

Becoming a Pro

IN Mobile Applications Testing



MOBILE APPS: WEB APP

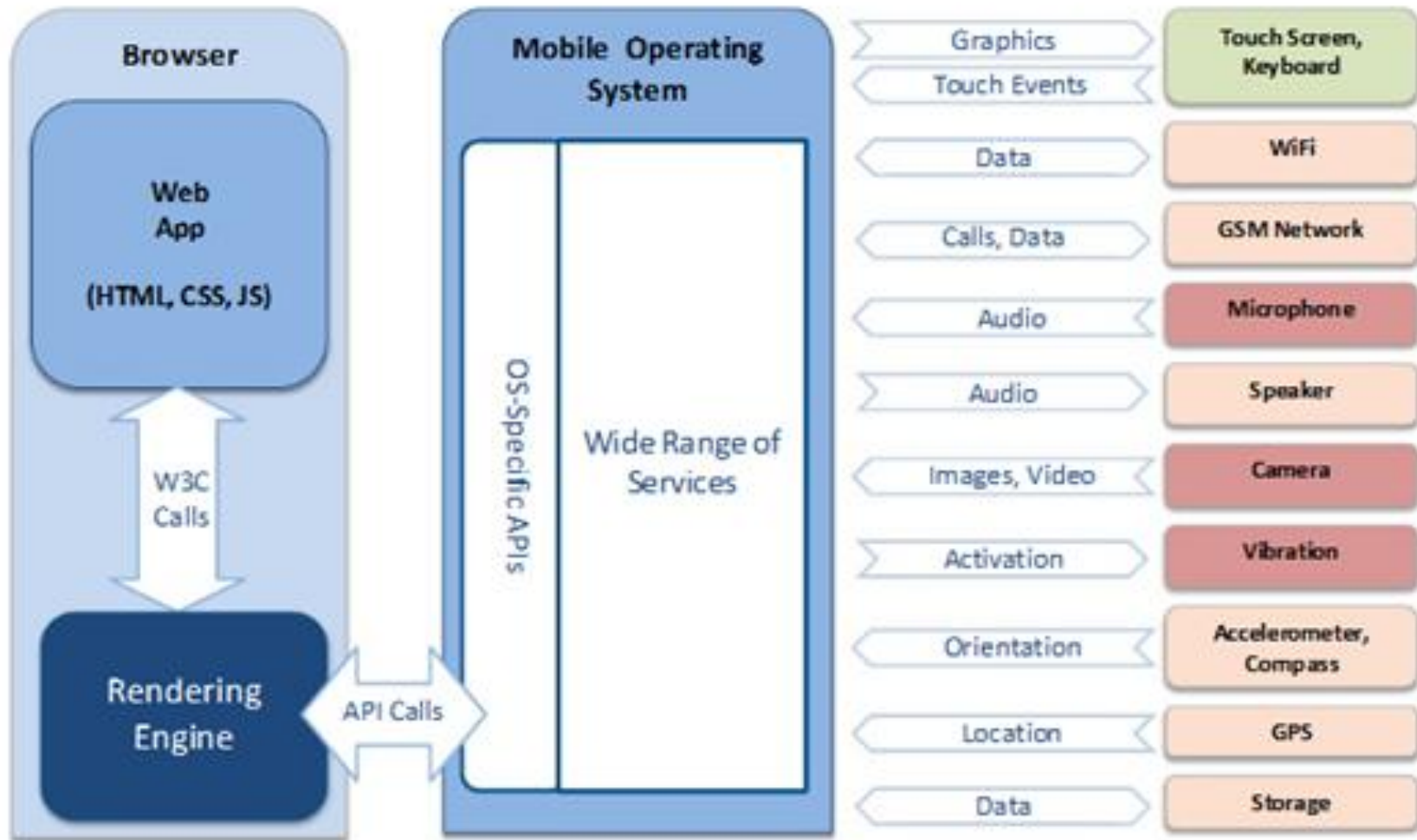


Mobile websites are applications that work well on a mobile device, but are accessed through the mobile browser.

These websites viewed on a mobile device in a mobile browser, with the exception of being designed to fit a mobile device screen size.

Web applications commonly use a combination of server-side script (ASP, PHP, etc) and client-side script (HTML, Javascript, etc.) to develop the application..

MOBILE APPS: WEB APP



MOBILE APPS: WEB APP



PROS

Maintainability

No
installation.

Cross platform.

CONS

No native access

Requires
keyboard to load

Limited user
interface.

