Cordova Test Suite User Guide

Version 1.0

Contents

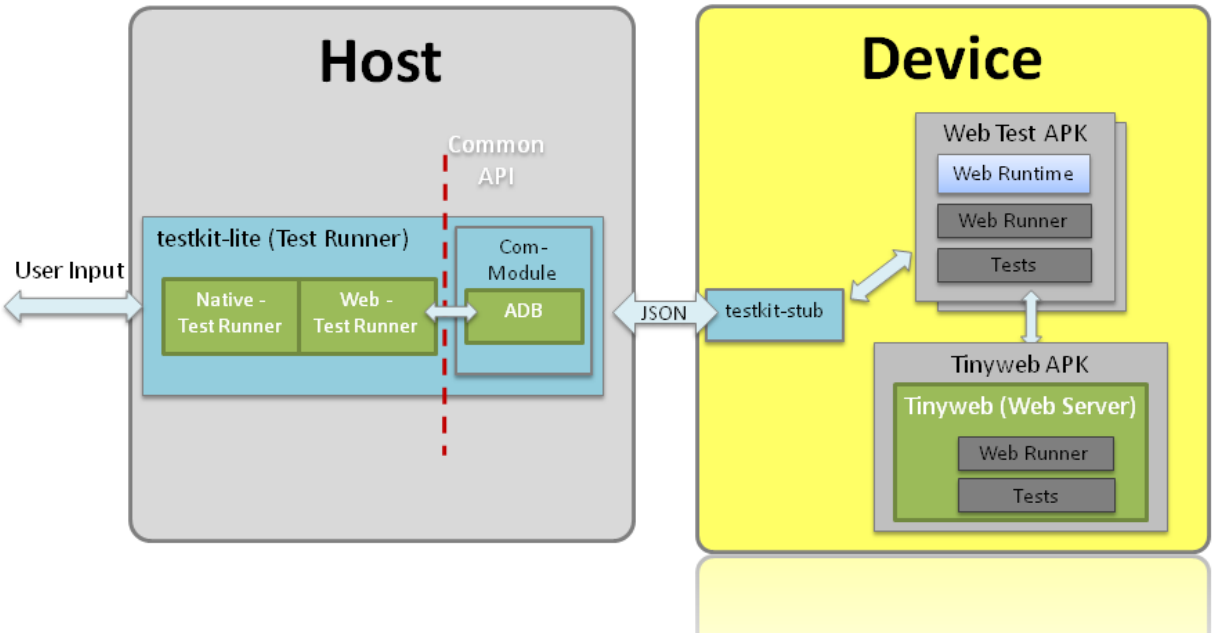
1 Introduction

This document provides method to run Crosswalk based Cordova Test Suite. Currently the target platform is Android only. You can use the following method to run it with testkit-lite. Testkit tool-chain includes 3 components:

- testkit-lite: a command-line interface application deployed on Host
- testkit-stub: a test stub application deployed on Device
- tinyweb: a web service application deployed on Device

2 Cordova Web Testing Architecture

- Cordova Web Testing on Android
  - Architecture



There are two types of Webapi tests:

- Web service dependent

Client side is a stub test package which link to remote web runner, no local TCs and web runner, thus avoid cross origin issue.

Server side includes tinyweb, webrunner and TCs.

- Web service independent

Self contained test package which include all things - web runner, TCs.

3 Install testkit-lite on Host

- Deploy testkit-lite
  - Install dependency python-requests (version>1.0)

    $ sudo apt-get install python-pip

    $ sudo pip install requests

  - Install testkit-lite from source code in GitHub

    $ git clone git@github.com:testkit/testkit-lite.git

    $ cd testkit-lite && sudo python setup.py install

4 Crosswalk based Cordova System Requirements

- Java JDK 1.5 or greater
  http://www.oracle.com/technetwork/java/javase/downloads/index.html
- Apache ANT 1.8.0 or greater http://ant.apache.org/bindownload.cgi
- Android SDK http://developer.android.com
- Python 2.7 or greater https://www.python.org/download/

5 Crosswalk based Cordova Developer Tools

The Cordova developer tooling is split between general tooling and project level tooling.

