

## Review Article

## Open Access

## Mastering Perfecto Mobile: Techniques for Mobile and Web Testing Automation

Asha Rani Rajendran Nair Chandrika

Infosys Ltd, USA

### ABSTRACT

This article serves as a comprehensive step-by-step guide for beginners on using Perfecto to test both mobile applications and web browsers. It explores how Perfecto simplifies manual and automated testing on real devices and desktop browsers, supports parallel execution, and integrates with automation frameworks like Appium and Selenium. By the end of this guide, beginners will have the necessary foundation to conduct efficient mobile and web testing using Perfecto.

### \*Corresponding author

Asha Rani Rajendran Nair Chandrika, Infosys Ltd, USA.

Received: December 01, 2022; Accepted: December 14, 2022; Published: December 20, 2022

### Introduction

As technology advances and the variety of devices and browsers expands, the demand for efficient testing solutions becomes more crucial. QA testers must ensure that applications work seamlessly across multiple mobile devices and web browsers. Perfecto, a cloud-based platform, provides a comprehensive solution for testing on both real mobile devices and web browsers. This article introduces Perfecto to beginners, covering step-by-step processes for manual and automated testing in both mobile and web environments.

### How Perfecto Works for QA Testers

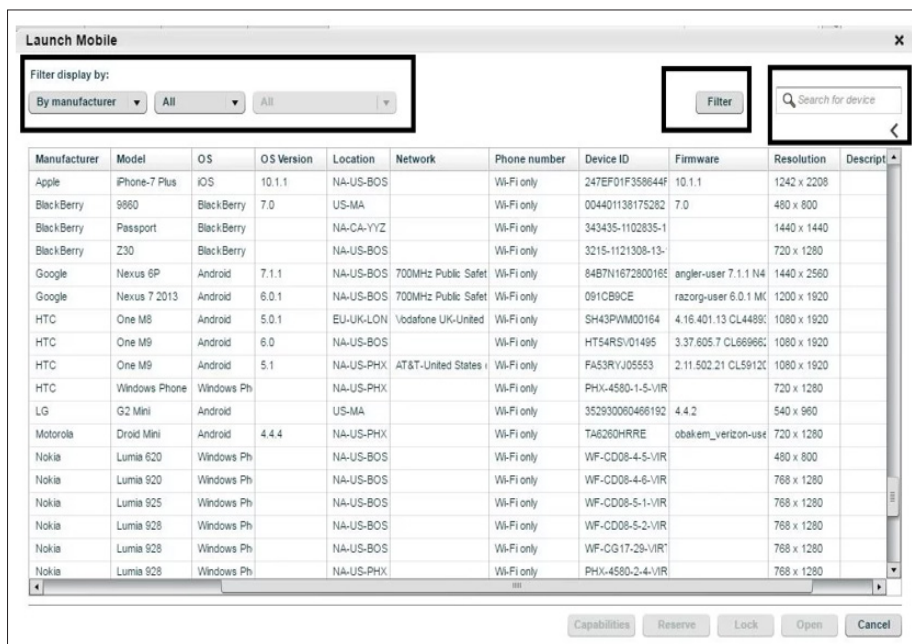
Perfecto enables testers to execute manual and automated tests on real devices (mobile phones, tablets) and desktop browsers

(Chrome, Firefox, Safari, etc.) hosted in the cloud. The platform provides access to a wide range of device and browser combinations, facilitating efficient testing of mobile apps and web applications.

### Step-by-Step Guide to Using Perfecto for Mobile and Web Testing

#### Getting Started with Perfecto

- **Sign Up:** Create an account on Perfecto. Once logged in, you can access a wide variety of real mobile devices and browsers for testing [1].
- **Select Devices and Browsers:** Use filters to select mobile devices or desktop browsers based on your testing needs (OS, version, device model, or browser type) [2].



