GeoNode Virtual Machine Structure

The Virtual Machine is based on a distribution of:

- `Ubuntu 20.04.2 LTS (codename Focal) Desktop 64-bit`

It has been installed with a minimal set of dependencies, except the ones required by the GeoNode installation.

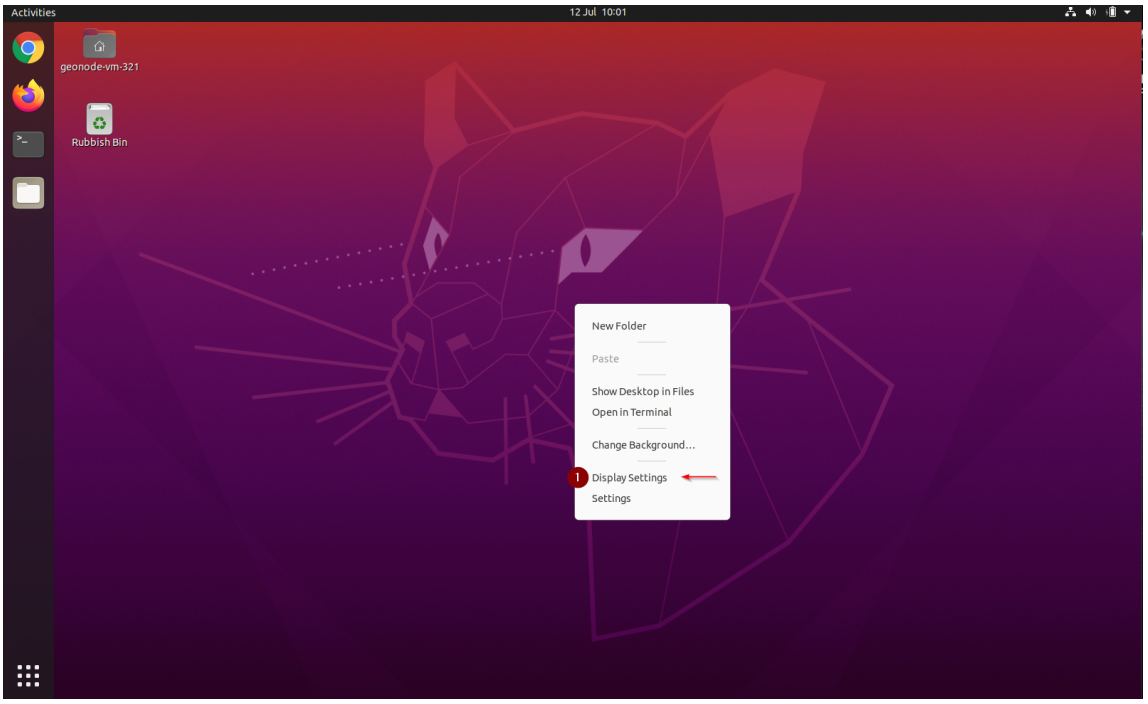
System and Application Users' Credentials

Username	Password	Type
`geonode-vm-321`	`geonode`	`System user with root power`
`admin`	`admin`	`GeoNode default superuser`
`admin`	`geoserver`	`GeoServer default admin (internal)`
`postgres`		`Postgresql 13 default superuser`
`geonode`	`geonode`	`Postgresql 13 geonode DB owner`
`geonode`	`geonode`	`Postgresql 13 geonode_data DB owner`

