Plataformas Móviles

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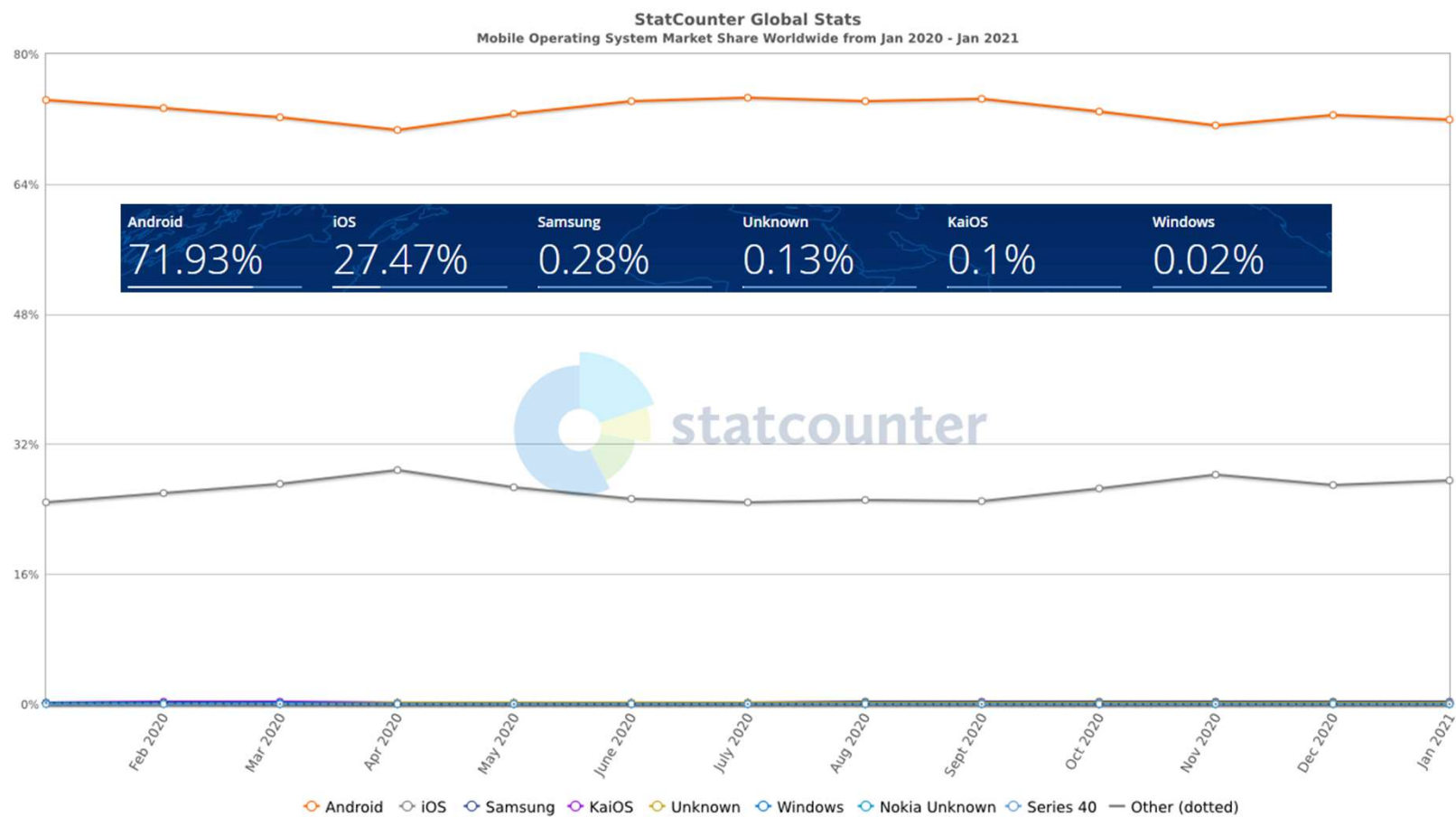2021-1

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Plataformas Móviles

- Plataformas móviles
- Evolución de Android
- Arquitectura Plataforma Android
- Herramientas de Desarrollo
- Preguntas

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Plataformas Móviles

StatCounter Global Stats
Mobile Operating System Market Share Worldwide from Jan 2020 - Jan 2021

Android	iOS	Samsung	Unknown	KaiOS	Windows
71.93%	27.47%	0.28%	0.13%	0.1%	0.02%

○ Android ○ iOS ○ Samsung ○ KaiOS ○ Unknown ○ Windows ○ Nokia Unknown ○ Series 40 — Other (dotted)

