

Mobile Application Testing

Introduction

Mobile Application usage is exploding across the world today. There are several hundred thousand mobile applications available to consumers today across platforms such as Android, Windows and Apple iPhone. Many consumers of web applications now expect at least a basic continuance of the same web services on their mobile devices. This brings up not only the need to create Apps but to Test them, and to ensure that they run on an increasing array of platforms and devices. What is Mobile Application Testing? It is the process by which application software developed for hand held devices are tested for its functionality, usability and consistency.

While mobile Applications are rapidly becoming one of the critical pieces of the industry, new and complicated challenges are also taking the center stage.

Challenges

Mobile Application users have high expectations on quality of applications they install on their devices. Applications are expected to be simple, responsive, stable, 24*7 uptime and most important secured.

The growing complexity of Mobile App testing is caused by many factors

- An endless variety of devices with different operating systems.
- Firmware updates are numerous and can affect application functionality.
- The performance of carrier network can have a huge impact on user's experience with the App.

The most difficult and important challenges of these is the very large and constantly growing variations of mobile devices along with their ever changing configurations. It is enormously challenging to verify applications across myriads of devices with different screen sizes and operating system flavors. Therefore, Test team need to find better and more cost effective solutions to avoid any compromise on quality. To handle the challenge we can use real devices, emulated devices or a combination of both and cloud computing solutions to test the applications.

Real devices can achieve 100% test coverage and shall give more realistic test results. However testing on real devices can be expensive taking device cost into consideration. Other cost effective and easier to manage solution is to make use of device emulators in a well-equipped test environment. Applications can be deployed and tested on emulators without investing in Mobile devices or various OS. You can switch device types by simply loading a new device profile. However, an emulated device may not give accurate rendering that can be achieved with real devices. A third approach is to select a mix of both emulated and real device testing. First start testing in emulated environment to take advantage of the speed and diversity that the emulator can provide. It can be used during unit testing or testing at the early development cycle at a reduced cost. Then, add real devices to the test plan during the testing phase so that it can validate the application with its functionality and can certify all the requirements and objectives have been met. The QA team can also use the mobile cloud computing environment to deploy and test an application. The devices in the cloud computing can be accessed through web interfaces. The advantage is in terms of renting the device on hourly basis, device logs are recorded to

help with troubleshooting, and you will have large number of devices to choose from. Testing can also be in with multiple devices in parallel.

Device Model Selection

Types of Mobile Application Testing

Mobile Application Testing – Best Practices