

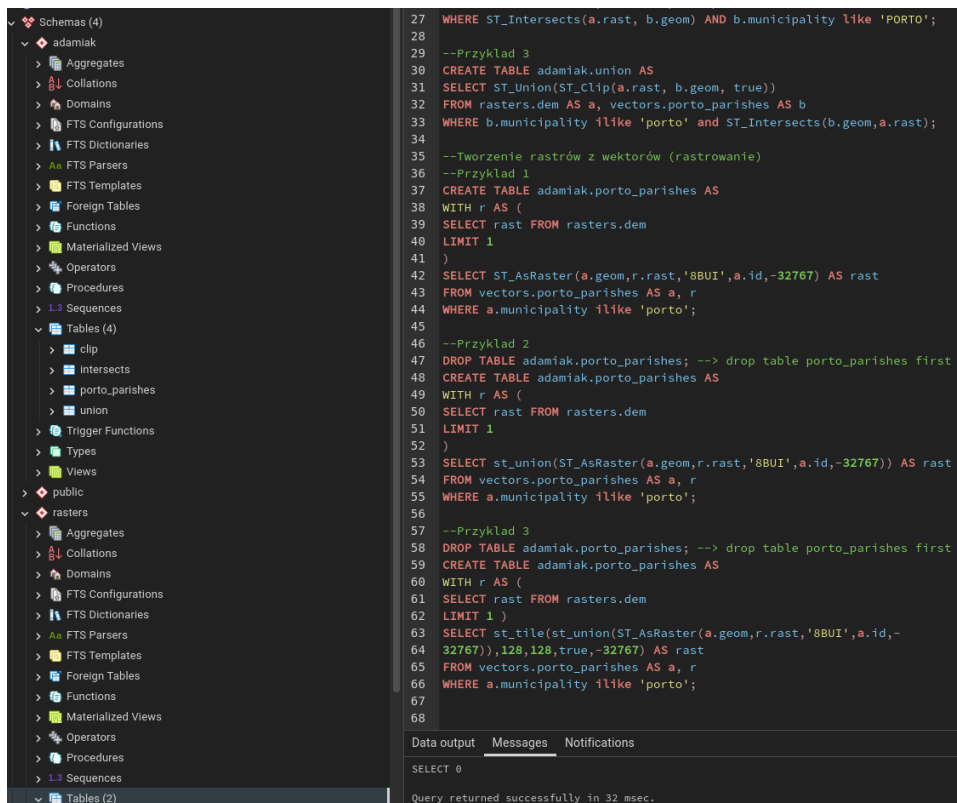
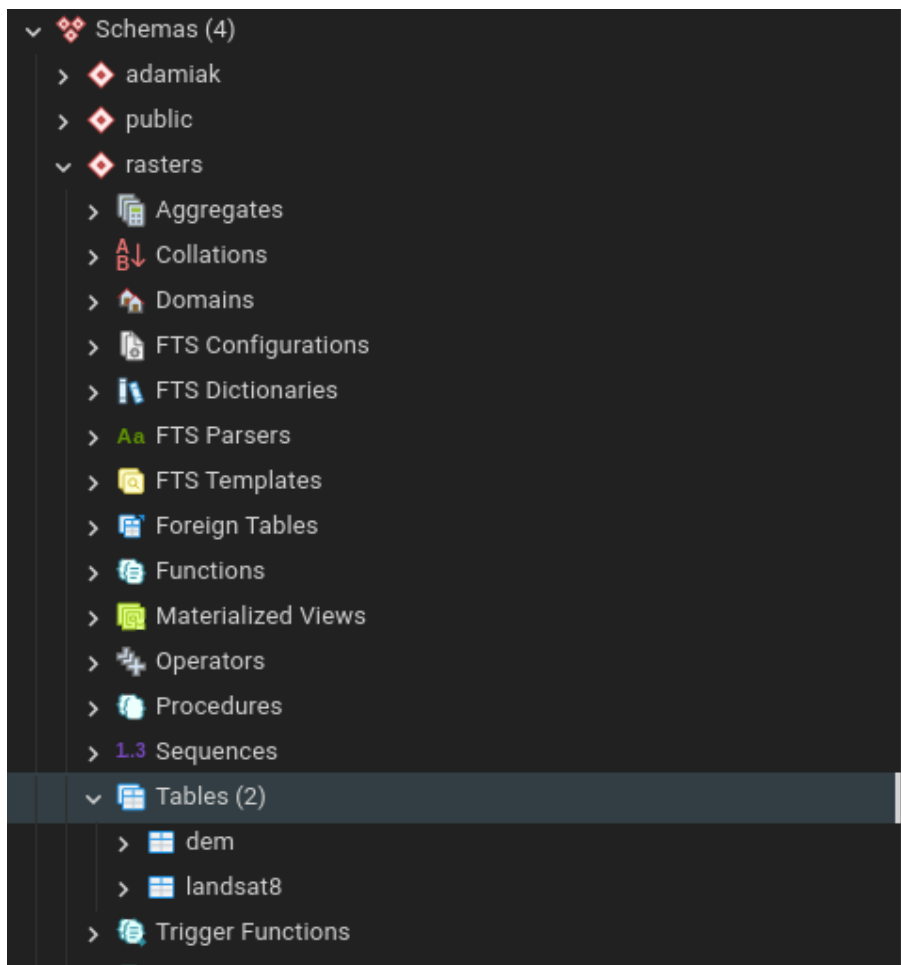
```
/usr/bin/pg_restore --host "localhost" --port "5432" --username "postgres" --no-password --dbname "lab6" --
section=pre-data --verbose "/home/wildfire/Downloads/postgis_raster_backup
```

```
raster2pgsql -s 32767 -t 100x100 -I -C -M -d srtm_1arc_v3.tif rasters.dem | psql -d lab6 -h localhost -U postgres
-p 5432
```

```
(base) wildfire@pop-os:~/Downloads$ raster2pgsql -s 32767 -t 100x100 -I -C -M -d srtm_1arc_v3.tif rasters.dem | psql -d lab
6 -h localhost -U postgres -p 5432
Processing 1/1: srtm_1arc_v3.tif
Password for user postgres:
BEGIN
NOTICE: table "dem" does not exist, skipping
DROP TABLE
CREATE TABLE
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
```

```
raster2pgsql -s 32767 -t 100x100 -I -C -M -d Landsat8_L1TP_RGBN.tif rasters.landsat8 | psql -d lab6 -h
localhost -U postgres -p 5432
```

```
(base) wildfire@pop-os:~/Downloads$ raster2pgsql -s 32767 -t 100x100 -I -C -M -d Landsat8_L1TP_RGBN.tif rasters.landsat8 |
psql -d lab6 -h localhost -U postgres -p 5432
Processing 1/1: Landsat8_L1TP_RGBN.tif
Password for user postgres:
BEGIN
NOTICE: table "landsat8" does not exist, skipping
DROP TABLE
CREATE TABLE
INSERT 0 1
```



