TEKSI

TEKSI in the cloud

A showcase for a cloud-based QGIS solution

TEKSI dans le cloud

Une vitrine pour une solution QGIS basée sur le cloud

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GEOWERKSTATT waldburgeringenieure

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About GeoWerkstatt

- GIS & IT service providers and consultants since 1997
- 14 team members
- we do:
  - Software development
  - consulting
  - GIS infrastructure design
  - Spatial Data modelling
  - GIS training, especially INTERLIS

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QGIS QGEP Cloud – how it came to be

- A TEKSI environment can be challenging to set up properly. Not every engineer has access to a professional database admin
- Project by Waldburger Ingenieure and GeoWerkstatt to streamline TEKSI installation by means of a Chocolatey Package Manager script for Windows environments
- One step further: Standardise not just the installation process, but the installation itself using containerization → QGIS QGEP Cloud

The showcased solution is not an official TEKSI-project and its development has not been funded by the TEKSI association

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Reasons for choosing a cloud-based approach

- Standardise your installation and make it 100% reproduceable
- Accessible for any host system featuring an internet connection and a web browser
- DB can be run and/or managed separately within or outside the cloud
- Easily scalable by allocation of resources to the host system according to the user's needs
- Reset your DB and/or installation at any time, if needed

First real-world usage:

Standardised platform for educational use within the **CAS Siedlungsentwässerung** – GEP& Data management topic taught by Stefan Burckhardt at Bern University of Applied Sciences

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Reasons for choosing Linux

- TEKSI has no Windows-related dependencies
- A lightweight distribution can be chosen to reduce overhead and resource use
- Containerisation is easy to achieve due to the modular nature of Linux's architecture
- QGIS runs faster on Linux

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QGIS QGEP Cloud – Cornerstones

- Cloud-hosted Lightweight Ubuntu Linux Virtual Machine (VM) on Azure
- Containerised environment (Docker) consisting of 3 containers:
  1. Ubuntu MATE with full GUI, QGIS and TEKSI Plugin
  2. PostGIS database
  3. pgAdmin

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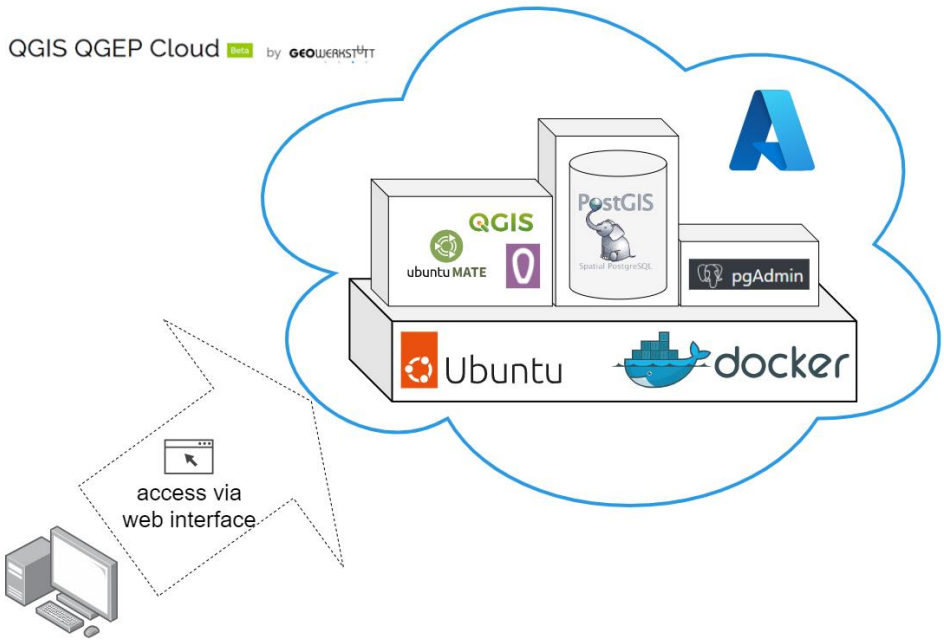

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<<Live demo>>

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What's up next?

- Testing phase in April 2024 with an engineering partner (not a TEKSI member yet, but probably soon…)
- Development of alternative approaches for a more integrated solution (e.g. Citrix or Azure Cloud w/ Windows Remote Desktop) for better hardware integration

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Conclusions

- Setting up a suitable TEKSI production environment can be challenging
- There is no such thing as one single TEKSI solution that fits everyone – however, a tailor-made TEKSI environment can be designed using a container- or VM-based approach, as we showcase in this proof-of-concept.
- The solution worked out well within it's purpose. Drawbacks were no multi-monitor support and no printing capabilities.
- Full VM (e.g. Citrix) solutions are possible to provide better hardware integration. More findings are to be expected in the near future

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Last but not least…

By nature, A TEKSI environment comes with full QGIS as a bonus…

… so imagine using QGIS as a managed service that fits your needs in terms of ease of use, scalability, and reproducibility!

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