

WELCOME

Mobile Applications Testing



Platforms / OS : What do I HAVE ?



Which Operating System My Mobile has?



Platforms / OS :

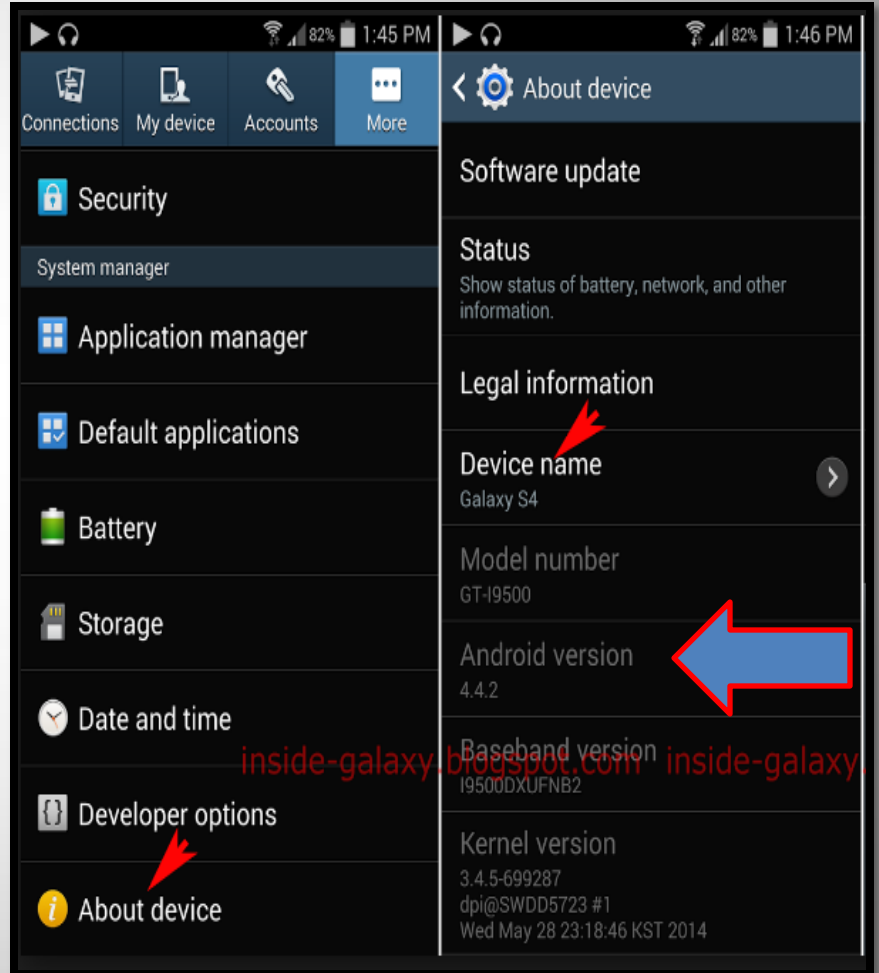
How to find my Android OS Version ?



Open your
device
SETTINGS

Scroll to
ABOUT
PHONE

Look for line
which says
"Android
Version"



Platforms / OS :

How to find my Apple iOS Version ?