Plataformas Móviles

	Android	iOS
Developer	Google, Open Handset Alliance	Apple Inc.
Initial release	September 23, 2008	July 29, 2007
First version	Android 1.0, Alpha	iPhone OS 1, before named iOS
Latest stable release and Updates	Android 10 (September 3, 2019)	iOS 13.2.3 and iPadOS 13.2.3 (November 18, 2019)
Working state	Current	Current
Customizability	A lot. Can change almost anything.	Limited unless jailbroken
Source model	Open source	Closed, with open source components.
File transfer	Easier than iOS. Using USB port and Android File Transfer desktop app. Photos can be transferred via USB without apps.	More difficult. Media files can be transferred using iTunes desktop app. Photos can be transferred out via USB without apps.
Widgets	Yes, except on lockscreen	No, except in Notification Center
Internet browsing	Google Chrome (other browsers are available). Any browser app can be set as default.	Safari (Other browsers are available but not as default)
Maps	Google Maps	Apple Maps, default as of iOS 6 (Google Maps also available via a separate app download, but not as default, formerly used in iOS 5 and older)
Available language(s)	100+ Languages	34 Languages
Video chat	Google Duo and other 3rd party apps	FaceTime (Apple devices only) and other 3rd party apps
Voice commands	Google Assistant	Siri
Available on	Many phones and tablets. Major manufacturers such as Samsung, Oppo, OnePlus, Vivo, Honor and Xiaomi. Android One devices are pure Android. Pixel line of devices is made by Google, using almost pure version of Android	iPod Touch, iPhone, iPad, Apple TV (2nd and 3rd generation)
Calls and messaging	Google Messages. 3rd party apps like Facebook Messenger, WhatsApp, Google Duo, Discord and Skype all work on Android and iOS both.	iMessage, FaceTime (with other Apple devices only). 3rd party apps like Google Hangouts, Facebook Messenger, WhatsApp, Google Duo, Discord and Skype all work on Android and iOS both.

https://www.diffen.com/difference/Android_vs_iOS

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	Android	iOS
App store , Affordability and interface	Google Play Store – 1,000,000+ apps. Other app stores like Amazon and Apptoid also distribute Android apps. (".APKs"). Apps containing virus rare, but existing.	Apple App Store – 1,000,000+ apps. Apps containing virus very rare or nonexistent.
Alternative app stores and side loading	Several alternative app stores other than the official Google Play Store. (e.g. Aptoide, Galaxy Apps)	Apple blocks 3rd party app stores. The phone needs to be jailbroken if you want to download apps from other stores.
Battery life and management	Many Android phone manufacturers equip their devices with large batteries with a longer life.	Apple batteries are generally not as big as the largest Android batteries. However, Apple is able to squeeze decent battery life via hardware/software optimizations.
Open source	Kernel, UI, and some standard apps	The iOS kernel is not open source but is based on the open-source Darwin OS.
File manager	Yes. (Stock Android File Manager included on devices running Android 7.1.1)	Files app, limited and less useful (iOS 12).
Photos & Videos backup	Apps available for automatic backup of photos and videos. Google Photos allows unlimited backup of photos. OneDrive, Amazon Photos and Dropbox are other alternatives.	Up to 5 GB of photos and videos can be automatically back up with iCloud. All other vendors like Google, Amazon, Dropbox, Flickr and Microsoft have auto-backup apps for both iOS and Android.
Security	Monthly security updates. Android software patches are available soonest to Pixel device users. Manufacturers tend to lag behind in pushing out these updates. So at any given time a vast majority of Android devices are running outdated OS software.	Occasional security updates. Security threats rare, because iOS is locked and downloading apps out of the App Store is complicated.
Rooting, bootloaders, and jailbreaking	Access and complete control over your device is available and you can unlock the bootloader.	Complete control over your device is not available.
Cloud services	Native integration with Google Drive storage. 15GB free, $2/mo for 100GB, 1TB for $10. Apps available for Amazon Photos, OneDrive and Dropbox.	Native integration with iCloud. 5GB free, 50GB for $1/mo, 200GB for $3/mo, 1TB for $10/mo. Apps available for Google Drive and Google Photos, Amazon Photos, OneDrive and Dropbox.
Interface	Touch Screen	Touch Screen
Biometric Authentication	Fingerprint and/or Face Authentication. Availability depends on manufacturer's hardware.	Fingerprint or Face Authentication. Available on iPhone (5s and later) and iPad (Air 2 and later).

https://www.diffen.com/difference/Android_vs_iOS

Evolución de Android

Android 0.5

Android 0.9 Beta

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Evolución de Android

Android 1.0 Apple Pie (2008)

