

Zo gemakkelijk kun je geo-webdiensten uitrollen!

Just van den Broecke

FOSS4GNL
Enschede - 20 oktober 2021

Geo-webdiensten uitrollen met GitOps!

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Lid

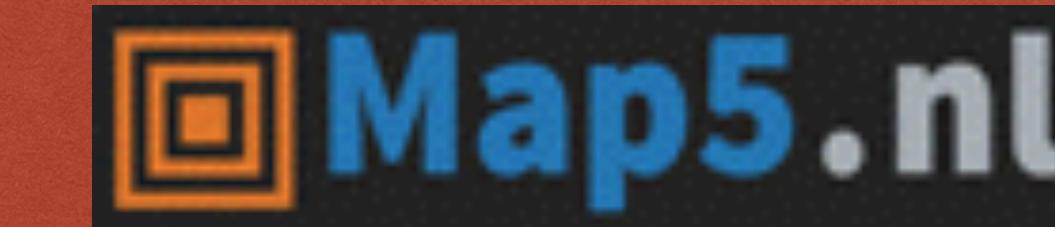
**OPEN GEO
GROEP**



Voorzitter



Uitbater



GeoQoS



geotoko.nl

Het installeren en met name
beheren van Open Source
geo componenten!

Uitdagingen?

Over welke componenten hebben we het?

Ushahidi GeoTools osgEarth Geomajas OSSIM
GeoMoose GRASS GIS MapServer
SpatiaLite pgRouting OpenCPN Natural Earth uDig
MapTiler GeoNetwork 52 North SOS MapGuide
Marble OpenJUMP AtlasStyler GDAL and OGR deegree
MB-System Geopublisher MapWindow GIS QGIS Server Viking
OTB 52 North WPS 52 North WSS North Carolina dataset
TinyOWS Mapnik gvSIG OpenStreetMap
GeoServer Mapbender
MetaCRS OSGeo Live R Spatial
OpenLayers Quantum GIS MapProxy
GMT MapFish zyGrib GpsDrive PostGIS
GeoKettle libLAS Rasdaman
Sahana



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Welcome to OSGeoLive 14.0

OSGeoLive is a self-contained bootable DVD, USB thumb drive or Virtual Machine based on [Lubuntu](#), that allows you to try a wide variety of open source geospatial software without installing anything. It is composed entirely of free software, allowing it to be freely distributed, duplicated and passed around.

It provides pre-configured applications for a range of geospatial use cases, including storage, publishing, viewing, analysis and manipulation of data. It also contains sample datasets and documentation.

To try out the applications, simply:

1. Insert DVD or USB thumb drive in computer or virtual machine.
2. Reboot computer. (verify boot device order if necessary)
3. Press "Enter" to startup & login.
4. Select and run applications from the "Geospatial" menu.

