

CYPRESS TEST AUTOMATION



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KEY FEATURES OF CYPRESS AUTOMATION TOOL



Fast and
Reliable
Testing

Comprehensive
Test Runner

Cross-Browser
Testing

Built-in
Mocking and
Stubbing

Easy Setup
and
Integration

Powerful
API

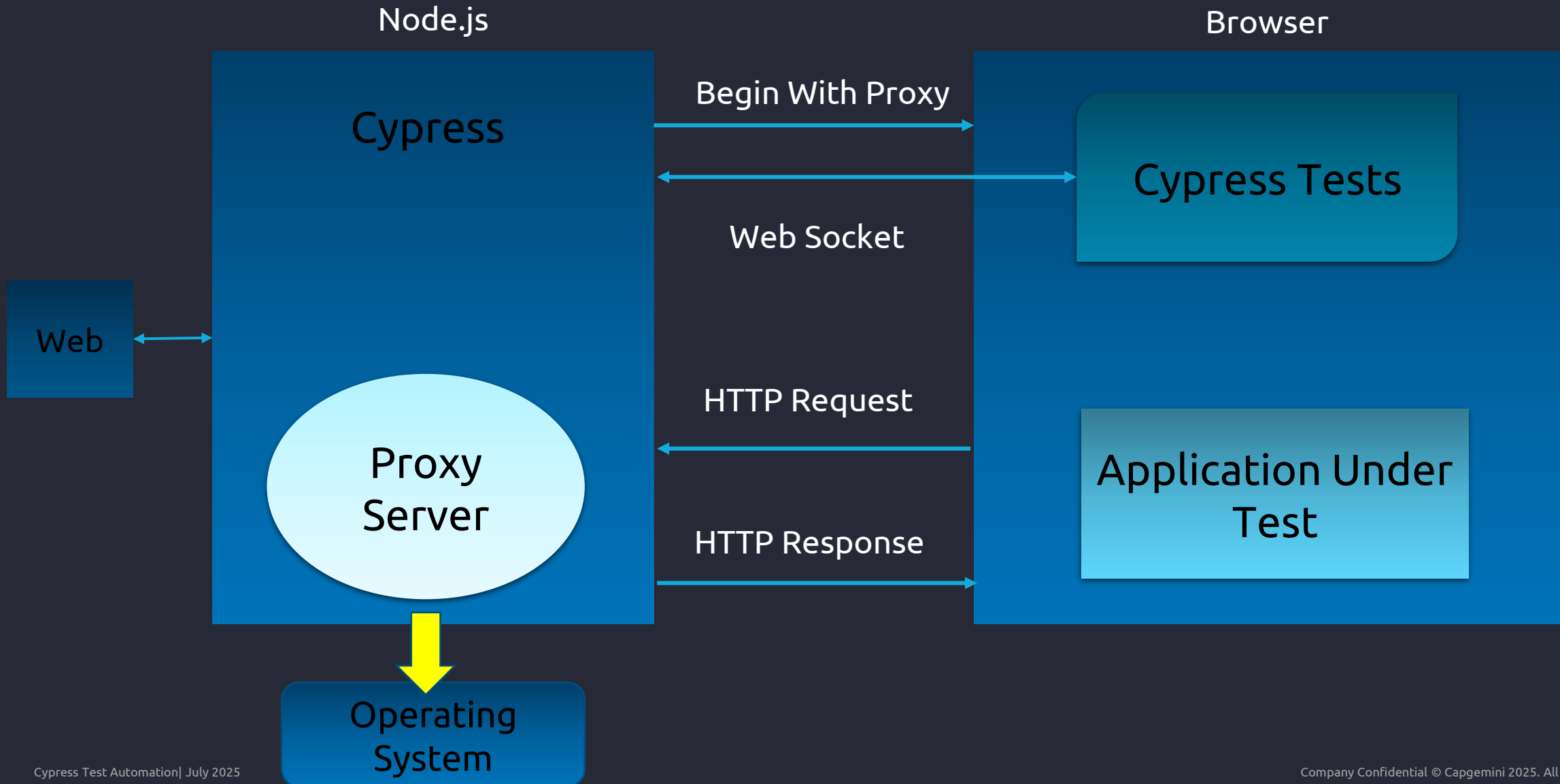
Time Travel
Debugging



FEATURES OF CYPRESS END-TO-END TESTING FRAMEWORK

1. Executes tests inside the browser for faster, more accurate results.
2. Offers quick and consistent test execution with automatic waiting.
3. Simple to install with powerful debugging tools and readable error messages.
4. Uses JavaScript; integrates well with modern front-end stacks.
5. Supports Chrome, Edge, Electron and Firefox (limited compared to Selenium).
6. Time Travel: Can take snapshots of the application when the tests are running. Then as a test developer, we can hover over each command in the Test Runner panel to see what happened at each step.
7. Debuggability: Enables debugging of the tests directly from the familiar tools like Developer Tools. The readable errors and stack traces make debugging lightning fast.
8. Automatic Waiting: With Cypress, there is no need to put explicit waits or sleeps to your tests. It automatically waits for commands and assertions before proceeding.
9. Spies, Stubs, and Clocks: Similar to unit test cases, you can verify and control the behavior of functions, server responses, or timers at run time using the spies and stubs provided by Cypress.
10. Network Traffic Control: Using Cypress, you can stub network traffic as you like and customize the response of your API calls as per your need.
11. Consistent Results: As Cypress doesn't use Selenium or WebDriver and executes tests directly in the browser, it aids for fast, consistent, and reliable tests that are flake-free.
12. Screenshots and Videos:* It takes screenshots automatically on failure, or record videos of your entire test suite when running from the CLI.*
13. No shadow DOM support. You can imagine the shadow DOM as a "DOM within a DOM". It is its own isolated DOM tree with its elements and styles, completely isolated from the original DOM.
