



# CYPRESS TEST AUTOMATION



# TABLE OF CONTENTS



- 1 Key Features and What makes it Unique?**
- 2 Architecture of Cypress Automation Tool**
- 3 Cypress Components**
- 4 Common differences between Selenium , Cypress,Playwright**
- 5 Cypress Automation Testing**



# 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

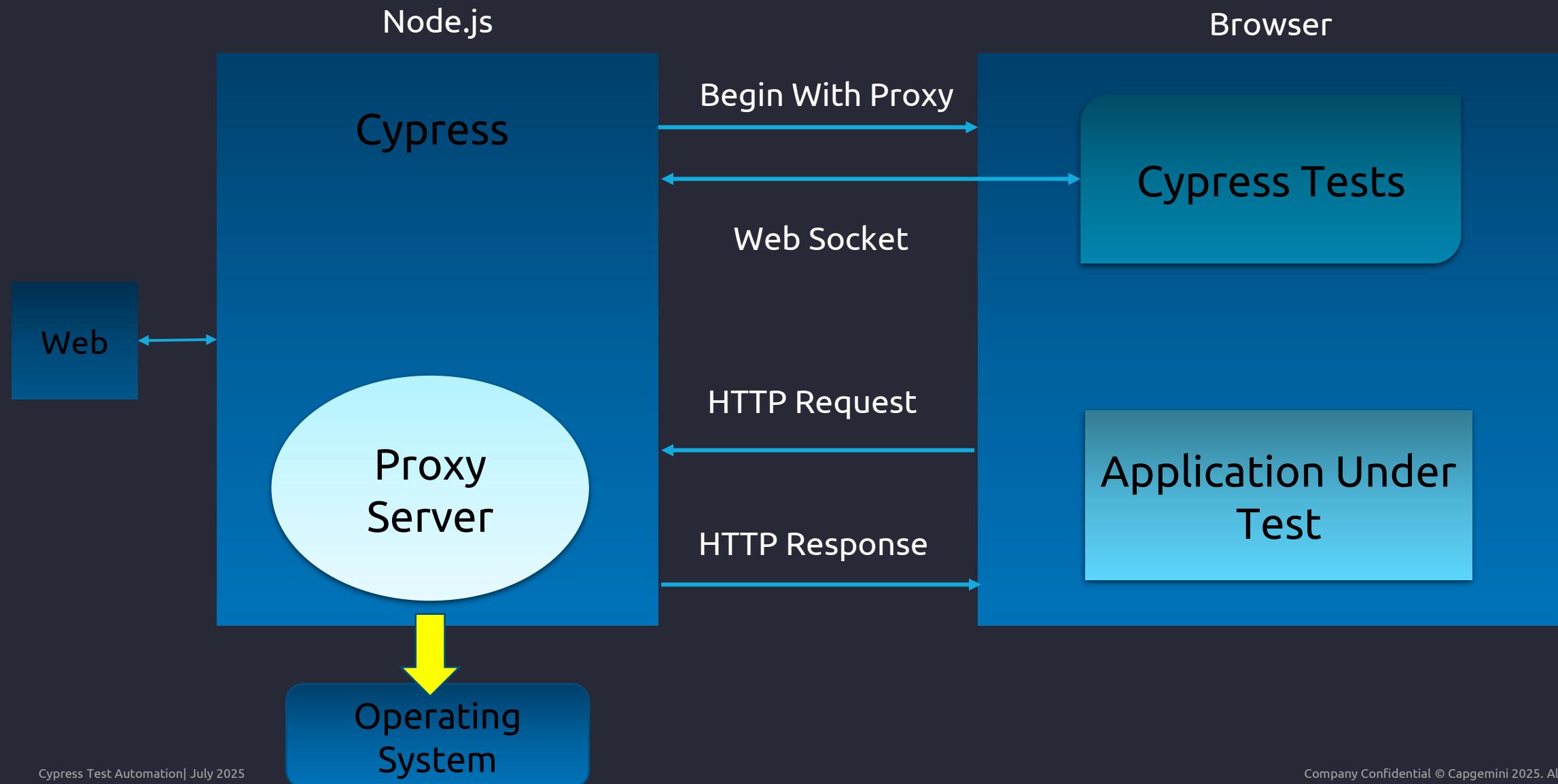


# FEATURES OF CYPRESS END-TO-END TESTING FRAMEWORK

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.

4 2 0 3.94

**Url Preview**

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

http://localhost:8888/#/ 625 x 750 (97%)

**Viewport Sizing**

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

**TodoMVC**

**New Todo**

- ✓ should allow me to add a todo item
  - BEFORE EACH
  - 1 VISIT http://localhost:8888
  - (NEW URL) http://localhost:8888/r/
- TEST
  - 1 GET .new-todo
  - 2 - TYPE buy some cheese
  - 3 - TYPE {enter}
  - 4 GET .todo-list li
  - 5 - FIRST
  - 6 - FIND label
  - 7 - ASSERT expected: <label> to contain: buy some cheese
- ✓ should clear text input field when an item is...
  - ✓ should append new items to the bottom of...

**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 ▾

Chrome 50 ▾

Last updated: 10:00:01am

**Runs See All**

#	Branch	Description	Time Ago	Duration	Tests	Issues	Comments	Logs	Console	Diff	Diff
#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	28	-	-	-	-

**Version | Changelog**

Company Confidential © Capgemini 2025. All rights reserved | 7

# 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 Vitest	Mocha, Jest/Jasmine, TestNG, JUnit, Cucumber and 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	Playwright 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 plugin e.g. cypress-iframe
Driver	No driver required	Each browser requires its driver	No need of driver bindings
Multi Tab Support	YES	NO	YES
Drag & Drop Support	YES	YES	YES
Test Assertions Libraries	Mocha, Chai	PyUnit, JUnit, Testing 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

Page Object  
Model Framework  
Pattern

Cypress Cloud  
Dashboard Test  
Results

End to End  
Testing for  
Web

End to End  
Testing for  
API

PDF  
Validation



## About Capgemini

Capgemini is a global leader in partnering with companies to transform and manage their business by harnessing the power of technology. The Group is guided everyday by its purpose of unleashing human energy through technology for an inclusive and sustainable future. It is a responsible and diverse organization of 360,000 team members in more than 50 countries. With its strong 55-year heritage and deep industry expertise, Capgemini is trusted by its clients to address the entire breadth of their business needs, from strategy and design to operations, fueled by the fast evolving and innovative world of cloud, data, AI, connectivity, software, digital engineering and platforms. The Group reported in 2022 global revenues of €22 billion.



Get the Future You Want | [www.capgemini.com](http://www.capgemini.com)

This presentation contains information that may be privileged or confidential and is the property of the Capgemini Group.

Copyright © 2025 Capgemini. All rights reserved.



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