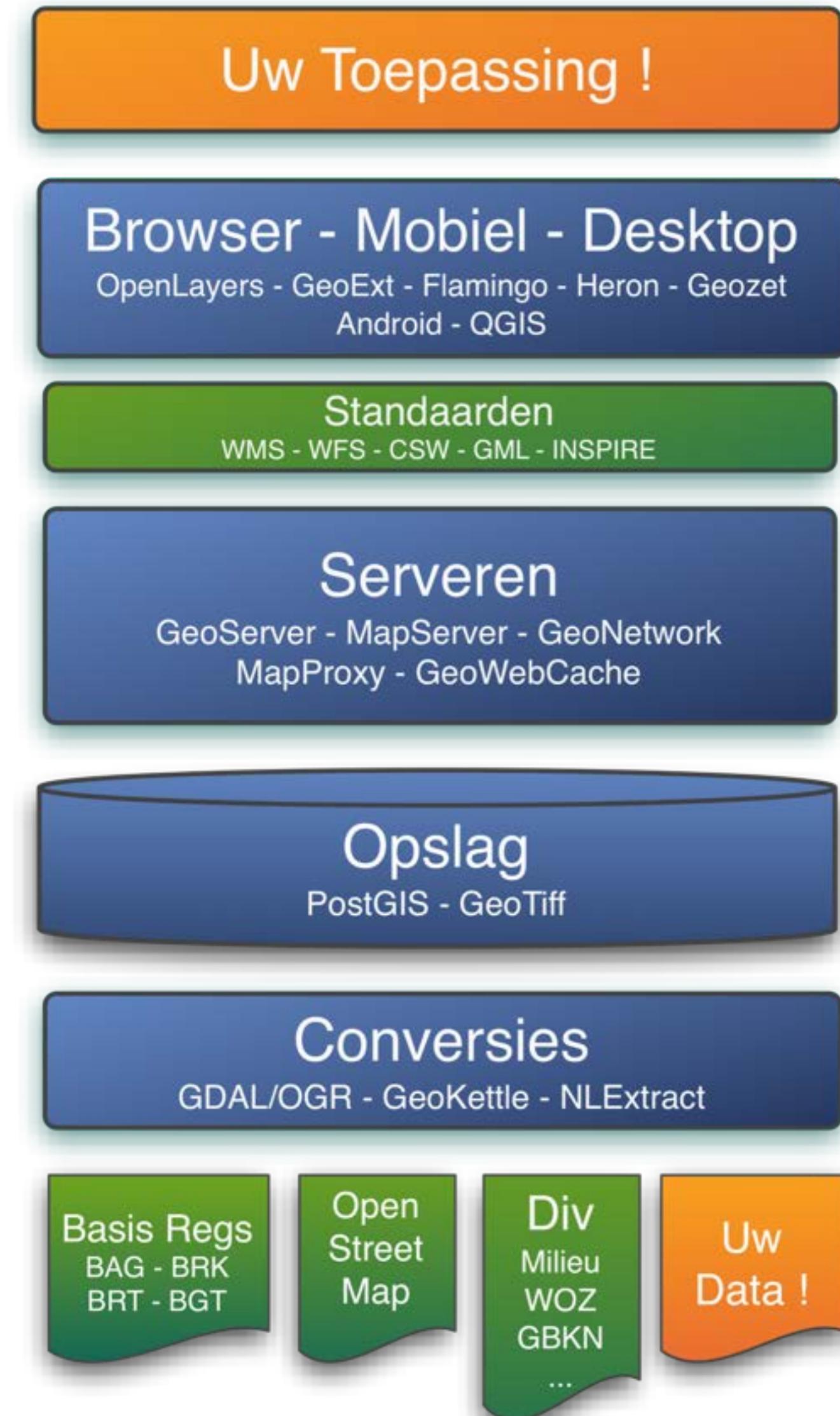
OSGeoLive is an [OSGeo Foundation](#) project. The OSGeo Foundation is a not-for-profit supporting Geospatial Open Source Software development, promotion and [education](#).