- General Commands

./bin/create [path package activity]

create the ./example app or a cordova android project

./bin/check_reqs

checks that your environment is set up for cordova-android development

./bin/update [path]

updates an existing cordova-android project to the version of the framework

- Project Commands

./cordova/clean

cleans the project

./cordova/build

calls `clean` then compiles the project

./cordova/log

stream device or emulate logs to stdout

./cordova/run

calls `build` then deploys to a connected Android device. If no Android device is detected, will launch an emulator and deploy to it.

./cordova/version

returns the cordova-android version of the current project

6 Cordova Mobile Spec Test on Crosswalk based Cordova

- Build and run Cordova Mobile Spec test build (named as cordova_mobile_spec-debug.apk) on Android

1. Extract XWalkCoreLibrary in Crosswalk builds

Download crosswalk builds from

https://download.01.org/crosswalk/releases/android-x86/canary/crosswalk-<version>-x86.zip
https://download.01.org/crosswalk/releases/android-arm/canary/crosswalk-<version>-arm.zip

$ unzip crosswalk-<version>-arm.zip <path>/

$ tar zxvf /path/to/crosswalk-<version>-arm/xwalk_core_library.tar.gz

2. Checkout crosswalk-cordova-android

   $ git clone https://github.com/crosswalk-project/crosswalk-cordova-android.git

3. Update branches when you test on target versions if needed, e.g. xwalk-4 or xwalk, the xwalk is the master branch.

   $ git checkout -b xwalk-4 origin/xwalk-4

4. Import XWalkCoreLibrary by linking it to framework folder of crosswalk-cordova-android

   $ ln -s /path/to/xwalk_core_library /path/to/crosswalk-cordova-android/framework/xwalk_core_library

   Make sure there is only one xwalk_core_library folder rather than xwalk_core_library/xwalk_core_library under /framework/.

5. Fetch Cordova Mobile Spec test cases:

   $ git clone git@github.com:apache/cordova-mobile-spec.git
   $ cd cordova-mobile-spec
   $ git checkout -b 3.3.0 3.3.0

6. Create mobile spec app:

   $ /path/to/crosswalk-cordova-android/bin/create mobilespec org.apache.mobilespec mobilespec --shared
   $ cd mobilespec
   $ cp -r /path/to/cordova-mobile-spec/* assets/www (Please don't accept to overwrite the cordova.js)
   $ cp -r /path/to/cordova-mobile-spec/config.xml res/xml/config.xml

7. Set up Cordova Mobile Spec plugins environment. Recommend to use plugman to install plugins. You need to have node.js installed. Then install plugman by:

```
$ npm install -g plugman
```