- HTC Dream (Google G1)
- Suite de aplicaciones Google (Gapps)
- Android Market
- Patrón de desbloqueo
- Aviso batería baja

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Evolución de Android

Android 1.5 Cupcake (2009)

- HTC Magic
- Teclado Virtual
- Panel de notificaciones renovado
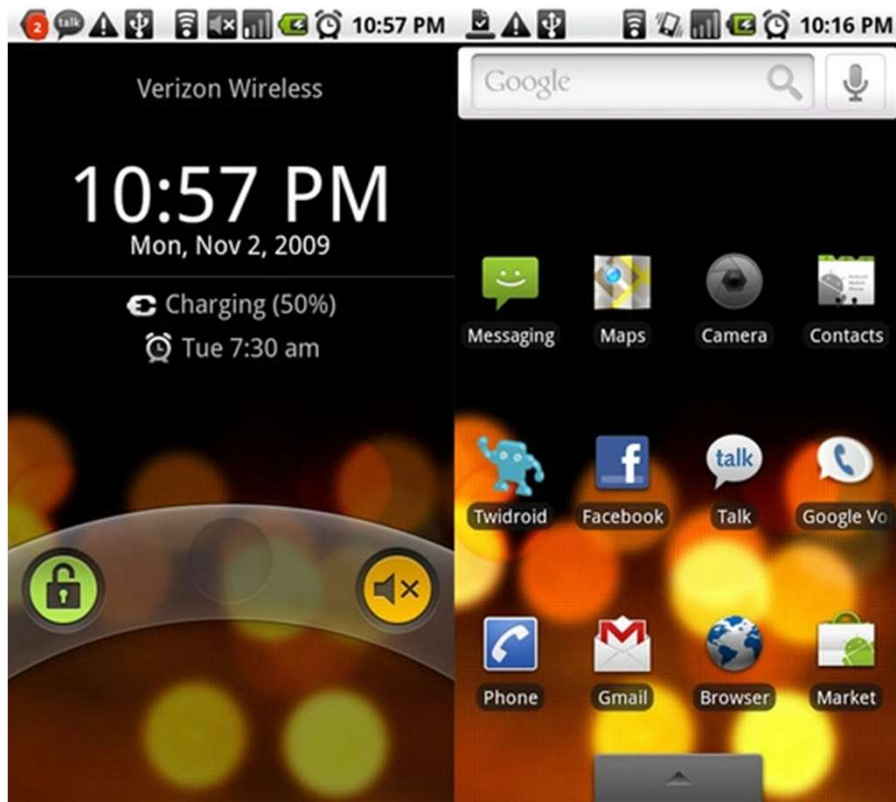- Widgets de Terceros
- Live Folders
- Grabar video móvil

Evolución de Android

Android 1.6 Donut (2009)

- Soporte para diferentes pantallas (size)
- Soporte redes CDMA
- Rediseño Android Market
- Sistema Texto a Voz
- Estado de batería

https://andro4all.com/2018/08/versiones-android-historia

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Evolución de Android

Android 2.0 Eclair (2009)

- Motorola Droid
- Rediseño pantalla de bloqueo
- Barra de búsqueda en inicio
- Navegación GPS Google Maps
- Brillo automático
- Escenas en la app de cámara

Evolución de Android

Android 2.1 Eclair (2010)

- HTC Nexus
- Fondos de pantalla animados
- Renovado cajón de aplicaciones
- Animaciones en interfaz
- Pinch-to-zoom

Evolución de Android

Android 2.2 Froyo (2010)

- Compilador Dalvik JIT
- Dock de aplicaciones en inicio
- Control de actualización de apps
- Soporte Adobe Flash
- Mover aplicaciones microSD
- Comandos de Voz

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Evolución de Android

Android 2.3 Gingerbread (2010)

- Renovación en diseño (color)
- Samsung Nexus S
- Conectividad NFC
- Overscroll
- Apis para Juegos

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Evolución de Android

Android 3.0 Honeycomb (2011)

- Diseñada para tablets
- Diseño Interfaz Holo
- Motorola Xoom
- Barra de navegación virtual
- Menú de aplicaciones recientes
- Panel de ajuste rápido

Evolución de Android

Android 4.0 Ice Cream Sandwich
(2011)

- Diseño Holo en móviles
- Samsung Galaxy Nexus
- Cajón de aplicaciones dual (Apps-Widgets)
- Carpetas de aplicaciones
- Redimensión Widgets
- Android Beam (NFC)
- Google Play Store (2012)