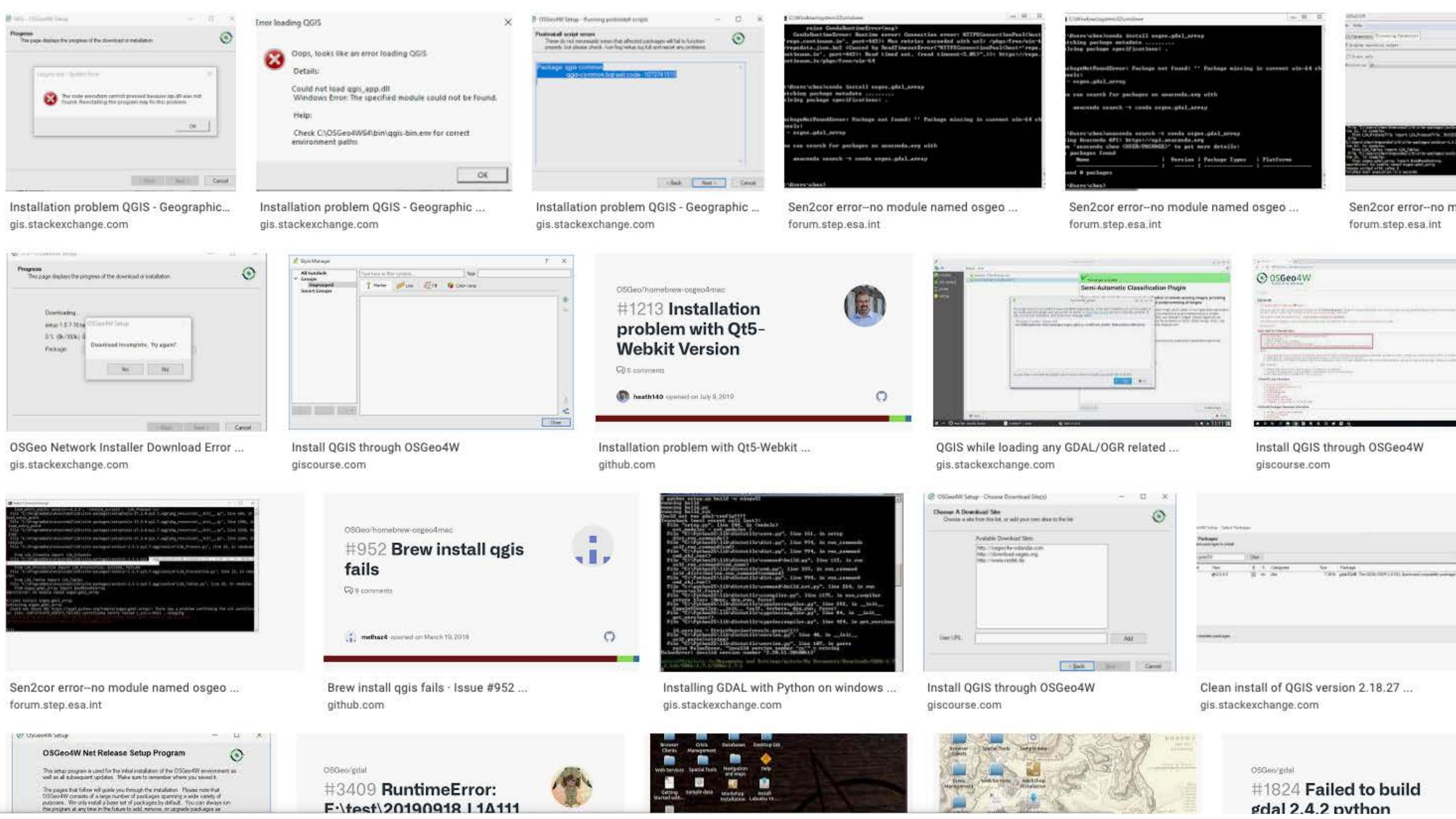
Quick Starts

- [Getting started with OSGeoLive](#)
- [Change language or keyboard type](#)
- [Install OSGeoLive to Hard Disk](#)
- [Running in a Virtual Machine](#)
- [Creating an OSGeoLive Bootable USB flash drive](#)
- [Running in a Hyper-V Virtual Machine](#)
- [Command Line basics](#)



Meta Architectuur (OpenGeoGroep)





Pijnpunten bij Installeren en vooral onderhouden Open Source Geo componenten

- Verschillende programmeertalen: Java(Script), Python, C+, ..
==> Verschillende installatie/upgrade technieken
- Netwerken: inter-connecties, proxies, SSL-certificaten
- Aanvullende beheer functies: monitoring, firewalls
- Verschillende omgevingen/configuraties:
Dev, Test, Acceptatie, Productie
- Plus: OS updates, ‘DLL-hell’ ==> ‘niet aanraken!’ (don’t touch it!)

En de oplossing?

Containers - Cloud - Containers ?