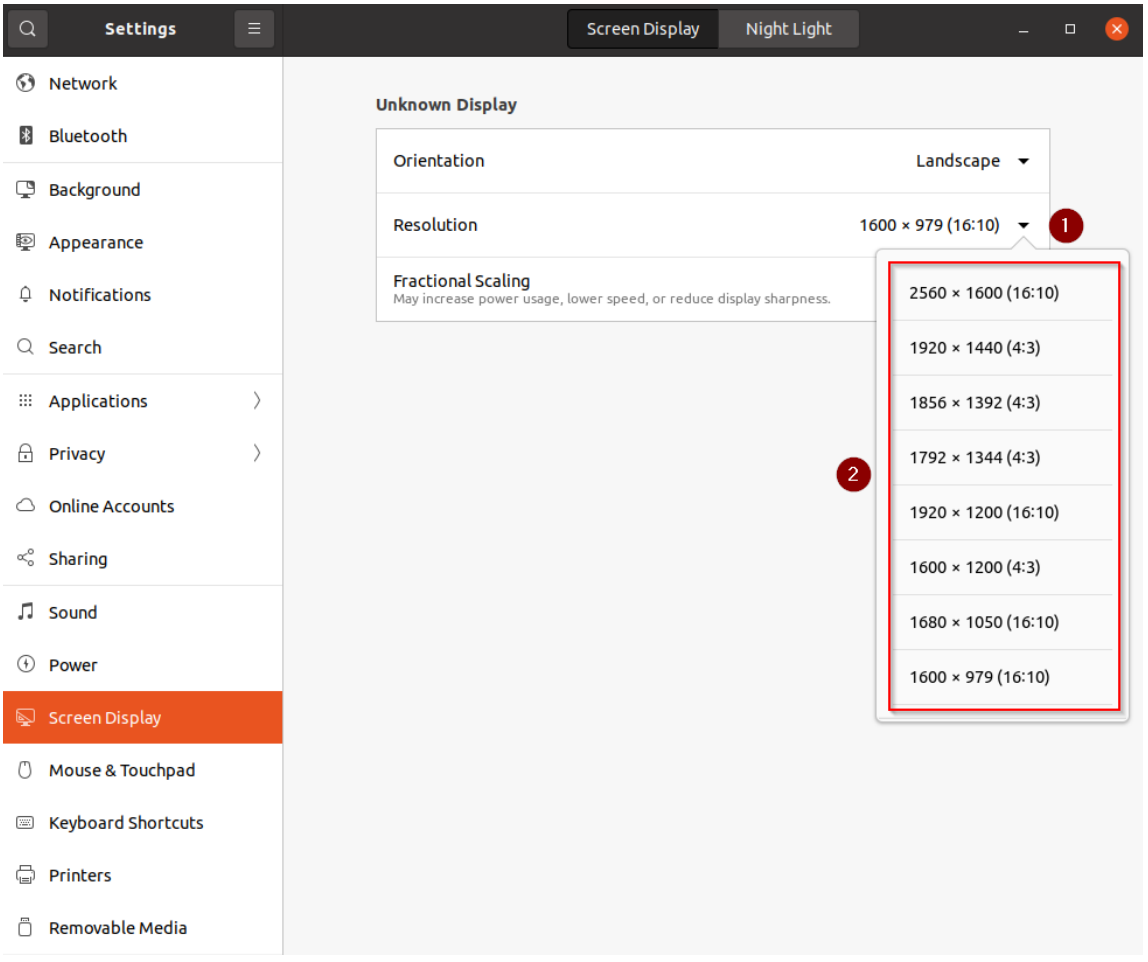
Changing Screen Resolution and Keyboard Type

Screen Resolution

- You can change the screen resolution by clicking with the `mouse right button` to the desktop and selecting the `Display Settings menu`

