

# Significance of Cross-browser Testing

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# Introduction

The beginning of the world wide web (www) dates back to 1989 when a scientist at CERN, Tim Berners, created a platform to automate information sharing systems along with scientists across the world universities. This noble idea to create an information sharing system gave rise to today's powerful 'web' interface accessed over the internet. This system has grown monstrous with a huge majority of the world population relying on the web for information gathering and media downloads. The world wide web has changed global communication and accelerated digital transformation with added convenience at various levels. Information from the world wide web can be accessed by software applications called **web browsers**. Web browsers were further released with powerful computing capabilities to improve web page design and usability. The introduction of Mozilla, Internet Explorer (now Microsoft Edge), Firefox, Google Chrome, Safari, etc., gave varied options to users to experience varying levels of privacy and security.

Billions of people across the world use the internet to access information, and web browsers act as the gateway to use the internet. Hence, there is an increasing use of web browsers in today's modern world. However, the speed of different web browsers is based on the customizability, privacy, and speed it offers. Further, the browser should perform as expected on all platforms/devices like desktops, laptops, smartphones, tablets, etc., else it will give rise to compatibility issues. Hence, when a web app is developed, it is important to test the app on all the web browsers under all the above-said conditions; this kind of testing is called '**cross-browser testing**'

With the emergence and flourishing of web apps, it has become essential to ensure the apps are working on any browser of the users' preferences. Web apps have become an integral part of the digital transformation journey of any organization. These web apps accelerate the business by offering higher efficiency, 24\*7 accessibility, higher scalability, higher security, and lower maintenance. To improve the efficiency and reliability of web apps they must be tested. This whitepaper explains what cross-browser testing is, how cross-browser errors occur, what are the popular device farms, and how Tenjin Online helps in minimizing cross-browser errors.

## What is cross-browser testing?

Cross-browser testing verifies the app's performance across different browsers and checks if it's working as expected. Web apps are popularly used by businesses to achieve a competitive edge. With this popularity of web apps, testing them on different browsers is important to check their behavior across all of them. Each browser will read and interpret codes in different ways, and the app's behavior will change accordingly. To prevent the issues arising from the way the app behaves across different browsers, cross-browser testing is incorporated.

Cross-browser testing is a complex task that will involve testing on various browsers, failing which the app will behave differently on different browsers, making it lose its reliability and will not be liked by the masses. Testing cross-browser errors manually is a highly tedious task and may not give accurate results. Hence, automation becomes important to get the expected results.

When automating cross-browser testing, choosing the right test automation tool is critical. Tenjin Online is one such tool that can help you test apps for cross-browser errors and create reliable apps. Let us understand how Tenjin Online helps reduce cross-browser errors.

## Why do cross-browser errors occur?

Cross-browser testing evaluates how the app works on different browsers and identifies the errors that can cause dissatisfactory user experience. Cross-browser testing can be a tedious task to perform, which when done manually can be prone to errors and highly time-consuming. Hence, it is automated to yield maximum benefits to get the expected results. Irrespective of the methods of testing implemented, cross-browser testing becomes highly essential to ensure the app is working as expected across all browsers.

Organizations may encounter a bunch of challenges while performing cross-browser testing. Let us discuss in detail the reasons for cross-browser errors to occur.

## Challenges of cross-browser testing

The prominent challenges associated with testing cross-browser errors can be listed below:

- » The presence of too many browsers is the biggest challenge companies face to test the app on multiple browsers. Hosting a wide range of browsers internally can be a tedious as well as expensive task, hence, it is important to find an efficient yet cost-effective alternative to perform cross-browser testing.
- » Testing too many operating system combinations is available today. A cross-browser test does not only involve testing on multiple browsers, but also with a variety of devices, browsers, versions, and operating systems. It would be impossible to maintain an in-house collection of devices, browsers, browser versions, and operating systems. To overcome these challenges, a Cloud-based cross-browser testing platform can offer multiple combinations of devices, browsers, browser versions, and operating systems with automated testing capabilities.