MOBILE APPS: HYBRID APP

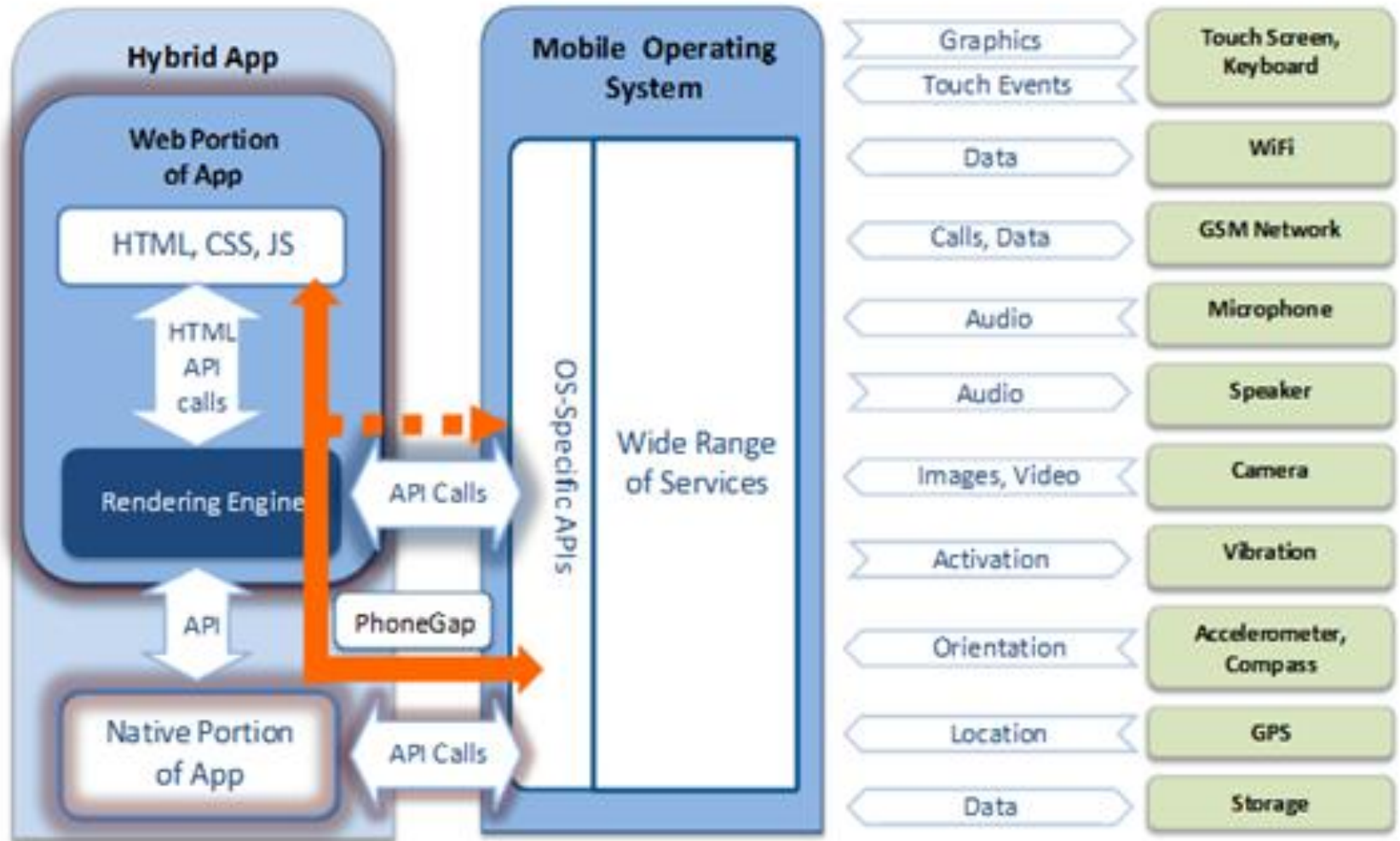


A hybrid app is one that combines elements of both native and Web applications

Hybrid apps are often mentioned in the context of mobile computing

Native source code is written and compiled into an executable program and a web based component written with HTML, JavaScript, and CSS