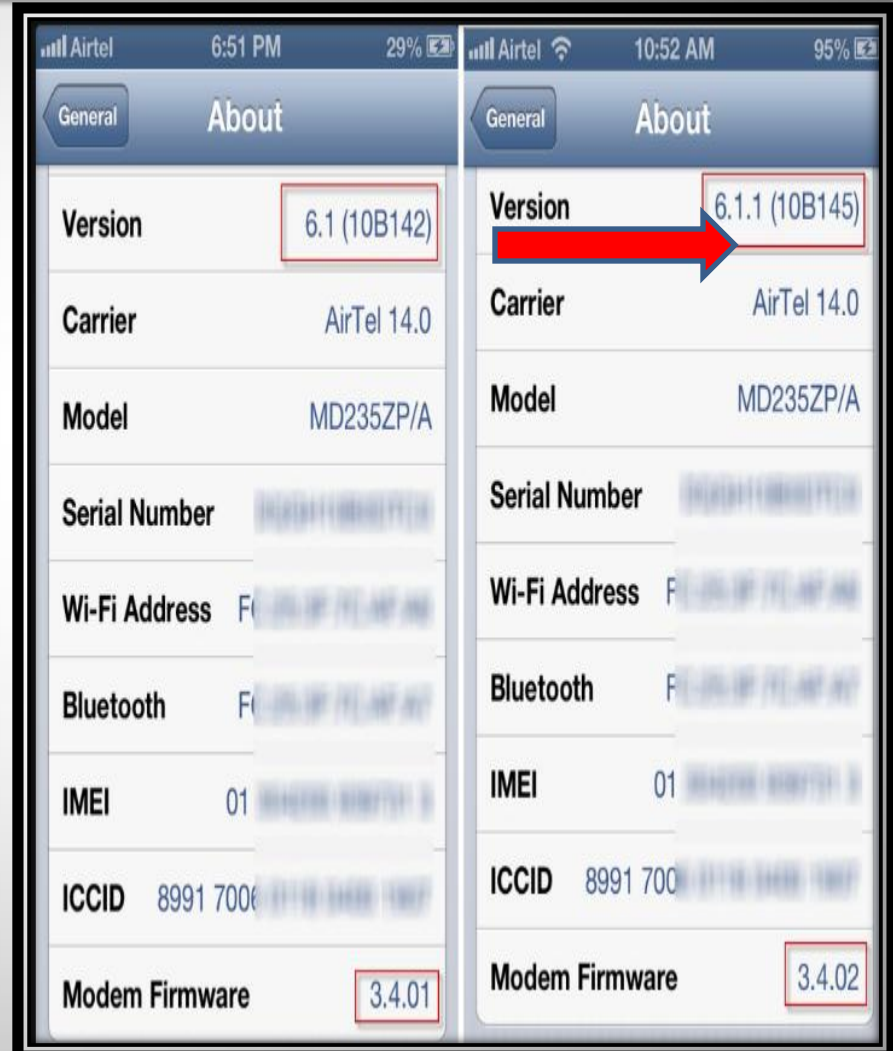


Open the
Settings

Tap 'General'

Tap 'About'

Scroll down
for 'Version'



Platforms / OS :

How to find my WinPhone OS version ?



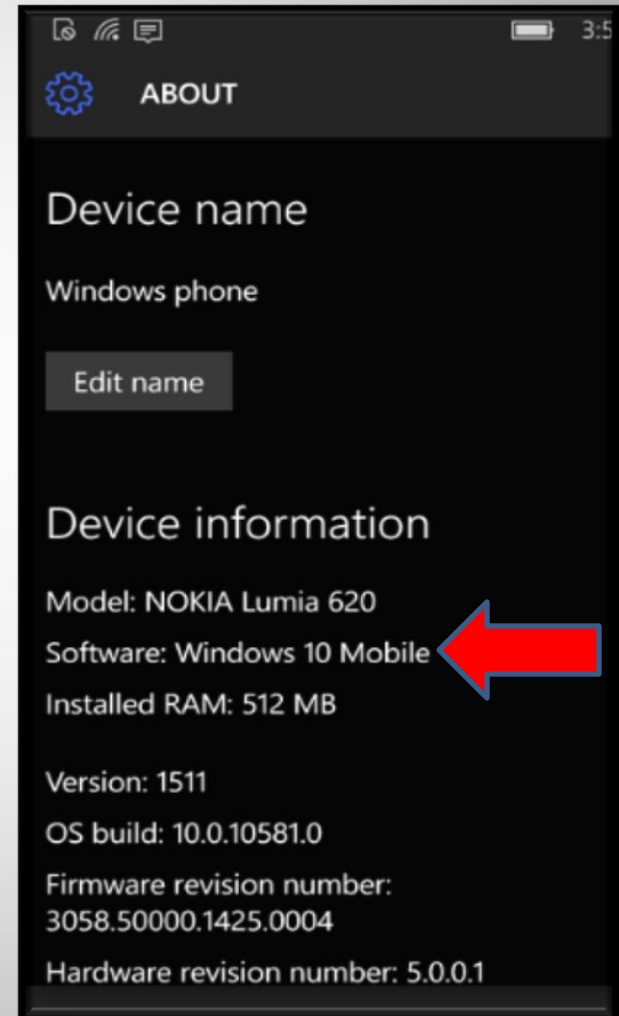
Windows Phone home screen

Swipe left to reveal more icons

Scroll down and tap 'SETTINGS'

Scroll down and tap 'ABOUT'

'About' screen, tap MORE INFO



Platforms / OS :

ANDROID

ANDROID

is a mobile operating system developed by Google Based on the Linux Kernel and designed primarily for touch screen Mobile Devices such as : SmartPhones and Tablets.