Manufacturer	Model	OS	OS Version	Location	Network	Phone number	Device ID	Firmware	Resolution	Descript
Apple	iPhone-7 Plus	iOS	10.1.1	NA-US-BOS		Wi-Fi only	247EP01F358644F	10.1.1	1242 x 2208	
BlackBerry	9860	BlackBerry	7.0	US-MA		Wi-Fi only	004401138175282	7.0	480 x 800	
BlackBerry	Passport	BlackBerry		NA-CA-YYZ		Wi-Fi only	343435-1102835-1		1440 x 1440	
BlackBerry	Z30	BlackBerry		NA-US-BOS		Wi-Fi only	3215-1121308-13-		720 x 1280	
Google	Nexus 6P	Android	7.1.1	NA-US-BOS	700MHz Public Safet	Wi-Fi only	84B7N1672800165	angler-user 7.1.1 N4	1440 x 2560	
Google	Nexus 7 2013	Android	6.0.1	NA-US-BOS	700MHz Public Safet	Wi-Fi only	091CB8CE	razorg-user 6.0.1 M	1200 x 1920	
HTC	One M8	Android	5.0.1	EU-UK-LON	Vodafone UK-United	Wi-Fi only	SH43PMM00164	4.16.401.13 CL4489	1080 x 1920	
HTC	One M9	Android	6.0	NA-US-BOS		Wi-Fi only	HT54RSV01495	3.37.605.7 CL66966	1080 x 1920	
HTC	One M9	Android	5.1	NA-US-PHX	AT&T-United States	Wi-Fi only	FA53RVJ05553	2.11.502.21 CL5912C	1080 x 1920	
HTC	Windows Phone	Windows Ph		NA-US-PHX		Wi-Fi only	PHX-4580-1-S-VIR		720 x 1280	
LG	G2 Mini	Android		US-MA		Wi-Fi only	352930080486192	4.4.2	540 x 960	
Motorola	Droid Mini	Android	4.4.4	NA-US-PHX		Wi-Fi only	TA626QHRRE	obekem_verizon-use	720 x 1280	
Nokia	Lumia 620	Windows Ph		NA-US-BOS		Wi-Fi only	WF-CD08-4-S-VIR		480 x 800	
Nokia	Lumia 920	Windows Ph		NA-US-BOS		Wi-Fi only	WF-CD08-4-6-VIR		768 x 1280	
Nokia	Lumia 925	Windows Ph		NA-US-BOS		Wi-Fi only	WF-CD08-5-1-VIR		768 x 1280	
Nokia	Lumia 928	Windows Ph		NA-US-BOS		Wi-Fi only	WF-CD08-5-2-VIR		768 x 1280	
Nokia	Lumia 928	Windows Ph		NA-US-BOS		Wi-Fi only	WF-CG17-29-VIR		768 x 1280	
Nokia	Lumia 928	Windows Ph		NA-US-PHX		Wi-Fi only	PHX-4580-2-4-VIR		768 x 1280	

Figure 1: Perfecto Mobile Device and Browser Selection Interface [2].

## Running Manual Tests on Mobile and Web

Perfecto allows manual testing for both mobile applications and web browsers. Manual testing is particularly useful for exploratory testing, UI validation, and verifying specific functionalities [1,3].

- **Install or Open the App:** For mobile, upload the application (APK for Android, IPA for iOS) to the cloud device. For web, simply navigate to the desired URL using the cloud browser.
- **Execute Test Cases:** Interact with the mobile device or web browser to execute your test scenarios.
- **Capture Logs and Screenshots:** Perfecto captures logs, screenshots, and network performance metrics during the session.