Open Source Container Company Docker ...
adtmag.com



Containerization: Advantages And ...
anexio.com



Containerization Crash Course - What is ...
boxboat.com



Containerization on Embedded Systems ...
blogs.knowledgelens.com



dead, long live containerization
diginomica.com



Containerizing Legacy Applications: The ...
contino.io



containers: Virtualbox, KVM, Xen, LXC ...
davidokwii.com



Containers success stories from 3 ...
techgenix.com



Apps in Containers -
t2client.com



Containers Part 1: Why You Need them ...
medium.com



The state of containers: Current trends ...
techbeacon.com



& Deploy Containerized Applications ...
medium.com



Kubernetes vs. Docker: Comparing ...
technologyadvice.com



Containerisation: Benefits and How I...
newtglobal.com



Container vs. VM security: Which is better?
searchcloudsecurity.techtarget.com



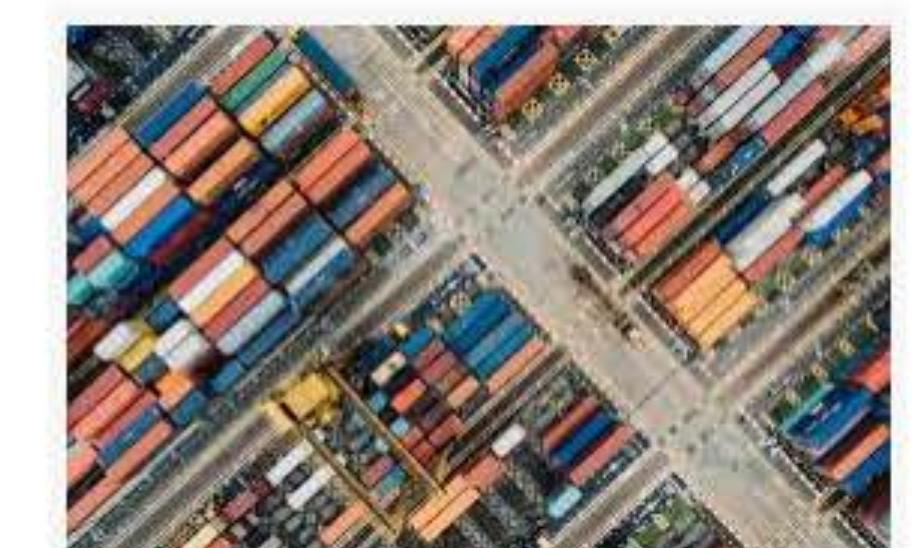
A big step forward in container ...
zdnet.com



Modularity, Microservices and ...
jaxenter.com



AWS Container Consultir ...
missioncloud.com



Kort antwoord:

Docker !

Docker

*“Docker is a way of standardizing how software is
packaged, deployed, and updated.*

