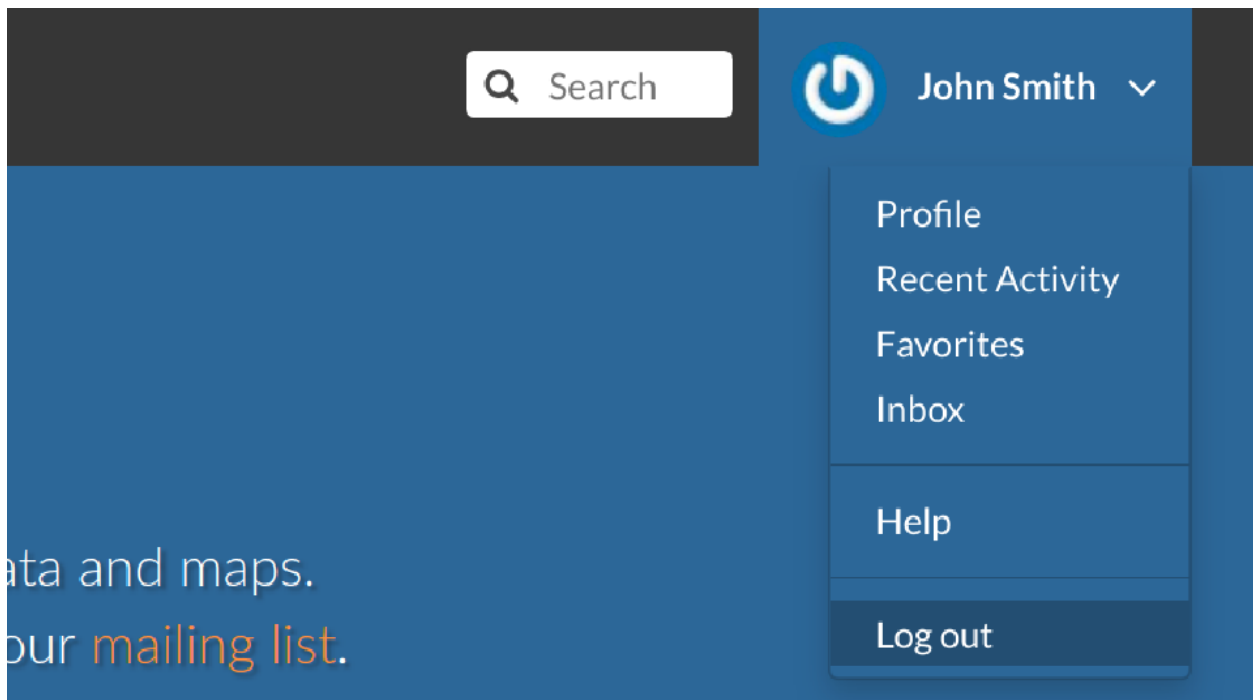


Abb. 4: Logout link

You have to confirm this action as described in the picture below.

## 1.8.2 Updating the Profile

Once having an account you can enrich your profile with useful information, you can also edit or delete the existing ones. You can connect the account with your social network, associate many e-mail addresses to it and manage many options such as preferences about notifications.

You can update these information anytime from your *Profile* page, it is accessible from the user menu.



Abb. 5: Confirm Log out

So, click on your user name in the top right of the screen. A drop-down list will show. Click on *Profile* to enter the *Profile* settings page.

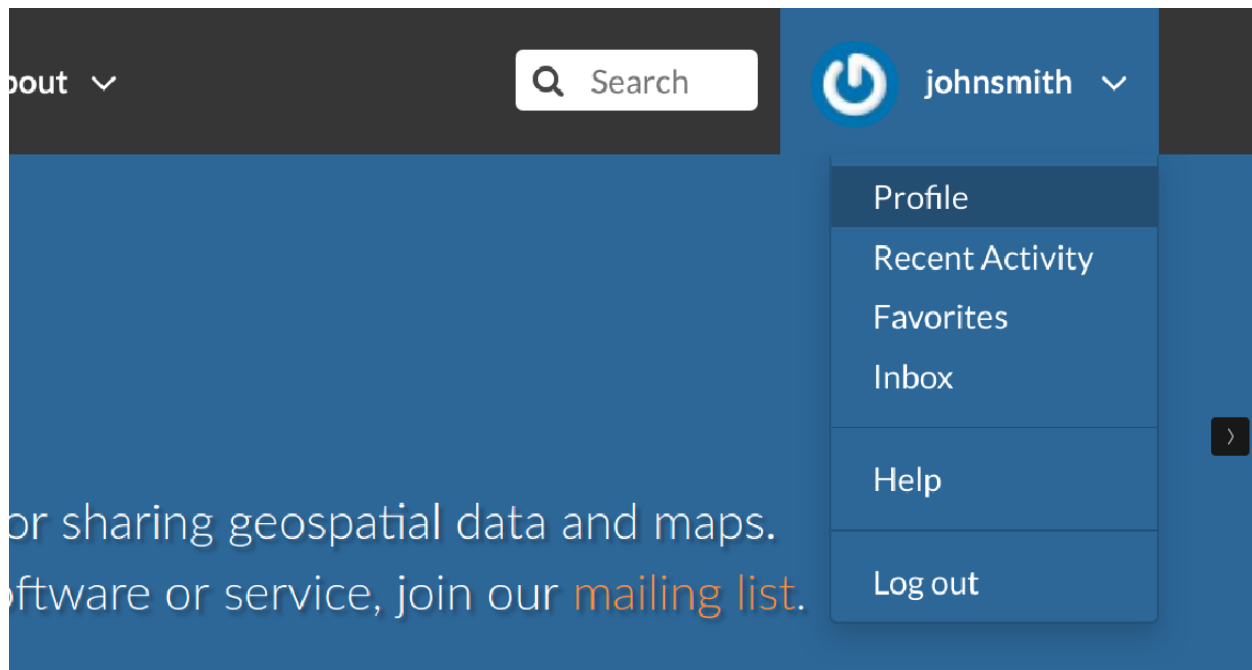


Abb. 6: Link to your profile

The *Profile* page looks like the one shown in the picture below.


Your personal information are shown under the username. At the bottom of the page are listed all the resources associated to your *Profile*, you can decide to view only layers or maps or documents by clicking on the corresponding tab.


Through the link `User layers WMS GetCapabilities document` you can retrieve an XML document with the list of the available layers.

On the right side of the page there are many useful links to edit personal information, to upload and create layers or maps, to update your *Profile* settings and to get in touch with other GeoNode users.

The *Favorites* link, also accessible from the user menu, drive you to the list of the resources marked as your favorites. Click the *Delete from Favorites* button to remove the resource from the list.


The *My Activities* link allows to see all your recent activities on GeoNode such as layers uploading and maps creation. This link is also available in the user menu.

 [Data](#) [Maps](#) [About](#)


Search  johnsmith

---

## johnsmith




Position	Not provided.
Organization	Not provided.
Location	Not provided.
Voice	Not provided.
Fax	Not provided.
Description	Not provided.
Keywords	Not provided

 User layers WMS GetCapabilities document

[Message User](#)  
[Edit profile](#)  
[Connected social accounts](#)  
[Associated e-mails](#)  
[Set/Change password](#)  
[Upload new layers](#)  
[Create a new layer](#)  
[Create a new map](#)  
[My Activities](#)  
[Favorites](#)  
[Notifications](#)  
[Invite Users](#)






### Resources


[All contents](#) [Layers](#) [Maps](#) [Documents](#)




#### OSM Railways

Railways extracted from OSM






 johnsmith  4 Jun 2019  0  0  0


 [View Map](#)



#### railways

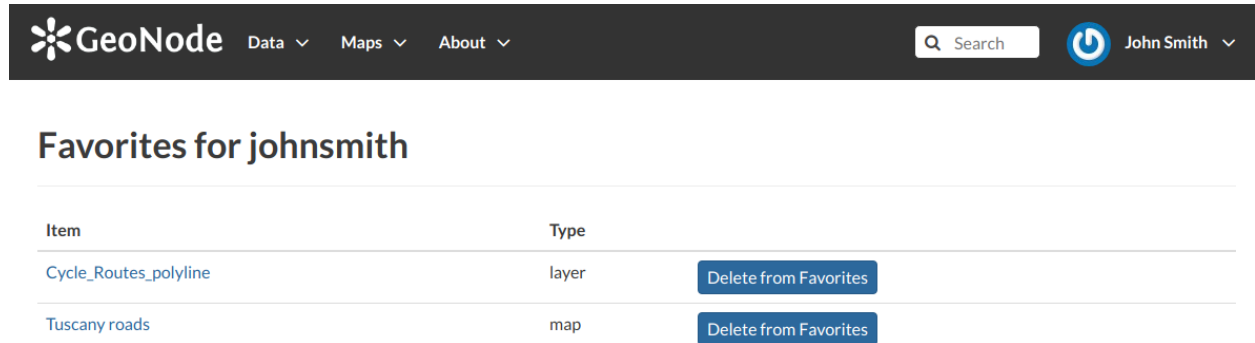
No abstract provided

 johnsmith  4 Jun 2019  0  0  0

 [Create a Map](#)

< page 1 of 1 >

Abb. 7: User profile page

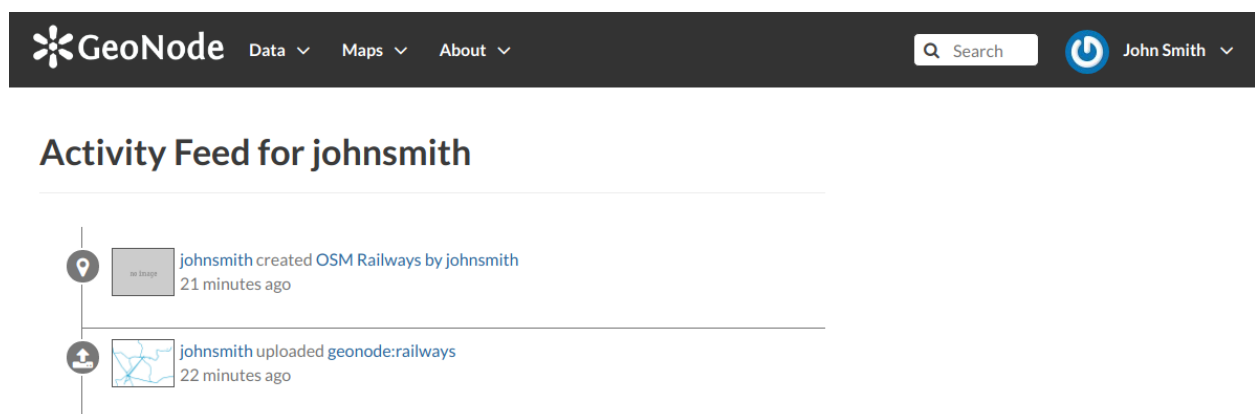


GeoNode Data Maps About Search John Smith

### Favorites for johnsmith

Item	Type	
Cycle_Routes_polyline	layer	Delete from Favorites
Tuscany roads	map	Delete from Favorites

Abb. 8: *Favorites*



GeoNode Data Maps About Search John Smith

### Activity Feed for johnsmith

- johnsmith created OSM Railways by johnsmith 21 minutes ago
- johnsmith uploaded geonode:railways 22 minutes ago

Abb. 9: *Recent activities*

All other links and their functionalities will be described in depth in the following sections.

## Editing Profile Information

Your *Profile* contains personal information such as your address, your telephone number, your organization and so on but it is empty by default at the beginning.

Through the *Edit profile* button of the *Profile* page (see [Updating the Profile](#)) you can set your details, including your avatar.

When finished, click *Update profile*. You will be redirected to the *Profile* page.

A message will confirm the profile has been correctly updated.

## Connecting your Account with Social Networks

You currently have no social network accounts connected to this account.

## Associating your Account with an e-mail

Your account is automatically associated with the e-mail that you used to register yourself on the platform.

By clicking on *Associated e-mails* of the *Profile* page (see [Updating the Profile](#)), you will have the possibility to fill up a new e-mail address. Type it in the *E-mail* input field then click on *Add E-mail* to perform a new association.

You can make it primary if necessary, in order to receive the notification on this address. To do that, select the e-mail that you want, then click on *Make Primary*.

## Managing the Password

To change your password, click on the *Set/Change password* link of the *Profile* page (see [Updating the Profile](#)). You will be asked to enter your current password and the new one (two times). Click on *Change my password* to perform the change.

If no errors occur you will see a confirmation message.

Next time you log in you will have to use the new password.

## Setting Notification Preferences

By default GeoNode sends notifications to the users for events that the users could be subscribe such as a new layer uploaded or a new rate added to a map. You can adjust your notification settings by clicking on the *Notifications* link of the *Profile* page (see [Updating the Profile](#)).

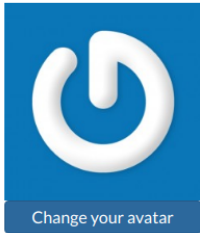
---

**Bemerkung:** Make sure to have a verified email address to which notices can be sent. If not see [Associating your Account with an e-mail](#).

---

Now check/uncheck the notification types you wish to receive or not receive. It is possible to be notified for the events shown in the picture below.

## Edit Your Profile



Change your avatar

### First name

### Last name

### Email address

### Organization Name

name of the responsible organization

### Profile

introduce yourself

### Position Name

role or position of the responsible person

### Voice

telephone number by which individuals can speak to the responsible organization or individual

### Facsimile

telephone number of a facsimile machine for the responsible organization or individual

### Delivery Point

physical and email address at which the organization or individual may be contacted

### City

city of the location

### Administrative Area

state, province of the location

### Postal Code

ZIP or other postal code

### Country

country of the physical address

### Keywords

A space or comma-separated list of keywords

### Language

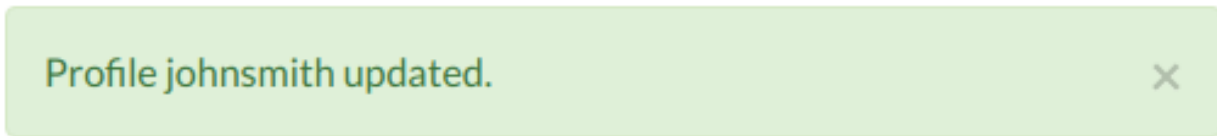


Abb. 11: Updating Profile correctly finalized

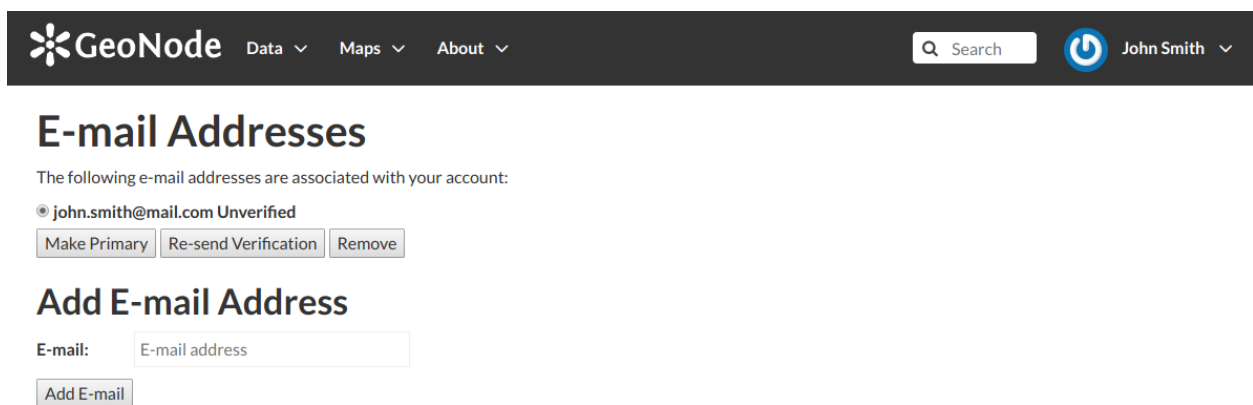


Abb. 12: Accounts e-mail

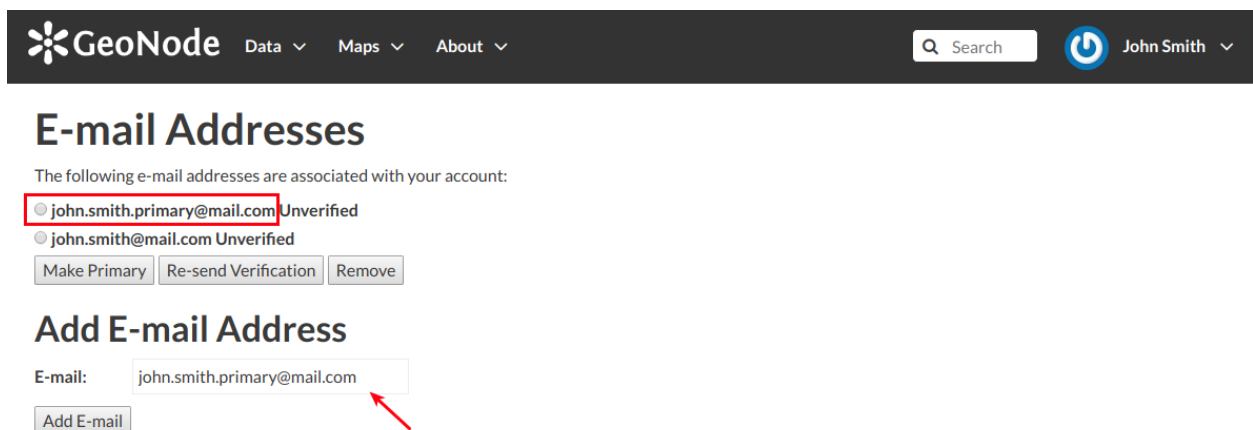
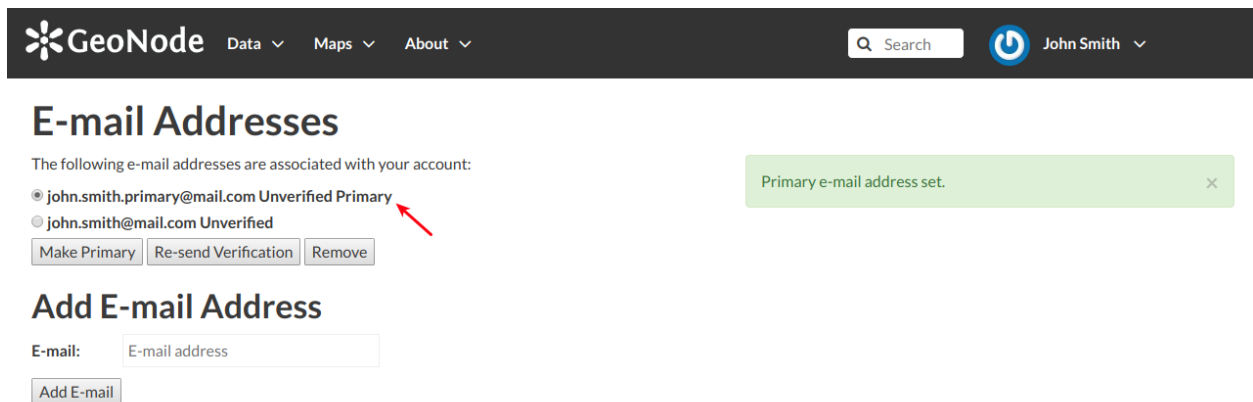


Abb. 13: New e-mail association



**E-mail Addresses**

The following e-mail addresses are associated with your account:

- john.smith.primary@mail.com Unverified Primary
- john.smith@mail.com Unverified

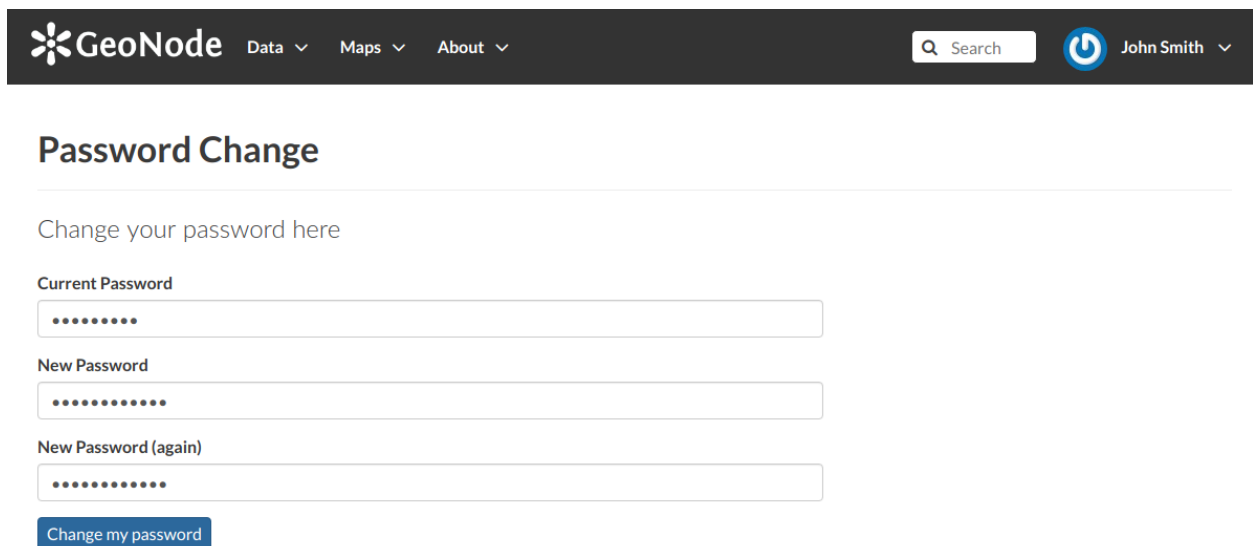
Make Primary Re-send Verification Remove

**Add E-mail Address**

E-mail:

Add E-mail

Abb. 14: Primary e-mail address



**Password Change**

Change your password here

Current Password

.....

New Password

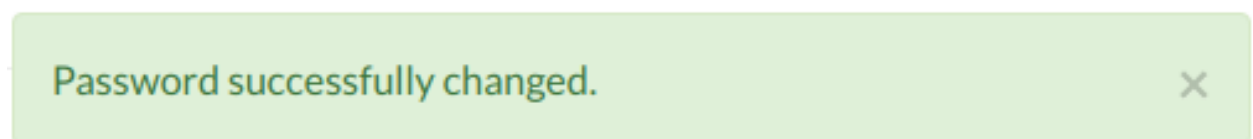
.....

New Password (again)

.....

Change my password

Abb. 15: Change your password



Password successfully changed.

Abb. 16: Change password confirmation



## Notification Settings

Notification Type	Email
<b>Request to download a resource</b> A request for downloading a resource was sent	<input checked="" type="checkbox"/>
<b>Layer Created</b> A Layer was created	<input checked="" type="checkbox"/>
<b>Layer Updated</b> A Layer was updated	<input checked="" type="checkbox"/>
<b>Layer Approved</b> A Layer was approved by a Manager	<input checked="" type="checkbox"/>
<b>Layer Published</b> A Layer was published	<input checked="" type="checkbox"/>
<b>Layer Deleted</b> A Layer was deleted	<input checked="" type="checkbox"/>
<b>Comment on Layer</b> A layer was commented on	<input checked="" type="checkbox"/>
<b>Rating for Layer</b> A rating was given to a layer	<input checked="" type="checkbox"/>
<b>Map Created</b> A Map was created	<input checked="" type="checkbox"/>
<b>Map Updated</b> A Map was updated	<input checked="" type="checkbox"/>
<b>Map Approved</b> A Map was approved by a Manager	<input checked="" type="checkbox"/>
<b>Map Published</b> A Map was published	<input checked="" type="checkbox"/>
<b>Map Deleted</b> A Map was deleted	<input checked="" type="checkbox"/>
<b>Comment on Map</b> A map was commented on	<input checked="" type="checkbox"/>
<b>Rating for Map</b> A rating was given to a map	<input checked="" type="checkbox"/>
<b>Document Created</b> A Document was created	<input checked="" type="checkbox"/>
<b>Document Updated</b> A Document was updated	<input checked="" type="checkbox"/>
<b>Document Approved</b> A Document was approved by a Manager	<input checked="" type="checkbox"/>
<b>Document Published</b> A Document was published	<input checked="" type="checkbox"/>
<b>Document Deleted</b> A Document was deleted	<input checked="" type="checkbox"/>
<b>Comment on Document</b> A Document was commented on	<input checked="" type="checkbox"/>
<b>Document for Map</b> A rating was given to a document	<input checked="" type="checkbox"/>
<b>User following you</b> Another user has started following you	<input checked="" type="checkbox"/>
<b>User requested access</b> A new user has requested access to the site	<input checked="" type="checkbox"/>
<b>Account activated</b> This account is now active and can log in the site	<input checked="" type="checkbox"/>
<b>Layer uploaded</b> A layer was uploaded	<input checked="" type="checkbox"/>
<b>Monitoring alert</b> Alert situation reported by monitoring	<input checked="" type="checkbox"/>

## 1.9 Interacting with Users and Groups

The GeoNode platform allows you to communicate by message with other GeoNode users and groups of users.

You can also invite external users to join your GeoNode. In order to do that, click on *Invite Users* in the *Profile* page (see *Updating the Profile*) or in the *About* menu in the *Home* page.

You can invite your contacts typing their email addresses in the input field as shown in the picture below. Click on *Submit* to perform the action.

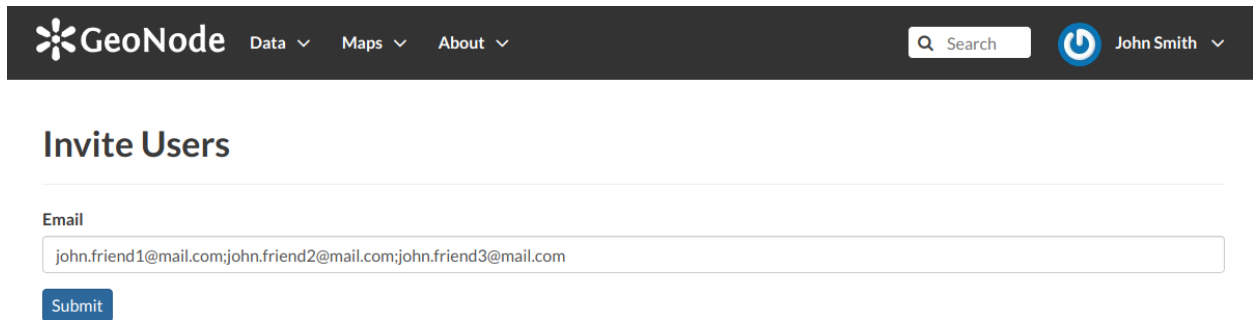


Abb. 18: *Invite users to join GeoNode*

A message will confirm that invitations have been correctly sent.



Abb. 19: *Invitations confirm message*

---

**Bemerkung:** You can invite more than one user at the same time by typing the email addresses inline with a semi-colon separator.

---

The next sections will show you how to view information about other users and how to contact them.

### 1.9.1 Viewing other users information

Once your account is created, you can view other accounts on the system.

To see information about other users on the system, click the *People* link of the *About* menu in *Home* page.

You will see a list of users registered on the system.

The *Search* tool is very useful in case of many registered users, type the name of the user you are looking for in the input text field to filter the users list.

Select a user and click on its *username* to access to the user details page.

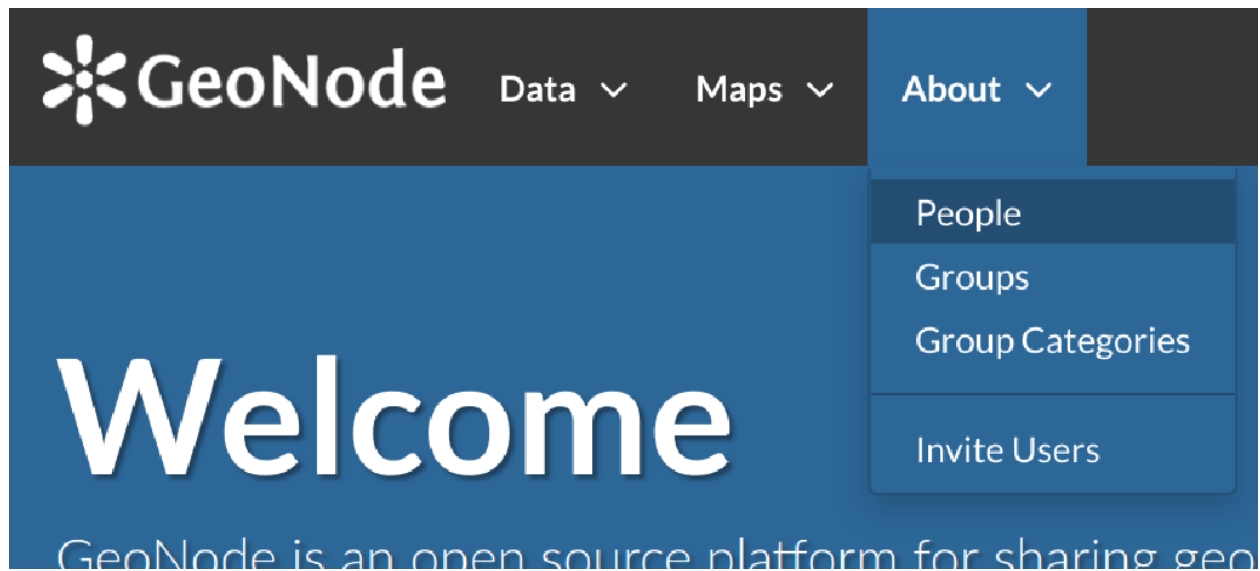


Abb. 20: About menu - People link

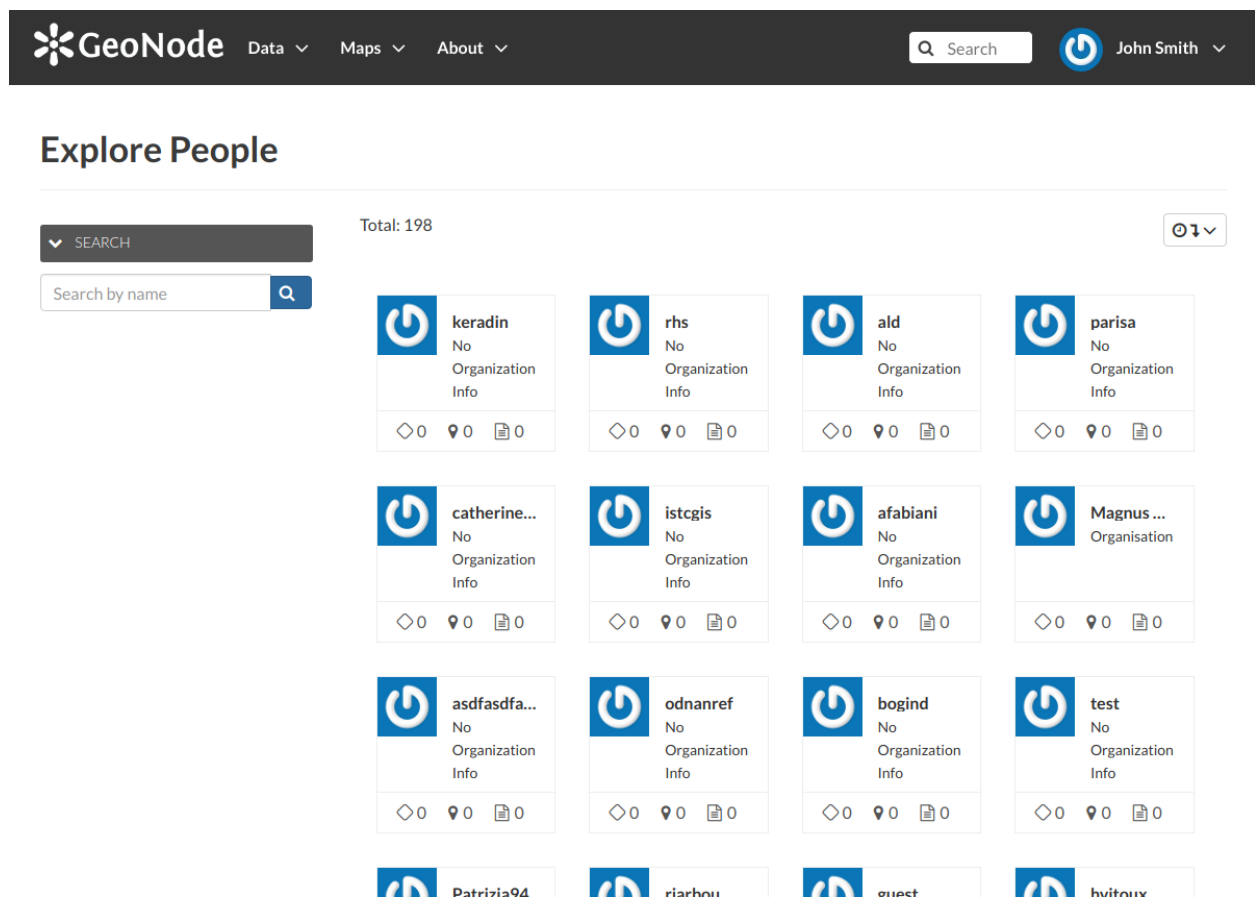





Abb. 21: List of the registered users


 Data ▾ Maps ▾ About ▾   John Smith ▾

## Mario Rossi (mariorossi)



### Mario


Position	Not provided.
Organization	Mario Rossi Transport
Location	Not provided.
Voice	Not provided.
Fax	Not provided.
Description	Not provided.
Keywords	Not provided

 [User layers WMS GetCapabilities document](#)

[Message User](#)  
[User Activities](#)






### Resources


All contents Layers Maps Documents

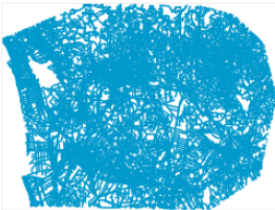


#### Tuscany roads

Roads of Tuscany






 Mario Rossi  3 Jun 2019  0  0  0


 [View Map](#)



#### roads

No abstract provided

 Mario Rossi  3 Jun 2019  0  0  0

 [Create a Map](#)

< page 1 of 1 >

Abb. 22: User details

In this page the main information about the user are shown: personal information (name, surname, organization and so on...) and the resources the user owns (layers, maps and documents).

Through the *User Activities* link, in right side of the page, it is possible to visualize all the activities the user has been done.

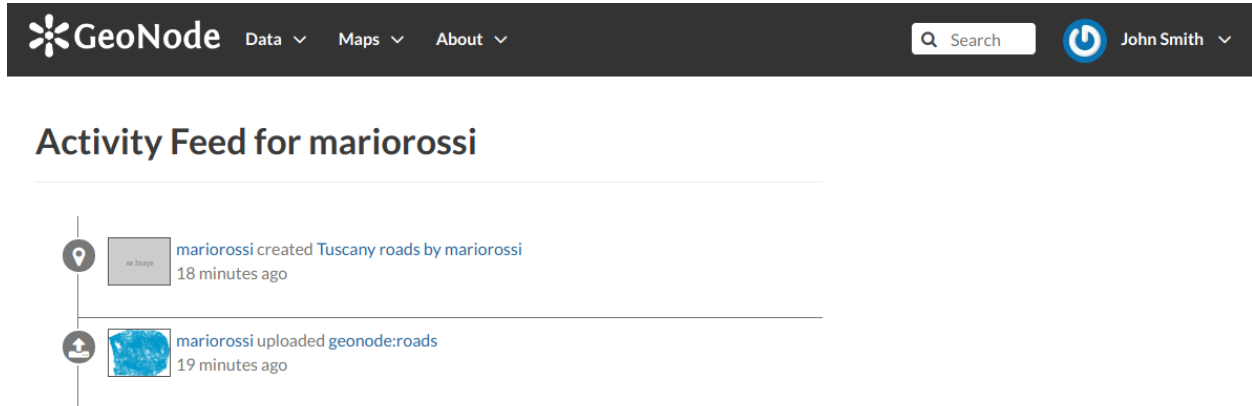


Abb. 23: User activities

The *Message User* link lets you to contact other users, see the next section to read more about that.

It is also possible, in GeoNode, to see the recent activities of all users through the *Recent Activities* link of the user menu.

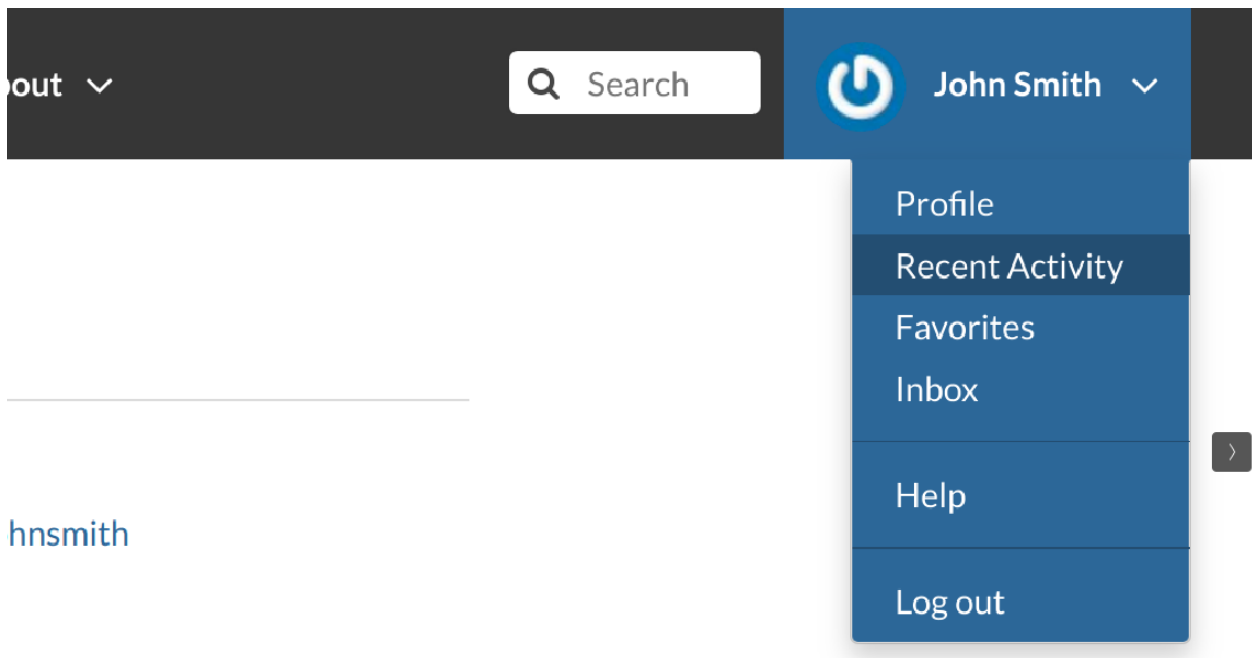




Abb. 24: Recent Activities link

In the picture below an example.


As you can see, you can decide whether to see only the activities related to layers or those related to maps or comments by switching the tabs.


 Data ▾ Maps ▾ About ▾


 John Smith ▾


## Recent activity


All Layers Maps Comments





 johnsmith created [OSM Railways by johnsmith](#)  
24 minutes ago





 johnsmith uploaded [geonode:railways](#)  
25 minutes ago





 cbardalesc subido [geonode:](#)  
14 hours, 18 minutes ago





 cbardalesc subido [geonode:Crhc0](#)  
14 hours, 18 minutes ago





 cbardalesc subido [geonode:Crhc](#)  
14 hours, 19 minutes ago





 Palma creato [SELVA by Palma](#)  
14 hours, 20 minutes ago



 Palma aggiornato [geonode:latina3](#)  
14 hours, 36 minutes ago



 Palma aggiornato [geonode:viterbo](#)  
15 hours, 28 minutes ago




 pedroalves10 criado [teste by pedroalves10](#)

Abb. 25: *Recent Activities*

## 1.9.2 Contacting other users

GeoNode allows you to communicate by message with other registered users and groups.

To send a message to some user and/or groups you can follow the link *Message User* from your *Profile* page (see *Updating the Profile*) or from the *Profile* details page (see the previous section *Viewing other users information*) of that user.

**Create Message** [Back to Inbox](#)

**To users**

- marcoxavier2005
- mariepaulebonnet
- mariorossi**
- marlon

**To groups**

- Geosolutions**

**Subject**

Greetings from John Smith

**Content**

Hello,  
I'm John Smith, I'm now registered on [GeoNode!](#)

[Send message](#)

Abb. 26: Send message to users and groups

Insert your content, type a subject and click on *Send message* to send the message to the users and groups you have selected.

You will be redirected to the *Conversation* details page related to the subject.

### The Inbox page

You can view your conversations in your *Inbox* page, reachable through the *Back to inbox* button (see the picture above) or from the *Inbox* link of the user menu.

The picture below shows how your *Inbox* page should look like.

In *Inbox* all the unread messages are listed. You haven't received any message yet so your *Inbox* is empty. If you switch to the *All* tab you can see all the conversations you are involved in.

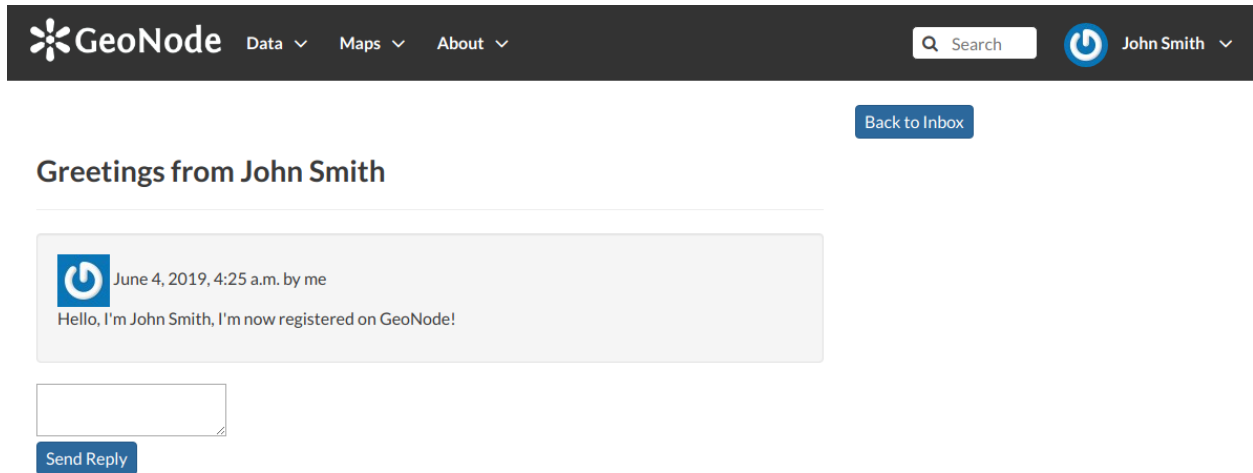


Abb. 27: *Your message*

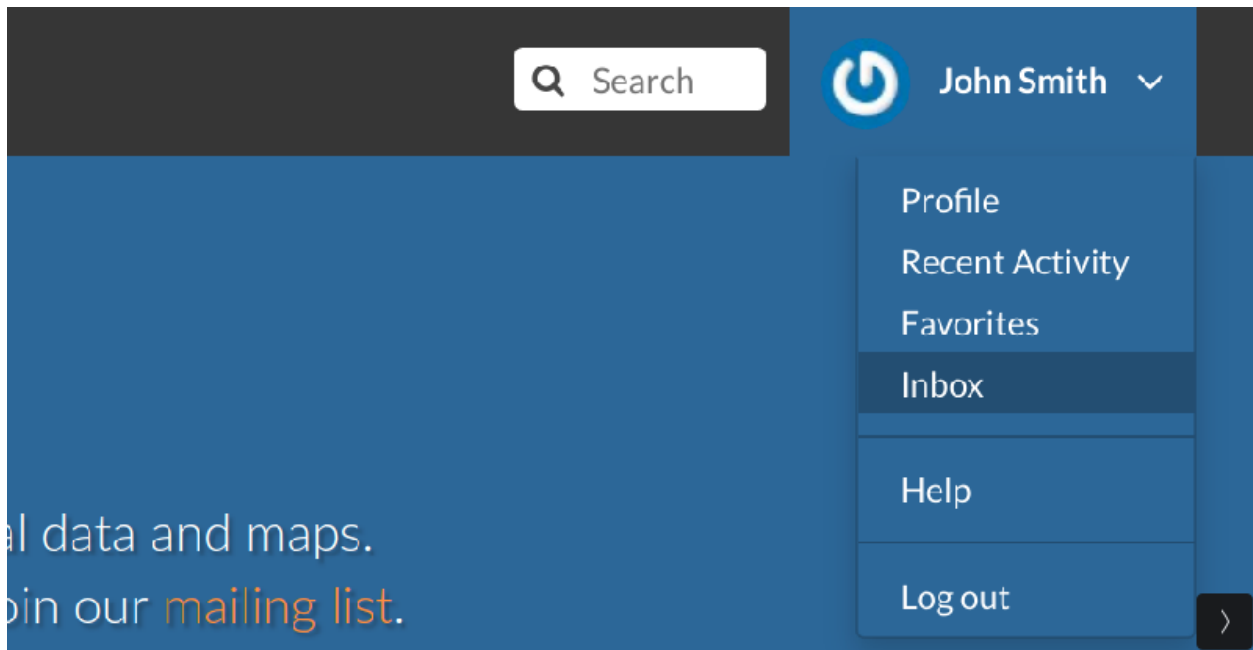


Abb. 28: *Inbox link*

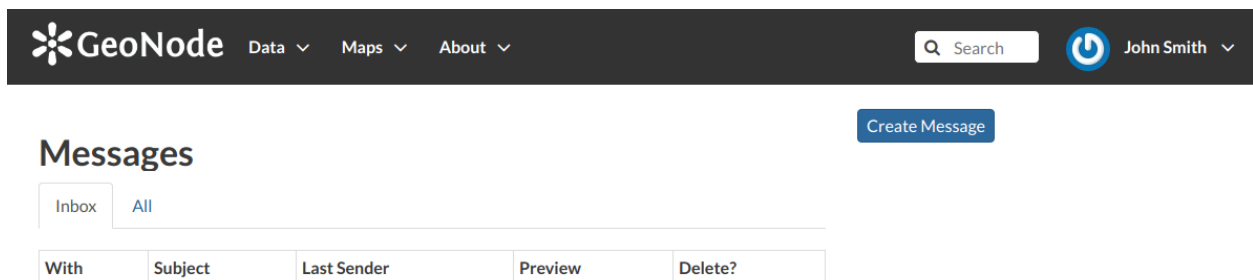


Abb. 29: *Inbox page*



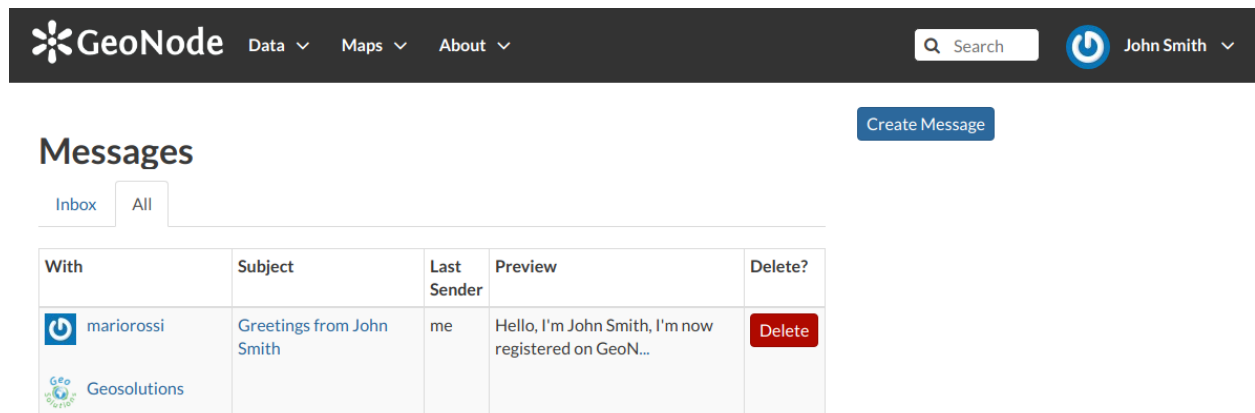


Abb. 30: All your conversations

When some user send a reply to your message your *Inbox* shows it, see the picture below for an example.

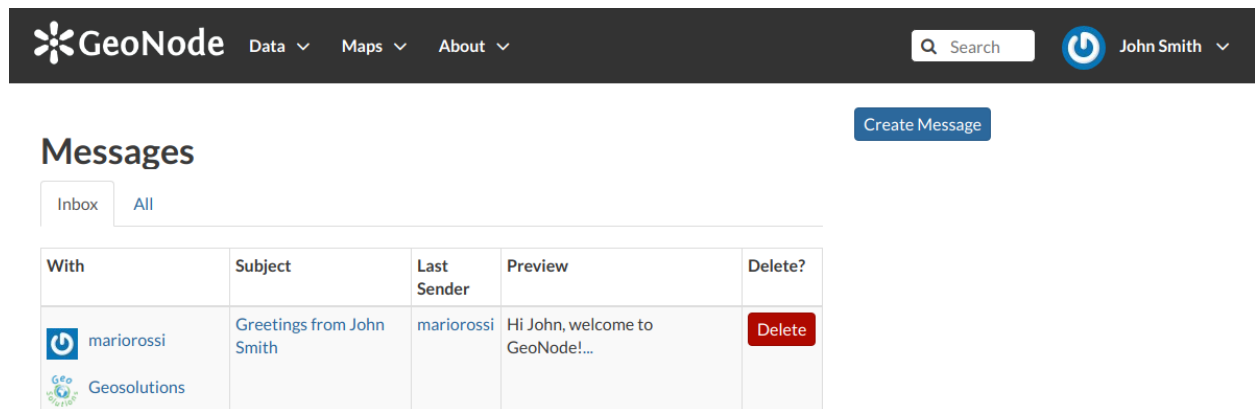


Abb. 31: A reply to your message

You can open the *Conversation* details by clicking on the *Subject* link.

As you can see in the picture above, in the *Conversation* page you have the ability to write a quick reply. Type your message in the text box and click on *Send Reply* to do that.

In the *Inbox* page there is also the *Create Message* button that provides you a quick link to the message creation form.

## 1.10 Data

Data management tools built into GeoNode allow for integrated creation of data, documents, link to external documents, and map visualizations. Each dataset in the system can be shared publicly or restricted to allow access to only specific users. Social features like user profiles and commenting and rating systems allow for the development of communities around each platform to facilitate the use, management, and quality control of the data the GeoNode instance contains.

The following sections will explain more in depth what data can be managed in GeoNode and how to easily find that data.

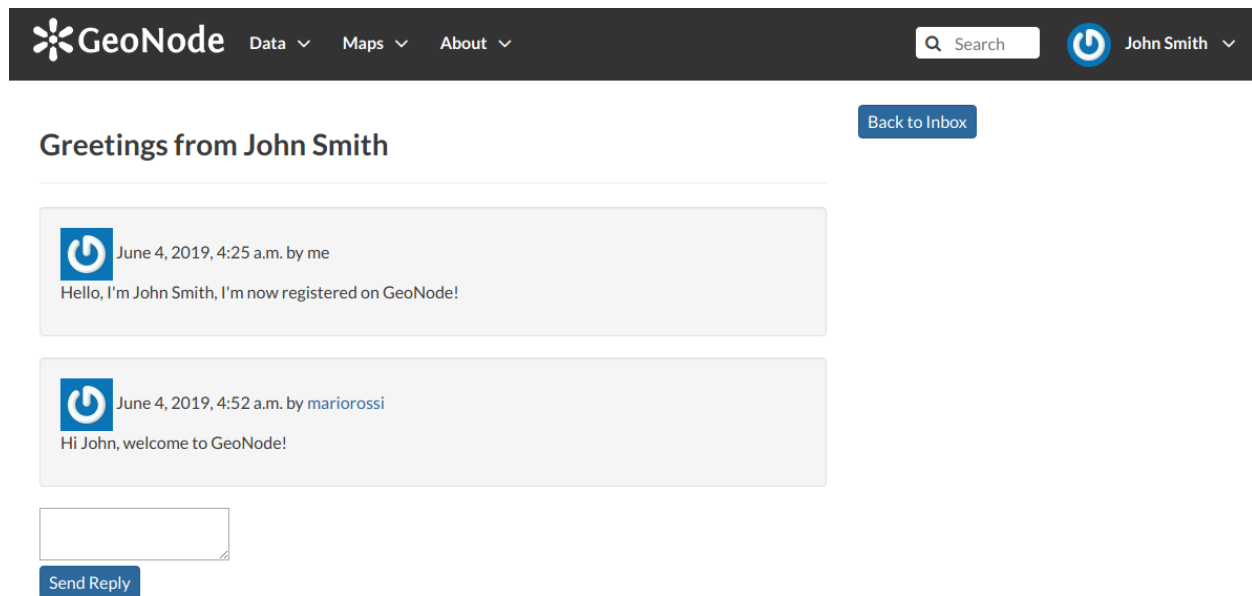


Abb. 32: Conversation details

### 1.10.1 Data Types

GeoNode welcome page shows a variety of information about the current GeoNode instance.

You can explore the existing data using many search tools and filters (see [Finding Data](#)) or through the links of the navigation bar at the top of the page.

There are three main types of resources that GeoNode can manage:

1. Documents
2. Layers
3. Maps

Documents and layers can be accessed from the *Data* menu of the navigation bar.

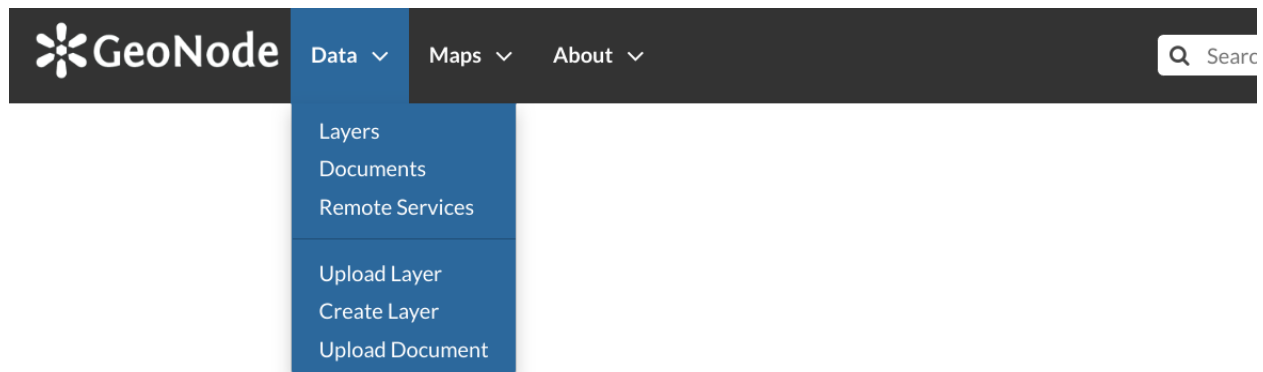


Abb. 33: Data menu

The *Maps* menu let you to manage maps.

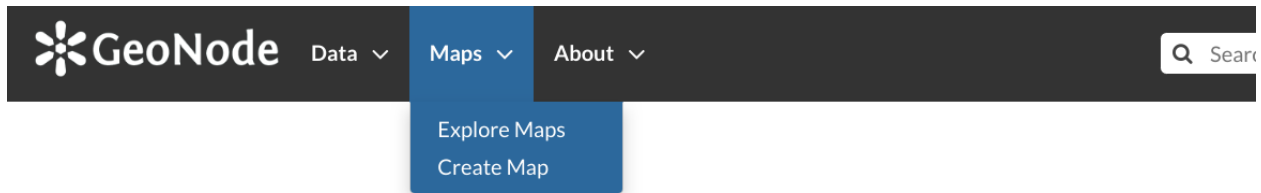


Abb. 34: Maps menu

## Documents

GeoNode allows to publish tabular and text data and to manage metadata and associated documents.

Documents can be uploaded directly from your disk (see [Uploading Documents](#) for further information).

The following documents types are allowed: `.doc`, `.docx`, `.gif`, `.jpg`, `.jpeg`, `.ods`, `.odt`, `.odp`, `.pdf`, `.png`, `.ppt`, `.pptx`, `.rar`, `.sld`, `.tif`, `.tiff`, `.txt`, `.xls`, `.xlsx`, `.xml`, `.zip`, `.gz`, `.qml`.

Through the document detailed page is possible to view, download and manage a document.

## Layers

Layers are a primary component of GeoNode.

Layers are publishable resources representing a raster or vector spatial data source. Layers also can be associated with metadata, ratings, and comments.

By clicking the Layers link you will get a list of all published layers. If logged in as an administrator, you will also see the unpublished layers in the same list.

GeoNode allows the user to upload vector and raster data in their original projections using a web form.

Vector data can be uploaded in many different formats (ESRI Shapefile, KML and so on...). Satellite imagery and other kinds of raster data can be uploaded as GeoTIFFs.

## Maps

Maps are a primary component of GeoNode.

Maps are comprised of various layers and their styles. Layers can be both local layers in GeoNode as well as remote layers either served from other WMS servers or by web service layers such as Google or MapQuest.

GeoNode maps also contain other information such as map zoom and extent, layer ordering, and style.

You can create a map based on uploaded layers, combine them with some existing layers and a remote web service layer, share the resulting map for public viewing. Once the data has been uploaded, GeoNode lets the user search for it geographically or via keywords and create maps. All the layers are automatically reprojected to web mercator for maps display, making it possible to use popular base maps such as [OpenStreetMap](#).

### 1.10.2 Finding Data

This section will guide you to navigate GeoNode to find layers, maps and documents by using different routes, filters and search functions.

In *Home* page you can find some quick search tool.

The *Search* box in the navigation bar (see the picture below) let you type a text and find all the data which have to deal with that text.



Abb. 35: Search tool in GeoNode welcome page

When you trigger a search you are brought to the *Search* page which shows you the search result through all data types.

This page contains a wealth of options for customizing a search for various information on GeoNode. This search form allows for much more fine-tuned searches than the simple search box is available at the top of every page. It is possible to search for data by Text, Categories, Type, Keywords, Owners, Date, Regions or Extent.

Try to set some filter and see how the resulting data list changes accordingly. An interesting type of filter is *EXTENT*: you can apply a spatial filter by moving or zooming a map within a box as shown in the picture below.

Data can be ordered by date, name and popularity.