MOBILE APPS: HYBRID APP



MOBILE APPS: HYBRID APP



PROS

Access to
device

Same
environment

CONS

Web view
limitations

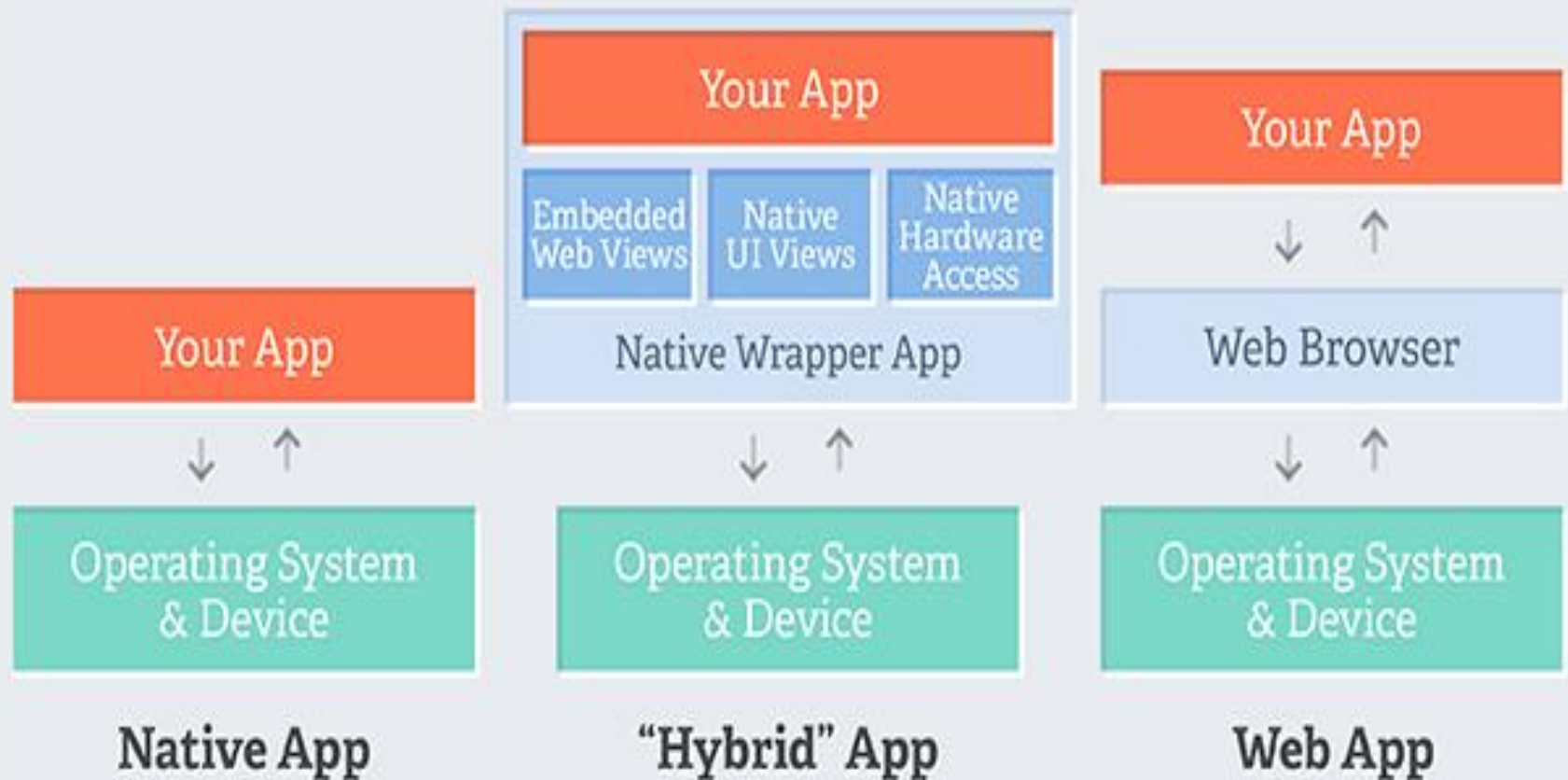
Native via
plugins

No native user
interface controls

Experienced
developers

MOBILE APPS: SUMMARY

Mobile App Technology Stacks



MOBILE APPS: SUMMARY

Native Mobile App

- IOS - Developed using Objective-c
- Android - Developed using JAVA
- Need to Install from APP Store.
- Available as an Application on Device.

Mobile Web App

- Developed using typical web development technology - HTML, CSS, Java Script.
- View size of the Web page fit to the real-estate of the device.
- Accessed through the browsers on the device

Hybrid Mobile App

- Wrapping the HTML and creating Native like look and feel (HTML within the app itself). Framework like Phone Gap support this development.
- Native Mobile App with Web view control and render the HTML directly on the web view (HTML Rendered from enterprise server).
- View size of the Web page fit to the real-estate of the device.
- Accessed through the browsers on the device

Mobile APPS : Conclusion

LIST	Native	HTML5	Hybrid
App Features			
Graphics	<i>Native APIs</i>	<i>HTML, Canvas, SVG</i>	<i>HTML, Canvas, SVG</i>
Performance	<i>Fast</i>	<i>Slow</i>	<i>Slow</i>
Native look and feel	<i>Native</i>	<i>Emulated</i>	<i>Emulated</i>
Distribution	<i>Appstore</i>	<i>Web</i>	<i>Appstore</i>
Device Access			
Camera	<i>Yes</i>	<i>No</i>	<i>Yes</i>
Notifications	<i>Yes</i>	<i>No</i>	<i>Yes</i>
Contacts, calendar	<i>Yes</i>	<i>No</i>	<i>Yes</i>
Offline storage	<i>Secure file storage</i>	<i>Shared SQL</i>	<i>Secure file system, shared SQL</i>
Geolocation	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Gestures			
Swipe	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Pinch, spread	<i>Yes</i>	<i>No</i>	<i>Yes</i>
Connectivity	<i>Online and offline</i>	<i>Mostly online</i>	<i>Online and offline</i>

Overview: Mobile APPS

➤ Categories

➤ Types

➤ **Distribution/Installation/Logs**

➤ Mobile Test Industry Standards

➤ Remote Device Access (RDA)

➤ Emulators

➤ Simulators

➤ Troubleshooting Guide

➤ App Risk Analysis

Mobile APPS: *Distribution/Installation: Android .APK*



Through an App Marketplace (*Google Play*)



by Email (*Android system recognizes the APK and displays an Install Now button in the email message*)



Through a Website (*host the release-ready APK file on your website and provide a download link*)



Google Drive



Android Studio



Test Fairy TOOL



Crashlytics



*enable allow "Unknown Sources" on the device
(Settings > Applications > Unknown Sources)*

Mobile APPS: **Distribution/Installation: Android .APK**

*What is
TEST
FAIRY ?*

TestFairy offers some great features for app developers. One of the stand out features is client side Video recording and not just screen shots.

TestFairy provides a video recording of the exact test from the client side, including CPU, Memory, GPS, Network monitoring, logs, crash reports and more.

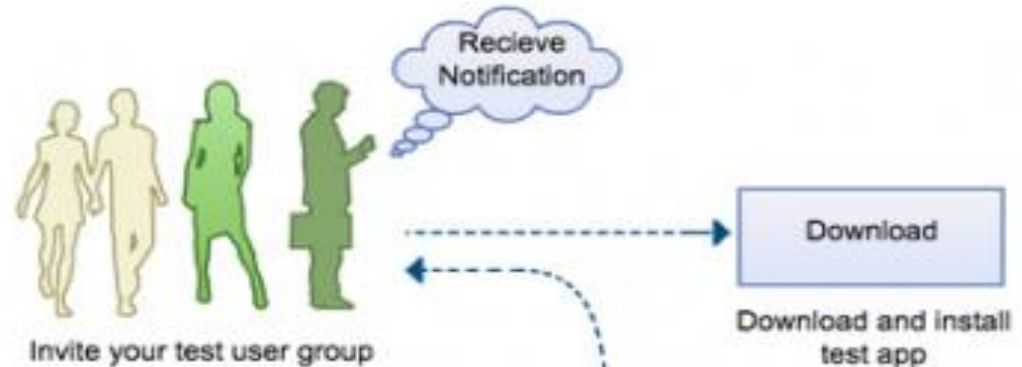
With Android apps you don't need to integrate any SDK or APIs into your app builds. You upload your APK (Android application file) to the TestFairy platform.

