

How to Evaluate a Mobile Test Automation Tools for your Application?

This article provides a recommended checklist for selecting a mobile test automation tool.

There are several must-have requirements in a mobile test automation tool. Support for all object identification methods: more specifically, the tool should be able to identify an object by its Native ID, Image Recognition, Text Recognition and Web HTML5 (DOM). This is crucial otherwise the maintenance of the tests will be very poor. For example - tools that only support image recognition will be extremely sensitive to any change in the graphical appearance of the object and will therefore require huge amount of maintenance.

Checklist

Following is a detailed, recommended criteria when evaluating a mobile test automation tool.

| Criteria | Description | Tools |
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| Identification methods | | |
| Native ID | Can the tool identify objects by their Native ID? | See Test, UIAutomation, Selenium, Robotium |
| Web HTML5(DOM) commands | Can the tool identify objects in Web/HTML5 using DOM commands? | See Test, Selenium |
| Image recognition | Can the tool identify objects using Image Recognition? | See Test, MonkeyTalk |
| OCR (text recognition) | Can the tools identify objects using Text Recognition? | Appium,Selenium,MonkeyTalk,See Test |
| Devices Exactly like the actual user has: No Jailbreak/Rooting | | |
| Ability to test devices taken out of a retail store and test them as-is. | Make sure the tool you are using does not require any change in the devices under test. Specifically make sure there is no need to Jailbreak or root the devices as this changes the device compared to what an actual user would be experiencing. Otherwise you might be “chasing ghosts” trying to debug non-existing bugs. | MonkeyTalk, See Test, Appium, UIAutomation, Robotium(Jail breaking not required), Selenium |
| Supported Phones | | |
| Phones iOS (iPhone, iPad) Android (inc. tablets) | | UIAutomation, Appium, MonkeyTalk, See Test Appium, Robotium, MonkeyTalk, See Test, Selenium |

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| BlackBerry Windows Mobile | | See Test, Selenium See Test |
| Support for phones that are not yet commercially released | The ability to launch applications on latest devices means also the ability to test on the latest devices even before they are commercially available in the market. Make sure your solution supports these devices. You do not want to wait to test your applications – as time to market is critical. | The existing tools have the ability to stand with upcoming phones. |
| Emulators iOS (iPhone, iPad) Android (inc. tablets) BlackBerry Windows Mobile | | UIAutomation, Appium, MonkeyTalk, Selenium, See Test Appium, Robotium, MonkeyTalk, See Test, Selenium See Test, Selenium See Test, Selenium |
| Plugs-in to existing test environments | | |
| The mobile automation tool should integrate into your existing test environment. This way you can leverage your investment in existing infrastructure (such as HP's QTP, QC, LoadRunner or any other test environment your organization already uses). | Verify that the test tool you select seamlessly integrates into the existing test environments including the latest versions of the environment e.g. : QTP (inc. V 11) MSTest JUnit Rational TestComplete Java Python Perl | Appium, Selenium, See Test and Robotium. |
| Recorder | | |
| Ability to record tests | Enables easy and quick test creation. | Appium, UIAutomation, MonkeyTalk, See Test, Selenium, Robotium(Using TestDroid app) |
| Same test can run on different devices | | |
| Different devices of the same OS | For example, a script recorded on one Android device can run on another Android device | Appium, UIAutomation, MonkeyTalk, Robotium, Selenium, See Test |
| Different devices of a different OS | For example, a script recorded on an Android device can run on an iPhone device | See Test, MonkeyTalk |
| Test Execution | | |

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| Serial test execution on different devices | Ability to automatically run several different scripts one after the other on several different devices connected to the station | Appium, Robotium, UIAutomation, Selenium, MonkeyTalk, See Test |
| High speed test execution | Very fast script execution for effective overnight runs | Selenium, UIAutomation, See Test |
| Full Functionality Support | | |
| Multi-touch | On-screen multi-touch gestures such as rotation of an image, text box | Appium, UIAutomation, Robotium, MonkeyTalk, See Test, Selenium |
| Swipe | Swipe in all directions | Appium, MonkeyTalk, Robotium, MonkeyTalk, See Test, Selenium |
| Drag and drop | Drag and drop on screen | Appium, UIAutomation, Robotium, MonkeyTalk, See Test, Selenium |
| Zoom | -Zoom in -Zoom out | Appium, UIAutomation, Robotium, MonkeyTalk, See Test, Selenium |
| Scrolling | - Scroll in all screen configurations -Scroll until event -Scroll to find elements not currently presented on the screen | Appium, MonkeyTalk, Robotium, MonkeyTalk, See Test, Selenium |
| Click on Security alerts | | Appium, MonkeyTalk, Robotium, MonkeyTalk, See Test, Selenium |
| Click on System Alerts | | Appium, MonkeyTalk, Robotium, MonkeyTalk, See Test, Selenium |
| Reboot device | | Appium, Robotium, See Test, MonkeyTalk, Selenium, UIAutomation |
| Awake device from sleep mode | | Appium, UIAutomation, See Test, Robotium, MonkeyTalk |
| Operate device Back, Call/Hang Call, Home, Menu buttons | | Appium, UIAutomation, Robotium, MonkeyTalk, Selenium |
| Landscape mode | | Appium, UIAutomation, Robotium, MonkeyTalk, See Test, Selenium |
| Ability to receive mobile device CPU usage | | UIAutomation and System Trace(Instrument in Xcode to find the CPU usage) |
| Ability to receive mobile device memory usage | | Leaks(Instrument in Xcode to find the Memory Leaks) |
| Device keyboard Input | - All configurations (alphabet, punctuation and numbers, and punctuation and symbols) | Appium, UIAutomation, MonkeyTalk, See Test |
| PC keyboard Input | - All languages - Support for Special symbols and characters | Appium, UIAutomation, Robotium, MonkeyTalk, See Test, Selenium |

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| Simulating incoming call | - Support for Capitalization Ability to trigger incoming call | Research and Development |
| Simulating incoming SMS | Ability to trigger incoming SMS | Research and Development |
| Device Connectivity | | |
| Connectivity Options: | | |
| USB | | Appium, UIAutomation, Robotium, MonkeyTalk, See Test, Selenium |
| WiFi | | MonkeyTalk, See Test |
| Cloud (On-Site Private Cloud) | | See Test |

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