Platforms / OS : ANDROID

ACTIVE OPERATING SYSTEMS



Platforms/OS

ANDROID version 9.0

API level 28

Android 9.0 "Pie"

Released August 6th,
2018

**Pixel Devices only
as of release date**

*All others will be
updated in late 2018
and 2019*



Platforms/OS

ANDROID version 8.0-8.1
API level 26-27 (info as of 1/23/18)

Android 8.0 "OREO"

21, 2017 Officially released on
August

Oreo 8.1 – Dec, 2017

Nexus 5X

Nexus 6P

Google Pixel

Google Pixel XL

Pixel C

Nexus Player



More devices would be covered in coming months

Platforms / OS :

ANDROID version 7.0-7.1.2
API level 24-25

Android 7.0-7.1.2 "Nougat"

*Officially released on August
22, 2016 and 7.1.2 released
April 7th, 2017*

Nexus 5X

Nexus 6P

Nexus 6

Nexus 9

Nexus Player

Pixel C

Android One General Mobile 4G

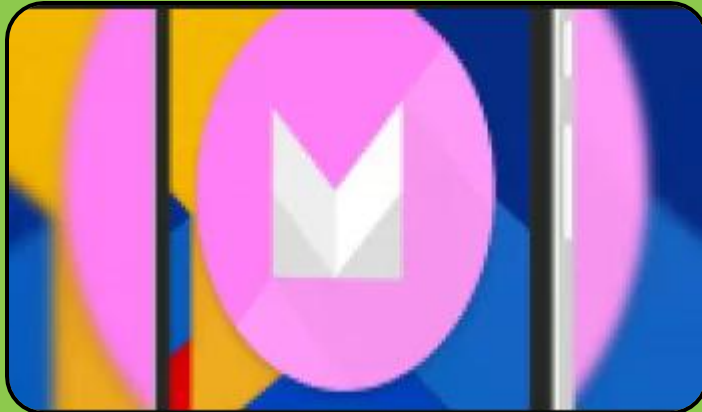


Platforms / OS :

ANDROID version 6.0-6.0.1

API level 23

“MARSHMALLOW”



Officially released in
October 2015



Platforms / OS :

ANDROID version 5.0-5.1.X

API level 22-23

“LOLLIPOP”

Officially released in
June , 2014

5.1 released in
February, 2016



Platforms / OS :

ANDROID version 4.4-4.4.4

API level 19-20

“KITKAT” 4.4.

**Officially released in
June , 2014**

**4.4.4. released in
June, 2014**



Platforms/OS

Google OS Stats : ANDROID

Android Name	Android Version	Usage Share
Nougat	7.0, 7.1	30.8%
Marshmallow	6.0	22.7%↓
Lollipop	5.0, 5.1	19.2%↓
Oreo	8.0, 8.1	14.6%↑
KitKat	4.4	8.6%↓
Jelly Bean	4.1.x, 4.2.x, 4.3.x	3.5%↓
Ice Cream Sandwich	4.0.3, 4.0.4	0.3%↓
Gingerbread	2.3.3 to 2.3.7	0.3%↑

Platforms / OS :

ANDROID HISTORY 2009-2018

Android 1.5
(CupCake)



Android 1.6
(Donut)



Android 2.0 and 2.1
(Eclair)



Android 2.2
(Froyo)



Android 2.3 and 2.4
(Gingerbread)



Android 3.0-3.2
(Honeycomb)



Android 4.1-4.3
(Jelly Bean)



Android 4.0
(Ice-Cream Sandwich)



Android 4.4
(KitKat)



Android 5.0-5.1
(Lollipop)



Android 6.0
(Marshmallow)



Android 7.0
(Nougat)



Android 8.0
(Oreo)



Android 9.0 (Pie)



Platforms / OS :