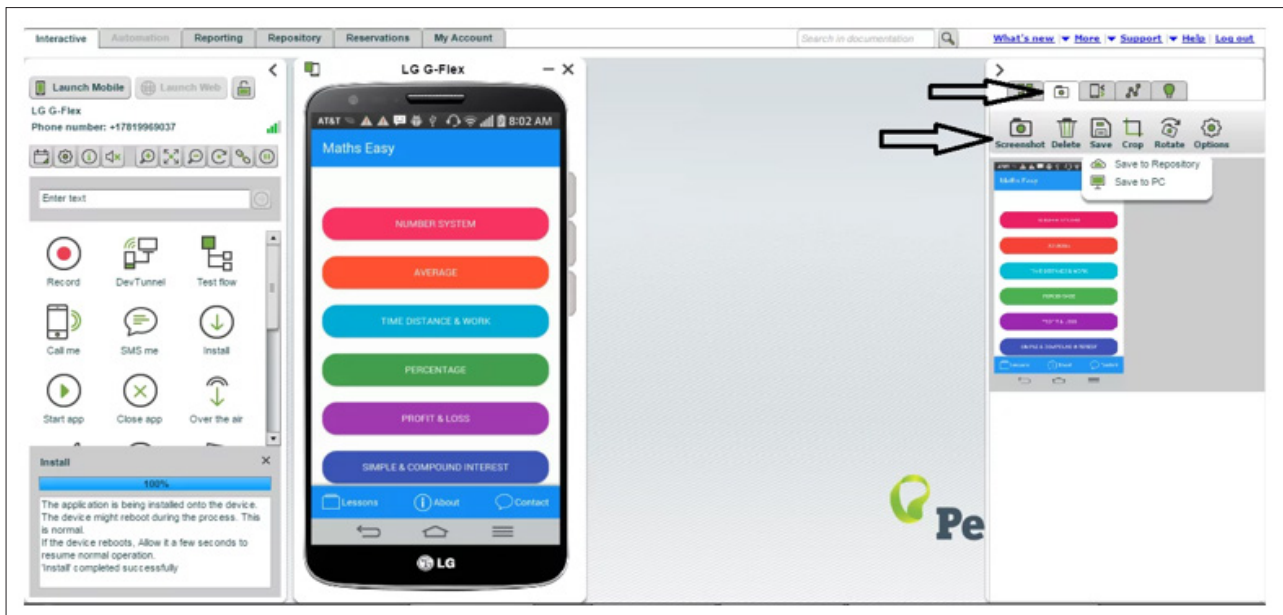


Figure 2: Manual Testing Session in Perfecto [2].

## Automating Tests for Mobile and Web

Perfecto seamlessly integrates with automation tools like Selenium (for web) and Appium (for mobile) to enable test automation [4].

- **Automation for Web:** By integrating Selenium WebDriver with **Perfecto's cloud-based testing platform**, testers can automate browser tests on a wide range of real browsers hosted in Perfecto's secure, scalable cloud environment. To set this up, configure Selenium with your **Perfecto cloud credentials** and define the desired browser capabilities—such as browser type, version, and operating system. This setup allows for parallel test execution across multiple browser and platform combinations, improving test coverage and accelerating feedback loops. Perfecto's cloud also offers advanced features such as live reporting, video recording of test execution, and detailed logs, which enhance debugging and ensure comprehensive validation of web application functionality [5].

## Example Selenium WebDriver Code

This code sets up a **Selenium RemoteWebDriver** to run automated tests in the **Perfecto cloud environment**. It uses a **DesiredCapabilities** object to specify the browser as **Chrome** and the operating system as **Windows 10**, while also providing a security token for authentication with Perfecto's cloud. The **RemoteWebDriver** is initialized by connecting to Perfecto's cloud URL, allowing the test to execute remotely on the specified browser and platform configuration. Once configured, the driver can be used to perform actions in the browser as part of the test automation process.

```
DesiredCapabilities capabilities = new DesiredCapabilities();
capabilities.setCapability("browserName", "Chrome");
capabilities.setCapability("platformName", "Windows 10");
capabilities.setCapability("securityToken", "your-perfecto-token");

WebDriver driver = new RemoteWebDriver(new
URL("https://cloud.perfecto.io/nexperience/perfectomobile/wd/hub"), capabilities);
```