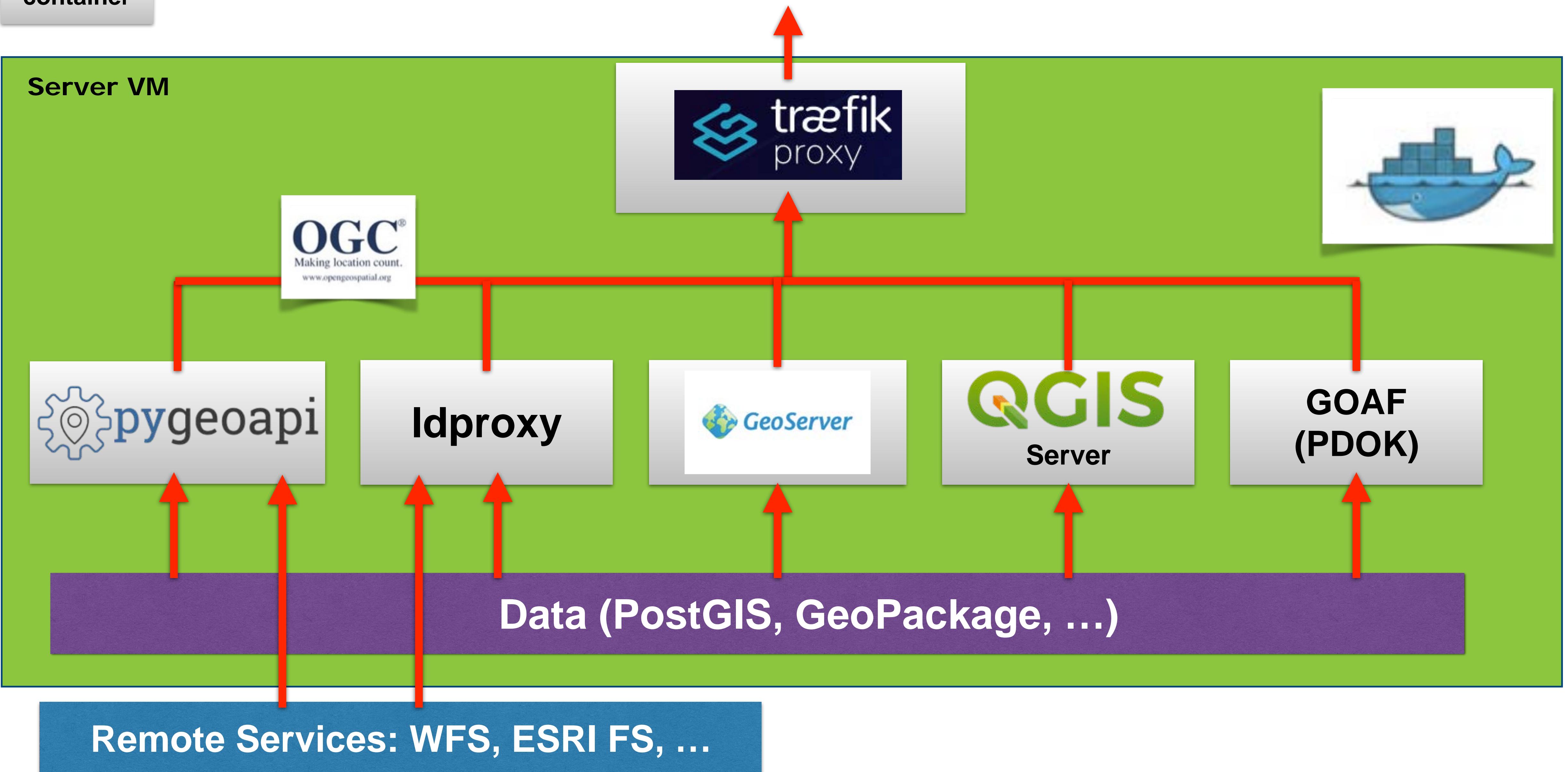
*Docker deployments are composed of a series of one or more
containers.*

***Each container provides one service of the application (-stack),
such as a GeoServer, a PostGIS database server etc.”***

