appium

mobile automation made awesome

jQueryUK Workshop • Oxford, UK
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Unit/Functional Mobile Testing with Appium and Sauce Labs

Ecosystem & Integrations

Project Lead & Architect

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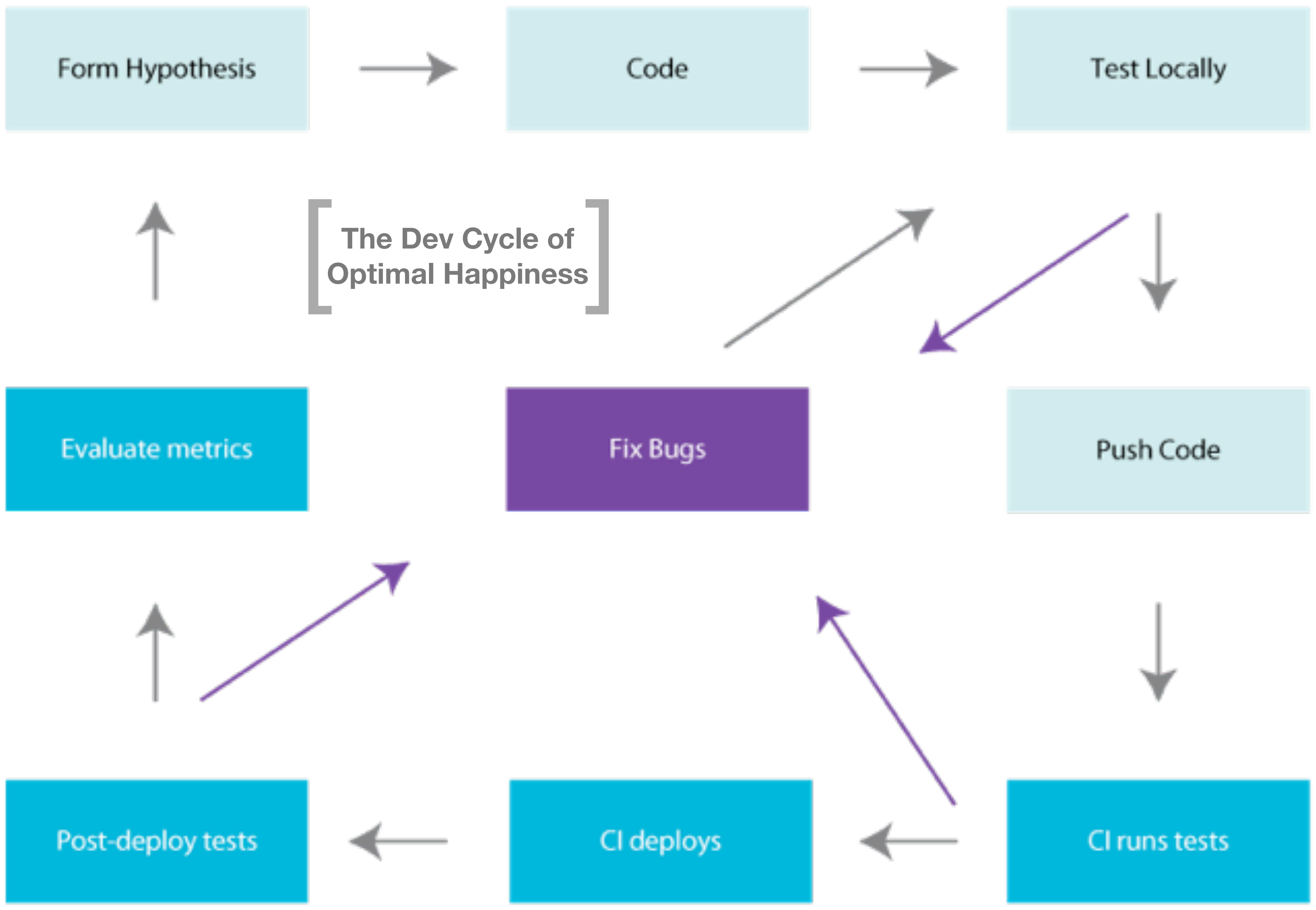
appium introduction