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tpi30

union

Trigger Functions

Query

Query History

124 SELECT b.parish AS parish, st\_summarystats(ST\_Union(ST\_Clip(a.rast,

125 b.geom,true))) AS stats

126 FROM rasters.dem AS a, vectors.porto\_parishes AS b

127 WHERE b.municipality ilike 'porto' and ST\_Intersects(b.geom,a.rast)

128 group by b.parish

129 )

130 SELECT parish,(stats).min,(stats).max,(stats).mean FROM t;

131

132 --Przyklad 9

133 SELECT b.name,st\_value(a.rast,(ST\_Dump(b.geom)).geom)

134 FROM

135 rasters.dem a, vectors.places AS b

136 WHERE ST\_Intersects(a.rast,b.geom)

137 ORDER BY b.name;

138

139 --Przyklad 10

140 create table adamiak.tpi30 as

141 select ST\_TPI(a.rast,1) as rast

142 from rasters.dem a;

143

144 CREATE INDEX idx\_tpi30\_rast\_gist ON adamiak.tpi30

145 USING gist (ST\_ConvexHull(rast));

146

147 SELECT AddRasterConstraints('adamiak'::name,

148 'tpi30'::name,'rast'::name);

149

150 --QGIS

151

152 --Algebra map

153 --Przyklad 1

154 CREATE TABLE adamiak.porto\_ndvi AS

155 WITH r AS (

156 SELECT a.rid,ST\_Clip(a.rast, b.geom,true) AS rast

157 FROM rasters.landsat8 AS a, vectors.porto\_parishes AS b

158 WHERE b.municipality ilike 'porto' and ST\_Intersects(b.geom,a.rast)

159 )

160 SELECT

161 r.rid,ST\_MapAlgebra(

162 r.rast, 1,

163 r.rast, 4,

164 '([rast2.val] - [rast1.val]) / ([rast2.val] +

165 [rast1.val])::float','32BF'

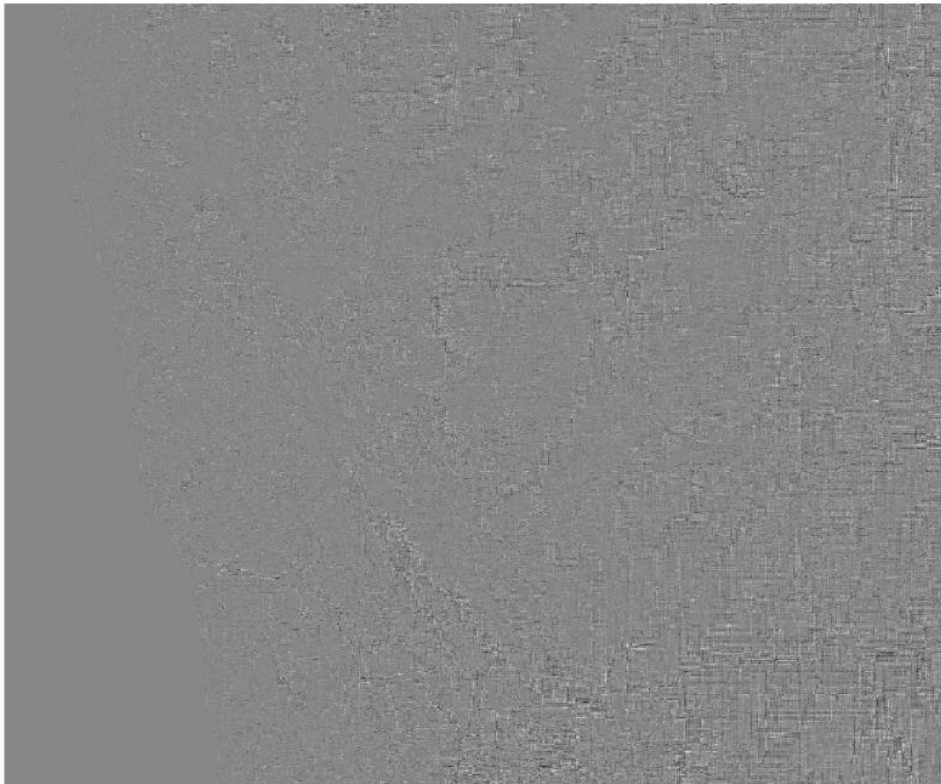
166 ) AS rast

167 FROM r;

168

169

170



```

151
152 --Algebra map
153 --Przyklad 1
154 CREATE TABLE adamiak.porto_ndvi AS
155 WITH r AS (
156 SELECT a.rid,ST_clip(a.rast, b.geom,true) AS rast
157 FROM rasters.landsat8 AS a, vectors.porto_parishes AS b
158 WHERE b.municipality ilike 'porto' and ST_Intersects(b.geom,a.rast)
159 )
160 SELECT
161 r.rid,ST_MapAlgebra(
162 r.rast, 1,
163 r.rast, 4,
164 '([rast2.val] - [rast1.val]) / ([rast2.val] +
165 [rast1.val])::float','32BF'
166 ) AS rast
167 FROM r;
168
169 CREATE INDEX idx_porto_ndvi_rast_gist ON adamiak.porto_ndvi
170 USING gist (ST_ConvexHull(rast));
171
172 SELECT AddRasterConstraints('adamiak'::name,
173 'porto_ndvi'::name,'rast'::name);
174
175 --Przyklad 2
176 create or replace function adamiak.ndvi(
177 value double precision [] [] [],
178 pos integer [][],
179 VARIADIC userargs text []
180 )
181 RETURNS double precision AS
182 $$
183 BEGIN
184 --RAISE NOTICE 'Pixel Value: %', value [1][1][1];-->For debug purposes
185 RETURN (value [2][1][1] - value [1][1][1])/(value [2][1][1]+value
186 [1][1][1]); --> NDVI calculation!
187 END;
188 $$
189 LANGUAGE 'plpgsql' IMMUTABLE COST 1000;
190
191
192
193