The GeoNode welcome page offers you many other options to find resources.

- The *Search for data* tool allows you to search for data by name.

The *Search* page, which you will be redirected to, will have the TEXT filter already set with the name you have typed in the search box (see the picture below). If you want to reach the *Search page* directly, without any input text, you can click the *Advanced Search* link.

- In the *Home* page section shown below are listed all the categories available in the GeoNode instance you are using. You can search for data by category by clicking on it.

In the *Search* page, data will be filtered by that category.

- The *Featured Datasets* section (see the picture below) shows you aggregate data about *Layers*, *Maps*, *Documents* and *Users*. You can trigger a search on layers by clicking on the *Layers* icon, the same happens for *Maps*, *Documents* and *Users*. The *Explore all datasets* drive you to the *Search* page with no filter on data types. In this section there are also useful quick links to add new resources: the *Add layers* drives you to the layer uploading page, the *Add documents* to the document uploading page and the *Create maps* guide you to the map creation.

For each data type GeoNode makes available an individual *Search* page, the next paragraphs will explain that in depth. For *Users* see [Viewing other users information](#).

## Documents

When you are searching for *Documents* you can:

- use the *Documents* quick link of the *Featured Datasets* section as described above

The screenshot shows the GeoNode web interface. At the top is a dark navigation bar with the GeoNode logo, links for Data, Maps, and About, a search bar, and a user profile for John Smith. Below the navigation bar, the search results for 'railways' are displayed. On the left is a sidebar with a 'Selected Objects' section, a 'Set permissions' button, and a 'Filters' section. The 'Filters' section includes a 'TEXT' filter with 'railways' entered and a search button. Below this are expandable sections for KEYWORDS, TYPE (with 'Map' and 'Vector Layer' selected), CATEGORIES, OWNERS, DATE, REGIONS, and EXTENT. The main content area shows '2 found' results. The first result is 'OSM Railways', described as 'Railways extracted from OSM', by John Smith, dated 4 Jun 2019, with 3 views and 0 interactions. The second result is 'railways', described as 'No abstract provided', by John Smith, dated 4 Jun 2019, with 9 views and 0 interactions. Both results include a thumbnail image and a 'View Map' or 'Create a Map' link. At the bottom right of the results area is a pagination control showing 'page 1 of 1'.

GeoNode Data Maps About Search John Smith

Search: railways

Selected Objects

Add objects through the "checkboxes".

Set permissions

Filters Clear

TEXT

railways

KEYWORDS

TYPE

Map 1

Vector Layer 1

CATEGORIES

OWNERS

DATE

REGIONS

EXTENT

2 found

no image

OSM Railways

Railways extracted from OSM

John Smith 4 Jun 2019 3 0 0 View Map

no image

railways

No abstract provided

John Smith 4 Jun 2019 9 0 0 Create a Map

page 1 of 1

Abb. 36: The Search page



Abb. 37: Search filter by *EXTENT*

The screenshot shows the GeoNode search results page. The header includes the GeoNode logo, navigation links (Data, Maps, About), a search bar, and a user profile (John Smith). The main content area displays "37 found" results. On the left, there are filters for "Selected Objects", "Add objects through the 'checkboxes'", "Set permissions", and "Filters" (Text, Keywords, Type). The search results list includes "Tuscany Roads Map" and "Belfast Cycle Map". A dropdown menu is open, showing options for ordering: "Most recent", "Less recent", "A - Z", "Z - A", and "Most popular".

Abb. 38: Ordering Data

The screenshot shows the GeoNode search interface. The main heading is "Search for Data." Below it is a search bar with the text "railways". To the right of the search bar is a button labeled "Advanced Search".

Abb. 39: Searching for data

The screenshot shows the GeoNode search results page for the query 'railways'. The top navigation bar includes the GeoNode logo, links for Data, Maps, and About, a search bar, and a user profile for John Smith. The main heading is 'Search : railways'. On the left, there is a sidebar with 'Selected Objects' (containing instructions to add objects via checkboxes and a 'Set permissions' button), 'Filters' (with a 'Clear' button), and a list of filter categories: TEXT, KEYWORDS, TYPE, CATEGORIES, OWNERS, DATE, REGIONS, and EXTENT. The 'TEXT' filter is expanded, showing the search term 'railways' in a red circle. The main content area displays '2 found' results. The first result is 'OSM Railways', described as 'Railways extracted from OSM', by John Smith, dated 4 Jun 2019, with 7 views, 0 shares, and 0 stars. It includes a 'View Map' link. The second result is 'railways', described as 'No abstract provided', also by John Smith, dated 4 Jun 2019, with 9 views, 0 shares, and 0 stars. It includes a 'Create a Map' link. A pagination bar at the bottom right shows 'page 1 of 1'.

Abb. 40: Results of searching made by name

The screenshot shows the 'Discover the available datasets' page on GeoNode. It features a dark header with the text 'Legal land descriptions. Examples: political and administrative boundaries.' and the main heading 'Discover the available datasets.'. Below this, there are two rows of icons representing different dataset categories. The first row includes: BIOTA, BOUNDARIES, CLIMATE, ECONOMY, ELEVATION, ENVIRONMENT, FARMING, GEOSCIENCE, HEALTH, BASE MAPS, INLAND WATERS, and INTELLIGENCE. The second row includes: LOCATION, OCEANS, PLANNING, POPULATION, SOCIETY, STRUCTURE, TRANSPORTATION, and UTILITIES.

Abb. 41: Searching for datasets by category



The screenshot shows the GeoNode web interface. At the top is a dark navigation bar with the GeoNode logo, links for Data, Maps, and About, a search bar, and a user profile for John Smith. Below the navigation bar, the page is titled "Search :". On the left side, there is a sidebar with various filter options: "Selected Objects" (with instructions to add objects through checkboxes and a "Set permissions" button), "Filters" (with a "Clear" button), and several expandable categories: "TEXT", "KEYWORDS", "TYPE" (showing "Vector Layer" with 1 item), "CATEGORIES" (showing "Boundaries" with 1 item, "climatologyMeteorolo..." with 1 item, and "Transportation" with 1 item), "OWNERS", "DATE", "REGIONS", and "EXTENT". The "Boundaries" category is highlighted with a red circle. The main content area shows "1 found" results. The first result is a map of Italy with the title "BOUNDARIES" (circled in red) and subtitle "Com2016\_WGS84\_g". Below the title, it says "Administrative boundaries of Italian municipalities". The result is attributed to John Smith, dated 5 Jun 2019, with 0 views, 0 shares, and 0 stars. A "Create a Map" link is also present. On the right side of the result, there is a "+" icon and a "page 1 of 1" indicator.

Abb. 42: Results of searching made by category

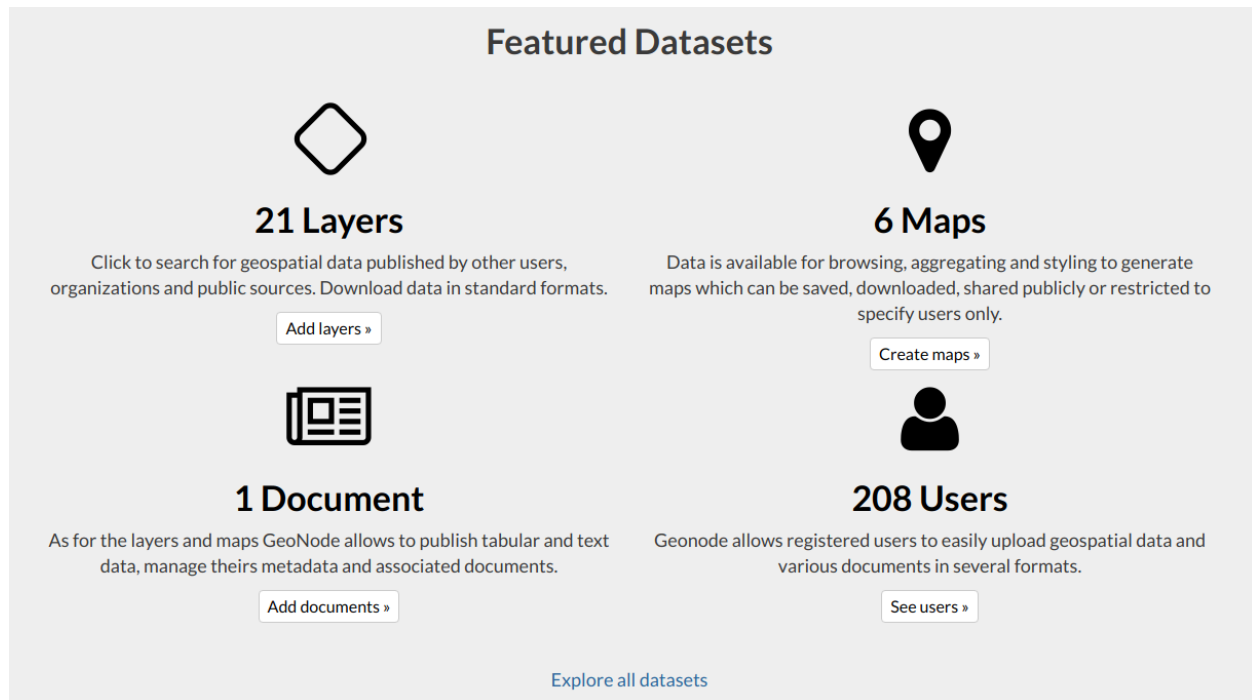


Abb. 43: *Featured Datasets*

- click on the *Documents* link of the *Data* menu in the navigation bar

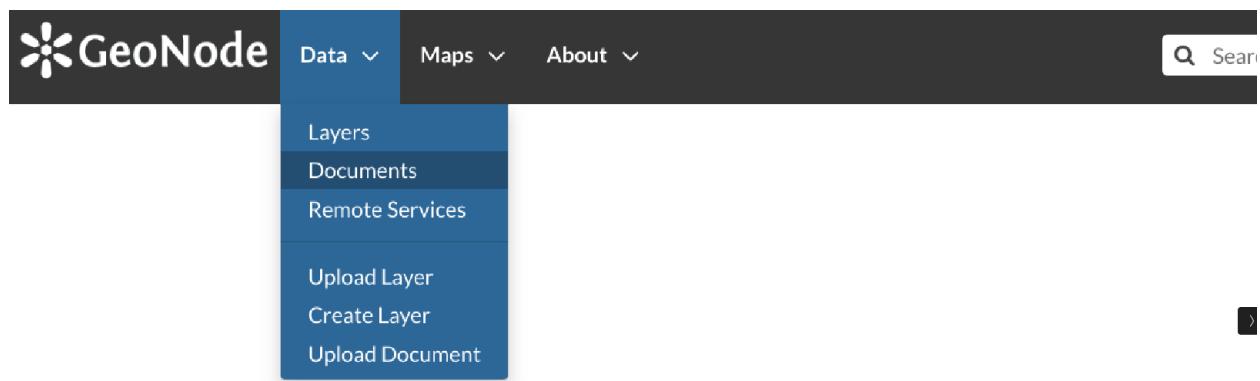


Abb. 44: *Link for Documents*

The *Documents* search page looks like the generic one but only *Document* is considered as data type. You can filter documents by CATEGORIES, as in the example below, or by TEXT, KEYWORDS and so on. You can also use more than one filter at the same time.

## Layers

To find *Layers* you can:

- use the *Layers* quick link of the *Featured Datasets*
- click on the *Layers* link of the *Data* menu in the navigation bar

The screenshot shows the GeoNode interface. At the top is a dark navigation bar with the GeoNode logo, links for Data, Maps, and About, a search bar, and a user profile for John Smith. Below this is the 'Explore Documents' section. On the left is a sidebar with filters: 'Selected Documents' (with instructions to add documents via checkboxes and a 'Set permissions' button), 'Filters' (with a 'Clear' button), and a list of categories. The 'BOUNDARIES' category is selected and circled in red, showing a count of 1. Other categories include 'Society' (1), 'OWNERS', 'DATE', 'REGIONS', and 'EXTENT'. The main content area shows '1 Documents found'. A document titled 'old\_italian\_boundaries.jpg' by 'GEO SOLUTIONS' is displayed, featuring a map of Italy. The document title is circled in red. Below the document, it shows the author 'John Smith', the date '5 Jun 2019', and zero views, shares, and stars. At the bottom right of the document list, there is a pagination control showing 'page 1 of 1'.

Abb. 45: Documents filtered by categories

The screenshot shows the GeoNode navigation bar. The 'Data' menu is open, displaying a list of options: 'Layers', 'Documents', 'Remote Services', 'Upload Layer', 'Create Layer', and 'Upload Document'. The 'Layers' option is highlighted in blue.

Abb. 46: Link for Layers

In the *Layers* search page only *Layer* will be considered as data type. You can set one or more filter to refine the search. In the example below the layers have been filtered by EXTENT and CATEGORIES.

Abb. 47: *Layers filtered by extent*

## Maps

If you are searching for *Maps* you can:

- use the *Maps* quick link of the *Featured Datasets* section as described above
- click on the *Explore Maps* link of the *Maps* menu in the navigation bar

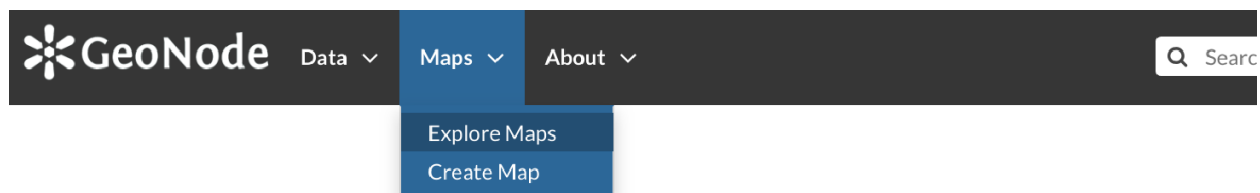


Abb. 48: *Link for Maps*

As seen for the other data types, the *Maps* search page allows you to filter your maps by a combination of criteria. The example below shows maps filtered by REGIONS.

Abb. 49: *Maps filtered by regions*

## 1.11 Managing Documents

In this section all the aspects concerning *Documents* will be discussed.

You will learn how to upload a document and how to inspect its metadata and details. All the editing tools will be also explained.

### 1.11.1 Uploading Documents

GeoNode allows to share reports, conceptual notes, posters, spreadsheets, etc. A wide range of documents files can be hosted on the platform, including text files (.doc, .docx, .txt, .odt), spreadsheets (.xls, .xlsx, .ods), presentations (.ppt, .pptx, .odp), images (.gif, .jpg, .png, .tif, .tiff), PDF, zip files (.rar, .zip, .gz), SLD, XML or QML files.

<b>Warnung:</b> Only authenticated users can upload data into GeoNode.
--

*Documents* uploading is accessible from two positions:

- the *Upload Documents* button of the *Documents Search* page (see *Documents*)
- the *Upload Document* link of the *Data* menu in the navigation bar

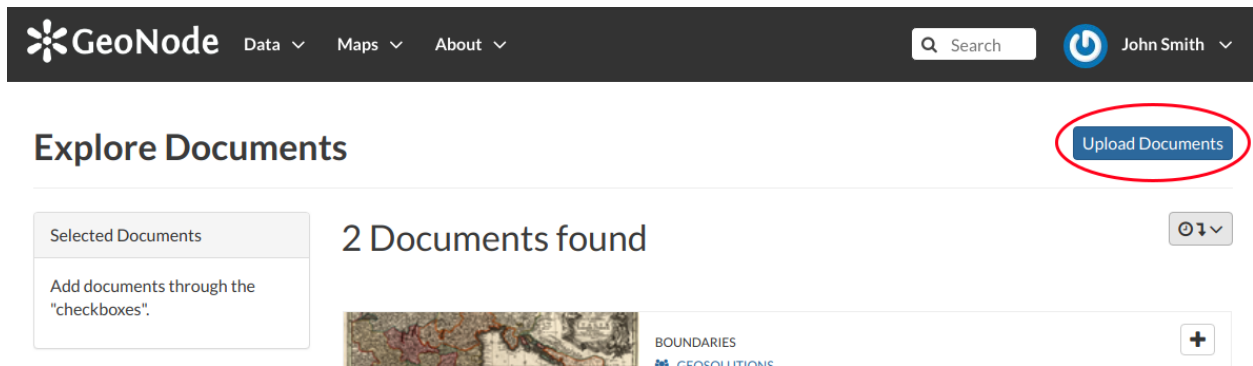


Abb. 50: Documents Upload button

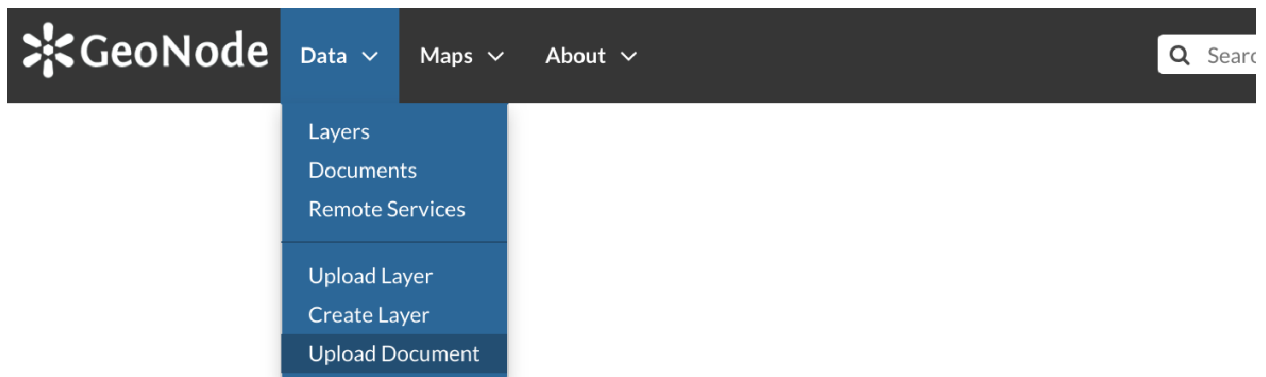


Abb. 51: Document Upload link

The *Document Upload* page looks like the one shown in the picture below.

Abb. 52: *Document Upload* page

In order to upload a document:

1. select a file from your disk or enter a URL address if the document is stored on the internet
2. insert the title of the document
3. select one or more published resources the document can be linked to (optional)
4. click the red *Upload* button

At the end of the uploading process you will be driven to the *Metadata* page to fill out other information about the document. See the next section to know more about that.

### 1.11.2 Filling the Document Metadata

Metadata contains all the information related to the document: they are its ID card. They provide essential information for its identification and its comprehension. Metadata also make the document more easily retrievable through search by other users.

Editing a document's metadata is done in three steps (*Basic Metadata*, *Location and Licenses*, *Optional Metadata*). The first two steps are mandatory (no documents will be published if the required information are not provided) whereas the last one is optional.

1. On the **Basic Metadata** page, the essential information that has to be filled is:
  - The *Title* of the document, which should be clear and understandable;

- The *Resources* the document should be linked to;
- An *Abstract* on the document;
- The *Creation/Publication/Revision* dates which define the time period that is covered by the document;
- The *Keywords*, which should be chosen within the available list. The contributor search for available keywords by clicking on the searching bar, or on the folder logo representing, or by entering the first letters of the desired word. Key-words should be relevant to the imported document;
- The *Category* in which the document belongs;
- The *Group* to which the document is linked.

**GeoNode** Data ▾ Maps ▾ About ▾ Search John Smith ▾

## Metadata for Old italian boundaries

Completeness: 93%  
Check Schema mandatory fields

Edit Settings

Mandatory Mandatory Optional

**1 Basic Metadata**

Title: Old italian boundaries

Link to: Com2016\_WGS84.g (layer)

Abstract: Old italian boundaries

**2 Location and Licenses**

Date type: Publication Date: 2019-06-05 04:00

Category: Boundaries

Group: Geosolutions

**3 Optional Metadata**

Com2016\_WGS84.g

Update Next >>


Abb. 53: Document Basic Metadata

Once all the fields are filled, click on the blue button *Next >>* in the bottom right corner of the page.

2. On the **Location and Licenses** page, the following information should be filled:



- The *Language* of the document;
- The *Regions*, which informs on the spatial extent covered by the document. Proposed extents cover the following scales: global, continental, regional, national;
- The *Data Quality statement* (general explanation of the data producer's knowledge about the lineage of a dataset);
- Potential *Restrictions* to sharing the document should be provided in the Restrictions box.

Click on the blue button *Next >>* to go ahead to the next step.


Data ▾
Maps ▾
About ▾


John Smith ▾

## Metadata for Old italian boundaries

 Edit
  Settings

Mandatory

Mandatory

Optional

1

2

3

Basic Metadata

Location and Licenses

Optional Metadata

Language  

English ▾

License  

Open Data Commons Open Database Licens ▾

Regions

× Global

× Italy

× Europe

Data quality statement  

Old maps digitalized

Restrictions

exclusive right to the publication, production ▾

Restrictions other  

No other restrictions

<< Back

Update

Next >>

Completeness

✖ Check Schema mandatory fields

93 %

Abb. 54: Document Location and Licenses



3. On the **Optional Metadata** page, complementary information can be added:

- The *Edition* to indicate the reference or the source of the document;
- The *Purpose* of the document and its objectives;
- Any *Supplemental information* that can provide a better understanding of the uploaded document;
- The *Maintenance frequency* of the document;
- The *Spatial representation type* used.

*Responsible Parties*, *Owner* and *Permissions* are listed on the right side of the page, you can edit them.

**GeoNode** Data ▾ Maps ▾ About ▾ Search John Smith ▾

## Metadata for Old italian boundaries

Completeness: Check Schema mandatory fields 93%

Edit Settings

Mandatory Mandatory Optional

1 2 3

### Basic Metadata

Other, Optional, Metadata

**Edition**

1.0

**Purpose**

John Smith wants to share information with other user

**Supplemental information**

No information provided

### Location and Licenses

**temporal extent start**

2019-06-05 17:

**temporal extent end**

2019-07-05 17:

**Maintenance frequency**

frequency of maintenance for the data is not known ▾

**Spatial representation type**

grid data is used to represent geographic data ▾

### Optional Metadata

**Responsible Parties**

**Point of Contact**

johnsmith

**Owner and Permissions**

**Owner**

johnsmith

**Metadata Author**

johnsmith

<< Back Update

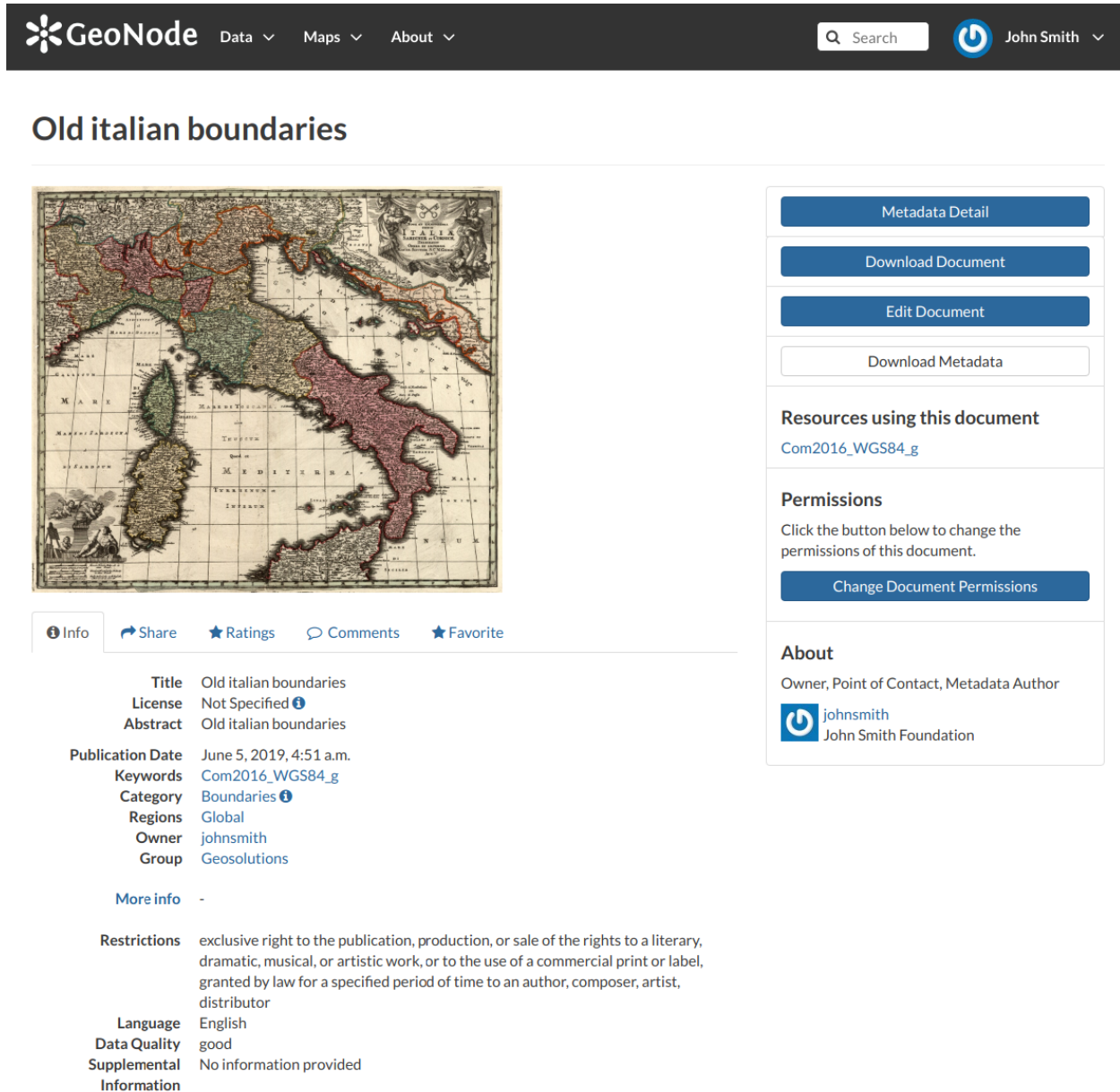
Abb. 55: Document Optional Metadata

If all the mandatory information is filled out the document can be published, if not the Completeness progress bar warns you that something is missing.

Click on the blue button *Update* to save information on the system.

### 1.11.3 Document Information

From the *Documents Search Page* (see [Documents](#)) you can select the document you are interested in and see some basic information about it. You can access the document details page by clicking on its name. That page looks like the one shown in the picture below.



The screenshot shows the GeoNode interface. At the top is a dark navigation bar with the GeoNode logo, menu items (Data, Maps, About), a search bar, and a user profile for John Smith. Below the navigation bar is the document title 'Old italian boundaries'. To the left is a map of Italy with historical boundaries. To the right is a sidebar with buttons for 'Metadata Detail', 'Download Document', 'Edit Document', and 'Download Metadata'. Below these buttons are sections for 'Resources using this document' (linking to 'Com2016\_WGS84\_g'), 'Permissions' (with a 'Change Document Permissions' button), and 'About' (listing the owner as John Smith Foundation). Below the map, there is a tabbed interface with 'Info' selected. The 'Info' tab displays metadata: Title (Old italian boundaries), License (Not Specified), Abstract (Old italian boundaries), Publication Date (June 5, 2019, 4:51 a.m.), Keywords (Com2016\_WGS84\_g), Category (Boundaries), Regions (Global), Owner (johnsmith), and Group (Geosolutions). A 'More info' link is also present. Below the metadata, there are sections for 'Restrictions' (exclusive right to publication, production, or sale of rights), 'Language' (English), 'Data Quality' (good), and 'Supplemental Information' (No information provided).

Abb. 56: *Document Information page*

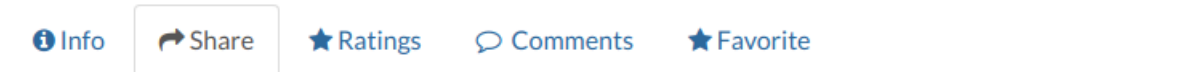
On the page of a document, the resource is either directly displayed on the page or accessible by clicking on the link provided under the title.

### Exploring the Tabs Sections

There is a **tab section** below the document, where you can first view *Info* about the document.

The *Info* tab section shows the document metadata such as its title, abstract, date of publication etc. The metadata also indicates the user who is responsible for uploading and managing this content, as well as the group to which it is linked.

The *Share* tab provides the social media links for the document to share. There is also a link to share the document through email.

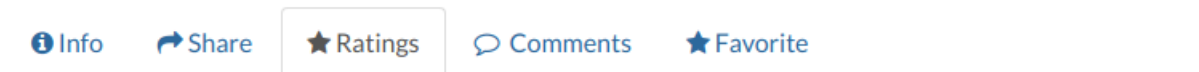


## Share This Document

- [Email](#)
- [Facebook](#)
- [Twitter](#)
- [Google +](#)

Abb. 57: Document Sharing

You can *Rate* the document through the *Ratings system*.



## Rate this document



### Average Rating



Abb. 58: Rate the Document

In the *Comments* tab section you can post your comment. Click on *Add Comment*, insert your comment and click *Submit Comment* to post it.

Your comment will be added next to the last already existing comment. If you want to remove it click on the red *Delete* button.

If you want this document in your *Favorites* (see [Updating the Profile](#)), open the *Favorite* tab and click on *Add to Favorites*.

## The Tools Section

On the right side of the *Document Page* you can see other useful information such as the links to the resources linked to the document, the document *Owner*, the *Point of Contact* and the *Metadata Author*.

In the same section of the *Document Page* you can find the following useful tool:

- *Metadata Detail* to explore in detail the document metadata (see the next paragraph)
- *Download Document* to download the document

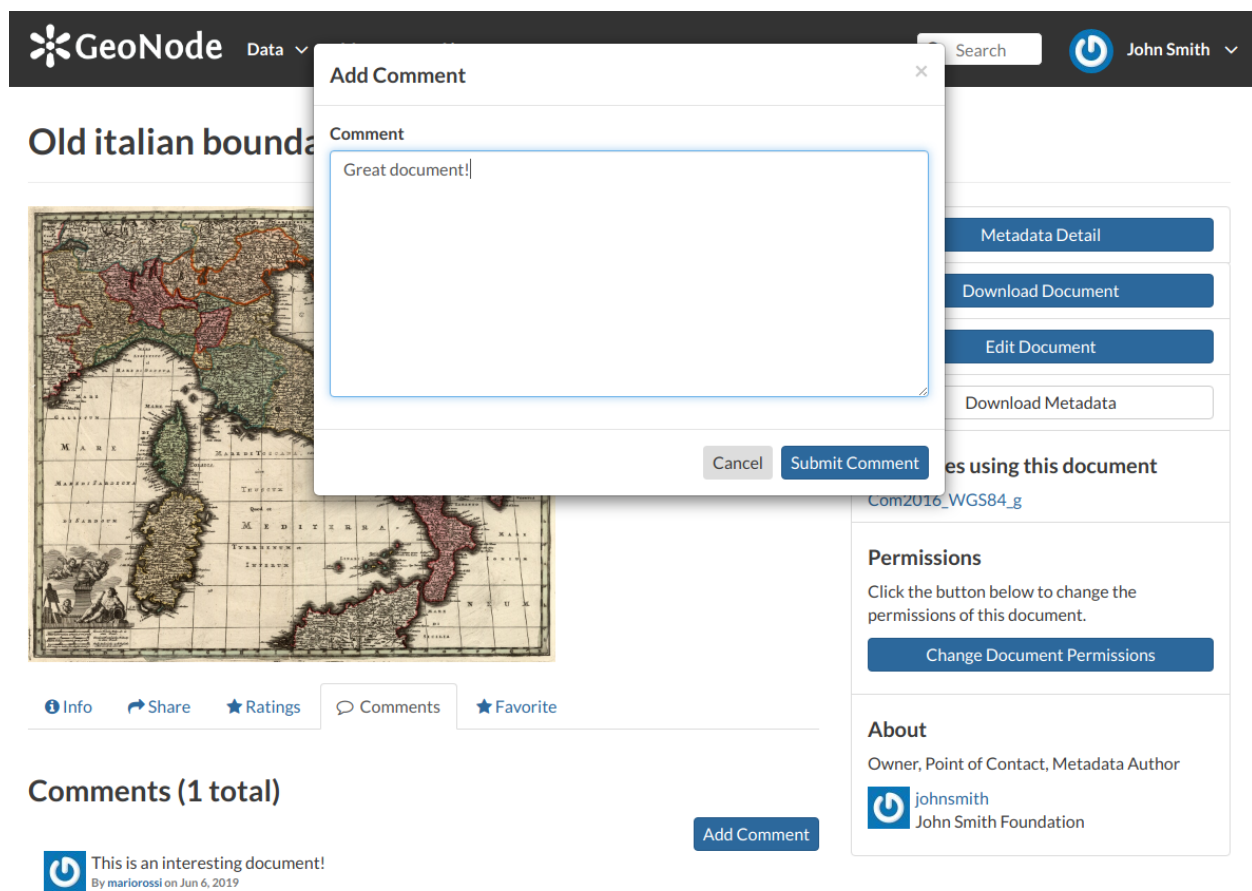


Abb. 59: Document Comments

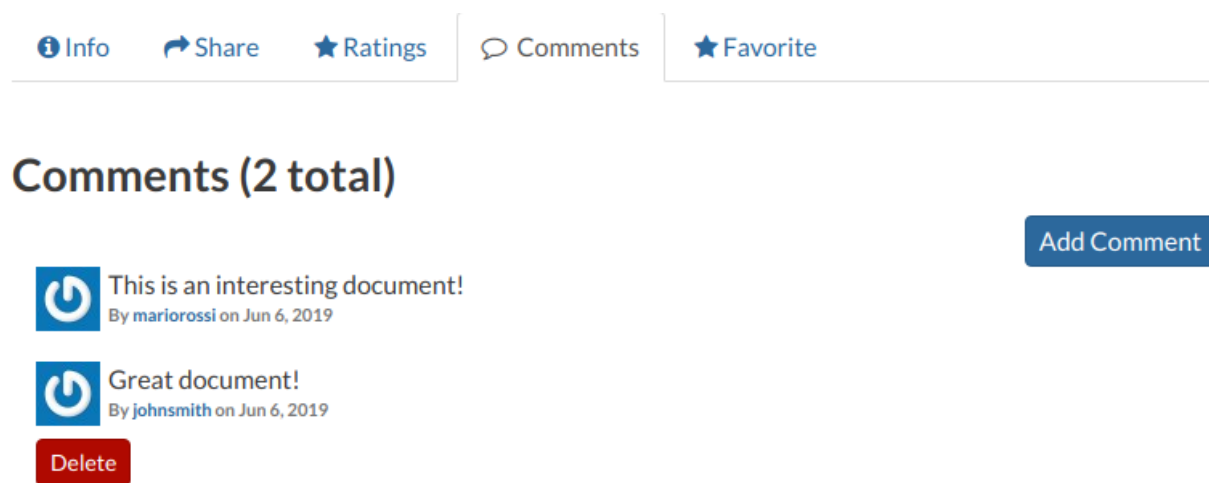


Abb. 60: Your Comment



Abb. 61: *Your Favorite Comment*

- *Edit Document* to change the document metadata, replace the file etc (see [Document Editing](#))
- *Download Metadata* to download the whole set of metadata in various formats
- *Change Document Permissions* to assign permissions on the document to users and groups (see [Changing the Document Permissions](#)).

## Exploring Metadata Details

When clicking on the *Metadata Detail* button the *Metadata Details Page* will open.

It displays the whole set of available metadata about the document.

Metadata are grouped in order to show the following types of information:

- *Identification* to uniquely identify the document
- *Owner*, the user who own the document
- *Information*, the identification image, the Spatial Extent, Projection System and so on
- *Features*, Restrictions, Language and so on
- *Contact Points*, the user available to have a contact
- *References*, various links to the resource information
- *Metadata Author*, the metadata author information

### 1.11.4 Document Editing

The *Document Information* page makes available useful tools for document editing. Click on the *Edit Document* button to see what you can do to make changes. The picture below shows you the *Editing Panel* that will appear on the screen.

You can *Replace* the document file with another one by clicking on *Replace*. It will drive you to the *Document Upload* page (see [Uploading Documents](#)) where you can upload a new file.

The *Remove* button allows you to delete the document. You will have to confirm that choice.

The *Editing Panel* shows you also some links for editing the metadata and the thumbnail. These actions will be explained more in depth in the next paragraphs.

[Metadata Detail](#)

[Download Document](#)

[Edit Document](#)

[Download Metadata](#)

### Resources using this document

[Com2016\\_WGS84\\_g](#)

### Permissions

Click the button below to change the permissions of this document.

[Change Document Permissions](#)

### About

Owner, Point of Contact, Metadata Author


 **johnsmith**  
John Smith Foundation

Abb. 62: Document useful tool

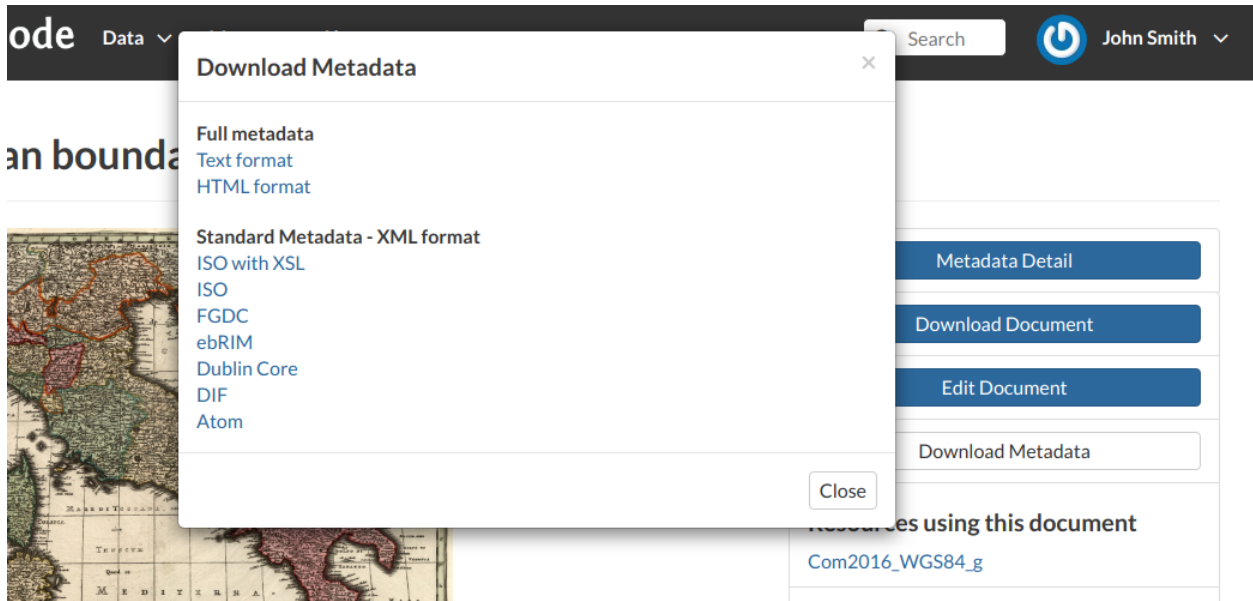


Abb. 63: Document Metadata download

### Setting the Document Thumbnail

From the *Editing Panel*, it is also possible to *Set the Thumbnail* of the document. Click on *Set* to open the *Thumbnail Uploading* page and chose the image that will illustrate your document. You can either drag and drop it in the *Drop files here* box or selecting from your folders by clicking on *Choose Files*. Once this is done, click on the red button *Upload files*. If the thumbnail has been successfully uploaded you can see it by coming back to the document list. Click on the *Explore Documents* button to check that.

If no errors occur the following message will be shown.

### Editing the Document Metadata

You can edit the metadata of your document through the buttons shown in the red rectangle in below picture.

The *Wizard* button drive you to the wizard described in the *Filling the Document Metadata* section. The *Advanced Edit* button takes you to a big form where all the available metadata of the document can be edited. Some information are mandatory such as the *Title* or the *Category* the document belongs to, some others are optional.

In the example shown in the picture above, the information inside the red rectangles have been changed. To save the changes click on *Update*, you will be redirected to the document page.

### 1.11.5 Changing the Document Permissions

GeoNode encourages to publicly, share and make available for download information uploaded on the platform. By default, anyone can see and download a document. However, the document responsible can choose to limit access to the document to some contributors and/or groups.

Through the button shown in the picture below it is possible to manage the document permissions.

The *Change Document Permissions* button on the right side of the document page allows to set up who can:

## Metadata : Old italian boundaries

[Return to Document](#)

## Identification

Title	Old italian boundaries
Abstract	Old italian boundaries
License	Not Specified ⓘ
Publication Date	June 5, 2019, 4:51 a.m.
Keywords	Com2016_WGS84_g
Category	Boundaries ⓘ
Regions	Global
Approved	Yes
Published	Yes
Featured	No
Group	Geosolutions

## Owner

Name	John Smith (johnsmith)
email	john.smith@mail.com
Position	CEO and Founder
Organization	John Smith Foundation
Location	John Smith Avenue 12345 John Smith City John Smith District ZAF
Voice	123456789
Fax	987654321

## Information

## Identification Image



Spatial Extent	---
Projection System	EPSG:4326
Extension x0	313279.2514000000000000
Extension x1	1312016.1506000000000000
Extension y0	3933846.2156000000000000
Extension y1	5220292.2922000000000000

## Features

Restrictions	exclusive right to the publication, production, or sale of the rights to a literary, dramatic, musical, or artistic work, or to the use of a commercial print or label, granted by law for a specified period of time to an author, composer, artist, distributor
Language	English
Data Quality	good
Supplemental Information	No information provided

## Contact Points

Name	John Smith (johnsmith)
email	john.smith@mail.com
Position	CEO and Founder
Organization	John Smith Foundation
Location	John Smith Avenue 12345 John Smith City John Smith District ZAF
Voice	123456789
Fax	987654321

## References

Link Online	/documents/37
-------------	---------------



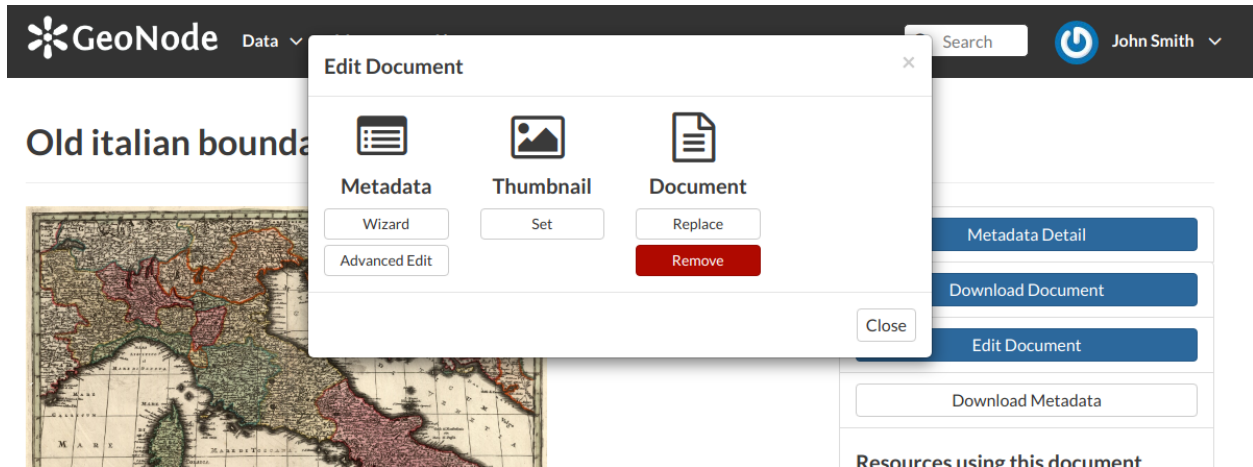


Abb. 65: Document Editing panel

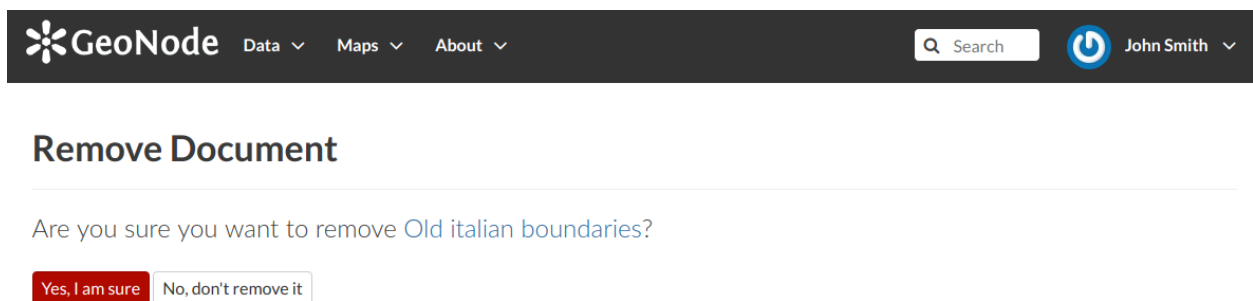




Abb. 66: Document Removal confirmation




[Data](#) [Maps](#) [About](#)

 [John Smith](#)

## Upload Document's Thumbnail

Explore Documents



Drop files here

or select them one by one:  

Choose Files

Files to be uploaded

420884656472

JPEG

420884656472.jpg [Remove](#)

Clear

Upload files

### Permissions

Who can view it?

☒ Anyone  
The following users:  

\* johnsmith

  
The following groups:  

Choose groups...

Who can download it?

Who can change metadata for it?

Who can manage it? (update, delete, change permissions, publish/unpublish it)

Abb. 67: Upload Document's Thumbnail

Your document was successfully updated

Document Info

Edit Metadata

Abb. 68: Uploading success

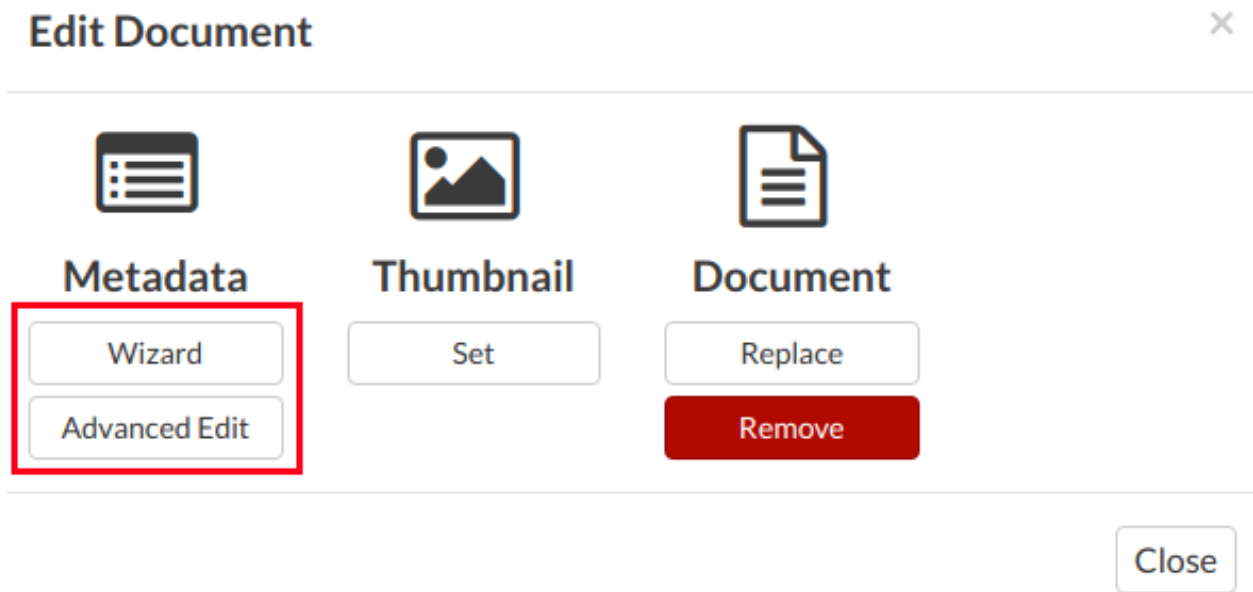


Abb. 69: Editing Metadata

- View the document;
- Download it;
- Edit its metadata;
- Manage it (update, delete, change permissions, publish/unpublish).

See an example in the picture below.

Usually that editing of metadata and the management of a document are in charge of the responsible of the document, i.e. the contributor who uploaded it and who has those permissions by default.

Once the permissions are set, click *Apply changes* to save them.

## 1.12 Managing Layers

Layers are published resources representing raster or vector spatial data sources. Layers can also be associated with metadata, ratings, and comments.


In this section, you will learn how to create a new layer by uploading a local data set, add layer info, change the style of the layer, and share the results.


### 1.12.1 Layers Uploading

The most important resource type in GeoNode is the *Layer*. A layer represents spatial information so it can be displayed inside a map.

To better understand what we are talking about let's upload your first layer.

The *Layer Uploading* page can be reached from the *Upload Layer* link of the *Data* menu in the navigation bar.

 [Data](#) [Maps](#) [About](#)

 [John Smith](#)

Explore Documents

Update

 Data ▾ Maps ▾ About ▾

Search

John Smith ▾

## Nouvelle Carte de l'Italie



[Info](#) [Share](#) [Ratings](#) [Comments](#) [Favorite](#)

**Title** Nouvelle Carte de l'Italie

**License** Not Specified ⓘ

**Abstract** A map from the Moll's map collection

**Publication Date** June 5, 2019, 4:51 a.m.

**Keywords** [Com2016\\_WGS84\\_g](#)

**Category** [Boundaries](#) ⓘ

**Regions** [Global](#) , [Italy](#)

**Owner** [johnsmith](#)

[Metadata Detail](#)

[Download Document](#)

[Edit Document](#)

[Download Metadata](#)

**Resources using this document**  
[Com2016\\_WGS84\\_g](#)

**Permissions**  
Click the button below to change the permissions of this document.  
[Change Document Permissions](#)

**About**  
Owner, Point of Contact, Metadata Author  
 [johnsmith](#)  
John Smith Foundation

Abb. 71: The button to change permissions

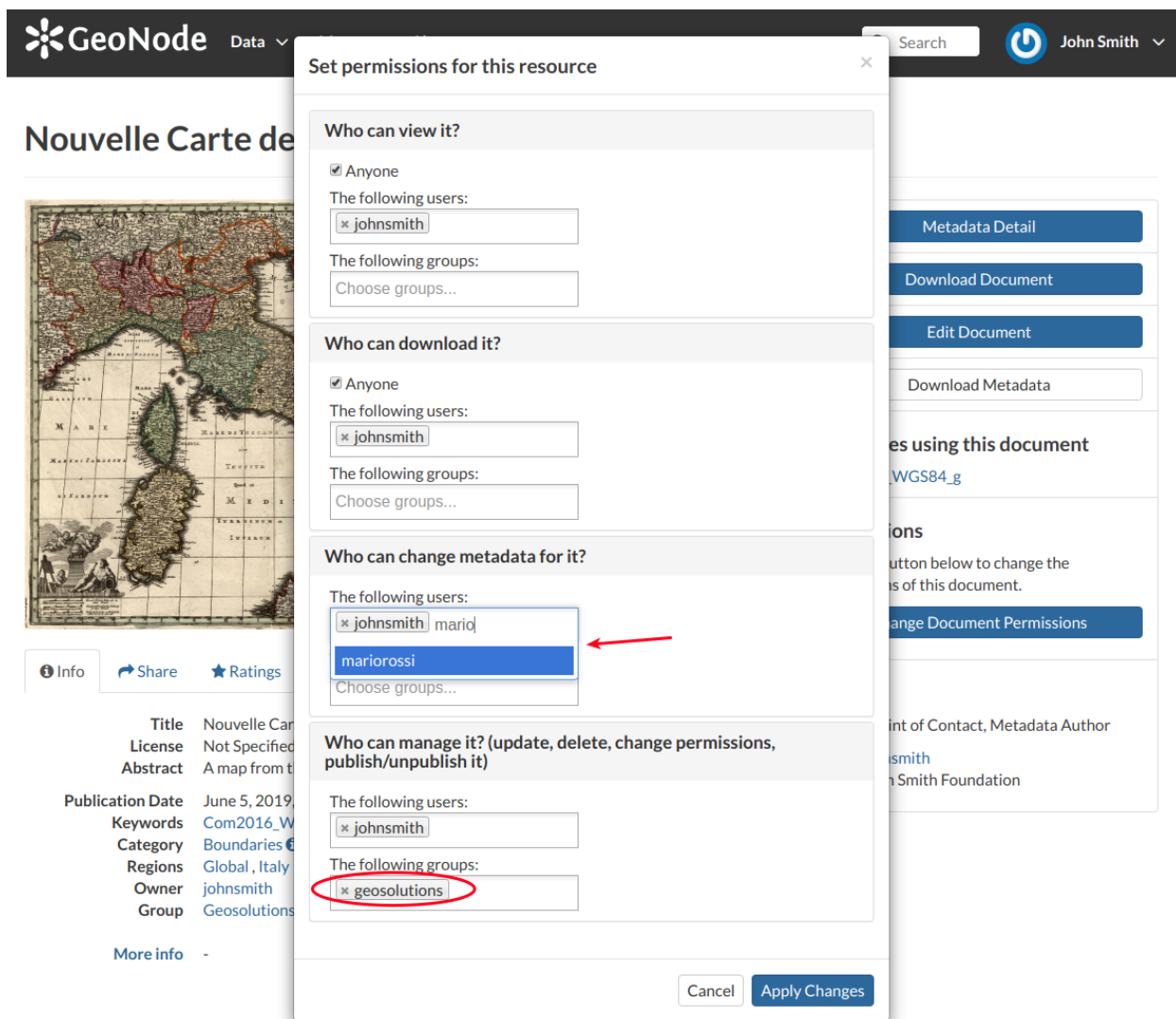


Abb. 72: Changing the Document permissions

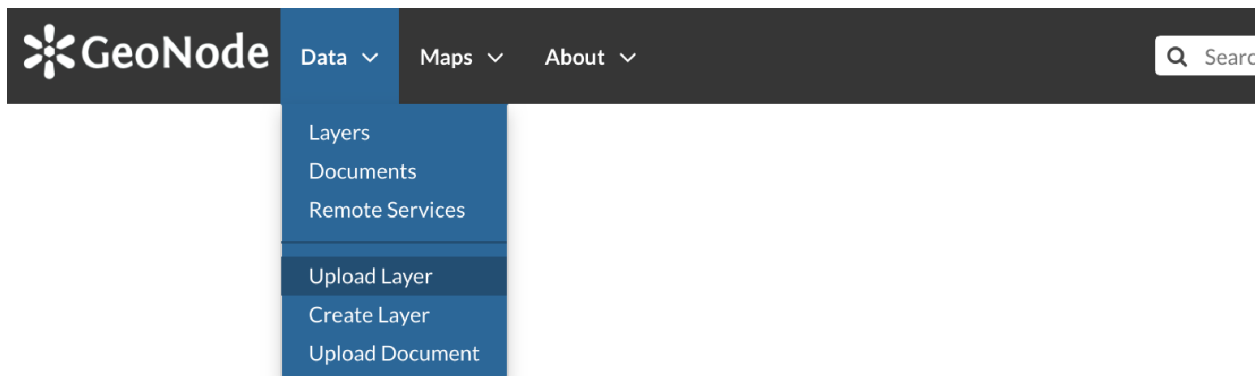


Abb. 73: Link for Layers Uploading

There is also an *Upload Layers* button in the *Layers Page*.

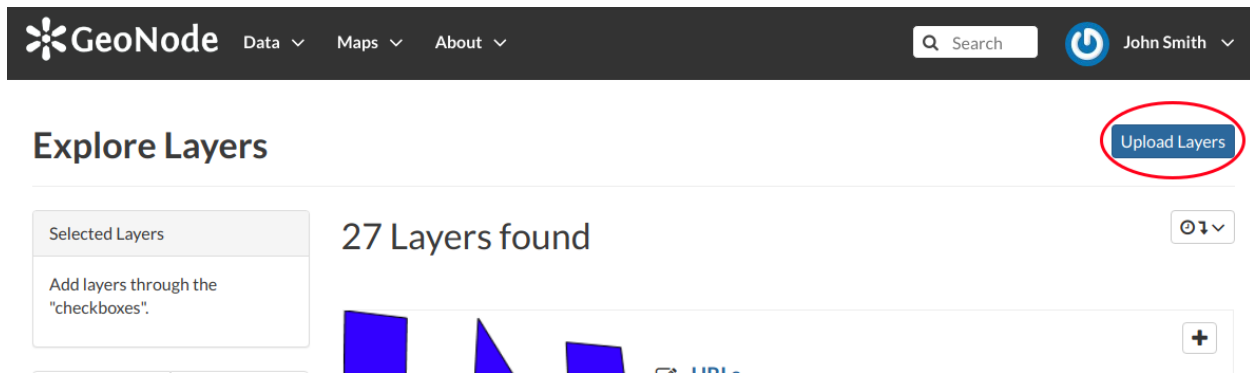


Abb. 74: Button for Layers Uploading

The *Layers Uploading* page looks like the one in the picture below.

Through the *Choose Files* button you can select files from your disk, make sure they are valid raster or vector spatial data. You can also change the default *Permissions* settings (see [Changing the Layer Permissions](#) for further information on how to set permissions).

Select the *charset*, then click on *Upload files* to start the process or click *Clear* to remove all the loaded files from the page.

In this example the `roads` ESRI Shapefile, with all its mandatory files (`.shp`, `.shx`, `.dbf` and `.prj`), has been chosen. A progress bar shows the operation made during the layer upload and alerts you when the process is over. When the process ends click the *Layer Info* to check the layer has been correctly uploaded.

---

**Bemerkung:** There are lot of free spatial dataset available in the Internet. In this example, an extract of the Berlin city center roads map from the [BBBike extracts](#) [OpenStreetMap](#) dataset has been used.

---

In the next paragraphs you will learn how to create a layer from scratch, how to set permissions, how to explore the layer properties and how to edit them.

### 1.12.2 Creating a Layer from scratch

An interesting tool that GeoNode makes available to you is the *Create Layer*. It allows you to create a new vector layer from scratch. The *Layer Creation Form* is reachable through the *Create Layer* link shown in the picture below.

In order to create the new Layer you have to fill out the required fields:

- *Name*
- *Title*
- *Geometry type*

Usually the layers features should have some *Attributes* that enrich the amount of information associated with each of them. Through the *Add Attribute* button you can add new attributes.