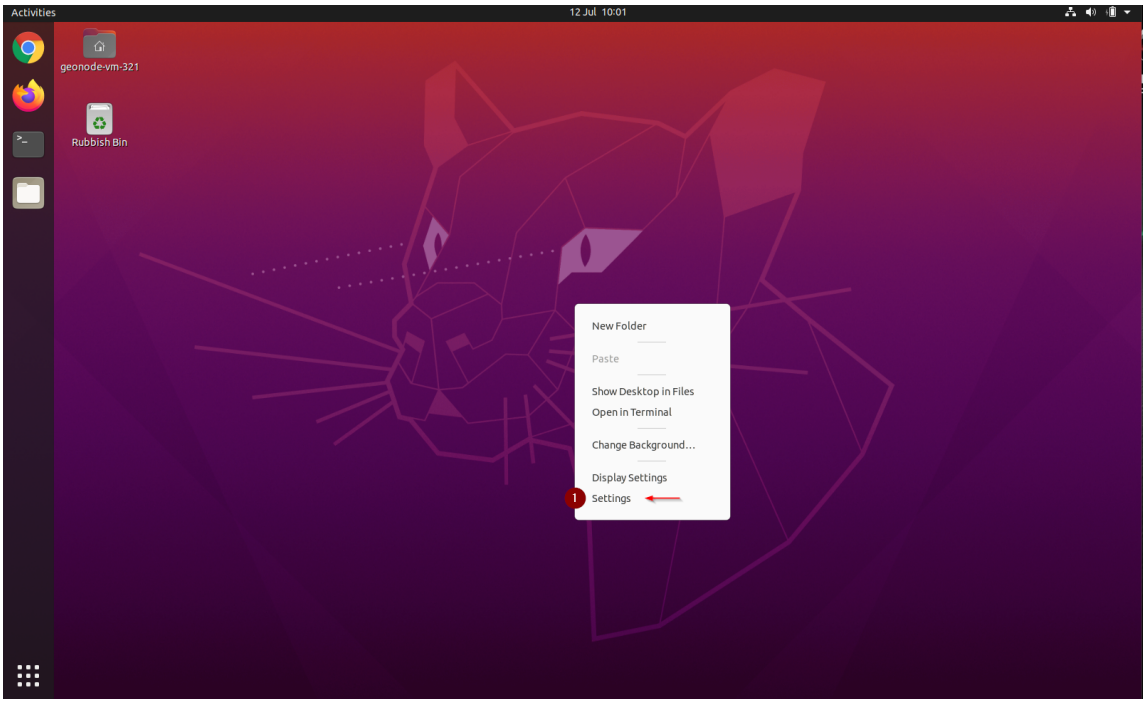


- Select the desired resolution from the dropdown selector and then click on `Apply`

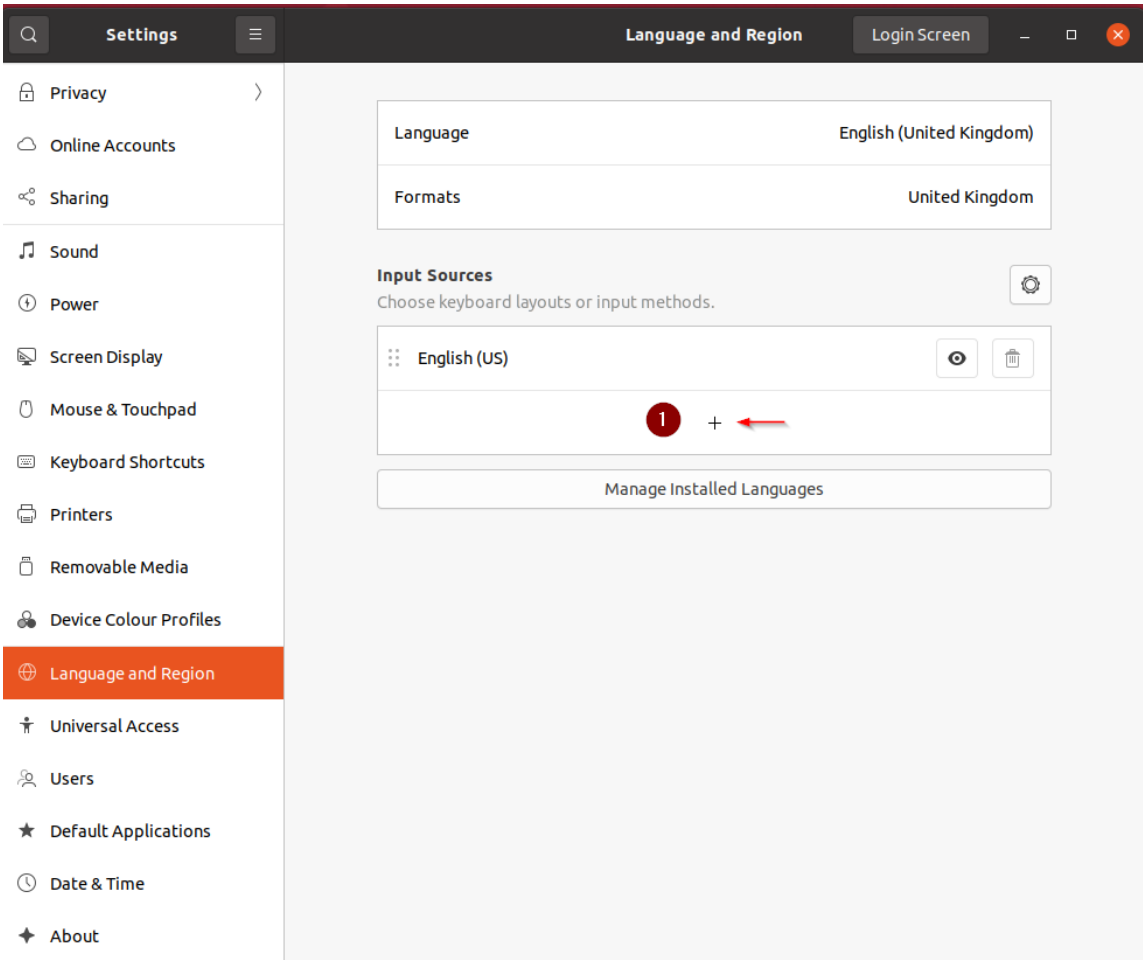


Keyboard Layout

- You can change the screen resolution by clicking with the `mouse right button` to the desktop and selecting the `Settings menu`

