

Project Number 32: Android Emulator Extension

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Project Design Specification

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Version: 1.1

**Objective:**

The goal of this project is to produce Android device snapshots for emulation using VirtualBox. Design and build a system for automating the startup of different Android virtual devices in VirtualBox. Minimize the boot time of these images to a maximum of 15 seconds. Ensure cross platform compatibility of the product across Windows, Mac and Ubuntu Operating Systems. Add to the product the ability to monitor Android device sensors (GPS, Accelerometer). Add to the product the ability to fake Android device sensor data from the user. Create the test harness framework for regression testing of the emulated device's sensors.

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| Marketing  Requirements | Engineering Requirements | Justification |
| 1,2,3 | 1. Compatibility across Windows, Mac and Ubuntu operating systems. | Accommodate as many app developers as possible on as many host machines as possible. |
| 1,2,3 | 1. Multiple target android device. | Provide meaningful coverage of the wide and fragmented android device market. |
| 1,2,3 | 1. Multiple target android APIs. | Provide meaningful coverage of the wide and fragmented android device market. Support API 19 and 21. |
| 2,3 | 1. Automated interface for app development and testing. | Test applications across multiple target devices and APIs. |
| 2,3 | 1. Minimize boot time for any target android device and API combination. | Customer feels that boot time of android virtual devices greater than 15 seconds is too long for automated test platforms. |
| 1,2,3 | 1. Provide control over emulated devices sensor data via software hooks. | Robust interface for automated sensor data. |
| **Marketing Requirements:**   1. Wide range of app developers. 2. Minimize cost to the app developer. 3. Minimize setup and test time for the app developer. | | |