At this time you can also change the default *Permissions* settings, see [Changing the Layer Permissions](#) to learn how.

Abb. 75: The Layers Uploading page

Abb. 76: Shapefile Uploading

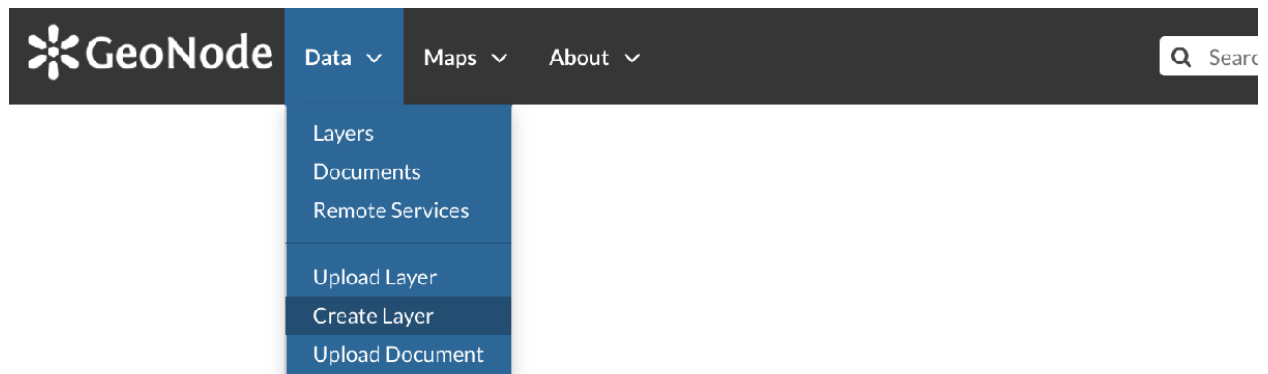


Abb. 77: Create layer link

### Geometry type

Abb. 78: Geometry types



Abb. 79: *New Layer creation from scratch*

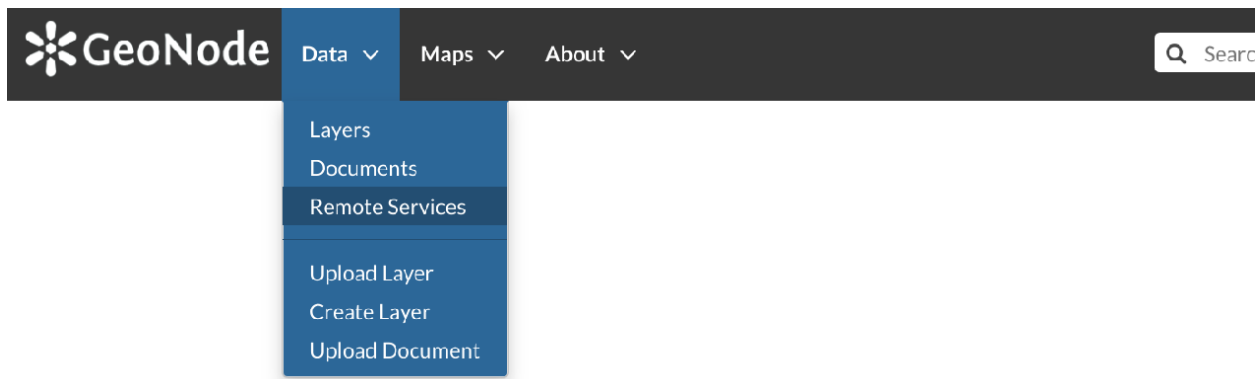
Once the form has been filled out, click on *Create*. You will be redirected to the *Layer Page* (see [Layer Information](#)). Now your Layer is created but is still empty, no features have been added yet. See the [Layer Editing](#) section to learn how to add new features.

### 1.12.3 Using Remote Services

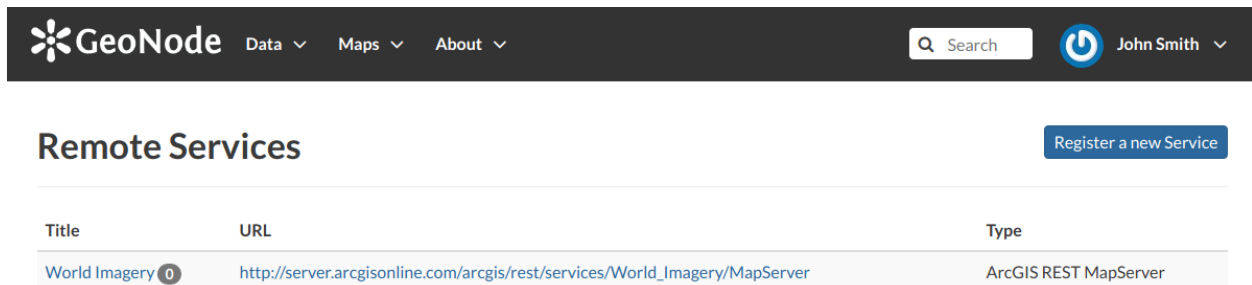
In GeoNode you can add new layers not only loading them from your disk but also using *Remote Services*. In this section you will learn how to add a new service and how to load resources in GeoNode through that.

Let's try it!

Click on the *Remote Services* link of the *Data* menu in the navigation bar.

Abb. 80: *Remote Services link*

The page that opens will contain the list of the available services.

Abb. 81: *Remote Services*

To configure a new service:

- click on *Register a new Service*
- type the *Service URL*
- select the *Service Type*
- click on *Create*

Service Type

Web Map Service	▼
Web Map Service	
GeoNode (Web Map Service)	
ArcGIS REST MapServer	

Abb. 82: Service Types

**Bemerkung:** Lots of services are available on the internet, in this example we used the `https://demo.geo-solutions.it/geoserver/wms`.

Once the service has been configured, you can load the resources you are interested in through the *Import Resources* page where you will be automatically redirected to. Take a look at the gif below to see the whole process.

Abb. 83: A new Remote Service

From the page where the services are listed, it is possible to click on the *Title* of a service. It opens the *Service Details* page.

Each service has its own metadata such as the *Service Type*, the *URL*, an *Abstract*, some *Keywords* and the *Contact* user. You can edit those metadata through the form available from the *Edit Service Metadata* button of the *Service Details* page (see the picture below).

**GeoNode** Data ▾ Maps ▾ About ▾

Search John Smith ▾

### GeoServer Web Map Service

Type: Web Map Service

URL: <https://demo.geo-solutions.it/geoserver/wms>

**Abstract:** A compliant implementation of WMS plus most of the SLD extension (dynamic styling). Can also generate PDF, SVG, KML, GeoRSS

**Keywords:** GEOSERVER, WFS, WMS

**Contact:** [johnsmith](#)

### Service Resources 2

Title	Description
<a href="#">sfdem</a>	No abstract provided
<a href="#">Regioni Italiane</a>	No abstract provided

### Manage

Edit Service Metadata

Import Service Resources


Remove Service


Abb. 84: Remote Service metadata

## 1.12.4 Changing the Layer Permissions


When creating or uploading a new Layer you have to set who can view, download, edit and manage that Layer. By default only owners can edit and manage layers, anyone can view and download them.

In order to modify the Layer *Permissions* settings you have to click the *Change the Layer Permissions* button in the Layer page.


[Data](#) [Maps](#) [About](#)

 John Smith

## Italian Towers



[Download Layer](#)
[Metadata Detail](#)
[Editing Tools](#)
[View Layer](#)
[Download Metadata](#)

### Legend

Default Point

- Red Square

### Maps using this layer

This layer is not currently used in any maps.

### Create a map using this layer

Click the button below to generate a new map based on this layer.

[Create a Map](#)

### Add the layer to an existing map

Regioni Italiane Map

Click the button below to add the layer to the selected map.

[Add to Map](#)

### Styles

The following styles are associated with this layer. Choose a style to view it in the preview map.

☒ (default style) Default Point

### Refresh Attributes and Statistics of this layer

Click the button below to allow GeoNode refreshing the list of available Layer Attributes. If the option 'WPS\_ENABLED' has been also set on the backend, it will recalculate their statistics too.

[Refresh Attributes and Statistics](#)

### Clear the Server Cache of this layer

Click the button below to wipe the tile-cache of this layer.

[Empty Tiled-Layer Cache](#)


### Permissions

Click the button below to change the permissions of this layer.

[Change Layer Permissions](#)



### About

Owner, Point of Contact, Metadata Author


 johnsmith

### Info

[Attributes](#) [Share](#) [Ratings](#) [Comments](#) [Favorite](#)

**Title** Italian Towers  
**License** Not Specified   
**Abstract** No abstract provided  
**Publication Date** June 7, 2019, 4:03 a.m.  
**Type** Vector Data  
**Keywords** features, italian\_towers  
**Category** Environment   
**Regions** Global  
**Owner** johnsmith

[More info](#) -

 Layer WMS GetCapabilities document

Through the *Permissions Settings Panel* you can add or remove permissions for users and groups. The picture below shows an example.

You can set the following types of permissions:

- *View* allows to view the layer;
- *Download* allows to download the layer;
- *Change Metadata* allows to change the layer metadata;
- *Edit Data* allows to change attributes and properties of the layers features;
- *Edit Style* allows to change the layer style;
- *Manage* allows to update, delete, change permissions, publish and unpublish the layer.

**Warning:** When assigning permissions to a group, all the group members will have those permissions. Be careful in case of editing permissions.

Click on *Apply Changes* to save these settings.

### 1.12.5 Layer Information

In this section you will learn more about layers. In the [Layers](#) section we explain how to find layers, now we want to go more in depth showing you how to explore detailed information about that.

From the layers list page, click on the layer you are interested in. The *Layer Page* will open.

As shown in the picture above, the *Layer Page* is divided into three main sections:

1. the *Layer Preview* section, under the title
2. the *Tabs* section, under the layer preview
3. the *Tools* section, on the right side of the page

#### Layer Preview

The *Layer Preview* shows the layer in a map with very basic functionalities:

- the *Base Map Switcher* that allows you to change the base map;
- the *Zoom in/out* tool to enlarge and decrease the view;
- the *Zoom to max extent* tool for the zoom to fit the layer size;
- the *Query Objects* tool to retrieve information about the map objects by clicking on the map;
- the *Print* tool to print the preview.

The GeoNode map viewer is [MapStore](#) based, see the [MapStore Documentation](#) to learn more.

#### Tabs Sections

The *Layer Page* shows you some tabs sections containing different information about the layer:

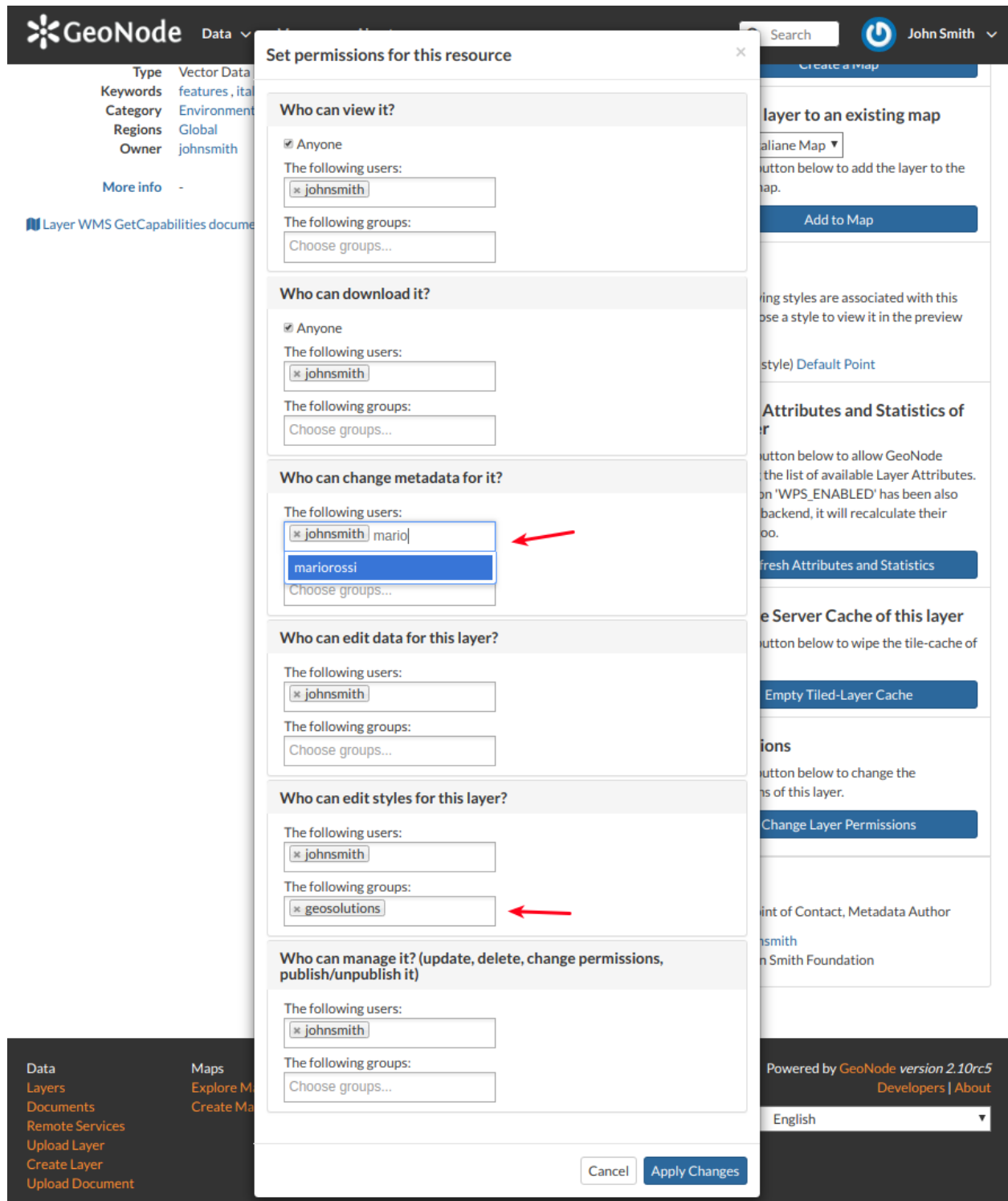





Abb. 86: Layer Permissions settings for users and groups


[Data](#)
[Maps](#)
[About](#)

 John Smith

## Italian Towers



[Download Layer](#)
[Metadata Detail](#)
[Editing Tools](#)
[View Layer](#)
[Download Metadata](#)

[Info](#)
[Attributes](#)
[Share](#)
[Ratings](#)
[Comments](#)
[Favorite](#)

**Title** Italian Towers

**License** Not Specified ⓘ

**Abstract** No abstract provided

**Publication Date** June 7, 2019, 4:03 a.m.

**Type** Vector Data


**Keywords** [features](#), [italian\\_towers](#)

**Category** [Environment](#) ⓘ

**Regions** [Global](#)

**Owner** johnsmith

**More info** -

 [Layer WMS GetCapabilities document](#)

**Legend**

Default Point

- Red Square

**Maps using this layer**

This layer is not currently used in any maps.

**Create a map using this layer**

Click the button below to generate a new map based on this layer.

[Create a Map](#)

**Add the layer to an existing map**

Click the button below to add the layer to the selected map.

[Add to Map](#)

**Styles**

The following styles are associated with this layer. Choose a style to view it in the preview map.

☒ (default style) [Default Point](#)

**Refresh Attributes and Statistics of this layer**

Click the button below to allow GeoNode refreshing the list of available Layer Attributes. If the option 'WPS\_ENABLED' has been also set on the backend, it will recalculate their statistics too.

[Refresh Attributes and Statistics](#)

**Clear the Server Cache of this layer**

Click the button below to wipe the tile-cache of this layer.

[Empty Tiled-Layer Cache](#)

**Permissions**

Click the button below to change the permissions of this layer.

[Change Layer Permissions](#)

Abb. 88: Layer Preview

- The tab *Info* is active by default. This tab section shows some layer metadata such as its title, the abstract, date of publication etc. The metadata also indicates the layer owner, what are the topic categories the layer belongs to and which regions are affected.




<b>Title</b>	Regioni Italiane
<b>License</b>	Not Specified ⓘ
<b>Abstract</b>	No abstract provided
<b>Publication Date</b>	June 7, 2019, 4:49 a.m.
<b>Type</b>	Data
<b>Keywords</b>	features, Reg2015_WGS84_g
<b>Category</b>	Environment ⓘ
<b>Regions</b>	Global, Africa, Central Africa, North Africa, Algeria, Tunisia, Europe, Albania, Austria, Bosnia and Herzegovina, Croatia, France, Greece, Holy See (Vatican City), Hungary, Italy, Liechtenstein, Malta, Monaco, Montenegro, San Marino, Serbia, Slovenia, Switzerland, Pacific
<b>Owner</b>	johnsmith
<b>More info</b>	-
<b>Language</b>	English
<b>Supplemental Information</b>	No information provided

Abb. 89: Layer Info tab

- The *Attributes* tab shows the data structure behind the layer. All the attributes are listed and for each of them some statistics (e.g. the range of values) are estimated (if possible).
- The *Share* tab provides the links for the layer to share through social media or email.
- You can *Rate* the layer through the *Rating system*.
- In the *Comments* tab section you can post your comment. Click on *Add Comment*, insert your comment and click *Submit Comment* to post it.  
Your comment will be added next to the last already existing comment. If you want to remove it click on the red *Delete* button.
- If you want this layer in your *Favorites* (see *Updating the Profile*), open the *Favorite* tab and click on *Add to Favorites*.

## Layer Tools

In the right side of the *Layer Page* there are some buttons and information that can help you to manage your layer. This paragraph will cover only those tools which show layers information. The *Editing Tools* will be explored in the *Layer Editing* section.

 Data ▾ Maps ▾ About ▾

Search John Smith ▾

[Info](#) [Attributes](#) [Share](#) [Ratings](#) [Comments](#) [Favorite](#)[Download Layer](#)  
[Metadata Detail](#)  
[Editing Tools](#)  
[View Layer](#)  
[Download Metadata](#)**Legend**  
Default Point  
■ Red Square**Maps using this layer**  
This layer is not currently used in any maps.**Create a map using this layer**  
Click the button below to generate a new map based on this layer.  
[Create a Map](#)**Add the layer to an existing map**

Abb. 90: Layer Attributes tab

[Info](#) [Attributes](#) [Share](#) [Ratings](#) [Comments](#) [Favorite](#)

## Share This Layer

- Email
- Facebook
- Twitter
- Google +

Abb. 91: Layer Sharing



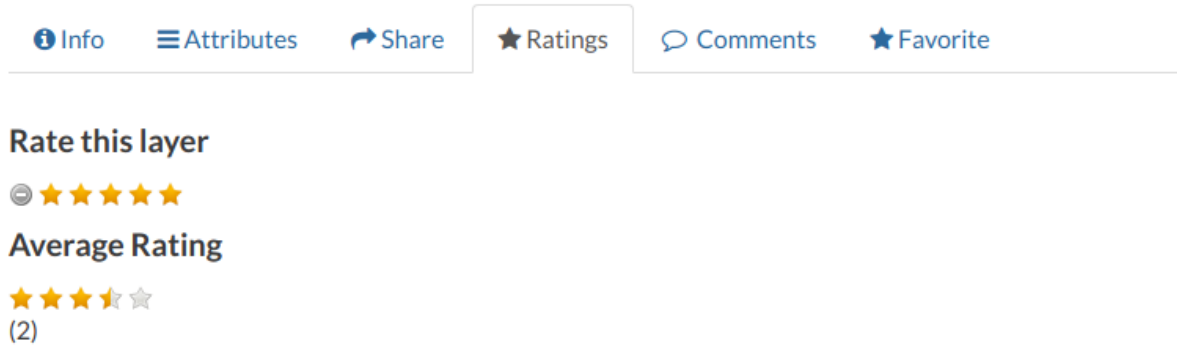


Abb. 92: Rate the Layer



Abb. 93: Layer Comments

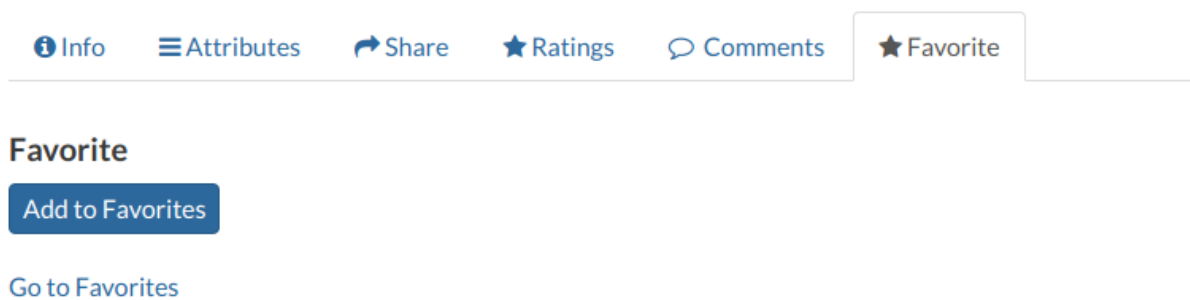


Abb. 94: Your Favorite Layer

- through the *Download Layer* button you can download your layer with some options, see [Downloading Layers](#);
- the *Metadata Detail* button to see the layer metadata, see [Layers Metadata](#) to read more;
- the *Editing Tools* button allows you to access to many editing tools. Those functionalities will be explained in the [Layer Editing](#) section;
- the *View Layer* button opens the layer loaded in a map, see the [Map Information](#) for more details;
- the *Download Metadata* button allows you to download the layer metadata in various formats;
- the *Legend* shows what the symbols and styles on the map are referring to;
- in the *Map using this layer* section all the map which uses the layer are listed;
- in the *Create a map using this layer*, the *Create a Map* button allows you to create a map from scratch using the layer;
- the section *Add the layer to an existing map* shows you a dropdown menu in which all the maps the user can view are listed. The button *Add to Map* allows you to add the layer to the map you have selected in the previous menu;
- the *Styles* section shows all the styles associated with the layer. Click on the checkbox corresponding to one of the styles listed to apply it the preview;
- in the *Refresh Attributes and Statistics of this layer* section the *Refresh Attributes and Statistics* allows GeoNode to refresh the list of available Layer Attributes. If the option ,WPS\_ENABLED‘ has been also set on the backend, it will recalculate their statistics too;
- in the *Clear the Server Cache of this layer* section the *Empty Tiled-Layer Cache* allows to wipe the tile-cache of this layer;
- the *About* section shows you the layer *Owner*, the *Contact* user and the *Metadata Author*.

### 1.12.6 Downloading Layers

At the top of the *Layer Page* there is the *Download Layer* button (see [Layer Information](#)). It provides access to the ability to extract geospatial data from within GeoNode.

You will see a list of options of the supported export formats. You can choose the *Images* formats PNG, PDF, JPEG if you want to save a „screenshot-like“ image of the layer.

You can also download the layer data, the supported export formats will be listed in the *Data* tab. Click on your desired format to trigger the download.


As shown in the image above, GeoNode allows you to download a subset of data. Click on *Do you want to filter it?* to filter the layer data before the download.

### 1.12.7 Layer Editing

The *Editing Tools* button of the *Layer Page* (see [Layer Information](#)) opens a panel like the one shown in the picture below.

In that panel you can see many options grouped by four categories:

1. *Metadata*
2. *Styles*
3. *Thumbnail*


[Data](#)
[Maps](#)
[About](#)

[Test Menu](#)

[johnsmith](#)



[Download Layer](#)
[Metadata Detail](#)
[Editing Tools](#)
[View Layer](#)
[Download Metadata](#)

### Legend

#### Maps using this layer

This layer is not currently used in any maps.

#### Create a map using this layer

Click the button below to generate a new map based on this layer.

[Create a Map](#)

### Styles

The following styles are associated with this layer. Choose a style to view it in the preview map.

- ☐ A orange line style
- ☒ (default style) Red road

### Refresh Attributes and Statistics of this layer

Click the button below to allow GeoNode refreshing the list of available Layer Attributes

[Info](#)
[Attributes](#)
[Share](#)
[Ratings](#)
[Comments](#)
[Favorite](#)

**Title** roads

**License** Not Specified [i](#)

**Abstract** No abstract provided

**Publication Date** June 7, 2019, 2:15 p.m.

**Type** Vector Data

**Keywords** features, ne\_10m\_roads

**Category** Transportation [i](#)

**Regions** Global

**Owner** johnsmith

**More info** -

Abb. 95: Change the Layer Style in preview

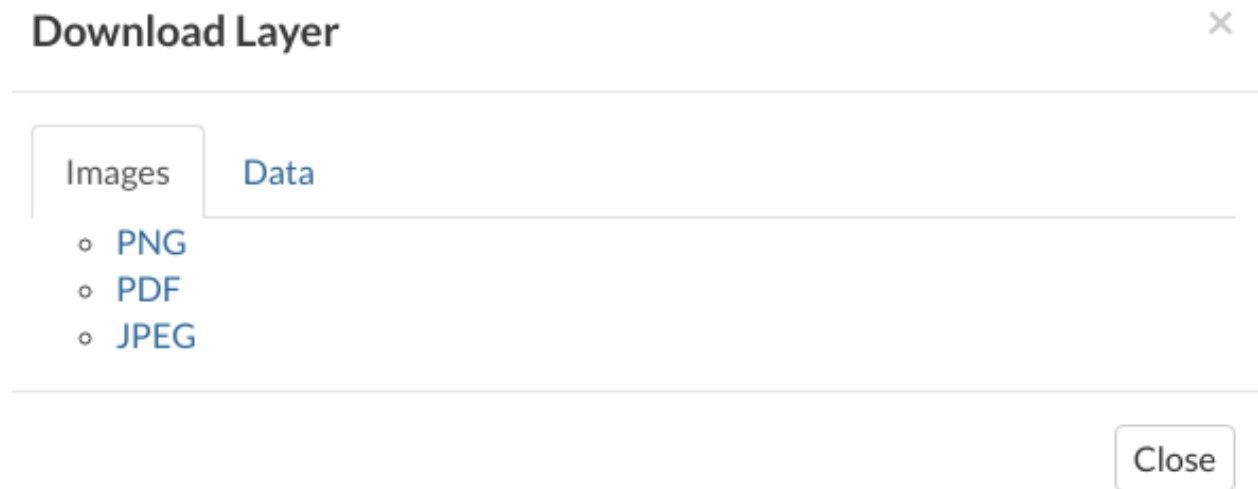


Abb. 96: *Downloading Layers as Images*

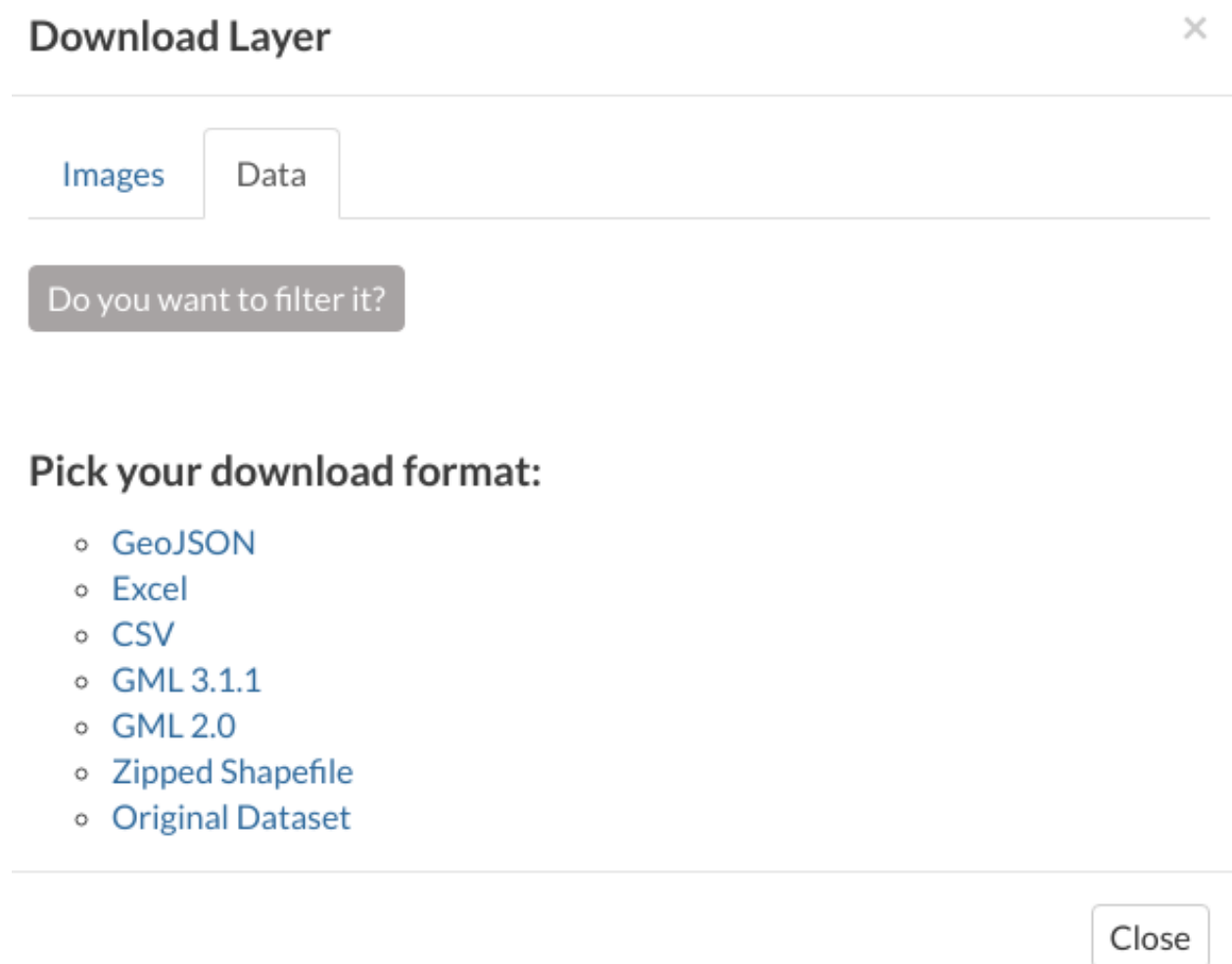


Abb. 97: *Downloading the Layer Data*

Abb. 98: Downloading the Layer Data

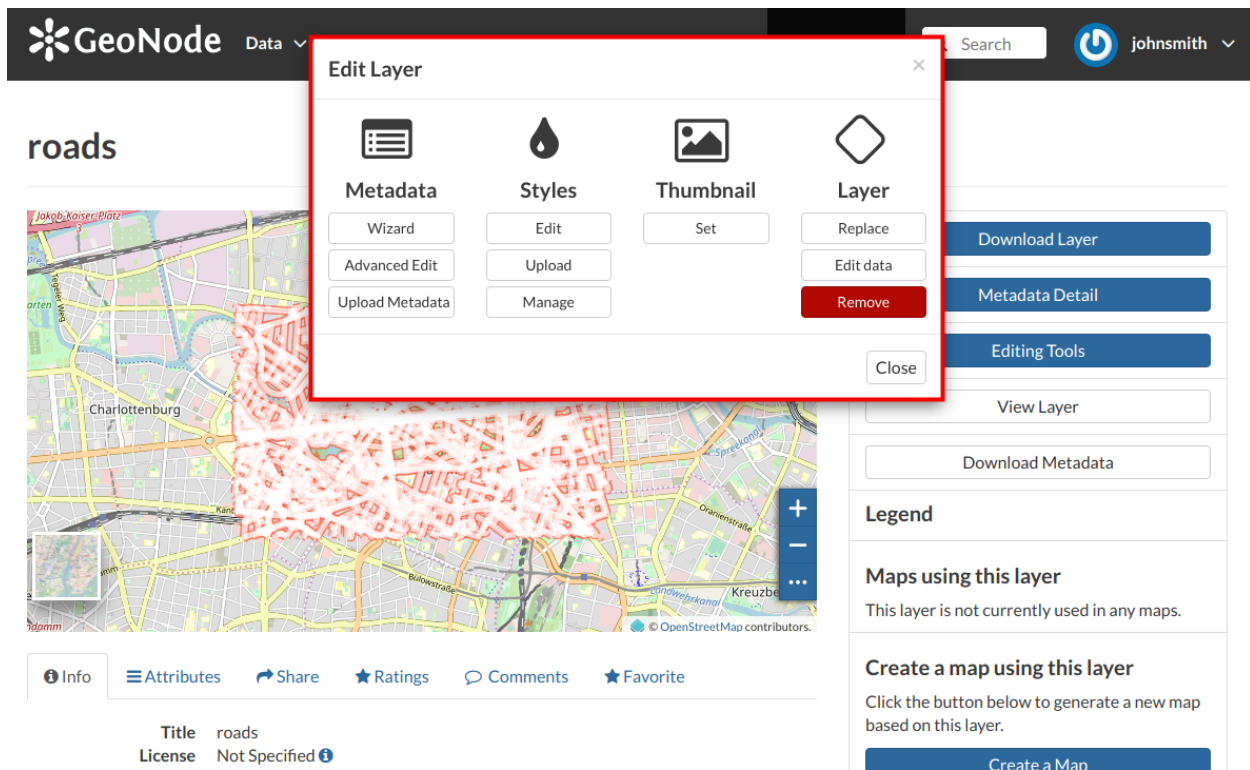


Abb. 99: The Layer Editing panel

#### 4. Layer

In this section you will learn how to edit a *Layer*, how to replace and edit its data. See [Layers Metadata](#) to learn how to explore the layer *Metadata*, how to upload and edit them. The *Styles* will be covered in a dedicated section, see [Layer Styling](#).

### Setting the Layer Thumbnail

The Thumbnail of the layer that will be displayed on the *Layers* list page can be changed by dragging and zooming on the layer preview to select which portion will be displayed, then by clicking on the *Set* button of the *Layer Editing* panel.

A message will confirm the thumbnail has been correctly changed.

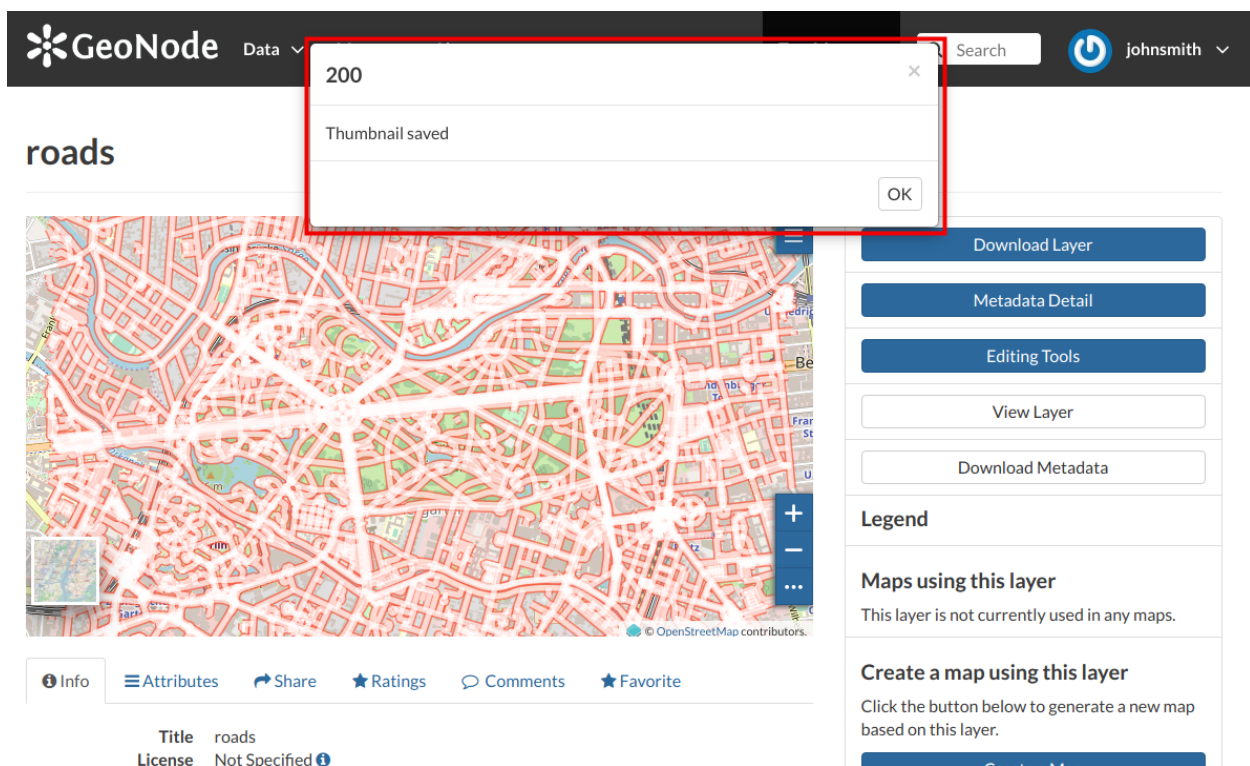


Abb. 100: The Layer Editing panel

### Replacing the Layer

From the *Layer Editing* panel click on *Replace* to change the layer source dataset. You will be driven to the *Replace Layer* page in which *Choose Files* button allows you to select files from your disk.


Once the *Charset* selected the upload process can be triggered by clicking on *Replace Layer*. If no errors occur you will see a message like the one in the picture below.


We have replaced the *roads* dataset with the *railways* one. You can see the differences in the *Layer Preview*.

Abb. 101: *Replace a Layer*

## Editing the Layer Data





The *Edit data* button of the *Layer Editing* panel opens the *Layer* within a *Map*.

The *Attribute Table* panel of the *Layer* will automatically appear at the bottom of the *Map*. In that panel all the features are listed. For each feature you can zoom to its extent by clicking on the corresponding *magnifying glass* icon  at the beginning of the row, you can also observe which values the feature assumes for each attribute.

Click the *Edit Mode*  button to start an editing session.


Now you can:


- *Add new Features*

Through the *Add New Feature* button  it is possible to set up a new feature for your layer. Fill the attributes fields and click  to save your change. Your new feature doesn't have a shape yet, click on  to draw its shape directly on the *Map* then click on  to save it.


**Bemerkung:** When your new feature has a multi-vertex shape you have to double-click the last vertex to finish the drawing.

- *Delete Features*

If you want to delete a feature you have to select it on the *Attribute Table* and click on .



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## Replace Layer [roads](#)

[Return to Layer](#)
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Drop files here

or select them one by one:

Choose Files

Files to be uploaded

### railways

### ESRI Shapefile

- [railways.shx](#) [Remove](#)
- [railways.shp](#) [Remove](#)
- [railways.prj](#) [Remove](#)
- [railways.dbf](#) [Remove](#)

Your layer was successfully updated

Layer Info

Edit Metadata

Upload Metadata

Upload SLD

Manage Styles

Select the charset or leave default

UTF-8/Unicode

Clear

Replace Layer

### Permissions

Who can view it?

☒ Anyone
 

The following users:

The following groups:

Who can download it?

Who can change metadata for it?

Who can edit data for this layer?

Who can edit styles for this layer?


Who can manage it? (update, delete, change permissions, publish/unpublish it)

Abb. 102: *Replace Layer success*

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### Legend

### Maps using this layer

This layer is not currently used in any maps.

### Create a map using this layer

Click the button below to generate a new map based on this layer.

[Create a Map](#)

### Styles

The following styles are associated with this layer. Choose a style to view it in the preview map.

- ☐ A orange line style
- ☒ (default style) Red road

[Info](#)
[Attributes](#)
[Share](#)
[Ratings](#)
[Comments](#)
[Favorite](#)

**Title** roads

**License** Not Specified

**Abstract** No abstract provided

**Publication Date** June 7, 2019, 2:15 p.m.

**Type** Vector Data

**Keywords** features, ne\_10m\_roads

**Category** Transportation

**Regions** Global

**Owner** johnsmith

**More info** -

Abb. 103: Result of the Layer Replacement

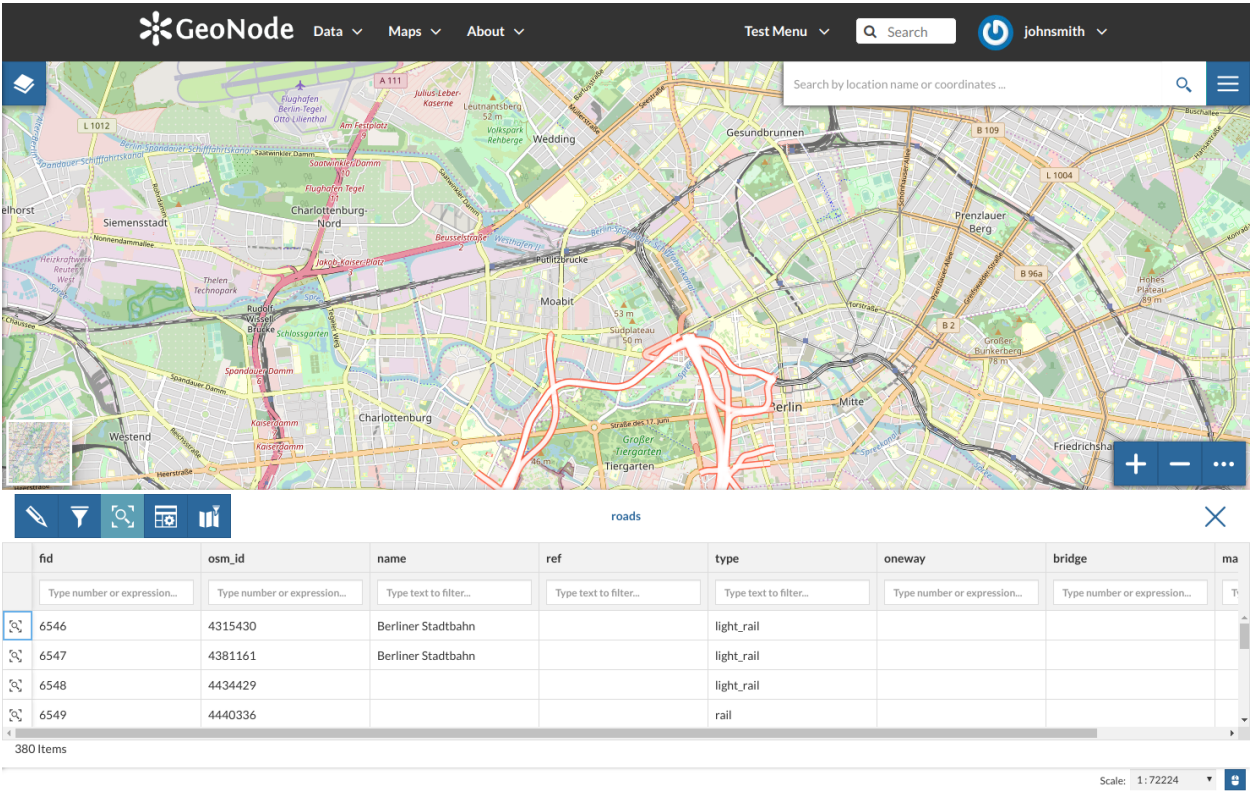


Abb. 104: Editing the Layer Data

Abb. 105: Add a New Feature to the Layer

Abb. 106: Delete a Feature

- *Change the Feature Shape*

You can edit the shape of an existing geometry dragging its vertices with the mouse. A blue circle lets you know what vertex you are moving.

Abb. 107: *Feature Shape Editing - Change the existing shape*

Features can have *multipart shapes*. You can add parts to the shape when editing it.

Abb. 108: *Feature Shape Editing - Add parts to the existing shape*

- *Change the Feature Attributes*

When you are in *Edit Mode* you can also edit the attributes values changing them directly in the corresponding text fields.

Abb. 109: *Feature Attributes Editing*

Once you have finished you can end the *Editing Session* by clicking on the  button.

By default the GeoNode map viewer is [MapStore](#) based, see the [MapStore Documentation](#) for further information.

### 1.12.8 Layers Metadata

In GeoNode special importance is given to *Metadata* and their standard formats. You can explore the *Metadata* of a *Layer* by clicking the *Metadata Detail* button from the *Layer Page*.

The *Layer Metadata* page will be displayed.

In that page you can see the whole set of available metadata about the layer. Metadata are grouped in order to show the following types of information:


- *Identification* to uniquely identify the layer (Title, Abstract, Publication Date etc.);
- *Owner*, the user who owns the layer;
- *Information*, the Identification Image, the Spatial Extent, Projection System and so on;
- *Features*, Language, Supplemental and other Information;
- *Contact Points*, the available user to get in contact;
- *References*, various links to the resource information and data;
- *Metadata Author*, information about the author of the metadata.

### Downloading Metadata


The *Download Metadata* button of the *Layer Page* allows you to download the layer metadata in various formats.

The available download formats are grouped in three categories:


- *Full metadata*
- *Standard Metadata - XML format*
- *Attribute Information*


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## roads



[Download Layer](#)
[Metadata Detail](#)
[Editing Tools](#)
[View Layer](#)
[Download Metadata](#)

### Legend

roads0

- dark orange line

### Maps using this layer

This layer is not currently used in any maps.


### Create a map using this layer

Click the button below to generate a new map based on this layer.

[Create a Map](#)

[Info](#)
[Attributes](#)
[Share](#)
[Ratings](#)
[Comments](#)
[Favorite](#)

**Title** roads

**License** Not Specified 

**Abstract** No abstract provided



**Publication Date** June 10, 2019, 12:58 p.m.

Abb. 110: The Layer Metadata Detail button

## Metadata : roads

[Return to Layer](#)

### Identification

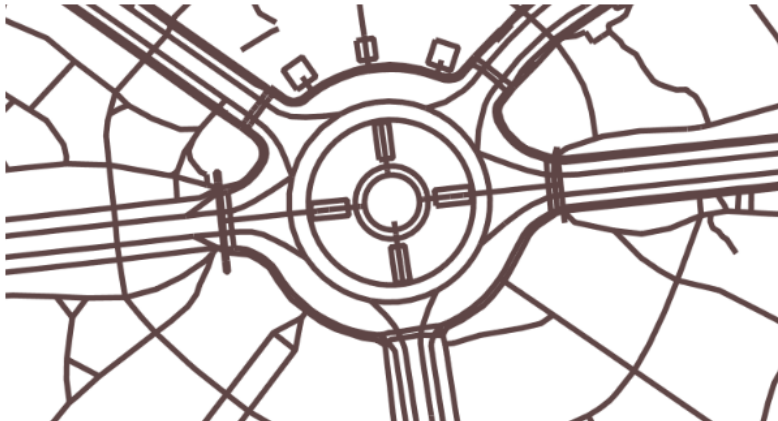
<b>Title</b>	roads
<b>Abstract</b>	No abstract provided
<b>License</b>	Not Specified 
<b>Publication Date</b>	June 10, 2019, 12:58 p.m.
<b>Type</b>	Vector Data
<b>Keywords</b>	features ne_10m_roads
<b>Category</b>	Transportation 
<b>Regions</b>	Global
<b>Approved</b>	Yes
<b>Published</b>	Yes
<b>Featured</b>	No

### Owner

<b>Name</b>	johnsmith
<b>email</b>	johnsmith@mail.com
<b>Position</b>	None
<b>Organization</b>	None
<b>Location</b>	
<b>Voice</b>	None
<b>Fax</b>	None

### Information

#### Identification Image



<b>Spatial Extent</b>	---
<b>Projection System</b>	EPSG:4326
<b>Extension x0</b>	13.326002500000000
<b>Extension x1</b>	13.386979800000000
<b>Extension y0</b>	52.503006700000000
<b>Extension y1</b>	52.525999300000000

### Features

<b>Language</b>	English
<b>Supplemental Information</b>	No information provided

### Contact Points

<b>Name</b>	johnsmith
<b>email</b>	johnsmith@mail.com
<b>Position</b>	None
<b>Organization</b>	None
<b>Location</b>	
<b>Voice</b>	None
<b>Fax</b>	None

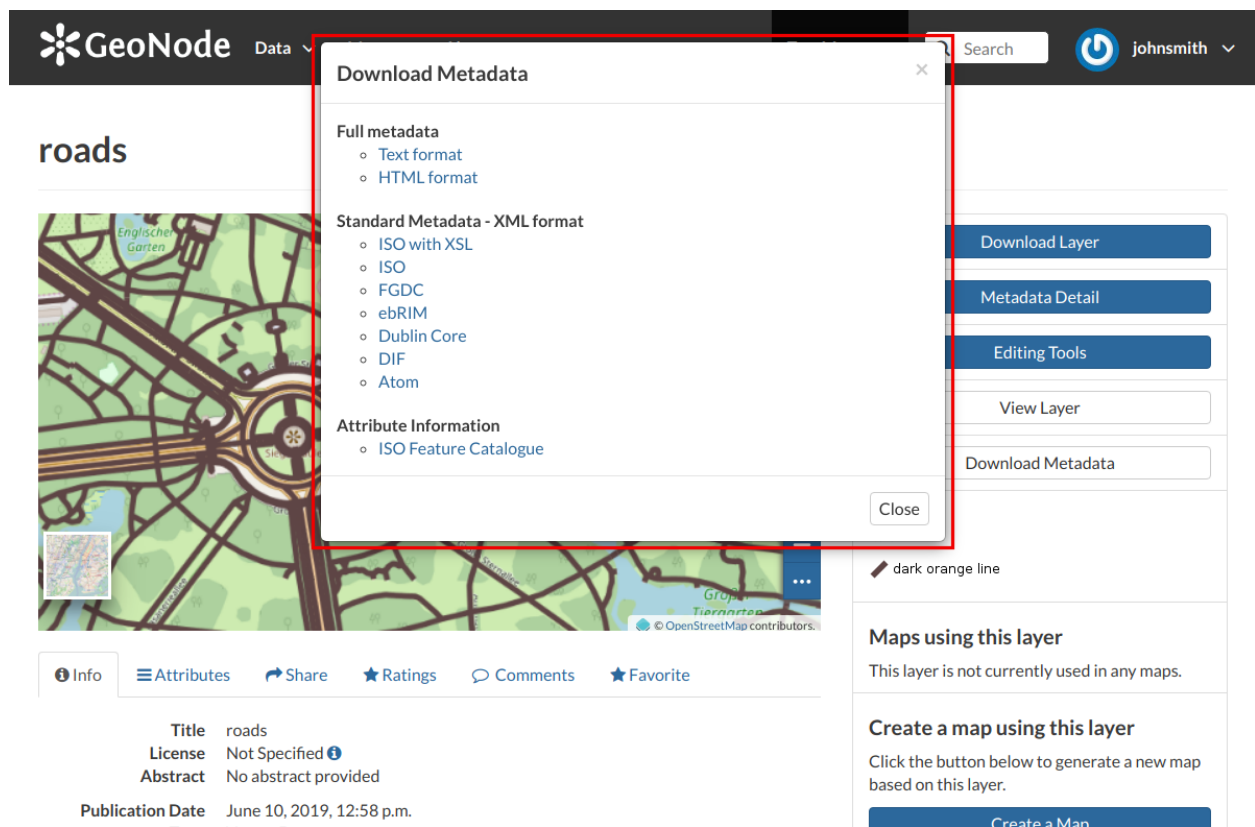


Abb. 112: How to Download Metadata

Click on the format name that you prefer to start the download.

## Metadata Wizard

Metadata contains all the information related to the layer. They provide essential information for its identification and its comprehension. Metadata also make the layer more easily retrievable through search by other users.

The *Metadata* of a layer can be changed through a *Wizard* which involves four steps, one for each type of metadata considered:

- *Basic Metadata*

The first two steps are mandatory (no layers will be published if the required information are not provided) whereas the last two are optional.

The screenshot shows the GeoNode web interface for editing metadata for a layer named 'roads'. The top navigation bar includes the GeoNode logo, links for Data, Maps, and About, a Test Menu, a search bar, and an Admin link. A 'Completeness' badge indicates that 83% of mandatory fields are checked. The wizard is divided into four steps: 1. Basic Metadata (Mandatory), 2. Location and Licenses (Mandatory), 3. Optional Metadata (Optional), and 4. Dataset Attributes (Optional). The first step, 'Basic Metadata', is active and contains the following fields:

- Thumbnail:** A map thumbnail of Berlin roads with an 'Edit' button below it.
- Title:** A text input field containing 'roads'.
- Abstract:** A text area containing 'Berlin Roads'.
- Keywords:** A list of tags including 'features', 'ne\_10m\_roads', and 'roads'.
- Date type:** A dropdown menu set to 'Publication'.
- Date:** A date input field showing '2019-06-10 12:00'.
- Category:** A dropdown menu set to 'Transportation'.
- Group:** A dropdown menu set to 'John Smith Foundation Team'.

At the bottom right, there are three buttons: 'Return to Layer', 'Update', and 'Next >>'.

Abb. 113: *Basic Layer Metadata*

In the first step the system asks you to insert the following metadata:

- The *Thumbnail* of the layer (click *Edit* to change it);
- The *Title* of the layer, which should be clear and understandable;
- An *Abstract* on the layer;
- The *Creation/Publication/Revision Dates* which define the time period that is covered by the layer;
- The *Keywords*, which should be chosen within the available list. The contributor search for available keywords by clicking on the searching bar, or on the folder logo representing, or by entering the first letters of



the desired word;

- The *Category* which the layer belongs to;
- The *Group* which the layer is linked to.

- *Location and Licenses*

**GeoNode** Data Maps About Test Menu Search Admin

## Metadata for roads

Completeness  
✓ Metadata Schema mandatory fields completed  
100%

Edit Preview Settings Done!

Mandatory Mandatory Optional

1 Basic Metadata 2 Location and Licenses 3 Optional Metadata 4 Dataset Attributes

Language English  
License Not Specified

Regions  
× Global

Data quality statement  
Data provided by a community of users

Restrictions  
exclusive right to the publication, production

Restrictions other  
other restrictions and legal prerequisites for accessing and using the resource or metadata

Return to Layer << Back Update Next >>

Abb. 114: *Location and Licenses Metadata for Layers*

The following list shows what kinds of metadata you are required to enter (see also the picture below):

- The *Language* of the layer;
- The *License* of the dataset;
- The *Regions*, which informs on the spatial extent covered by the layer. Proposed extents cover the following scales: global, continental, regional, national;
- The *Data Quality statement* (general explanation of the data producer’s knowledge about the lineage of a dataset);
- Potential *Restrictions* on layer sharing.

- *Optional Metadata*

Complementary information are:

- The *Edition* to indicate the reference or the source of the layer;
- The *Purpose* of the layer and its objectives;
- Any *Supplemental information* that can provide a better understanding of the uploaded layer;



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## Metadata for roads

**Completeness**  
 ✓ Metadata Schema mandatory fields completed  
 100 %

[Edit](#)
[Preview](#)
[Settings](#)
[Done!](#)

MandatoryMandatoryOptional

1

2

3

4

**Basic Metadata**  
 Other, Optional, Metadata  
**Edition**  
 version of the cited resource  
**Purpose**  
 To test some routing algorithms  
**Supplemental information**  
 No information provided

**Location and Licenses**  
 temporal extent start  
 2019-06-10 17:  
 Maintenance frequency  
 data is updated each month  
 Spatial representation type  
 -----

**Optional Metadata**  
 temporal extent end  
 2019-08-21 17:

**Dataset Attributes**  
 Responsible Parties  
**Point of Contact**  
 johnsmith  
 Owner and Permissions  
**Owner**  
 johnsmith  
**Metadata Author**  
 johnsmith

[Return to Layer](#)
[<< Back](#)
[Update](#)
[Next >>](#)

Abb. 115: *Optional Layer Metadata*

- The *Maintenance frequency* of the layer;
- The users who are *Responsible* for the layer, its *Owner*, and the *Author* of its metadata;
- The *Spatial representation type* used.

- *Dataset Attributes*

**Metadata for roads**

Completeness  
✓ Metadata Schema mandatory fields completed  
100 %

Edit Preview Settings Done!

Mandatory Mandatory Optional

1 2 3 4

Basic Metadata Location and Licenses Optional Metadata Dataset Attributes

Attribute	Label	Description	Display Order
fid			1
the_geom			2
osm_id		The ID in the OSM full dataset	3
name		The name of the road	4
ref			5
type		The road type	6
oneway		The road can be traveled in one di	7
bridge		Is it a bridge?	8
maxspeed		The speed limits	9

Return to Layer << Back Update

Abb. 116: *Dataset Attributes Metadata for Layers*

At this step you can enrich the dataset attributes with useful information like the following:

- The *Label* displayed
- A detailed *Description*
- The *Display Order*

Use *next >>* or *<< back* to navigate through those steps. Once you have finished click on *Update*.

Some metadata are mandatory, if you miss any of that metadata the *Completeness* bar shows you a red message like the one in the picture below.

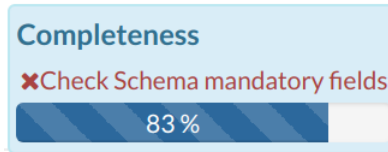


Abb. 117: Completeness Progress Bar

## Metadata Advanced Editing

In the *Layer Editing* panel the *Advanced Edit* is also available.