8. Add Cordova Mobile Spec plugins for Crosswalk based Cordova, please refer to full supported plugin list:

```
$ cd mobilespec
$ plugman install --platform android --project ./ --plugin https://git-wip-us.apache.org/repos/asf/cordova-plugin-device.git#r0.2.5
$ plugman install --platform android --project ./ --plugin https://git-wip-us.apache.org/repos/asf/cordova-plugin-network-information.git#r0.2.5
$ plugman install --platform android --project ./ --plugin https://git-wip-us.apache.org/repos/asf/cordova-plugin-battery-status.git#r0.2.5
$ plugman install --platform android --project ./ --plugin https://git-wip-us.apache.org/repos/asf/cordova-plugin-device-motion.git#r0.2.4
$ plugman install --platform android --project ./ --plugin https://git-wip-us.apache.org/repos/asf/cordova-plugin-device-orientation.git#r0.3.3
$ plugman install --platform android --project ./ --plugin https://git-wip-us.apache.org/repos/asf/cordova-plugin-geolocation.git#r0.3.4
$ plugman install --platform android --project ./ --plugin https://git-wip-us.apache.org/repos/asf/cordova-plugin-media.git#r0.2.6
$ plugman install --platform android --project ./ --plugin https://git-wip-us.apache.org/repos/asf/cordova-plugin-file.git#r0.2.5
$ plugman install --platform android --project ./ --plugin https://git-wip-us.apache.org/repos/asf/cordova-plugin-file-transfer.git#r0.4.0
$ plugman install --platform android --project ./ --plugin https://git-wip-us.apache.org/repos/asf/cordova-plugin-dialogs.git#r0.2.4
$ plugman install --platform android --project ./ --plugin https://git-wip-us.apache.org/repos/asf/cordova-plugin-splashscreen.git#r0.2.5
$ plugman install --platform android --project ./ --plugin https://git-wip-us.apache.org/repos/asf/cordova-plugin-console.git#r0.2.5
$ plugman install --platform android --project ./ --plugin https://git-wip-us.apache.org/repos/asf/cordova-plugin-camera.git#r0.2.5
$ plugman install --platform android --project ./ --plugin https://git-wip-us.apache.org/repos/asf/cordova-plugin-media-capture.git#r0.2.8
$ plugman install --platform android --project ./ --plugin https://git-wip-us.apache.org/repos/asf/cordova-plugin-vibration.git#r0.3.5
```

```
$ plugman install --platform android --project ./ --plugin https://git-wip-us.apache.org/repos/asf/cordova-plugin-globalization.git#r0.2.4
$ plugman install --platform android --project ./ --plugin https://git-wip-us.apache.org/repos/asf/cordova-plugin-contacts.git#r0.2.5
$ plugman install --platform android --project ./ --plugin https://git-wip-us.apache.org/repos/asf/cordova-plugin-inappbrowser.git#r0.2.4
$ plugman install --platform android --project ./ --plugin assets/www/cordova-plugin-whitelist
```

9. According to Splash Screen API Spec, you may need to add following statement into the onCreate method of the class that extends DroidGap:

   super.setIntegerProperty("splashscreen", R.drawable.splash);
   in /path/to/mobilespec/src/org/apache/mobilespec/mobilespec.java

   The .java file path maps to package activity etc., package parameters in step 6 "mobilespec org.apache.mobilespec mobilespec"

```
public void onCreate(Bundle savedInstanceState)
{
    super.onCreate(savedInstanceState);
    super.init();
    super.setIntegerProperty("splashscreen", R.drawable.splash);
    super.loadUrl(Config.getStartUrl());
}
```

10. Connect the Android test device to host (adb enabled), build and run:

    ```
    $ cd /path/to/mobilespec
    $ ./cordova/build
    ```

    Add "--debug" switch if "remote debugging" feature is needed to run the test

    ```
    $ ./cordova/build --debug
    $ ./cordova/run
    ```

- The alternate way is copy test apk from /path/to/mobilespec/bin/mobile_spec-

debug.apk to device, install it.

- Run Cordova API (Cordova Mobile Spec) test cases in app on test device.

7 Web Runtime and Web API Test on Crosswalk based Cordova

- Download Crosswalk binaries from:
  https://download.01.org/crosswalk/releases/android-x86/canary/crosswalk-<version>-x86.zip
  https://download.01.org/crosswalk/releases/android-arm/canary/crosswalk-<version>-arm.zip

- In Web Runtime testing, there are two methods to build web apps base on two kinds of test sources:

  Build Crosswalk based Cordova app with cordova.tar.gz (there should be cordova.tar.gz in crosswalk-<version>-x86/arm.zip, but it's not ready in download.01.org)

  1. Unzip cordova.tar.gz extracted from crosswalk-<version>-x86/arm.zip

     tar zxvf /path/to/cordova.tar.gz
  2. /path/to/crosswalk-cordova-android/bin/create webapp com.example.webapp webapp --shared
  3. $ cd webapp
  4. Copy web app source code (e.g. index.html with some contents) to assets/www
  5. . /cordova/build
  6. . /cordova/run

If you can't get cordova.tar.gz in decompressed crosswalk-<version>-x86/arm.zip, please refer to the steps as below:

1. Extract XWalkCoreLibrary in Crosswalk builds

   Download crosswalk builds from

   https://download.01.org/crosswalk/releases/android-x86/canary/crosswalk-<version>-x86.zip
   https://download.01.org/crosswalk/releases/android-arm/canary/crosswalk-<version>-arm.zip
   $ unzip crosswalk-<version>-arm.zip <path>/
   $ tar zxvf /path/to/crosswalk-<version>-arm/xwalk_core_library.tar.gz

2. Checkout crosswalk-cordova-android

   $ git clone https://github.com/crosswalk-project/crosswalk-cordova-android.git

3. Update branches when you test on target versions if needed, e.g. xwalk-4 or xwalk, the xwalk is the master branch.

   $ git checkout -b xwalk-4 origin/xwalk-4

4. Import XWalkCoreLibrary by linking it to framework folder of crosswalk-cordova-android

   $ ln -s /path/to/xwalk_core_library /path/to/crosswalk-cordova-android/framework/xwalk_core_library
   Make sure there is only one xwalk_core_library folder rather than xwalk_core_library/xwalk_core_library under /framework/.

   The steps 1~4 are equal to unzipped cordova.tar.gz.

5. /path/to/crosswalk-cordova-android/bin/create webapp com.example.webapp webapp --shared

6. $ cd webapp

7. Copy web app source code (e.g. index.html with some contents) to assets/www

8. . /cordova/build

9. ./cordova/run

- Set Permissions

  Some HTML5 APIs which access devices require developers to set appropriate permissions in AndroidManifest.xml to work correctly. For example, if your app calls getUserMedia, it needs to add

  ```
  <uses-permission android:name="android.permission.RECORD_AUDIO" />
  <uses-permission android:name="android.permission.CAMERA" />
  ```

  into AndroidManifest.xml in /path/to/webapp folder.

The Cordova Mobile Spec test doesn't need testkit-lite etc., tools to run the test, but for Web Runtime and Web API tests, please run the following steps:

- Deploy testkit-stub and launch it
  - Make binary for testkit-stub from source code in GitHub

    ```
    $ git clone git@github.com:testkit/testkit-stub.git
    $ cd testkit-stub/android/jni/ && /path/to/android-ndk-dir/ndk-build
    ```
  - Import project testkit-stub to Android developer Tool by location testkit-stub/android
  - Build the project and install APK to android device

    ```
    $ adb install /path/to/testkit-stub/bin/testkit-stub.apk
    ```
  - Launch testkit-stub by clicking the testkit-stub App icon in launcher

- Deploy tinyweb and launch it
  - Make binaries for tinyweb from source code in GitHub

    ```
    $ git clone git@github.com:testkit/tinyweb.git
    $ cd tinyweb/android/native/jni/ && /path/to/android-ndk-dir/ndk-build
    ```
  - Copy tinyweb/android/native/libs/ to folder testkit-stub/android/assets/system/libs/
  - Import project tinyweb to Android developer Tool by location tinyweb /android
  - Build the project and install APK to android device

```
$ adb install /path/to/tinyweb/bin/tinywebservice.apk
```

- Launch tinyweb by clicking the tinyweb app icon in launcher

- Pack test suite package

  Please see ***Web_Test_Suite_Packaging_Guide***, Chapter 3.1 "*Pack Web Test Suite Packages for Android*", detailed steps for Cordova test suites package are added.

  Note: For Android device, the default APK package mode of Crosswalk based Cordova is embedded mode.

- Install test suite on Android device

  ```
  $ unzip -o <test_suite_name>.apk.zip -d ~/ xwalk_suites/
  $ ~/xwalk_suites/opt/<test_suite_name>/inst.sh
  ```

- Launch web test with lite

  ```
  $ testkit-lite -f ~/ xwalk_suites/opt/<test_suite_name>/tests.xml --comm androidmobile
  ```

- Uninstall test suite

  ```
  $ ~/xwalk_suites/opt/<test_suite_name>/inst.sh -u
  ```