TEST FAIRY is for ANDROID ONLY

Mobile APPS: **Distribution/Installation: Android .APK**

TEST FAIRY

You will receive an invitation by email



Build and generate .apk

You may manually build or use build automation tools

Upload your app

You may upload using scripts, for CI builds.

Processing Build

Build ready

Now build is ready to download

TEST FAIRY is for ANDROID ONLY



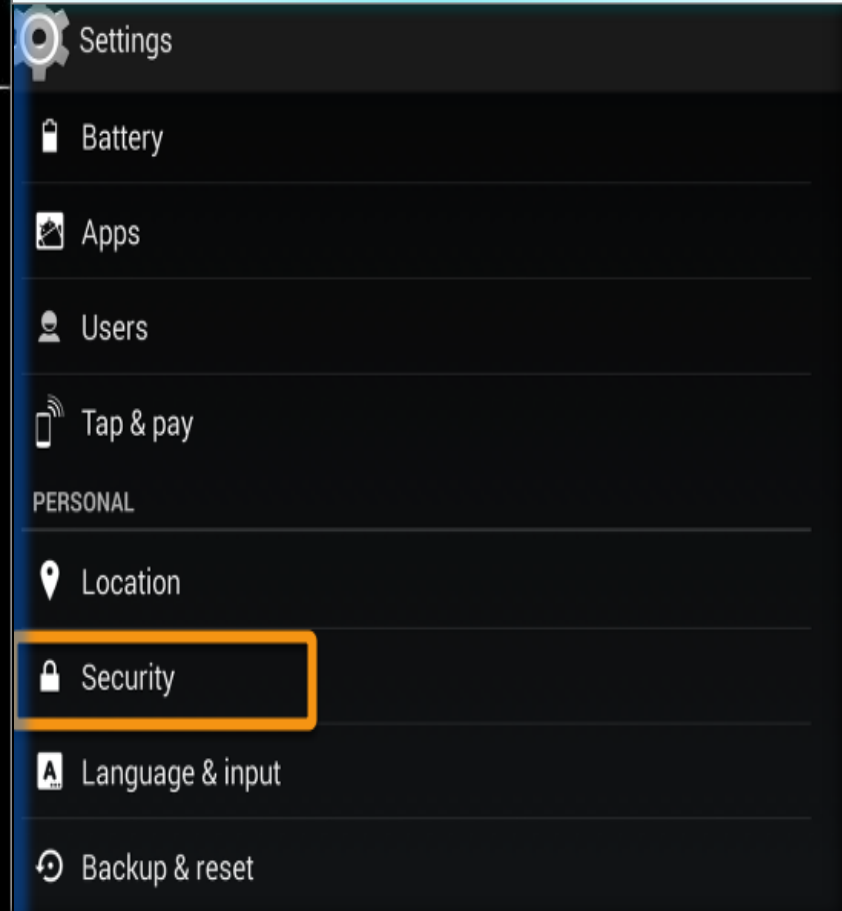
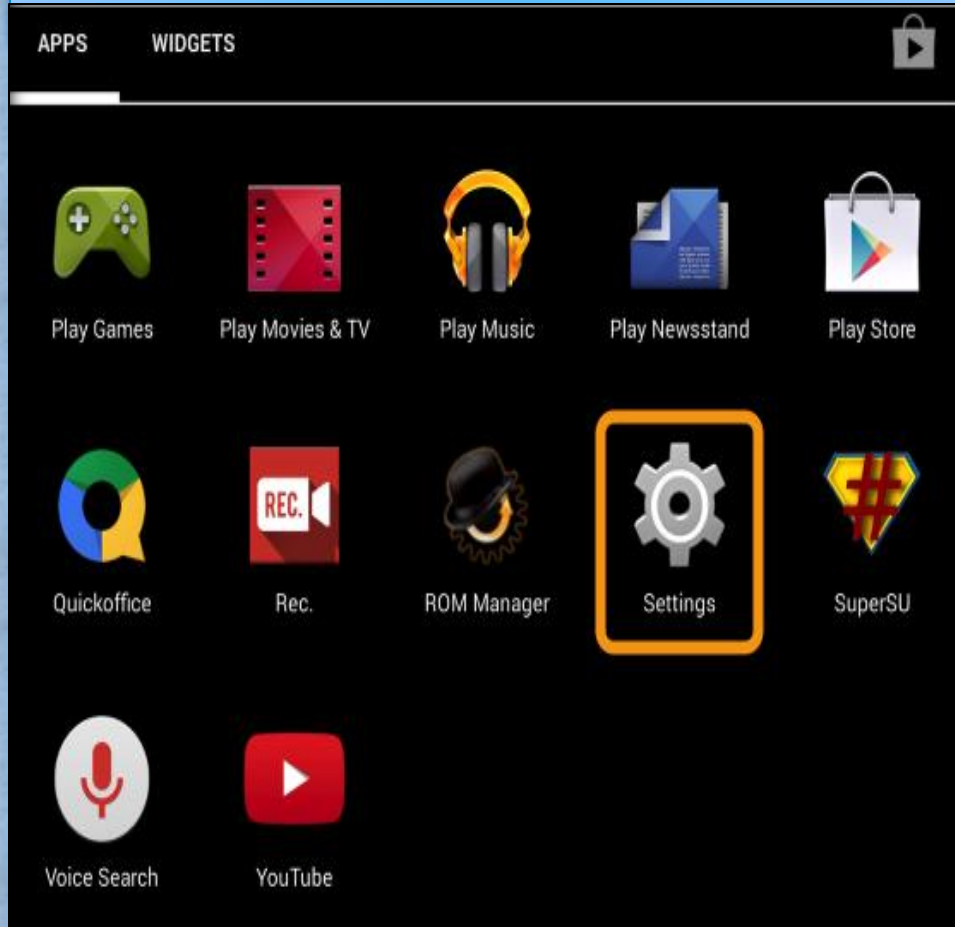
Test Fairy
Smart Android testing

