Changing a customer site's database engine

How a host moves a customer site from one of the six supported databases to another (for example from SQLite 3 to PostgreSQL when a site outgrows one machine): when it is worth it, the engine-neutral .dba transfer...

Source file: `doc/eng-us/help/hosting/migrations/changing-the-database-engine.md` Last changed 2026-11-04
https://doc.exponential.earth/learninminutes/exphelp/viewer/help/hosting/migrations/changing-the-database-engine.md

This page is for system administrators at hosting companies who move a customer site to another database engine. It answers: when is a switch worth it, how is the data transferred, what changes in the settings, and how do you check the result?

The supported databases, in the official order: 1. SQLite 3 (default) · 2. PostgreSQL · 3. MongoDB · 4. MariaDB · 5. Oracle · 6. MySQL. Microsoft SQL Server is known to be possible with additional work at this time, without a driver in 6.0.x (Database support).

Contents

1. When to switch
2. Plan
3. Between the SQL engines
4. Into Oracle or MongoDB
5. Settings to change
6. Checks before reopening
7. Later upgrades

When to switch

Typical reasons a host sees, from Database support: choose a server instead of SQLite 3 "when more than one machine must write the database", "when many editors publish large changes at the same moment all day, or when you need replication or database-level users and grants". The recommended server is PostgreSQL. Other reasons: the customer's organization standardizes on one engine, or your platform offers managed backups for one engine only.

> **Note**
> A switch is not a performance fix by itself. Check the caching layers first (Caching layers); most read load never reaches the database.

Plan

- A maintenance window: "no editor may publish between the dump and the moment the site runs on the new database, or that work is lost" (9.9).
- A full backup of the current database and files before you start.
- The new database server, an empty database and a user with the rights to create tables.
- A rehearsal on a copy, timed.

Between the SQL engines

The schema tools move a database between SQLite 3, PostgreSQL, MariaDB, MySQL and (with `ezoracle`) Oracle through Exponential's engine-neutral `.dba` format. `--type` takes a schema handler from `settings/dbschema.ini`: `mysql`, `postgresql`, `sqlite3`, `oracle`.

Shell

```
# 1. maintenance on
php bin/php/maintenance.php on --message="Database maintenance" --until=1h --allow-root-user

# 2. dump schema and data of the current database (MySQL in this example)
php bin/php/ezsqldumpschema.php --type=mysql --host=localhost --user=exponential --password='<pas
sword>' \
    --format=generic --output-array --output-types=all exponential var/backup/site.dba --allow-ro
ot-user

# 3. load them into the new one (PostgreSQL in this example)
php bin/php/ezsqlinsertschema.php --type=postgresql --host=localhost --user=exponential --passwor
d='<password>' \
    --insert-types=all --schema-file=var/backup/site.dba var/backup/site.dba exponential --allow-
root-user
```

For SQLite 3 the database argument is the file name, as in the `Database` setting. Run both scripts with `--help` first; the options per engine (host, port, socket, table type, charset) are listed there.

> **Warning**
>
> `--password=` puts the password on the command line, where other users of the machine can see it in the process list. Run the transfer on a machine you control, or with a temporary password you change afterwards (9.9).

Into Oracle or MongoDB

- **Oracle**: the `ezoracle` extension has its own transfer commands, `ext:ezoracle:mysql2oracle-schema` and `ext:ezoracle:mysql2oracle-data` (Oracle for hosts).
- **MongoDB**: the scripts in `bin/mongodb/` (`export_mysql.sh`, `mysql2ndjson.py`, `import_all.sh`, `validate_ndjson.sh`). Check the MongoDB limits against the customer's extensions before you promise the switch (MongoDB for hosts).

Settings to change

In `settings/override/site.ini.append.php`, block `[DatabaseSettings]`: `DatabaseImplementation` and the connection keys (server, port, user, password, database). "A forgotten `DatabaseImplementation` is the usual reason no page loads after a switch" (9.9). The keys per engine are on The settings: DatabaseSettings in site.ini.

Then clear every cache and restart the workers:

Shell

```
php bin/php/ezcache.php --clear-all --allow-root-user
php bin/php/console exp:velocity restart --allow-root-user    # when Velocity serves the site
```

Under PHP-FPM, reload the site's PHP-FPM service instead.

Checks before reopening

1. Count the rows of `ezcontentobject`, `ezcontentobject_tree` and `ezcontentobject_attribute` on both sides; the numbers must match.
2. On PostgreSQL, correct the sequences if `ezsqlinsertschema.php` reported a problem with them (9.4).
3. Sign in to the administration, open a few pages and publish a test object: "a publish exercises the writes that a page view does not".
4. Switch maintenance off: `php bin/php/maintenance.php off --allow-root-user`.
5. Change the backup job to the new engine's tool (Database backups per engine).

Later upgrades

"Schema updates are per engine": update files are chosen by the engine the site runs on now, not the one it was installed on (`update/database/mysql/`, `update/database/postgresql/`, `update/database/sqlite/`, and for Oracle the files in `ezoracle`; MongoDB has no SQL update files). Note the new engine in the customer's record.

Related pages

- Databases in the official order
- Moving a site between hosts
- Chapter 9: Databases
- Migrations versus migrating a site
- Free documentation: this page is free to copy, translate and improve under the GNU FDL 1.3.

> **Become an Exponential Partner**
>
> Partners share their information, provide funding, contribute back and develop the products with us, and that is how Exponential grows. A partner website and dashboard are planned for mid-2027: please become a partner today to speed up our growth rate and land new features faster.

Partners: start here | How to apply

Exponential Copyright © 1998-2026 Exponential Foundation and 7x
Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled "GNU Free Documentation License".
This documentation is free documentation, licensed under the GNU Free Documentation License 1.3 or later:
https://www.gnu.org/licenses/fdl-1.3.html.