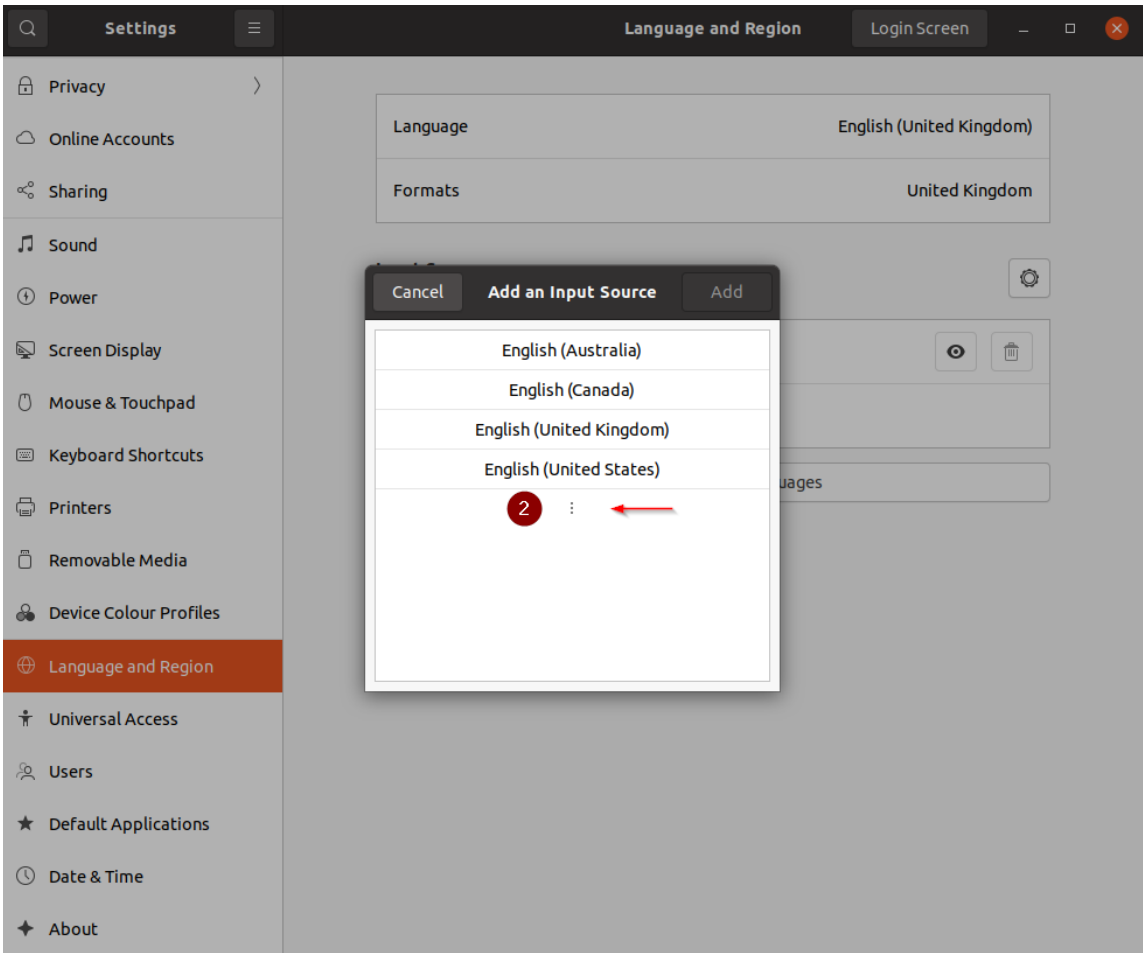


- Clck on the `plus button`



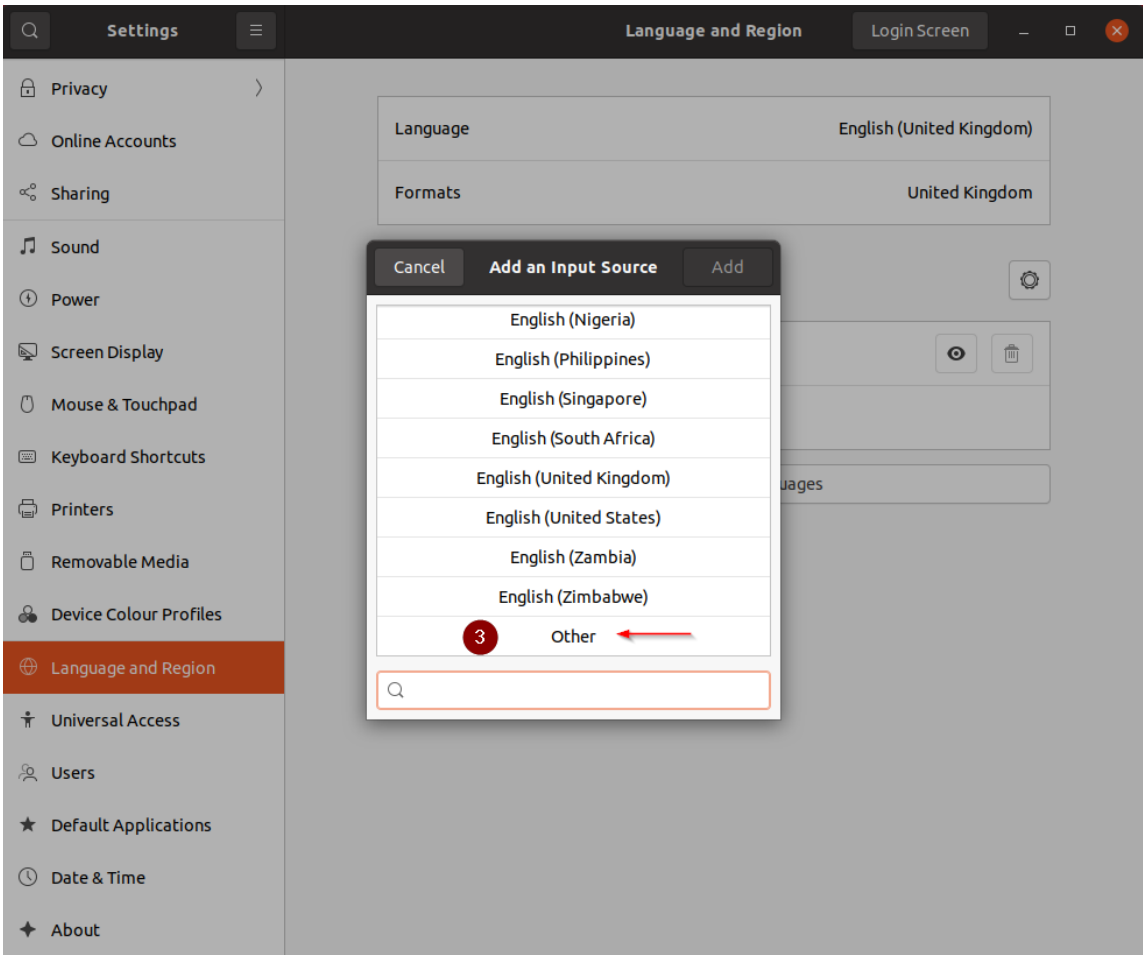
-

Click on the vertical points



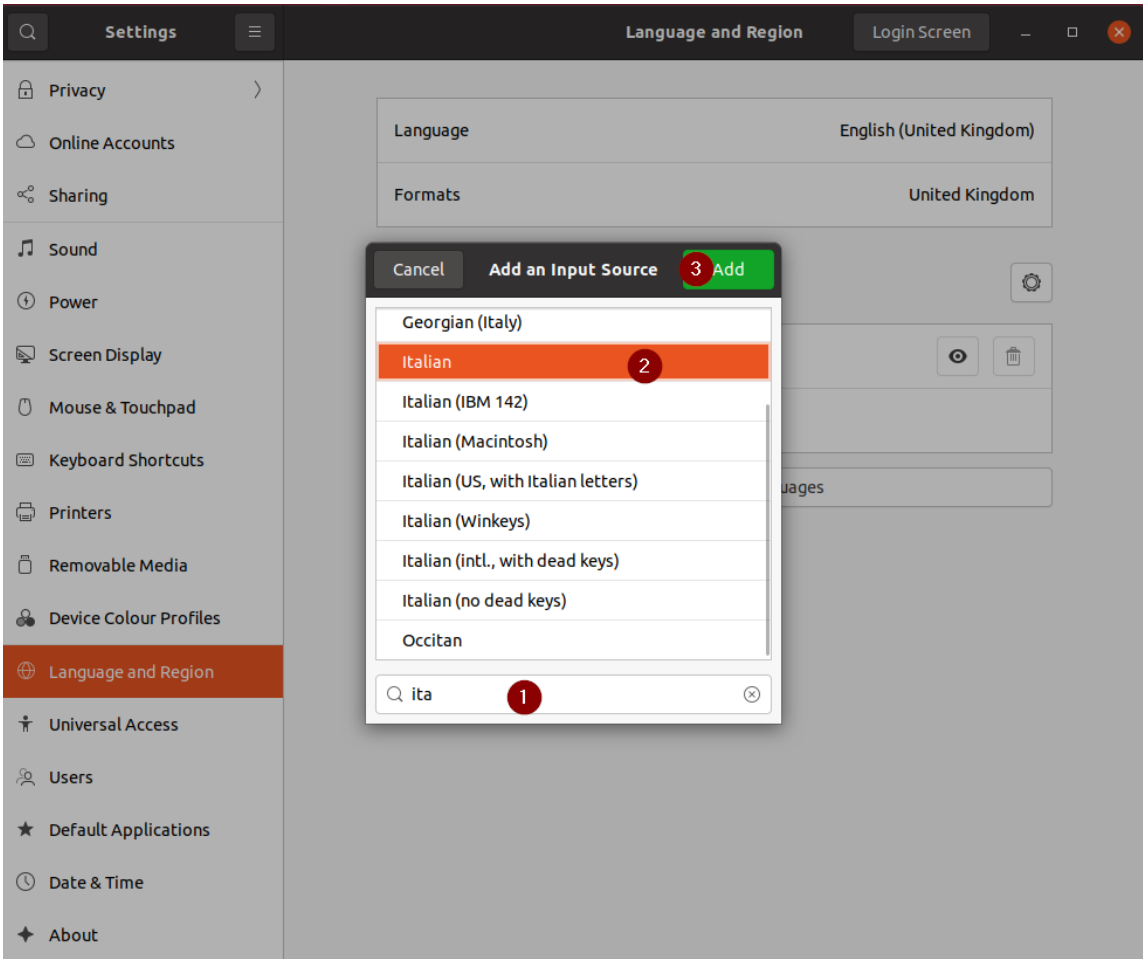
-

If you don't find the desired language, click on the `Other` button



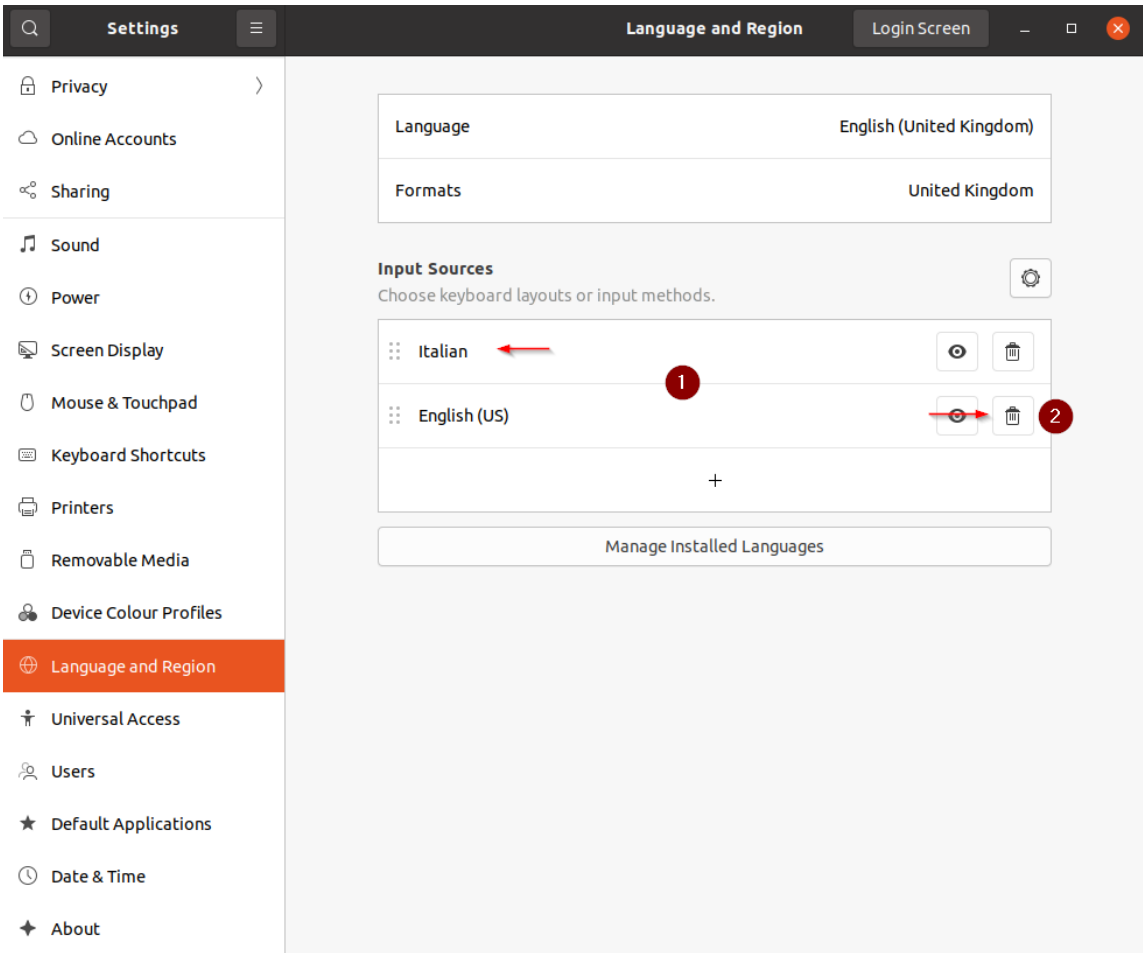
-

Search and select the desired language from the list and click on the `Add` button



-

Drag & drop the desired language to the top and delete the others



System Services and Log files

Postgresql 13 DBMS

This GeoNode installation relies on a DB hosted by an instance of Postgresql 13 service, with the PostGIS Extensions.

Start and Stop the Service