Form Hypothesis
Code
Test Locally
The Dev Cycle of Optimal Happiness
Evaluate metrics
Fix Bugs
Push Code
Post-deploy tests
CI deploys
CI runs tests

appium is the cross-platform solution for native and hybrid mobile automation

Philosophy

R1. Test the same app you submit to the marketplace

R2. Write your tests in any language, using any framework

R3. Use a standard automation specification and API

R4. Build a large and thriving open-source community effort

appium architecture

Automation Orchestra

Apple **Instruments** & **UIAutomation** for iOS

Google **UiAutomator** for Android (4.2.1 up)

Selendroid for older Android

WebDriver interface

appium is an HTTP server that creates and handles **WebDriver sessions** appium extends the WebDriver protocol with **mobile-specific** behaviors

appium setup

Requirements (1/2)

- Mac (10.8/10.9)
    - Android automation works on PC/Linux too
- Node >= 0.10
- Xcode 5.1 with CLI tools and iOS 7.1

Requirements (2/2)

- Android Developer Tools >= 22
  - http://developer.android.com/sdk/index.html
  - mv to `/usr/local/adt`
  - `export ANDROID_HOME=/usr/local/adt/sdk`
  - add (.bashrc, .zshrc, etc):

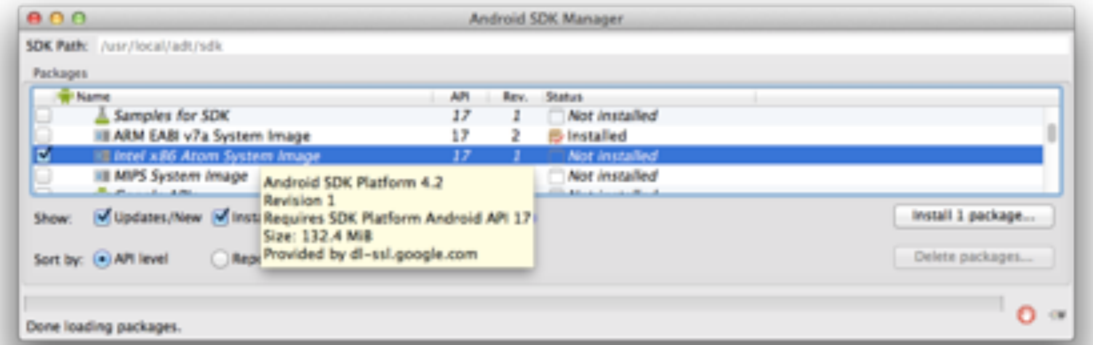
    ```
    export PATH=”$PATH:$ANDROID_HOME/tools:
    $ANDROID_HOME/platform-tools”
    ```

Install HAXM for Android Speed!

- `open /usr/local/adt/sdk/extras/intel/Hardware_Accelerated_Execution_Manager/IntelHAXM.dmg`
- https://software.intel.com/en-us/android/articles/intel-hardware-accelerated-execution-manager

Make an Android Device

- `android`
- Check ‘Intel x86 Atom System Image’ - Android (4.4)
- Click ‘Install 1 package...’



Android SDK Manager

SDK Path: /usr/local/adt/sdk

Packages

	Name	API	Rev.	Status
	Samples for SDK	17	1	Not installed
	ARM EABI v7a System Image	17	2	Installed
✓	Intel x86 Atom System Image	17	1	Not installed
	MIPS System Image			Not installed

Android SDK Platform 4.2
Revision 1
Requires SDK Platform Android API 17
Size: 132.4 MiB
Provided by dl-ssl.google.com

Show: [✓ Updates/New] [✓ Inst]