- » Web browsers are constantly evolving, hence, undergo a frequent update process to offer a better user experience. Take the instance of Safari or Google Chrome browsers, which require an update every two months. It is important to constantly test the web apps on the updated browser version to stay on par with the current requirements and offer a seamless user experience.
- » Performing cross-browser testing requires special infrastructure for setting up and execution, in which either simulators, emulators, or real devices should be arranged, increasing the cost of testing. Hence, it becomes difficult for organizations to perform cross-browser testing. However, this challenge can be resolved by introducing Device Farms, where testing is performed on emulators accessed on Cloud, offering efficient and cost-effective solutions.

## Device Farm Integration: How it helps in cross-browser testing

An innovative app idea and developing it efficiently alone will not assure the app's success. Testing the developed app is an integral part of the entire process to ensure that there is no discrepancy from the expected result and offers a great user experience. The main challenge that lies ahead of testing the app is to check if its experience across all devices, networks, operating systems, browsers, or any combination is seamless. With more than 300 million digital devices, testing them across all of them becomes extremely difficult. Hence, 'device farm' is the best alternative that provides access to all the devices, platforms, browsers, etc. on Cloud; thereby, streamlining the process, offering high scalability, and reducing the cost tremendously.

'Device Farms' are either in-built or purchased from a third-party provider. The popular device farms available today are BrowserStack and SauceLabs. Tenjin Online is pre-integrated with these two device farms to give access to a wide range of devices, browsers, and platforms to the tester and ensure the app works fine across all of them.

Let us understand what features they have to offer, how they are different from each other, and which one to choose.



# What are the benefits of incorporating device farms?

Device farms are integrated for testing apps across different platforms, browsers, and devices. It contributes to creating top-quality apps by giving access to a wide range of platforms to test the app. This approach helps test apps across different devices, decrease cross-platform errors, reduce time, and create quality apps.

Here are some of the advantages of device farms:

- » It helps increase platform testing coverage by giving access to a wide range of devices
- » It reduces the cost of investment that goes into buying physical devices
- » Reduces infrastructural and management cost
- » Offers seamless integration across CI/CD pipeline
- » Access from anywhere, anytime
- » Helps test the app's operability
- » Offers elaborate reporting
- » It is a cost-effective alternative
- » Provides higher scalability for tests

# What is Tenjin Online and why should you include it in your testing journey?

Tenjin Online is a self-serviced, multi-tenant, SaaS-based, codeless test automation solution for apps which supports web, Android, iOS, and API testing. It's the world's most advanced Cloud native testing suite covering a wide gamut of capabilities - test life cycle management, codeless automation for web and mobile, DevOps integration, device farm integration, defect management integration and many more exciting features. It does not need installation assistance or support from the expert core group and allows the users to test the application by scanning automatically screen-by-screen without manual intervention.

Tenjin Online is a solution that allows users to test the application as they build. With multiple usability features and functionalities, the platform does not require critical configuration and assures testing applications anytime and anywhere. It has integrations with BrowserStack and is expanding to other devices as Cloud providers are giving it access to a wide variety of devices and browsers.

## Why choose Tenjin Online?

- » Quick & efficient independent test platform
- » End-to-end testing lifecycle management
- » Manual & Automation Test execution
- » No technical knowledge required
- » Easy automation of functional and UI test
- » Test, as you build, reduces testing time & cost by up to 75%
- » Defect tracking & management
- » Compatible with Android & iOS devices

# Cross-browser testing with Tenjin Online

There are three predominantly used web browsers worldwide – Google Chrome, Firefox, and Microsoft Edge. Tenjin Online covers testing across all these browsers efficiently to ensure there are no cross-browser errors arising and to enable an enjoyable experience on the users' favorite browsers.

Tenjin Online allows running the same test in these browsers, hence, reducing the time and effort spent by three individuals working on it. Since the process is automated, accuracy and optimal results are guaranteed.