14. It doesn't support native mobile apps, but it does intend to support mobile web browsers in the future.

ARCHITECTURE OF CYPRESS TOOL





CYPRESS COMPONENTS

- Cypress Test Runner
- Cypress Dashboard
- Test Status: Menu shows you a summary of how many tests passed, failed, or in progress and time took for the test.
- URL Preview shows you the URL of your test and helps you track any URL route.
- Viewport Sizing: set your app viewport size to test responsive layouts.
- Command Log: It shows you the command logs as it executes for all the tests that execute.
- App Preview: you can see the test while commands execute.
- Dashboard Service: The Cypress Dashboard is a service that provides you access to recorded tests - typically when running Cypress tests from your CI provider. The Dashboard provides you with insight into what happened when your tests ran.



Test Status Menu

See how many tests passed or failed and how fast the tests took to run.

Url Preview

The url of your app updates as you test, so you have more visibility on testing routes.

Viewport Sizing

Set your app's viewport size to test responsive layouts.

The screenshot shows the Cypress Test Runner interface. At the top, the Test Status Menu displays 4 passed tests, 2 failed tests, and a total time of 3.94s. The Url Preview shows the current URL as http://localhost:8888/#/. The Viewport Sizing shows the current viewport size as 625 x 750 (97%). The main area displays the Cypress application under test, which is a todo list. The application has a header "todos" and a form with a label "What needs to be done?". Below the form, there are two todo items: "buy some cheese" and "feed the cat". The application also has a "0 items left" message and buttons for "All", "Active", "Completed", and "Clear completed".

Command Log

Every command logs as it executes. Hover to highlight the affected element, or click to log more info to the console.

App preview

See your app while test commands execute in real-time. Use your devtools to inspect or debug each command.