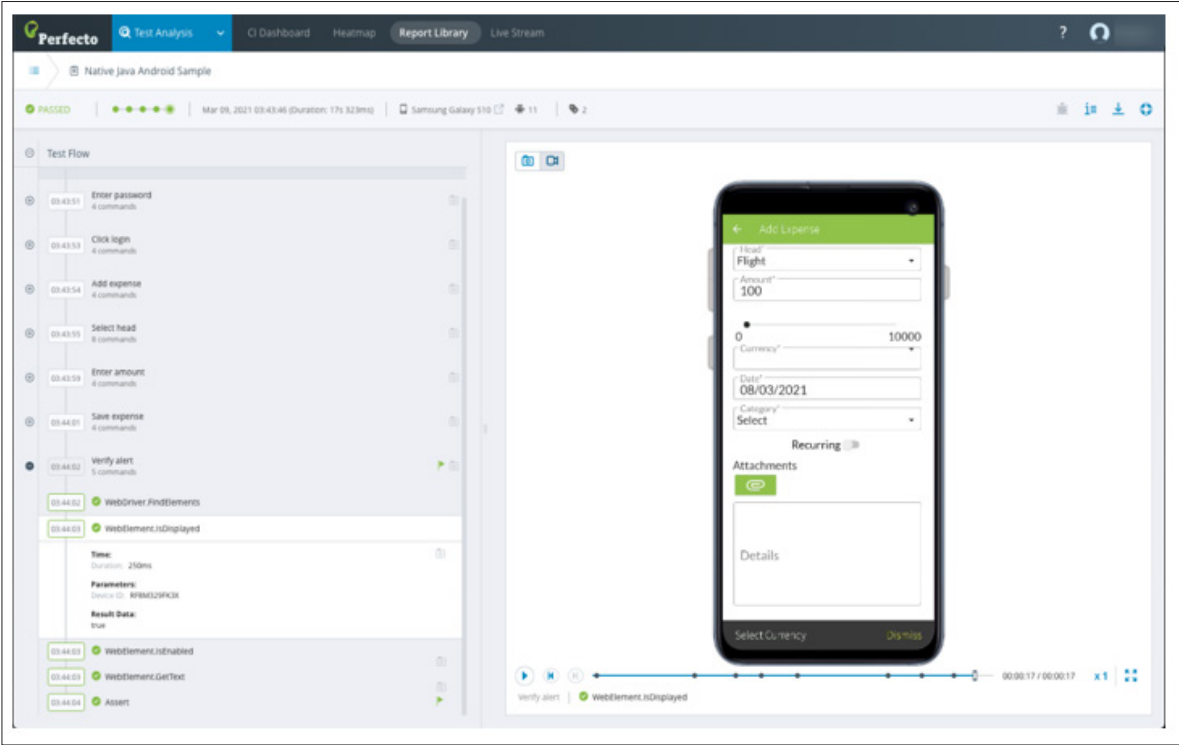


Figure 4: Mobile Application Test Execution [1].

Analysing Test Results

Perfecto provides robust, detailed reporting capabilities for both mobile and web testing, ensuring teams have all the information they need to assess test outcomes and troubleshoot issues effectively. The platform automatically generates rich test reports that include session logs, screenshots at each step, and full video recordings of the test execution. These insights allow testers to quickly identify failures, investigate issues, and validate the correctness of test behavior across different environments [1].

- Access Reports: Navigate to the 'Reports' section in Perfecto's dashboard.
- Analyze Results: Review the captured logs, screenshots, and videos to troubleshoot and refine your test cases.