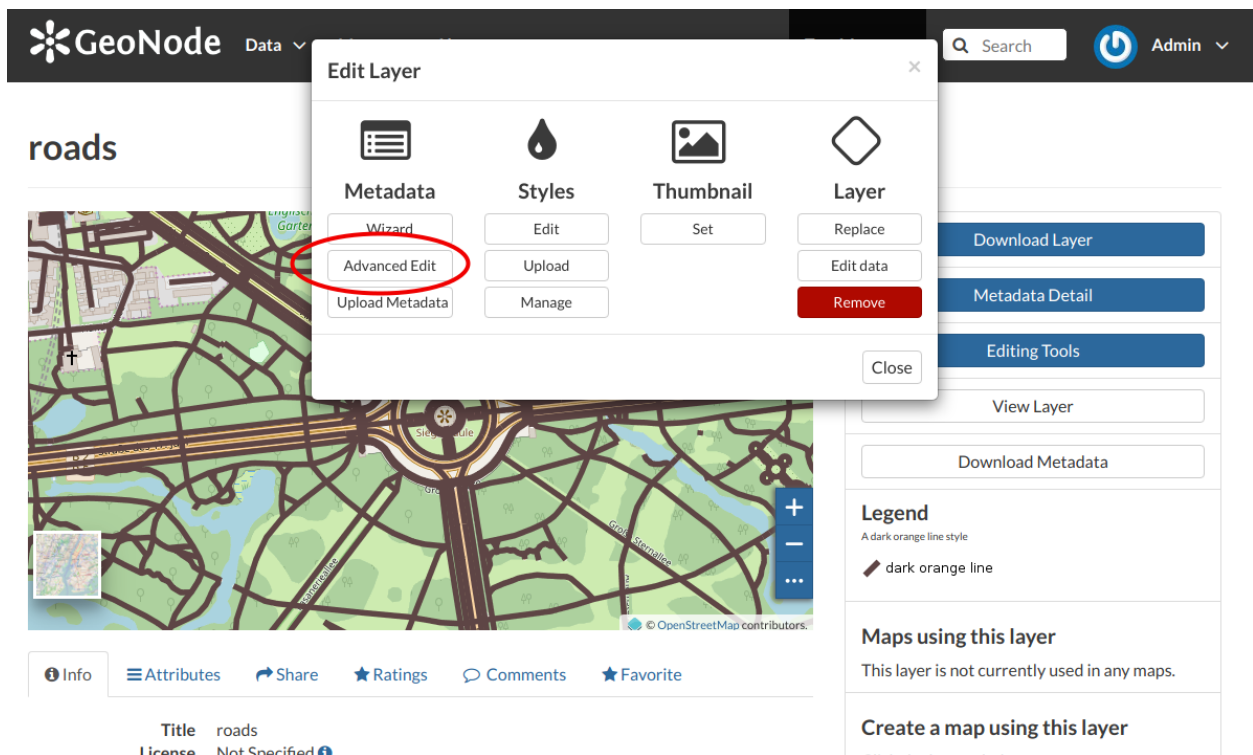


Abb. 118: The Advanced Edit button

Click on it to display the *Metadata Advanced Editing Page*. That page allows you to edit all the layer metadata described in the previous paragraph. Once you have finished to edit them click on *Update* to save your changes.

## Uploading Metadata

Users may also upload a metadata XML document (in ISO, FGDC, or Dublin Core format) to fill in key GeoNode metadata elements automatically. The picture below shows you how the page looks like.

Click on *Choose Files* to select the document from your disk, then click on *Upload files* to trigger the uploading process.

**Upload Layer Metadata** (XML - ISO, FGDC, ebRIM, Dublin Core) [Return to Layer](#) [Explore Layers](#)

Drop files here

or select them one by one:

[Choose Files](#)

**Files to be uploaded**

[Clear](#) [Upload files](#)

**Permissions**

**Who can view it?**

☒ Anyone

The following users:

The following groups:

**Who can download it?**

**Who can change metadata for it?**

**Who can manage it? (update, delete, change permissions, publish/unpublish it)**

Abb. 119: *The Metadata Advanced Editing page*

### 1.12.9 Layer Styling

Maps are helpful because they allow you gain a deeper understanding of your data by allowing you to visualize it in many different ways. So you can tell different stories depending on how the data is presented. For any given data or layer, you should explore different styling options and choose the best style for that.

In GeoNode each layer has a *Default Style* which is determined by the nature of the data you're mapping. When uploading a new layer (see [Layers Uploading](#)) a new default style will be associated to it.



Referring to the example above, dark orange lines are not very good to represent waterways so we would need to change this style. In the following paragraphs you will learn how to create a new style starting from given templates, how to edit a style, how to upload styles from file and how to manage them.

#### Creating new Styles

In order to create a new style, open the *Layer Page* (see [Layer Information](#)) and click on *Editing Tools*. Then click the *Edit* button in the *Styles* section of the *Layer Editing* panel (see the picture below).

The *Layer* will open in a new *Map*. The *Styles Panel* will show you all the available styles for the layer and some useful tools.

Now follow the steps below:

1. Click the  button. The *Style Templates Panel* will open.
2. Choose a *Style Template* from the list (both *CSS* and *SLD* styles are available).
3. Click the  button to add the *Style Template* to the styles list.

**waterways**

**Info** Attributes Share Ratings Comments Favorite

**Title** waterways  
**License** Not Specified ⓘ  
**Abstract** No abstract provided  
**Publication Date** June 11, 2019, 4:21 a.m.  
**Type** Vector Data  
**Keywords** features , waterways  
**Regions** Global  
**Owner** johnsmith

**More info** -

Layer WMS GetCapabilities document

**Download Layer**  
**Metadata Detail**  
**Editing Tools**  
**View Layer**  
**Download Metadata**

**Legend**  
A dark orange line style  
dark orange line

**Maps using this layer**  
This layer is not currently used in any maps.

**Create a map using this layer**  
Click the button below to generate a new map based on this layer.  
**Create a Map**

**Styles**  
The following styles are associated with this layer. Choose a style to view it in the preview map.  
☒ (default style) A dark orange line style

**Refresh Attributes and Statistics of this layer**  
Click the button below to allow GeoNode refreshing the list of available Layer Attributes

Abb. 120: Default Style for Layers

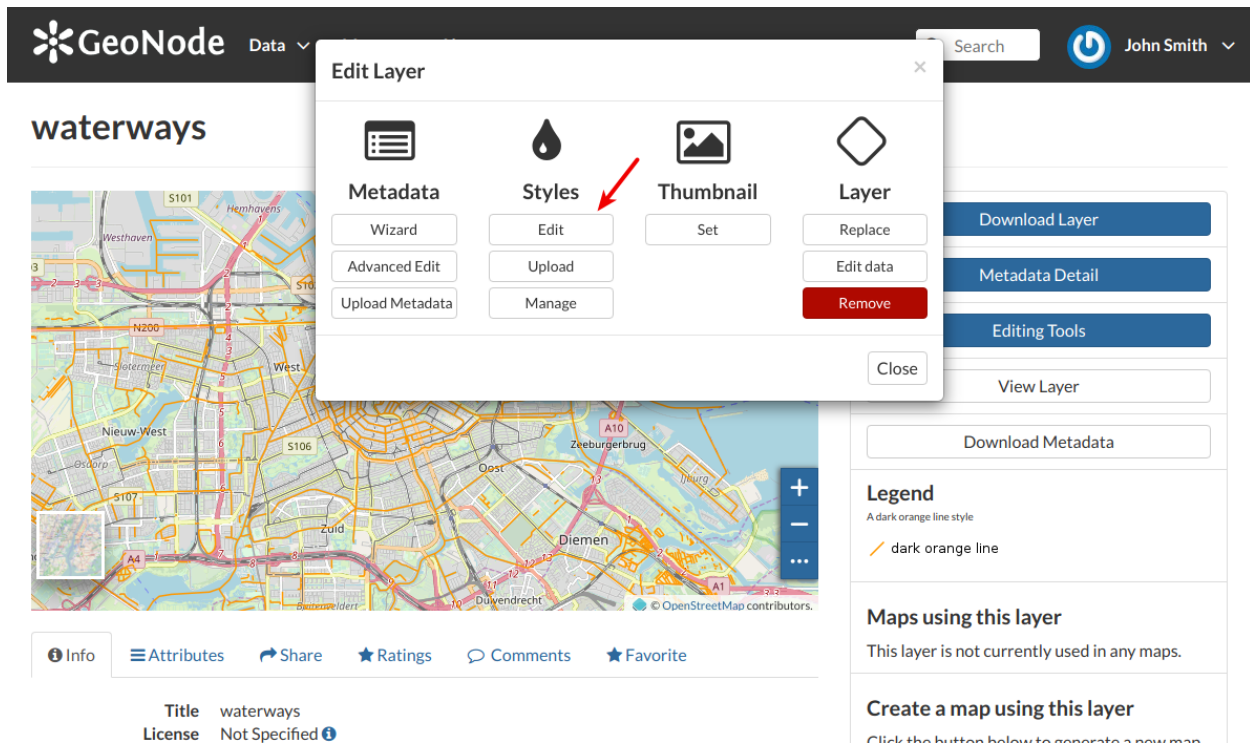


Abb. 121: *Edit Styles button*

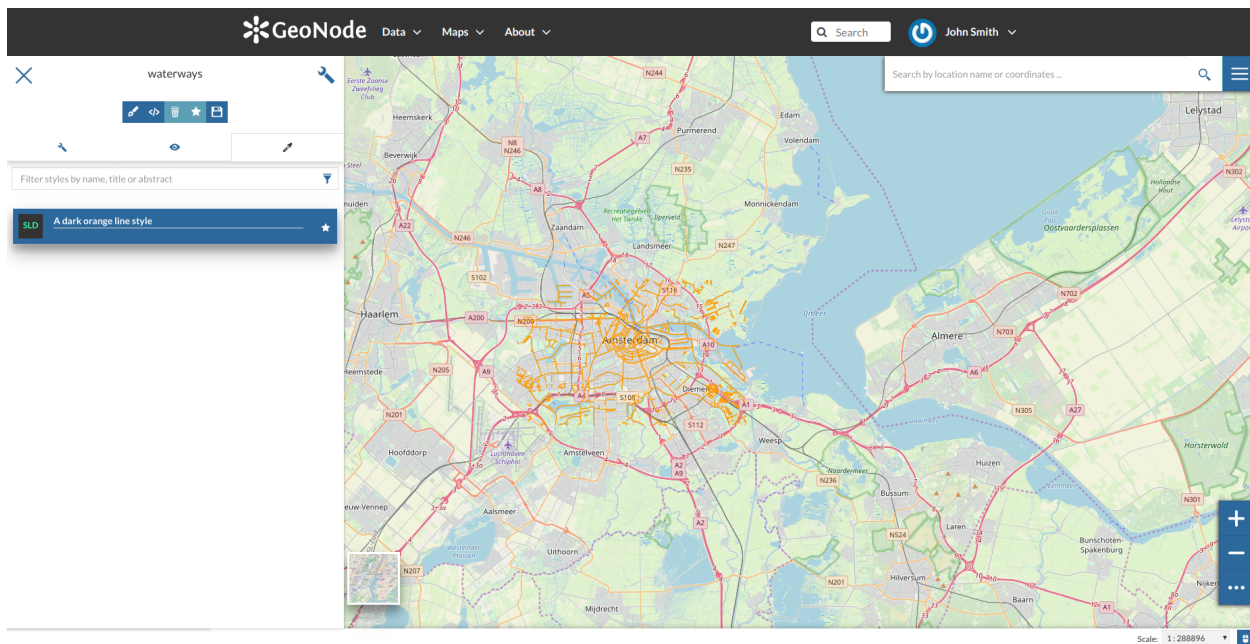


Abb. 122: *The Styles Panel in the Map*



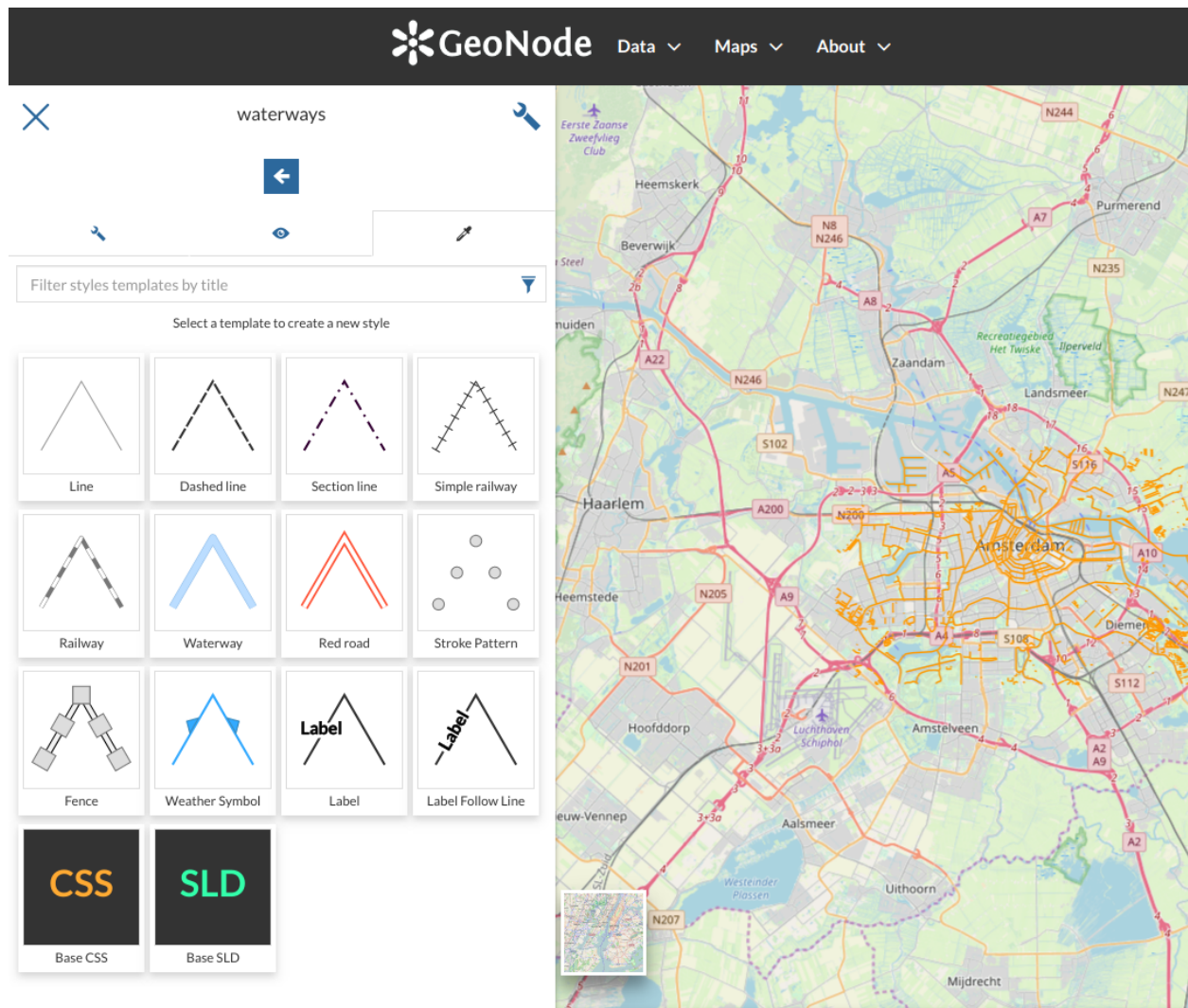
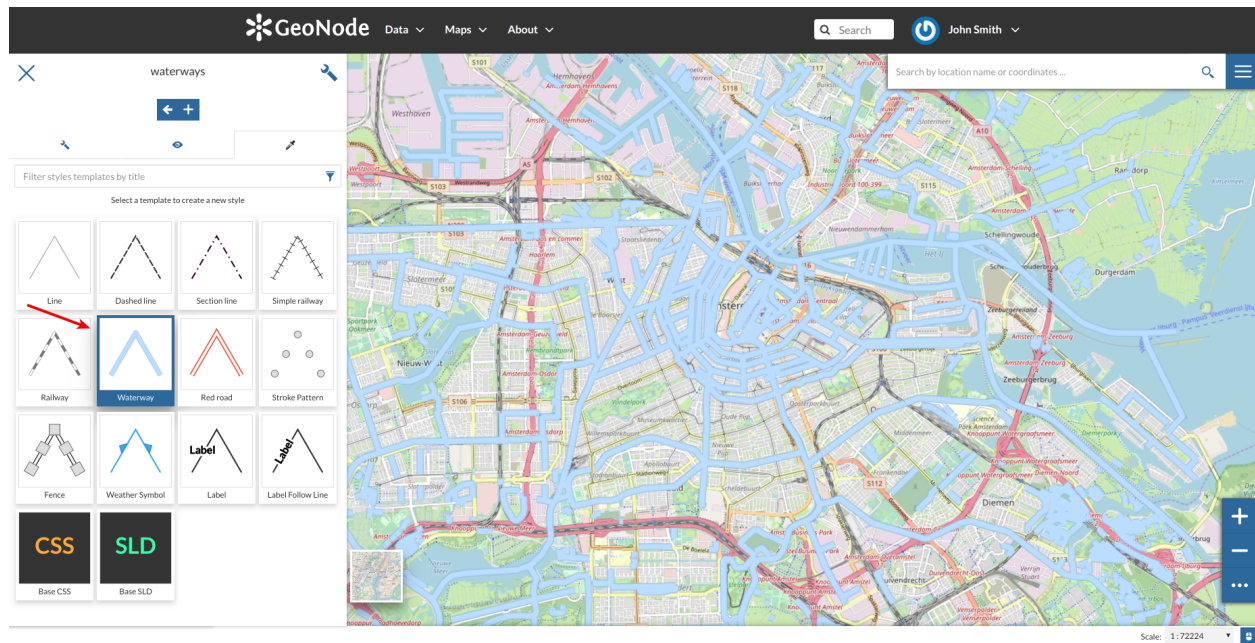


Abb. 123: Create new Styles

Abb. 124: *Style Templates*

4. Insert a *Title* and an *Abstract* (optional), then click on *Save*.

Create new style

Title

Waterway

Abstract

A style for waterways

Save

Abb. 125: *Title and Abstract for new Styles*

The style you have created is now added to the *Styles List*.

You will also see this new style in the *Layer Page*.

Now you can switch the style by clicking on the corresponding checkbox.

It would be nice to change the style in order to decrease the opacity of the filling color as well as to reduce the lines width. The embedded [MapStore](#) makes available a powerful *Style Editor* to accomplish that tasks. In the next paragraph we will explain how.

## Editing the Layer Style

The following steps show you how to edit styles:



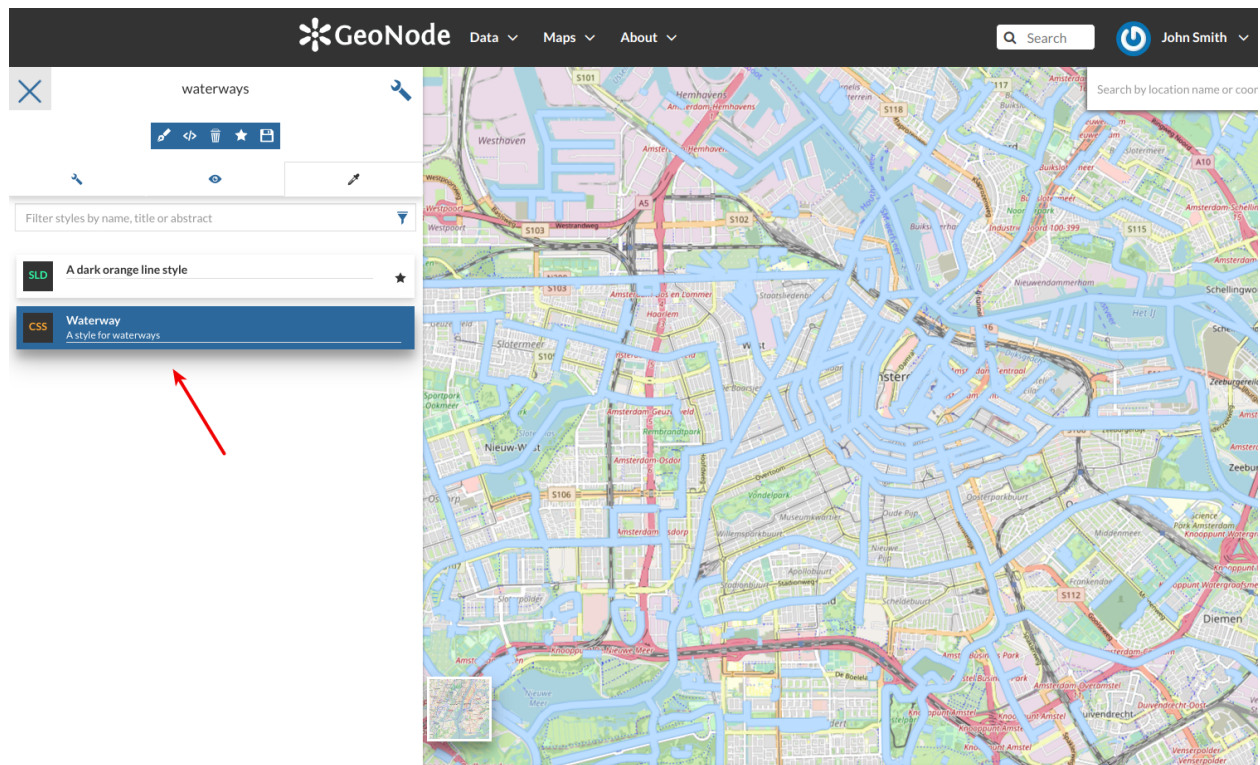





Abb. 126: New Styles into the list

1. From inside the map open the *TOC (Table Of Content)* by clicking the  button

2. Click on 

3. Open the *Style* tab 

**Warnung:** Styles editing is allowed only to those users who have the needed permission. See [Changing the Layer Permissions](#) to read more)

4. Select the *Style* and click on 


5. Edit the style. The *Style Editor* helps you to write valid styles through the *Syntax Validator* which shows you a popup in case of errors (see the picture below).


6. Click on  to save your changes.

See the following gif to recap the whole process.

You can also decide to make your new style the *Default Style* of that layer. Click on  to do that.

Click on  to delete the style.


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[Download Metadata](#)

### Legend

A dark orange line style



### Maps using this layer

This layer is not currently used in any maps.

### Create a map using this layer

Click the button below to generate a new map based on this layer.

[Create a Map](#)

### Styles

The following styles are associated with this layer. Choose a style to view it in the preview map.

- ☒ (default style) A dark orange line style
- ☐ Waterway

[Refresh Attributes and Statistics of](#)

[Info](#)
[Attributes](#)
[Share](#)
[Ratings](#)
[Comments](#)
[Favorite](#)

**Title** waterways

**License** Not Specified

**Abstract** No abstract provided

**Publication Date** June 11, 2019, 4:21 a.m.

**Type** Vector Data

**Keywords** features , waterways

**Regions** Global

**Owner** johnsmith

[More info](#)

[Layer WMS GetCapabilities document](#)

Abb. 127: The Layer Page with the new Style

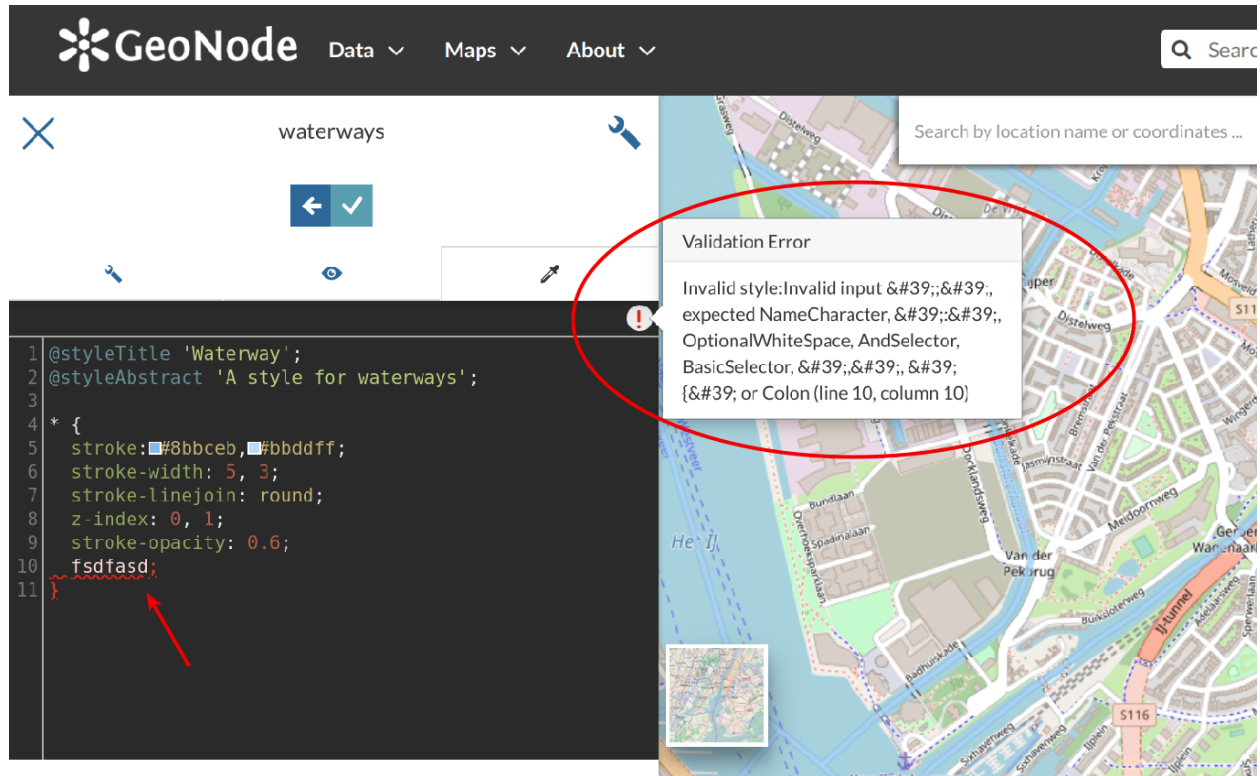


Abb. 128: The Style Editor Syntax Validation

Abb. 129: The Style Editor

## Uploading Styles

In GeoNode it is also possible to upload an existing style from file.

**Warnung:** Currently only styles in **SLD (Style Layer Descriptor 1.0, 1.1)** format can be uploaded in GeoNode.

From the *Layer Page* click on *Editing Tools* to open the *Editing Tools* panel and follow the steps below:

1. Click the *Upload* button of the *Styles* section

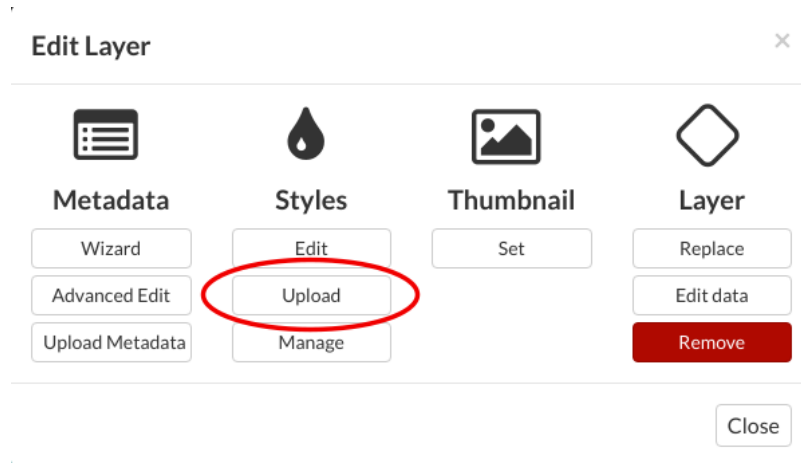


Abb. 130: Upload Styles button

2. Click on *Choose Files* and select your style from your disk

3. Click on *Upload files*

Once the process has been finished the new *Style* will be visible in the *Layer Page*.


## Managing Styles


Given a layer, you can manage all its styles in the *Styles Management Page* accessible from the *Manage* button of the *Layer Editing* panel.

In that page you can:

- See the *Layer Name*
- Add/remove styles to/from the *Available styles* list
- Choose the *Layer Default Style* from the *Available styles* list

Click on *Update Available Styles* to save your changes.


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[Return to Layer](#)
[Explore Layers](#)



Drop files here

or select them one by one:

Files to be uploaded

waterways

Style Layer Descriptor

- waterways.sld [Remove](#)

**WARNING:** This will most probably overwrite the current default style!

### Permissions

**Who can view it?**

☒ Anyone

The following users:


The following groups:


**Who can download it?**

**Who can change metadata for it?**

**Who can manage it? (update, delete, change permissions, publish/unpublish it)**

Abb. 131: Upload Styles


Data ▾
Maps ▾
About ▾

 John Smith ▾

**Available styles**

Click on an available style in the upper box to assign it to this layer. Selected styles appear in the lower box.

- A violet polygon style
- A violet polygon style
- A teal line style
- A red polygon style
- dtv\_ruta\_segmentada\_
- A red line style

- orange square point style
- Waterways SLD**

Abb. 132: Managing Styles

## 1.13 Managing Maps

Maps are a set of layers displayed together on an interactive web map. The maps can be composed in the map composer and saved as a GeoNode resource. Maps can also be associated with metadata, ratings, and comments. In this section, you will learn how to create a new map and share the results.

### 1.13.1 Creating Maps

In this section, we'll create a *Map* using some uploaded layers, combine them with some layers from remote web services, and then share the resulting map for public viewing.

In order to create new maps you can use:

- the *Create Map* link of the *Maps* menu in the navigation bar

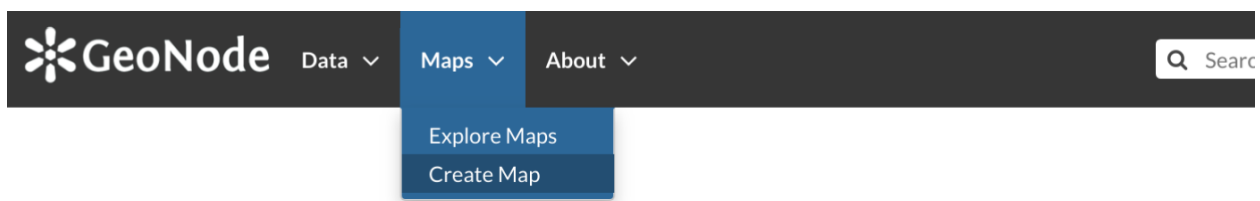







Abb. 133: The *Create Map* link


- the *Create Map* button in the *Layer Page* (it creates a map using a specific layer)
- the *Create New Map* button in the *Explore Maps* page

The new *Map* will open in a *Map Viewer* like the one in the picture below.

In the upper left corner the  button opens the *Table of Contents (TOC)* of the *Map*. It allows to manage all the layers associated with the map and to add new ones from the *Catalog*.

The *TOC* component makes possible to manage layers overlap on the map by shifting their relative positions in the list (drag and drop them up or down in the list).

It also allows to hide/show layers (  and  ), to zoom to layers extents (  ) and to manage their properties (  ).

Once the map layers have been settled it is possible to save the *Map* by clicking on  and choosing *Save as*.

If you followed the steps above, you have just created your first *Map*. Now you should see it in the *Explore Maps* page, see [Map Information](#) for further details.

We will take a closer look at the *Map Viewer* tools in the [Exploring Maps](#) section.

### 1.13.2 Map Information

As mentioned in the [Maps](#) section, in GeoNode you can see your maps and all the published maps through the *Explore Maps* link of the navigation bar.



The screenshot shows the GeoNode web interface. At the top is a dark navigation bar with the GeoNode logo, menu items (Data, Maps, About), a search bar, and a user profile for John Smith. Below the navigation bar, the page title 'waterways' is displayed. The main content area features a map of Amsterdam with waterways highlighted in blue. To the right of the map is a sidebar with several buttons: 'Download Layer', 'Metadata Detail', 'Editing Tools', 'View Layer', and 'Download Metadata'. Below these buttons is a 'Legend' section showing 'Waterways SLD' and a 'Rule Title'. Further down is a 'Maps using this layer' section stating 'This layer is not currently used in any maps.' Below that is a 'Create a map using this layer' section with a text description and a blue button labeled 'Create a Map', which is circled in red. At the bottom of the sidebar is a 'Styles' section. On the left side of the map, there is a metadata panel with fields for Title, License, Abstract, Publication Date, Type, Keywords, Regions, and Owner. The 'Create a Map' button is the primary focus of this image.

Abb. 134: The Create Map button

The screenshot shows the 'Explore Maps' page on GeoNode. The top navigation bar is identical to the previous image. Below the navigation bar, the page title 'Explore Maps' is displayed. On the right side, there is a blue button labeled 'Create a New Map', which is circled in red. Below the navigation bar, the page content shows '0 Maps found' and 'No content created yet.' On the left side, there is a sidebar with a 'Selected Maps' section, a 'Set permissions' button, and a 'Filters' section with a 'Clear' button. The 'Filters' section shows a dropdown menu with 'TEXT' selected. At the bottom right, there is a pagination bar showing 'page 1 of 1'.

Abb. 135: The Create New Map button

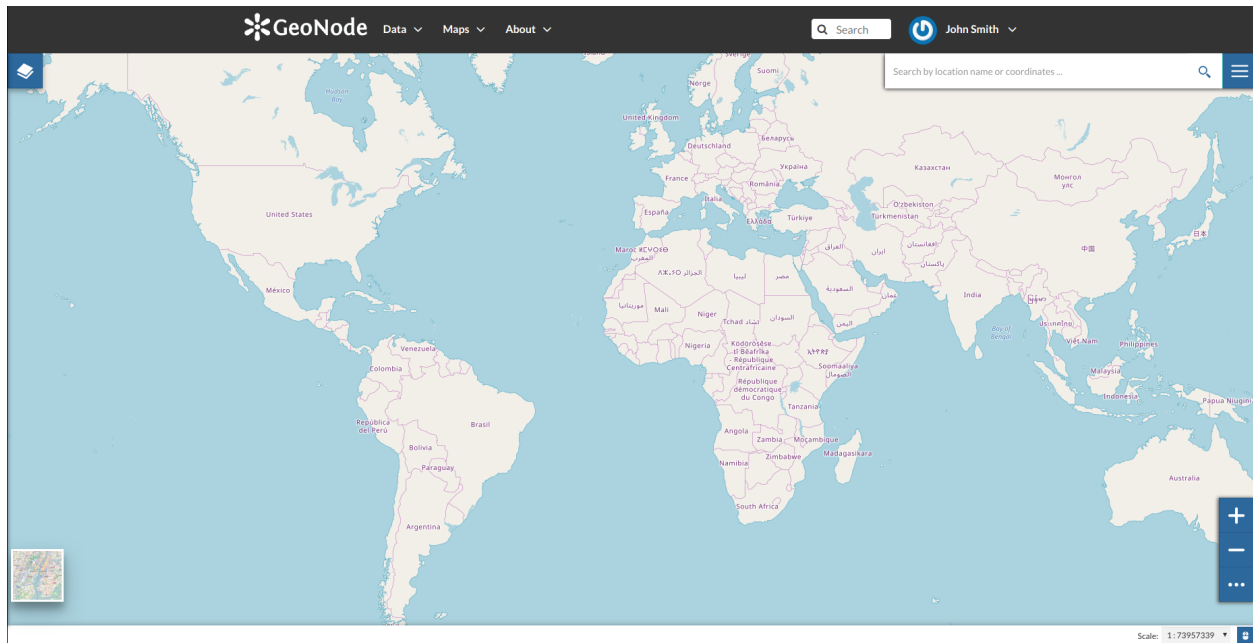


Abb. 136: *The Map Viewer*

Abb. 137: *Creating new Maps*

Click on the title of the *Map* you are interested in to open its *Information* page, it should look like the following.

The *Map Page* is divided into three main sections:

1. the *Map Preview* section, under the title
2. the *Tabs* section, under the layer preview
3. the *Tools* section, on the right side of the page

## Map Preview

The *Map Preview* shows the *Map* with very basic functionalities:


- the *Base Map Switcher* that allows you to change the base map;
- the *Zoom in/out* tool to enlarge and decrease the view;
- the *Zoom to max extent* tool for the zoom to fit the layers extents;
- the *Query Objects* tool to retrieve information about the map objects by clicking on the map;
- the *Print* tool to print the preview.


See the [MapStore Documentation](#) to learn more.

## Tabs Sections


The *Map Information* page shows you some tabs sections containing different information about the map:




[Data](#)
[Maps](#)
[About](#)

 John Smith

## My New Map



[Download Map](#)
[Metadata Detail](#)
[Editing Tools](#)
[View Map](#)

### Map Layers

This map uses the following layers:

- epi:epi-environmental-performance-index-2010\_biodiversity-and-habitat
- US\_MSR
- San Francisco Landuse OSM

### Permissions

Specify which users can view or modify this map

[Change Permissions of this Map](#)

### Copy this map

Duplicate this map and modify it for your own purposes

[Create a New Map](#)

### Map WMS


WMS layer group for local map layers:  
(on local OWS)

Publish local map layers as WMS layer group


[Publish Map WMS](#)

### About

Owner, Point of Contact, Metadata Author

 johnsmith  
John Smith Foundation

[Info](#)
[Share](#)
[Ratings](#)
[Comments](#)
[Favorite](#)

**Title** My New Map  
**License** Not Specified   
**Publication Date** June 12, 2019, 8:17 a.m.  
**Regions** Global , Africa , Central Africa , West Africa , Pacific , Kiribati  
**Owner** johnsmith

[More info](#) -


 Map layers WMS GetCapabilities document

Abb. 138: The Map Information page

Abb. 139: Map Preview

- The tab *Info* is active by default. This tab section shows some metadata such as its Title, the License, the Publication Date etc. The metadata also indicates the map owner and which regions are involved. The Map Layers WMS GetCapabilities document link is also provided.

The screenshot shows the 'Info' tab selected in a navigation bar with options: Info, Share, Ratings, Comments, and Favorite. Below the navigation bar, the map metadata is displayed in a table-like format:

<b>Title</b>	My New Map
<b>License</b>	Not Specified ⓘ
<b>Publication Date</b>	June 12, 2019, 8:17 a.m.
<b>Regions</b>	Global , Africa , Central Africa , West Africa , Pacific , Kiribati
<b>Owner</b>	johnsmith
<b>More info</b>	-
<b>Language</b>	English
<b>Supplemental Information</b>	No information provided

Below the metadata, there is a link with a document icon: [Map layers WMS GetCapabilities document](#).

Abb. 140: *Maps Info tab*

- The *Share* tab provides the links for the map to share through social media or email.

The screenshot shows the navigation bar with the 'Share' tab selected. The other tabs are Info, Ratings, Comments, and Favorite.

## Share This Map

- [Email](#)
- [Facebook](#)
- [Twitter](#)
- [Google +](#)

Abb. 141: *Map Sharing*

- You can *Rate* the map through the *Rating system*.
- In the *Comments* tab section you can post your comment. Click on *Add Comment*, insert your comment and click *Submit Comment* to post it.

Your comment will be added next to the last already existing comment. If you want to remove it click on the red *Delete* button.

- If you want this map in your *Favorites* (see [Updating the Profile](#)), open the *Favorite* tab and click on *Add to Favorites*.

---

[Info](#) [Share](#) [★ Ratings](#) [Comments](#) [★ Favorite](#)

---

## Rate this Map

☹️ ⭐⭐⭐⭐⭐

## Average Rating

⭐⭐⭐⭐⭐ (1)


Abb. 142: Map Rating

---

[Info](#) [Share](#) [★ Ratings](#) [Comments](#) [★ Favorite](#)

---

## Comments (1 total)

 Great Map!  
By johnsmith on Jun 12, 2019

Delete

Add Comment

Abb. 143: Map Comments

---

[Info](#) [Share](#) [★ Ratings](#) [Comments](#) [★ Favorite](#)

---

## Favorite

Add to Favorites

Go to Favorites

Abb. 144: Your Favorite Maps

## Map Tools

In the right side of the *Map Information* page there are some tools that can help you to manage your maps. In this paragraph you will learn how to discover and retrieve information about maps.

The following is a list of actions you can take in order to accomplish this task:

- click the *Download Map* button, to download the map as image;
- click the *Metadata Detail* button to see the map metadata, see [Maps Metadata](#);
- click the *Editing Tools* button to access to many editing tools. Those functionalities will be explained in the [Exploring Maps](#) section;
- click the *View Map* button to open the map, see the [Exploring Maps](#) section for more details;
- see the *Map Layers* section to know which layers are used by the map (you can open the *Layer Page* by clicking on its name, available only for local layers);
- click the *Create a Map* button of the *Copy this map* section to duplicate the map;
- click the *Publish Map WMS* of the *Map WMS* section to publish local map layers as WMS layer group;
- see the *About* section to know the map *Owner*, the *Contact* user and the *Metadata Author*.

### 1.13.3 Maps Metadata

*Maps Metadata* can be explored by clicking the *Metadata Detail* button from the *Map Information* page.

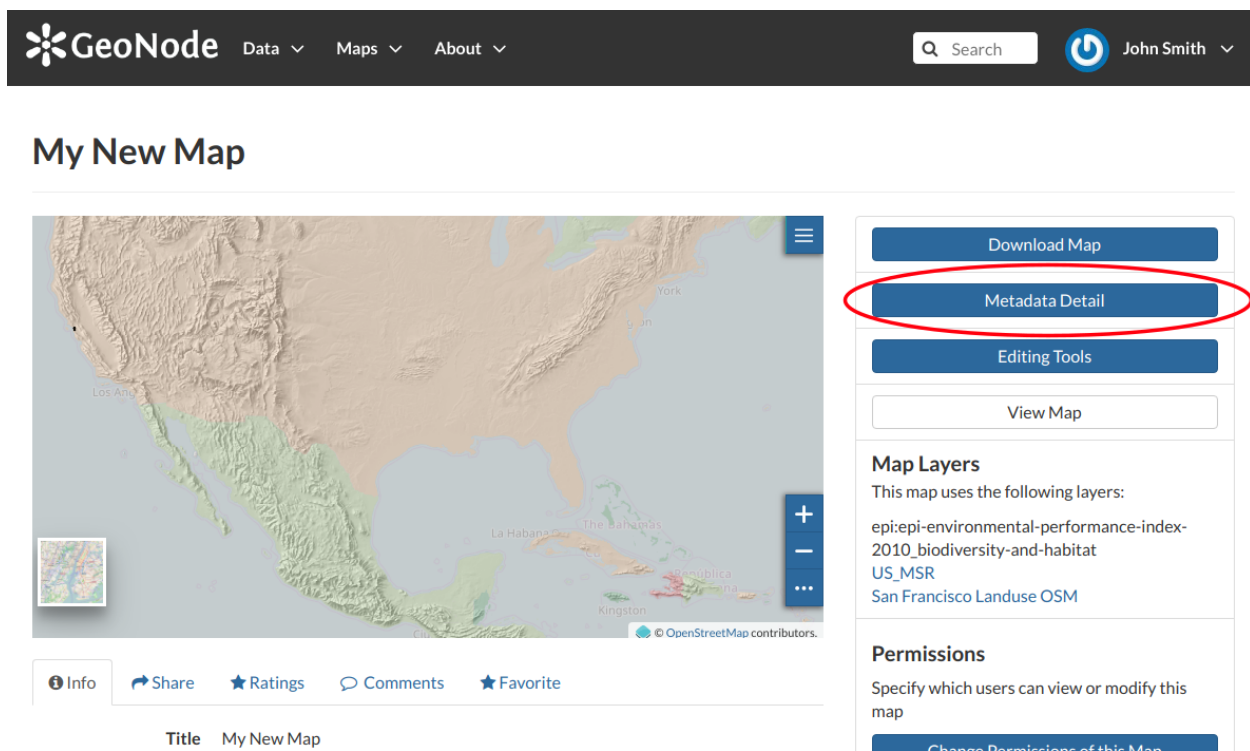



Abb. 145: The Map Metadata Detail button

The *Map Metadata* page will open.

## Metadata : My New Map

[Return to Map](#)

### Identification

<b>Title</b>	My New Map
<b>License</b>	Not Specified 
<b>Publication Date</b>	June 12, 2019, 8:17 a.m.
<b>Regions</b>	Global, Africa, Central Africa, West Africa, Pacific, Kiribati
<b>Approved</b>	Yes
<b>Published</b>	Yes
<b>Featured</b>	No

### Owner

<b>Name</b>	John Smith (johnsmith)
<b>email</b>	john.smith@mail.com
<b>Position</b>	CEO and Founder
<b>Organization</b>	John Smith Foundation
<b>Location</b>	John Smith Avenue 12345 John Smith City John Smith District ZAF
<b>Voice</b>	123456789
<b>Fax</b>	987654321

### Information

#### Identification Image



<b>Spatial Extent</b>	---
<b>Projection System</b>	EPSG:3857
<b>Extension x0</b>	-20037397.023299999535084
<b>Extension x1</b>	666726.142827000003308
<b>Extension y0</b>	-5787726.067250000312924
<b>Extension y1</b>	20037397.023299999535084

### Features

<b>Language</b>	English
<b>Supplemental Information</b>	No information provided

### Contact Points

<b>Name</b>	John Smith (johnsmith)
<b>email</b>	john.smith@mail.com
<b>Position</b>	CEO and Founder
<b>Organization</b>	John Smith Foundation
<b>Location</b>	John Smith Avenue 12345 John Smith City John Smith District ZAF
<b>Voice</b>	123456789
<b>Fax</b>	987654321

### References

<b>Link Online</b>	<a href="/maps/47">/maps/47</a>
<b>Metadata Page</b>	<a href="/maps/47/metadata_detail">/maps/47/metadata_detail</a>

### Metadata Author

<b>Name</b>	John Smith (johnsmith)
<b>email</b>	john.smith@mail.com
<b>Position</b>	CEO and Founder
<b>Organization</b>	John Smith Foundation
<b>Location</b>	John Smith Avenue 12345 John Smith City John Smith District ZAF
<b>Voice</b>	123456789
<b>Fax</b>	987654321

Lots of information are displayed in this page. Those information are grouped as follow:

- *Identification* to uniquely identify the map (Title, License, Publication Date and Regions. There are also some flags which tell you the state of the map, in particular if it is Approved and/or Published);
- the map *Owner*;
- *Information*, the Identification Image, the Spatial Extent, the Projection System and the Extent;
- *Features*, Language, Supplemental and other Information;
- *Contact Points*, the available user to get in contact;
- *References*, links to the map and its metadata;
- *Metadata Author*, information about the author of the metadata.

## Metadata Wizard

Metadata provide essential information for the identification and the comprehension of the map. They also make the map more easily retrievable through the search tools.

Those *Metadata* can be filled out through a three-steps *Wizard* in which you have to provide all mandatory information to complete the process. Those three steps are described below.

- *Basic Metadata*

The screenshot shows the 'Metadata for My New Map' wizard in the GeoNode interface. At the top, the GeoNode logo and navigation links (Data, Maps, About) are visible, along with a search bar and a user profile for John Smith. A 'Completeness' bar indicates 50% completion, with a note to 'Check Schema mandatory fields'. The wizard is divided into three steps: 1. Basic Metadata, 2. Location and Licenses, and 3. Optional Metadata. Step 1 is currently active. It includes a 'Thumbnail' section with a placeholder image and an 'Edit' button. The 'Title' field is filled with 'My New Map'. The 'Abstract' field is empty. The 'Date type' is set to 'Publication' and the 'Date' is '2019-06-12 08:'. The 'Category' and 'Group' fields are empty. At the bottom right, there are 'Update' and 'Next >>' buttons.

Abb. 147: Basic Map Metadata

In the first step the system asks you to insert the following metadata (required fields are highlighted with red outlines):

- The *Thumbnail* of the map (click *Edit* to change it);
- The *Title* of the map, which should be clear and understandable;
- An *Abstract*;
- The *Creation/Publication/Revision Dates* which define the time period that is covered by the map;
- The *Keywords*, which should be chosen within the available list;
- The *Category* which the map belongs to;
- The *Group* which the map is linked to.

Click *Next >>* to go to the next step.

- *Location and Licenses*

**GeoNode** Data Maps About Search John Smith

## Metadata for My New Map

Completeness: Check Schema mandatory fields 83%

Edit Settings

Mandatory Mandatory Optional

1 Basic Metadata 2 Location and Licenses 3 Optional Metadata

**Basic Metadata**

Language: English

License: Open Data Commons Open Database License

**Location and Licenses**

Regions: Global, Pacific, Americas, United States of America [North America]

Data quality statement

**Optional Metadata**

Restrictions

Restrictions other

<< Back Update Next >>

Abb. 148: *Location and Licenses Metadata for Maps*

The following list shows what kinds of metadata you are required to enter (see also the picture below):

- The *Language* of the layer;
- The *License* of the dataset;
- The *Regions* covered by the layers extent. Proposed extents cover the following scales: global, continental, regional, national;

- The *Data Quality statement* (general explanation of the data producer’s knowledge about the lineage of a dataset);
- Potential *Restrictions* on layer sharing.

No further mandatory metadata are required in the next step so, once the required fields have been filled out, a green *Done* button will be visible in the screen. Click *Next >>* to go to the next step or *<< Back* to go back to the previous step.

- *Optional Metadata*

**GeoNode** Data ▾ Maps ▾ About ▾ Search John Smith ▾

## Metadata for My New Map

**Completeness**  
 ✓ Metadata Schema mandatory fields completed  
 100%

[Edit](#) [Settings](#) [Done!](#)

**1 Basic Metadata** **2 Location and Licenses** **3 Optional Metadata**

Other, Optional, Metadata

**Edition**

**Purpose**

**Supplemental information**  
 No information provided

**temporal extent start** **temporal extent end**

**Maintenance frequency**

**Spatial representation type**

**Responsible Parties**

**Point of Contact**  
 johnsmith

**Owner and Permissions**

**Owner**  
 johnsmith  
 Metadata Author  
 johnsmith

[<< Back](#) [Update](#)

Abb. 149: *Optional Map Metadata*

Complementary information are:

- The *Edition* of the map;
- The *Purpose* of the map and its objectives;
- Any *Supplemental information* that can provide a better understanding of the map;
- The *Maintenance frequency* of the map;
- The *Spatial representation type*, the method used to represent geographic information in the dataset;
- The users who are *Responsible* for the layer, its *Owner*, and the *Author* of its metadata;

If you miss some mandatory metadata the *Completeness* bar shows you a red message like the one in the picture below.



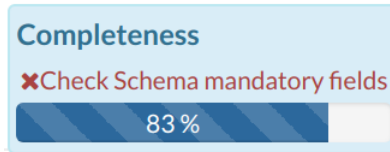


Abb. 150: Completeness Progress Bar

## Metadata Advanced Editing

The *Advanced Edit* editing tool allows to change the map metadata. You can find this button into the map *Editing Tools*.

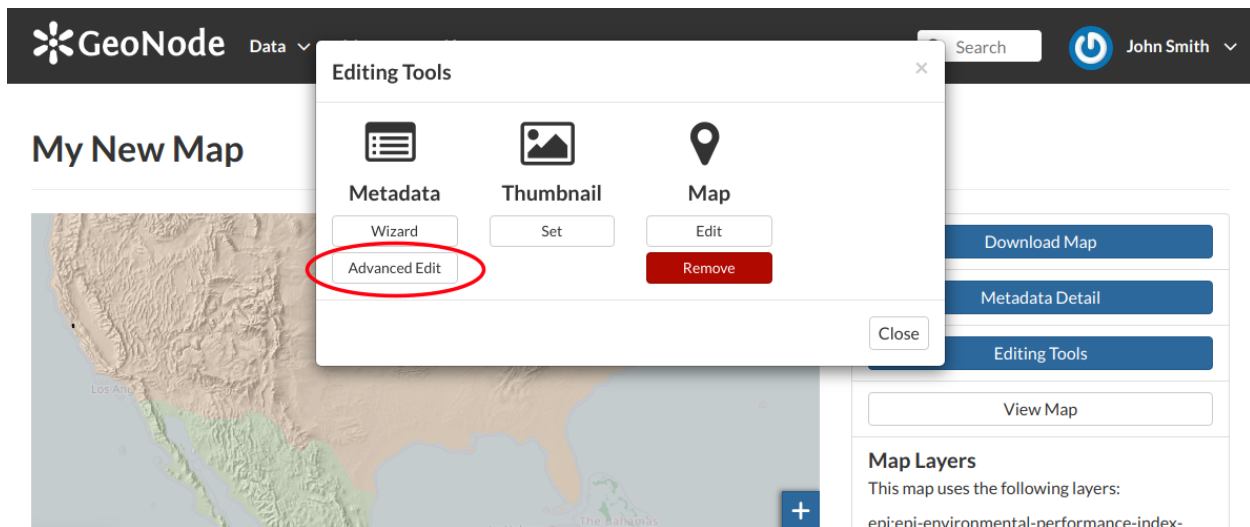


Abb. 151: The Advanced Edit button

Click on it to display the *Metadata Advanced Editing Page*. That page allows you to edit all the layer metadata described in the previous paragraph. Once you have finished to edit them click on *Update* to save your changes.

### 1.13.4 Changing the Map Permissions

In the *Map Information* section of this guide we said that you can see your maps and all the published maps. In GeoNode the permissions management system is indeed more complex. Administrators can choose who can do what for each map. Users can manage only the maps they own or the maps which they are authorize to manage.


By default only owners can edit and manage maps, anyone can view and download them.

In order to modify the *Map Permissions* settings you have to click the *Change the Layer Permissions* button in the *Map Page*.

Through the *Permissions Settings Panel* you can add or remove permissions for users and groups. The picture below shows an example.

You can set the following types of permissions:

- *View* allows to view the map;
- *Download* allows to download the map;
- *Change Metadata* allows to change the map metadata;


Data ▾
Maps ▾
About ▾

John Smith ▾


[Info](#)
[Share](#)
[Ratings](#)
[Comments](#)
[Favorite](#)

**Title** My New Map

**License** Open Data Commons Open Database License / OSM (ODbL/OSM) ⓘ

**Abstract** My Abstract

**Publication Date** June 12, 2019, 8:17 a.m.

**Keywords** [GeoTIFF](#), [US\\_MSR](#)

**Category** [Planning Cadastre](#) ⓘ

**Regions** [Global](#), [Americas](#), [United States of America](#), [Pacific](#)

**Owner** [johnsmith](#)

**Group** [Geosolutions](#)

[More info](#) -

[Download Map](#)
[Metadata Detail](#)
[Editing Tools](#)
[View Map](#)

### Map Layers

This map uses the following layers:

- [epi:epi-environmental-performance-index-2010\\_biodiversity-and-habitat](#)
- [US\\_MSR](#)
- [San Francisco Landuse OSM](#)

### Permissions

Specify which users can view or modify this map

[Change Permissions of this Map](#)

### Copy this map

Duplicate this map and modify it for your own purposes

[Create a New Map](#)

### Map WMS

Abb. 152: *Change Map Permissions*

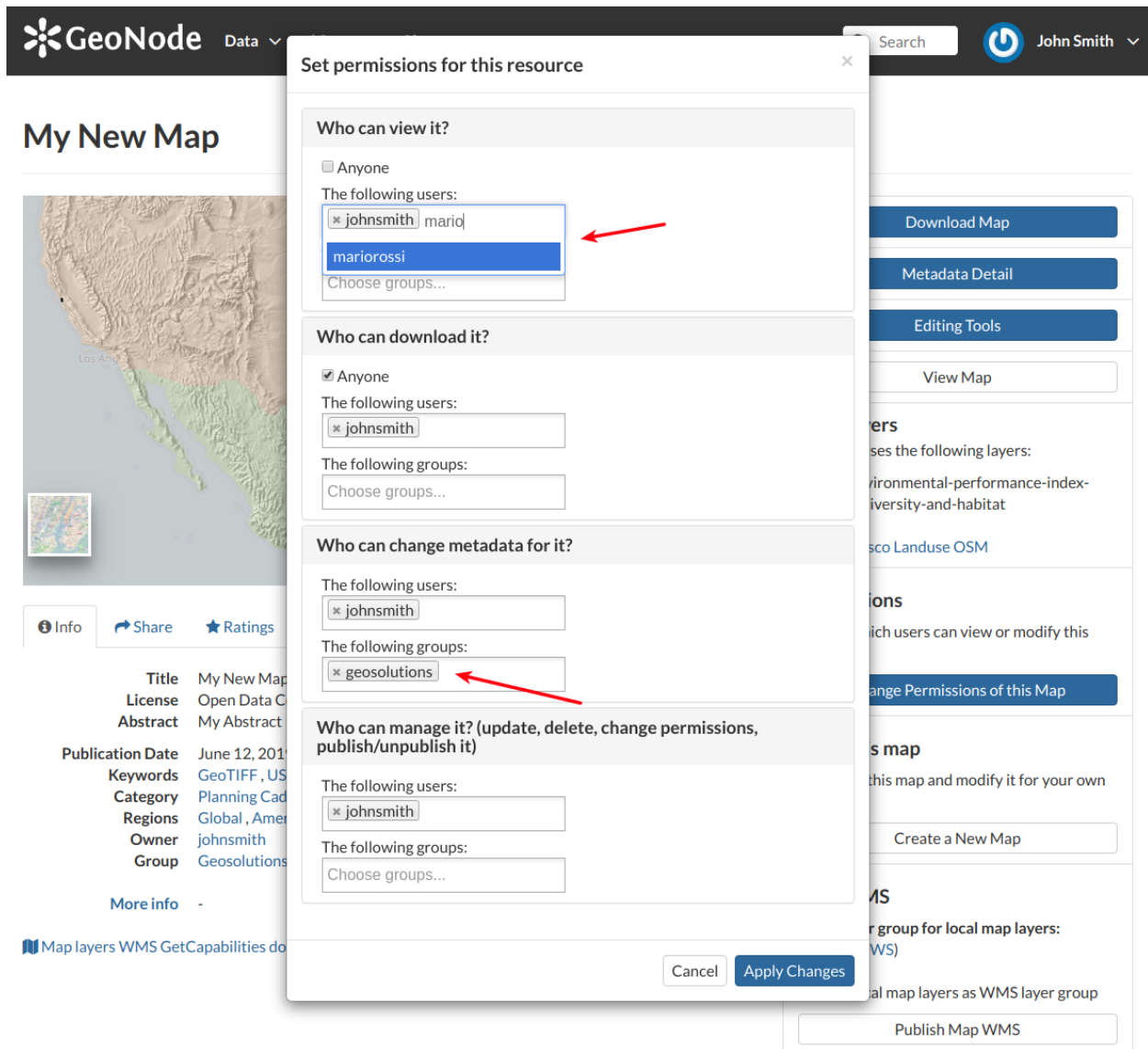


Abb. 153: Map Permissions settings for users and groups

- *Manage* allows to update, delete, change permissions, publish and unpublish the map.

**Warnung:** When assigning permissions to a group, all the group members will have those permissions. Be careful in case of editing permissions.

Click on *Apply Changes* to save these settings.

### 1.13.5 Exploring Maps

From the *Explore Maps* link of the navigation bar you can reach the *Maps List* page (see [Maps](#)). Select a map you are interested in and click on it, the *Map Page* will open.