ANDROID FILE FORMAT .APK

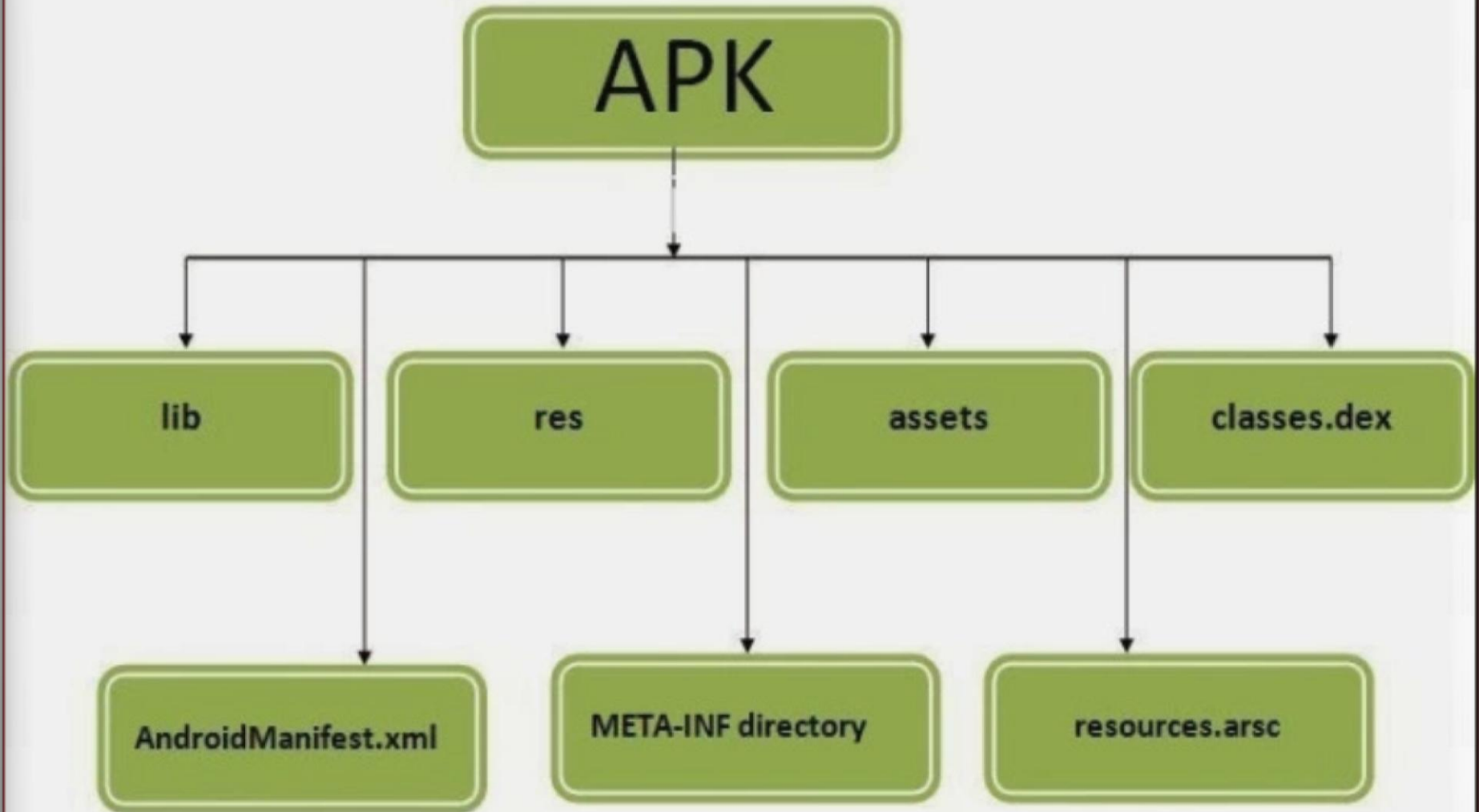
Android Package Kit (APK for short) is the package file format used by the Android operating system for distribution and installation of mobile apps.

What is an APK File?

Just like Windows (PC) systems use an **.exe** file for installing software, Android does the same. An **APK** file is the file format used for installing software on the Android operating system.

Platforms / OS :

APK STRUCTURE : general



APK STRUCTURE : detailed

AndroidManifest.xml

Every APK file includes an AndroidManifest.xml file which declares the application's package name, version components and other metadata.

The manifest file in binary XML format

META-INF directory

folder containing the MANIFEST.MF file, which stores meta data about the contents of the JAR. which sometimes will be store in a folder named original.