- In order to check the service status run:

  ```
  sudo systemctl status postgresql
  ```

  The system will print something like:

  ```
  ● postgresql.service - PostgreSQL RDBMS
     Loaded: loaded (/lib/systemd/system/postgresql.service; enabled;
     Active: active (exited) since Mon 2021-07-12 09:30:39 BST; 2s ago
    Process: 5458 ExecStart=/bin/true (code=exited, status=0/SUCCESS)
   Main PID: 5458 (code=exited, status=0/SUCCESS)
  ```

- Stop the service by running:

  ```
  sudo systemctl stop postgresql
  ```

- Start the service by running:

  ```
  sudo systemctl start postgresql
  ```

- Check and follow the service logs by running:

  ```
  sudo tail -500f /var/log/postgresql/postgresql-13-main.log
  ```

GeoServer 2.18.3

The geospatial server backend is provided by GeoServer 2.18.3 hosted by an instance of the Apache Tomcat 9.0.48 servlet application provider.

You can access the service interface by pointing the browser to:

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

Start and Stop the Service

- In order to check the service status run:

  ```
  sudo systemctl status tomcat9
  ```

  The system will print something like:

  ```
  ● tomcat9.service - Apache Tomcat Server
     Loaded: loaded (/lib/systemd/system/tomcat9.service; enabled; ven
     Active: active (running) since Mon 2021-07-12 09:41:44 BST; 2s ag
    Process: 6444 ExecStart=/opt/tomcat/latest/bin/startup.sh (code=ex
   Main PID: 6454 (java)
      Tasks: 17 (limit: 4652)
     Memory: 119.3M
     CGroup: /system.slice/tomcat9.service
             └─6454 /usr/lib/jvm/java-8-openjdk-amd64/jre//bin/java -D

  Jul 12 09:41:44 geonodevm-3 systemd[1]: Starting Apache Tomcat Serve
  Jul 12 09:41:44 geonodevm-3 startup.sh[6444]: Existing PID file foun
  Jul 12 09:41:44 geonodevm-3 startup.sh[6444]: Removing/clearing stal
  Jul 12 09:41:44 geonodevm-3 startup.sh[6444]: Tomcat started.
  Jul 12 09:41:44 geonodevm-3 systemd[1]: Started Apache Tomcat Server
  ```

