

Android 13: internally codenamed Android Tiramisu

Harsha Harish Parmar¹

¹Master of Computer Application, ASM Institute of Management & Computer Studies

Abstract - Android is an open and free operating system based on Linux, which is mainly used for mobile terminals, such as smartphones and panel computers. It is developed by Open Handset Alliance composed of more than 30 technology companies and mobile phone companies. Android tries to allow users to experience the best service quality, and allow developers to get a more open level for more convenient software development.

“Welcome to the Android 13 Preview, a program that gives you everything you need to make your apps compatible with and build for the next version of Android.”

1. Introduction

Android 13 (internally codenamed Android Tiramisu) is the thirteenth and upcoming major release of the Android mobile operating system, developed by the Open Handset Alliance led by Google. The first phones to launch with Android 13 will be Google Pixel 7 and 7 Pro.

2. History

Android 13 (internally codenamed Tiramisu) was announced in an Android blog posted on February 10, 2022, and the first Developer Preview was immediately released for the Google Pixel series (from Pixel 4 to Pixel 6, dropping support for the Pixel 3 and Pixel 3a). It was released 4 months or so after the stable version of Android 12. Developer Preview 2 followed later, releasing in March. Beta 1 was released on April 26, 2022. Google released beta 2 during Google I/O on May 11, 2022. Two more beta versions are planned for release in June and July. Platform stability will be reached in June, with Beta 3. The final release of Android 13 will start in September.

3. Definition

Building on the foundation laid by Android 12, described by many as the biggest Android OS update since 2014, this year's upcoming Android 13 release refines the feature set and tweaks the user interface in subtle ways. However, it also includes many significant behavioral and platform changes under the hood, as well as several new platform APIs that developers should be aware of.

For large screen devices in particular, Android 13 also builds upon the enhancements and features introduced in Android 12L, the feature drop for large screen devices.

Android 13 is set for release later this year, but ahead of its public release, Google has shared preview builds so developers can test their applications. The preview builds provide an early

look at Android 13 and introduces many — but not all — of the new features, API updates, user interface tweaks, platform changes, and behavioral changes to the Android platform. In this article, we'll document all of the changes that we find so you can prepare your application or device for Android 13.

Although Android 13 reached Platform Stability with the third Beta release — meaning that the APIs and app-facing system behaviors have been finalized — future beta releases may still modify the feature set or the UI. In addition, Google has not publicly documented many of the changes in Android 13.

4. Features

4.1 Privacy: Android 13 includes several new features intended to enhance user privacy, both user-facing and developer-facing.

A new media picker is added, which improves privacy by allowing users to choose which photos and videos apps have access to. Most apps have not implemented this picker yet. In addition, 13 introduces a new permission, `NEARBY_WIFI_DEVICES`. Previously, Wi-Fi and GPS permissions were bundled into a single setting termed "Location". This change means that apps can now be allowed to search for nearby devices and networks without needing to request access to broader navigational systems.

Apps are now required to request permission from the user before they are able to send notifications.

Also, a new runtime permission feature is being added to apps sending non-exempt notifications which allows users to focus on notifications most important to them.

4.2 User experience: small changes to dialog windows such as the Internet toggle have been added, making them fit better with the design language. As of Developer Preview 2, the media player has been redesigned, now using the album cover as a background, and including more user controls. In the early previews, silent mode disabled vibration completely, including haptics. As of the beta versions, the old behavior has returned. The multiple users feature has been improved, with now the possibility of selecting which apps can be accessed from the guest user. App data is sandboxed between users, so no information is shared. A back-to-home animation preview is shown for compatible apps when the back gesture - if completed - will close the app.

4.3 New features: Support for Bluetooth LE Audio and the LC3 audio codec, which enable receiving and sharing audio between multiple Bluetooth devices simultaneously, can also improve the audio quality and battery life of the connected devices, as long as they also support it. This version opens the support for third-party apps to use themed Material Your icons. Long-pressing and dragging a notification will allow the notification to open in a split screen view. This feature is available on phones as well as tablets.

As of Beta 2, the Pixel launcher includes a new "unified" search bar, which is able to provide search results from the internet as well as local apps and activities. It seems that Google will be expanding the capabilities of this search tool in future releases.

4.4 Tweaks: Split Screen mode now persists through app changes, meaning it is possible to use other apps and the phone launcher, and split screen apps will stay paired together in the Overview menu. Animations have been improved, notably the fingerprint scanner glow on the Pixel 6 series. Overflow notifications on the lock screen also are housed in a dynamically sized pill rather than a bar, and the 2-line stacked clock is slightly smaller. The app label font has been changed in the Pixel Launcher, and subtle haptics have been added throughout the user experience. The version easter egg will remain the same as Android 12 until Platform Stability 2 with Beta 4, but the Android version has been changed to "Tiramisu" in settings and the Quick Settings panel. As of Developer Preview 2, "Tiramisu" is replaced with "13". The unified search bar includes new smoother animations and transitions.

Many of the changes are from Android 12.1 "12L", such as the dock displayed on large screens, and other improvements for large format devices. These are mainly intended for foldables and tablets, but it can be enabled on phones by changing the DPI settings.

5. CONCLUSIONS

Android 13 introduces great new features and APIs for developers. The sections below help you learn about features for your apps and get started with the related APIs. For a detailed list of new, modified, and removed APIs, read the https://developer.android.com/sdk/api_diff/t-dp1/changes. For details on new APIs visit the <https://developer.android.com/reference> — new APIs are highlighted for visibility. Also, to learn about areas where platform changes may affect your apps, be sure to check out Android 13 behavior changes for apps that target Android 13 visit <https://developer.android.com/about/versions/13/behavior-changes-13>.

References

- [1] Google
- [2] Wikipedia
- [3] Quora
- [4] Medium