Playwright Browser test runner

START HERE

npm init playwright@latest
Set up a project

npx playwright install
Download browsers

npx playwright test
Run all tests

npx playwright test --ui
Pick and watch tests

npx playwright test --debug
Step through a test

npx playwright codegen *<url>*
Record a test

npx playwright show-report
Open the HTML report

npx playwright test --last-failed
Re-run failures

Config projects, browsers → `test` → **Workers** parallel files → `reporter` → **Report** HTML, traces → `show-trace` → **Trace viewer** timeline, DOM

CONCEPTS

Test filters are regexes on the file path, so "login" runs every file with login in its path.

Each project in the config is one browser or device setup. Select it with --project.

By default the config records a trace only on the first retry. Use --trace on to force it locally.

SETUP

npm init playwright@latest
Scaffold config, example tests and CI file

npx playwright install
Install the default browsers

npx playwright install --with-deps
Install browsers and system libraries
Needs sudo on Linux; the usual step in CI images.

npx playwright install *<browser>*
Install one browser (chromium, firefox, webkit)

npx playwright clear-cache
Clear build and test caches

npm install -D @playwright/test@latest
Update Playwright

RUNNING TESTS

npx playwright test
Run every test headless

npx playwright test *<file>*
Run files matching a path regex

npx playwright test *<file>*:*<line>*
Run the test at a line

npx playwright test -g "*<title>*"
Run tests whose title matches

npx playwright test -G "*<title>*"
Skip tests whose title matches

RUNNING TESTS (cont.)

npx playwright test --project=*<name>*
Run one project (browser)

npx playwright test --headed
Show the browser window

npx playwright test --last-failed
Re-run only the failures

npx playwright test --only-changed
Run files changed since HEAD

npx playwright test --list
List tests without running

npx playwright test -x
Stop after the first failure

npx playwright test -c *<file>*
Use another config file

DEBUGGING

npx playwright test --ui
Interactive UI mode with time travel

npx playwright test --debug
Run with the Inspector, headed, 1 worker

npx playwright test --trace on
Record a trace for every test

npx playwright test --trace retain-on-failure
Keep traces only for failures

npx playwright show-trace *<trace.zip>*
Open a trace in the viewer

npx playwright test --timeout *<ms>*
Per-test timeout (default 30000)

npx playwright test --repeat-each *<N>*
Run each test N times (find flakes)

PARALLELISM AND CI

npx playwright test --workers *<N>*
Number of workers or a percent of cores

PARALLELISM AND CI (cont.)

npx playwright test --workers=1
Run serially in one worker

npx playwright test --fully-parallel
Run tests of one file in parallel too

npx playwright test --retries *<N>*
Retry failed tests N times

npx playwright test --shard *<n>*/*<total>*
Run one slice, e.g. 2/4

npx playwright test --forbid-only
Fail if test.only is left in

npx playwright test --fail-on-flaky-tests
Fail when a test only passed on retry

npx playwright merge-reports *<dir>*
Merge sharded blob reports

REPORTS AND OUTPUT

npx playwright show-report
Open the last HTML report

npx playwright show-report *<dir>*
Open a report folder or zip

npx playwright test --reporter *<name>*
Choose reporters: list, line, dot, html, json, junit

npx playwright test --reporter=html,list
Combine reporters, comma separated

npx playwright test --output *<dir>*
Folder for artifacts (test-results)

SNAPSHOTS

npx playwright test -u
Update snapshots that changed

npx playwright test -u all
Rewrite every snapshot

SNAPSHOTS (cont.)

npx playwright test --update-snapshots missing
Only write absent snapshots

CODEGEN

npx playwright codegen *<url>*
Record actions into test code

npx playwright codegen -o *<file>*
Save the generated script

npx playwright codegen --target *<lang>*
Pick the language, e.g. python

npx playwright codegen -b *<browser>*
Record in firefox or webkit

npx playwright codegen --device "*<name>***"**
Emulate a device

npx playwright codegen --save-storage *<file>*
Save logged-in state
The file holds cookies and tokens; keep it out of git.

npx playwright codegen --load-storage *<file>*
Start from saved state

RECIPES

Debug one failing test

```
# run the test at line 42 with the Inspector
npx playwright test tests/login.spec.ts:42 --debug
```

Reuse a login

```
# log in once and save the state
npx playwright codegen --save-storage=auth.json <url>
# later sessions start logged in
npx playwright codegen --load-storage=auth.json <url>
```

Shard in CI and merge

```
# on each of 3 machines
npx playwright test --shard=1/3 --reporter=blob
# then on one machine, with all blobs in one folder
npx playwright merge-reports --reporter html ./all-blob-reports
```