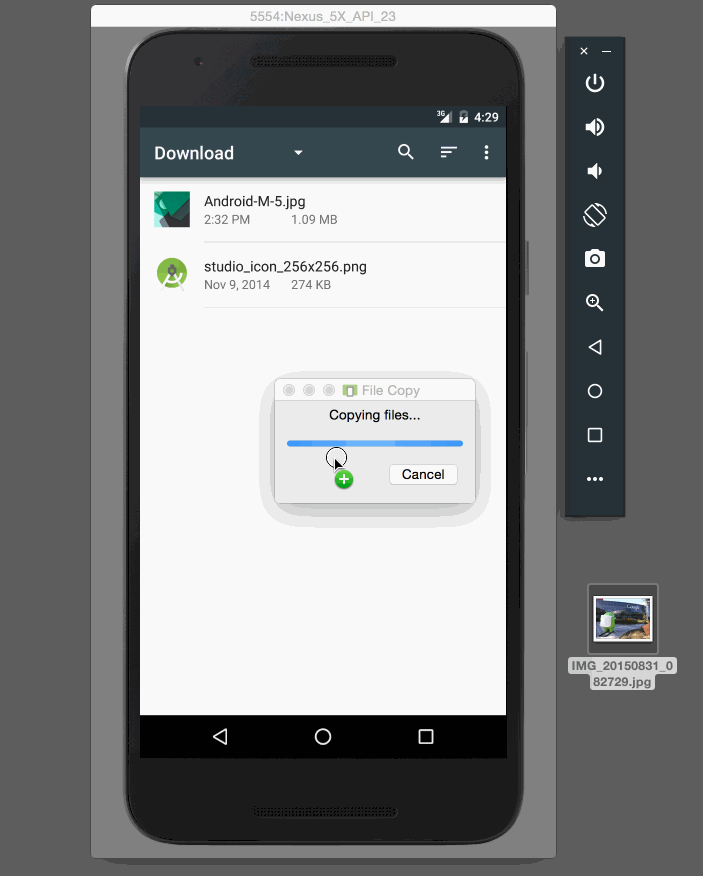
Real Devices Vs Emulator/Simulator in Mobile Testing: Which is Best?

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Written by [Indium](https://huddle.eurostarsoftwaretesting.com/members/indiumsoft/profile/)

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Mobile testing has [become a nightmare](https://huddle.eurostarsoftwaretesting.com/5-mobile-development-pitfalls/) due to increasing number of devices and configurations that mobile apps and websites need to be cross-checked against. While both Emulators and Simulators look like great alternatives for testing apps, since having a wide range of real devices also accounts for the cost involved.  These tests should confirm the seamless running of applications. Thankfully, today we have a wide range of testing tools for thorough testing.



Emulators, Simulators, or Real Devices

These tools can be categorised into three broad categories: emulators, simulators, or real devices. Well, few may say that emulators and simulators can be clubbed in a single group. But, real device testing does what the name implies – it tests the application as they run on the users’ smartphones.

Let’s take a deeper look at the categories.

Real device mobile testing requires the use of the actual smartphone. But emulators and simulators are based on the concept of virtual testing. Virtual testing involves testing the software that provides the same functionality as provided by the real phone.

For testing mobile apps, an emulator is a desktop application that mimics the hardware and OS of the applications that should be tested. A simulator does not mimic the hardware/OS, but rather it mimics the basic behavior of a device. While simulators are usually simpler in function than emulators, they are not as useful as emulators. Real device testing checks the functionality of mobile apps thoroughly and ensures the appropriate working of the apps.

Emulators provide better results compared to simulators as they can be used to test specific situations or cases, and also can mimic multiple devices. Emulators are often used more as they are relatively cheaper – specifically if compared to real devices.

Emulator/Simulators VS Real Devices

Let us try to compare what provides better benefits in the following scenarios:

* **Situation-based scenarios:** In situation-based scenarios, buying required mobile devices may be tough – while using the emulator/simulator may take care of the need. This means, not all the scenarios can be tested in simulators/emulators – this is possible only if testing is done on the mobile.
* **Ease-of-use scenarios:** Emulators or Simulators make testing the plethora of apps on the multiple mobile devices available today much easier, but they miss out the UI and UX aspects of an app, including the color and brightness display.
* **Ease-of-access scenarios:** Testing on mobile devices is reliable – however, testing on Emulators and Simulators makes it easier as it requires only the URL for the app.
* **Validating battery scenarios:** Mobile devices can perform this test as required whereas emulators and simulators usually are not able to mimic the issues related to the battery.
* **Validating Performance:** This is a very crucial part of testing a mobile application. Testing the performance of an app on a mobile device usually gives a more accurate result as compared when tested on emulators or simulators.

Disadvantages of Emulators and Simulators

While both Emulators and Simulators look like great alternatives for testing apps, since having a wide range of real devices also accounts for the cost involved. But, they have issues that may generate both false positive and negative results, which will surely have a negative impact on the business ROI. Another disadvantage of emulator/simulator is that howsoever much close their feature may be to the real app, emulator/simulator may still not cover all features/scenarios and the results obtained may not be as accurate as we would want them to be.

[Real device testing](http://www.indiumsoft.com/mobile-apps-testing-services/) wins the challenge over either of the two. With an efficient testing process, real devices can validate for every possible scenario with almost 100% accuracy.

However, having all three options have their own benefits, and can be used according to the need, helping organisations meet their goals.