SQLite for development

Run a DXP project on SQLite with no database server - the DSN, the synchronous messenger transport, the install, file permissions, the two typical errors and the limits that keep SQLite out of busy production sites.

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This page is for developers who want a DXP project running on a laptop, in a test pipeline or on a demo server without installing a database server. SQLite support is one of the things the DXP adds over the upstream line (Who is the Exponential Foundation?).

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Five steps

1. **Check the extensions.**

   Shell
   ```
   php -m | grep -i sqlite      # expect SQLite3 and pdo_sqlite
   ```

2. **Set the DSN** in `.env.local`, and remove the `DATABASE_DRIVER`, `DATABASE_HOST` and other parts:

   Shell
   ```
   DATABASE_URL="sqlite:///%kernel.project_dir%/var/data_%kernel.environment%.db"
   MESSENGER_TRANSPORT_DSN=sync://
   ```

   The messenger line matters: the default Doctrine transport needs a second database connection, which SQLite may not give it; `sync://` handles messages in the same request (Messenger and notifications).

3. **Install.** The command creates `var/data_dev.db` (or `var/data_prod.db`), imports the seed content and creates the Doctrine tables.

   Shell
   ```
   php bin/console exponential:install exponential-oss
   ```

4. **Let the web server write the file.** SQLite writes to the file on every edit:

   Shell
   ```
   chmod 664 var/data_dev.db
   chown "$USER":www-data var/data_dev.db     # your web server's group
   ```

5. **Clear the cache:** `php bin/console cache:clear`.

Two errors you will meet

Error	Cause	Fix
`no such table: ibexa_section`	The database file was never initialized	Run the install command; if an empty file exists, remove it first and install again
`attempt to write a readonly database`	The install ran as another user than the web server	Fix the owner and mode as in step 4

Limits

From the skeleton's guide:

Limit	Impact
No concurrent write transactions	Writes queue up under load and can time out
No replication or clustering	One server only
No FULLTEXT index	Full-text search falls back to LIKE queries
File-level locking	The file must be on a local file system, not NFS or CIFS

SQLite is right for development, automated tests, demos and air-gapped installations. Use MySQL 8.0, MariaDB 10.6 or PostgreSQL 14 or newer for any public or multi-user site.

Moving to a server database later

The skeleton's guide converts a SQLite project to MySQL with `sqlite3-to-mysql` or to PostgreSQL with `pgloader`. Afterwards remove the SQLite DSN and the `sync://` transport from `.env.local` (Databases, Converting between engines).

Related pages

- SQLite for Exponential Platform
- Platform SQLite installer
- Database support in Exponential 6
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