GeoNode User and Security Management

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Learning Objective

After the end of this lecture you will be able to:

- appreciate and use the GeoNode software including its **core functions**
- comprehend all the GeoNode **sections and entities** from a **user and administrator perspective**

Introduction

GeoNode is:

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

It brings together **mature** and **stable open-source software** projects under a consistent and **easy-to-use** interface allowing **non-specialized users** to **share data** and **create interactive maps**.

Accounts and Users

GeoNode is also a social platform, and thus a primary component of any GeoNode instance is the **user account**. The following are therefore necessary before utilizing what GeoNode has to offer:

- Creating a **new account**
- Managing your **profile**
- Setting **notification** preferences
- Viewing **other user** accounts

Managing layers

After creating user accounts, the next primary component of GeoNode is the **Layer**.

Layers are:

- a published resource representing a **raster or vector** spatial data source.
- associated with **metadata** (data about data), **ratings**, and **comments**.

This section allows creation of a new layer by **uploading** a local data set, **adding layer info**, changing the **style** of the layer, and **sharing** the results with other users.
The next slide captures the steps involved in **managing** layers.

Managing layers

1. **Uploading** a layer (vector or raster)
2. **Adding Layer information**
    - Downloads
    - Layer Detail Tabs
3. **Sharing** layers
    - Anonymous access
    - Sharing with social media
4. **Adding more** layers

Administrators Workshop

This workshop is meant to showcase **how to install and manage a deployment of the GeoNode software application**.

It enables you to master all the GeoNode sections and entities from an administrator perspective and be able to:

- Use the GeoNode's **Django Administration Panel**
- Use the console **Management Commands** for GeoNode
- **Configure and customize** your GeoNode installation

However, **prior knowledge** of the following concepts is strongly recommended for you to achieve the above tasks.

Administrators Workshop

1. GeoNode and **Django framework** concepts
2. Good knowledge of **Python**
3. Good knowledge of what is a **geospatial server** and **geospatial web services**
4. Good knowledge of what is **metadata** and a **catalog**
5. Good knowledge of **HTML** and **CSS**

Usage of the GeoNode's Django Administration Panel

GeoNode has an administration panel based on the Django admin which can be used to do some **database operations**.

Although **most of the operations can and should be done through the normal GeoNode interface**, the admin panel provides a **quick overview** and **management tool** over the database.

It should be highlighted that the **sections not covered are meant to be managed through GeoNode**.

Admin Interface

The admin interface allows the following capabilities:

1. Manage **users and groups** through the admin panel
2. Manage **profiles** using the admin panel
3. Manage the **metadata categories** using the admin panel
4. Manage **layers** using the admin panel
5. Manage the **maps** using the admin panel
6. Manage the **documents** using the admin panel

Management Commands for GeoNode

Below is the list of the ones that come from the GeoNode application. The **full list** can be obtained by doing:

python manage.py help

Importlayers: Imports a file or folder with geospatial files to GeoNode.

python manage.py importlayers <data_dir>

Updatelayers:

python manage.py updatelayers

fixsitename:Uses SITENAME and SITEURL to set the values of the default site object.

python manage.py fixsitename

Debugging GeoNode Installations

The following logs play an important role in debugging GeoNode installations:

- **GeoNode** main log
- **GeoServer** log
- **Tomcat** logs
- **PostgreSQL** logs

They give important detailed information about the problems being experienced.

Security and Permissions

Covers the steps that can be done in order to **restrict access** on your data uploaded to a GeoNode instance.

1. First of all it defines how a user can be created and what permissions he/she can have.
2. Secondly it involves a closer look to layers, maps and documents and the different opportunities present in order to ban certain users from viewing, downloading or editing your data.

Security and Permissions

There are **three types of users** with different kind of permissions:

1. **your_superuser:** This user is allowed to attend the admin interface and has all available permissions on layers, maps etc.
2. **geonode_user:** This user is permitted to attend the admin interface, but permissions on layers, maps etc. have to be assigned
3. **test_user:** This user is not able to attend the admin interface, permissions on layers, maps etc. have also to be assigned

Security and Permissions

Layer: Access to a given layer is split up into 3 groups:

1. **View** and **Download** data
2. **Edit** data
3. **Manage** and **Edit** data

The difference between last 2 is that a user assigned to edit a layer is not able to change the permissions on the layer whereas a user assigned to manage and edit layer can change the permissions.

You can now choose whether you want your layer to be viewed and downloaded by:

- **anyone**
- **any registered user**
- **certain user (or group)**

Security and Permissions

Maps

The permission on maps are basically the same as on layers, just that there are fewer options on how to edit the map.

Documents

All the same as with Maps is also valid for your uploaded documents

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