Mobile APPS: *Distribution/Installation: Android .APK*

Installing THIRD PARTY APK

1. Go to the "Settings" application on your Android device

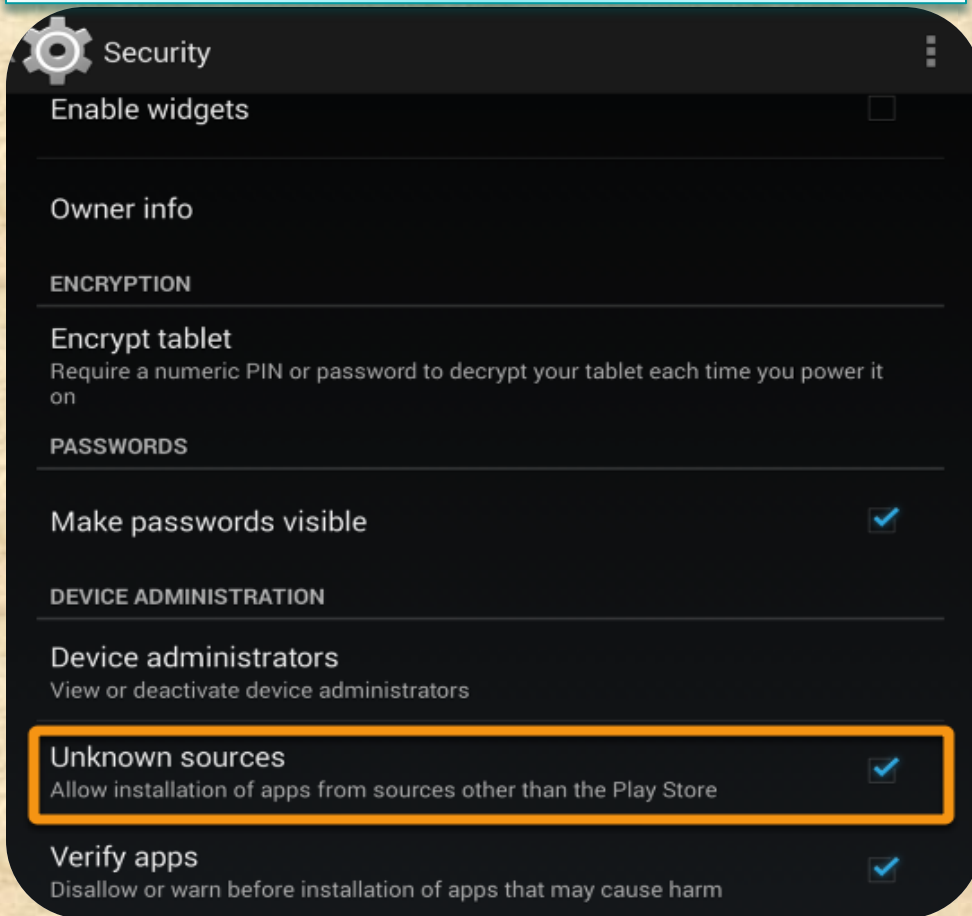
2. Choose the "Security" option located under the heading "Personal"



Mobile APPS: *Distribution/Installation: Android .APK*

Installing THIRD PARTY APK (OS 7 and lower)

3. Under "Device Administration" place a checkbox next to the option "Unknown Sources"



This allows you to install applications on your Android device that are not downloaded directly from the Google Play store