The signature of the APK is also stored in this folder.

lib

optional folder containing compiled code - i.e. native code libraries.

res

optional folder containing compiled code - i.e. native code libraries.

assets

optional folder containing applications assets, which can be retrieved by AssetManager

resources.arsc

file containing precompiled application resources, in binary XML.

classes.dex

application code compiled in the dex format



Manifest tag

- Contains android installation mode, package name, build versions

Permissions

- Custom permission and protection level

uses-permissions

- Requests a permission that must be granted in order for it to operate

uses-feature

- Declares a single hardware or software feature that is used by the application.

Application

- The declaration of the application. Will contains all the activity



Activity

- Declares an activity that implements part of the application visual user interface

intent-filter

- Specifies the types of intents that an activity, service, or broadcast receiver can respond to

service

- Declare a service as one of the application components

receiver

- Broadcast receivers enable applications to receive intents that are broadcast by the system or by other applications, even when other components of the application are not running

provider

- Declares a content provider component. A content provider is a subclass of `ContentProvider` that supplies structured access to data managed by the application

Platforms / OS :

iOS

- *iOS (originally iPhone OS) is a mobile operating system created and developed by Apple Inc. and distributed exclusively for Apple hardware*
- It is the operating system that presently powers many of the company's mobile devices, including the iPhone, iPad, and iPod touch.



Platforms / OS :

iOS latest version 12 (Sept 17th, 2018)

**Original Version 12
released on
September 17, 2018**

iOS 12 focuses on reliability and performance with this update, and it supports all of the same iPhones and iPads that iOS 11 worked with.



Platforms / OS :

iOS latest version 11.X

<http://www.mobiloitte.com/blog/evolution-iphone-os-1-ios-10-journey-ios>

IPHONE: 1 TO X

A look at the evolution of the Apple gadget across key specs

WEIGHT (in gm)



@network18 creative

Platforms / OS :Version Name HISTORY →

iOS 12 – HOPE)



1.0:Alpine (1.0.0 - 1.0.2: Heavenly)	8.0: Okemo
1.1: Little Bear	8.1: OkemoTaos
1.1.1: Snowbird, 1.1.2: Oktoberfest	8.2: OkemoZurs
2.0: Big Bear	8.3: Stowe
2.1: Sugarbowl	8.4: Copper
2.2: Timberline	9.0: Monarch
3.0: Kirkwood	9.1: Boulder
3.1: Northstar	9.2: Castlerock
3.2: Wildcat (iPad only)	9.3: Eagle
4.0: Apex	10.0: Whitetail
4.1: Baker	10.1: Butler
4.2: Jasper (4.2.5 - 4.2.10: Phoenix)	10.2: Corry
4.3: Durango	10.3: Erie
5.0: Telluride	11.0: Tigris
5.1: Hoodoo	11.1 Bursa
6.0: Sundance	11.2 Cinar
6.1: Brighton	11.2.5 Dalaman
7.0: Innsbruck	11.3 Emet
7.1: Sochi	11.4 Fatsa

Platforms / OS :

iOS (iPhone) Architecture (simplified)

Cocoa Touch Layer

It is a top layer of the iPhone OS stack and it contains the frameworks that are most commonly used by iPhone application developers.

Media Layer

It is the second layer from the top of the stack. It provides the iPhone OS with audio, video, animation and graphics capabilities.

Core Services Layer

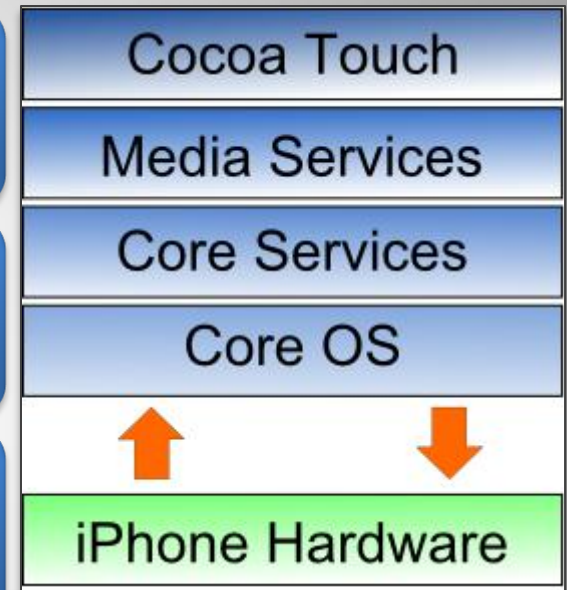
It is the third layer from the top of the stack. The iPhone Core Services layer provides much of the foundation on which the above layers are built.

