

Parallelism/Parallel Testing

Playwright Parallelism/Parallel Testing

Playwright supports both **Serial** and **Parallel** test execution modes. You can control how your tests are run using configuration in the **playwright.config.ts** file or **command-line** options.

Serial Mode Execution

In **Serial Mode**, tests run **one after another**, without parallel execution.

1) Set Serial Mode in playwright.config.ts

```
fullyParallel: false,  
workers: 1
```

- `fullyParallel: false` → Disables parallelism.
- `workers: 1` → Only one worker is used, ensuring serial execution.
- **Note:** The default is 1 worker. Changing this in config won't have an effect unless `fullyParallel` is set properly.

2) Set Serial Mode per Test File

To run tests in **serial** within a file:

```
test.describe.configure({ mode: 'serial' })
```

This ensures all tests in that describe block run sequentially.

Parallel Mode Execution

In **Parallel Mode**, tests run **simultaneously** across multiple workers for faster execution.

1) Set Parallel Mode in playwright.config.ts

```
fullyParallel: true,  
workers: 2 // You can increase/decrease as needed
```

- `fullyParallel: true` → Enables parallelism for all tests.
- `workers: 2` → allocate 2 test workers to run tests concurrently.

Example:

- 4 tests → 4 workers (if workers is set to 4)
- 5 tests → 5 workers

2) Parallel Mode for Specific Project/Browser

You can configure parallelism per browser/project:

```
export default defineConfig({
  projects: [
    {
      name: 'chromium',
      use: { ...devices['Desktop Chrome'] },
      fullyParallel: true,
    },
  ],
});
```

3) Set Parallel Mode per Test File

To run tests in **serial** within a file:

```
test.describe.configure({ mode: parallel })
```

This ensures all tests in that describe block run parallelly.

Control Workers via Command Line

You can also set the number of workers (limit workers) when running tests:

```
npx playwright test mytest.spec.ts --workers 3
```

or

```
npx playwright test mytest.spec.ts --workers=3
```

Notes:

- You **cannot set more workers than the number of tests**.
- Setting **--workers=1** disables parallelism (runs in serial mode).