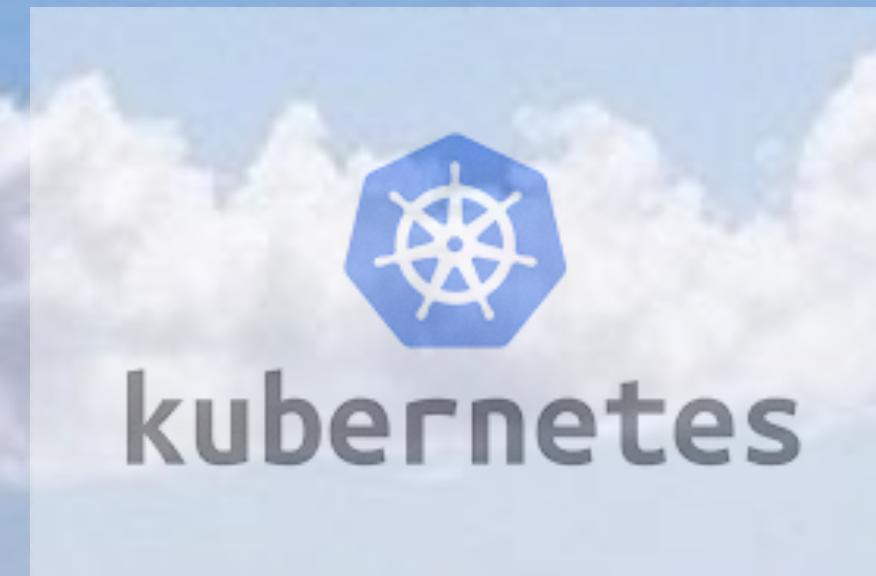
Dataflow
→

container

OGC API Testbed - Service Stack



Stip/Schip aan de Horizon!



Uit de Praktijk: Niet alleen Docker

Docker

+

Ansible

+

Git

= ?

<https://www.ansible.com/>

GitOps!

Push

Trigger

Uitrol

=> Git => Ansible => Docker

<https://www.gitops.tech/>

Wat heb je nodig?

hetzner.com/cloud

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HETZNER

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DEFAULT DEDICATED vCPU

CX11	CPX11	CX21	CPX21	CX31	CPX31
€ 3.49 monthly € 0.006 / h	€ 3.99 monthly € 0.007 / h	€ 4.90 monthly € 0.008 / h	€ 6.90 monthly € 0.011 / h	€ 8.90 monthly € 0.014 / h	€ 12.40 monthly € 0.020 / h
1 vCPU Intel 2 GB RAM 20 GB Disk space 20 TB Traffic DE FR Locations	2 vCPU AMD 2 GB RAM 40 GB Disk space 20 TB Traffic DE FR Locations	2 vCPU Intel 4 GB RAM 40 GB Disk space 20 TB Traffic DE FR Locations	3 vCPU AMD 4 GB RAM 80 GB Disk space 20 TB Traffic DE FR Locations	2 vCPU Intel 8 GB RAM 80 GB Disk space 20 TB Traffic DE FR Locations	4 vCPU AMD 8 GB RAM 160 GB Disk space 20 TB Traffic DE FR Locations

CX41	CPX41	CX51	CPX51
€ 15.90 monthly € 0.026 / h	€ 22.90 monthly € 0.038 / h	€ 29.90 monthly € 0.050 / h	€ 49.90 monthly € 0.080 / h
4 vCPU Intel 16 GB RAM 160 GB Disk space 20 TB Traffic DE FR Locations	8 vCPU AMD 16 GB RAM 240 GB Disk space 20 TB Traffic DE FR Locations	8 vCPU Intel 32 GB RAM 240 GB Disk space 20 TB Traffic DE FR Locations	16 vCPU AMD 32 GB RAM 360 GB Disk space 20 TB Traffic DE FR Locations