Back to Projects									
Docs Chat Jane Lane									
Tests Runs Settings Chrome 50									
Runs See All									
Last updated: 10:00:01am									
#1891	search-todos	remove listings from search results on clear	7 months ago	23m 44s	7	43			
#1892	master	fix for smaller screens widths so todos display completely	8 months ago		7	43	-	-	-
#1893	search-todos	regex remove whitespace	9 months ago	23m 44s			-	28	-
#1894	search-todos	remove listings from search results on clear	a year ago	23m 44s	2	2	2	28	-

CYPRESS VS SELENIUM

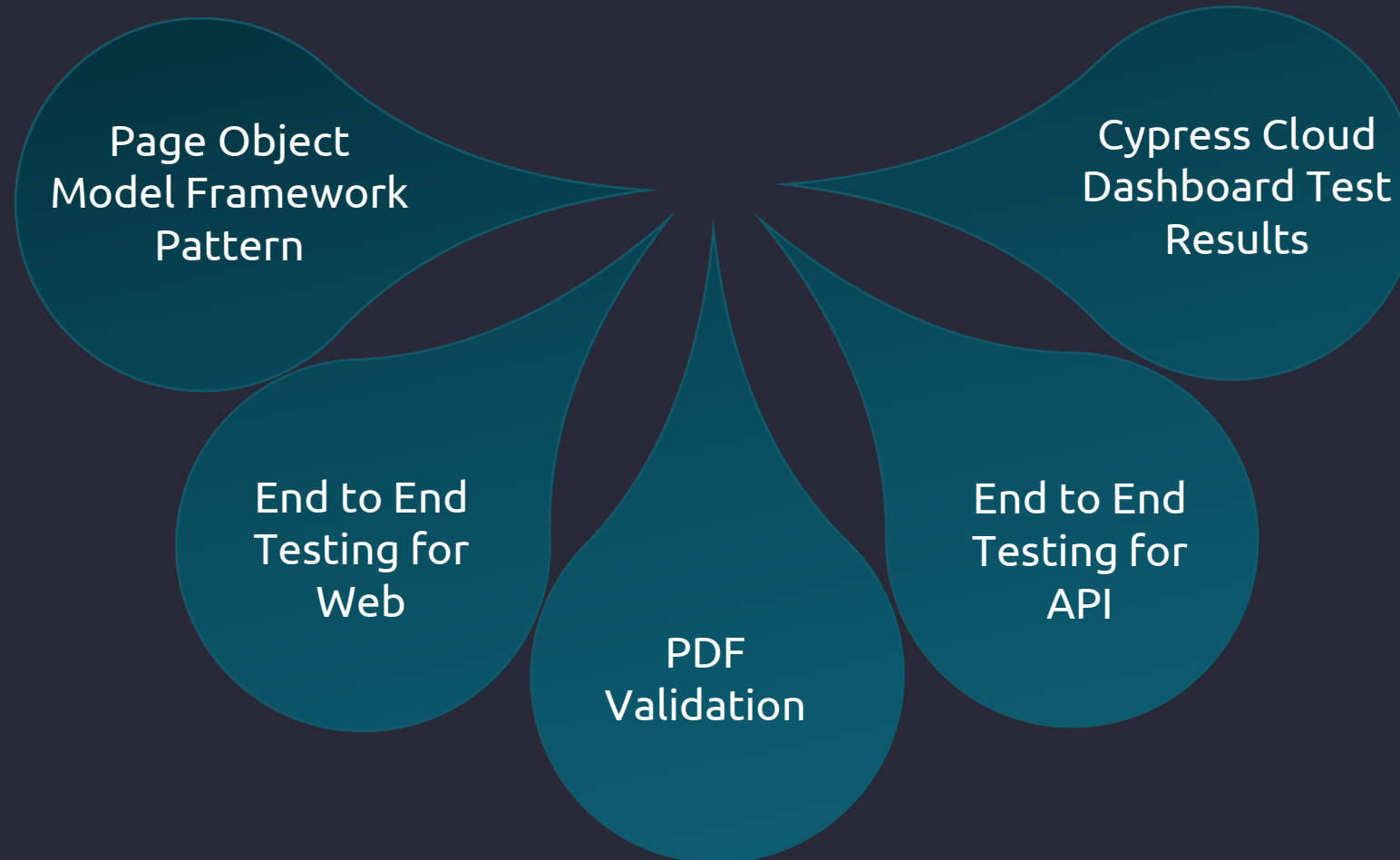


	Cypress	Selenium
Languages Supported	Supports JavaScript, TypeScript	Supports all popular languages like Java, Python, Ruby, C#, PHP, etc.
Browsers Supported	Chrome, Edge, Firefox, Electron	Chrome, IE, Safari, Edge, Firefox, Opera
Frameworks Supported	Supports only Mocha JS	Supports multiple frameworks based on specific programming languages. (For example: JUnit for Java, Cucumber for JavaScript, etc.)
Setup Complexity	The setup is simple. No dependencies or additional downloads required	Setup is a bit challenging as it requires downloading browser-specific drivers and setting up the test environment
Documentation & Community Support	Very intuitive documentation along with a rapidly growing community	Well-established documentation and firm community support from users across the globe
Architecture	Runs test directly in the browser	Separate WebDriver interacts with Browsers
Test Writing Experience	Intuitive	Moderate
Ease of Use	Easier to setup and write tests	A steeper learning curve, and requires WebDriver
Performance	Faster test execution	Slower due to network communication
Community & Support	Growing community & decent documentation	Larger well-established community
Integration	Integrates well with other JS frameworks	Integrates with various testing tools
Additional Features	Build-in debugger	Mobile device testing(with Appium)

			
Language Support	JavaScript, Java, C#, Python, Ruby	JavaScript, Java, C#, Python, Ruby	JavaScript/TypeScript
