Sharing and Migrating GIS Projects

with OGC GeoPackage

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Motivation
Let us Picture some Scenarios...
• *Leno has been creating a QGIS project, assembling information about his favorite holiday spot.*

• *Now he wants to share this project with his neighbor, which does **not** have an Internet connection.*
What if he could just pop the project in an USB stick?
At his daytime job, Leno has been developing a project in ArcGIS. He would like to share his project with a different office, but they only work with FOSS4G.
What if he could export the project in ArcGIS and then read it in QGIS?
How can we support these scenarios?
OGC Geopackage
OGC Geopackage:

- Interoperable across a range of environments, in particular mobile devices operating in offline scenarios.
- SQLite database.
- Extensions.
Registered Extensions:

- Non-Linear Geometry Types.
- RTree Spatial Indexes.
- ...

http://www.geopackage.org/spec/#registered_extensions
3rd party extension registry

GeoPackage Extensions

This page lists GeoPackage extensions that are not currently part of the GeoPackage Encoding System developed outside of OGC. It is often preferable to use an existing extension (even if it is proprietary) or develop your own. Extensions that have widespread adoption will be considered for OGC approval.

- Related Tables
- OWS Context
- Feature Tile Link
- Geometry Index
- Aspatial Support (Legacy)
- Tiled Grid Elevation Data Extension (Draft)
- User Defined Geometry Types (Deprecated)
- Geometry Type Triggers (Deprecated)

This extension provides a mechanism for associating tables with existing feature or attribute tables things, it can be used to establish a many-to-many relationship between features and multimedia files. The main goal of the extension is to store content and styling of a mapping project as part of a GeoBase.

The extension aims to provide a way to include styling information with GeoBase data.

http://www.geopackage.org/extensions.html
The Qgpkg Plugin
The **qgpkg** QGIS plugin implements a GeoPackage extension to store QGIS mapping information in a GeoPackage database file:

- It was started on github, by Cédric Christen and Pirmin Kalberer (Sourcepole).
- Initially it was only aimed at supporting scenario 1.
- Later it was forked by GeoCat, which envisioned supporting scenario 2.
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- It features a command line tool to convert to/from QGIS projects.
- It supports the **qgis** and **ows** geopackage extensions.
The Qgis Extension

- The goal is to enable users to share their QGIS projects.
- Stores a QGIS project file in one of the extension tables.

Data + QGIS Project + Resources
https://www.youtube.com/watch?v=Jwi9IK6YeDs&feature=youtu.be
The OWS Extension

- The goal is to enable interoperability with other GIS software.
- It is completely standards based.
GeoCat Bridge is an ArcGIS extension which supports migration to FOSS4G.

- It encodes an ESRI project in an OWS extended geopackage.
- This enables us to decode it in QGIS, using the qgpkg plugin.
https://www.youtube.com/watch?v=CM9LSnMUfQU
Current State & Future Developments
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- The pull request was merged on July 2017.
- The new version of the plugin was just released on the QGIS repository.
- We still miss writing support for the ows geopackage extension.
- The cli is only supported for the qgis geopackage extension.
- QGIS grant application: extend the QGIS Resource sharing plugin with the extended geopackage.
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References

- http://www.geopackage.org/
- https://github.com/pka/qgpkg
- https://github.com/pka/qgpkg/blob/master/qgis_geopackage_extension.md
- https://github.com/pka/qgpkg/blob/master/owc_geopackage_extension.md
- https://www.geocat.net/extending-geopackage-to-include-projectstyling-information/
- https://www.geocat.net/announcing-the-extended-geopackage-qgis-plugin/