Database and live tests

Tests that need a real database or server - the database group and tests/runtests.php with a DSN and a database per test, the MongoDB and live HTTP tests and their environment variables, how to pass passwords safely…

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This page is for PHP developers who write or run tests that need a database, a MongoDB server or a running site. Those tests are kept out of the normal PHPUnit run, so that `vendor/bin/phpunit` passes on any laptop and CI runner, and are run separately against servers you name.

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Which tests are live

Kind	Marked by	Excluded from the normal run
database tests (legacy toolkit)	`@group database`, classes extending `ezpDatabaseTestCase`	yes
MongoDB and MySQL integration	`@group mongodb-live`	yes
real mail	`@group mail-live`	yes
network	`@group network-live`	yes
live HTTP against a site	environment variables; skipped when unset	they skip

A live test reads where its server is from environment variables and skips, naming the variable, when it is not set. No test carries a host name, an account or a password of its own.

Database tests with runtests.php

The legacy runner `tests/runtests.php` creates the schema in a database you name, optionally one database per test, and runs the database group:

Shell

```
php -d date.timezone=America/Los_Angeles tests/runtests.php --dsn mysql://user@127.0.0.1/testdb --db-per-test
php tests/runtests.php --dsn postgresql://user@127.0.0.1/testdb --db-per-test
```

Use a throwaway database and an account that may create and drop databases. Never point it at a site's database: the runner rebuilds the schema.

Writing a database test

The toolkit in `tests/toolkit/` provides `ezpDatabaseTestCase` (`tests/toolkit/ezpdatabasetestcase.php`), which sets up the database connection for a test case:

PHP

```php
<?php
/**
 * @group database
 */
class acmeReportStorageTest extends ezpDatabaseTestCase
{
    public function testStoreAndFetch()
    {
        $item = new acmeReportItem( array( 'status' => 'open', 'amount' => 2 ) );
        $item->store();
        $fetched = acmeReportItem::fetch( $item->attribute( 'id' ) );
        $this->assertSame( 'open', $fetched->attribute( 'status' ) );
    }
}
```

Keep database tests few and focused on what really needs the database (SQL, transactions, storage), and test the logic around them without one (PHPUnit without a database).

MongoDB and MySQL integration tests

Tests	Variables
`expMongoDBIntegrationTest`, `sevenxMongoDBIntegrationTest` (MongoDB part)	`EXP_TEST_MONGO_URI` (a `mongodb://` connection string), `EXP_TEST_MONGO_DATABASE` (default `exp`)
the same tests (MySQL part)	`EXP_TEST_MYSQL_USER`, `EXP_TEST_MYSQL_PASSWORD`, `EXP_TEST_MYSQL_DATABASE`, `EXP_TEST_MYSQL_HOST` (default `localhost`), `EXP_TEST_MYSQL_PORT` (default 3306)
`expMongoDBDeclaredDefaultTest`, `TrashListPagedTest`	`EXP_TEST_MONGO_SCRATCH` (`<host>:<port>/<database>`, a database whose name contains "scratch" or "test")

Shell

```
php vendor/bin/phpunit --testsuite mongodb-live
```

Live HTTP tests

Tests such as `ApiKeyLiveTest` and `RestContentPermissionLiveTest` call a running site over HTTP. They read `EXP_TEST_PUBLIC_HOST` (else the host of the default siteaccess's `SiteURL`), `APIKEY_LIVE_BASES` and `APIKEY_LIVE_ADMIN_PASSWORD`. Run them against a test installation with a test account, never against production and never with a shared administrator account.

A live test that checks what the web server recorded in the audit trail reads the site's audit directory, `expAuditConfig::siteLogDir()`, not the run's own directory under `var/tmp` that `tests/bootstrap.php` sets up.

Passing passwords safely

Pass a password through the environment, read from a file only you can read, not on the command line where it lands in the shell history and the process list:

Shell

```
EXP_TEST_MYSQL_PASSWORD="$(cat ~/.exp-test-mysql-password)" EXP_TEST_MYSQL_USER=test EXP_TEST_MYS
QL_DATABASE=testdb \
    php vendor/bin/phpunit tests/tests/lib/ezdb/mongodb/expMongoDBIntegrationTest.php
```

In CI

The PHPUnit workflow runs **Database tests** on MySQL 8.0 and PostgreSQL 15 (PHP 8.3, with `pgcrypto` on PostgreSQL), using `tests/runtests.php --dsn ... --db-per-test`. SQLite is covered by driver unit tests in `tests/tests/lib/ezdb/`, MongoDB by adapter unit tests without a server; the `mongodb-live` group is not run in CI (Database support).

Related pages

- Quality checks: tests that need a live server
- Code for every supported database
- CI and reproducing a red check
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