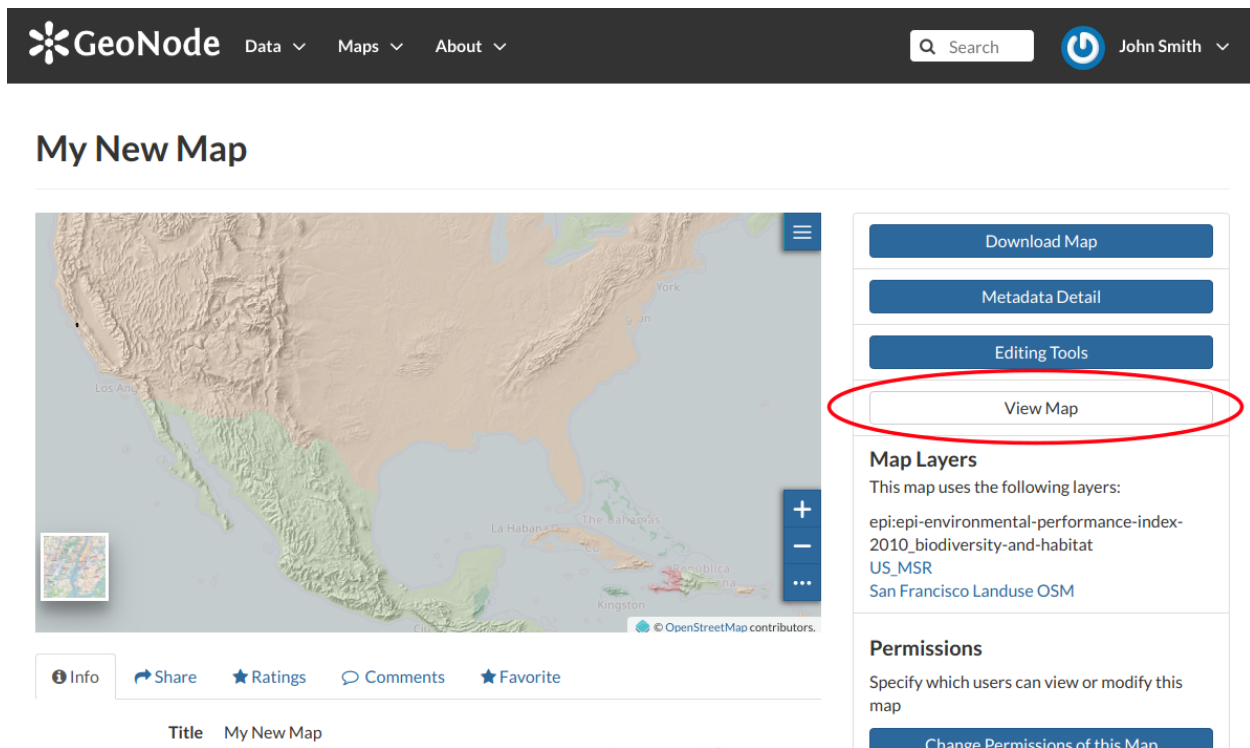
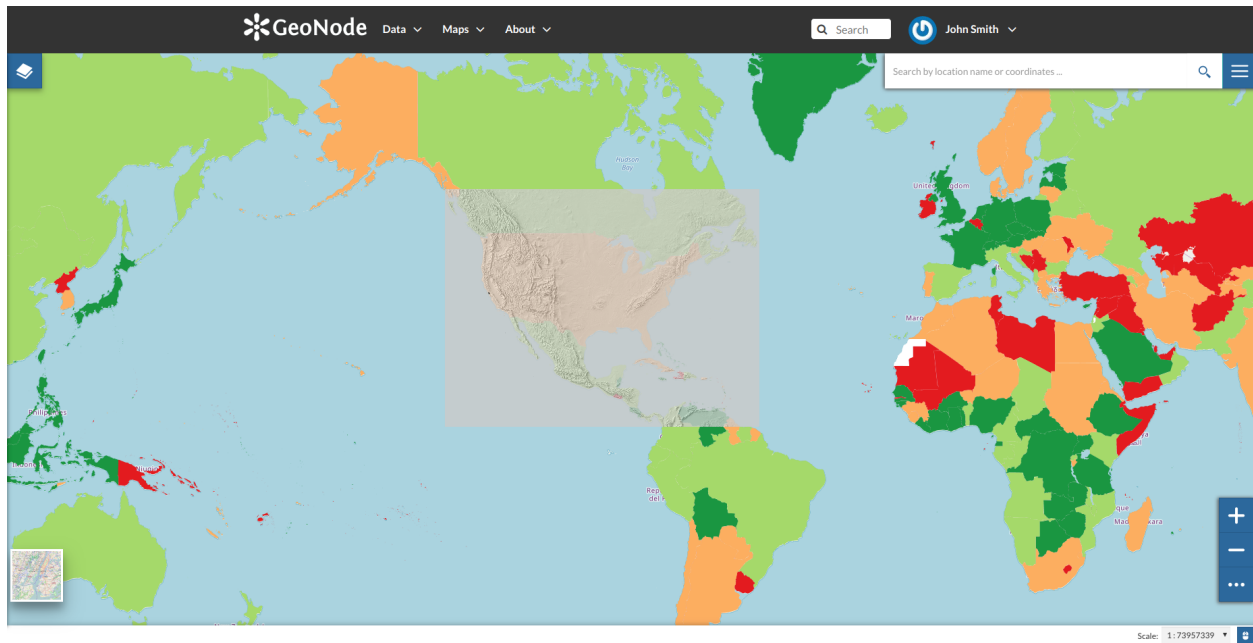


Abb. 154: The View Map button


Click on the *View Map* button to open the *Map Viewer*.

The Map Viewer (based on [MapStore](#)) provides the following tools:



- the *Table of Contents (TOC)* to manage the map contents;
- the *Basemap Switcher* to change the basemap (see the next paragraphs);
- the *Search Bar* to search by location, name and coordinates (see the paragraph below);
- the *Options Menu Tools* which contains the link to the *Print* tool, to the layers *Catalog* and to the *Measure* tool;
- the *Sidebar* and its tools such as the *Zoom* tools and the *Get Features Info* tool;
- the *Footer Tools* to manage the scale of the map, to track the mouse coordinates and change the CRS (Coordinates Reference System).

Abb. 155: *The Map View*

## Table of Contents (TOC)





In the upper left corner, click on  to open the *Table Of Contents*, briefly *TOC* from now on, of the map. The *TOC* shows all the layers involved with the *Map* and allows to manage their properties and representations on the map.

From the *TOC* you can:

- manage the layers *Overlap*;
- filter the layers list by typing text in the *Filter Layers* field;
- add new layers from the *Catalog* by clicking the *Add Layer* button;
- manage the layers properties such as *Opacity* (scroll the opacity cursor), *Visibility* (click on  to make the layer not visible, click on  to show it on map);
- manage the *Layer Settings*, see the next paragraph.

Select a *Layer* from the list and click on it, the *Layer Toolbar* should appear in the *TOC*.

The *Toolbar* shows you many buttons:

-  allows you to zoom to the layer extent;
-  drives you through the layer settings customization (see the next paragraph);
-  to explore the features of the layer and their attributes (more information at [Attributes Table](#));
-  to delete layers (click on *Delete Layer* to confirm your choice);

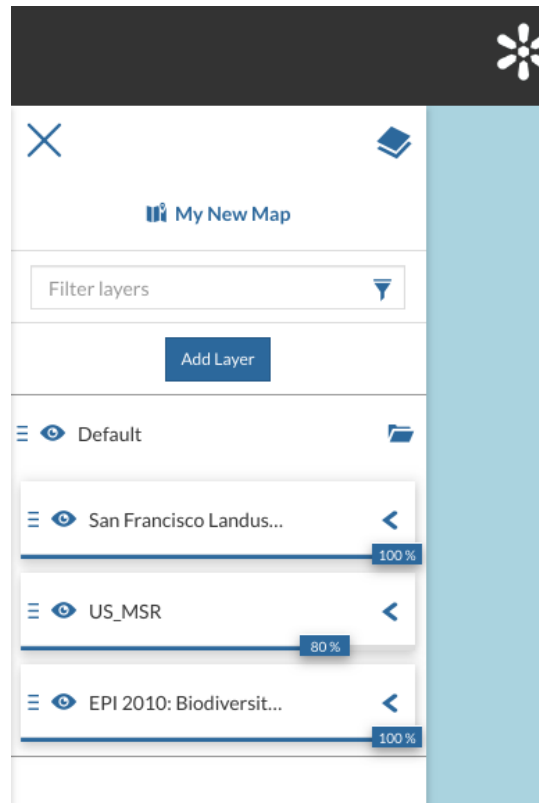
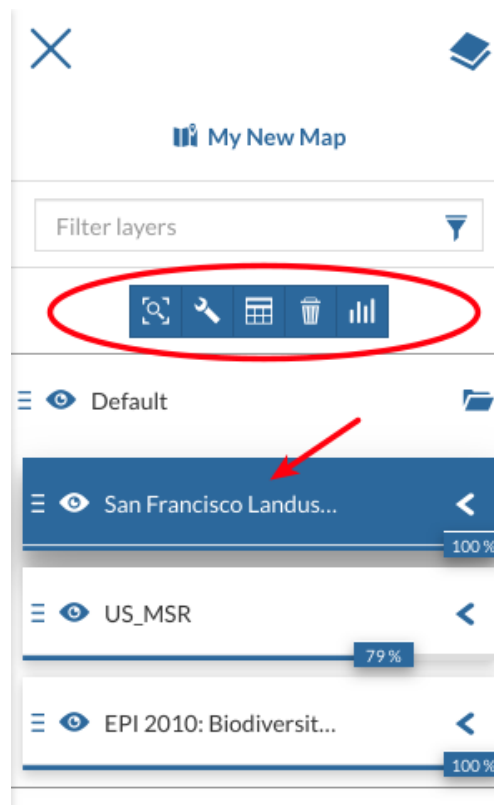
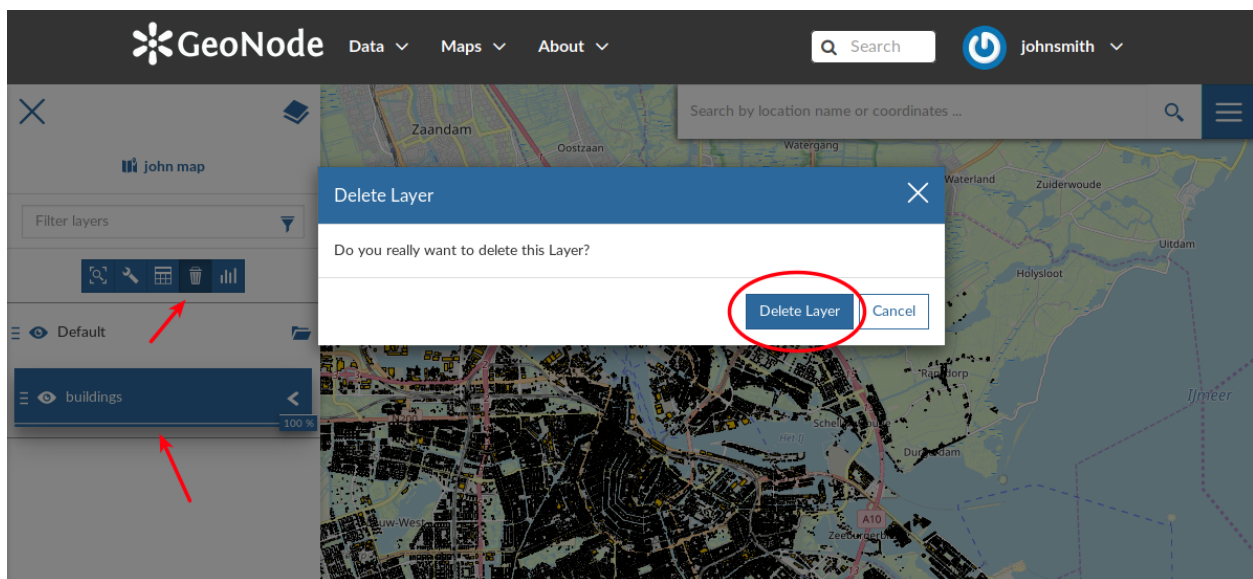



Abb. 156: *The Table Of Contents (TOC)*

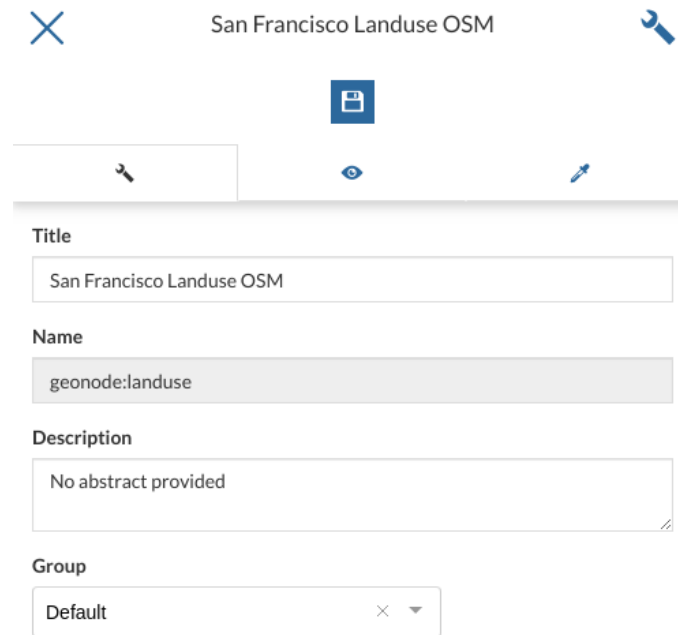
Abb. 157: *Scrolling the Layer Opacity*

Abb. 158: *The Layer Toolbar*Abb. 159: *Deleting Layers*

-  to create *Widgets* (see *Creating Widgets*).

## Managing Layer Settings

The *Layer Settings* panel looks like the one below.



The screenshot shows the 'Layer Settings' panel for a layer named 'San Francisco Landuse OSM'. At the top, there is a title bar with a close button (X), the layer name, and a settings icon (wrench). Below the title bar is a toolbar with icons for settings (wrench), visibility (eye), and editing (pencil). The main content area is divided into sections: 'Title' with a text input field containing 'San Francisco Landuse OSM'; 'Name' with a text input field containing 'geonode:landuse'; 'Description' with a text area containing 'No abstract provided'; and 'Group' with a dropdown menu showing 'Default'.

Abb. 160: *The Layer Settings Panel*

The *Layer Settings* are divided in three groups:

1. *General* settings
2. *Display* settings
3. *Style* settings

In the **General** tab of the *Settings Panel* you can customize the layer *Title*, insert a *Description* and change/create the *Layer Group*.

Click on the **Display** tab to see what are the layer appearance properties you can configure.

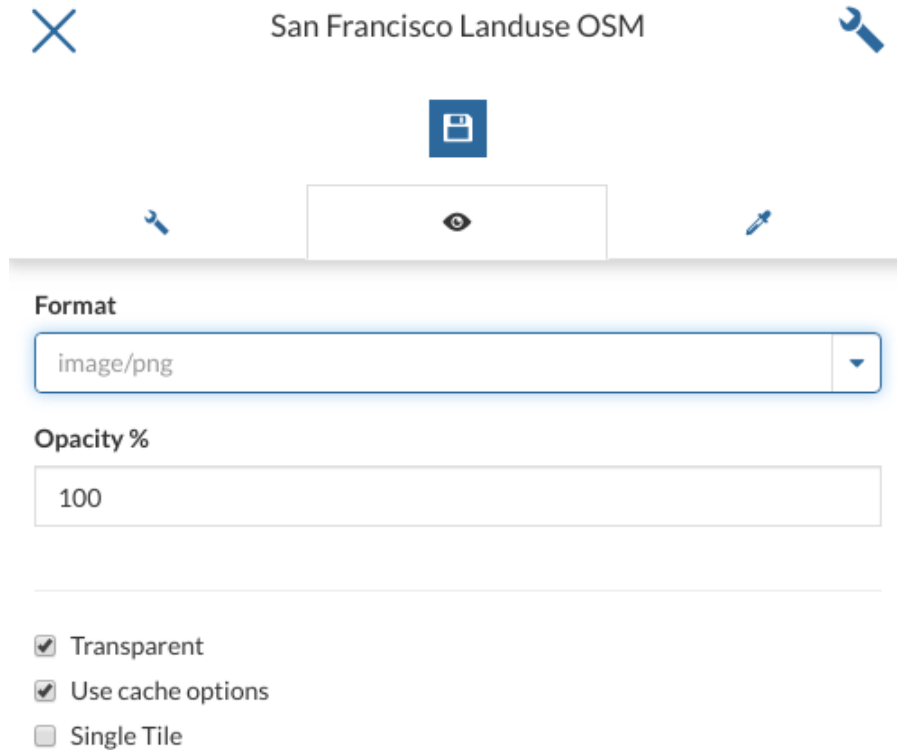
The *Format* field allows you to change the output format of the WMS requests.

You can set a numeric value of *Opacity* using the corresponding input field.


You can also set the layer as *Transparent*, decide to *Use cache options* and to use *Single Tile*.


The third tab is the **Style** one. By clicking on it, an advanced *Style Editor* allows you to create new styles and to modify or delete an existing one. See the *Layer Styling* section to read more.



Abb. 161: *The Layer Display Settings Panel*

### Attributes Table

When clicking on the  button of the *Table of Contents (TOC)*, the *Attributes Table* panel opens at the bottom of the *Map* page.

In that panel you can navigate through the features of the layer, zoom to their geometries by clicking on the  icon and explore their attributes.


The *Attribute Tables* has a row for each feature belonging to the layer and a column for each attribute that describes the feature.

Each column has a *Filter* input field through which you can filter the features basing on some value or expression (depending on the data type of the field).

The *Attributes Table* panel contains a *Toolbar* which makes you available some useful functionalities.

Those functionalities are:

- *Edit Mode*

By clicking on  you can start an editing session. It permits you to add new features, to delete or modify the existing ones, to edit geometries. See the *Editing the Layer Data* section for further information.

- *Advanced Search*

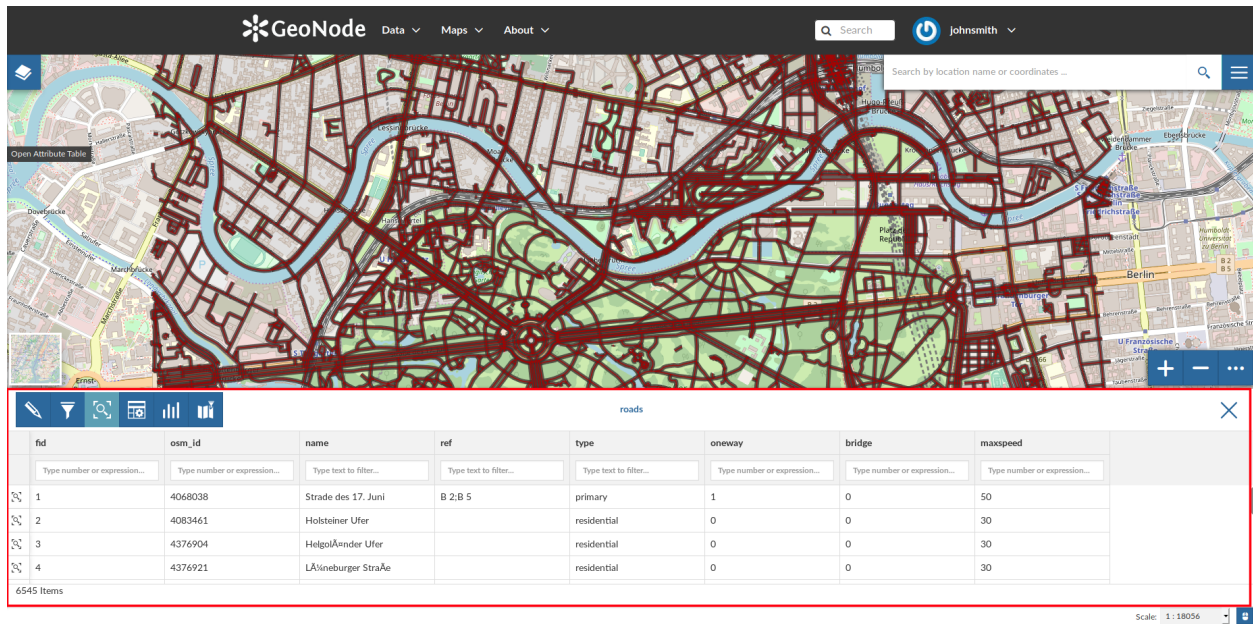


Abb. 162: The Attributes Table Panel

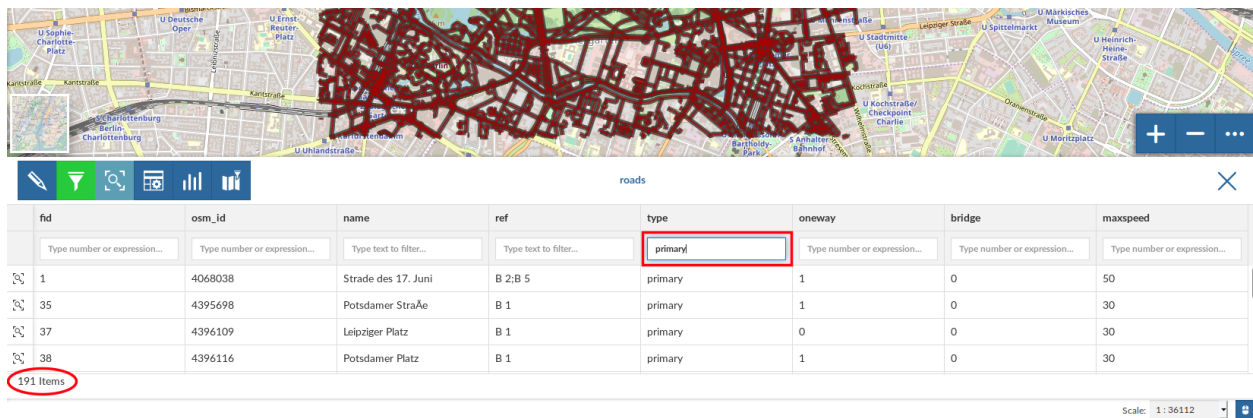


Abb. 163: Filtering Features by Attribute

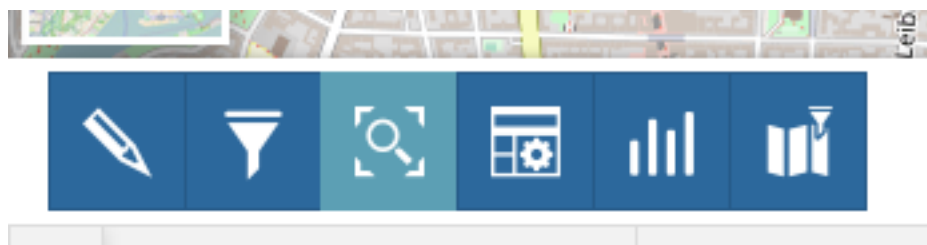




Abb. 164: The Attributes Table Toolbar

Click on , a new panel opens. That panel allows you to filter features in many different ways. This functionality will be explained in depth in the [Advanced Search](#) section.

- *Zoom to page extent*

Click on  to zoom to the page extent.

- *Hide/show columns*



When clicking on  another panel opens inside the *Attributes Table*. Through that panel you can choose what columns you want to see, see the picture below.

Abb. 165: *Hide/Show Columns of the Attributes Table*


- *Create a chart*




Through the  button you can open the *Chart Widgets* panel where many functionalities to describe and visualize the layer data are available (see [Creating Widgets](#)).

- *Sync map with filter*


Click on the  icon to synchronize the map with the filter.

## Advanced Search

As mentioned before, GeoNode allows both an attribute based and spatial filtering. When clicking on  from the layer *Attributes Table* the *Advanced Search* panel opens and shows you three different filtering functionalities:


- In the **Attribute Filter** section you can compose a series of conditions about the attributes of the layer. Click on  to insert a new empty condition. Select the attribute you are interested in, select an operator and type a comparison value. You can group conditions through the *Add Group*  button. Click on  to perform the search.




You can also decide if *All* the conditions have to be met, if only *Any* or *None* of them (see the red arrow in the picture above).


- The **Region of interest** filtering allows you to filter features that have some relationship with a spatial region that you draw on the map. Select the *Filter Type* (Circle, Viewport, Polygon or Rectangle), draw the spatial region of interest on the map, select a *Geometric Operation* (Intersects, Bounding Box, Contains or Is contained) and then click on .
- Through the **Layer Filter** you can select only those features which comply with some conditions on other layers of the map. You can also add conditions on attributes for those layers.



You can read more about the *Attributes Table* and the *Advanced Search* on the [MapStore2 Documentation](#).


## Creating Widgets

*Widgets* are graphical elements that describe the layers data. They can be of different types such as *Charts*, *Texts*, *Tables* and *Counters*. Through the  button of the *Table of Contents (TOC)* you can open the *Widgets* panel.




**Attribute Filter**


Match any of the following conditions:


**Region of interest**

Filter Type

Select...

Geometric Operation

Intersects

**Layer filter**

Target layer


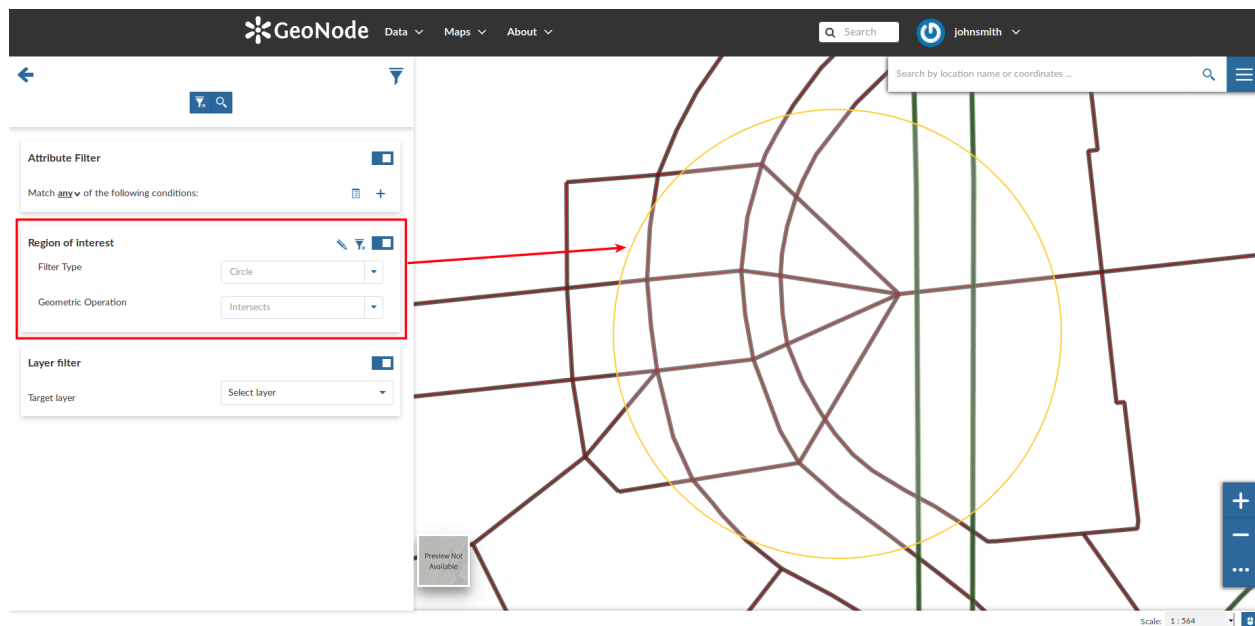
Select layer

Abb. 166: *Advanced Search*

### Attribute Filter

Match all of the following conditions:

type	=	primary
oneway	=	1
maxspeed	<	40

Abb. 167: *Filtering by Attributes*Abb. 168: *Filtering by Region Of Interest*

**Layer filter**

Target layer: railways

Operation: Intersects

Match any of the following conditions:

type = rail




Abb. 169: Layer Filtering


## Chart Widgets

*Chart Widgets* are graphical representations of the layer data. They can be *Bar Chart*, *Pie Chart* or *Line Chart* as shown in the picture below.

Let's create a new **Bar Chart**.


Click on *Bar Chart* then select the *X Attribute*, the *Y Attribute*, the *Operation* and the *Color* do you prefer. You can also display the *Legend*, *Hide the Y axis*, *Hide the grid* and decide what *Label* display into the legend.

Now you can filter the data to be considered for the chart by clicking on . We don't need any filter so click  to configure other widget options. Insert a *Title* and a *Description* and click on *Save* .

The green  icon means that the chart is connected to the viewport.

Expanding the options menu of the widget you can *Show the plotted data*, *Edit* the widget or *Delete* it, *Download* the data as a CSV file or *Export* the image of the graph.

## Text Widgets

If you select *Text* on the *Widgets* panel you can create *Text Widgets*. Add a *Title* and the desired descriptive text, then click on .

The resulting widget looks like the following.



## Widget



Select the widget type



### Chart

*add a chart*



### Text

*add a text area*



### Table

*add a table*



### Counter

*add a counter*

Abb. 170: *Creating Widgets*



Widget



## Select the Chart type



### Bar Chart

Create a bar chart to add to the map

*bar*



### Pie Chart

Create a pie chart to add to the map

*pie*



### Line Chart

Create a line chart to add to the map

*line*

Abb. 171: *Chart Widgets*

Abb. 172: *Chart Widgets Creation*



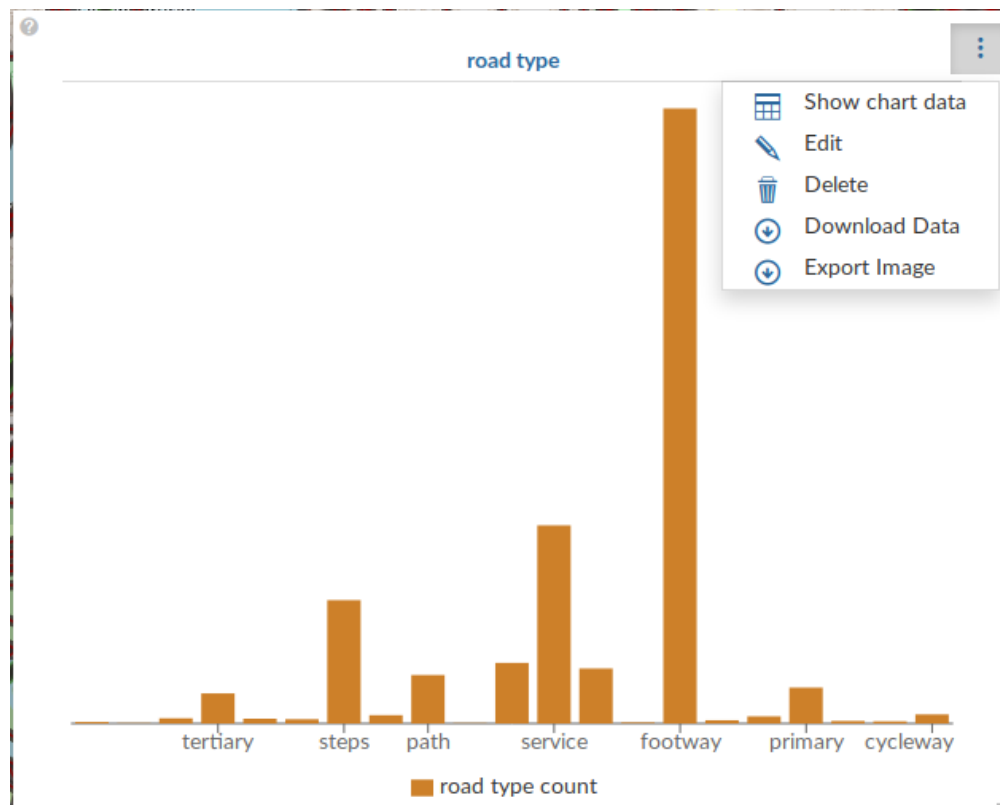


Abb. 173: Chart Widgets Options

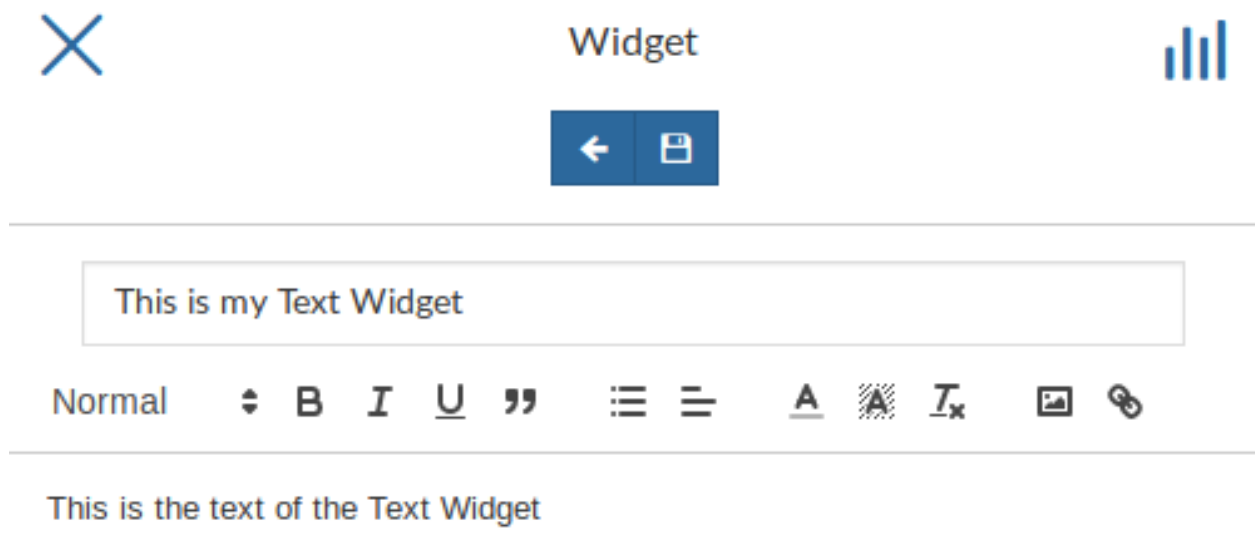


Abb. 174: Text Widgets Creation

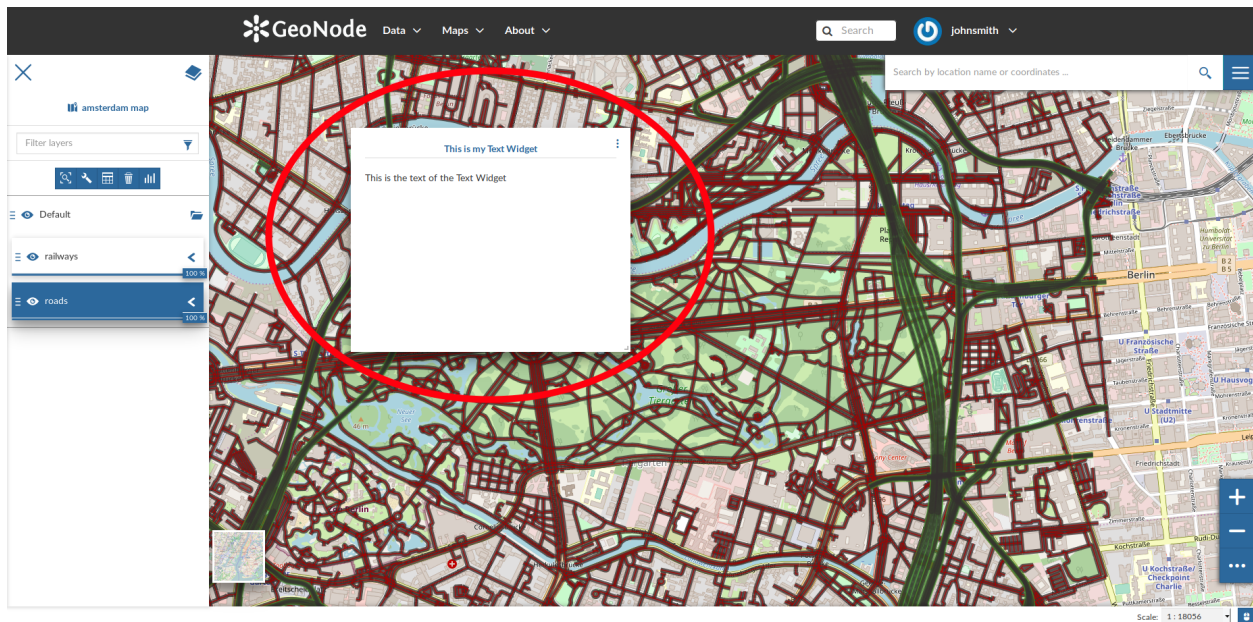



Abb. 175: My Text Widget

## Table Widgets



Through the *Table Widgets* you can add the *Attributes Table* of the layer to the map. You can decide to show a subset of the features, through filters, and you can select one or more columns/attributes.

So, choose what attributes you are interested in and click on .

Insert *Title* and *Description* (optional) and click on . The example below shows the *Table Widget* on the map.

## Counter Widgets

*Counter Widgets* are numeric representations of some attributes. For example you can represent the average speed limit on a road network.

Click on , insert *Title* and *Description* then click on .

The GeoNode map viewer is [MapStore](#) based, see the [MapStore Documentation](#) for further information.

## Timeline

GeoNode can manage layers with a *time dimension*. Those vector layer may vary their data through time so it is useful to represent that variation on the map.

The [MapStore](#) based map viewer used in Geonode makes available the **Timeline** tool which allows you to observe the layers' evolution over time, to inspect the layer configuration at a specific time instant and to view different layer configurations time by time dynamically through animations (see the [MapStore Documentation](#) for further details).

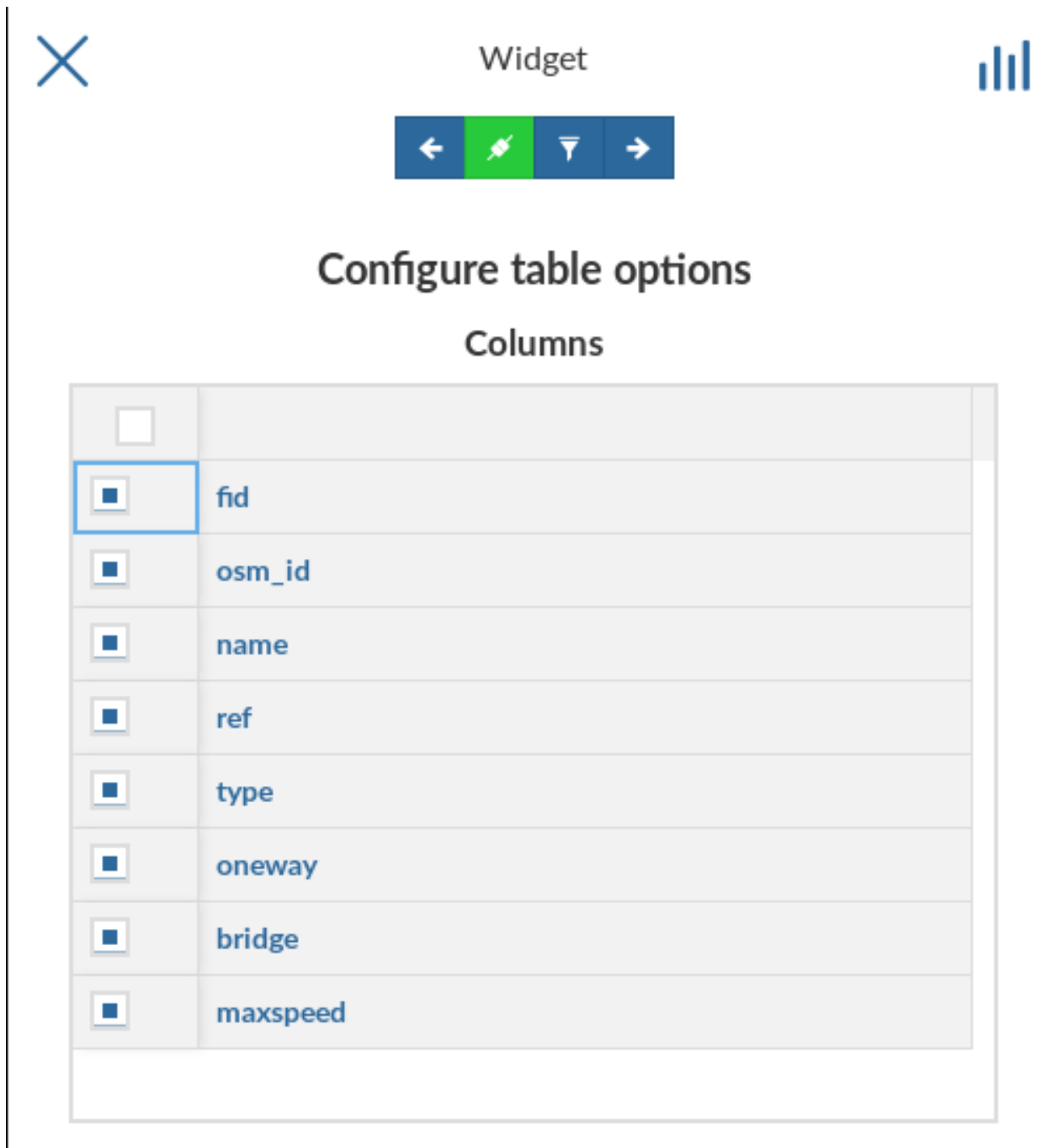


Abb. 176: Table Widgets Columns

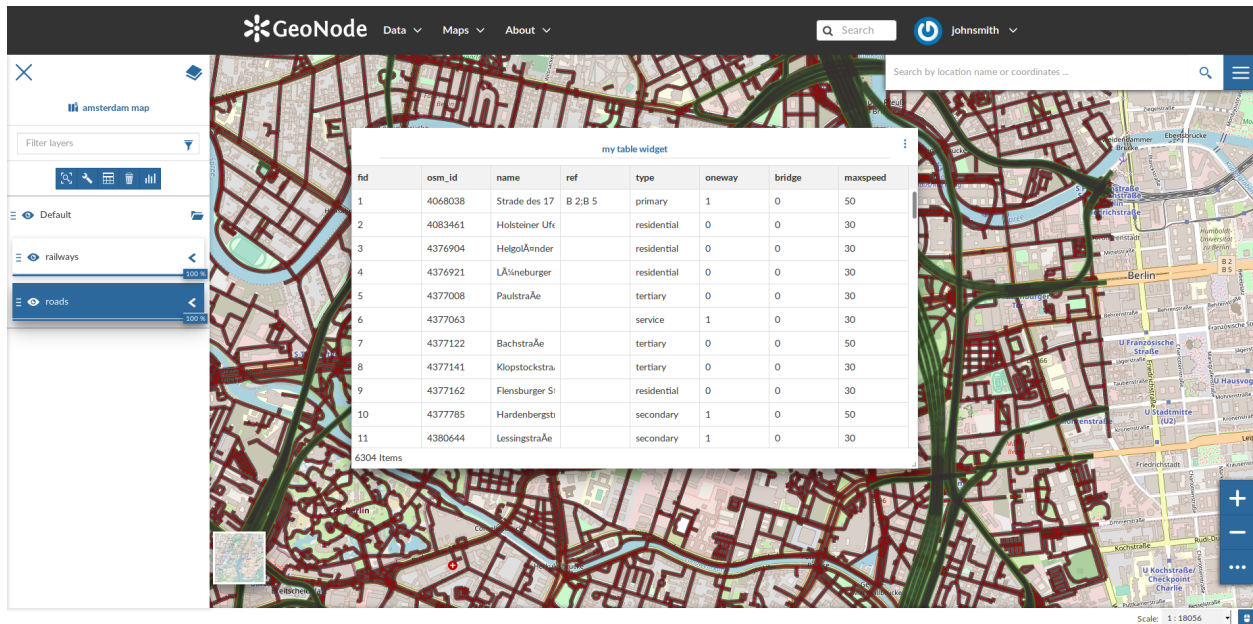


Abb. 177: Table Widget

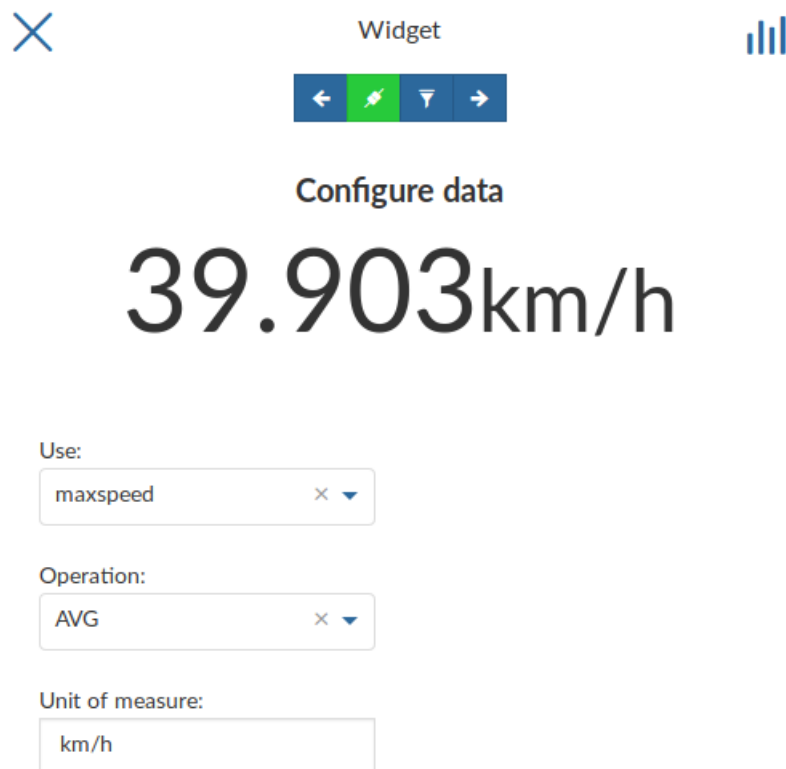


Abb. 178: Counter Widget Creation

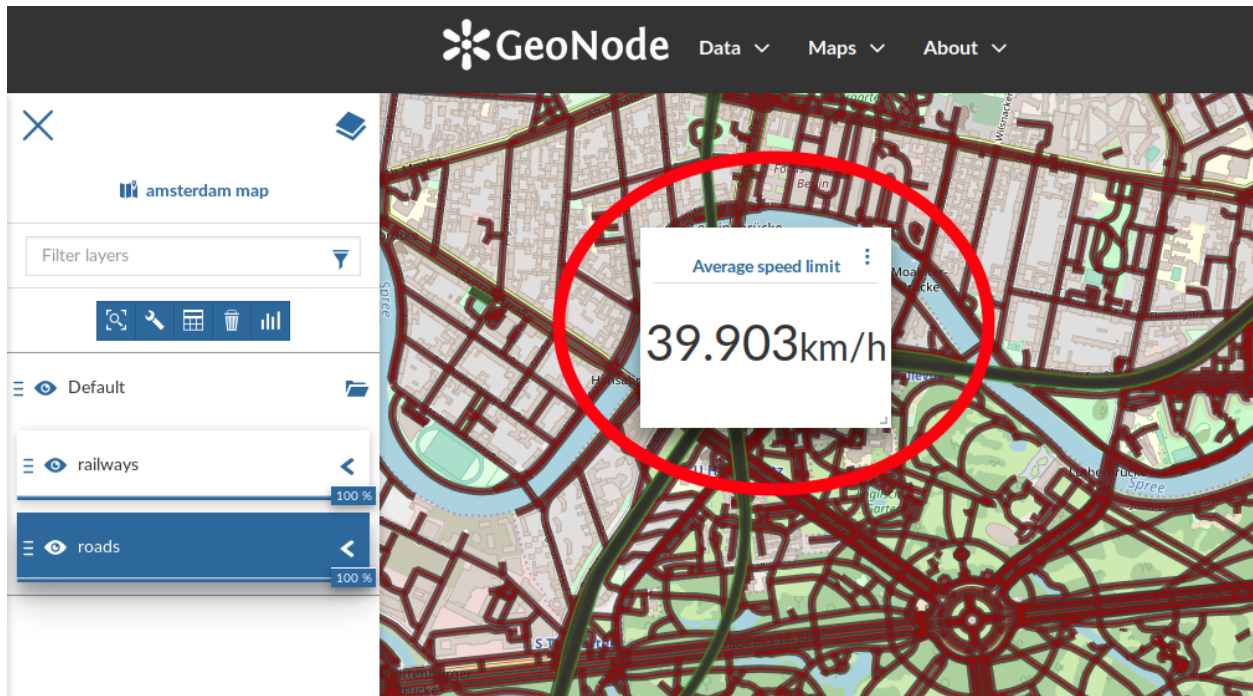




Abb. 179: Counter Widget


**Warnung:** Timeline actually works only with WMTS-Multidim extension (WMS time in capabilities is not fully supported).

When loading a temporal layer into the map, the *Timeline* opens automatically.

On the left side of the *Timeline* panel you can set the time value in which you want to observe the data. You can type it directly filling out the corresponding input fields or by using the up/down arrows.


On the other side there are the buttons responsible for managing the animations.


In particular you can *Play* the animation by clicking , go back to the previous time instant through , go forward to next time step using  and stop the animation by clicking .

The *Timeline* panel can be expanded through the  button.

The expanded section of the *Timeline* panel contains the *Time Layers List* and an *Histogram* which shows you:

- the distribution of the data over time
- the *Time Cursor*

You can show/hide the layers list by clicking  (it is active by default).

Through the *Time Range* function you can observe the data in a finite temporal interval. Click on  and set the initial and the final times to use it.

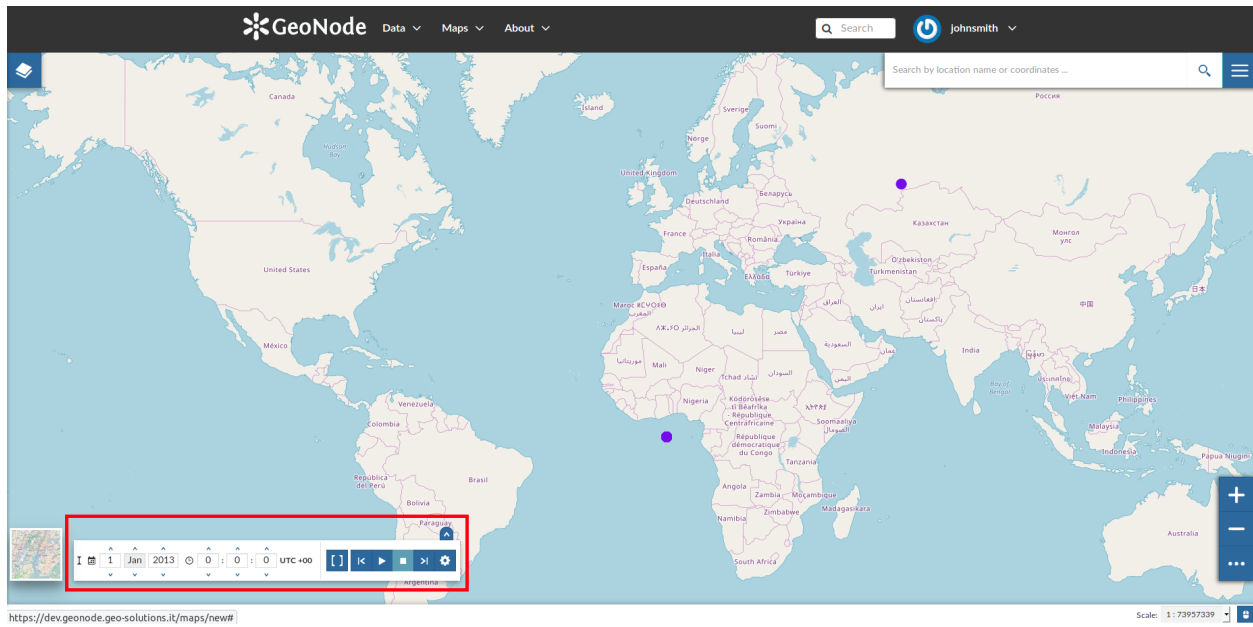


Abb. 180: *The Timeline*



Abb. 181: *The Time Control Buttons*

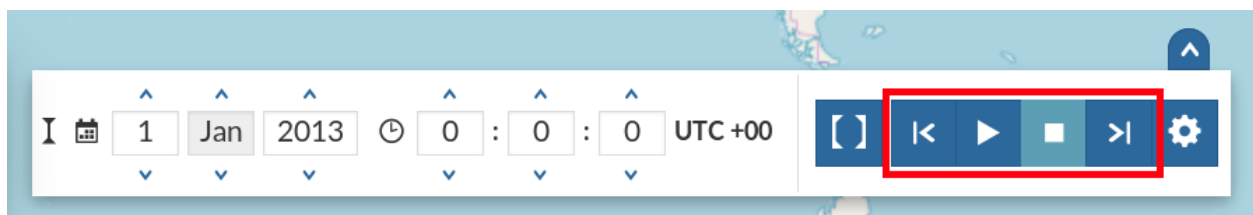
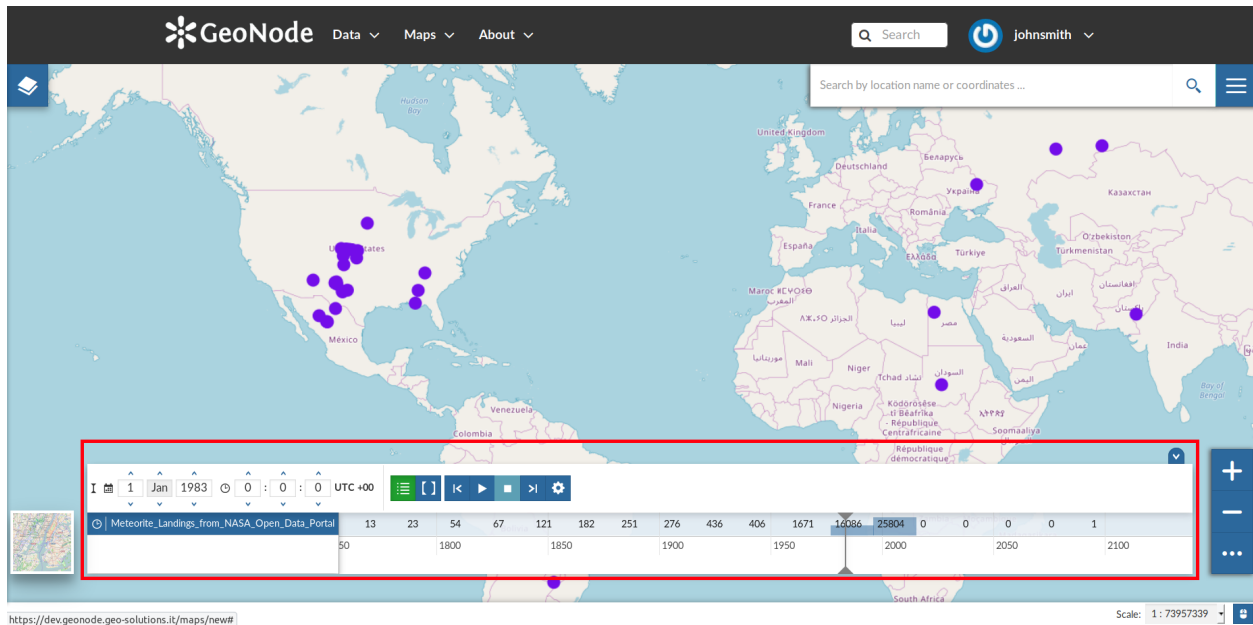
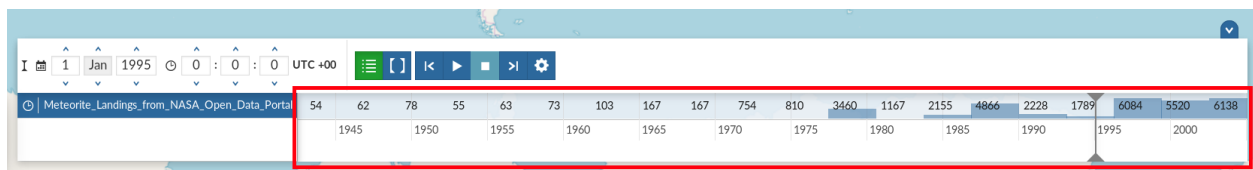
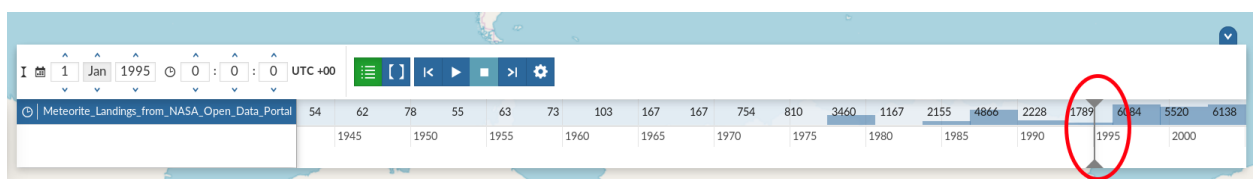
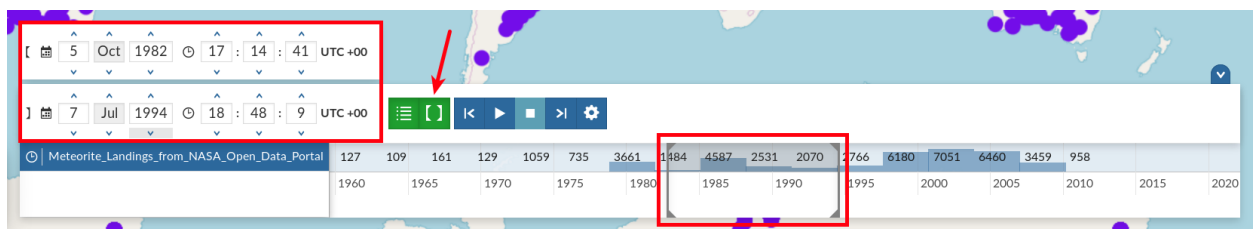



Abb. 182: *The Animation Control Buttons*




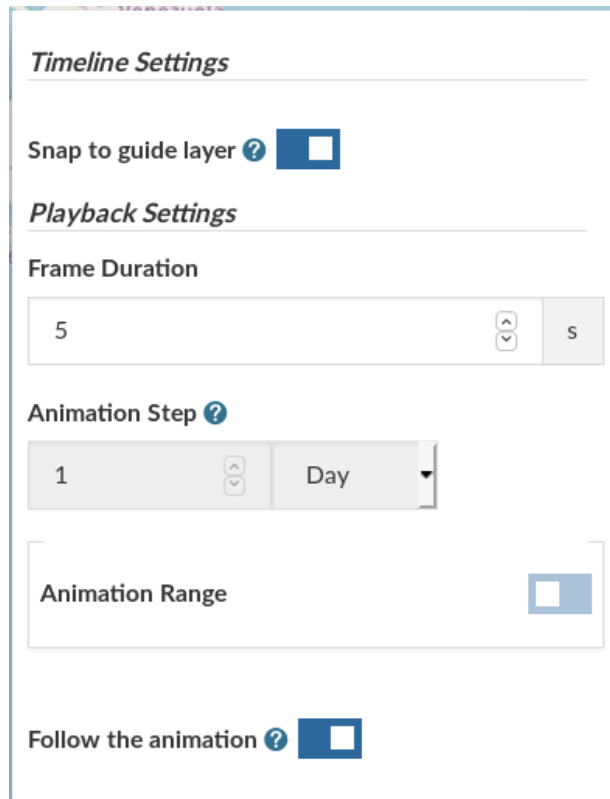
Abb. 183: *The Expanded Timeline*Abb. 184: *The Timeline Histogram*Abb. 185: *The Time Cursor*Abb. 186: *The Time Range Settings*

## Animations

The *Timeline* allows you to see the data configurations (one for each time in which the data are defined) through ordered sequences of steps.