Chat icon

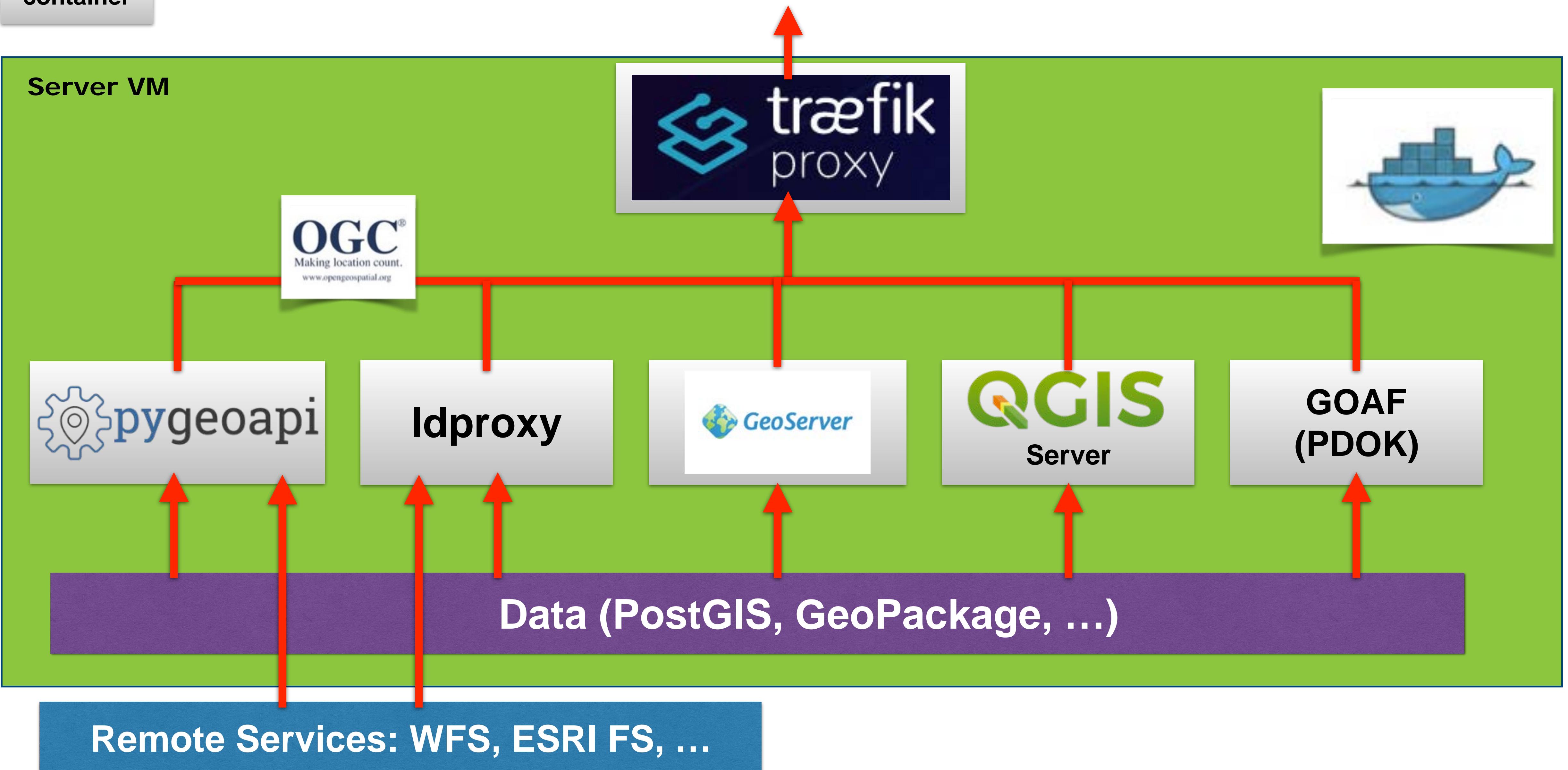
Praktijk: Geonovum OGC API Testbed

- Juni/Juli 2021
- Friso Penninga (lead), Thijs Brentjens (lead/dev), Paul van Genuchten (dev), Just van den Broecke (dev)
- Doel: experimenteer/evaluateer implementaties OGC API Features
- Toegankelijk voor derden (Tender!) om verder op te bouwen
- Experimenteer- (Sandbox) en productie- (Stabiel) omgeving
- Home: <https://apitestdocs.geonovum.nl/>

Dataflow
→

container

OGC API Testbed - Service Stack



OGC API Testbed - Technisch

— GitOps —

GitHub (complete configuratie, “**source of truth**”)