Evolución de Android

Android 4.1- 4.2 Jelly Bean (2012)

- Project Butter
- Reloj en panel de notificaciones
- Notificaciones ampliables
- Multicuenta
- Google Now
- Google Play Services
- LG Nexus 4 - Nexus 10

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Evolución de Android

Android 4.4 Kitkat (2013)
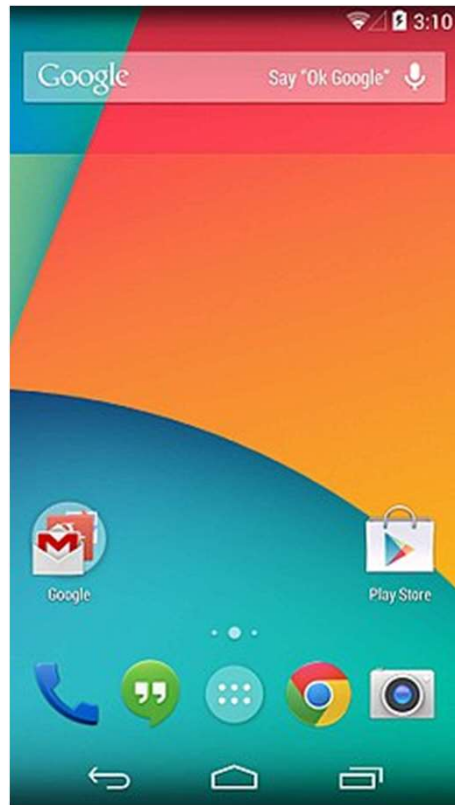
- LG Nexus 5
- Project Svelte (RAM)
- Holo blanco
- Modo inmersivo
- Ok Google
- Google Fotos

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Evolución de Android

Android 5 Lollipop (2014)
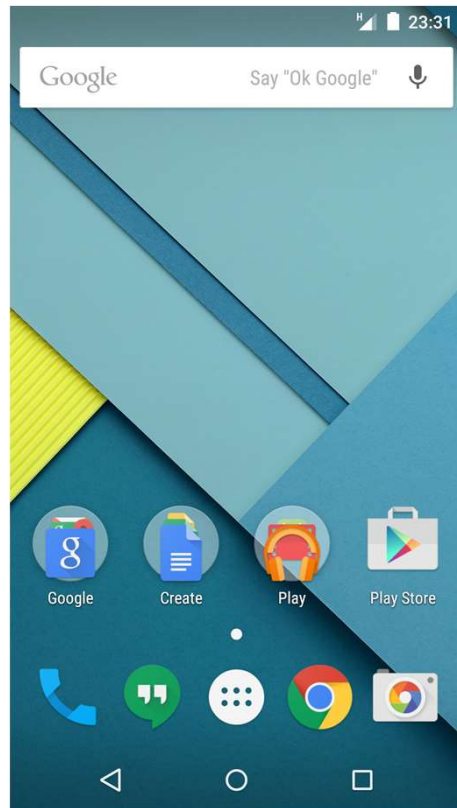
- Developer preview
- Material Design
- Panel de ajustes rápidos
- ART VM
- Project Volta (Batería)
- Control de notificaciones

Evolución de Android

Android 6 Marshmallow (2015)
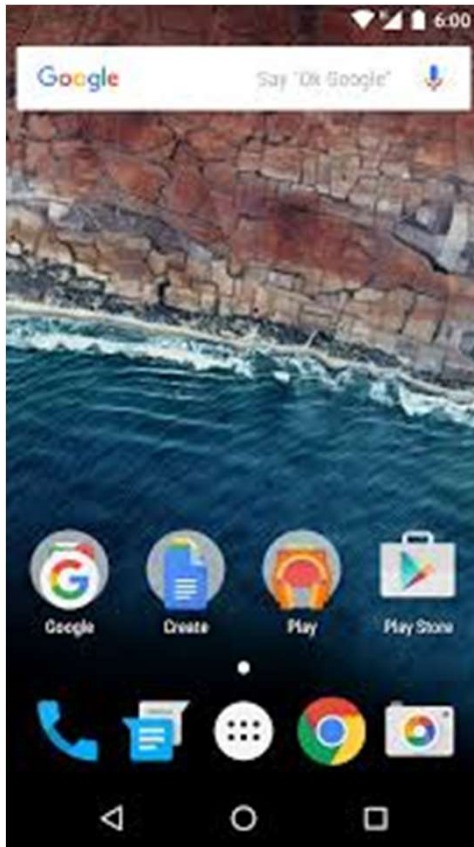
- Cajón de aplicaciones vertical
- Now on Tap
- Sistema de permisos de apps
- Sistema Doze (Batería)
- Adoptable Storage (SD)
- Avisos Peek
- Actualizaciones de seguridad
- Fingerprint Api

