Schema tools: dump, insert and diff

The three command-line schema tools of Exponential - ezsqldumpschema.php to dump a schema and data to .dba or SQL, ezsqlinsertschema.php to load them into any SQL engine, and ezsqldiff.php to compare two schemas with an...

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This page is for database administrators who dump, load or compare Exponential schemas. Three scripts in `bin/php/` do it, each also available through the console (`exp:ezsqldumpschema`, `exp:ezsqlinsertschema`, `exp:ezsqldiff`). The options below are copied from their `--help` output in 6.0.15; run `--help` on your release before you rely on one.

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Before you start

- The `--password=` option puts the password on the command line, visible in the process list. Run the tools on a machine you control or with a temporary password.
- `--type` takes a schema handler type from `settings/dbschema.ini`; for SQLite the database argument is the file name, as in `Database`. The scripts' own help lists only some types; `sqlite3` and, with `ezoracle`, `oracle` work as well (9.9).
- Add `--allow-root-user` when you run them as root.

ezsqldumpschema.php

`ezsqldumpschema.php [OPTION]... [DATABASE] [FILENAME]` dumps the schema, the data or both to a file or standard output.

Option	Meaning
`--type`, `--host`, `--port`, `--socket`, `--user`, `--password`	the source database (`--socket` MySQL only)
`--output-array`	a file with array structures (human readable): the `.dba` format
`--output-serialized`	serialized data (saves space)

Option	Meaning
`--output-sql`	SQL for the source engine
`--format=generic` or `local`	`generic` suits all databases (default); `local` only the one it was dumped from
`--output-types=schema`, `data`, `all`	what to dump (default: schema only)
`--diff-friendly`	SQL output friendlier to `diff`
`--meta-data`	extra engine-specific information
`--table-type`, `--table-charset`	for SQL output (MySQL table types: bdb, innodb, myisam)
`--compatible-sql`, `--no-sort`, `--allow-multi-insert`	output details
`--schema-file`	only when dumping from files

ezsqlinsertschema.php

`ezsqlinsertschema.php [OPTION]... [FILENAME] [DATABASE]` loads a `.dba` schema and data into a database.

Option	Meaning
`--type`, `--host`, `--port`, `--socket`, `--user`, `--password`	the target database
`--insert-types=schema`, `data`, `all`, `none`	what to load (default: schema only); `none` with `--clean-existing` only cleans
`--schema-file`	the schema file, required when importing a schema
`--table-type`, `--table-charset`	table options for the target
`--allow-multi-insert`	multi-row inserts where the engine supports them
`--clean-existing`	**removes all database objects** before loading

`--clean-existing` empties the target database. Check the `DATABASE` argument twice, and never point it at a production database by accident. On PostgreSQL the installer corrects the sequences after loading data.

ezsqldiff.php

`ezsqldiff.php [OPTION]... [SOURCE] [MATCH]` shows the differences between two schemas and sets the exit code: 0 when they match, 1 when they differ.

Option	Meaning
`--type`, `--host`, `--user`, `--password`, `--socket`	one connection for both sides
`--source-*`, `--match-*`	separate connections per side
`--check-only`	no SQL, only the exit code
`--reverse`	reverse the differences

Option	Meaning
`--lint-check`	check the source schema against the naming rules instead of comparing (The .dba schema format)

Types: `mysql` and `postgresql`. A side can be a `.dba` file. To compare your database with the release, give the reference schema **first**; the output is the SQL that would turn your database into the reference. Read it, do not run it: a `DROP TABLE` line often names a table of your own extension (11.7).

Examples

Dump schema and data of a MySQL site into one portable file:

Shell

```
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
```

Load it into PostgreSQL:

Shell

```
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
```

Compare a MySQL database with the release's schema:

Shell

```
php bin/php/ezsqldiff.php --type=mysql --user=exponential --password='<password>' share/db_schema
.dba exponential --allow-root-user
echo $?        # 0: the same, 1: differences
```

Keep dumps out of the web root: `var/backup/` is below `var/`, which the shipped rewrite rules do not serve, but check your server as for the SQLite file (Securing the database).

Checklist

- ☐ `--help` read on your release.
- ☐ Passwords on the command line only on a machine you control.
- ☐ `--clean-existing` used only against a target you meant to empty.
- ☐ Diff output read and reviewed, never piped into the database.

Related pages

- Moving a site to another engine
- Checking the schema after an upgrade
- A portable dump between SQL engines
- Migrations, Coming from SQL update files, Engine notes for migrations

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