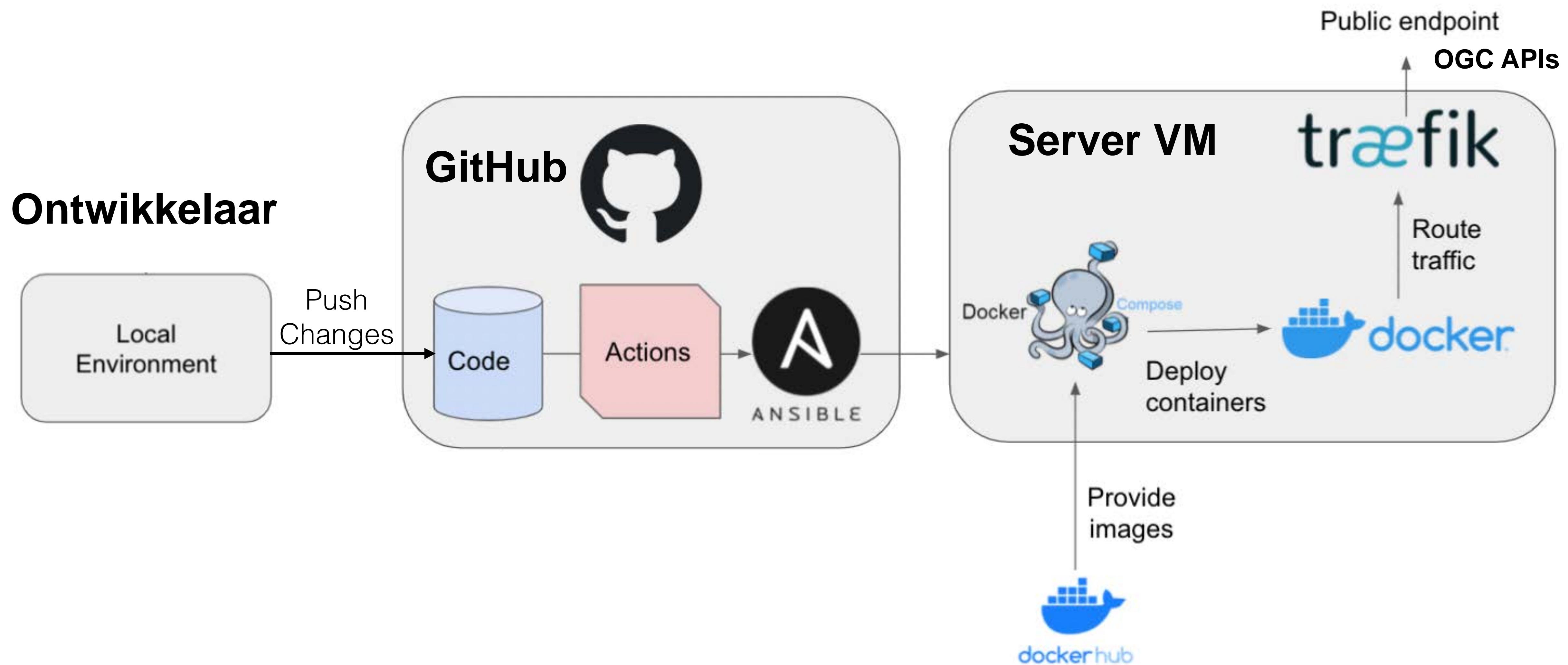
Docker (met Docker Compose)

Ansible (remote uitrol)

via **GitHub Workflows (Actions)**

- Continue uitrol, trigger via GitHub “push”
- Secured config via GitHub Secrets en Ansible Vault
- Beschikbaar als: GitHub Template Repository

OGC API Testbed - Technisch



Links

- Geonovum “OGC API Testbed - Documentatie”
<https://apitestdocs.geonovum.nl/>
- Geonovum “OGC API Testbed - Live Server”
<https://apitestbed.geonovum.nl/>
- Geonovum “OGC API Testbed - GitHub Template”
<https://github.com/Geonovum/ogc-api-testbed>
- EC JRC - voorbeeld - <https://jrc.map5.nl>

Dank! - Vragen?