Evolución de Android

Android 7 Nougat (2016)

- Pixel
- Pantalla compartida
- Responder notificaciones
- Project Vulkan (Videojuegos)
- Accesos directos rápidos
- Seamless Updates

Evolución de Android

Android 8 Oreo (2017)
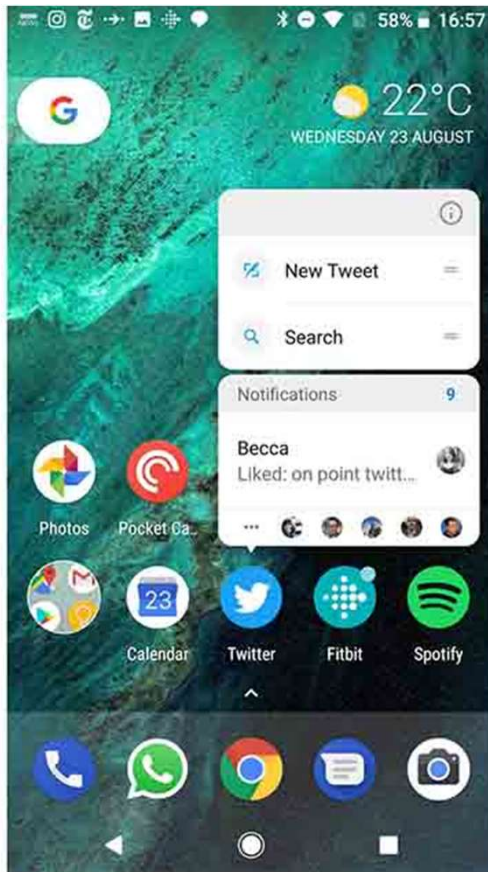
- Gestión de notificaciones
- Notification Dots y Badges
- Picture in Picture
- Project Treble (Fragmentación)
- Api Redes Neuronales

Evolución de Android

Android 9 Pie (2018)

- Material Theme
- Navegación por gestos
- Indoor Navigation
- Mejoras en ART y Doze
- Soporte dos cámaras
- Editor de Screenshots
- Android Go

Evolución de Android

Android 10 (2018)
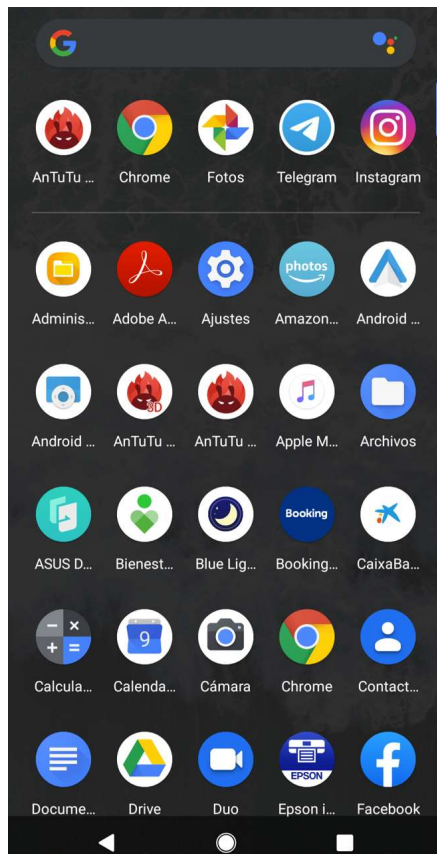
- Permisos más finos para apps
- Tema oscuro
- Modo escritorio
- Burbujas flotantes de notificaciones
- Sistema de gestos intuitivo
- Project Mainline (fragmentación)