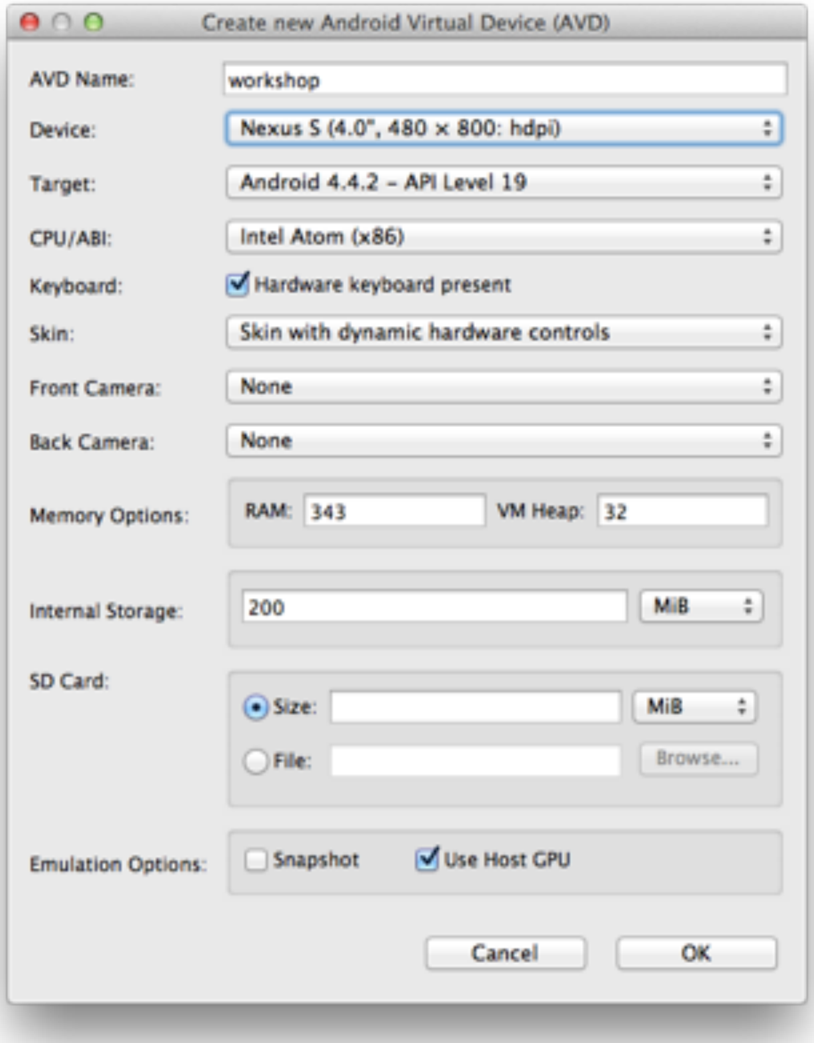
Sort by: [✓ API level] Repo

Done loading packages.

- Tools > Manage AVDs
- New...

Create the Image

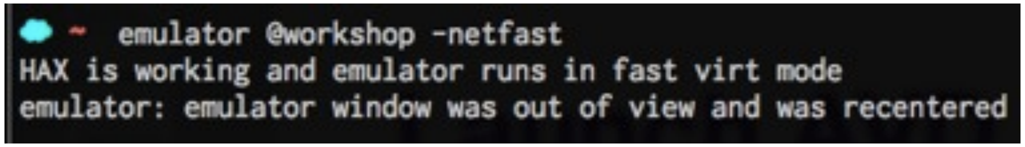
- AVD Name: workshop
- Device: Nexus S
- Target: Android 4.4
- CPU: Intel/Atom
- Skin: hw controls
- Host GPU


Create new Android Virtual Device (AVD)