Mobile APPS: *Distribution/Installation: Android .APK*

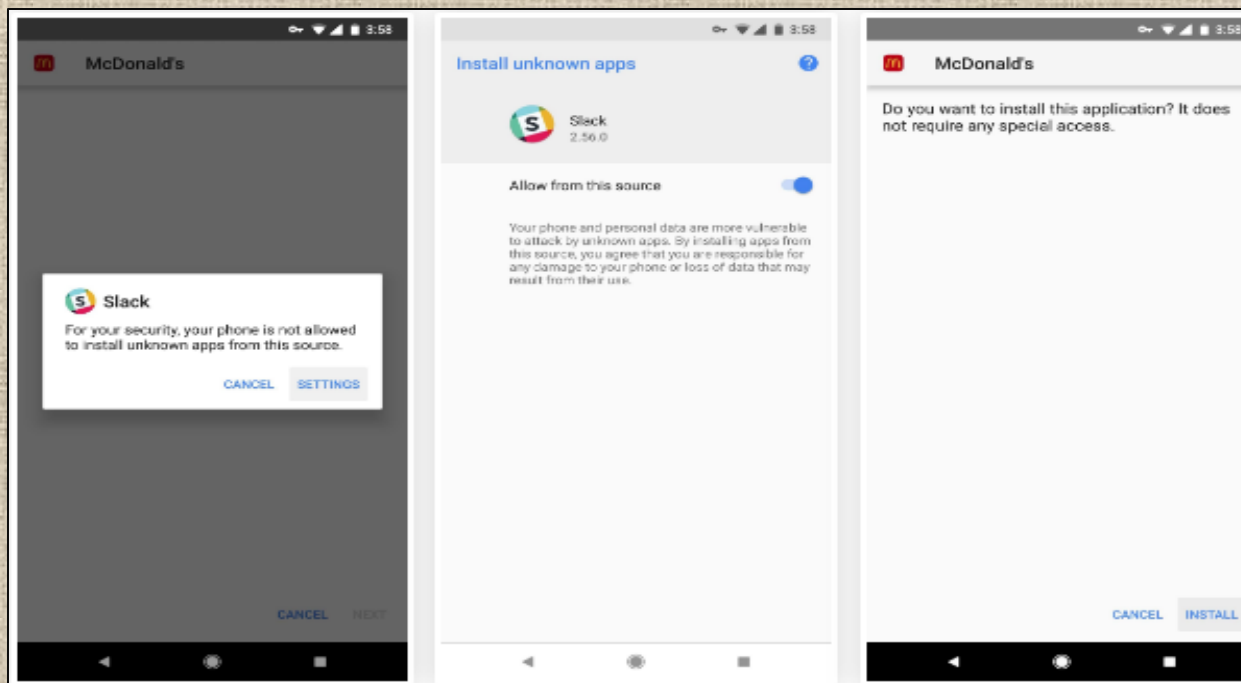
Installing THIRD PARTY APK (OS 8 and higher)

Just download APKs as you normally would, but when you launch the APK, you'll be prompted to allow the permission.

1. Tap "**Settings**" on the prompt,
2. **Enable the switch** next to "Allow from this source" on the following screen.
3. Hit your back button, then you can resume installation.

Starting with **Android 8.0**, the process of side loading apps has changed

No longer is there a system-wide "Unknown Sources" setting instead, it's now handled on a per-app basis.



Mobile APPS: *Distribution/Installation: Android .APK*

Transferring APK to your Device

1. On your computer, attach the ".apk" file to an e-mail and send it to an account that you can access via your Android device.



2. On the Android device, click on the ".apk" attachment in the e-mail in order to download it.



3. Follow the on-screen instructions to install the application.

Do you want to install this application? It will get access to:



read phone status and identity



modify or delete the contents of your USB storage
read the contents of your USB storage



find accounts on the device

DEVICE ACCESS



full network access
receive data from Internet
view network connections
view Wi-Fi connections

Cancel

Install



Mobile APPS: Android LOGS : EXTRA

Installing LOGCAT APP to your Device

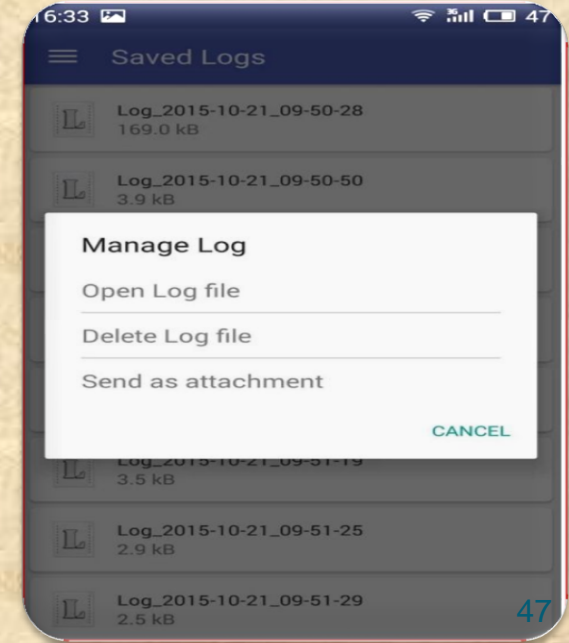
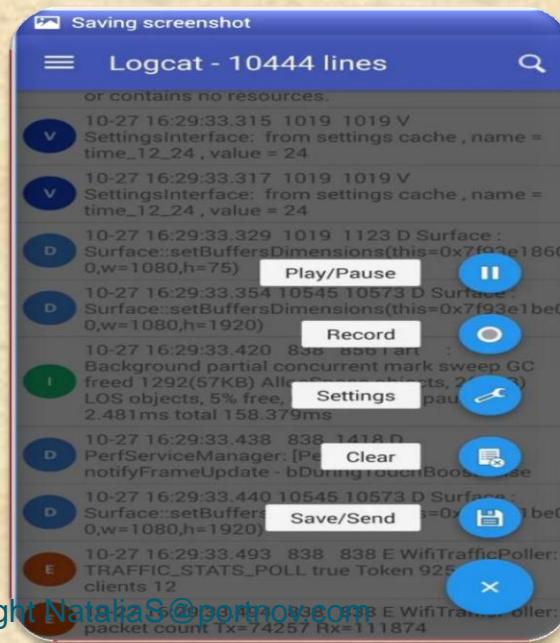
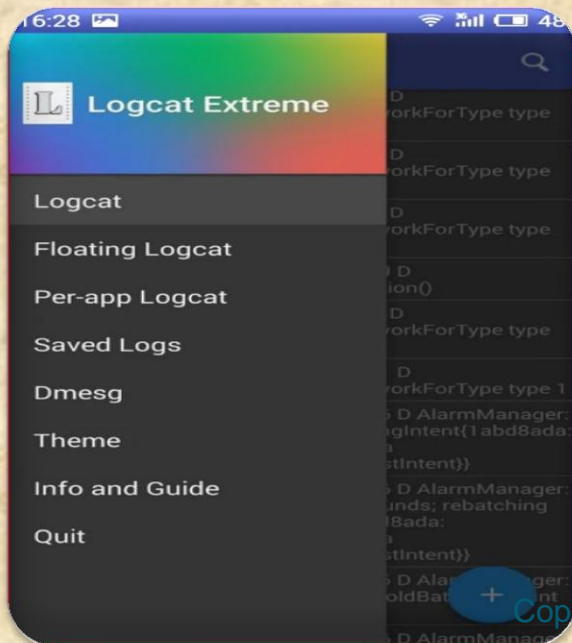
Download
LOGCAT EXTREME
from PlayStore to
your Device directly
(*this is only an
example, there are
many other similar
apps*)