https://andro4all.com/2018/08/versiones-android-historia

Evolución de Android

Android 11 (2020)
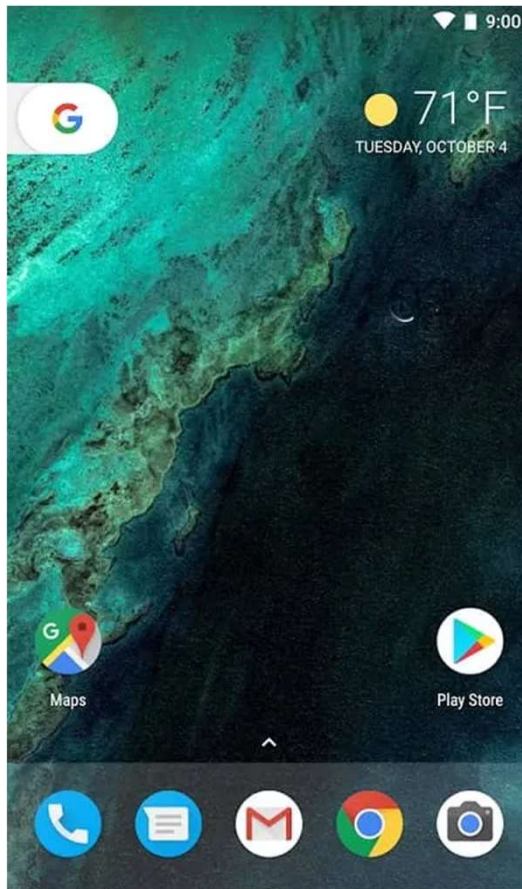
- Permisos de solo uso
- Mejoras para desarrolladores
- 5G
- Pantalla Plegable, Curvas

Arquitectura Plataforma Android
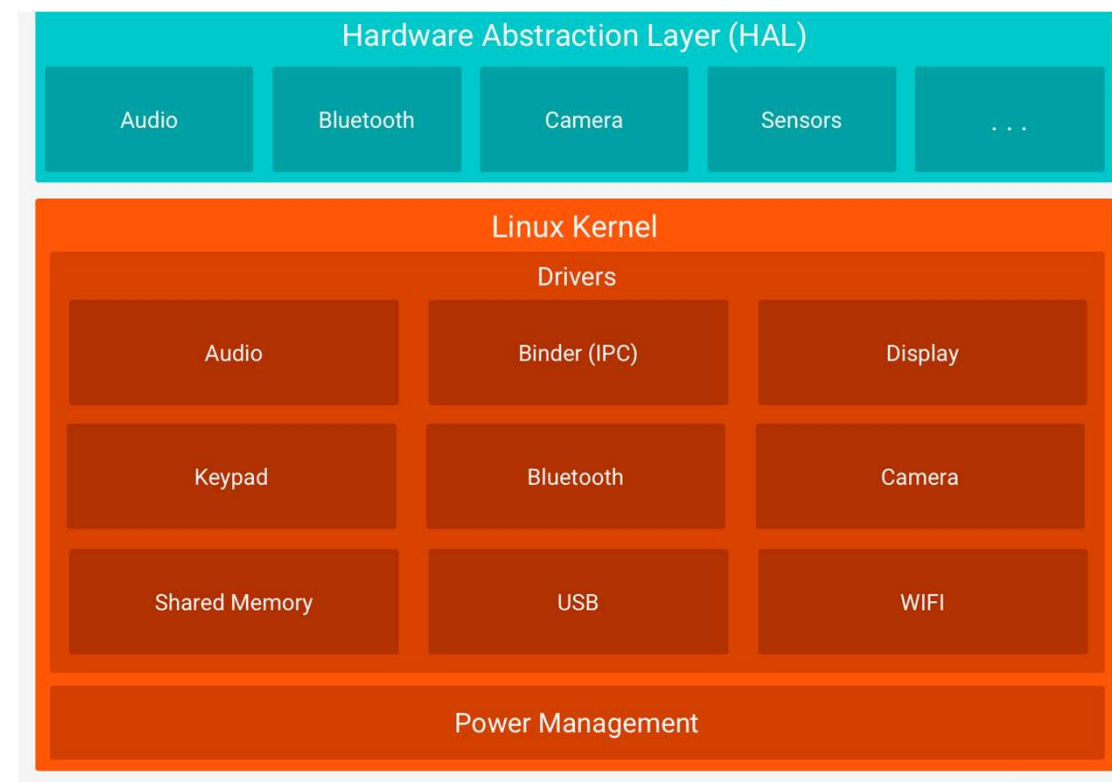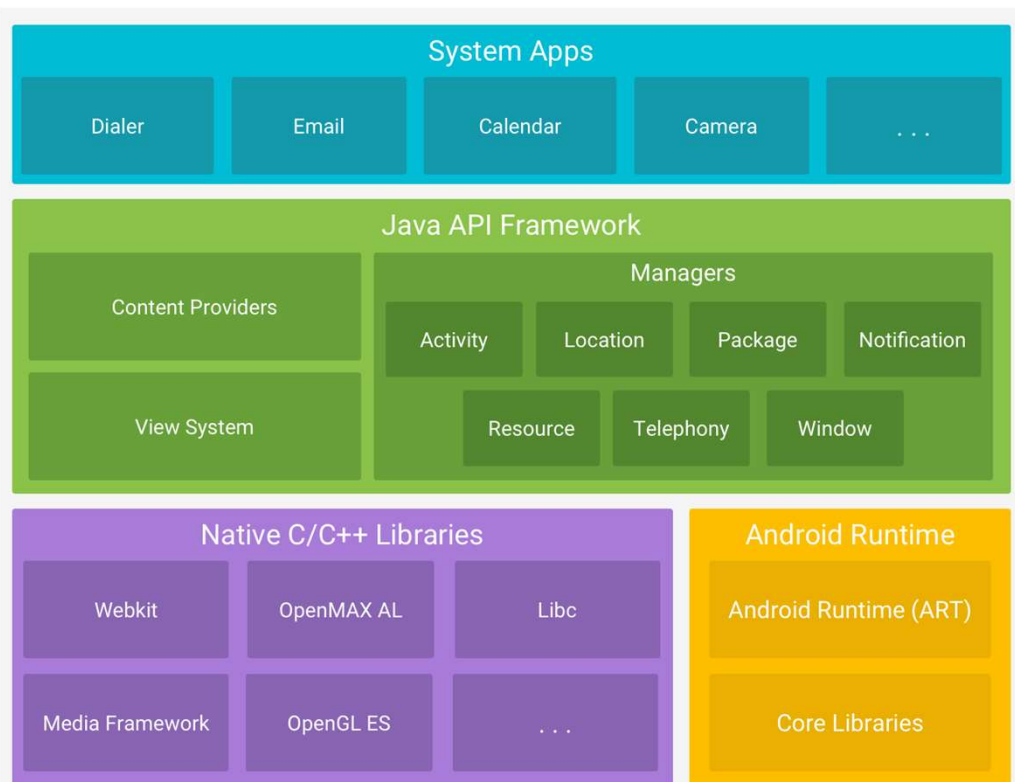
Herramientas de Desarrollo
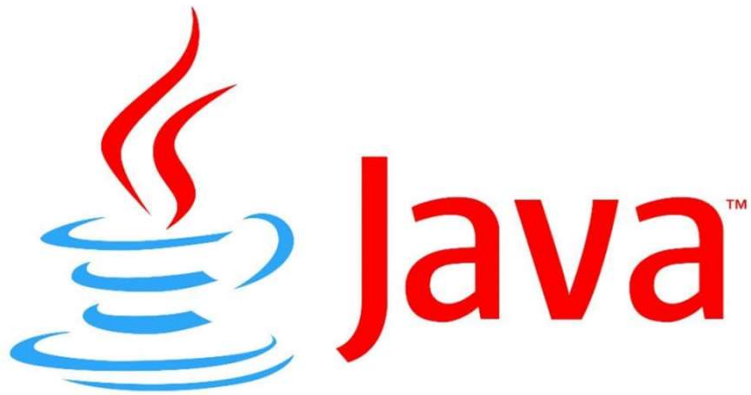
Herramientas de Desarrollo