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Here, tests are executed to check how it behaves functionally on these browsers, if the test is passed the app is either sent to test other parameters or moved to delivery; in the event the test fails, it is again sent back to the developers to fix the errors and tested again to check if it passes. The automated approach makes the whole process easy.

There are different versions of the browsers, and they are continually upgrading to offer a great user experience. The number of versions is high, for example, Chrome has 90+ versions, Firefox has 19 versions, etc., and testing apps across all the versions could be tedious and time-consuming. As most of the browsers get upgraded and run on the latest version, testing only on the highest version would suffice. The browsers should be upgraded or degraded to the version that has to be tested and testing can be carried out easily to get accurate results.

Tenjin Online allows the easy three-step process to complete cross-browser testing – upgrading/downgrading the browser to the required version, execute the test and check it passes or fails, and if fails, repeating the process. This is the easiest and most efficient way to perform cross-browser testing.

## Conclusion

Cross-browser testing is crucial for web apps to ensure their performance on different browsers and devices. As web apps become more prevalent in digital transformation, they must be tested to offer reliability, efficiency, scalability, and security. Cross-browser testing is a complex task that involves testing web apps on different browsers, devices, operating systems, and versions. Failing to test on different browsers may lead to cross-browser errors, causing dissatisfactory user experience.

Challenges associated with cross-browser testing include the presence of too many browsers, testing multiple operating systems, frequent updates of web browsers, and the requirement for special infrastructure. To overcome these challenges, organizations can adopt Cloud-based cross-browser testing platforms like Tenjin Online, offering cost-effective solutions. Choosing the right test automation tool is critical; Tenjin Online can help minimize cross-browser errors, providing reliable apps.

Cross-browser testing has become increasingly important as web apps have become an integral part of the digital transformation journey of organizations. Web apps offer higher efficiency, 24\*7 accessibility, higher scalability, higher security, and lower maintenance. Cross-browser testing verifies the app's performance across different browsers and checks if it's working as expected. Each browser will read and interpret codes in different ways, and the app's behavior will change accordingly. To prevent issues arising from the way the app behaves across different browsers, cross-browser testing is incorporated.

Cross-browser testing is a complex task that involves testing on various browsers. Testing cross-browser errors manually is a tedious task and may not give accurate results. Hence, automation becomes important to get the expected results. When automating cross-browser testing, choosing the right test automation tool is critical.

There are several challenges associated with cross-browser testing. The presence of too many browsers is the biggest challenge companies face to test the app on multiple browsers. Additionally, testing too many operating system combinations is a challenge. Web browsers are constantly evolving and undergo frequent updates to offer a better user experience. It is important to constantly test web apps on updated browser versions to stay on par with current requirements and offer a seamless user experience. Performing cross-browser testing requires special infrastructure for setting up and execution, in which either simulators, emulators, or real devices should be arranged, increasing the cost of testing.

To overcome these challenges, a Cloud-based cross-browser testing platform can offer multiple combinations of devices, browsers, browser versions, and operating systems. Tenjin Online is a tool that can help test apps for cross-browser errors and create reliable apps. Using device farms can offer efficient and cost-effective solutions.

In conclusion, cross-browser testing is crucial to ensure web apps work as expected across all browsers, and automation and cloud-based solutions can help organizations perform it efficiently and cost-effectively. Choosing the right testing tool and device farm is essential to get expected results.



## About Tenjin Online

Tenjin Online is a powerful SaaS-based, codeless test automation platform for web, Android, iOS, and API testing. It can conduct functional testing, UI testing, project tracking, and defect management with minimal or no human intervention. Try out this revolutionary tool to improve the quality of the app which will eventually improve business returns. Further, pre-integrated with JIRA and Device Farm make test tracking and management easier. JIRA makes defect tracking and management easy and efficient, while Device Farms like BrowserStack and SauceLabs provide access to a wide range of devices.

### Disclaimer

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