AVD Name: workshop
Device: Nexus S (4.0", 480 × 800: hdpi)
Target: Android 4.4.2 – API Level 19
CPU/ABI: Intel Atom (x86)
Keyboard: ☑ Hardware keyboard present
Skin: Skin with dynamic hardware controls
Front Camera: None
Back Camera: None
Memory Options: RAM: 343 VM Heap: 32
Internal Storage: 200 MiB
SD Card: ● Size: MiB ○ File: Browse...
Emulation Options: ☐ Snapshot ☑ Use Host GPU

Launch AVD

- In a new terminal window:
- `emulator @workshop -netfast`
- Go through the new device tour



```
~  emulator @workshop -netfast
HAX is working and emulator runs in fast virt mode
emulator: emulator window was out of view and was recentered
```

- `$ANDROID_HOME/sdk/tools/emulator @workshop -netfast (without env)`

Get the workshop code

- `git clone https://github.com/jlipps/jqueryuk-workshop-2014.git`
- `cd jqueryuk-workshop-2014`

Install dependencies

- `npm install -g appium  # no sudo!`
- `npm install -g cordova`
- `npm install -g mocha`
- `npm install .`

Set up Sauce Labs env vars

- http://saucelabs.com/signup/plan/free
- http://saucelabs.com/account
- # add to .bashrc or equivalent
- export SAUCE_USERNAME=”myusername”
- export SAUCE_ACCESS_KEY=”xxxxxxxx”

Get Sauce Connect

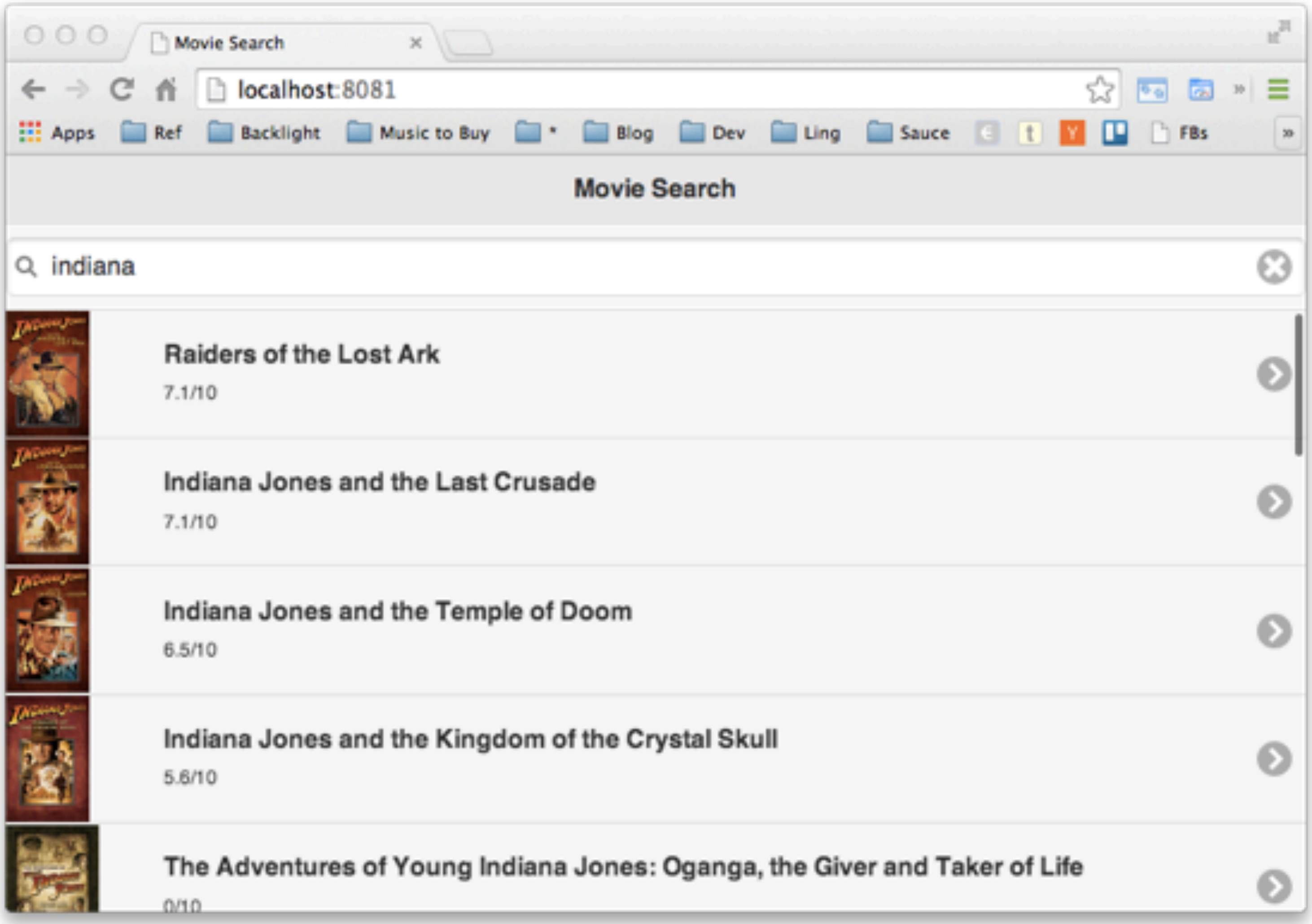
- https://saucelabs.com/docs/connect
- `cp ~/Downloads/sc-4.2-osx/bin/sc \`

