

SA__00__setup

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1 Setup the env and the DB

1.1 System & basic packages

```
sudo apt install -y build-essential git wget curl lsb-release gnupg
```

1.2 (WSL2 specific)

```
echo -e "[boot]\nsystemd=true" | sudo tee /etc/wsl.conf  
# wsl --shutdown # run from PowerShell once
```

1.3 Docker

```
curl -fsSL https://get.docker.com | sudo sh  
sudo systemctl enable --now docker  
sermod -aG docker $USER && newgrp docker  
# docker run hello-world # should succeed
```

```
# Running bash in pg container:  
# docker exec -it pg bash
```

1.3.1 Removing Docker (just in case)

```
## sudo apt remove -y docker-ce docker-ce-cli containerd.io \  
## docker-compose-plugin docker-ce-rootless-extras docker-buildx-plugin  
## sudo rm -rf /var/lib/docker /var/lib/containerd
```

1.4 PostgreSQL Client and OSM2PGSQL

```
sudo apt install -y postgresql-client  
# 1. Add the OSM admins PPA which ships fresh builds (1.11 for Jammy)  
sudo add-apt-repository ppa:osmadmins/ppa  
sudo apt update  
sudo apt install -y osm2pgsql  
sudo apt install -y pgcli pspg # + add to ~/.bashrc: export PAGER="pspg --csv --no-mouse"
```

1.5 Python

```
python -m venv venv && source venv/bin/activate  
pip install jupyterlab geopandas h3 duckdb psycopg[binary] sqlalchemy matplotlib tqdm
```

2 Data

2.1 Get Cyprus data

```
mkdir -p ~/geo/data
wget -O ~/geo/data/cyprus-latest.osm.pbf \
    https://download.geofabrik.de/europe/cyprus-latest.osm.pbf
```

2.2 Run the PG container and mount the folders

```
docker run -d --name pg \
    -e POSTGRES_PASSWORD=geo \
    -v $HOME/geo/pgdata:/var/lib/postgresql/data \
    -v $HOME/geo/data:/imports \
    -v $HOME/geo:/geo \
    -p 5432:5432 \
    postgis/postgis:15-3.4 #\
    # -c shared_preload_libraries=pg_stat_statements
```

2.3 Create the DB in PG with all extensions (one-off)

```
export PGPASSWORD=geo
psql -h 127.0.0.1 -U postgres -d template_postgis \
    -c "CREATE EXTENSION IF NOT EXISTS hstore;"
dropdb -h 127.0.0.1 -U postgres --if-exists osm
createdb -h 127.0.0.1 -U postgres -T template_postgis osm
# psql -h 127.0.0.1 -U postgres -d osm -c "\dx"
```

2.3.1 (Whole bunch of gis-relevant extensions when we need them)

```
EXT_LIST="hstore pg_trgm unaccent btree_gist pgRouting postgis_raster postgis_sfcgal"
for ext in $EXT_LIST; do
    PGPASSWORD=geo psql -h 127.0.0.1 -U postgres -d template_postgis \
        -c "CREATE EXTENSION IF NOT EXISTS $ext;"
done
```

2.4 Import Cyprus data

```
osm2pgsql --create --slim \
    --cache 1500 \
    --host 127.0.0.1 --port 5432 \
    --user postgres --database osm \
    "$HOME/geo/data/cyprus-latest.osm.pbf"
```