



WHANGANUI  
DISTRICT COUNCIL  
Te Kaunihera a Rohe o Whanganui

# Whanganui GeoSpatial Stack

Implementing Open Source GIS Solutions  
at Whanganui District Council

# Why Open Source GIS?

- Flexible licensing with no vendor lock in
- Development driven by community worldwide, not vendor marketing department
- Agile technology adoption and quicker innovation
- Reliable with faster maintenance and bug fixing
- Uses open standards accessible to everyone
- Successful projects enforce teamwork rules and strictly review change – no cowboys!



# Why Not Vendor GIS

- Vendor marketing determines way forward
- Do it vendors way not our way
- Restrictive Licensing
  - Number of users determined by \$\$\$
- Innovation much slower
- Bug fixes much slower
- Vendor standards are not necessarily open standards



# Open Source Licensing

- In general Open Source Licensing...
  - provides royalty free (re)use of software
  - has no licenses costs
  - guarantees access to the source code
  - enables the source code to be audited and modified
  - allows redistribution of the software with no additional costs





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# Whanganui GeoSpatial Stack

# Previous Stack

Desktop



Viewer (Internal)



Viewer (External)



Mobile



Database

# Previous Stack

## Desktop

MapInfo Pro \$\$\$  
MapBasic \$\$\$  
Global Mapper \$\$\$

## Mobile

GBM Konnect \$\$\$

## Database

### Files

- MapInfo Tab
- ESRI Shp
- ECW Raster

## Services

http downloads

## Catalogue

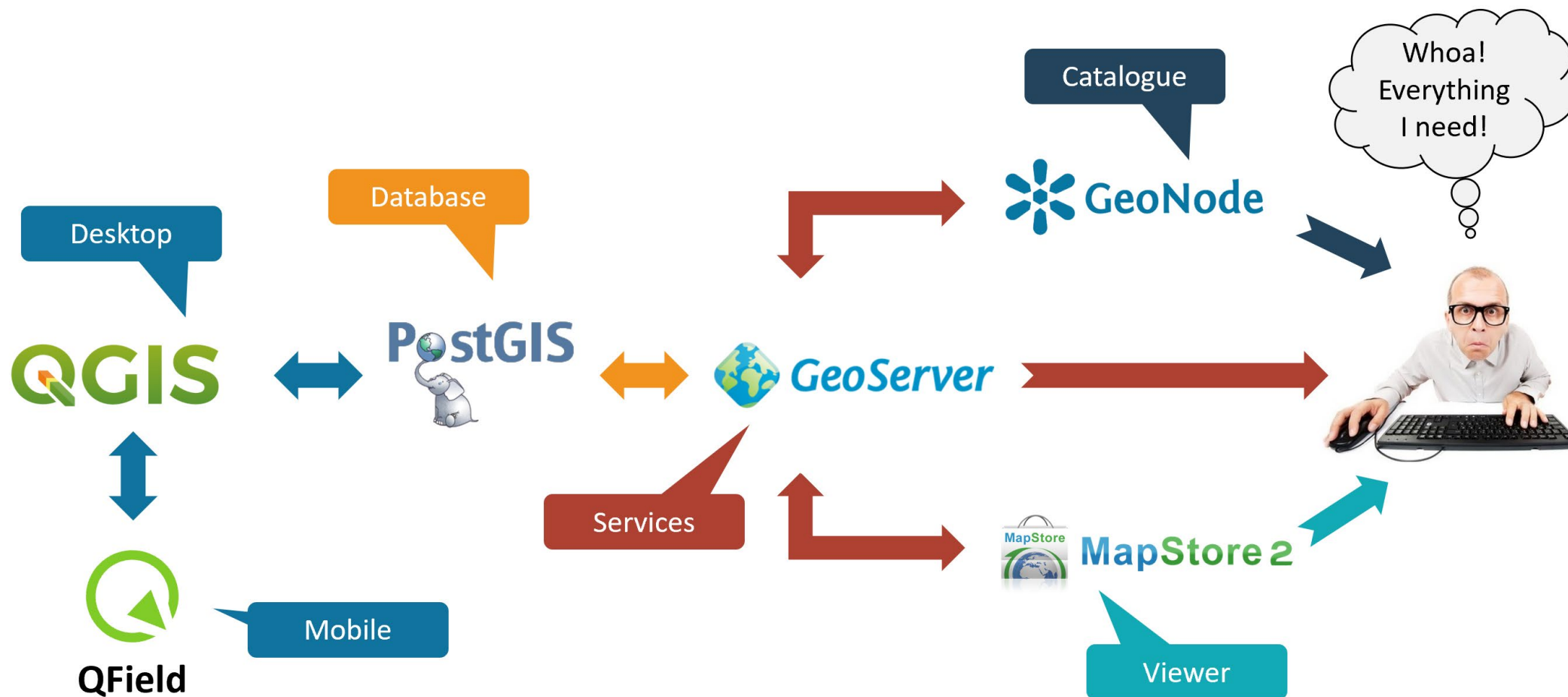
None

## Viewer

IntraMaps \$\$\$  
MangoMaps \$\$\$



# New Stack







# New Stack

## Desktop

### QGIS 3.10 LTS

- Processing Tools
- Graphical Modeller
- Plugins

## Mobile

### QField

## Database

### PostgreSQL 12

- PostGIS
- tds\_fdw  
(FDW for SQL Server)

### Files

- GeoPackage
- GeoTiff  
(highly optimised)

## Services

### GeoServer 2.17

- WCS
- WFS
- WMS
- TMS
- WMS-C