- Stop the service by running:

  ```
  sudo systemctl stop tomcat9
  ```

- Start the service by running:

  ```
  sudo systemctl start tomcat9
  ```

- Check and follow the service logs by running:

  ```
  sudo tail -500f /opt/data/geoserver_logs/geoserver.log
  ```

GeoServer DATA_DIR and JVM Options

The defailt GeoServer `JVM Options` (heap memory, logs and data dir locations, ...) can be set by editing the following file:

```
sudo vim /opt/tomcat/latest/bin/setenv.sh
```

By default those options are set as follows:

```
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.dat
```

The default `GEOSERVER_DATA_DIR` , containing the GeoServer catalog, is set to:

```
GEOSERVER_DATA_DIR="/opt/data/geoserver_data"
```

NGINX 1.18.0 HTTPD Server

All the HTTP services are provided through an instance of the NGINX 1.18.0 HTTPD Server.

This service allows to proxy every HTTP based application through the `http://localhost` virtual host.

Start and Stop the Service

- In order to check the service status run:

  ```
  sudo systemctl status nginx
  ```

  The system will print something like:

  - `nginx.service - A high performance web server and a reverse proxy`

```
     Loaded: loaded (/lib/systemd/system/nginx.service; enabled; vendo
     Active: active (running) since Mon 2021-07-12 09:05:30 BST; 45min
       Docs: man:nginx(8)
    Process: 636 ExecStartPre=/usr/sbin/nginx -t -q -g daemon on; mast
    Process: 693 ExecStart=/usr/sbin/nginx -g daemon on; master_proces
   Main PID: 705 (nginx)
      Tasks: 3 (limit: 4652)
     Memory: 11.2M
     CGroup: /system.slice/nginx.service
             ├─705 nginx: master process /usr/sbin/nginx -g daemon on;
             ├─710 nginx: worker process
             └─711 nginx: worker process

Jul 12 09:05:29 geonodevm-3 systemd[1]: Starting A high performance
Jul 12 09:05:30 geonodevm-3 systemd[1]: Started A high performance w
```

- Stop the service by running:

  ```
  sudo systemctl stop nginx
  ```

- Start the service by running:

  ```
  sudo systemctl start nginx
  ```

- Check and follow the service logs by running:

  ```
  sudo tail -500f /var/log/nginx/access.log  sudo tail -500f /var/log
  /nginx/error.log
  ```

NGINX localhost configuration files

- The main configuration file can be edited by running the following command:

  ```
  sudo vim /etc/nginx/nginx.conf
  ```

- The GeoNode/GeoServer configuration file can be edited by running the following command:

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

GeoNode 3.2.1

GeoNode is provided by an instance of the UWSGI service.

You can access the GeoNode interface by pointing the browser to:

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

GeoNode Source Code

- Everytime touching the GeoNode source code, or any of its components, you **must** enable the correct `VIRTUALENV`. You can do that by running the following command:

```
workon geonode
```

- The GeoNode source code and settings are based on the following folder:

```
cd /opt/geonode
```

- The GeoNode current commit is set to `b87472a44f8d5af75647620f6dcddd9164332d22 (HEAD -> 3.2.x, origin/3.2.x) - Thu Jul 8 17:06:37 2021 +0200`.

- You can check the GeoNode source code version and history by running the following command from the GeoNode source code folder:

```
git log
```

Change the .env settings and restart GeoNode

- The GeoNode settings are currently stored on a `UWSGI ini` file:

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

- Whenever you need to change the settings and restart GeoNode, you can simply run the following command:

```
touch /opt/geonode/geonode/wsgi.py
```

Update the GeoNode Statics Files (UI and clieng updates)

- Whenever you need to the `STATICS` files of GeoNode, you can simply run the following command from the GeoNode source folder:

```
./manage_dev.sh collectstatic
touch /opt/geonode/geonode/wsgi.py
```

GeoNode Logs

- Follow the GeoNode log file by running the following command:

```
sudo tail -500f /var/log/uwsgi/app/geonode.log
```

Next Section: Accounts and User Profile