  `/usr/local/bin`

unit tests

Run local server

- `node server.js`
- `# visit http://localhost:8081`



Movie Search

indiana

Raiders of the Lost Ark
7.1/10

Indiana Jones and the Last Crusade
7.1/10

Indiana Jones and the Temple of Doom
6.5/10

Indiana Jones and the Kingdom of the Crystal Skull
5.6/10

The Adventures of Young Indiana Jones: Oganga, the Giver and Taker of Life
0/10

Run QUnit tests

- `http://localhost:8081/test.html`
- `# moviesearch/www/test.html`
- `# moviesearch/www/test.js`

Run QUnit tests

- `http://localhost:8081/test.html`
- `# moviesearch/www/test.html`
- `# moviesearch/www/test.js`

Start Sauce Connect

- `sc -u $SAUCE_USERNAME -k $SAUCE_ACCESS_KEY`

Run tests on Sauce

- `./test/jsunit.sh`
- `http://saucelabs.com/tests`

appium test model

Start/stop a session

```
var wd = require('wd');

describe('MovieSearch app', function () {
  var driver;

  before(function (done) {
    driver = wd.promiseChainRemote('localhost', 4723);
    driver.init({
      platformName: 'iOS',
      platformVersion: '7.1',
      deviceName: 'iPhone Simulator',
      app: '/path/to/my.app'
    }).nodeify(done);
  });

  after(function (done) {
    driver.quit().nodeify(done);
  });
});
```

Find & Interact with Elements

```
driver
  .elementByClassName("UIAButton")
  .text() // get its text
  .then(function (text) { console.log(text); })
  .click() // click element

driver
  .elementByAccessibilityId("username")
  .sendKeys("jlipps") // type text into a field
```

Automate a WebView

```
driver
   .contexts() // ['NATIVE_APP', 'WEBVIEW_1']
   .context("WEBVIEW_1")
   .elementByCss("a.clickme")
   .click()
```

appium tests

Build & run sample apps

- `./go_ios.sh`
- `./go_android.sh`

Launch Appium

- `sudo authorize_ios`
- `appium`

Moment of truth…

- `mocha -t 60000 -R spec test/ios.js`
- `mocha -t 60000 -R spec test/android.js`

Upload app to Sauce Storage

- `./test/upload.sh`

Run Appium tests on Sauce

- `SAUCE=1 mocha -t 60000 test/ios.js`

Questions?

http://appium.io

https://github.com/appium/appium

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WE'RE HIRING!
http://saucelabs.com/careers

Thanks!

http://appium.io
https://github.com/appium/appium
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