LOGCAT EXTREME
is an enhanced
Logcat reader and
Logcat recorder
which comes with a
rich set of features
and handy user
interface.



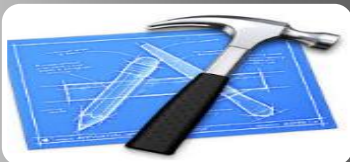
Please note: From
Android 4.1 onwards
ANY logcat app needs
root access in order to
show logs properly.



Mobile APPS: *Distribution/Installation: iOS .IPA*



Through an App Marketplace (APP STORE)



XCODE



ITUNES



CRASHLYTICS



TEST FLIGHT

Mobile APPS: **Distribution/Installation: .IPA**



What is XCode?

Xcode is an Intergrated Development Environment by Apple containing a suite of software Development Tools for macOS, iOS, WatchOS and tvOS

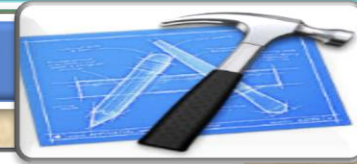
Xcode supports source code for programing languages C, C++, Objective-C, Objective-C++, Java, AppleScript, Python, Ruby, ResEdit (Rez), and Swift

Also supports variety of programming models, including but not limited to Cocoa, Carbon, and Java



Mobile APPS: *Distribution/Installation: .IPA*

Distributing .IPA through XCode ?



Connect the device to your Mac.



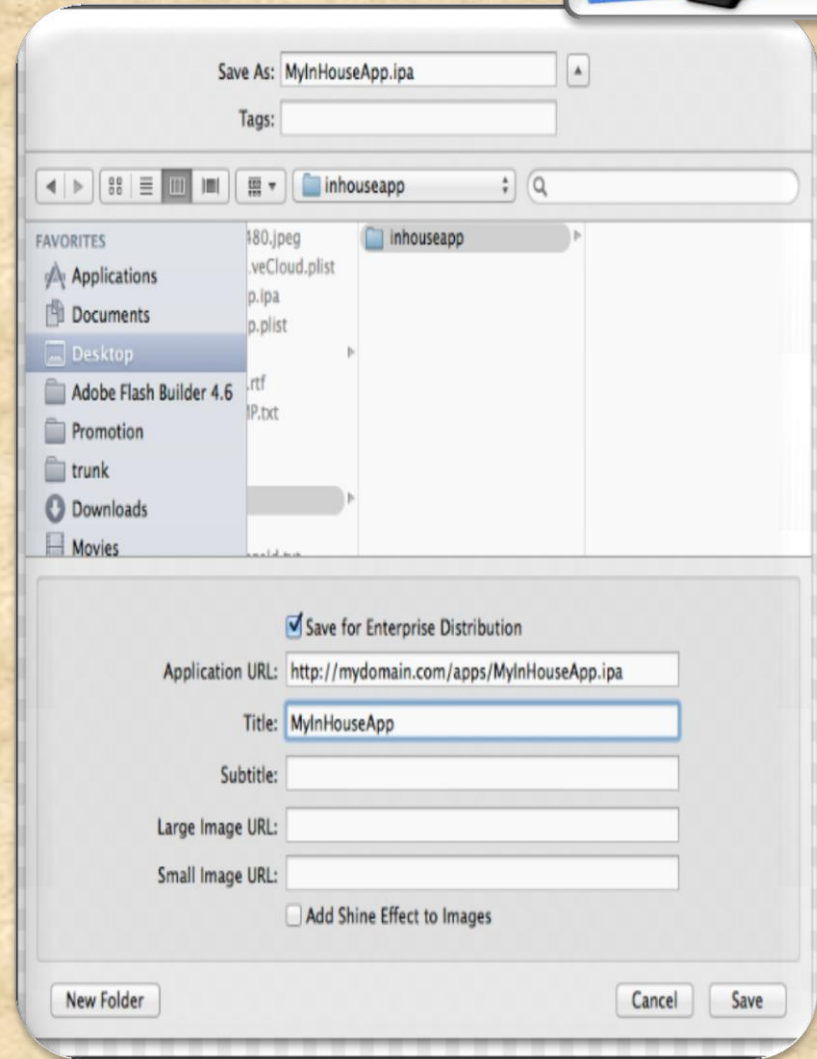
In Xcode, choose Window > Devices and select the device under Devices.



In the dialog that appears, choose the iOS App file and click Open.