Core OS Layer

The Core OS Layer is the bottom layer of the iPhone OS stack and sits directly on top of the device hardware. This layer provides a variety of services

iPhone Hardware

Hardware devices are managed by iPhone OS and provides the technologies needed for implementing native applications on the phone.




Platforms / OS :

iOS .IPA

- An **.ipa** file is an iOS application archive file which stores an iOS app.
- Each **.ipa** file includes a binary for the ARM architecture and can only be installed on an iOS device.
- Files with the **.ipa** extension can be uncompressed by changing the extension to **.zip** and unzipping.

Platforms / OS :

ANDROID vs IOS : SUMMARY

Category	Google Android	Apple iOS
License - Source	Open Source	Close - Proprietary
Company	Open Handset Alliance/Google	Apple
OS Platform	Linux	OS X – Unix (Darwin)
Programming Language	Java and Kotlin 	Objective-C and Swift-4
Virtual Machine	ART – Android Runtime (from KitKat 4.4 and Dalvik VM prior)	None
Package Manager	APK – Google Play/Play Store	IPA – APP Store
Carriers	AT&T, Verizon, T-Mobile, Sprint, MetroPCS, Virgin, 96% out of 369 US carriers	Apple Store, AT&T, Verizon, Sprint, Virgin Mobile, Cricket + 10 regional carriers
Life Battery	Moderate	Advance high
Browser Engine	WebKit: Web, Opera Mini, Dolphin, Chrome	WebKit: Safari, Opera Mini, Chrome

Don't like GOOGLE OS? 2018 List



Alternative Open Source OS: TIZEN

TIZEN is an open source, Linux based mobile operating system which is often dubbed as official Linux mobile OS for the reason that the project is supported by the [Linux Foundation](#).

Apart from Linux Foundation, **TIZEN** project is supported by tech giants Samsung and Intel. Initially slotted for late 2013 release, it was only in January'15 that the first Tizen phone, [Samsung Z was released](#) in South Asian market.

Despite being based on Linux, **TIZEN** [has been marred with security issues](#).



Alternative Open Source OS: PLASMA MOBILE

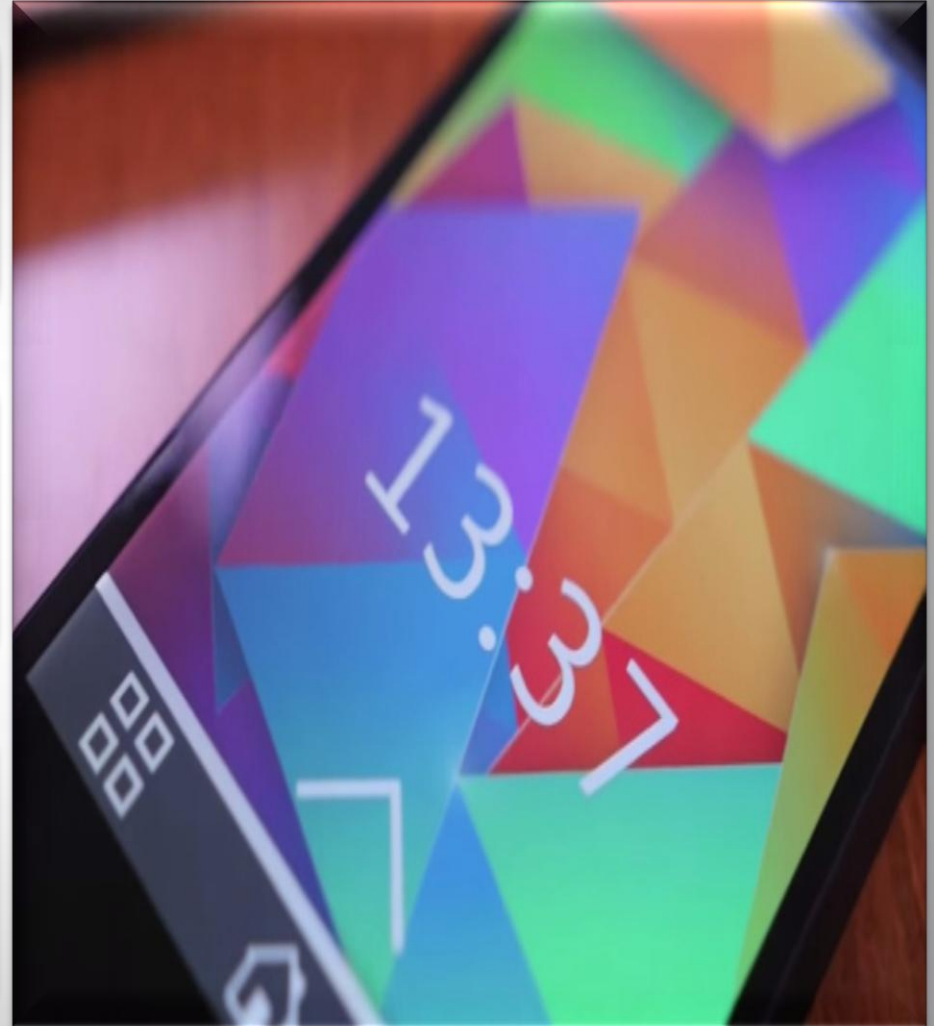
In April , 2018 KDE announced its own open source mobile OS:

PLASMA MOBILE

KDE is an international community that develops Free and Open Source based software.

Based on Kubuntu, Plasma Mobile is the mobile version of desktop Plasma user interface that aims to provide convergence to KDE users.

OS is in the experimental phase and can be tested on Lg Nexus 5 devices.



Alternative Open Source OS : LIBREM

Not an open source mobile OS
but an **Open Source
Mobile Phone.**

Security and Privacy focused Linux
distribution [PureOS](#) has plans to
launch a secure and encrypted
SmartPhone.

Librem will be running a touch
optimized version of PureOS, Debian,
Ubuntu, SUSE, Fedora and even Arch
Linux.



Alternative Open Source OS: PostmarketOS

pmOS is a touch-optimized, pre-configured [Alpine Linux](#) with own packages, that can be installed on SmartPhones.

The idea is to provide 10-year life cycle to smartphones.

pmOS is in very early phases of development and it is most likely that you won't be able to use it on your SmartPhone just yet.



Alternative Open Source OS: LineageOS

LineageOS is an Android distribution.
In other words, you can call it a
custom ROM

It was created after the much more
successful Android
distribution [CyanogenMod](#) was
discontinued

LineageOS is a fork of CyanogenMod

Started in December 2016, LineageOS
now supports 178 SmartPhone models
and claims to have over 1.7 million
installs



LineageOS

Alternative Open Source OS: eelo

eelo is an upcoming Android distribution based on LineageOS

It is being created by the developer of Mandrake Linux

The idea is to have an open source mobile operating system free from Google.

eelo promises to have its own cloud and email services to give you an Android free experience

eelo is in very early phases of development



Alternative Open Source OS: Sailfish OS

Developed by Finnish startup Jolla, Sailfish OS is a Linux-based mobile operating system that utilizes Mer, the successor to Nokia's short-lived MeeGo operating system.

The user interface is gesture based, with the a focus on multitasking.

One distinct advantage that Sailfish OS boasts over the competition is a huge catalog of apps and software, as it is compatible with software made for Android, Linux, Mer/MeeGo and anything written in HTML5.

Not an Open Source



Alternative Open Source OS: UBUNTU TOUCH

Spanish manufacturer **BQ** became the first device running **Ubuntu Touch** in February'15.

It was soon followed by Chinese manufacturer Meizu.

It is too soon to gauge the success or failure of **Ubuntu** phones because these first few devices aim at developers.



Alternative Open Source OS: MIUI

MIUI (pronounced “Me-You-I”) is a heavily modified version of the Android OS, made and maintained by Xiaomi Tech, a Chinese electronics company

MIUI offers a higher level of customization than stock Android, allowing users to apply custom themes, lock screens, fonts and more

MIUI has built-in network monitoring, spam and virus protection, a data backup app and other useful and unique features

The UI is somewhat similar to that of the iPhone, with its glossy icons and smooth screen transitions