Herramientas de Desarrollo

Pros	Cons
Java is multiplatform and works on practically any device, server or operating system	The syntax that Java uses can be a little complicated or cumbersome while comparing to other languages like C + or Python.
Java coding is robust, and it is impossible for Java instruction to corrupt memory or compromise data from other applications of OS X	With Java, it is impossible to access certain content that may be incompatible with the device or equipment being used.
Java is object-oriented and makes it easy to create modular applications and reuse the parts that contribute to the robustness	It isn't easy to access the new Java enhancements in mobile development.
It is ready to use, and with Java, you will get a lot of third-part code ready to be used.	There are times when Java causes problems with Android API design.
While comparing Kotlin vs Java performance, it to other languages, Java is easy to use, compiling and makes debugging and deploying even simpler	Test-Driven Development for Java requires writing more code and carries a much higher risk of programming errors and bugs
Java is an open-source language that ensures safety since many of its libraries are managed by trusted companies like Google, Apache, and others.	Java is a bit slower compared to other programming languages and takes a lot of system memory

https://www.xenonstack.com/blog/kotlin-andriod/

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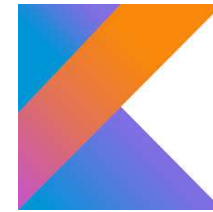
Herramientas de Desarrollo