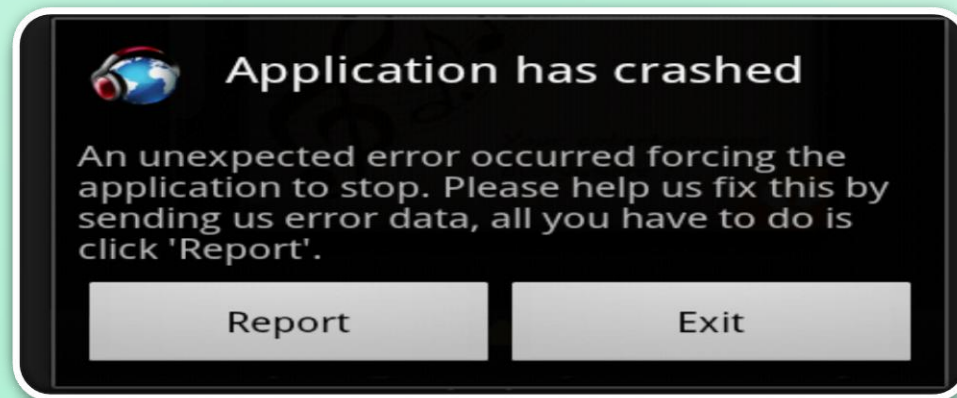


In the Installed Apps table, click the Add button (+) below the table.



How can I debug a deployed app without Xcode debugger ?

- ❖ A: Once you have deployed your app, either through the *App Store* or as an *Ad Hoc* or *Enterprise* build, you won't be able to attach *Xcode's* debugger to it.
- ❖ To debug problems, you need to analyze *Crash Logs* and *Console* output from the device.



Mobile APPS: **Distribution/Installation: .IPA**



What is iTunes?

iTunes is a media player, media library, online radio broadcaster, and mobile device management application developed by Apple Inc.

It is used to play, download, and organize digital downloads of music and video (as well as other types of media available on the iTunes Store) on personal computers running the macOS and Microsoft Windows operating systems.

What is iTunes?



Mobile APPS: **Distribution/Installation: .IPA**

Drag-and-drop IPA file into 'Apps' tab of iTunes BEFORE you connect the device



Connect your device

Select your device on iTunes

Select 'Apps' tab

Search app that you want to install

Click on 'Install' button. This will change to 'Will Install'

Click on 'Apply' button on right corner

LOGS: Collecting from iTunes

- ❖ Sync your device with iTunes on your desktop.
- ❖ After syncing, look for crash logs in the correct directory.

The Following few slides will give an instructions . Lets start !



LOGS: Collecting from iTunes

❑ Mac OS X:

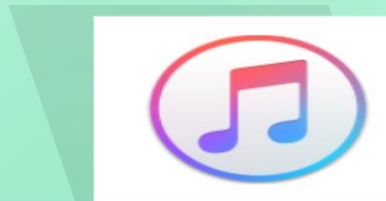
- ❖ Open Finder (found in the Dock)
- ❖ Click on the 'Go' menu at the top of your screen, and select 'Go to Folder'
- ❖ Type (or paste): `~/Library/Logs/CrashReporter/MobileDevice/<DEVICE_NAME>`
- ❖ Open the folder with the same 'name' as your device.
(Note: your device name appears in iTunes on the left side, under 'Devices').
- ❖ Open the folder called 'Retired'
- ❖ You will see at least one item starting with 'ReadItLaterPro'.



LOGS: Collecting from iTunes

❑ Windows Vista or 7:

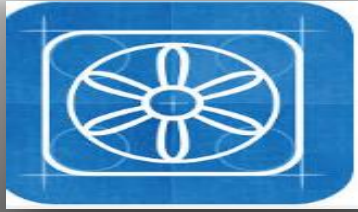
- ❖ Open any Windows Explorer Window (My Computer, My Documents, etc.)
- ❖ Enter %appdata%, and press enter → Navigate to Roaming
C:\Users\<USERNAME>\AppData\Roaming\Apple
- ❖ *Computer\Logs\CrashReporter\MobileDevice\<DEVICE_NAME>*
- ❖ (Note: your device name appears in iTunes on the left side, under 'Devices')
- ❖ You will see at least one item starting with 'ReadItLaterPro'.



LOGS: Collecting from your Device

- To obtain iOS crash logs, please select your device and go to:
- **Settings>Privacy>Analytics>Analytics Data (iOS 10 and higher)**
- *Settings > Privacy > Diagnostics & Usage (for iOS 8 and iOS 9))*
- *Settings > General > About > Diagnostics & Usage (for iOS 7 or older)*
- ❖ Select a **Chrome** crash from the list.
This will start with “**Chrome_**” and contain the timestamp of the crash.
- ❖ Tap on the crash and you will see a text field with a crash log.
Long press to *Select All* and then *Copy* the crash text.
- ❖ Paste it into something you can get off of your device (for example, an email to yourself).

Mobile APPS: **Distribution/Installation: .IPA**



What is TestFlight?

TestFlight is an online service for over-the-air installation and testing of mobile applications, currently owned by Apple Inc and only offered to developers within the iOSDeveloper Program

Developers signed up with the service to distribute applications to internal or external beta testers, who could subsequently send feedback about the application to developers

The TestFlight SDK additionally allows developers to receive remote logs, crash reports and tester feedback.

HOMEWORK : READ AN ENTIRE ARTICLE ABOUT TestFLIGHT

<https://www.raywenderlich.com/48750/testflight-sdk-tutorial>

