# Most Popular JavaScript Test Automation Frameworks Comparison Chart

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| **Feature** | [**WebdriverIOv6**](http://v6.webdriver.io/) | [**Cypress**](https://docs.cypress.io/guides/overview/why-cypress) |
| Open Source + Premium Features | All Free | Free (Open Source) + [Paid Dashboard](https://www.cypress.io/pricing) (>500 tests) |
| Community (Popularity) | 7.4k stars, 223 watching, 2.1k forks | 36.8k stars, 562 watching, 2.2k forks |
| Native Mobile Application Testing | Supported using Appium | Not supported |
| Test scripting language | JavaScript | Built-in Cypress (70-80%) + JavaScript |
| Test framework and assertions | Supports Mocha + Chai (for assertions), Jasmine, and Cucumber | Mocha and Chai |
| Test Runner | Code runs locally on the development machine. communicates with a Selenium Server (a W3C recommendation supported by all browsers) for execution using the JSON wire protocol. | Executes commands directly inside the browser. does not use selenium. A dedicated Cypress window to automatically notice changes and run tests automatically |
| Architecture | Utilizes Selenium webdriver api and slower than Cypress. | Uses Node.js as a server. Faster and more reliable. not constrained by the same restrictions as Selenium (timeout or sync issue) |
| Setup | Commands for setup/initialization   1. npm install @wdio/cli ./workspace/wdio 2. npx wdio config (Installs runner (local, cloud, grid), framework, base url, reporter, driver, page object model) flexible | Commands required to get started   1. npm init #Creates package.json 2. npm install cypress — save-dev # install dependency (pre-configured all-in-one installation) |
| App domain support (cross-origin support) | Supports multidomain | Single Domain (same-origin = same protocol, port (if specified), and host) |
| Browser tabs | Supports multiple tabs | Only single tab |
| Multiple Browsers at the same time | Supported | Single browser |
| iframes, shadow Dom | Supports iframes and shadow Dom | Limited support to iframes and shadow Dom |
| Parallel Execution | Supports Parallel execution | Does not support parallel execution |
| Running specific tests (as in tagging) | Supported | Supported |
| Reporting tool | [Supports several reporting services](https://webdriver.io/docs/allure-reporter/) | [Supports several reporting services](https://docs.cypress.io/guides/tooling/reporters) |
| Documentation | Good | Very Good |
| Cloud Execution | Supported | Supported |
| Browser support | All and Headless | Chrome-family browsers (including Electron and Chromium-based Microsoft Edge), and Firefox and headless |
| Visual Regression Tests (Image Comparison) | Supported | Supported |
| Time travel | Not supported | takes snapshots as tests run. Hover over commands in the Command Log to see exactly what happened at each step. |
| Component Testing (Unit testing) | Not supported | Supported. Best suited for TDD |
| Network Intercept (Network Traffic Control) | plugin wdio-intercept-service | Built-in support |
| Waits | Automatic waits (Supports Async/Await) | Automatic waits (Using Async/await in Cypress tests can cause system to behave unexpectedly) |
| Fixtures support | Can create test data using module.exports = {} and require it from scripts and use faker.js | cy.fixture() from fixtures folders. Automatic support |
| Screenshots and Videos | Supported with simple configuration | Automatically supported |
| Page Object Model | Supported | Not Supported |
| Debugging | WDIO task runner. Pause the run between Selenium commands. No interactive window. Debugging supported using native commands. | Readable error messages with interactive window help to debug quickly, and cypress captures snapshots for all the test steps which make debugging superfast |
| Angular Support | Using lib webdriverjs-angular | Supported but May face page synch issues |
| Learning Curve | Needs JavaScript knowledge. Debugging needs more JS background | POM not supported. Needs JS knowledge |
| [Code Quality](https://lumnify.com/grades/?rel=libhunt-cmp) | L5 |  |
| Boilerplate projects | [WebdriverIO Projects](https://webdriver.io/docs/boilerplates/) | [Cypress Projects](https://docs.cypress.io/examples/examples/projects-media) |
| Resources | [WebdriverIO Resources](https://webdriver.io/community/resources) | [Cypress Resources](https://docs.cypress.io/examples/examples/recipes) |

More articles:

[BrowserStack](https://www.browserstack.com/) – a commercial testing infrastructure provider: [Cypress Vs WebdriverIO](https://www.browserstack.com/guide/cypress-vs-webdriverio)

[Vitaq](https://vitaq.io/) - a cloud-based Test Automation tool based in UK: [Cypress vs WebDriverIO](https://vitaq.io/2021/04/20/cypress-vs-webdriverio/)