```

Data output Messages Notifications

CREATE FUNCTION

Query returned successfully in 46 msec.

```

213 --MapAlgebra
214
215 --Eksport Danych
216 --Przyklad 1
217 SELECT ST_AsTiff(ST_Union(rast))
218 FROM adamiak.porto_ndvi;
219
220 --Przyklad 2
221 SELECT ST_AsGDALRaster(ST_Union(rast), 'Gtiff', ARRAY['COMPRESS=DEFLATE',
222 'PREDICTOR=2', 'PZLEVEL=9'])
223 FROM adamiak.porto_ndvi;
224
225 SELECT ST_GDALDrivers();
226
227 -- CREATE TABLE tmp_out AS
228 -- SELECT lo_from_bytea(0,
229 -- ST_AsGDALRaster(ST_Union(rast), 'Gtiff', ARRAY['COMPRESS=DEFLATE',
230 -- 'PREDICTOR=2', 'PZLEVEL=9'])
231 -- ) AS loid
232 -- FROM adamiak.porto_ndvi;
233
234 -- SELECT lo_export(loid, 'G:\myraster.tiff') --> Save the file in a place
235 -- where the user postgres have access. In windows a flash drive usually works
236 -- fine.
237 -- FROM tmp_out;
238
239 -- SELECT lo_unlink(loid)
240 -- FROM tmp_out; --> Delete the large object.
241
242 --Rozwiazanie problemu
243 create table adamiak.tpi30_porto as
244 SELECT ST_TPI(a.rast,1) as rast
245 FROM rasters.dem AS a, vectors.porto_parishes AS b
246 WHERE ST_Intersects(a.rast, b.geom) AND b.municipality ilike 'porto'
247
248 CREATE INDEX idx_tpi30_porto_rast_gist ON adamiak.tpi30_porto
249 USING gist (ST_ConvexHull(rast));
250
251 SELECT AddRasterConstraints('adamiak'::name,
252 'tpi30_porto'::name,'rast'::name);

```

Data output Messages Notifications

addrasterconstraints	boolean
1	true

Run a command in a new container

```

(base) wildfirepop-os:~/docker-mapserver$ sudo docker run -d -p 8182:80 --name mapserver2 -v 'pwd'/map:/map kartoza/mapserver_kartoza
59ecd9e3038907c133db18ac52c5ca0cce052f30984bacb0c244b86ef0612a80
(base) wildfirepop-os:~/docker-mapserver$ sudo docker exec -it mapserver2 /bin/bash
root@59ecd9e30389:/# apt-get install -y postgresql-client

```

For linux systems, you can – starting from major version 20.04 of the docker engine – now also communicate with the host via `host.docker.internal`. This won't work automatically, but you need to provide the following run flag:

```
--add-host=host.docker.internal:host-gateway
```

See the answer here: <https://stackoverflow.com/a/61424570/3757139>

See also this answer below to add to a docker-compose file -  
<https://stackoverflow.com/a/67158212/243392>

```
mil@irwag-mil:~/docker-mapserver$ sudo docker run -d -p 8182:80 --name mapserver2 -v --add-host=host.docker.internal:host-gateway pwd:/map:/map kartoza/mapserver_kartoza
Unable to find image 'host.docker.internal:host-gateway' locally
docker: Error response from daemon: pull access denied for host.docker.internal, repository does not exist or may require 'docker login': denied: requested access to the resource is denied.
See 'docker run --help'.
mil@irwag-mil:~/docker-mapserver$
```