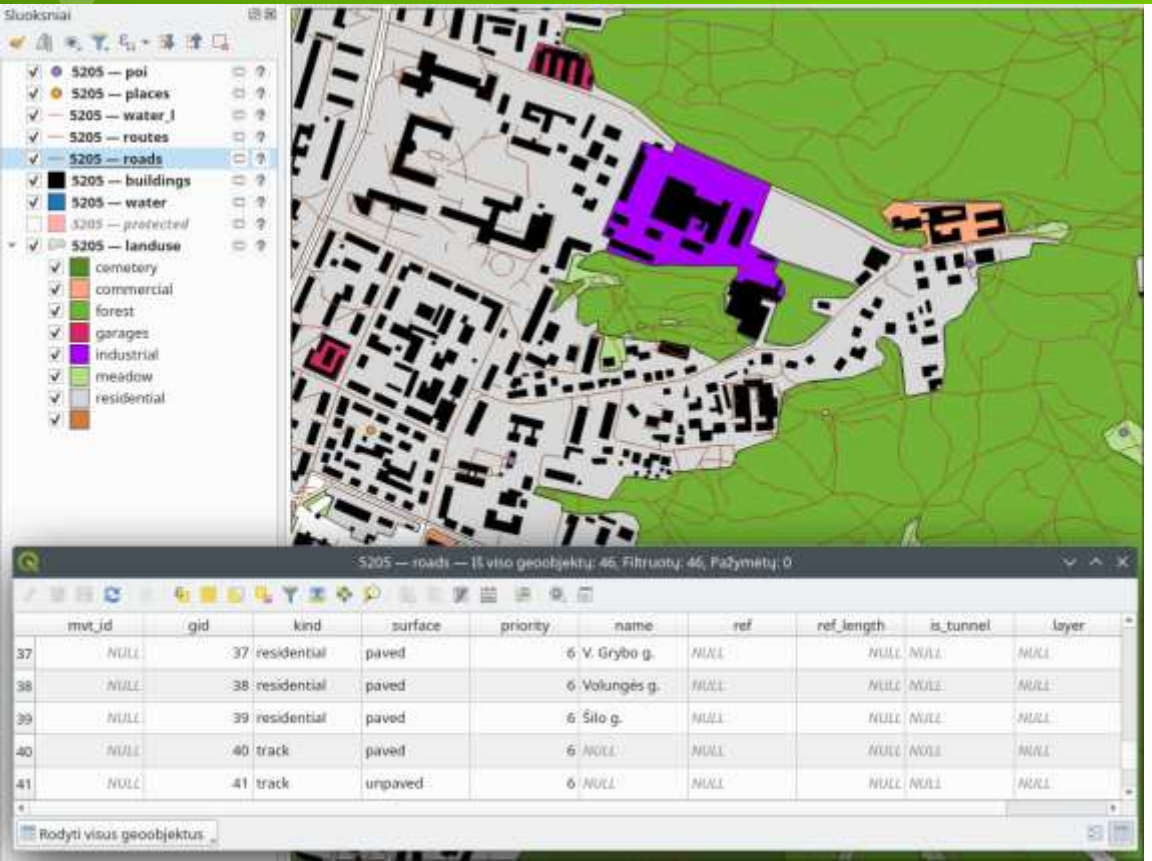
Vector Tiles: Lessons from 8 years in production

BalticGIT 2026

Vector tiles

What? When? Why? How?

What are vector tiles?