Pros	Cons
Kotlin Application Deployment is faster to compile, lightweight, and prevent applications from increasing size.	Kotlin is not so popular, and so the developer community is sparse compared to other well-established languages like Java.
Any chunk of code written in Kotlin is much smaller compared to Java, as it is less verbose and less code means fewer bugs.	Kotlin matches weak patterns, and initial code readability becomes a bit difficult to read and understand at first.
Kotlin compiles the code to a bytecode which can be executed in the JVM. Thus, all the libraries and frameworks made in Java can be moved and run in a Kotlin project.	It has a small support community as Kotlin is younger than Java. Moreover, it has fewer libraries, blog posts and tutorials.
Kotlin script can be used to configure projects in Android Studio for auto-completion aids, and it helps to reduce compile-time error detection.	Kotlin has a steep learning curve, and switching teams to Kotlin because of language's concise syntax can be a real challenge.
Kotlin is safe against NullPointerException (The Billion Dollar Mistake).	There are very few Kotlin developers available in the market. So, finding an experienced mentor is quite tricky.
Kotlin incorporates coroutines, as well as interoperability with Javascript for web development.	

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Herramientas de Desarrollo

- Spotify
- Twitter
- Cash App
- Signal
- Amaze File Manager

- Pinterest
- Trello
- Evernote
- Twidere for Twitter
- Shadowsocks

https://www.xenonstack.com/blog/kotlin-andriod/

Herramientas de Desarrollo

Parameter	Java	Kotlin
Compilation	Bytecodes	Virtual Machine
Null Safety	X	√
Lambda Expression	X	√
Invariant Array	X	√
Non-private Fields	√	X
Smart Casts	X	√
Static Members	√	X
Wildcard Types	√	X
Singletons Objects	√	√

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	React Native	Xamarin	Ionic/Phonegap
What?	A framework for building native apps with React	Create iOS, Android and Mac apps in C#	Front-end framework for developing hybrid mobile apps in HTML5 and AngularJS.
Who Owns?	Facebook	Microsoft	Drifty/Phonegap
Why?	▪ Native iOS/android components ▪ Live Reload ▪ Great community ▪ fast development and test cycle ▪ Win-win solution of hybrid app ▪ Not dependent on other technologies ▪ Easy to start from Scratch ▪ Highly customizable	▪ No JavaScript - truly compiled code ▪ Powerful platform for .NET developers ▪ Ability to leverage visual studio ▪ Great customer support ▪ Native apps with native UI controls and Native performance ▪ Use of third-party .NET libraries ▪ Enables code re-use on server ▪ NuGet Package Manager	▪ Allows for rapid prototyping ▪ Extensibility ▪ Productivity ▪ Best Support and Community ▪ Easy setup, development and testing ▪ Material design support using theme ▪ User Friendly ▪ Removes 300ms delay in mobile browsers
Pros	1. Code reusability (most of the time) to develop applications for Android, iOS, Windows Phone. 2. Can use JSX to program your application, by using JSX you can write concise HTML/XML-like structures in the same file as you write JavaScript code 3. Much better performance than Cordova in Ionic. 4. ReactNative uses multiple cores simultaneously so your JavaScript code runs on one core and the app view runs on another core.	1. Xamarin has TestCloud which allows you to test your apps automatically 2. Provides 100% code reuse with Xamarin.Forms UI development using shared code base and logic. This saves lot of time and resources 3. Xamarin Performance is close to Native apps. 4. Supports patterns like MVC and MVVM 5. Xamarin.Android supports Google Glass devices, Android Wear and Firephone 6. Learning curve is relative. If team knows C#, it is comparatively easy to get started with Xamarin	1. Hybrid web development support and code reusability to develop applications for Android, iOS, Windows and web. 2. Fast development-testing cycle and no need for heavy emulator loading. 3. Allows to code in TypeScript and makes easy transition from AngularJS 2. 4. The same language (TypeScript) can be used to develop applications for every platform. 5. Its plugin system makes it available for you to use any kind of native functionalities of devices.
Cons	1. The process of conversion of HTML code to native code can be buggy at times, and to fix the problems, you need to understand ObjC/Swift. 2. Originally created for iOS, so many components for the Android may require some work from your side. 3. It's harder to understand how it works comparing, for example, with Cordova. Front-end developer should spend some time learning React Native to use it properly.	1. Does not provide access to certain Android specific UI controls. 2. Impacts load time as it has its own runtime 3. Xamarin is not supported to use open source libraries. 4. Xamarin apps occupies a few MB more than their native(iOS/android) apps.	1. Performance issues may occur if you need to use a lot of callbacks to the native code. 2. The same UI look in all the devices may be a deal breaker for those who prefer the native UI look. 3. Development of highly advanced graphics or highly interactive transitions can be a complex job.
Top Users	facebook, instagram, airbnb, Walmart	slack, pinterest, SIEMENS, Honeywell	CAT, NASA, DIESEL, TARGET

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Preguntas