WCS

Elevation data and WCS

Land Survey of Sweden

LANTMÄTERIET

WCS

- In production since beginning of this year

- Based on MapServer 7

- WCS versions: 1.0, 1.1, 2.0

- Elevation grid in 1m resolution

- Formats: GeoTiff and AsciiGrid

WCS

- Few lines of MapServer Configuration

```
MAP
   ...
   LAYER
      ...
      PROCESSING "CLOSE_CONNECTION=DEFER"
      NAME "elevation_1m"
      STATUS ON
      DATA /data/elevation1m/pyramid.vrt
      TYPE RASTER
      PROCESSING "BANDS=1"
      PROJECTION
         "init=epsg:3006"
      END
   END
END
```
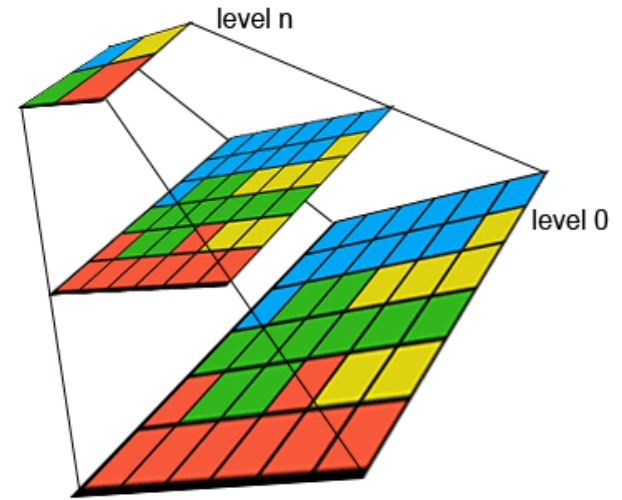
WCS

- Datasource is a raster pyramid

- Pregenerated levels/resolutions

- Handle requests for any resolution

WCS

- Exposing a raster pyramid to MapServer

  ```
  DATA /data/elevation1m/pyramid.vrt
  ```
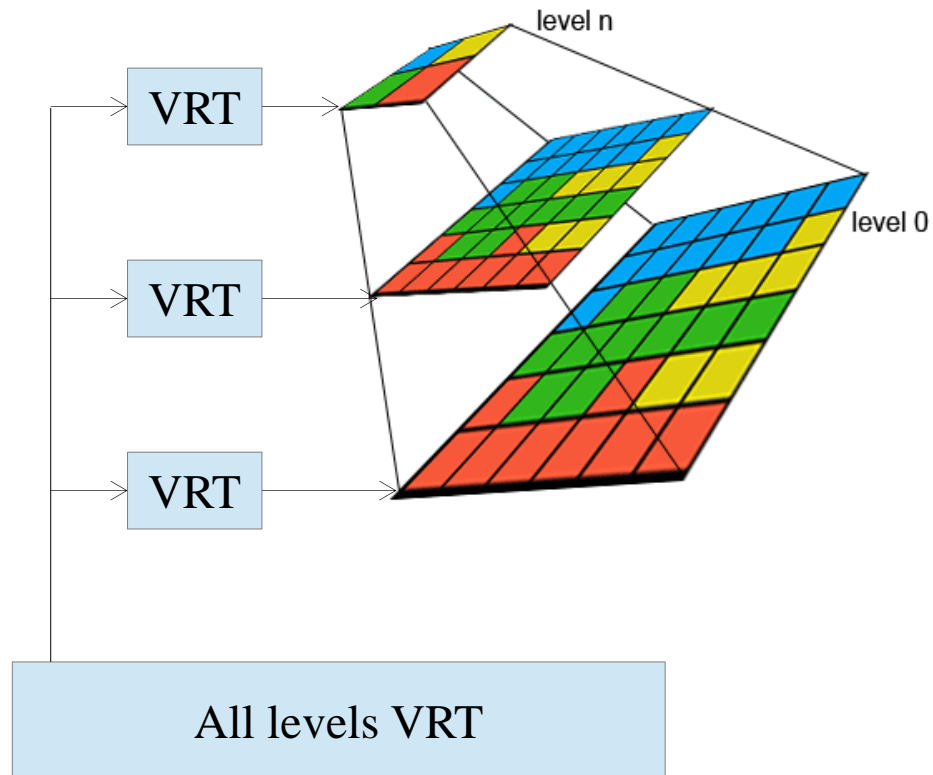
- Easy in WMS, but not in WCS

- Pyramid must be exposed as a single raster

WCS

- A VRT for each pyramid level
- A VRT with all pyramid levels
- Levels >0 are overviews

```
<VRTDataset>
  <VRTRasterBand>

    <ComplexSource>
      <SourceFilename>level_0.vrt</SourceFilename>
    </ComplexSource>

    <Overview>
      <SourceFilename>level_1.vrt</SourceFilename>
    </Overview>

    <Overview>
      <SourceFilename>level_2.vrt</SourceFilename>
    </Overview>

  </VRTRasterBand>
```

WCS

- Drape orthoimagery on elevation

  - https://youtu.be/DUzbcREypwA

- Dynamic hillshade using JavaScript

  - https://youtu.be/JxLFS18XL_E