

LIZSYNC

A QGIS plugin for PostgreSQL synchronisation
between a central database & clones



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3LIZ

- **QGIS** and **PostgreSQL** lovers
- QGIS **core** contributors (mainly server)
- 8 employees
- QGIS / QGIS Server / PostgreSQL / Lizmap
- **Open Source** forever
- Development, server hosting, consulting, support, training



PRESENTATION

LizSync is a set of tools allowing to perform PostgreSQL **database synchronisation** between a **central** database and one or many **clone** databases.

Two-way synchronisation is done:

- for **data of tables** in chosen schemas,
- between tables having **the same structure**.
- No synchronisation is made on structure changes (adding a column, creating or dropping tables, etc.).



LIZSYNC WORKFLOW

- For the 1st time
 - **install** the needed PostgreSQL **structure** in the central database
 - **prepare the central database:**
 - add an **uid column** to every synchronized table
 - add needed **audit triggers**
- Before each campaign / when structure has changed
 - **create an archive** from the central database with data from chosen schemas
 - **deploy** it to one or many clones
- Whenever needed
 - **perform** a two-way synchronisation from the clone

POSTGRESQL STRUCTURE

LizSync uses **2 dedicated schemas**:

- **audit**
 - in charge of recording every actions made on tables: **inserts, updates and deletes.**
 - It is a slightly modified version of the [audit trigger tool](#)
- **lizsync**
 - stores information on central and clones databases
 - manages the sync actions
 - maintains an history of synchronisations

AUDITING CHANGES

LizSync uses a modified version of the `audit trigger tool` to **monitor the changes** made in the central and clone databases.

The audit tool stores data in **two tables**:

- **audit.logged_relations**: the list of audited tables and their primary key(s)
- **audit.logged_actions**: the logs of every data modification made on the audited tables

DEMO !

Videos

- 1/ Install database structure, create and deploy a ZIP archive: <https://youtu.be/l8a1Pn7CpN0>
- 2/ Data editing and 2-way synchronisation:
<https://youtu.be/tnWVBJGqD0M>

KEY FEATURES

- **Two-way sync:** clone A <-> central <-> clone B <-> central <-> clone C <-> central
- **Field granularity:** replay only needed changes

```
UPDATE test.pluviometers SET name = 'New name' WHERE uid = 'XYZ';
```

- **Manage UPDATE conflicts:** last date of modification wins (last person in the field)
- **SQL based:** run from any clone DB

```
SELECT lizsync.synchronize();
```

- **Processing algs:** can be run in CLI if needed
- **Unit tests:** installation/upgrade/synchronisation

LINKS

- Github repository: <https://github.com/3liz/qgis-lizsync-plugin/>
- Documentation: <https://docs.3liz.org/qgis-lizsync-plugin/>
- This presentation: <https://docs.3liz.org/qgis-lizsync-plugin/presentation-reveal/>
- Temporary plugin repository: <https://github.com/3liz/qgis-lizsync-plugin/releases/latest/download/plugins.xml>
- Twitter: https://twitter.com/3LIZ_news/

THANK YOU FOR YOUR ATTENTION