- WMTS

## Catalogue

### GeoNode 3






- Data
- Documents
- Search
- Download

## Viewer

### MapStore 2

- Maps
- Dashboards
- StoryMaps
- Embedded Maps
- Reports

# Stack Solutions Maturity

	<u>Approx. Project Age</u>	<u>Contributors*</u>
 <b>MapStore 2</b>	<b>8 years</b>	<b>40</b>
 <b>GeoNode</b>	<b>10 years</b>	<b>177</b>
 <b>GeoServer</b>	<b>18 years</b>	<b>198</b>
 <b>PostGIS</b>	<b>19 years</b>	<b>18</b>
 <b>QGIS</b>	<b>18 years</b>	<b>306</b>

Viewer



MapStore 2

Catalogue



GeoNode

Services



GeoServer

Database



PostGIS

Desktop



QGIS

Mobile



QField

# Comparative Vendor Solutions

ArcGIS Apps, Web AppBuilder for  
ArcGIS, LocalMaps, IntraMaps,...

ArcGIS Online, ArcGIS Open Data

ArcGIS Enterprise

ArcGIS Enterprise, ArcSDE

ArcGIS Pro, MapInfo Pro, Hexagon

ArcGIS Collector, GBM Konnect...



# Benefits to Council

- Significant Recurring Cost Savings
  - Zero annual software license fees
- Greater Functionality
- New functionality driven by community
- Improved Service Levels
- No loss of Integration
  - Property and Rating System
  - Asset Management System
  - Document Management System
  - Eplan Integration



# Where to Next

- Contribute more to OS communities
  - Support
  - Code
  - Documentation
- Local Govt. sharing
  - MWLASS
  - ALGIM
  - LGGA?
- At WDC
  - Greater use of PostGIS
  - Create GIS staff upskilling programme

what's the  
opposite of  
contribute?



withhold, keep, take, hurt,  
neglect, take away, counteract,  
hold, shun, subtract



 [Thesaurus.plus](https://www.thesaurus.plus)

# Reflections on LG GIS in NZ

- Changing to Vendor A from Vendor B will not fix your data issues!
- Is vendor lock-in being driven by dumbing down of GIS skills and blinkering?
  - “I don’t know how to use product Y”
  - “I only use product X”
- Is innovation decreasing as organisations accept vendors word as gospel?
- Open Source GIS frees up resources to improve data and upskill staff!