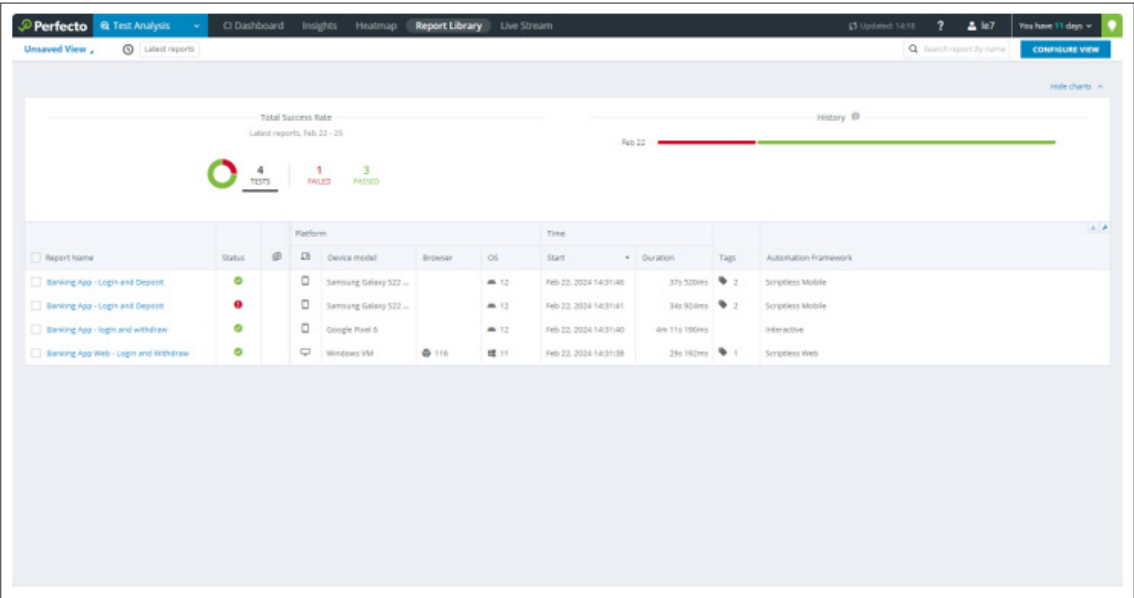


Figure 5: Perfecto Test Execution Reports [1].

### Best Practices for Mobile and Web Testing in Perfecto

- **Choose Real Devices and Browsers:** For more accurate results, prioritize testing on real devices and browsers instead of emulators or simulators.
- **Leverage Parallel Execution:** Use parallel testing to maximize coverage and reduce testing time.
- **Integrate Early:** Incorporate Perfecto into your continuous integration (CI) pipeline for regular automated testing during the development process.
- **Utilize Reports:** Perfecto's detailed reporting features can be invaluable for diagnosing issues quickly and efficiently.

### Conclusion

- **All-in-One Solution:** Perfecto provides a robust cloud-based platform for both mobile and web testing, allowing testers to scale easily.
- **Support for Automation:** With its seamless integration with Appium and Selenium, Perfecto enables efficient automation across mobile devices and web browsers.
- **Detailed Reporting:** Comprehensive reporting tools help QA teams diagnose issues quickly and improve test coverage.
- **CI/CD Friendly:** Perfecto integrates with continuous integration systems to ensure that mobile and web apps maintain high quality throughout the development lifecycle [8].

### References

1. Getting Started with Perfecto. Perfecto Documentation <https://help.perfecto.io/perfecto-help/content/home.htm>.
2. Re-Producing Production Issues with Perfecto Mobile. TestersDock <https://testersdock.com/reproduce-production-issues-perfecto/>.
3. What Is Cloud Mobile Testing? Sauce Labs <https://saucelabs.com/resources/blog/what-is-cloud-mobile-testing>.
4. Daniel Knott (2015) Hands-On Mobile App Testing: A Guide for Mobile Testers and Anyone Involved in the Mobile App Business. Programming & Software Development <https://www.amazon.in/Hands-Mobile-App-Testing-Involved/dp/0134191714>.
5. How to Test a Mobile App: A Beginner's Guide (2020) Abstracta <https://abstracta.us/blog/mobile-testing/how-to-test-a-mobile-app/>.
6. Feroz Pearl Louis, Gaurav Gupta (2015) Mastering Mobile Test Automation. Programming & Software Development <https://www.amazon.in/Mastering-Mobile-Automation-Feroz-Pearl/dp/1782175423>.
7. What Is Cloud Test Automation? DuploCloud <https://duplocloud.com/blog/what-is-cloud-test-automation/>.
8. Nishant Verma (2017) Mobile Test Automation with Appium. Programming & Software Development <https://www.amazon.in/Mobile-Automation-Appium-Nishant-Verma/dp/1787280160>.