Browser Support	Chrome, Edge, Firefox, Safari	Chrome, Edge, Firefox, Safari	Chrome, Edge, Firefox, Safari
Framework Support	Jest/Jasmine, AVA, Mocha, and <u>Vitest</u>	Mocha, Jest/Jasmine, <u>TestNG</u> , JUnit, Cucumber <u>and</u> NUnit	Supports Mocha, Jest/Jasmine, Cucumber
Continuous Integration	Can be easily integrated with continuous integration tools like Jenkins	Can be easily integrated with continuous integration tools like Jenkins	Can be easily integrated with continuous integration tools like Jenkins
Ease of use	<u>Playwright</u> has a user-friendly interface and requires minimal setup	Selenium requires more setup and has a steeper learning curve	Cypress has a user-friendly interface and requires minimal setup
Test Writing Experience	Intuitive	Moderate	Intuitive
DOM manipulation	Easy	Moderate	Easy
Community Support	Growing community	Large and active community with good documentation and support resources	Active community with good documentation and support resources
Support for headless mode	YES	YES	YES
Parallel Execution	Supports parallel execution	Supports parallel execution	Supports parallel execution using CI/CD tool
Built-in network traffic control	YES	NO	YES
Setup complexity	Easy Setup	Requires some effort to build the framework	Easy Setup
Iframe Support	YES	YES	Iframe support through <u>plugin</u> e.g. cypress-iframe
Driver	No driver required	Each browser requires its driver	No need <u>of</u> driver bindings
Multi Tab Support	YES	NO	YES
Drag & Drop Support	YES	YES	YES
Test Assertions Libraries	Mocha, Chai	PyUnit, JUnit, TestNG almost any language-specific test framework can be adapted.	Mocha, Chai
Inbuilt reports	YES	NO	Default Reporter is Spec, Customizable for other supported reporters
Cross-Domain Support	YES	YES	YES



CYPRESS AUTOMATION TESTING





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	Selenium	Cypress
Speed		
Wait for Element		
Remote Execution		
Parallel Execution		
Headless		
Screenshot		
Video		
Documentation		
Community		
Execute JS		
Switch Tabs		
Several Browsers		
Load Extensions		
Manage Cookies		