As said before, you can play the resulting *Animation* by clicking the play button . The layer data displayed on map will change accordingly to the time reach by the cursor on the *Histogram*.

By clicking on  you can manage some *Animation Settings*.



**Timeline Settings**

Snap to guide layer ? ☐

**Playback Settings**

Frame Duration

5   s

Animation Step ?

1   Day

Animation Range ☐

Follow the animation ? ☐

Abb. 187: *The Timeline Settings*

You can activate the *Snap to guide layer* so that the time cursor will snap to the selected layer's data. You can also set up the *Frame Duration* (by default 5 seconds).


If the *Snap to guide layer* option is disabled, you can force the animation step to be a fixed value.

The *Animation Range* option lets you to define a temporal range within which the time cursor can move. See the following gif to better understand how the *Animation* works or take a look at the [MapStore Documentation](#).

Abb. 188: *The Timeline Animation*



## Options Menu Tools

At the top-right corner of the *Map* there is a *Burger Menu* button . Click on it to open the *Map Options* panel.

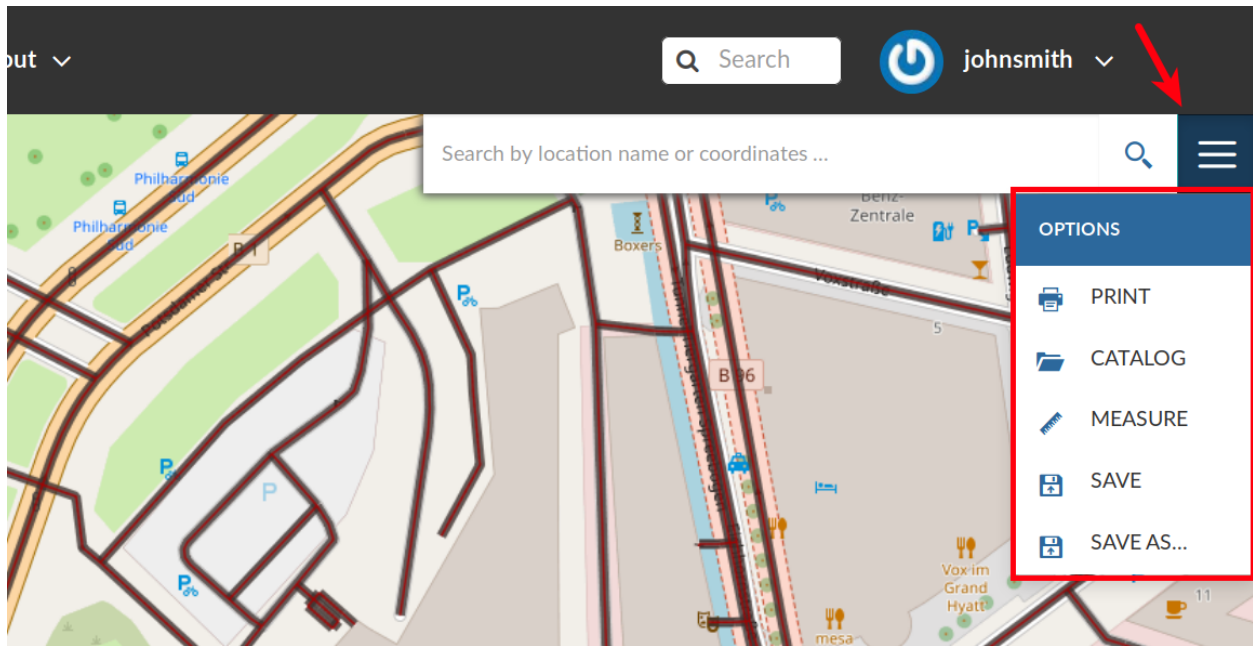


Abb. 189: *The Map Options Menu*

We will explain those tools more in depth in the next paragraphs.

## Printing a Map

The [MapStore](#) based map viewer of GeoNode allows you to print your map with a customizable layout. Click the *PRINT* option from the *Map Options Menu*, the **Printing Window** will open.

From this window you can:

- enter *Title* and *Description*;
- choose the *Resolution* in dpi;
- customize the *Layout*
  - the *Sheet size* (A3, A4);
  - if include the legend or not;
  - if to put the legend in a separate page;
  - the page *Orientation* (Landscape or Portrait);
- customize the *Legend*
  - the *Label Font*;
  - the *Font Size*;

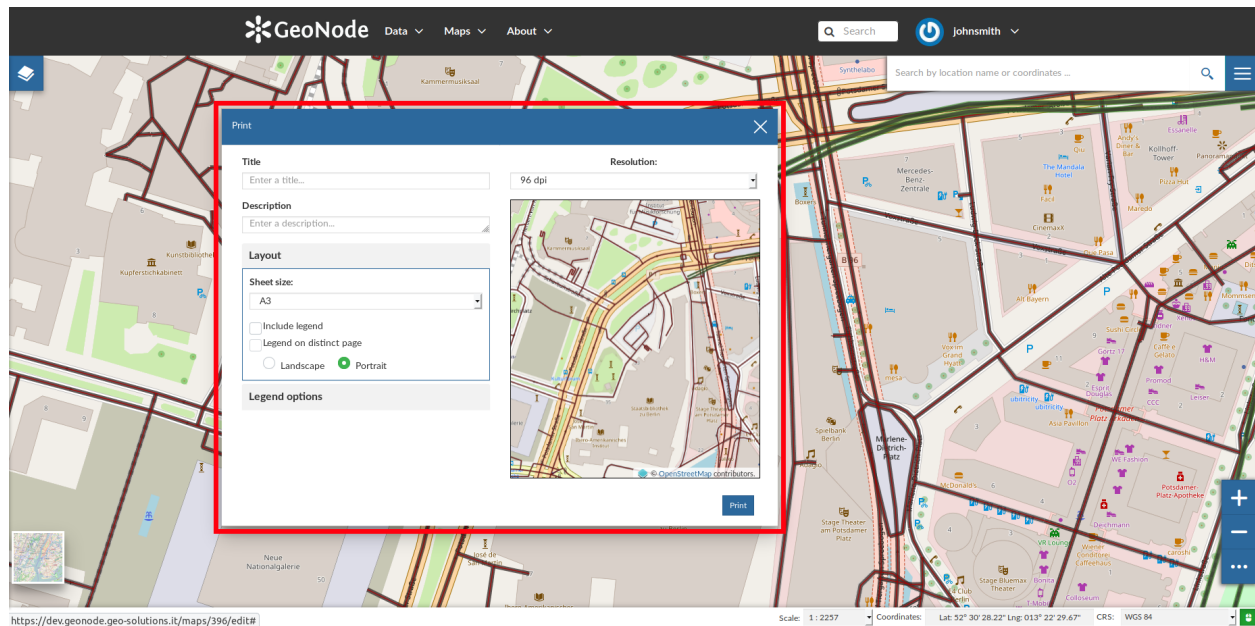


Abb. 190: The Printing Window

- the *Font Emphasis* (bold, italic);
- if *Force Labels*;
- if use *Anti Aliasing Font*;
- the *Icon Size*;
- the *Legend Resolution* in dpi.

To print the map click on *Print*.

## The Layers Catalog

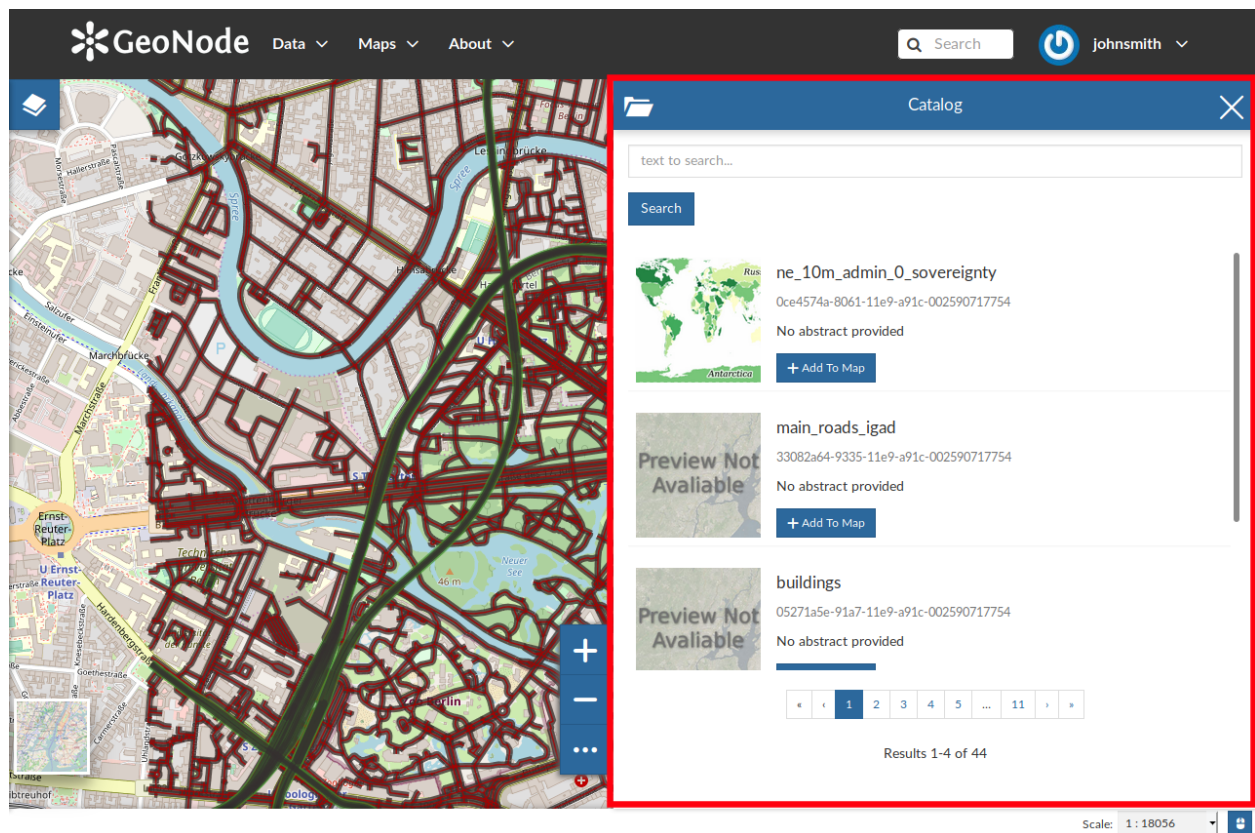
All the layers available in GeoNode, both uploaded and remote, can be loaded on the map through the *Catalog*. Click on the *CATALOG* option of the *Map Options Menu* to take a look at the catalog panel.

You can navigate through layers and look at their *Thumbnail* images, *Title*, *Description* and *Abstract*. Click on *Add To Map* to load a layer into the map, it will be also visible in the *Table of Contents (TOC)*.

## Performing Measurements

Click on the *MEASURE* option of the *Map Options Menu* to perform a measurement. As you can see in the picture below, this tool allows you to measure *Distances*, *Areas* and the *Bearing* of lines.

To perform a measure draw on the map the geometry you are interested in, the result will be displayed on the left of the unit of measure select menu (this tool allows you to change the unit of measure also).



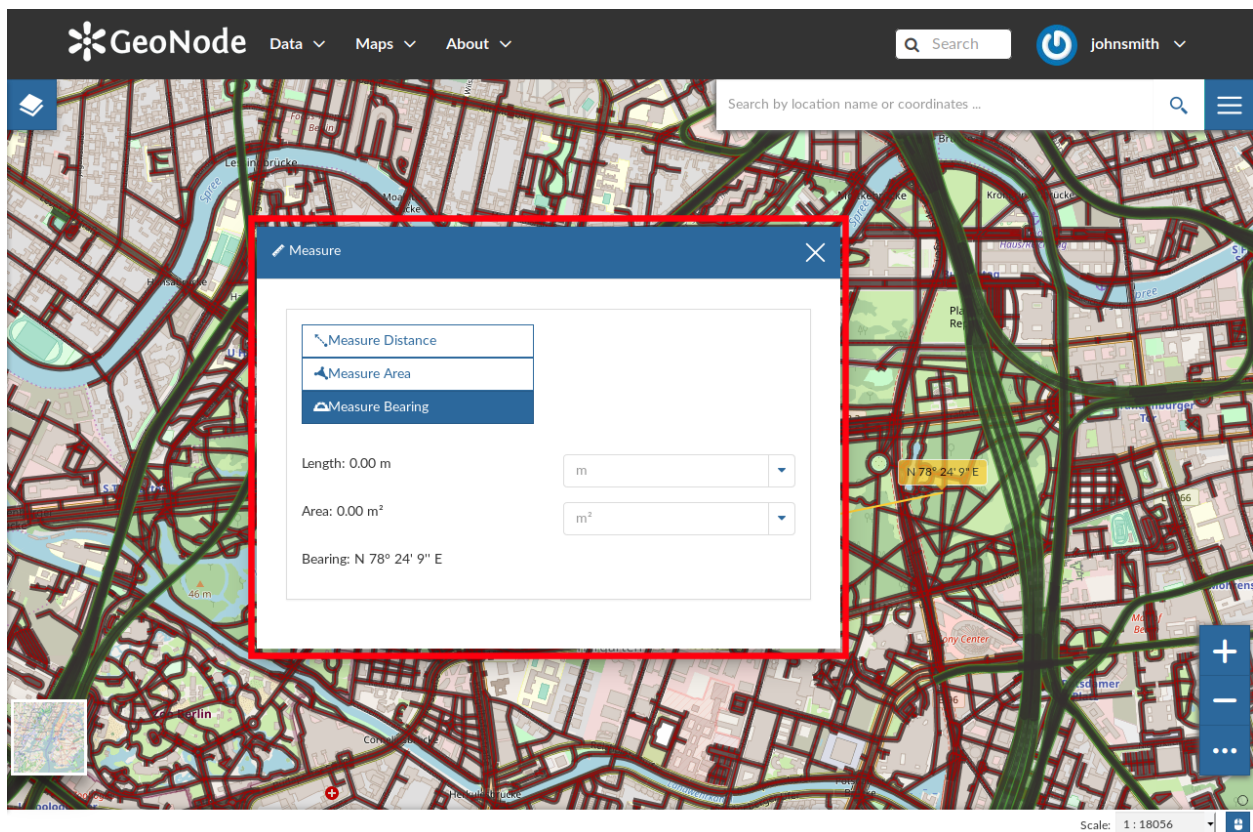


Abb. 192: *The Measure Tool*

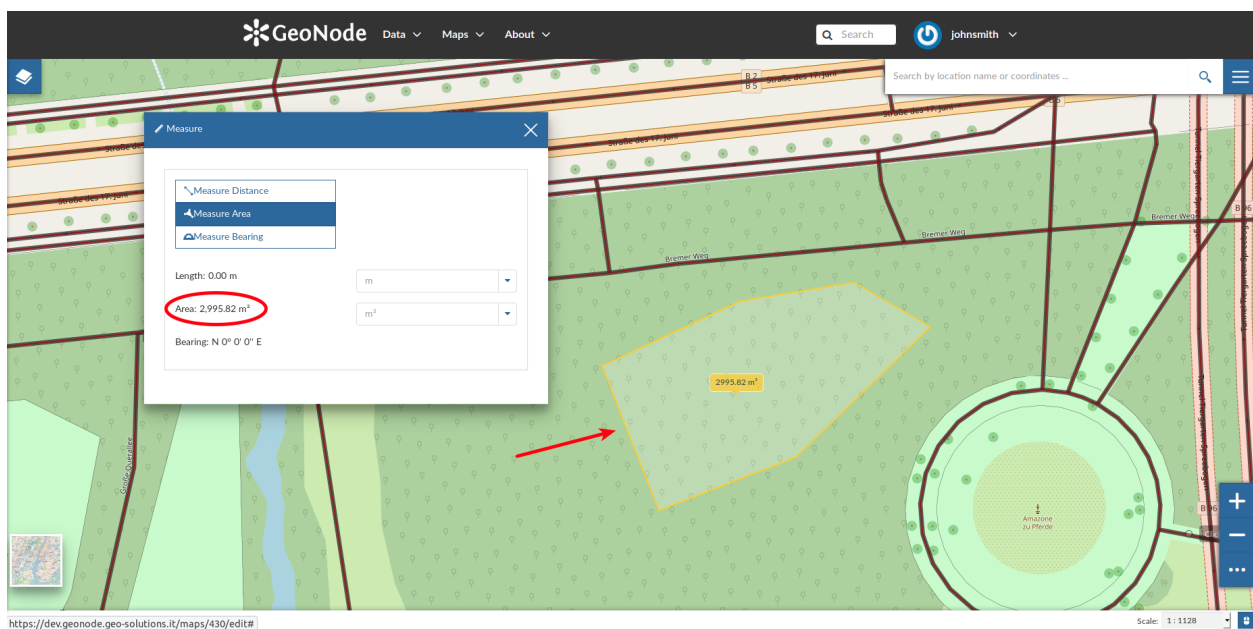


Abb. 193: *Measuring Areas*



## Saving a map

Once all the customizations have been carried out, you can *Save* your map by clicking on the *SAVE AS* option of the *Map Options Menu*.

A new popup window will open.

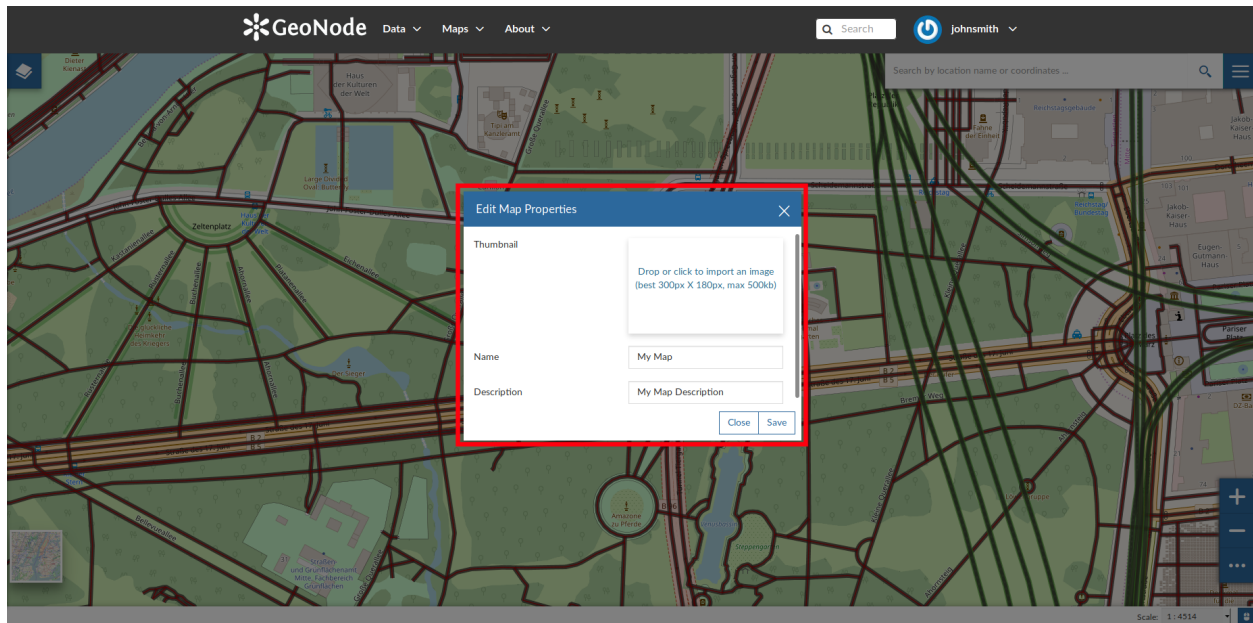


Abb. 194: Saving Maps

You have to fill out a *Title* and an optional *Description*, then click on *Save*. The page will reload and your map should be visible in the *Maps* list.

## Search Bar


The *Search Bar* of the map viewer allows you to find point of interests (POIs), streets or locations by name. Let's type the name of some place then select the first record.

The map will automatically re-center on that area delimiting it by a polygon in the case of an area, by a line in the case of a linear shape (e.g. streets, streams) and by a marker in the case of a point.

## Sidebar Tools

The *Map Viewer* makes also available the *Sidebar*. It is a navigation panel containing various tools that help you to explore the map such as tools for zooming, changing the extent and querying objects on the map.

By default the *Sidebar* shows you the zooming buttons  and , other options can be explored by clicking on

 which expands/collapses the toolbar.

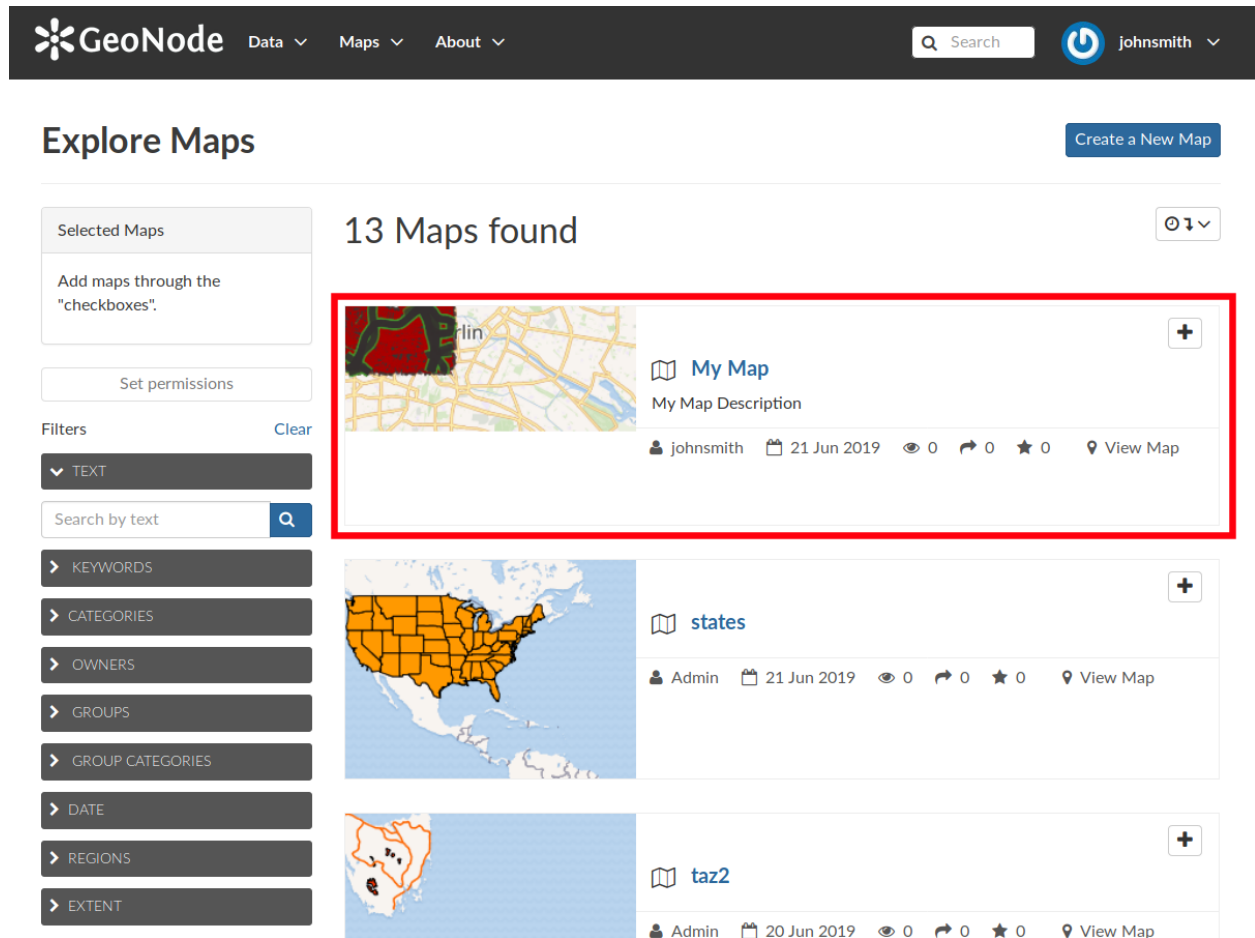


Abb. 195: Your Map into the List

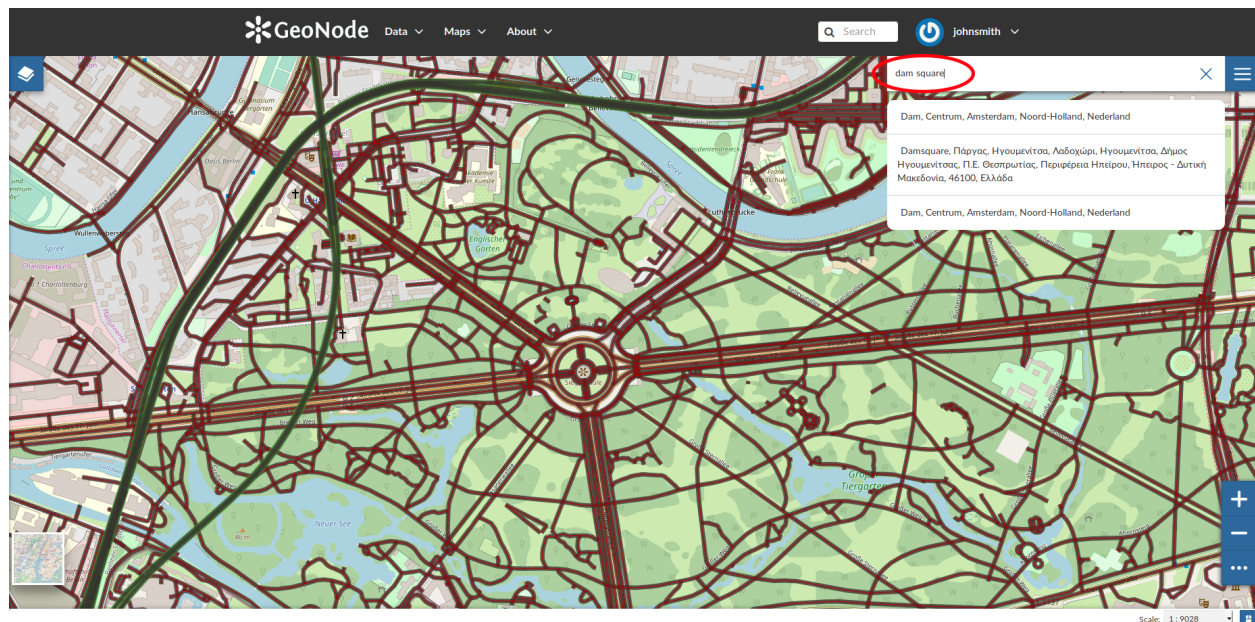


Abb. 196: The Search Bar

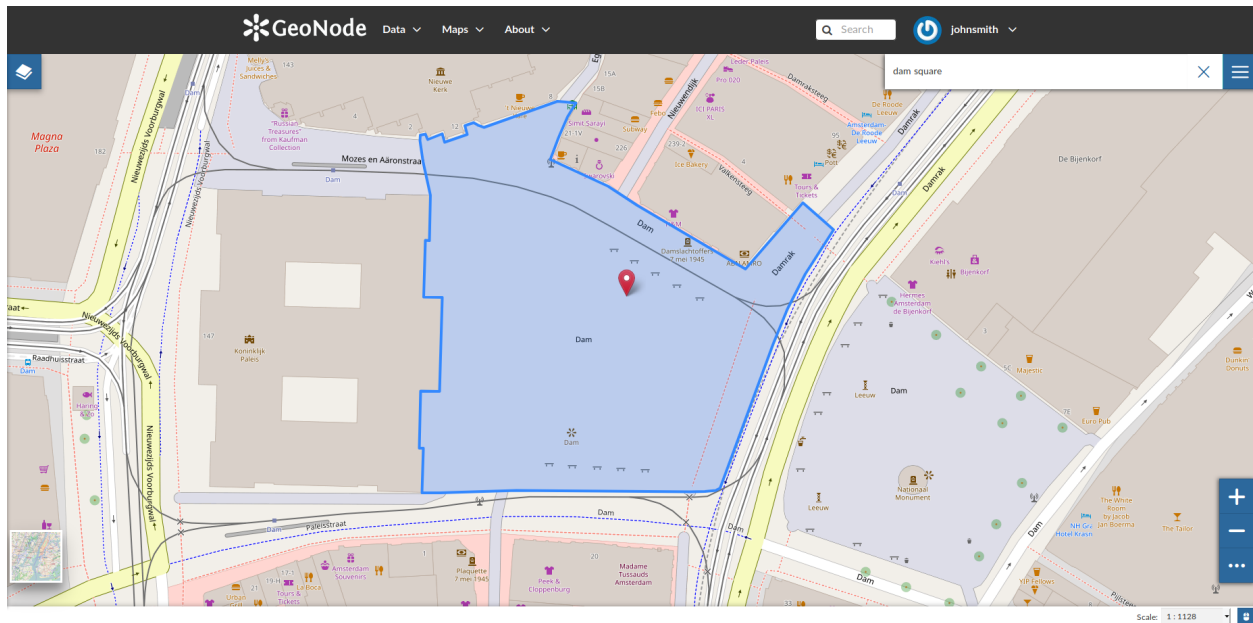


Abb. 197: Result of a Search

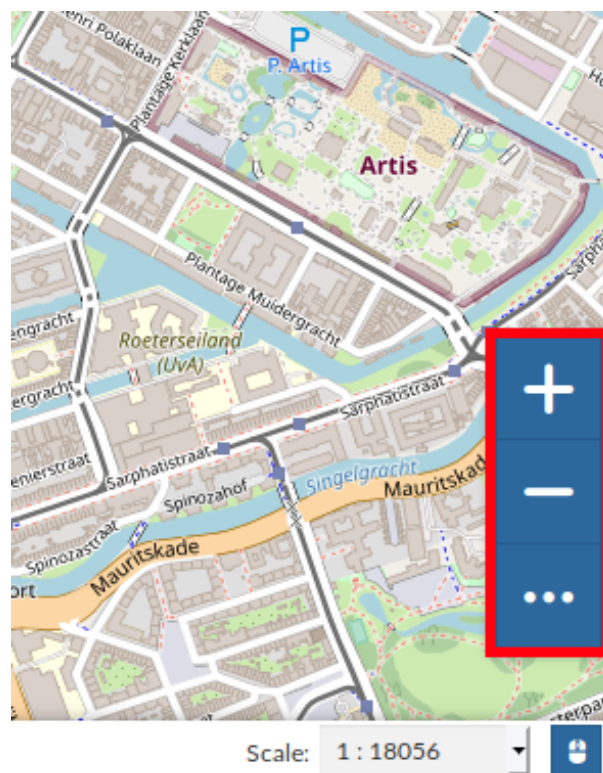


Abb. 198: The Default Sidebar

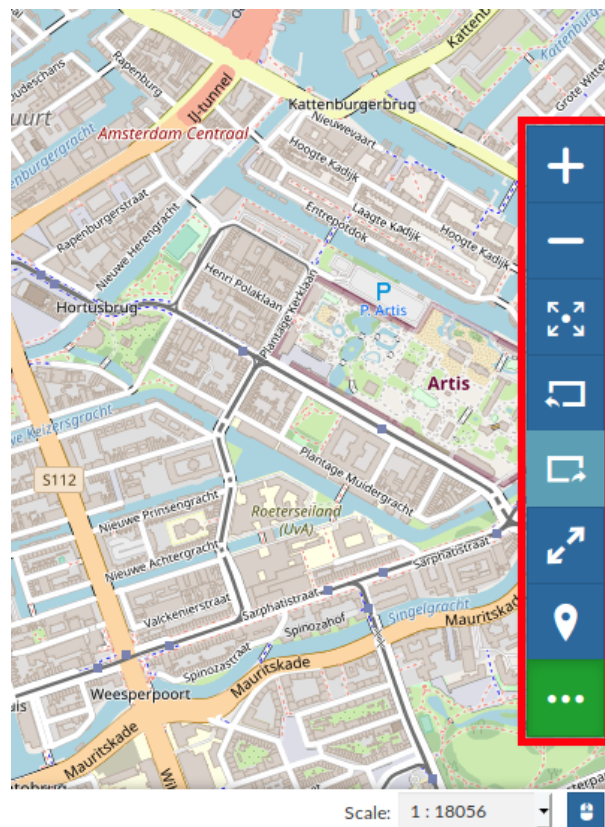


Abb. 199: *The Expanded Sidebar*



The *Sidebar* contains the following tools:






- The *Query Objects on map* allows you to get feature information through the  button. It allows you to retrieve information about the features of some layers by clicking them directly on the map.

Abb. 200: *Querying Objects on map*

When clicking on map a new panel opens. That panel will show you all the information about the clicked features for each active loaded layer.

- You can *Zoom To Max Extent* by clicking .
- You can switch between the previous and the next zoom level through the *Go Back* button  and the *Go Forward* one .
- The *Switch to Full Screen*  button allows to have a full screen map.

## Basemap Switcher


By default, GeoNode allows to enrich maps with many world backgrounds:

- *OpenStreetMap*
- *OpenTopoMap*
- *Sentinel-2-cloudless*

You can also decide to have an *Empty Background*.

## Footer Tools

At the bottom of the map, the *Footer* shows you the *Scale* of the map and allows you to change it.

The  button allows you to see the pointer *Coordinates* and to change the Coordinates Reference System (CRS), WGS 84 by default.

## 1.14 Publishing Data

### 1.15 Using GeoNode with Other Applications

Your GeoNode project is based on core components which are interoperable and as such, it is straightforward for you to integrate with external applications and services. This section will walk you through how to connect to your GeoNode instance from other applications and how to integrate other services into your GeoNode project. When complete, you should have a good idea about the possibilities for integration, and have basic knowledge about how to accomplish it. You may find it necessary to dive deeper into how to do more complex integration in order to accomplish your goals, but you should feel comfortable with the basics, and feel confident reaching out to the wider GeoNode community for help.

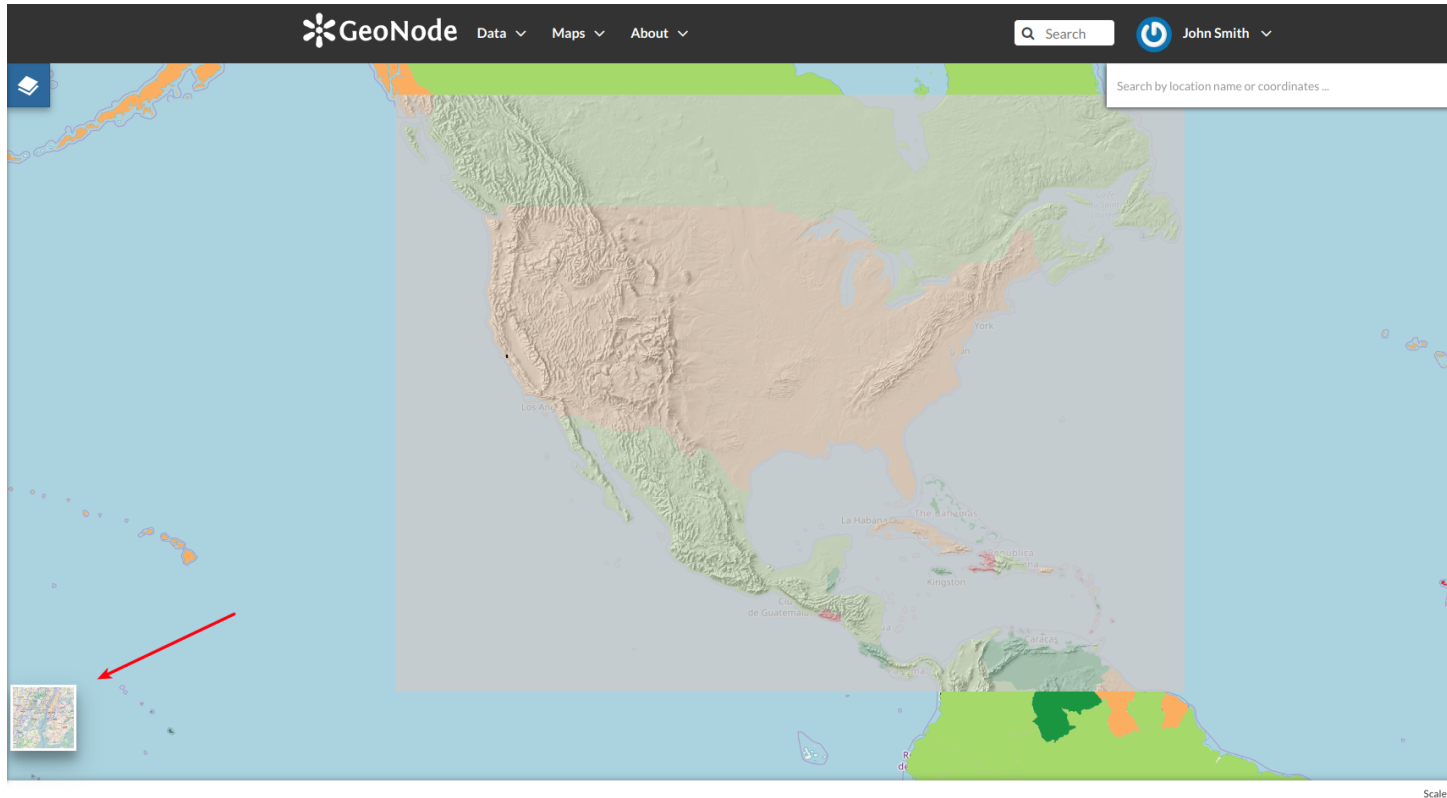


Abb. 201: *The Basemap Switcher Tool*

Abb. 202: *Switching the Basemap*

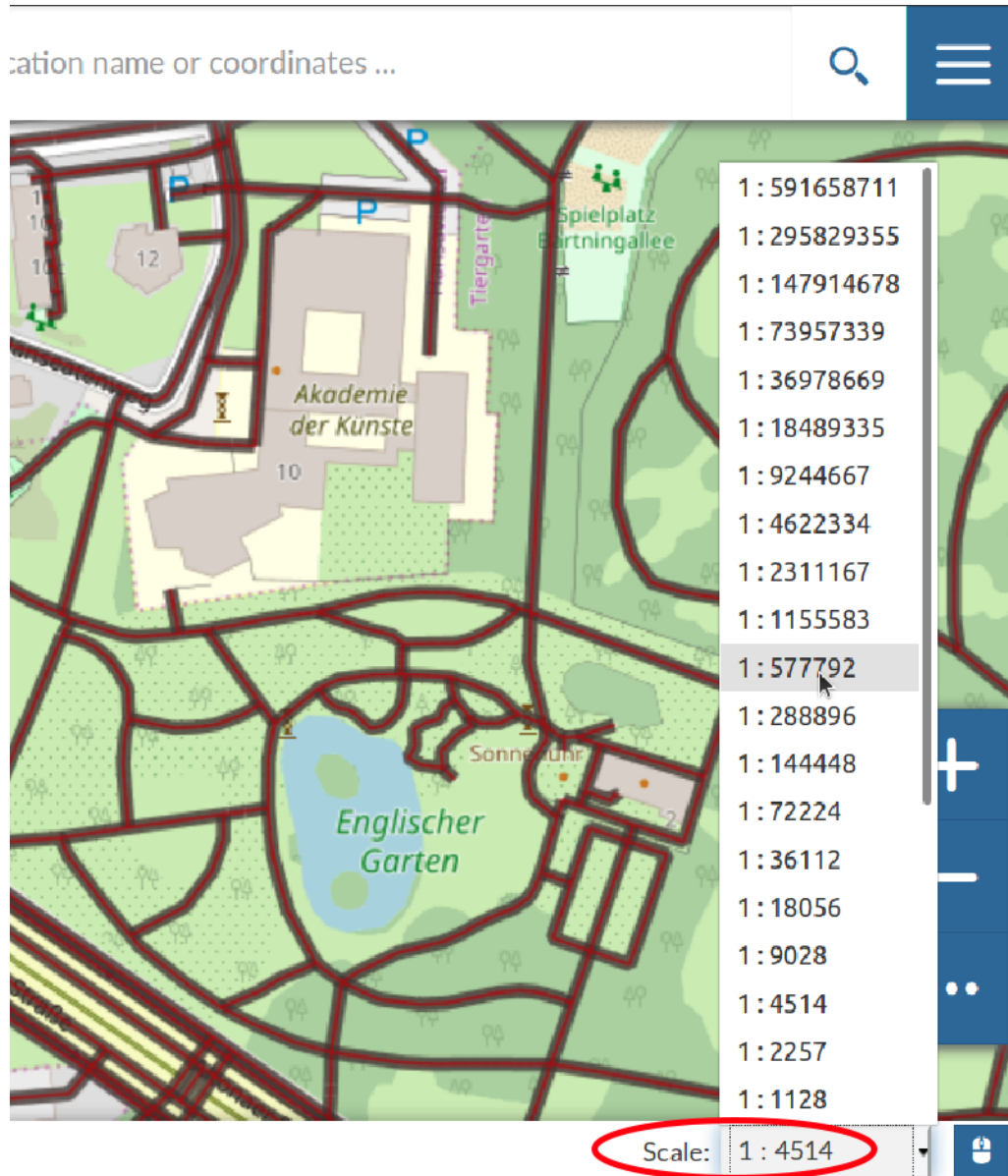
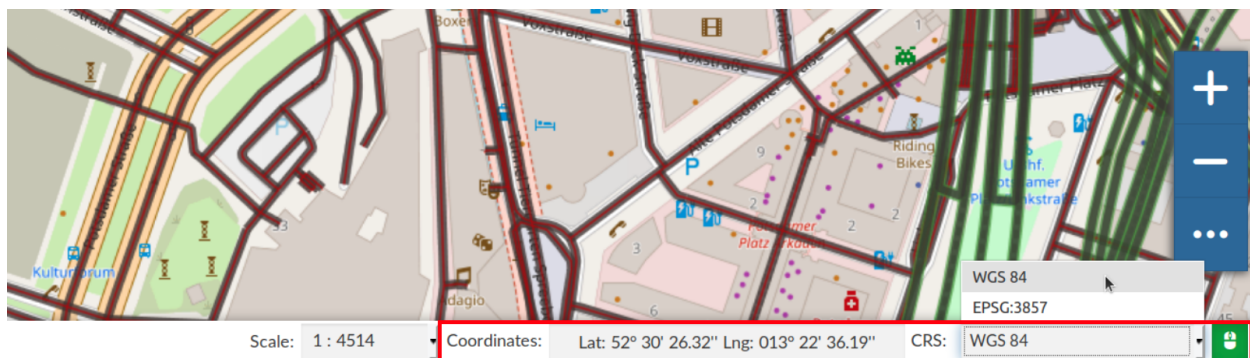


Abb. 203: *The Map Scale*

Abb. 204: *The Pointer Coordinates and the CRS*

## 1.16 GeoNode Core

### 1.16.1 Overview

The following steps will guide you to a fresh setup of GeoNode. All guides will first install and configure the system to run it in `DEBUG` mode (also known as `DEVELOPMENT` mode) and then by configuring an `HTTPD` server to serve GeoNode through the standard `HTTP` (80) port.

Those guides **are not** meant to be used on a production system. There will be dedicated chapters that will show you some *hints* to optimize GeoNode for a production-ready machine. In any case, we strongly suggest to task an experienced *DevOp* or *System Administrator* before exposing your server to the `WEB`.

### 1.16.2 Ubuntu 18.04

This part of the documentation describes the complete setup process for GeoNode on an Ubuntu 18.04 64-bit clean environment (Desktop or Server). All examples use shell commands that you must enter on a local terminal or a remote shell. - If you have a graphical desktop environment you can open the terminal application after login; - if you are working on a remote server the provider or sysadmin should have given you access through an `ssh` client.

#### Install the dependencies

In this section, we are going to install all the basic packages and tools needed for a complete GeoNode installation. To follow this guide, a basic knowledge about Ubuntu Server configuration and working with a shell is required. This guide uses `vim` as the editor; feel free to use `nano`, `gedit` or others.

#### Upgrade system packages

Check that your system is already up-to-date with the repository running the following commands:

```
sudo apt update
sudo apt upgrade
```

#### Packages Installation

We will use **example.com** as fictitious Domain Name.

First, we are going to install all the **system packages** needed for the GeoNode setup. Login to the target machine and execute the following commands:

```
# Install packages from GeoNode core
sudo apt install -y python-gdal gdal-bin
sudo apt install -y python-pip python-dev python-virtualenv virtualenvwrapper
sudo apt install -y libxml2 libxml2-dev gettext
sudo apt install -y libxslt1-dev libjpeg-dev libpng-dev libpq-dev libgdal-dev
↪ libgdal20
sudo apt install -y software-properties-common build-essential
sudo apt install -y git unzip gcc zlib1g-dev libgeos-dev libproj-dev
sudo apt install -y sqlite3 spatialite-bin libsqlite3-mod-spatialite

# Install Openjdk
sudo -i apt update
```

(Fortsetzung auf der nächsten Seite)

(Fortsetzung der vorherigen Seite)

```

sudo apt install openjdk-8-jdk-headless default-jdk-headless -y
sudo update-java-alternatives --jre-headless --jre --set java-1.8.0-openjdk-amd64

sudo apt update -y
sudo apt upgrade -y
sudo apt autoremove -y
sudo apt autoclean -y
sudo apt purge -y
sudo apt clean -y

```

## Create a Dedicated User

In the following steps a User named geonode is created (if needed) and used: to run installation commands the user must be in the sudo group.

Create User geonode **if not present**:

```

# Follow the prompts to set the new user's information.
# It is fine to accept the defaults to leave all of this information blank.
sudo adduser geonode

# The following command adds the user geonode to group sudo
sudo usermod -aG sudo geonode

# make sure the newly created user is allowed to login by ssh
# (out of the scope of this documentation) and switch to User geonode
su geonode

```

## GeoNode Installation

This is the most basic installation of GeoNode. It won't use any external server like Apache Tomcat, PostgreSQL or HTTPD.

It will run locally against a file-system based SQLite database.

First of all we need to prepare a new Python Virtual Environment

Since geonode needs a large number of different python libraries and packages, it's recommended to use a python virtual environment to avoid conflicts on dependencies with system wide python packages and other installed softwares. See also documentation of [Virtualenvwrapper](#). package for more information

```

# Create the GeoNode Virtual Environment (first time only)
mkvirtualenv --no-site-packages geonode

```

At this point your command prompt shows a (geonode) prefix, this indicates that your virtualenv is active.

**Bemerkung:** The next time you need to access the Virtual Environment just run

```
workon geonode
```

```

# Let's create the GeoNode core base folder and clone it
sudo mkdir -p /opt/geonode/

```

(Fortsetzung auf der nächsten Seite)

(Fortsetzung der vorherigen Seite)

```

sudo usermod -a -G www-data geonode
sudo chown -Rf geonode:www-data /opt/geonode/
sudo chmod -Rf 775 /opt/geonode/

# Clone the GeoNode source code on /opt/geonode
cd /opt
git clone https://github.com/GeoNode/geonode.git geonode

# Install the Python packages
cd /opt/geonode
pip install -r requirements.txt --upgrade --no-cache --no-cache-dir
pip install -e . --upgrade --no-cache --no-cache-dir

# Install GDAL Utilities for Python
GDAL_VERSION=`gdal-config --version`; \
PYGDAL_VERSION="$(pip install pygdal==$GDAL_VERSION 2>&1 | grep -oP '(?<=: )(.*) (?<=>=\\))' | \
grep -oh '\\b'${GDAL_VERSION}'[0-9.]\\+\\b')"; \
pip install pygdal==$PYGDAL_VERSION

```

## Run GeoNode for the first time in DEBUG Mode

**Warnung:** Be sure you have successfully completed all the steps of the section *Install the dependencies*.

This command will run both GeoNode and GeoServer locally after having prepared the SQLite database. The server will start in DEBUG (or DEVELOPMENT) mode, and it will start the following services:

1. GeoNode on `http://localhost:8000/`
2. GeoServer on `http://localhost:8080/geoserver/`

This modality is beneficial to debug issues and/or develop new features, but it cannot be used on a production system.

```

# Prepare the GeoNode SQLite database (the first time only)
paver setup
paver sync

```

**Bemerkung:** In case you want to start again from a clean situation, just run

```
paver reset_hard
```

**Warnung:** This will blow up completely your `local_settings`, delete the SQLite database and remove the GeoServer data dir.

```

# Run the server in DEBUG mode
paver start

```

Once the server has finished the initialization and prints on the console the sentence GeoNode is now available., you can open a browser and go to:

```
http://localhost:8000/
```

Sign-in with:

```
user: admin
password: admin
```

## Postgis database Setup

**Warnung:** Be sure you have successfully completed all the steps of the section *Install the dependencies*.

In this section, we are going to setup users and databases for GeoNode in PostgreSQL.

### Install and Configure the PostgreSQL Database System

In this section we are going to install the PostgreSQL packages along with the PostGIS extension. Those steps must be done **only** if you don't have the DB already installed on your system.

```
sudo sh -c 'echo "deb http://apt.postgresql.org/pub/repos/apt/ `lsb_release -cs`-pgdg_
↳main" >> /etc/apt/sources.list.d/pgdg.list'
sudo wget --no-check-certificate --quiet -O - https://www.postgresql.org/media/keys/
↳ACCC4CF8.asc | sudo apt-key add -

sudo apt update
sudo apt install -y postgresql-11 postgresql-11-postgis-2.5 postgresql-11-postgis-2.5-
↳scripts postgresql-contrib-11 postgresql-client-11
```

We now must create two databases, geonode and geonode\_data, belonging to the role geonode.

**Bemerkung:** This is our default configuration. You can use any database or role you need. The connection parameters must be correctly configured on `settings`, as we will see later in this section.

## Databases and Permissions

First, create the geonode user. GeoNode is going to use this user to access the database

```
sudo -u postgres createuser -P geonode
```

You will be prompted asked to set a password for the user. Enter geonode as password.

**Warnung:** This is a sample password used for the sake of simplicity. This password is very **weak** and should be changed in a production environment.

Create database geonode and geonode\_data with owner geonode

```
sudo -u postgres createdb -O geonode geonode
sudo -u postgres createdb -O geonode geonode_data
```

Next let's create PostGIS extensions

```
sudo -u postgres psql -d geonode_data -c 'CREATE EXTENSION postgis;'
sudo -u postgres psql -d geonode_data -c 'GRANT ALL ON geometry_columns TO PUBLIC;'
sudo -u postgres psql -d geonode_data -c 'GRANT ALL ON spatial_ref_sys TO PUBLIC;'
sudo -u postgres psql -d geonode_data -c 'GRANT ALL PRIVILEGES ON ALL TABLES IN_
↳SCHEMA public TO geonode;'
```

Final step is to change user access policies for local connections in the file `pg_hba.conf`

```
sudo vim /etc/postgresql/11/main/pg_hba.conf
```

Scroll down to the bottom of the document. We only need to edit one line.

```
# "local" is for Unix domain socket connections only
# local    all             all                                     peer
local      all             all                                     trust
```

**Warnung:** If your PostgreSQL database resides on a **separate/remote machine**, you'll have to **allow** remote access to the databases in the `/etc/postgresql/11/main/pg_hba.conf` to the `geonode` user and tell PostgreSQL to **accept** non-local connections in your `/etc/postgresql/11/main/postgresql.conf` file

Restart PostgreSQL to make the change effective.

```
sudo service postgresql restart
```

PostgreSQL is now ready. To test the configuration, try to connect to the `geonode` database as `geonode` role.

```
psql -U geonode geonode
\q
```

## Install GeoServer

When running the command `paver start`, as we have seen before, the script runs automatically a Jetty Servlet Java container running GeoServer with the default settings.

**Warnung:** Before executing the next steps, be sure GeoNode and GeoServer `paver` services have been stopped. In order to do that

```
workon geonode
cd /opt/geonode/
paver stop
```

This is not the optimal way to run GeoServer. This is a fundamental component of GeoNode and we must be sure it is running on a stable and reliable manner.

In this section, we are going to install the Apache Tomcat 8 Servlet Java container, which will be started by default on the internal port 8080.

We will also perform several optimizations to:

1. Correctly setup the Java VM Options, like the available heap memory and the garbage collector options.



2. Externalize the GeoServer and GeoWebcache catalogs in order to allow further updates without the risk of deleting our datasets.

**Bemerkung:** This is still a basic setup of those components. More details will be provided on sections of the documentation concerning the hardening of the system in a production environment. Nevertheless, you will need to tweak a bit those settings accordingly with your current system. As an instance, if your machine does not have enough memory, you will need to lower down the initial amount of available heap memory. **Warnings** and **notes** will be placed below the statements that will require your attention.

```
# Install Openjdk
sudo -i apt update
sudo apt install openjdk-8-jdk-headless default-jdk-headless -y
sudo update-java-alternatives --jre-headless --jre --set java-1.8.0-openjdk-amd64

# Check Java version
java -version
openjdk version "1.8.0_212"
OpenJDK Runtime Environment (build 1.8.0_212-8u212-b03-0ubuntu1.18.04.1-b03)
OpenJDK 64-Bit Server VM (build 25.212-b03, mixed mode)

# Install Apache Tomcat 8
sudo wget http://www-us.apache.org/dist/tomcat/tomcat-8/v8.5.41/bin/apache-tomcat-8.5.41.tar.gz
sudo tar xzf apache-tomcat-8.5.41.tar.gz
sudo mv apache-tomcat-8.5.41 /usr/local/apache-tomcat8
sudo useradd -m -U -s /bin/false tomcat
sudo usermod -a -G www-data tomcat
sudo sed -i -e 's/xom-\*\.\jar/xom-\*\.\jar,bcprov\*\.\jar/g' /usr/local/apache-tomcat8/conf/catalina.properties

export JAVA_HOME=$(readlink -f /usr/bin/java | sed "s:bin/java::")
echo 'JAVA_HOME=$JAVA_HOME' | sudo tee --append /usr/local/apache-tomcat8/bin/setenv.sh

# Add Tomcat user to www-data group !important!
sudo usermod -a -G www-data tomcat

sudo sh -c 'chmod +x /usr/local/apache-tomcat8/bin/*.sh'
sudo chown -Rf tomcat:www-data /usr/local/apache-tomcat8
```

Let's create a system service to manage tomcat startup

```
sudo vim /etc/systemd/system/tomcat.service
```

```
[Unit]
Description=Tomcat 8.5 servlet container
After=network.target

[Service]
Type=forking

User=tomcat
Group=tomcat

Environment="JAVA_HOME=/usr/lib/jvm/default-java"
```

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```
Environment="JAVA_OPTS=-Djava.security.egd=file:///dev/urandom"

Environment="CATALINA_BASE=/usr/local/apache-tomcat8"
Environment="CATALINA_HOME=/usr/local/apache-tomcat8"
Environment="CATALINA_PID=/usr/local/apache-tomcat8/temp/tomcat.pid"

ExecStart=/usr/local/apache-tomcat8/bin/startup.sh
ExecStop=/usr/local/apache-tomcat8/bin/shutdown.sh

[Install]
WantedBy=multi-user.target
```

To test the service:

```
sudo systemctl daemon-reload
sudo systemctl restart tomcat
sudo systemctl status tomcat.service
```

To make it enabled by default

```
sudo systemctl enable tomcat
```

## GeoServer Optimizations

Let's externalize the GEOSERVER\_DATA\_DIR and logs

```
# Create the target folders
sudo mkdir -p /opt/data
sudo chown -Rf geonode:www-data /opt/data
sudo chmod -Rf 775 /opt/data
sudo mkdir -p /opt/data/logs
sudo chown -Rf geonode:www-data /opt/data/logs
sudo chmod -Rf 775 /opt/data/logs

# Download and extract the default GEOSERVER_DATA_DIR
sudo wget --no-check-certificate https://build.geo-solutions.it/geonode/geoserver/
↳latest/data-2.14.3.zip
sudo unzip data-2.14.3.zip -d /opt/data/

sudo mv /opt/data/data/ /opt/data/geoserver_data
sudo chown -Rf tomcat:www-data /opt/data/geoserver_data
sudo chmod -Rf 775 /opt/data/geoserver_data

sudo mkdir -p /opt/data/geoserver_logs
sudo chown -Rf tomcat:www-data /opt/data/geoserver_logs
sudo chmod -Rf 775 /opt/data/geoserver_logs

sudo mkdir -p /opt/data/gwc_cache_dir
sudo chown -Rf tomcat:www-data /opt/data/gwc_cache_dir
sudo chmod -Rf 775 /opt/data/gwc_cache_dir

# Download and install GeoServer
sudo wget --no-check-certificate https://build.geo-solutions.it/geonode/geoserver/
↳latest/geoserver-2.14.3.war
sudo mv geoserver-2.14.3.war /usr/local/apache-tomcat8/webapps/geoserver.war
```

Let's now configure the JAVA\_OPTS, i.e. the parameters to run the Servlet Container, like heap memory, garbage collector and so on.