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  [ 1372.0, 1813.0 ],
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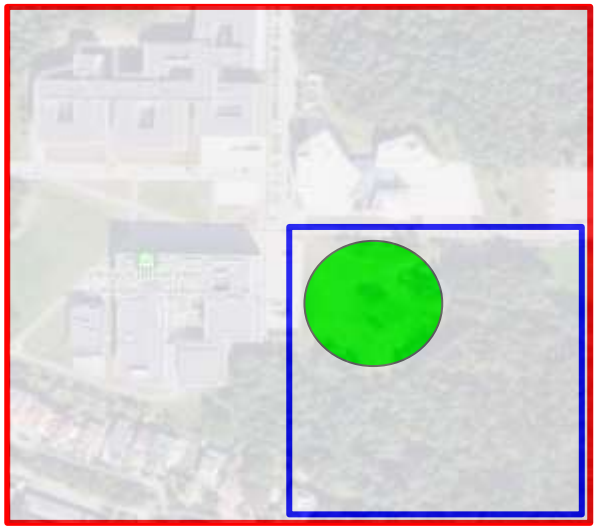
 ] ] ] } },
<...>
```

What are vector tiles?



x: 2000-3000

x: 0 - 2000

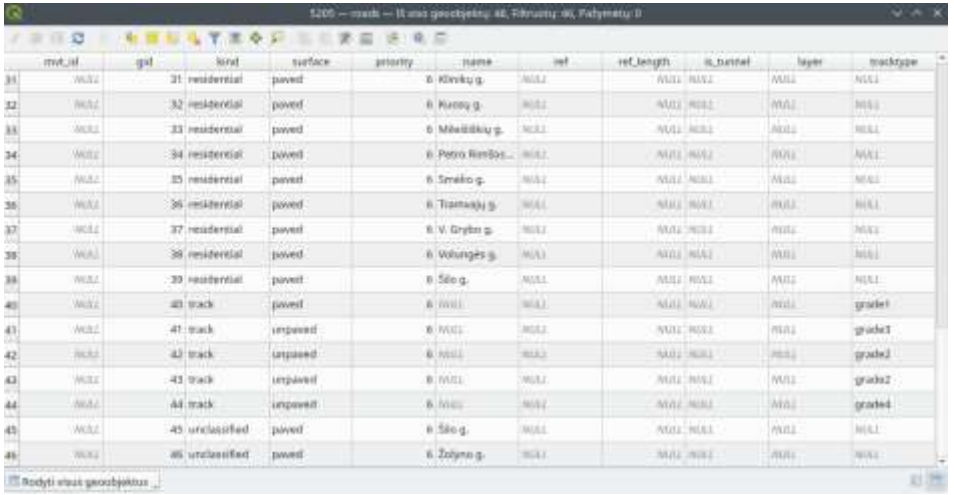
- Purpose of vector tile is to draw a rectangle:
  - Of a specific place
  - Of a specific scale
- VT is not WFS - no final coordinates
- „Automatic“ generalisation

What are vector tiles?

- Local system
- Integer coordinates
- For rendering picture which previously came as png/jpeg
- It is not WFS
  - (not only because WFS does not cache)

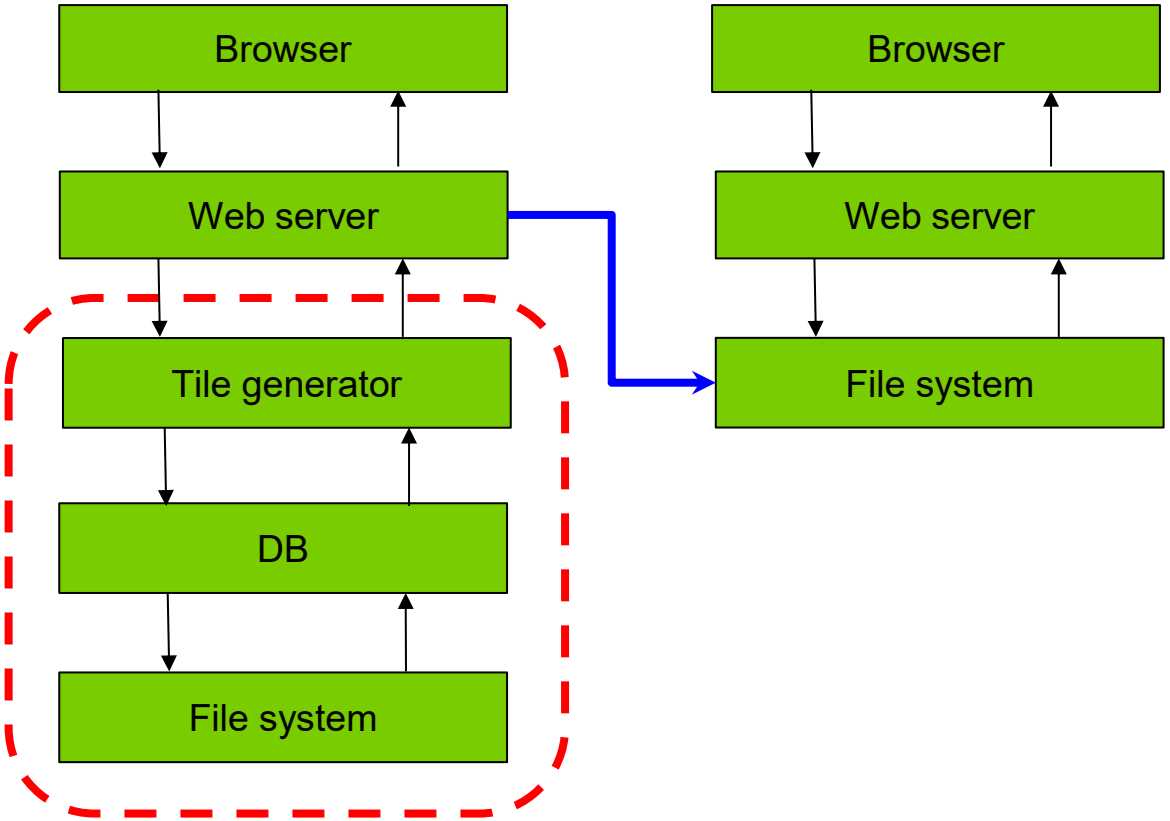
What are vector tiles?

- Unlimited size
- Smaller or larger than raster?



What are vector tiles?

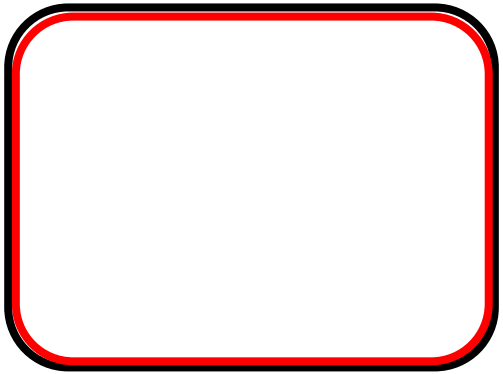
- Why fast?
- Caching



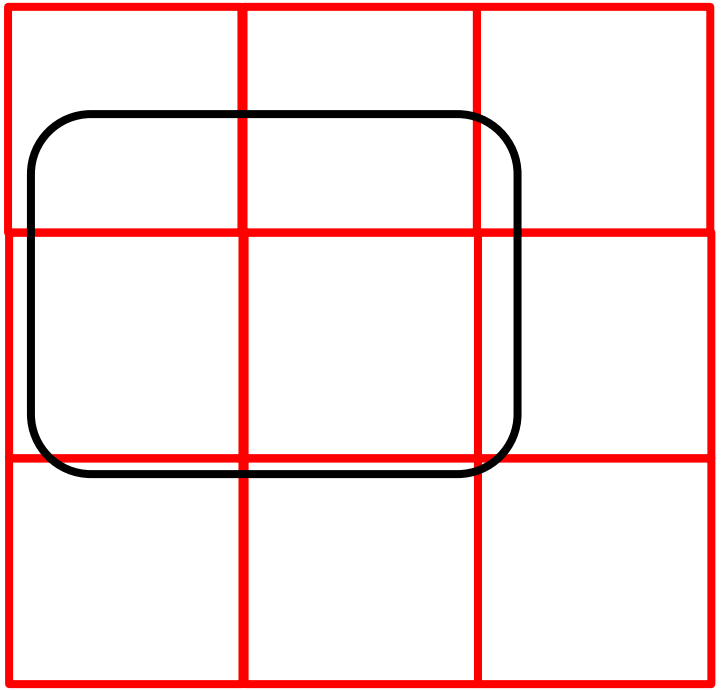
What are vector tiles?

- Why tiles?

without tiles



with tiles



When is using tiles good?

- When you can cache
  - Data does not change too often
  - Not rendered data is a minority

When is using tiles bad?

- When you cannot tile
  - Data is changing a lot
  - Very large initial dataset, and you only need to display small part of it
- Then we choose:
  - wms
  - data (f.e. geojson)

Where are vector tiles used?

- *.OpenMap.lt
- maps.lt
- Protected territory cadastre (stvk.lt)
- Forest cut permission system
- Election page
- 300mb Lithuania
- smalsuolis.lt
- citify.eu
- biip.lt
- OpenStreetMap.org

Problems with vector tiles and possible solutions

- Problem:
  - Polygon labels
- Solution
  - Now: precalculate positions
  - Later? Dynamically union by id

Problems with vector tiles and possible solutions

- Problem
  - local projections
- Potential solutions
  - add local projections to services
  - add webapp locpro vector tile support
  - wait until somebody does it :-)
  - do it ourselves

Problems with vector tiles and possible solutions

- Problem
  - Different standards: open world and ESRI
- Potential solution now?
  - ArcGIS already supports OGC vector tiles?

Problems with vector tiles and possible solutions

- Problem
  - Sharing symbolisation
- Potential solution?
  - MapBox type style sharing?
  - Is it always required…?

Problems with vector tiles and possible solutions

- Problem
  - Sharing feature info
- Potential solution?
  - Additional API?
  - What is its url and key…?

Conclusions

- Use it!
- Save server resources
- Create dynamic maps
- Create interactive maps

- Share boldly!

Questions?

Rokenrol