```
sudo sed -i -e "s/JAVA_OPTS=/#JAVA_OPTS=g" /usr/local/apache-tomcat8/bin/setenv.sh

echo 'GEOSERVER_DATA_DIR="/opt/data/geoserver_data"' | sudo tee --append /usr/local/
↪apache-tomcat8/bin/setenv.sh
echo 'GEOSERVER_LOG_LOCATION="/opt/data/geoserver_logs/geoserver.log"' | sudo tee --
↪append /usr/local/apache-tomcat8/bin/setenv.sh
echo 'GEOWEBCACHE_CACHE_DIR="/opt/data/gwc_cache_dir"' | sudo tee --append /usr/local/
↪apache-tomcat8/bin/setenv.sh
echo 'GEOFENCE_DIR="$GEOSERVER_DATA_DIR/geofence"' | sudo tee --append /usr/local/
↪apache-tomcat8/bin/setenv.sh
echo 'TIMEZONE="UTC"' | sudo tee --append /usr/local/apache-tomcat8/bin/setenv.sh

echo 'JAVA_OPTS="-server -Djava.awt.headless=true -Dorg.geotools.shapefile.
↪datetime=true -XX:+UseParallelGC -XX:ParallelGCThreads=4 -Dfile.encoding=UTF8 -
↪Duser.timezone=$TIMEZONE -Xms512m -Xmx4096m -Djavax.servlet.request.encoding=UTF-8 -
↪Djavax.servlet.response.encoding=UTF-8 -DGEOSERVER_DATA_DIR=$GEOSERVER_DATA_DIR -
↪Dgeofence.dir=$GEOFENCE_DIR -DGEOSERVER_LOG_LOCATION=$GEOSERVER_LOG_LOCATION -
↪DGEOWEBCACHE_CACHE_DIR=$GEOWEBCACHE_CACHE_DIR"' | sudo tee --append /usr/local/
↪apache-tomcat8/bin/setenv.sh
```

**Bemerkung:** After the execution of the above statements, you should be able to see the new options written at the bottom of the file /usr/local/apache-tomcat8/bin/setenv.sh.

```
...
# If you run Tomcat on port numbers that are all higher than 1023, then you
# do not need authbind. It is used for binding Tomcat to lower port numbers.
# (yes/no, default: no)
#AUTHBIND=no
JAVA_HOME=/usr/lib/jvm/java-8-openjdk-amd64/jre/
GEOSERVER_DATA_DIR="/opt/data/geoserver_data"
GEOSERVER_LOG_LOCATION="/opt/data/geoserver_logs/geoserver.log"
GEOWEBCACHE_CACHE_DIR="/opt/data/gwc_cache_dir"
GEOFENCE_DIR="$GEOSERVER_DATA_DIR/geofence"
TIMEZONE="UTC"
JAVA_OPTS="-server -Djava.awt.headless=true -Dorg.geotools.shapefile.datetime=true -
↪XX:+UseParallelGC -XX:ParallelGCThreads=4 -Dfile.encoding=UTF8 -Duser.timezone=
↪$TIMEZONE -Xms512m -Xmx4096m -Djavax.servlet.request.encoding=UTF-8 -Djavax.servlet.
↪response.encoding=UTF-8 -DGEOSERVER_DATA_DIR=$GEOSERVER_DATA_DIR -Dgeofence.dir=
↪$GEOFENCE_DIR -DGEOSERVER_LOG_LOCATION=$GEOSERVER_LOG_LOCATION -DGEOWEBCACHE_CACHE_
↪DIR=$GEOWEBCACHE_CACHE_DIR"
```

Those options could be updated or changed manually at any time, accordingly to your needs.

**Warnung:** The default options we are going to add to the Servlet Container, assume you can reserve at least 4GB of RAM to GeoServer (see the option -Xmx4096m). You must be sure your machine has enough memory to run both GeoServer and GeoNode, which in this case means at least 4GB for GeoServer plus at least 2GB for GeoNode. A total of at least 6GB of RAM available on your machine. If you don't have enough RAM available, you can lower down the values -Xms512m -Xmx4096m. Consider that with less RAM available, the performances of your services will be highly impacted.

In order to make the changes effective, you'll need to restart the Servlet Container.

```
# Restart the server
sudo systemctl daemon-reload
sudo systemctl restart tomcat
sudo systemctl status tomcat.service

# Follow the startup logs
sudo tail -F -n 300 /opt/data/geoserver_logs/geoserver.log
```

If you can see on the logs something similar to this, without errors

```
...
2019-05-31 10:06:34,190 INFO [geoserver.wps] - Found 5 bindable processes in
↳GeoServer specific processes
2019-05-31 10:06:34,281 INFO [geoserver.wps] - Found 89 bindable processes in
↳Deprecated processes
2019-05-31 10:06:34,298 INFO [geoserver.wps] - Found 31 bindable processes in Vector
↳processes
2019-05-31 10:06:34,307 INFO [geoserver.wps] - Found 48 bindable processes in
↳Geometry processes
2019-05-31 10:06:34,307 INFO [geoserver.wps] - Found 1 bindable processes in
↳PolygonLabelProcess
2019-05-31 10:06:34,311 INFO [geoserver.wps] - Blacklisting process
↳ras:ConvolveCoverage as the input kernel of type class javax.media.jai.KernelJAI
↳cannot be handled
2019-05-31 10:06:34,319 INFO [geoserver.wps] - Blacklisting process
↳ras:RasterZonalStatistics2 as the input zones of type class java.lang.Object cannot
↳be handled
2019-05-31 10:06:34,320 INFO [geoserver.wps] - Blacklisting process
↳ras:RasterZonalStatistics2 as the input nodata of type class it.geosolutions.jaiext.
↳range.Range cannot be handled
2019-05-31 10:06:34,320 INFO [geoserver.wps] - Blacklisting process
↳ras:RasterZonalStatistics2 as the input rangeData of type class java.lang.Object
↳cannot be handled
2019-05-31 10:06:34,320 INFO [geoserver.wps] - Blacklisting process
↳ras:RasterZonalStatistics2 as the output zonal statistics of type interface java.
↳util.List cannot be handled
2019-05-31 10:06:34,321 INFO [geoserver.wps] - Found 18 bindable processes in Raster
↳processes
2019-05-31 10:06:34,917 INFO [ows.OWSHandlerMapping] - Mapped URL path [/TestWfsPost]
↳onto handler 'wfsTestServlet'
2019-05-31 10:06:34,918 INFO [ows.OWSHandlerMapping] - Mapped URL path [/wfs/*] onto
↳handler 'dispatcher'
2019-05-31 10:06:34,918 INFO [ows.OWSHandlerMapping] - Mapped URL path [/wfs] onto
↳handler 'dispatcher'
2019-05-31 10:06:42,237 INFO [geoserver.security] - Start reloading user/groups for
↳service named default
2019-05-31 10:06:42,241 INFO [geoserver.security] - Reloading user/groups successful
↳for service named default
2019-05-31 10:06:42,357 WARN [auth.GeoFenceAuthenticationProvider] - INIT FROM CONFIG
2019-05-31 10:06:42,494 INFO [geoserver.security] - AuthenticationCache Initialized
↳with 1000 Max Entries, 300 seconds idle time, 600 seconds time to live and 3
↳concurrency level
2019-05-31 10:06:42,495 INFO [geoserver.security] - AuthenticationCache Eviction Task
↳created to run every 600 seconds
2019-05-31 10:06:42,506 INFO [config.GeoserverXMLResourceProvider] - Found
↳configuration file in /opt/data/gwc_cache_dir
2019-05-31 10:06:42,516 INFO [config.GeoserverXMLResourceProvider] - Found
↳configuration file in /opt/data/gwc_cache_dir
```

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```
2019-05-31 10:06:42,542 INFO [config.XMLConfiguration] - Wrote configuration to /opt/
↳data/gwc_cache_dir
2019-05-31 10:06:42,547 INFO [geoserver.importer] - Enabling import store: memory
```

Your GeoServer should be up and running at

```
http://localhost:8080/geoserver/
```

**Warnung:** In case of errors or the file `geoserver.log` is not created, check the Catalina logs in order to try to understand what's happened.

```
sudo less /usr/local/apache-tomcat8/logs/catalina.out
```

It is possible to test the new running GeoServer with the GeoNode paver service (DEBUG mode). To do that

```
workon geonode
cd /opt/geonode/
paver start_django
```

**Warnung:** The `paver reset` command from now on **won't** clean up GeoServer and its catalog anymore. Therefore, every data uploaded during those tests will remain on GeoServer even if GeoNode will be reset.

## Web Server

Until now we have seen how to start GeoNode in DEBUG mode from the command line, through the `paver` utilities. This is of course not the best way to start it. Moreover you will need a dedicated HTTPD server running on port 80 if you would like to expose your server to the world.

In this section we will see:

1. How to configure NGINX HTTPD Server to host GeoNode and GeoServer. In the initial setup we will still run the services on `http://localhost`
2. Update the settings in order to link GeoNode and GeoServer to the PostgreSQL Database.
3. Update the settings in order to update GeoNode and GeoServer services running on a **public IP** or **hostname**.
4. Install and enable HTTPS secured connection through the Let's Encrypt provider.

## Install and configure NGINX

**Warnung:** Before executing the next steps, be sure GeoNode paver services have been stopped. To do that

```
workon geonode
cd /opt/geonode/
paver stop_django
```

```
# Install the services
sudo apt install -y nginx uwsgi uwsgi-plugin-python
```

## Serving {"geonode", "geoserver"} via NGINX

```
# Create the GeoNode UWSGI config
sudo vim /etc/uwsgi/apps-available/geonode.ini
```

```
[uwsgi]
socket = 0.0.0.0:8000
uid = geonode
gid = www-data

plugins = python
virtualenv = /home/geonode/.virtualenvs/geonode
env = DEBUG=False
env = DJANGO_SETTINGS_MODULE=geonode.settings
env = SECRET_KEY='Rand0m%3cr3tK3y'
env = SITE_HOST_NAME=localhost
env = SITEURL=http://localhost/
env = LOCKDOWN_GEOCODE=False
env = SESSION_EXPIRED_CONTROL_ENABLED=True
env = FORCE_SCRIPT_NAME=
env = EMAIL_ENABLE=False
env = DJANGO_EMAIL_HOST_USER=
env = DJANGO_EMAIL_HOST_PASSWORD=
env = DJANGO_EMAIL_HOST=localhost
env = DJANGO_EMAIL_PORT=25
env = DJANGO_EMAIL_USE_TLS=False
env = DEFAULT_FROM_EMAIL=GeoNode <no-reply@localhost>
env = MONITORING_ENABLED=True
env = GEOSERVER_PUBLIC_HOST=localhost
env = GEOSERVER_PUBLIC_PORT=
env = GEOSERVER_ADMIN_PASSWORD=geoserver
env = GEOSERVER_LOCATION=http://localhost/geoserver/
env = GEOSERVER_PUBLIC_LOCATION=http://localhost/geoserver/
env = GEOSERVER_WEB_UI_LOCATION=http://localhost/geoserver/
env = RESOURCE_PUBLISHING=False
env = ADMIN_MODERATE_UPLOADS=False
env = GROUP_PRIVATE_RESOURCES=False
env = GROUP_MANDATORY_RESOURCES=False
env = OGC_REQUEST_TIMEOUT=60
env = OGC_REQUEST_MAX_RETRIES=3
env = OGC_REQUEST_POOL_MAXSIZE=100
env = OGC_REQUEST_POOL_CONNECTIONS=100
env = EXIF_ENABLED=True
env = CREATE_LAYER=False
env = FAVORITE_ENABLED=True

chdir = /opt/geonode
module = geonode.wsgi:application

processes = 4
threads = 2
enable-threads = true
```

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```

master = true

# logging
# path to where uwsgi logs will be saved
logto = /opt/data/logs/geonode.log
daemonize = /opt/data/logs/geonode.log
touch-reload = /opt/geonode/geonode/wsgi.py
buffer-size = 32768
max-requests = 500
harakiri = 300 # respawn processes taking more than 5 minutes (300 seconds)
max-requests = 500 # respawn processes after serving 5000 requests
# limit-as = 1024 # avoid Errno 12 cannot allocate memory
harakiri-verbose = true
vacuum = true
thunder-lock = true

```

```

# Enable the GeoNode UWSGI config
sudo ln -s /etc/uwsgi/apps-available/geonode.ini /etc/uwsgi/apps-enabled/geonode.ini

# Restart UWSGI Service
sudo service uwsgi restart

```

```

# Backup the origina NGINX config
sudo mv /etc/nginx/nginx.conf /etc/nginx/nginx.conf.orig

# Create the GeoNode Default NGINX config
sudo vim /etc/nginx/nginx.conf

```

```

# Make sure your nginx.config matches the following one
user www-data;
worker_processes auto;
pid /run/nginx.pid;
include /etc/nginx/modules-enabled/*.conf;

events {
    worker_connections 768;
    # multi_accept on;
}

http {
    ##
    # Basic Settings
    ##

    sendfile on;
    tcp_nopush on;
    tcp_nodelay on;
    keepalive_timeout 65;
    types_hash_max_size 2048;
    # server_tokens off;

    # server_names_hash_bucket_size 64;
    # server_name_in_redirect off;

    include /etc/nginx/mime.types;

```

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```

default_type application/octet-stream;

##
# SSL Settings
##

ssl_protocols TLSv1 TLSv1.1 TLSv1.2; # Dropping SSLv3, ref: POODLE
ssl_prefer_server_ciphers on;

##
# Logging Settings
##

access_log /var/log/nginx/access.log;
error_log /var/log/nginx/error.log;

##
# Gzip Settings
##

gzip on;
gzip_vary on;
gzip_proxied any;
gzip_http_version 1.1;
gzip_disable "MSIE [1-6]\.";
gzip_buffers 16 8k;
gzip_min_length 1100;
gzip_comp_level 6;
gzip_proxied any;
gzip_types video/mp4 text/plain text/css application/x-javascript text/xml
↪application/xml application/xml+rss text/javascript image/jpeg;

##
# Virtual Host Configs
##

include /etc/nginx/conf.d/*.conf;
include /etc/nginx/sites-enabled/*;
}

```

```

# Remove the Default NGINX config
sudo rm /etc/nginx/sites-enabled/default

# Create the GeoNode App NGINX config
sudo vim /etc/nginx/sites-available/geonode

```

```

uwsgi_intercept_errors on;

upstream geoserver_proxy {
    server localhost:8080;
}

# Expires map
map $sent_http_content_type $expires {
    default                off;
    text/html              epoch;

```

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(Fortsetzung der vorherigen Seite)

```

text/css                                max;
application/javascript                 max;
~image/                                max;
}

server {
    listen 80 default_server;
    listen [::]:80 default_server;

    root /var/www/html;
    index index.html index.htm index.nginx-debian.html;

    server_name _;

    charset utf-8;

    etag on;
    expires $expires;
    proxy_read_timeout 600s;
    # set client body size to 2M #
    client_max_body_size 50000M;

    location / {
        etag off;
        uwsgi_pass 127.0.0.1:8000;
        uwsgi_read_timeout 600s;
        include uwsgi_params;
    }

    location /static/ {
        alias /opt/geonode/geonode/static_root/;
    }

    location /uploaded/ {
        alias /opt/geonode/geonode/uploaded/;
    }

    location /geoserver {
        proxy_pass http://geoserver_proxy;
        include proxy_params;
    }
}

```

```

# Enable GeoNode NGINX config
sudo ln -s /etc/nginx/sites-available/geonode /etc/nginx/sites-enabled/geonode

# Restart the services
sudo systemctl restart tomcat
sudo service nginx restart

```

**Refresh GeoNode static data**

```

workon geonode
cd /opt/geonode
python manage.py collectstatic --no-input

```

**Refresh GeoNode and GeoServer OAuth2 settings**

```
workon geonode
cd /opt/geonode

# This must be done the first time only
sudo cp package/support/geonode.binary /usr/bin/geonode
sudo cp package/support/geonode.updateip /usr/bin/geonode_updateip
sudo chmod +x /usr/bin/geonode
sudo chmod +x /usr/bin/geonode_updateip
pip install -e git+https://github.com/justquick/django-activity-stream.git#egg=django-
↳activity-stream

# Update the GeoNode ip or hostname
sudo PYTHONWARNINGS=ignore VIRTUAL_ENV=$VIRTUAL_ENV DJANGO_SETTINGS_MODULE=geonode.
↳settings GEONODE_ETC=/opt/geonode GEOSERVER_DATA_DIR=/opt/data/geoserver_data_
↳TOMCAT_SERVICE="service tomcat" APACHE_SERVICE="service nginx" geonode_updateip -p_
↳localhost
```

The GeoNode service should now run on `http://localhost/`

The GeoServer service should now run on `http://localhost/geoserver/`

You should be able to login with the default user admin (pwd admin) and upload your layers.

### Update the settings in order to use the PostgreSQL Database

**Warnung:** Make sure you already installed and configured the Database as explained in the previous sections.

```
workon geonode
cd /opt/geonode

cp geonode/local_settings.py.geoserver.sample geonode/local_settings.py

# In case you want to change the DB password, run the following
# sudo sed -i -e "s/'PASSWORD': 'geonode','/PASSWORD': '<your_db_role_password>','/g" _
↳geonode/local_settings.py

# Stop Tomcat
sudo systemctl restart tomcat

# Initialize GeoNode
DJANGO_SETTINGS_MODULE=geonode.local_settings paver reset
DJANGO_SETTINGS_MODULE=geonode.local_settings paver setup
DJANGO_SETTINGS_MODULE=geonode.local_settings paver sync
DJANGO_SETTINGS_MODULE=geonode.local_settings python manage.py collectstatic --noinput
```

Before finalizing the configuration we will need to update the UWSGI settings

```
sudo vim /etc/uwsgi/apps-enabled/geonode.ini
```

Change `geonode.settings` to `geonode.local_settings`

```
%s/geonode.settings/geonode.local_settings/g
```

Restart UWSGI and update OAuth2 by using the new `geonode.local_settings`

**Warnung: !IMPORTANT!** In the statement below make sure to use `DJANGO_SETTINGS_MODULE=geonode.local_settings`

```
# Restart UWSGI
sudo service uwsgi restart

# Update the GeoNode ip or hostname
sudo PYTHONWARNINGS=ignore VIRTUAL_ENV=$VIRTUAL_ENV DJANGO_SETTINGS_MODULE=geonode.
↪local_settings GEONODE_ETC=/opt/geonode GEOSERVER_DATA_DIR=/opt/data/geoserver_data_
↪TOMCAT_SERVICE="service tomcat" APACHE_SERVICE="service nginx" geonode_updateip -p_
↪localhost
```

## Update the settings in order to update GeoNode and GeoServer services running on a public IP or hostname

**Warnung:** Before exposing your services to the Internet, **make sure** your system is **hardened** and **secure enough**. See the specific documentation section for more details.

Let's say you want to run your services on a public IP or domain, e.g. `www.example.org`. You will need to slightly update your services in order to reflect the new server name.

In particular the steps to do are:

1. Update NGINX configuration in order to serve the new domain name.

```
sudo vim /etc/nginx/sites-enabled/geonode

# Update the 'server_name' directive
server_name example.org www.example.org;

# Restart the service
sudo service nginx restart
```

2. Update UWSGI configuration in order to serve the new domain name.

```
sudo vim /etc/uwsgi/apps-enabled/geonode.ini

# Change everywhere 'localhost' to the new hostname
%s/localhost/www.example.org/g

# Restart the service
sudo service uwsgi restart
```

3. Update OAuth2 configuration in order to hit the new hostname.

```
workon geonode
cd /opt/geonode

# Update the GeoNode ip or hostname
sudo PYTHONWARNINGS=ignore VIRTUAL_ENV=$VIRTUAL_ENV DJANGO_SETTINGS_
↪MODULE=geonode.local_settings GEONODE_ETC=/opt/geonode GEOSERVER_DATA_DIR=/
↪opt/data/geoserver_data TOMCAT_SERVICE="service tomcat" APACHE_SERVICE=
↪"service nginx" geonode_updateip -l localhost -p www.example.org
```

4. Update the existing GeoNode links in order to hit the new hostname.

```
workon geonode
cd /opt/geonode

# Update the GeoNode ip or hostname
DJANGO_SETTINGS_MODULE=geonode.local_settings python manage.py migrate_
↪baseurl --source-address=http://localhost --target-address=http://www.
↪example.org
```

### Install and enable HTTPS secured connection through the Let's Encrypt provider

```
# Install Let's Encrypt Certbot
sudo add-apt-repository ppa:certbot/certbot
sudo apt update -y; sudo apt install python-certbot-nginx -y

# Reload NGINX config and make sure the firewall denies access to HTTP
sudo systemctl reload nginx
sudo ufw allow 'Nginx Full'
sudo ufw delete allow 'Nginx HTTP'

# Create and dump the Let's Encrypt Certificates
sudo certbot --nginx -d example.org -d www.example.org
# ...choose the redirect option when asked for
```

1. Update the GeoNode **OAuth2** Redirect URIs accordingly.

From the GeoNode Admin Dashboard **goto** Home > Django/GeoNode OAuth Toolkit > Applications > GeoServer

2. Update the GeoServer Proxy Base URL accordingly.

From the GeoServer Admin GUI **goto** About & Status > Global

3. Update the GeoServer Role Base URL accordingly.

From the GeoServer Admin GUI **goto** Security > Users, Groups, Roles > geonode REST role service

4. Update the GeoServer OAuth2 Service Parameters accordingly.

From the GeoServer Admin GUI **goto** Security > Authentication > Authentication Filters > geonode-oauth2

5. Update the UWSGI configuration

```
sudo vim /etc/uwsgi/apps-enabled/geonode.ini

# Change everywhere 'http' to 'https'
%s/http/https/g

# Add two more 'env' variables to the configuration
env = SECURE_SSL_REDIRECT=True
env = SECURE_HSTS_INCLUDE_SUBDOMAINS=True

# Restart the service
sudo service uwsgi restart
```

## Django administration

Home › Django/GeoNode OAuth Toolkit › Applications › GeoServer

### Change application

**Client id:** 6Aa43yllpxN0RcxwXXM7XDPArEtFSSPjv3Y2r

**User:** 1000 [admin](#)


**Redirect uris:**

https://example.org/geoserver/  
https://www.example.org/geoserver/

←

Allowed URIs list, space separated

**Client type:** ☒ Confidential ☐ Public

Abb. 205: *Redirect URIs*

## GeoServer

**About & Status**

- Server Status
- GeoServer Logs
- Contact Information
- About GeoServer
- Process status

**Data**

- Layer Preview
- Import Data
- Workspaces
- Storage

### Global Settings

Settings that apply to all OGC services and control the internal behavior of GeoServer.

#### OGC Services

##### Service Settings

Proxy Base URL

https://www.example.org/geoserver

←

☐ Use headers for Proxy URL

☒ Enable global services

##### Service Request Settings

☐ Evaluate XML entities from remote servers (security risk)

Abb. 206: *Proxy Base URL*

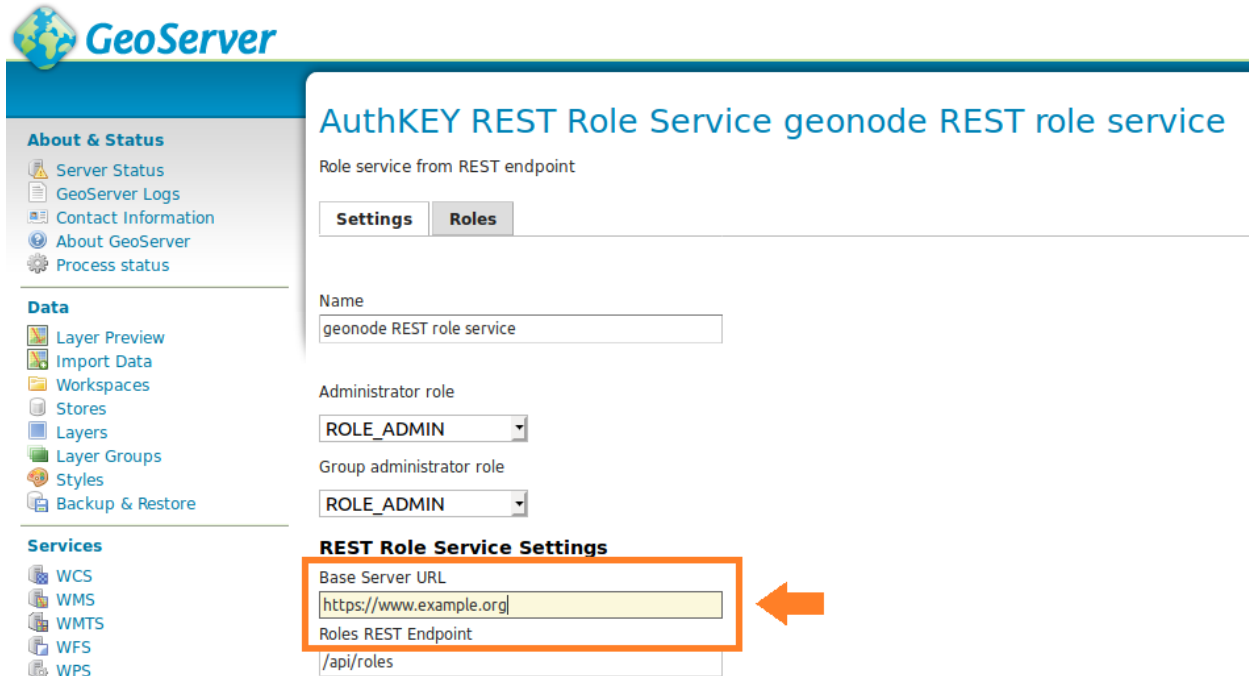


Abb. 207: Role Base URL

### 1.16.3 CentOS 7.0

- TODO

### 1.16.4 Docker

In this section we are going to list the passages needed to:


1. Install Docker and docker-compose packages on a Ubuntu host
2. Deploy a vanilla GeoNode 2.10 with Docker
  - a. Override the ENV variables to deploy on a public IP or domain
  - b. Access the django4geonode Docker image to update the code-base and/or change internal settings
  - c. Access the geoserver4geonode Docker image to update the GeoServer version
3. Passages to completely get rid of old Docker images and volumes (prune the environment completely)

#### Install the Docker and docker-compose packages on a Ubuntu host

##### Docker Setup (First time only)

```
sudo add-apt-repository universe
sudo apt-get update -y
sudo apt-get install -y git-core git-buildpackage debhelper devscripts
sudo apt-get install -y apt-transport-https ca-certificates curl gnupg-agent software-
↳ properties-common
```

(Fortsetzung auf der nächsten Seite)



# GeoServer

**About & Status**

- Server Status
- GeoServer Logs
- Contact Information
- About GeoServer
- Process status

**Data**

- Layer Preview
- Import Data
- Workspaces
- Stores
- Layers
- Layer Groups
- Styles
- Backup & Restore

**Services**

- WCS
- WMS
- WMTS
- WFS
- WPS

**Settings**

- Global
- Image Processing
- Raster Access

**Tile Caching**

- Tile Layers
- Caching Defaults
- Gridsets
- Disk Quota
- BlobStores

**Security**

- Settings
- Authentication

## Authentication using a GeoNode OAuth2 geonode-oauth2

Authenticates by looking up for a valid GeoNode OAuth2 access\_token key sent as URL parameter

Name  
geonode-oauth2

**OAuth2 provider connection**

☐ Enable Redirect Authentication EntryPoint

Login Authentication EndPoint  
/j\_spring\_oauth2\_geonode\_login

Logout Authentication EndPoint  
/j\_spring\_oauth2\_geonode\_logout

☒ Force Access Token URI HTTPS Secured Protocol

Access Token URI  
https://www.example.org/o/token/

☒ Force User Authorization URI HTTPS Secured Protocol

User Authorization URI  
https://www.example.org/o/authorize/

Redirect URI  
https://www.example.org/geoserver/

Check Token Endpoint URL  
https://www.example.org/api/o/v4/tokeninfo/

Logout URI  
https://www.example.org/account/logout/

Scopes  
write

Client ID  
6Aa43yllpxN0RcxwXXM7XDPArEtFSSPjv3Y2mcDd

Client Secret  
RHlyGtz1cDO597MKLQmxKvxTogubAaL0Q7kstFb9UeJi

**Role source**

Role service  
geonode REST role service

Abb. 208: OAuth2 Service Parameters

```
[uwsgi]
socket = 0.0.0.0:8000
uid = geonode
gid = www-data

plugins = python
virtualenv = /home/geonode/Envs/geonode
env = DEBUG=False
env = DJANGO_SETTINGS_MODULE=geonode.local_settings
env = SECRET_KEY='Rand0m%3cr3tK3y'
env = SITE_HOST_NAME=www.example.org
env = SITEURL=https://www.example.org/
env = LOCKDOWN_GEONODE=False
env = SESSION_EXPIRED_CONTROL_ENABLED=True
env = FORCE_SCRIPT_NAME=
env = EMAIL_ENABLE=False
env = DJANGO_EMAIL_HOST_USER=
env = DJANGO_EMAIL_HOST_PASSWORD=
env = DJANGO_EMAIL_HOST=www.example.org
env = DJANGO_EMAIL_PORT=25
env = DJANGO_EMAIL_USE_TLS=False
env = DEFAULT_FROM_EMAIL=GeoNode <no-reply@www.example.org>
env = MONITORING_ENABLED=True
env = GEOSERVER_PUBLIC_HOST=www.example.org
env = GEOSERVER_PUBLIC_PORT=
env = GEOSERVER_ADMIN_PASSWORD=geoserver
env = GEOSERVER_LOCATION=https://www.example.org/geoserver/
env = GEOSERVER_PUBLIC_LOCATION=https://www.example.org/geoserver/
env = GEOSERVER_WEB_UI_LOCATION=https://www.example.org/geoserver/
env = RESOURCE_PUBLISHING=False
env = ADMIN_MODERATE_UPLOADS=False
env = GROUP_PRIVATE_RESOURCES=False
env = GROUP_MANDATORY_RESOURCES=False
env = OGC_REQUEST_TIMEOUT=60
env = OGC_REQUEST_MAX_RETRIES=3
env = OGC_REQUEST_POOL_MAXSIZE=100
env = OGC_REQUEST_POOL_CONNECTIONS=100
env = EXIF_ENABLED=True
env = CREATE_LAYER=False
env = FAVORITE_ENABLED=True
env = SECURE_SSL_REDIRECT=True
env = SECURE_HSTS_INCLUDE_SUBDOMAINS=True
```

Abb. 209: UWSGI Configuration



(Fortsetzung der vorherigen Seite)

```
curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -

sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu
↪$(lsb_release -cs) stable"

sudo apt-get update -y
sudo apt-get install -y docker-ce docker-ce-cli containerd.io docker-compose
sudo apt autoremove --purge

sudo usermod -aG docker geonode
su geonode
```

## Install the Docker and docker-compose packages on a CentOS host

### Docker Setup (First time only)

**Warnung:** The *centos-extras* repository must be enabled

```
sudo yum install -y yum-utils device-mapper-persistent-data lvm2

sudo yum-config-manager --add-repo https://download.docker.com/linux/centos/docker-ce.
↪repo

sudo yum install docker-ce docker-ce-cli containerd.io

sudo systemctl start docker

sudo usermod -aG docker geonode
su geonode
```

### Test Docker Compose Instance

Logout and login again on shell and then execute:

```
docker run -it hello-world
```

## Deploy a vanilla GeoNode 2.10 with Docker

### Clone the Project

```
# Let's create the GeoNode core base folder and clone it
sudo mkdir -p /opt/geonode/
sudo usermod -a -G www-data geonode
sudo chown -Rf geonode:www-data /opt/geonode/
sudo chmod -Rf 775 /opt/geonode/

# Clone the GeoNode source code on /opt/geonode
cd /opt
git clone https://github.com/GeoNode/geonode.git geonode
```

Start the Docker instances on localhost

**Warnung:** The first time pulling the images will take some time. You will need a good internet connection.

```
cd /opt/geonode
docker-compose -f docker-compose.yml -f docker-compose.override.localhost.yml pull
docker-compose -f docker-compose.yml -f docker-compose.override.localhost.yml up -d
```

**Bemerkung:** If you want to re-build the docker images from scratch, instead of pulling them from the Docker Hub add the `--build` parameter to the up command, for instance:

```
docker-compose -f docker-compose.yml -f docker-compose.override.localhost.yml up --
↳build
```

In this case you can of course skip the pull step to download the pre-built images.

**Bemerkung:** To startup the containers daemonized, which means they will be started in the background (and keep running if you log out from the server or close the shell) add the `-d` option to the up command as in the following. `docker-compose` will take care to restart the containers if necessary (e.g. after boot).

```
docker-compose -f docker-compose.yml -f docker-compose.override.localhost.yml up -d

# If you want to rebuild the images also
docker-compose -f docker-compose.yml -f docker-compose.override.localhost.yml up --
↳build -d
```

### Test the instance and follow the logs

If you run the containers daemonized (with the `-d` option), you can either run specific Docker commands to follow the startup and initialization logs or entering the image shell and check for the GeoNode logs.

In order to follow the startup and initialization logs, you will need to run the following command from the repository folder

```
cd /opt/geonode
docker logs -f django4geonode
```

Alternatively:

```
cd /opt/geonode
docker-compose logs -f django
```

You should be able to see several initialization messages. Once the container is up and running, you will see the following statements

```
...
789 static files copied to '/mnt/volumes/statics/static'.
static data refreshed
Executing UWSGI server uwsgi --ini /usr/src/app/uwsgi.ini for Production
[uWSGI] getting INI configuration from /usr/src/app/uwsgi.ini
```

To exit just hit CTRL+C.

This message means that the GeoNode containers have been started. Browsing to `http://localhost/` will show the GeoNode home page. You should be able to successfully log with the default admin user (admin / admin) and start using it right away.

With Docker it is also possible to run a shell in the container and follow the logs exactly the same as you deployed it on a physical host. To achieve this run

```
docker exec -it django4geonode /bin/bash

# Once logged in the GeoNode image, follow the logs by executing
tail -F -n 300 /var/log/geonode.log
```

Alternatively:

```
docker-compose exec django /bin/bash
```

To exit just hit CTRL+C and `exit` to return to the host.

## Override the ENV variables to deploy on a public IP or domain

If you would like to start the containers on a public IP or domain, let's say `www.example.org`, you can

```
cd /opt/geonode

# Stop the Containers (if running)
docker-compose stop
```

Edit the ENV override file in order to deploy on `www.example.org`

```
# Make a copy of docker-compose.override.localhost.yml
cp docker-compose.override.localhost.yml docker-compose.override.example-org.yml
```

Replace everywhere `localhost` with `www.example.org`

```
vim docker-compose.override.example-org.yml
```

```
# e.g.: :%s/localhost/www.example.org/g

version: '2.2'
services:

  django:
    build: .
    # Loading the app is defined here to allow for
    # autoreload on changes it is mounted on top of the
    # old copy that docker added when creating the image
    volumes:
      - './usr/src/app'
    environment:
      - DEBUG=False
      - GEONODE_LB_HOST_IP=www.example.org
      - GEONODE_LB_PORT=80
      - SITEURL=http://www.example.org/
      - ALLOWED_HOSTS=['www.example.org', ]
```

(Fortsetzung auf der nächsten Seite)

(Fortsetzung der vorherigen Seite)

```
- GEOSERVER_PUBLIC_LOCATION=http://www.example.org/geoserver/
- GEOSERVER_WEB_UI_LOCATION=http://www.example.org/geoserver/

celery:
  build: .
  volumes:
    - './usr/src/app'
  environment:
    - DEBUG=False
    - GEONODE_LB_HOST_IP=www.example.org
    - GEONODE_LB_PORT=80
    - SITEURL=http://www.example.org/
    - ALLOWED_HOSTS=['www.example.org', ]
    - GEOSERVER_PUBLIC_LOCATION=http://www.example.org/geoserver/
    - GEOSERVER_WEB_UI_LOCATION=http://www.example.org/geoserver/

geoserver:
  environment:
    - GEONODE_LB_HOST_IP=www.example.org
    - GEONODE_LB_PORT=80
#   - NGINX_BASE_URL=
```

---

**Bemerkung:** It is possible to override here even more variables to customize the GeoNode instance. See the GeoNode Settings section in order to get a list of the available options.

---

Run the containers in daemon mode

```
docker-compose -f docker-compose.yml -f docker-compose.override.example-org.yml up --
↳ build -d
```

### Access the django4geonode Docker container to update the code-base and/or change internal settings

Access the container bash

```
docker exec -i -t django4geonode /bin/bash
```

You will be logged into the GeoNode instance as `root`. The folder is `/usr/src/app/` where the GeoNode project is cloned. Here you will find the GeoNode source code as in the GitHub repository.

---

**Bemerkung:** The machine is empty by default, no Ubuntu packages installed. If you need to install text editors or something you have to run the following commands:

```
apt update
apt install <package name>

e.g.:
  apt install vim
```

---

Update the templates or the Django models. Once in the bash you can edit the templates or the Django models/classes. From here you can run any standard Django management command.

Whenever you change a `template/CSS/Javascript` remember to run later:

```
python manage.py collectstatic
```

in order to update the files into the `statics` Docker volume.

**Warnung:** This is an external volume, and a simple restart won't update it. You have to be careful and keep it aligned with your changes.

Whenever you need to change some settings or environment variable, the easiest thing to do is to:

```
# Stop the container
docker-compose stop

# Restart the container in Daemon mode
docker-compose -f docker-compose.yml -f docker-compose.override.<whatever>.yml up -d
```

Whenever you change the model, remember to run later in the container via `bash`:

```
python manage.py makemigrations
python manage.py migrate
```

## Access the geoserver4geonode Docker container to update the GeoServer version

This procedure allows you to access the GeoServer container.

The concept is exactly the same as above, log into the container with `bash`.

```
# Access the container bash
docker exec -it geoserver4geonode /bin/bash
```

You will be logged into the GeoServer instance as `root`.

GeoServer is deployed on an Apache Tomcat instance which can be found here

```
cd /usr/local/tomcat/webapps/geoserver
```

**Warnung:** The GeoServer `DATA_DIR` is deployed on an external Docker Volume `geonode_gsdatadir`. This data dir won't be affected by changes to the GeoServer application since it is `external`.

Update the GeoServer instance inside the GeoServer Container

**Warnung:** The old configuration will be kept since it is `external`

```
docker exec -it geoserver4geonode bash
```

```
cd /usr/local/tomcat/
wget --no-check-certificate https://build.geo-solutions.it/geonode/geoserver/latest/
↪geoserver-2.14.3.war
mkdir tmp/geoserver
```

(Fortsetzung auf der nächsten Seite)

(Fortsetzung der vorherigen Seite)

```
cd tmp/geoserver/
unzip /usr/local/tomcat/geoserver-2.14.3.war
rm -Rf data
cp -Rf /usr/local/tomcat/webapps/geoserver/data/ .
cd /usr/local/tomcat/
mv webapps/geoserver/ .
mv tmp/geoserver/ webapps/
exit
```

```
docker restart geoserver4geonode
```

**Warnung:** GeoNode 2.8.1 is **NOT** compatible with GeoServer > 2.13.x

GeoNode 2.8.2 / 2.10.x are **NOT** compatible with GeoServer < 2.14.x

## Remove all data and bring your running GeoNode deployment to the initial stage

This procedure allows you to stop all the containers and reset all the data with the deletion of all the volumes.

```
cd /opt/geonode

# stop containers and remove volumes
docker-compose down -v
```

## Passages to completely get rid of old Docker images and volumes (reset the environment completely)

**Bemerkung:** For more details on Docker commands, please refer to the official Docker documentation.

It is possible to let docker show which containers are currently running (add `-a` for all containers, also stopped ones)

```
# Show the currently running containers
docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED
↪ 3b232931f820	geonode/nginx:geoserver	"nginx -g 'daemon of...'"	26 minutes ↪
↪ ago Up 26 minutes	0.0.0.0:80->80/tcp	nginx4geonode	
↪ ff7002ae6e91	geonode/geonode:latest	"/usr/src/app/entryp..."	26 minutes ↪
↪ ago Up 26 minutes	8000/tcp	django4geonode	
↪ 2f155e5043be	geonode/geoserver:2.14.3	"/usr/local/tomcat/t..."	26 minutes ↪
↪ ago Up 26 minutes	8080/tcp	geoserver4geonode	
↪ 97f1668a01b1	geonode_celery	"/usr/src/app/entryp..."	26 minutes ↪
↪ ago Up 26 minutes	8000/tcp	geonode_celery_1	
↪ 1b623598b1bd	geonode/postgis:10	"docker-entrypoint.s..."	About an ↪
↪ hour ago Up 26 minutes	5432/tcp	db4geonode	

Stop all the containers by running

```
docker-compose stop
```

Force kill all containers by running

```
docker kill $(docker ps -q)
```

If you want to clean up all containers and images, without deleting the static volumes (i.e. the DB and the GeoServer catalog), issue the following commands

```
# Remove all containers
docker rm $(docker ps -a -q)

# Remove all docker images
docker rmi $(docker images -q)

# Prune the old images
docker system prune -a
```

If you want to remove a volume also

```
# List of the running volumes
docker volume ls

# Remove the GeoServer catalog by its name
docker volume rm -f geonode-gsdatadir

# Remove all dangling docker volumes
docker volume rm $(docker volume ls -qf dangling=true)

# update all images, should be run regularly to fetch published updates
for i in $(docker images| awk 'NR>1{print $1":"$2}'| grep -v '<none>'); do docker_
→pull "$i" ;done
```

## 1.17 GeoNode Project

### 1.17.1 Overview

The following steps will guide you to a new setup of GeoNode Project. All guides will first install and configure the system to run it in **DEBUG** mode (also known as **DEVELOPMENT** mode) and then by configuring an **HTTPD** server to serve GeoNode through the standard **HTTP** (80) port.

Those guides **are not** meant to be used on a production system. There will be dedicated chapters that will show you some *hints* to optimize GeoNode for a production-ready machine. In any case, we strongly suggest to task an experienced *DevOp* or *System Administrator* before exposing your server to the **WEB**.

### 1.17.2 Ubuntu 18.04

This part of the documentation describes the complete setup process for GeoNode on an Ubuntu 18.04 64-bit clean environment (Desktop or Server). All examples use shell commands that you must enter on a local terminal or a remote shell. - If you have a graphical desktop environment you can open the terminal application after login; - if you are working on a remote server the provider or sysadmin should have given you access through an ssh client.

### Install the dependencies

In this section, we are going to install all the basic packages and tools needed for a complete GeoNode installation. To follow this guide, a piece of basic knowledge about Ubuntu Server configuration and working with a shell is required. This guide uses `vim` as the editor; feel free to use `nano`, `gedit` or others.

### Upgrade system packages

Check that your system is already up-to-date with the repository running the following commands:

```
sudo apt update
sudo apt upgrade
```

### Create a Dedicated User

In the following steps a User named `geonode` is used: to run installation commands the user must be in the `sudo` group.

Create User `geonode` **if not present**:

```
# Follow the prompts to set the new user's information.
# It is fine to accept the defaults to leave all of this information blank.
sudo adduser geonode

# The following command adds the user geonode to group sudo
sudo usermod -aG sudo geonode

# make sure the newly created user is allowed to login by ssh
# (out of the scope of this documentation) and switch to User geonode
su geonode
```

### Packages Installation

First, we are going to install all the **system packages** needed for the GeoNode setup.

```
# Install packages from GeoNode core
sudo apt install -y python-gdal gdal-bin
sudo apt install -y python-pip python-dev python-virtualenv
sudo apt install -y libxml2 libxml2-dev gettext
sudo apt install -y libxslt1-dev libjpeg-dev libpng-dev libpq-dev libgdal-dev
↪libgdal20
sudo apt install -y software-properties-common build-essential
sudo apt install -y git unzip gcc zlib1g-dev libgeos-dev libproj-dev
sudo apt install -y sqlite3 spatialite-bin libsqlite3-mod-spatialite

# Install Openjdk
sudo -i apt update
sudo apt install openjdk-8-jdk-headless default-jdk-headless -y
sudo update-java-alternatives --jre-headless --jre --set java-1.8.0-openjdk-amd64

sudo apt update -y
sudo apt upgrade -y
sudo apt autoremove -y
```

(Fortsetzung auf der nächsten Seite)



(Fortsetzung der vorherigen Seite)

```

sudo apt autoclean -y
sudo apt purge -y
sudo apt clean -y

# Install Packages for Virtual environment management
sudo apt install -y virtualenv virtualenvwrapper

```

## Geonode Project Installation

Geonode project is the proper way to run a customized installation of Geonode. The repository of geonode-project contains a minimal set of files following the structure of a django-project. Geonode itself will be installed as a requirement of your project. Inside the project structure is possible to extend, replace or modify all geonode componentse (e.g. css and other static files, templates, models..) and even register new django apps **without touching the original Geonode code**.

**Bemerkung:** You can call your geonode project whatever you like following the naming conventions for python packages (generally lower case with underscores (\_)). In the examples below, replace `my_geonode` with whatever you would like to name your project.

See also the *README* <<https://github.com/GeoNode/geonode-project/blob/master/README.rst>> fiel on geonode-project repository

First of all we need to prepare a new Python Virtual Environment

Check that the file `virtualenvwrapper.sh` exists in the `$HOME/.local/bin/` (`$HOME` is the current user home directory and in our case should be `/home/geonode`) and then add this line to your file `~/.bashrc`

```
vim ~/.bashrc
```

```

# virtualenv
source $HOME/.local/bin/virtualenvwrapper.sh

```

Then run the `.bashrc` from shell

```

source ~/.bashrc
#create a new virtualenv called geonode
mkvirtualenv --no-site-packages geonode

```

At this point, your command prompt shows a `(geonode)` prefix, this indicates that your virtualenv is active.

**Bemerkung:** The next time you need to access the Virtual Environment just run

```
workon geonode
```

```

# Let's create the GeoNode core base folder and clone it
sudo mkdir -p /opt/geonode/
sudo usermod -a -G www-data geonode
sudo chown -Rf geonode:www-data /opt/geonode/
sudo chmod -Rf 775 /opt/geonode/

# Clone the GeoNode source code on /opt/geonode

```

(Fortsetzung auf der nächsten Seite)

(Fortsetzung der vorherigen Seite)

```

cd /opt
git clone https://github.com/GeoNode/geonode.git geonode

# Install the Python packages
cd /opt/geonode
pip install -r requirements.txt --upgrade --no-cache --no-cache-dir
pip install -e . --upgrade --no-cache --no-cache-dir

# Install GDAL Utilities for Python
GDAL_VERSION=`gdal-config --version`; \
  PYGDAL_VERSION="$(pip install pygdal==$GDAL_VERSION 2>&1 | grep -oP '(?<=: )(.*) (?<=>=\\))' | grep -oh $GDAL_VERSION\\.[0-9])"; \
  pip install pygdal==$PYGDAL_VERSION

```

TODO

### 1.17.3 Docker

**Warnung:** Before moving with this section, you should have read and clearly understood the INSTALLATION > GeoNode Core sections, and in particular the Docker one. Everything said for the GeoNode Core Vanilla applies here too, except that the Docker container names will be slightly different. As an instance if you named your project my\_geonode, your containers will be called:

```
'django4my_geonode' instead of 'django4geonode' and so on...
```

### Deploy an instance of a geonode-project Django template 2.10.x with Docker on localhost

Prepare the environment

```

sudo mkdir -p /opt/geonode_custom/
sudo usermod -a -G www-data geonode
sudo chown -Rf geonode:www-data /opt/geonode_custom/
sudo chmod -Rf 775 /opt/geonode_custom/

```

Clone the source code

```

cd /opt/geonode_custom/
git clone https://github.com/GeoNode/geonode-project.git

```

Make an instance out of the Django Template

**Bemerkung:** We will call our instance my\_geonode. You can change the name at your convenience.

```

mkvirtualenv my_geonode
pip install Django==1.11.21
django-admin startproject --template=./geonode-project -e py,rst,json,yml,ini,env,
→sample -n Dockerfile my_geonode
cd /opt/geonode_custom/my_geonode

```

Modify the code and the templates and rebuild the Docker Containers

```
docker-compose -f docker-compose.yml -f docker-compose.override.yml build --no-cache
```

Finally, run the containers

```
docker-compose -f docker-compose.yml -f docker-compose.override.yml up -d
```

## Deploy an instance of a geonode-project Django template 2.10.x with Docker on a domain

**Bemerkung:** We will use `www.example.org` as an example. You can change the name at your convenience.

Stop the containers

```
cd /opt/geonode_custom/my_geonode
```

```
docker-compose -f docker-compose.yml -f docker-compose.override.yml stop
```

Edit the ENV override file in order to deploy on `www.example.org`

```
# Make a copy of docker-compose.override.yml
cp docker-compose.override.yml docker-compose.override.example-org.yml
```

Replace everywhere `localhost` with `www.example.org`

```
vim docker-compose.override.example-org.yml
```

```
# e.g.: :%s/localhost/www.example.org/g

version: '2.2'
services:

  django:
    build: .
    # Loading the app is defined here to allow for
    # autoreload on changes it is mounted on top of the
    # old copy that docker added when creating the image
    volumes:
      - './usr/src/my_geonode'
    environment:
      - DEBUG=False
      - GEONODE_LB_HOST_IP=www.example.org
      - GEONODE_LB_PORT=80
      - SITEURL=http://www.example.org/
      - ALLOWED_HOSTS=['www.example.org', ]
      - GEOSERVER_PUBLIC_LOCATION=http://www.example.org/geoserver/
      - GEOSERVER_WEB_UI_LOCATION=http://www.example.org/geoserver/

  geoserver:
    environment:
      - GEONODE_LB_HOST_IP=localhost
      - GEONODE_LB_PORT=80
  # - NGINX_BASE_URL=
```

**Bemerkung:** It is possible to override here even more variables to customize the GeoNode instance. See the GeoNode

Settings section in order to get a list of the available options.

---

Run the containers in daemon mode

```
docker-compose -f docker-compose.yml -f docker-compose.override.example-org.yml up --  
↪build -d
```

## 1.18 SPCGeoNode

### 1.18.1 Overview

### 1.18.2 Docker

## 1.19 GeoNode Settings

### *Settings*

### 1.19.1 Settings

Here's a list of settings available in GeoNode and their default values. This includes settings for some external applications that GeoNode depends on.

For most of them, default values are good. Those should be changed only for advanced configurations in production or heavily hardened systems.

The most common ones can be set through `environment` variables to avoid touching the `settings.py` file at all. This is a good practice and also the preferred one to configure GeoNode (and Django apps in general). Whenever you need to change them, set the environment variable accordingly (where it is available) instead of overriding it through the `local_settings`.

#### A

#### **ACCESS\_TOKEN\_EXPIRE\_SECONDS**

Default: 86400

Env: `ACCESS_TOKEN_EXPIRE_SECONDS`

When a user logs into GeoNode, if no `ACCESS_TOKEN` exists, a new one will be created with a default expiration time of `ACCESS_TOKEN_EXPIRE_SECONDS` seconds (1 day by default).

#### **ACCOUNT\_APPROVAL\_REQUIRED**

Default: `False`

Env: `ACCOUNT_APPROVAL_REQUIRED`

If `ACCOUNT_APPROVAL_REQUIRED` equals `True`, newly registered users must be activated by a superuser through the Admin gui, before they can access GeoNode.

## ACCOUNT\_CONFIRM\_EMAIL\_ON\_GET

Default: True

This is a [django-allauth setting](#) It allows specifying the HTTP method used when confirming e-mail addresses.

## ACCOUNT\_EMAIL\_REQUIRED

Default: True

This is a [django-allauth setting](#) which controls whether the user is required to provide an e-mail address upon registration.

## ACCOUNT\_EMAIL\_VERIFICATION

Default: optional

This is a [django-allauth setting](#)

## ACCOUNT\_LOGIN\_REDIRECT\_URL

Default: SITEURL

Env: LOGIN\_REDIRECT\_URL

This is a [django-user-accounts setting](#) It allows specifying the default redirect URL after a successful login.

## ACCOUNT\_LOGOUT\_REDIRECT\_URL

Default: SITEURL

Env: LOGOUT\_REDIRECT\_URL

This is a [django-user-accounts setting](#) It allows specifying the default redirect URL after a successful logout.

## ACCOUNT\_NOTIFY\_ON\_PASSWORD\_CHANGE

Default: True

Env: ACCOUNT\_NOTIFY\_ON\_PASSWORD\_CHANGE

This is a [django-user-accounts setting](#)

## ACCOUNT\_OPEN\_SIGNUP

Default: True

This is a [django-user-accounts setting](#) Whether or not people are allowed to self-register to GeoNode or not.

## ACTSTREAM\_SETTINGS

Default:

```
{
  'FETCH_RELATIONS': True,
  'USE_PREFETCH': False,
  'USE_JSONFIELD': True,
  'GFK_FETCH_DEPTH': 1,
}
```

Actstream Settings.

## ADMIN\_MODERATE\_UPLOADS

Default: False

When this variable is set to `True`, every uploaded resource must be approved before becoming visible to the public users.

Until a resource is in `PENDING APPROVAL` state, only the superusers, owner and group members can access it, unless specific edit permissions have been set for other users or groups.

A Group Manager *can* approve the resource, but he cannot publish it whenever the setting `RESOURCE_PUBLISHING` is set to `True`. Otherwise, if `RESOURCE_PUBLISHING` is set to `False`, the resource becomes accessible as soon as it is approved.

## AGON\_RATINGS\_CATEGORY\_CHOICES

Default:

```
{
  "maps.Map": {
    "map": "How good is this map?"
  },
  "layers.Layer": {
    "layer": "How good is this layer?"
  },
  "documents.Document": {
    "document": "How good is this document?"
  }
}
```

## ALLOWED\_DOCUMENT\_TYPES

Default:

```
['doc', 'docx', 'gif', 'jpg', 'jpeg', 'ods', 'odt', 'odp', 'pdf', 'png',
 'ppt', 'pptx', 'rar', 'sld', 'tif', 'tiff', 'txt', 'xls', 'xlsx', 'xml',
 'zip', 'gz', 'qml']
```

A list of acceptable file extensions that can be uploaded to the Documents app.

## ANONYMOUS\_USER\_ID

Default: -1

Env: ANONYMOUS\_USER\_ID

The id of an anonymous user. This is an django-guardian setting.

## API\_INCLUDE\_REGIONS\_COUNT

Default: False

Env: API\_INCLUDE\_REGIONS\_COUNT

If set to True, a counter with the total number of available regions will be added to the API JSON Serializer.

## API\_LIMIT\_PER\_PAGE

Default: 200

Env: API\_LIMIT\_PER\_PAGE

The Number of items returned by the APIs 0 equals no limit. Different from CLIENT\_RESULTS\_LIMIT, affecting the number of items per page in the resource list.

## ASYNC\_SIGNALS

Default: False

Env: ACCOUNT\_NOTIFY\_ON\_PASSWORD\_CHANGE

## AUTH\_EXEMPT\_URLS

Default:

```
(r'^/?$',  
'/gs/*',  
'/static/*',  
'/o/*',  
'/api/o/*',  
'/api/roles',  
'/api/adminRole',  
'/api/users',  
'/api/layers',)
```

A tuple of URL patterns that the user can visit without being authenticated. This setting has no effect if LOCKDOWN\_GEONODE is not True. For example, AUTH\_EXEMPT\_URLS = ('/maps',) will allow unauthenticated users to browse maps.

## AUTO\_GENERATE\_AVATAR\_SIZES

Default: 20, 30, 32, 40, 50, 65, 70, 80, 100, 140, 200, 240

An iterable of integers representing the sizes of avatars to generate on upload. This can save rendering time later on if you pre-generate the resized versions.

### AWS\_ACCESS\_KEY\_ID

Default: ''

Env: AWS\_ACCESS\_KEY\_ID

This is a [Django storage setting](#) Your Amazon Web Services access key, as a string.

### AWS\_BUCKET\_NAME

Default: ''

Env: S3\_BUCKET\_NAME

The name of the S3 bucket GeoNode will pull static and/or media files from. Set through the environment variable S3\_BUCKET\_NAME. This is a [Django storage setting](#)

### AWS\_QUERYSTRING\_AUTH

Default: False

This is a [Django storage setting](#) Setting AWS\_QUERYSTRING\_AUTH to False to remove query parameter authentication from generated URLs. This can be useful if your S3 buckets are public.

### AWS\_S3\_BUCKET\_DOMAIN

<https://github.com/GeoNode/geonode/blob/master/geonode/settings.py#L1661>

AWS\_S3\_BUCKET\_DOMAIN = ',%s.s3.amazonaws.com' % AWS\_STORAGE\_BUCKET\_NAME

### AWS\_SECRET\_ACCESS\_KEY

Default: ''

Env: AWS\_SECRET\_ACCESS\_KEY

This is a [Django storage setting](#) Your Amazon Web Services secret access key, as a string.

### AWS\_STORAGE\_BUCKET\_NAME

Default: ''

Env: S3\_BUCKET\_NAME

This is a [Django storage setting](#) Your Amazon Web Services storage bucket name, as a string.



## B

### BROKER\_HEARTBEAT

Default: 0

Heartbeats are used both by the client and the broker to detect if a connection was closed. This is a [Celery setting](#).

### BROKER\_TRANSPORT\_OPTIONS

Default:

```
{
  'fanout_prefix': True,
  'fanout_patterns': True,
  'socket_timeout': 60,
  'visibility_timeout': 86400
}
```

This is a [Celery setting](#).

## C

### CACHES

A dictionary containing the settings for all caches to be used with Django. This is a [Django setting](#)

### CACHE\_TIME

Default: 0

Env: CACHE\_TIME

### CASCADE\_WORKSPACE

Default: geonode

Env: CASCADE\_WORKSPACE

### CATALOGUE

A dict with the following keys:

ENGINE: The CSW backend (default is `geonode.catalogue.backends.pycsw_local`) URL: The FULLY QUALIFIED base URL to the CSW instance for this GeoNode USERNAME: login credentials (if required) PASSWORD: login credentials (if required)

pycsw is the default CSW enabled in GeoNode. pycsw configuration directives are managed in the PY-CSW entry.

## CELERYD\_POOL\_RESTARTS

Default: `True`

This is a [Celery setting](#).

## CELERY\_ACCEPT\_CONTENT

Default: `[ 'json' ]`

This is a [Celery setting](#).

## CELERY\_ACKS\_LATE

Default: `True`

This is a [Celery setting](#)

## CELERY\_BEAT\_SCHEDULE

Here you can define your scheduled task.

## CELERY\_DISABLE\_RATE\_LIMITS

Default: `False`

This is a [Celery setting](#).

## CELERY\_ENABLE\_UTC

Default: `True`

This is a [Celery setting](#).

## CELERY\_MAX\_CACHED\_RESULTS

Default: `32768`

This is a [Celery setting](#).

## CELERY\_MESSAGE\_COMPRESSION

Default: `gzip`

This is a [Celery setting](#).

## CELERY\_RESULT\_PERSISTENT

Default: False

This is a [Celery setting](#).

## CELERY\_RESULT\_SERIALIZER

Default: json

This is a [Celery setting](#).

## CELERY\_SEND\_TASK\_SENT\_EVENT

Default: True

If enabled, a task-sent event will be sent for every task so tasks can be tracked before they are consumed by a worker. This is a [Celery setting](#).

## CELERY\_TASK\_ALWAYS\_EAGER

Default: False if ASYNC\_SIGNALS else True

This is a [Celery setting](#).

## CELERY\_TASK\_CREATE\_MISSING\_QUEUES

Default: True

This is a [Celery setting](#).

## CELERY\_TASK\_IGNORE\_RESULT

Default: True

This is a [Celery setting](#).

## CELERY\_TASK\_QUEUES

Default:

```
Queue('default', GEONODE_EXCHANGE, routing_key='default'),
Queue('geonode', GEONODE_EXCHANGE, routing_key='geonode'),
Queue('update', GEONODE_EXCHANGE, routing_key='update'),
Queue('cleanup', GEONODE_EXCHANGE, routing_key='cleanup'),
Queue('email', GEONODE_EXCHANGE, routing_key='email'),
```

A tuple with registered Queues.

## CELERY\_TASK\_RESULT\_EXPIRES

Default: 43200

This is a [Celery setting](#).

## CELERY\_TASK\_SERIALIZER

Default: json

This is a [Celery setting](#).

## CELERY\_TIMEZONE

Default: UTC

Env: TIME\_ZONE

This is a [Celery setting](#).

## CELERY\_TRACK\_STARTED

Default: True

This is a [Celery setting](#).

## CELERY\_WORKER\_DISABLE\_RATE\_LIMITS

Default: False

Disable the worker rate limits (number of tasks that can be run in a given time frame).

## CELERY\_WORKER\_SEND\_TASK\_EVENTS

Default: False

Send events so the worker can be monitored by other tools.

## CLIENT\_RESULTS\_LIMIT

Default: 20

Env: CLIENT\_RESULTS\_LIMIT

The Number of results per page listed in the GeoNode search pages. Different from `API_LIMIT_PER_PAGE`, affecting the number of items returned by the APIs.

## CREATE\_LAYER

Default: False

Enable the create layer plugin.

## CKAN\_ORIGINS

Default:

```
CKAN_ORIGINS = [{
    "label": "Humanitarian Data Exchange (HDX)",
    "url": "https://data.hdx.rwlab.org/dataset/new?title={name}&notes=
↪ {abstract}",
    "css_class": "hdx"
}]
```

A list of dictionaries that are used to generate the links to CKAN instances displayed in the Share tab. For each origin, the name and abstract format parameters are replaced by the actual values of the ResourceBase object (layer, map, document). This is not enabled by default. To enable, uncomment the following line: `SOCIAL_ORIGINS.extend(CKAN_ORIGINS)`.

## CSRF\_COOKIE\_HTTPONLY

Default: *False*

Env: *CSRF\_COOKIE\_HTTPONLY*

Whether to use HttpOnly flag on the CSRF cookie. If this is set to True, client-side JavaScript will not be able to access the CSRF cookie. This is a [Django Setting](#)

## CSRF\_COOKIE\_SECURE

Default: *False*

Env: *CSRF\_COOKIE\_HTTPONLY*

Whether to use a secure cookie for the CSRF cookie. If this is set to True, the cookie will be marked as “secure,” which means browsers may ensure that the cookie is only sent with an HTTPS connection. This is a [Django Setting](#)

## D

### DATA\_UPLOAD\_MAX\_NUMBER\_FIELDS

Default: *100000*

Maximum value of parsed attributes.

## DEBUG

Default: *False*

One of the main features of debug mode is the display of detailed error pages. If your app raises an exception when DEBUG is True, Django will display a detailed traceback, including a lot of metadata about your environment, such as all the currently defined Django settings (from `settings.py`). This is a [Django Setting](#)

## DEBUG\_STATIC

Default: *False*

Load non minified version of static files.

## DEFAULT\_ANONYMOUS\_DOWNLOAD\_PERMISSION

Default: *True*

Whether the uploaded resources should downloadable by default.

## DEFAULT\_ANONYMOUS\_VIEW\_PERMISSION

Default: *True*

Whether the uploaded resources should be public by default.

## DEFAULT\_LAYER\_FORMAT

Default: *image/png*

Env: *DEFAULT\_LAYER\_FORMAT*

The default format for requested tile images.

## DEFAULT\_MAP\_CENTER

Default: (0, 0)

Env: *DEFAULT\_MAP\_CENTER\_X* *DEFAULT\_MAP\_CENTER\_Y*

A 2-tuple with the latitude/longitude coordinates of the center-point to use in newly created maps.

## DEFAULT\_MAP\_CRS

Default: *EPSG:3857*

Env: *DEFAULT\_MAP\_CRS*

The default map projection. Default: *EPSG:3857*

## DEFAULT\_MAP\_ZOOM

Default: 0

Env: *DEFAULT\_MAP\_ZOOM*

The zoom-level to use in newly created maps. This works like the OpenLayers zoom level setting; 0 is at the world extent and each additional level cuts the viewport in half in each direction.

## DEFAULT\_SEARCH\_SIZE

Default: 10

Env: DEFAULT\_SEARCH\_SIZE

An integer that specifies the default search size when using `geonode.search` for querying data.

## DEFAULT\_WORKSPACE

Default: `geonode`

Env: DEFAULT\_WORKSPACE

The standard GeoServer workspace.

## DELAYED\_SECURITY\_INTERVAL

Default: 60

Env: DELAYED\_SECURITY\_INTERVAL

This setting only works when `DELAYED_SECURITY_SIGNALS` has been activated and the Celery worker is running. It defines the time interval in seconds for the Celery task to check if there are resources to be synchronized.

For more details see `DELAYED_SECURITY_SIGNALS`

## DELAYED\_SECURITY\_SIGNALS

Default: `False`

Env: DELAYED\_SECURITY\_SIGNALS

This setting only works when `GEOFENCE_SECURITY_ENABLED` has been set to `True` and GeoNode is making use of the GeoServer `BACKEND`.

By setting this to `True`, every time the permissions will be updated/changed for a Layer, they won't be applied immediately but only and only if either:

- a. A Celery Worker is running and it is able to execute the `geonode.security.tasks.synch_guardian` periodic task; notice that the task will be executed every `DELAYED_SECURITY_INTERVAL` seconds.
- b. A periodic cron job runs the `sync_security_rules` management command, or either it is manually executed from the Django shell.
- c. The user, owner of the Layer or with rights to change its permissions, clicks on the GeoNode UI button `Sync permissions` immediately

**Warning:** Layers won't be accessible to public users anymore until the Security Rules are not synchronized!

## DISPLAY\_COMMENTS

Default: `True`

Env: `DISPLAY_COMMENTS`

If set to False comments are hidden.

## DISPLAY\_RATINGS

Default: `True`

Env: `DISPLAY_RATINGS`

If set to False ratings are hidden.

## DISPLAY\_SOCIAL

Default: `True`

Env: `DISPLAY_SOCIAL`

If set to False social sharing is hidden.

## DISPLAY\_WMS\_LINKS

Default: `True`

Env: `DISPLAY_WMS_LINKS`

If set to False direct WMS link to GeoServer is hidden.

## DOWNLOAD\_FORMATS\_METADATA

Specifies which metadata formats are available for users to download.

Default:

```
DOWNLOAD_FORMATS_METADATA = [  
    'Atom', 'DIF', 'Dublin Core', 'ebRIM', 'FGDC', 'ISO',  
]
```

## DOWNLOAD\_FORMATS\_VECTOR

Specifies which formats for vector data are available for users to download.

Default:

```
DOWNLOAD_FORMATS_VECTOR = [  
    'JPEG', 'PDF', 'PNG', 'Zipped Shapefile', 'GML 2.0', 'GML 3.1.1', 'CSV',  
    'Excel', 'GeoJSON', 'KML', 'View in Google Earth', 'Tiles',  
]
```

## DOWNLOAD\_FORMATS\_RASTER

Specifies which formats for raster data are available for users to download.

Default:



```
DOWNLOAD_FORMATS_RASTER = [  
    'JPEG', 'PDF', 'PNG' 'Tiles',  
]
```

## E

### EMAIL\_ENABLE

Default: False

Options:

- EMAIL\_BACKEND  
Default: `django.core.mail.backends.smtp.EmailBackend`  
Env: `DJANGO_EMAIL_BACKEND`
- EMAIL\_HOST  
Default: `localhost`
- EMAIL\_PORT  
Default: `25`
- EMAIL\_HOST\_USER  
Default: `' '`
- EMAIL\_HOST\_PASSWORD  
Default: `' '`
- EMAIL\_USE\_TLS  
Default: `False`
- DEFAULT\_FROM\_EMAIL  
Default: `GeoNode <no-reply@geonode.org>`

## F

### FREETEXT\_KEYWORDS\_READONLY

Default: False

Env: `FREETEXT_KEYWORDS_READONLY`

Make Free-Text Keywords writable from users. Or read-only when set to False.

## G

### GEOFENCE\_SECURITY\_ENABLED

Default: True (False is Test is true)

Env: `GEOFENCE_SECURITY_ENABLED`

Whether the geofence security system is used.

## GEOIP\_PATH

Default: Path to project

Env: PROJECT\_ROOT

The local path where GeoIPCities.dat is written to. Make sure your user has to have write permissions.

## GEONODE\_APPS

If enabled contrib apps are used.

## GEONODE\_CLIENT\_LAYER\_PREVIEW\_LIBRARY

Default: "mapstore"

The library to use for display preview images of layers. The library choices are:

"leaflet" "geoext"

## GEONODE\_EXCHANGE

Default:: Exchange("default", type="direct", durable=True)

The definition of Exchanges published by geonode. Find more about Exchanges at [celery docs](#).

## GEOSERVER\_EXCHANGE

Default:: Exchange("geonode", type="topic", durable=False)

The definition of Exchanges published by GeoServer. Find more about Exchanges at [celery docs](#).

## GEOSERVER\_LOCATION

Default: http://localhost:8080/geoserver/

Env: GEOSERVER\_LOCATION

Url under which GeoServer is available.

## GEOSERVER\_PUBLIC\_HOST

Default: SITE\_HOST\_NAME (Variable)

Env: GEOSERVER\_PUBLIC\_HOST

Public hostname under which GeoServer is available.

## **GEOSERVER\_PUBLIC\_LOCATION**

Default: `SITE_HOST_NAME` (Variable)

Env: `GEOSERVER_PUBLIC_LOCATION`

Public location under which GeoServer is available.

## **GEOSERVER\_PUBLIC\_PORT**

Default: `8080` (Variable)

Env: `GEOSERVER_PUBLIC_PORT`

Public Port under which GeoServer is available.

## **GEOSERVER\_WEB\_UI\_LOCATION**

Default: `GEOSERVER_PUBLIC_LOCATION` (Variable)

Env: `GEOSERVER_WEB_UI_LOCATION`

Public location under which GeoServer is available.

## **GROUP\_PRIVATE\_RESOURCES**

Default: `False`

Env: `GROUP_PRIVATE_RESOURCES`

If this option is enabled, Resources belonging to a Group won't be visible by others

## **H**

### **HAYSTACK\_FACET\_COUNTS**

Default: `True`

Env: `HAYSTACK_FACET_COUNTS`

If set to `True` users will be presented with feedback about the number of resources which matches terms they may be interested in.

### **HAYSTACK\_SEARCH**

Default: `False`

Env: `HAYSTACK_SEARCH`

Enable/disable haystack Search Backend Configuration.

## **L**

### **LEAFLET\_CONFIG**

A dictionary used for Leaflet configuration.

## LICENSES

Default:

```
{
  'ENABLED': True,
  'DETAIL': 'above',
  'METADATA': 'verbose',
}
```

Enable Licenses User Interface

## LOCAL\_SIGNALS\_BROKER\_URL

Default: `memory://`

## LOCKDOWN\_GEONODE

Default: `False`

Env: `LOCKDOWN_GEONODE`

By default, the GeoNode application allows visitors to view most pages without being authenticated. If this is set to `True` users must be authenticated before accessing URL routes not included in `AUTH_EXEMPT_URLS`.

## LOGIN\_URL

Default: `{ }account/login/'.format(SITEURL)`

Env: `LOGIN_URL`

The URL where requests are redirected for login.

## LOGOUT\_URL

Default: `{ }account/login/'.format(SITEURL)`

Env: `LOGOUT_URL`

The URL where requests are redirected for logout.

## M

### MAP\_CLIENT\_USE\_CROSS\_ORIGIN\_CREDENTIALS

Default: `False`

Env: `MAP_CLIENT_USE_CROSS_ORIGIN_CREDENTIALS`

Enables cross origin requests for geonode-client.

## MAX\_DOCUMENT\_SIZE

Default: 2

Env: MAX\_DOCUMENT\_SIZE

Allowed size for documents in MB.

## MISSING\_THUMBNAIL

Default: `geonode/img/missing_thumb.png`

The path to an image used as thumbnail placeholder.

## MODIFY\_TOPICCATEGORY

Default: `False`

Metadata Topic Categories list should not be modified, as it is strictly defined by ISO (See: <http://www.isotc211.org/2005/resources/Codelist/gmxCodetlists.xml> and check the `<CodeListDictionary gml:id="MD_MD_TopicCategoryCode">` element).

Some customization is still possible changing the `is_choice` and the GeoNode description fields.

In case it is necessary to add/delete/update categories, it is possible to set the `MODIFY_TOPICCATEGORY` setting to `True`.

## MONITORING\_ENABLED

Default: `False`

Enable internal monitoring application (*geonode.monitoring*). If set to `True`, add following code to your local settings:

```

MONITORING_ENABLED = True
# add following lines to your local settings to enable monitoring
if MONITORING_ENABLED:
    INSTALLED_APPS + ('geonode.monitoring',)
    MIDDLEWARE_CLASSES + ('geonode.monitoring.middleware.MonitoringMiddleware
    ↪',)

```

See `geonode_monitoring` for details.

## MONITORING\_DATA\_TTL

Default: 7

Env: MONITORING\_DATA\_TTL

How long monitoring data should be stored in days.

## MONITORING\_DISABLE\_CSRF

Default: `False`

Env: `MONITORING_DISABLE_CSRF`

Set this to true to disable csrf check for notification config views, use with caution - for dev purpose only.

## N

## NOTIFICATIONS\_MODULE

Default: `pinax.notifications`

App used for notifications. (pinax.notifications or notification)

## NOTIFICATION\_ENABLED

Default: `True`

Env: `NOTIFICATION_ENABLED`

Enable or disable the notification system.

## O

## OAuth2\_PROVIDER

Django OAuth Toolkit provides a support layer for Django REST Framework. For settings visit: [OAuth Toolkit settings](#)

## OGC\_SERVER\_DEFAULT\_PASSWORD

Default: `geoserver`

Env: `GEOSERVER_ADMIN_PASSWORD`

The geoserver password.

## OGC\_SERVER\_DEFAULT\_USER

Default: `admin`

Env: `GEOSERVER_ADMIN_USER`

The geoserver user.

## OGC\_SERVER

Default: `{ }` (Empty dictionary)

A dictionary of OGC servers and their options. The main server should be listed in the `,default'` key. If there is no `,default'` key or if the `OGC_SERVER` setting does not exist, Geonode will raise an Improperly Configured exception. Below is an example of the `OGC_SERVER` setting:

```
OGC_SERVER = {
    'default' : {
        'LOCATION' : 'http://localhost:8080/geoserver/',
        'USER' : 'admin',
        'PASSWORD' : 'geoserver',
    }
}
```

- **BACKEND**

Default: "geonode.geoserver"

The OGC server backend to use. The backend choices are:

'geonode.geoserver'

- **BACKEND\_WRITE\_ENABLED**

Default: True

Specifies whether the OGC server can be written to. If False, actions that modify data on the OGC server will not execute.

- **DATASTORE**

Default: '' (Empty string)

An optional string that represents the name of a vector datastore, where Geonode uploads are imported into. To support vector datastore imports there also needs to be an entry for the datastore in the DATABASES dictionary with the same name. Example:

```
OGC_SERVER = {
    'default' : {
        'LOCATION' : 'http://localhost:8080/geoserver/',
        'USER' : 'admin',
        'PASSWORD' : 'geoserver',
        'DATASTORE': 'geonode_imports'
    }
}

DATABASES = {
    'default': {
        'ENGINE': 'django.db.backends.sqlite3',
        'NAME': 'development.db',
    },
    'geonode_imports' : {
        'ENGINE': 'django.contrib.gis.db.backends.postgis',
        'NAME': 'geonode_imports',
        'USER' : 'geonode_user',
        'PASSWORD' : 'a_password',
        'HOST' : 'localhost',
        'PORT' : '5432',
    }
}
```

- **GEONODE\_SECURITY\_ENABLED**

Default: True

A boolean that represents whether GeoNode's security application is enabled.

- **LOCATION**

Default: "http://localhost:8080/geoserver/"

A base URL from which GeoNode can construct OGC service URLs. If using GeoServer you can determine this by visiting the GeoServer administration home page without the /web/ at the end. For example, if your GeoServer administration app is at <http://example.com/geoserver/web/>, your server's location is <http://example.com/geoserver>.

- **MAPFISH\_PRINT\_ENABLED**

Default: True

A boolean that represents whether the MapFish printing extension is enabled on the server.

- **PASSWORD**

Default: 'geoserver'

The administrative password for the OGC server as a string.

- **PRINT\_NG\_ENABLED**

Default: True

A boolean that represents whether printing of maps and layers is enabled.

- **PUBLIC\_LOCATION**

Default: "http://localhost:8080/geoserver/"

The URL used to in most public requests from Geonode. This setting allows a user to write to one OGC server (the LOCATION setting) and read from a separate server or the PUBLIC\_LOCATION.

- **USER**

Default: 'admin'

The administrative username for the OGC server as a string.

- **WMST\_ENABLED**

Default: False

Not implemented.

- **WPS\_ENABLED**

Default: False

Not implemented.

- **TIMEOUT**

Default: 10

The maximum time, in seconds, to wait for the server to respond.

## **OGP\_URL**

Default: <http://geodata.tufts.edu/solr/select>

Env: OGP\_URL

Endpoint of geodata.tufts.edu getCapabilities.



## OPENGRAPH\_ENABLED

Default:: True

A boolean that specifies whether Open Graph is enabled. Open Graph is used by Facebook and Slack.

## P

## PINAX\_NOTIFICATIONS\_BACKENDS

Default: ("email", \_EMAIL\_BACKEND, 0),

Used notification backend. This is a [pinax notification setting](#):

## PINAX\_NOTIFICATIONS\_LOCK\_WAIT\_TIMEOUT

Default: -1

Env: NOTIFICATIONS\_LOCK\_WAIT\_TIMEOUT

It defines how long to wait for the lock to become available. Default of -1 means to never wait for the lock to become available. This is a [pinax notification setting](#):

## PINAX\_NOTIFICATIONS\_QUEUE\_ALL

Default: -1

Env: NOTIFICATIONS\_LOCK\_WAIT\_TIMEOUT

By default, calling notification.send will send the notification immediately, however, if you set this setting to True, then the default behavior of the send method will be to queue messages in the database for sending via the emit\_notices command. This is a [pinax notification setting](#):

## PROXY\_ALLOWED\_HOSTS

Default: () (Empty tuple)

A tuple of strings representing the host/domain names that GeoNode can proxy requests to. This is a security measure to prevent an attacker from using the GeoNode proxy to render malicious code or access internal sites.

Values in this tuple can be fully qualified names (e.g. ,www.geonode.org'), in which case they will be matched against the request's Host header exactly (case-insensitive, not including port). A value beginning with a period can be used as a subdomain wildcard: .geonode.org will match geonode.org, www.geonode.org, and any other subdomain of geonode.org. A value of ,\*' will match anything and is not recommended for production deployments.

## PROXY\_URL

Default /proxy/?url=

The URL to a proxy that will be used when making client-side requests in GeoNode. By default, the internal GeoNode proxy is used but administrators may favor using their own, less restrictive proxies.

## PYCSW

A dict with pycsw's configuration. Of note are the sections `metadata:main` to set CSW server metadata and `metadata:inspire` to set INSPIRE options. Setting `metadata:inspire['enabled']` to `true` will enable INSPIRE support. Server level configurations can be overridden in the server section. See <http://docs.pycsw.org/en/latest/configuration.html> for full pycsw configuration details.

## R

### RABBITMQ\_SIGNALS\_BROKER\_URL

Default: `amqp://localhost:5672`

The Rabbitmq endpoint

### REDIS\_SIGNALS\_BROKER\_URL

Default: `redis://localhost:6379/0`

The Redis endpoint.

### REGISTRATION\_OPEN

Default: `False`

A boolean that specifies whether users can self-register for an account on your site.

## RESOURCE\_PUBLISHING

Default: `False`

By default, the GeoNode application allows GeoNode staff members to publish/unpublish resources. By default, resources are published when created. When this setting is set to `True` the staff members will be able to unpublish a resource (and eventually publish it back).

## S

### S3\_MEDIA\_ENABLED

Default: `False`

Env: `S3_MEDIA_ENABLED`

Enable/disable Amazon S3 media storage.

### S3\_STATIC\_ENABLED

Default: `False`

Env: `S3_STATIC_ENABLED`

Enable/disable Amazon S3 static storage.

## SEARCH\_FILTERS

Default:

```
'TEXT_ENABLED': True,  
'TYPE_ENABLED': True,  
'CATEGORIES_ENABLED': True,  
'OWNERS_ENABLED': True,  
'KEYWORDS_ENABLED': True,  
'H_KEYWORDS_ENABLED': True,  
'T_KEYWORDS_ENABLED': True,  
'DATE_ENABLED': True,  
'REGION_ENABLED': True,  
'EXTENT_ENABLED': True,
```

Enabled Search Filters for filtering resources.

## SECURE\_BROWSER\_XSS\_FILTER

Default: True

Env: SECURE\_BROWSER\_XSS\_FILTER

If True, the SecurityMiddleware sets the X-XSS-Protection: 1; mode=block header on all responses that do not already have it. This is [Django settings: https://docs.djangoproject.com/en/2.1/ref/settings/#secure-browser-xss-filter](https://docs.djangoproject.com/en/2.1/ref/settings/#secure-browser-xss-filter)

## SECURE\_CONTENT\_TYPE\_NOSNIFF

Default: True

Env: SECURE\_CONTENT\_TYPE\_NOSNIFF

If True, the SecurityMiddleware sets the X-Content-Type-Options: nosniff header on all responses that do not already have it. This is [Django settings: https://docs.djangoproject.com/en/2.1/ref/settings/#secure-content-type-nosniff](https://docs.djangoproject.com/en/2.1/ref/settings/#secure-content-type-nosniff)

## SECURE\_HSTS\_INCLUDE\_SUBDOMAINS

Default: True

Env: SECURE\_HSTS\_INCLUDE\_SUBDOMAINS

This is Django settings: <https://docs.djangoproject.com/en/2.1/ref/settings/#secure-hsts-include-subdomains>

## SECURE\_HSTS\_SECONDS

Default: 3600

Env: SECURE\_HSTS\_SECONDS

This is [Django settings: https://docs.djangoproject.com/en/2.1/ref/settings/#secure-hsts-seconds](https://docs.djangoproject.com/en/2.1/ref/settings/#secure-hsts-seconds). If set to a non-zero integer value, the SecurityMiddleware sets the HTTP Strict Transport Security header on all responses that do not already have it.

## SECURE\_SSL\_REDIRECT

If True, the SecurityMiddleware redirects all non-HTTPS requests to HTTPS (except for those URLs matching a regular expression listed in `SECURE_REDIRECT_EXEMPT`). This is [Django settings](#):

## SERVICE\_UPDATE\_INTERVAL

Default: 0

The Interval services are updated.

## SESSION\_COOKIE\_SECURE

Default: False

Env: `SESSION_COOKIE_SECURE`

This is a [Django setting](#):

## SESSION\_EXPIRED\_CONTROL\_ENABLED

Default: False

Env: `SESSION_EXPIRED_CONTROL_ENABLED`

By enabling this variable, a new middleware `geonode.security.middleware.SessionControlMiddleware` will be added to the `MIDDLEWARE_CLASSES`. The class will check every request to GeoNode and it will force a log out whenever one of the following conditions occurs:

1. The OAuth2 Access Token is not valid anymore or it is expired.

**Warning:** The Access Token might be invalid for various reasons. Usually a misconfiguration of the OAuth2 GeoServer application. The latter is typically installed and configured automatically at GeoNode bootstrap through the default fixtures.

2. The user has been deactivated for some reason; an Admin has disabled it or its password has expired.

Whenever the middleware terminates the session and the user forced to log out, a message will appear to the GeoNode interface.

## SHOW\_PROFILE\_EMAIL

Default: False

A boolean which specifies whether to display the email in the user's profile.

## SITE\_HOST\_NAME

Default: `localhost`

Env: `SITE_HOST_NAME`

The hostname used for GeoNode.

## SITE\_HOST\_PORT

Default: 8000

Env: SITE\_HOST\_PORT

The Site hostport.

## SITEURL

Default: 'http://localhost:8000/'

A base URL for use in creating absolute links to Django views and generating links in metadata.

## SKIP\_PERMS\_FILTER

Default: False

Env: SKIP\_PERMS\_FILTER

If set to true permissions prefiltering is avoided.

## SOCIALACCOUNT\_ADAPTER

Default: `geonode.people.adapters.SocialAccountAdapter`

This is a [django-allauth setting](#) It allows specifying a custom class to handle authentication for social accounts.

## SOCIALACCOUNT\_AUTO\_SIGNUP

Default: True

Attempt to bypass the signup form by using fields (e.g. username, email) retrieved from the social account provider. This is a [Django-allauth setting](#):

## SOCIALACCOUNT\_PROVIDERS

Default:

```

{
  'linkedin_oauth2': {
    'SCOPE': [
      'r_emailaddress',
      'r_basicprofile',
    ],
    'PROFILE_FIELDS': [
      'emailAddress',
      'firstName',
      'headline',
      'id',
      'industry',
      'lastName',

```

(Fortsetzung auf der nächsten Seite)

(Fortsetzung der vorherigen Seite)

```
        'pictureUrl',
        'positions',
        'publicProfileUrl',
        'location',
        'specialties',
        'summary',
    ]
},
'facebook': {
    'METHOD': 'oauth2',
    'SCOPE': [
        'email',
        'public_profile',
    ],
    'FIELDS': [
        'id',
        'email',
        'name',
        'first_name',
        'last_name',
        'verified',
        'locale',
        'timezone',
        'link',
        'gender',
    ]
},
}
```

This is a [django-allauth setting](#) It should be a dictionary with provider specific settings

## SOCIALACCOUNT\_PROFILE\_EXTRACTORS

Default:

```
{
    "facebook": "geonode.people.profileextractors.FacebookExtractor",
    "linkedin_oauth2": "geonode.people.profileextractors.LinkedInExtractor",
}
```

A dictionary with provider ids as keys and path to custom profile extractor classes as values.

## SOCIAL\_BUTTONS

Default: True

A boolean which specifies whether the social media icons and JavaScript should be rendered in GeoNode.

## SOCIAL\_ORIGINS

Default:

```

SOCIAL_ORIGINS = [{
    "label": "Email",
    "url": "mailto:?subject={name}&body={url}",
    "css_class": "email"
}, {
    "label": "Facebook",
    "url": "http://www.facebook.com/sharer.php?u={url}",
    "css_class": "fb"
}, {
    "label": "Twitter",
    "url": "https://twitter.com/share?url={url}",
    "css_class": "tw"
}, {
    "label": "Google +",
    "url": "https://plus.google.com/share?url={url}",
    "css_class": "gp"
}]

```

A list of dictionaries that are used to generate the social links displayed in the Share tab. For each origin, the name and URL format parameters are replaced by the actual values of the ResourceBase object (layer, map, document).

## SRID

Default:

```

{
    'DETAIL': 'never',
}

```

## T

### TASTYPIE\_DEFAULT\_FORMATS

Default: json

This setting allows you to globally configure the list of allowed serialization formats for your entire site. This is a *tastypie* setting:

### THEME\_ACCOUNT\_CONTACT\_EMAIL

Default: 'admin@example.com'

This email address is added to the bottom of the password reset page in case users have trouble unlocking their account.

## THESAURI

Default = []

A list of Keywords thesauri settings: For example *THESAURI* = [{,name:'inspire\_themes', ,required':True, ,filter':True}, {,name:'inspire\_concepts', ,filter':True}, ]

## TWITTER\_CARD

Default:: True

A boolean that specifies whether Twitter cards are enabled.

## TWITTER\_SITE

Default:: '@GeoNode '

A string that specifies the site to for the twitter:site meta tag for Twitter Cards.

## TWITTER\_HASHTAGS

Default:: ['geonode']

A list that specifies the hashtags to use when sharing a resource when clicking on a social link.

## U

### UNOCONV\_ENABLE

Default: False

Env: UNOCONV\_ENABLE

## UPLOADER

Default:

```
{
  'BACKEND' : 'geonode.rest',
  'OPTIONS' : {
    'TIME_ENABLED': False,
  }
}
```

A dictionary of Uploader settings and their values.

- BACKEND

Default: 'geonode.rest'

The uploader backend to use. The backend choices are:

'geonode.importer' 'geonode.rest'

The importer backend requires the GeoServer importer extension to be enabled.

- OPTIONS

Default:

```
'OPTIONS' : {
  'TIME_ENABLED': False,
}
```



- TIME\_ENABLED

Default: `False`

A boolean that specifies whether the upload should allow the user to enable time support when uploading data.

## USER\_MESSAGES\_ALLOW\_MULTIPLE\_RECIPIENTS

Default: `True`

Env: `USER_MESSAGES_ALLOW_MULTIPLE_RECIPIENTS`

Set to true to have multiple recipients in `/message/create/`

## X

## X\_FRAME\_OPTIONS

Default: `'ALLOW-FROM %s' % SITEURL`

This is a [Django](#) setting

## 1.20 Customise the Look and Feel

### 1.20.1 GeoNode Themes

### 1.20.2 Theming your GeoNode Project

## 1.21 GeoNode permissions


### 1.21.1 Permissions

Permissions in GeoNode are set per resource, where a resource can be a layer, a map, a document or a service. The way the permissions are set is the same for all of them.

**Warning:** GeoNode has a set of default permissions that are applied on resource creation **when** you don't explicitly declare them. This is particularly relevant when creating and saving a map, where you won't have the possibility to set the its permissions during the creation phase. GeoNode can be tuned to make sure that by default the new created resource are not public, this can be done by changing two settings, see [Default view permissions](#) and [Default download permissions](#)


### Single Resource permissions

Resource permissions can be generally set from the *resource detail* page. The following figure shows how to open the dialog to set permissions on a layer, the same concept applies to documents and maps.


[Data](#)
[Maps](#)
[About](#)

John Smith

## Italian Towers



[Info](#)
[Attributes](#)
[Share](#)
[Ratings](#)
[Comments](#)
[Favorite](#)

**Title** Italian Towers

**License** Not Specified

**Abstract** No abstract provided

**Publication Date** June 7, 2019, 4:03 a.m.

**Type** Vector Data

**Keywords** features, italian\_towers

**Category** Environment

**Regions** Global

**Owner** johnsmith

[More info](#)

[Layer WMS GetCapabilities document](#)

[Download Layer](#)
[Metadata Detail](#)
[Editing Tools](#)
[View Layer](#)
[Download Metadata](#)

**Legend**

Default Point

- Red Square

**Maps using this layer**

This layer is not currently used in any maps.

**Create a map using this layer**

Click the button below to generate a new map based on this layer.

[Create a Map](#)

**Add the layer to an existing map**

Regioni Italiane Map

Click the button below to add the layer to the selected map.

[Add to Map](#)

**Styles**

The following styles are associated with this layer. Choose a style to view it in the preview map.

(default style) Default Point

**Refresh Attributes and Statistics of this layer**

Click the button below to allow GeoNode refreshing the list of available Layer Attributes. If the option 'WPS\_ENABLED' has been also set on the backend, it will recalculate their statistics too.

[Refresh Attributes and Statistics](#)

**Clear the Server Cache of this layer**

Click the button below to wipe the tile-cache of this layer.

[Empty Tiled-Layer Cache](#)

**Permissions**

Click the button below to change the permissions of this layer.

[Change Layer Permissions](#)

**About**

Owner, Point of Contact, Metadata Author

johnsmith  
John Smith Foundation

Abb. 210: *Change Layer Permissions*

The dialog for setting the permission allow a granular selection of each permission type to be applied for users and/or groups, each permission type is grouped in tabs that are expanded on click.

The text boxes have an autosuggest feature to help the compilation of user names and groups, it starts upon typing.

You can set the following types of permissions:

- *View* allows to view the layer;
- *Download* allows to download the layer;
- *Change Metadata* allows to change the layer metadata;
- *Edit Data* allows to change attributes and properties of the layers features;
- *Edit Style* allows to change the layer style;
- *Manage* allows to update, delete, change permissions, publish and unpublish the layer.

**Warnung:** When assigning permissions to a group, all the group members will have those permissions. Be careful in case of editing permissions.

## Bulk permissions

GeoNode offers the possibility to set permissions in bulk, this can be done in any *list* page.

In order to set bulk permissions you have first to fill the *shopping cart* with the resources you are interested with by clicking the + button on the resource snippet.

Once happy with the selection you can click the *Set Permissions* button under the shopping cart to open the permissions dialogue that will apply the chosen permission to all selected resources.

## Set permissions for this resource



## Who can view it?

☐ Anyone

The following users:

✖ admin

The following groups:

Choose groups...

## Who can download it?

☐ Anyone

The following users:

✖ admin

The following groups:

Choose groups...

## Who can change metadata for it?

## Who can edit data for this layer?

## Who can edit styles for this layer?

## Who can manage it? (update, delete, change permissions, publish/unpublish it)

Cancel

Apply Changes

Abb. 211: Resource Permission Dialogue



Abb. 212: Add Resource To Shopping Cart

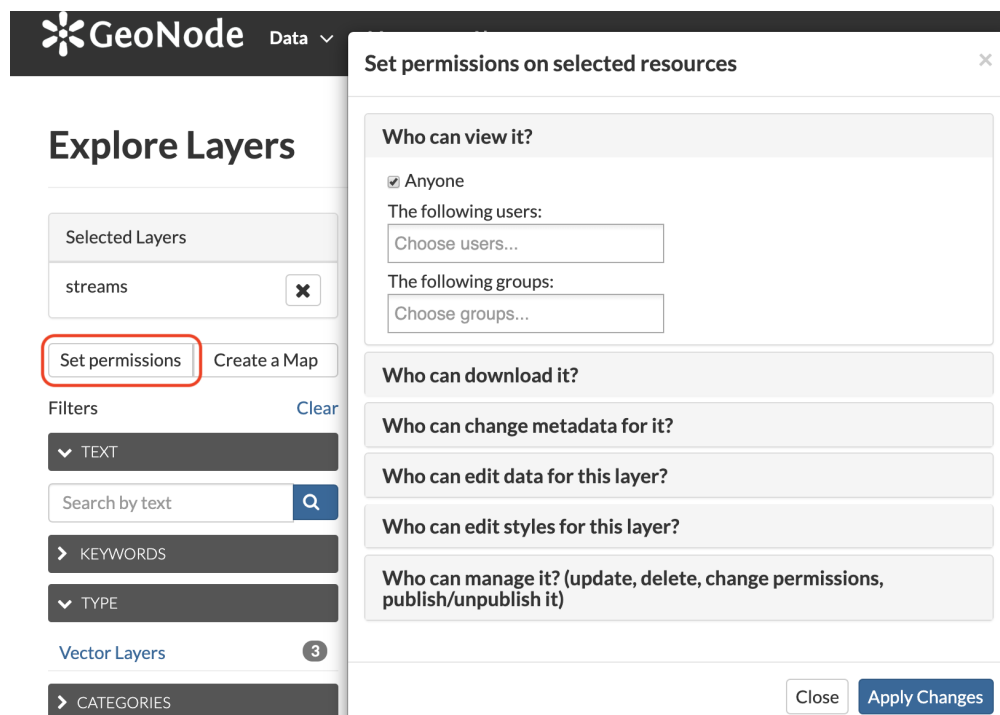


Abb. 213: Shopping Cart Permissions

## **1.22 Monitoring**

## **1.23 GeoNode Backup and Restore**

### **1.23.1 GeoNode Full Backup and Restore**

### **1.23.2 GeoNode selectively Export/Import Layers**

## **1.24 Viewer and Hooksets**

### **1.24.1 GXP**

### **1.24.2 MapStore 2**

### **1.24.3 Leaflet**

## **1.25 GeoNode Components and Architecture**

### **1.25.1 Overview**

### **1.25.2 Django**

### **1.25.3 WebServers**

Apache

## NGINX

### 1.25.4 GeoServer

### 1.25.5 Databases

### 1.25.6 Security with OAuth2

## 1.26 Hardening GeoNode

### 1.26.1 Publish on HTTPS

### 1.26.2 OAuth2 Fixtures Update and Base URL Migration

### 1.26.3 GeoNode Security Subsystem

### 1.26.4 OAuth2 Tokens and Sessions

## 1.27 Social Login

### 1.27.1 Overview

### 1.27.2 Configuration

### 1.27.3 Linkedin

### 1.27.4 Facebook

## 1.28 LDAP Configuration

### 1.28.1 Library Dependencies

### 1.28.2 Installation

### 1.28.3 Configure

## 1.29 GeoNode Django Contrib Apps

### 1.29.1 GeoSites

### 1.29.2 GeoTiffio

### 1.29.3 Datastore\_shards

### 1.29.4 WorldMap

## 1.30 GeoNode Management Commands

### 1.26. Hardening GeoNode

## 1.31 GeoNode Upgrade from older versions

### 1.31.1 Upgrade from 2.8.x

at the [Django Docs](#). Following will concentrate on what is needed for edit existing or contribute a new translation.

### Download the translation File

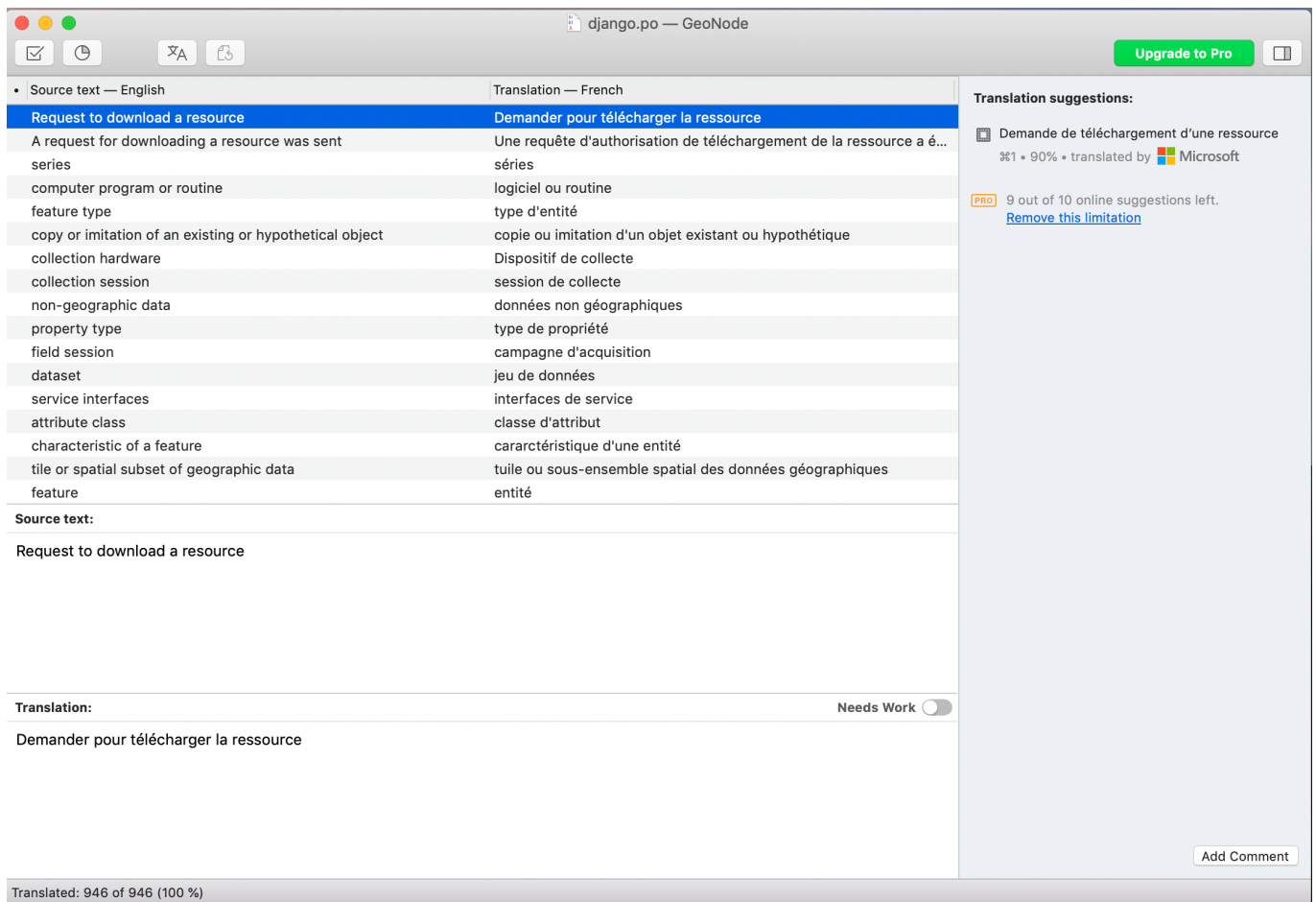
All language files live in a specific subfolder called after their [iso code](#) within the [locale folder](#). For example, for French, the main translation file called `django.po` can be downloaded from [here](#).

Next, to download the language file, we need to install an OpenSource Editor called „poedit“ for editing from: <https://poedit.net/download>

### Translation process

Make a copy of the file before starting the translation so that you can revert in case of errors.

After installing „poedit“, you should be able to double click on the `.po` file to open it. Poedit’s interface should look similar to the one shown in the picture below:

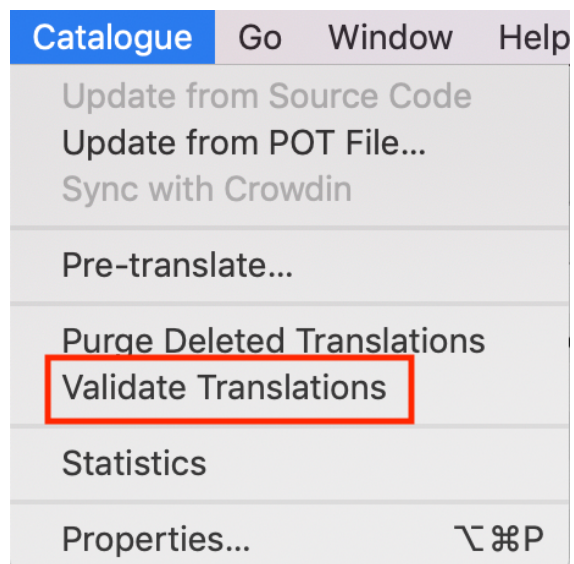
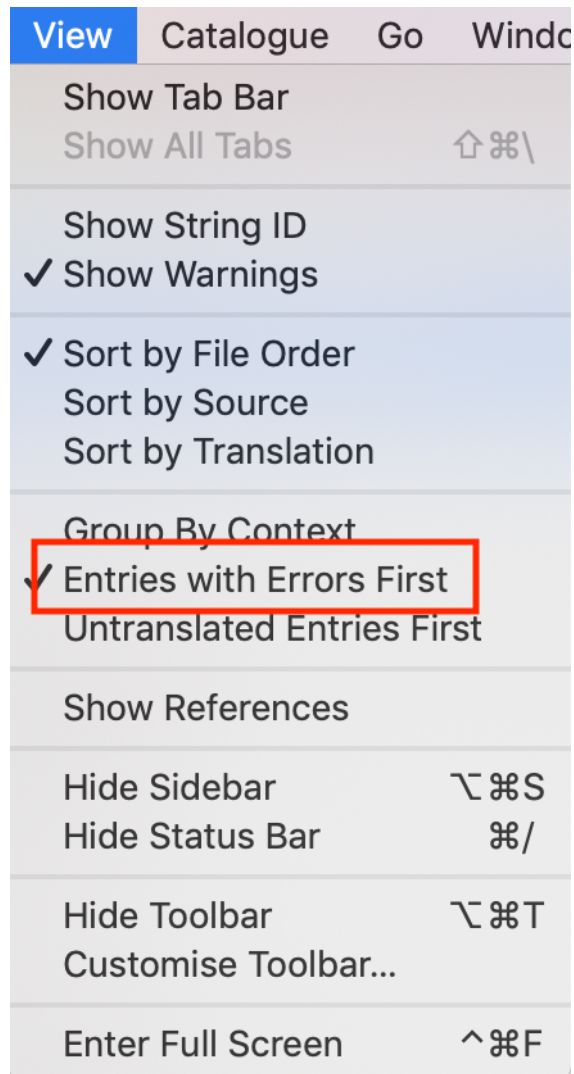


### Identifying translation issues

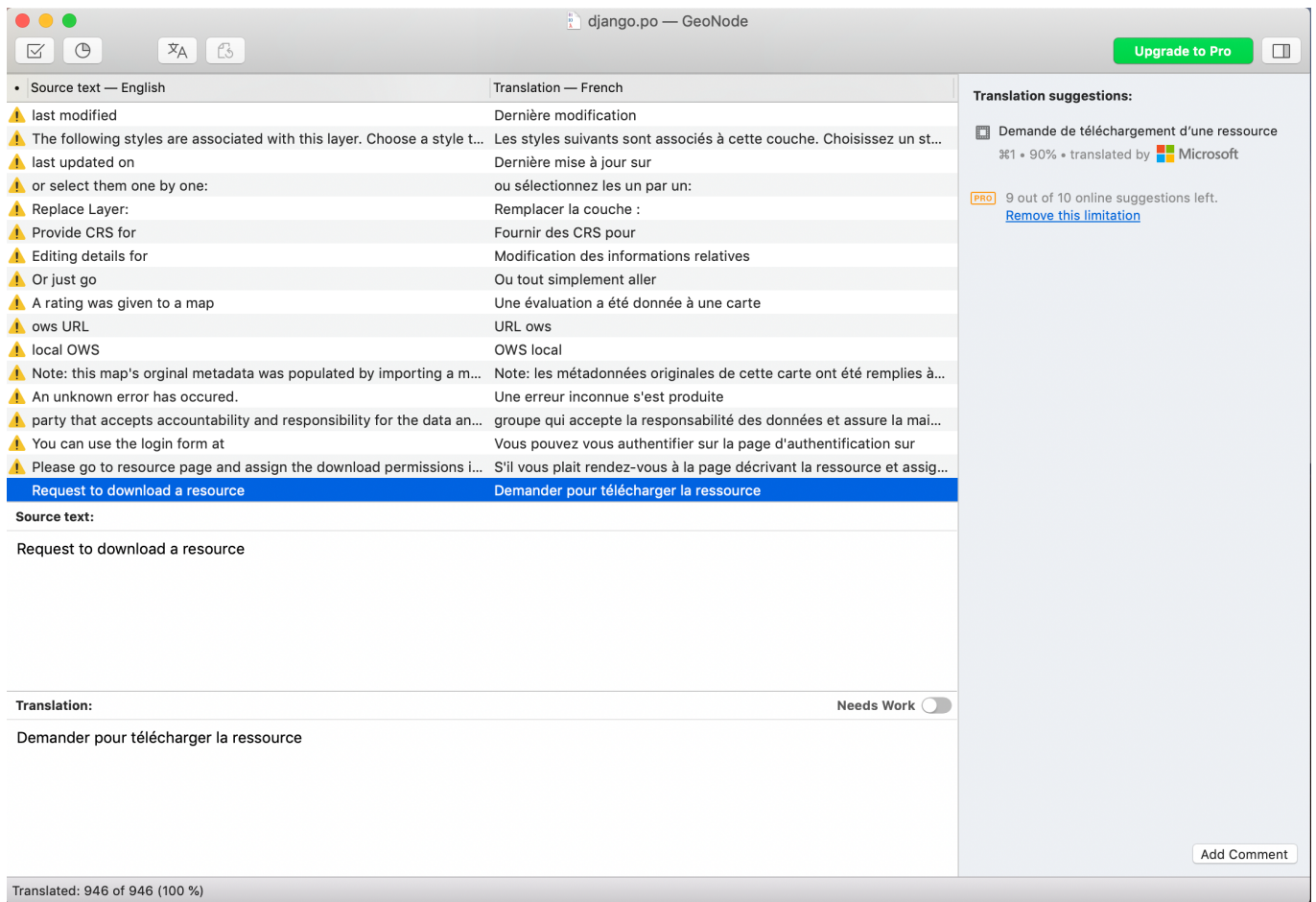
From the „poedit“ menu „View“, make sure that „Entries with Errors first“ is checked:

Next click on „Validate Translations“ from the „Catalogue“ menu:





,Poedit‘ will place translations which may require additional consideration on top of the list. A warning mark means that the interpretation might be not entirely consistent with the original phrase. This is not necessarily an error, just a warning asking the user to double check.



Following to marked phrases, ,Poedit‘ will show untranslated sentences. When clicking on one, it can be translated through the bottom panel.

During translation pay special attention to the button saying ,needs work‘. In case this button is checked, the phrase will be marked as ,fuzzy‘ and ignored in GeoNode.

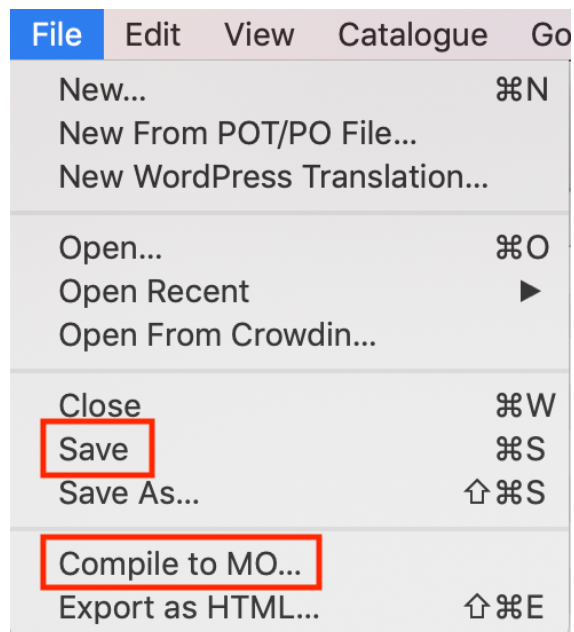
## Saving translations

As soon as the translation is complete, it must be saved and compiled. Saving is straightforward. All you have to do is clicking the ,Save‘ button from the top menu.

As a last step we compile the file. Compiling the translation means to create a binary ,.mo“ file out of the edited ,.po“ file. To do so, click on ,Compile to MO“

Poedit will ask where to write the ,.mo“ file to, by default, this is the same folder as the edited ,.po‘ resides in. The ,.mo‘ file can be overwritten if necessary.

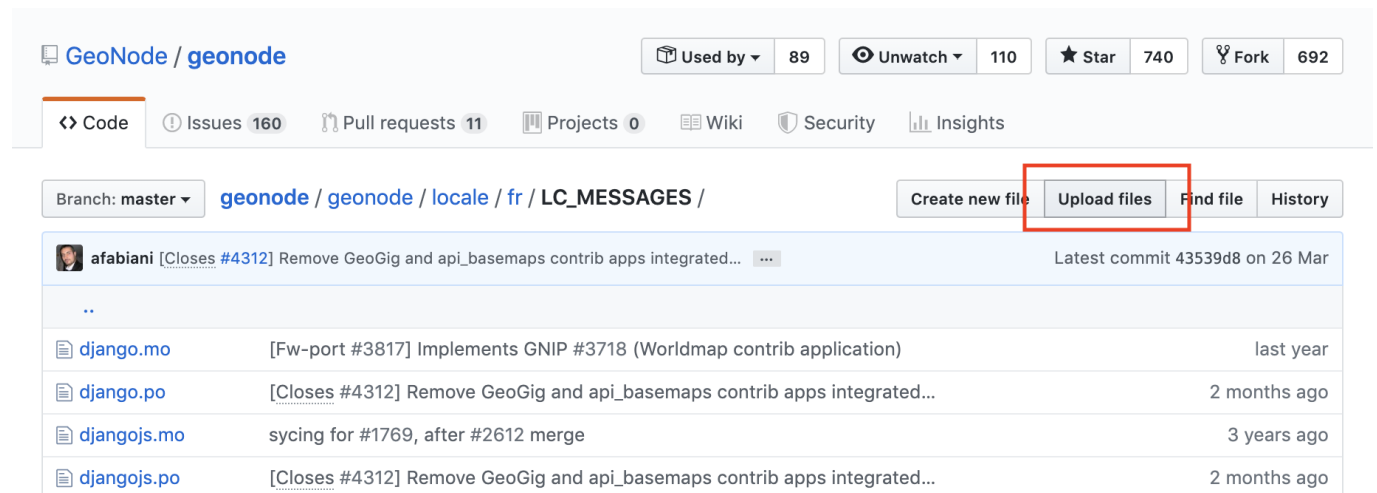
Source text:	
Request to download a resource	
Translation:	Needs Work <input type="checkbox"/>
Demander pour télécharger la ressource	



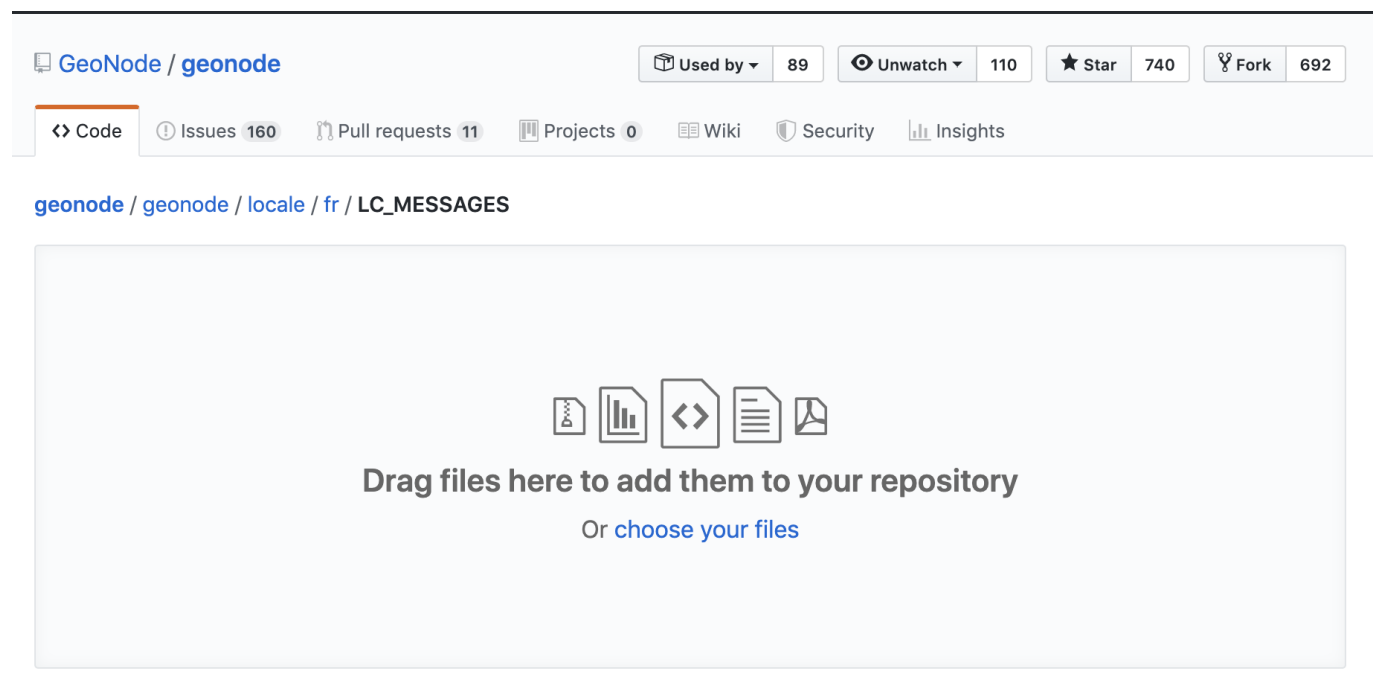
## Push translations to the repository

For sharing our updates, we must upload the files to GeoNode's GitHub repository. Go to the correct file position which, in case for French is: [https://github.com/GeoNode/geonode/tree/master/geonode/locale/fr/LC\\_MESSAGES](https://github.com/GeoNode/geonode/tree/master/geonode/locale/fr/LC_MESSAGES)

Click on „Upload Files“



Drag the updated files into the Upload form, and write a title/description of the changes



Click on „Create a new branch for this commit...“ and then click on the green button.

The last step will create a *PULL REQUEST* which can be reviewed and then approved by a developer.

### Commit changes

Add files via upload

Add an optional extended description...

☐ You can't commit to `master` because it is a [protected branch](#).
 ☒ Create a new branch for this commit and start a pull request. [Learn more about pull requests](#).

### Activate updated translation at your server

Once the files have been pushed to GitHub, it will be necessary to update your server to respect changed files.

At this time, this can be done only by an administrator. From the server ,shell' following commands need to be executed:

```
workon geonode
cd /opt/geonode
DJANGO_SETTINGS_MODULE=geonode.settings python -W ignore manage.py collectstatic --
noinput
sudo service uwsgi restart
```

### Texts not listed in .po files

In case you find a template output without corresponding translation you can add it as follows:

Identify the corresponding template file which is responsible for outputting the text. Add a `{% trans "TEXT" %}` tag. Save the template file and run the following:

```
django-admin makemessages -l en -d django -e "html,txt,py" -i docs
django-admin makemessages -l en -d djangojs -e "js" -i docs -i node_modules -i lib
```

This will update the english .po file. also to update the language which should be edited by settings the `-l fr` parameter. Continue with updating the .po file as described above.

## 1.36 Provide Translations

## 1.37 Write Code

## 1.38 How to Develop