

## A Quick Guide To Android

# INSTANT APPS

[www.indusnet.co.in](http://www.indusnet.co.in)



# Introduction

With every aspect of our life governed by apps, it wouldn't be outlandish to call our planet **"Planet of the Apps"**. From fitness, food, and shopping to dating, news, and chatting, we have an app for everything. The problem arises when an app installed on your phone is rarely used, like the one used only to order food at a specific restaurant you haven't visited for months. Such apps inadvertently occupy space on users' phones. They languish in phone memory for ages or till the time one uses it or god forbid, deletes it. Google found a solution to this problem with Android Instant Apps.

Instant apps are an offset to native apps and web apps with specific features available to users without them having to install the full version of the app from Play Store. For example, if a customer just wants to browse a popular shopping app to track fashion trends and not order anything, an instant app discharges only that specific function. If a user wishes to do more with the app, they can selectively add that feature to their instant app. There is no compromise on any account with respect to user interface, and instead, user experience touches a new high. This quick guide helps you to get a better understanding of Android Instant Apps.



# Advantages of Instant Apps

Android Instant Apps offer an innovative solution with swift and powerful user experience along with easy accessibility. Large apps are not easy to download due to heavy space requirements and slow mobile data connection. Instant apps obviate the need for a full app when you can avail specific features of an app on demand. The idea behind instant app technology is to allow users to launch the app with minimum features from Google Play without installing it. When users tap on a web link to launch instant app, the device loads a modular version of native app already on Google Play. And as soon as the user closes the browser, the app disappears. Google even added “Try Now” button on Play Store listings to highlight Android Instant Apps.



## 01 Easy Accessibility

Instant apps are easily accessible from any URL including search, social media, messaging, and deep links. The app is available to use without installation allowing simple and quick user access.



## 02 Innovation Potential

Instant apps will drive innovation among developers. Developers will compete to provide the best possible user experience amid app size limitations so that users feel inclined towards installing the full app to explore its full potential.



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## Convenience

Instant apps give you access to all the necessary features that you can add or remove selectively. It even allows users to make instant purchases using Android Pay. Moreover, with instant apps user interface of native app comes to mobile browser.



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## Download Selectively

Instant apps give opportunity to users to try the app before installing it. Users who find the app suitable and designed to their taste will not shy away from downloading the full version. So the actual number of downloads will indicate users happily using the app.



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## Free Up Space

Instant apps are allotted a size limit of 4 MB. Developers will have to make sure that they restrict the app size to as little as possible without negotiating the aesthetic and design value of app. This is great news for users struggling to save device memory by uninstalling apps and deleting media files.



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## Search & Use Instantly

Mobile users searching for instant app on Google come across a web link or a link directing them to Play Store. Users can instantly launch the app by tapping the URL saving a lot of time.





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## Shareable

Instant apps are accessible via a minimal web link making it extremely easy to be shared among friends across social media or messengers. Because the app can be used without installation, the sharable value of instant apps is very high.

### CHAPTER 2

# Technical Benefits of Android Instant Apps

Instant apps allow developers to build the apps in a modular format along with deep links that enable users to use a part of an app they are interested in. Modularization of simple instant app projects should not take more than a day whereas complicated projects may take longer. Users can easily share their experience from within the app with a link allowing their friends to solve a specific crossword or buy a specific product without installing the app. Instant apps can provide access to most of the features available to native apps like camera, location access, in-app purchases, vibration, and phone contacts. The experience of browsing is much more interactive and immersive with instant apps. Developers must follow these best practices to assure a seamless user experience on instant apps.



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## One Project for Both Versions

Because instant apps use the same technology as native app, a single project with a single source tree is sufficient to maintain and run the app without the necessity to re-write the source code. And the same project can be configured to deliver installable and instant app version.



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## Extensive NDK Support

Instant apps are currently compatible with devices with Android 5.0 (API level 21) and higher. However, soon they will be available for devices dating back to Jelly Bean



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## Seamless Navigation

Navigation between different activities is facilitated using a dedicated URL for every feature. One of the important features is App Links Assistant that makes it easy for developers to insert links within the app so that they are aware what links launch what part of the app.



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## Functionally Modular

Android Studio 3.0 and higher provides developers with the right set of tools to modularize their apps. The modules are classified as base feature module and individual feature modules. The resources in the base feature module are available for all other modules.



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## Multiple activities Within a Single Feature

Instant apps allow you to accommodate multiple activities within a feature provided every feature has a single activity as its entry point.

### CHAPTER 3

# Business Benefits of Android Instant Apps

Android Instant Apps are a boon to businesses because, they directly help discoverability, usability, and customer satisfaction. Most applications that are developed and launched usually languish on devices without ever being used. Android Instant Apps make sure that there is a higher chance of your app being used by a user simply because one doesn't have to download the entire application. Let us take a look at some of the business benefits.



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## Improves Discoverability of App

Instant apps are easily searchable through web search and it can be instantly launched. Users can choose between full installation and instant app version via Google Play. Both versions of the app have the same icon to avoid ambiguity.



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## **Analytics**

With multiple entry points for customers to engage with a business, businesses can actively analyze core user metrics rather than focusing on number of app downloads to have a precise understanding of customer behavior.



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## **Competitive Advantage**

You can launch different individual feature instant apps for different marketing campaigns and achieve your business goals faster with higher ROI.



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## **Customer Engagement**

Instant app links are easily sharable across social media and chat messengers. Multiple instant apps can run in parallel. There are endless ways for businesses to engage customers.



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## **Customer Retention**

With instant apps, it is not obligatory for customers to install your app but they can use only those features which they need to make their lives simple. By beating storage woes of native app and poor browsing experience of mobile web app, the added option to use instant apps will aid your customer retention efforts.



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## Customer Acquisition

Ecommerce businesses have long been incentivizing customers to install their apps. However, such efforts become futile when customers uninstall the app. With instant apps there is no barrier for customers to use your app. It saves customer time and they also get a chance to try your services before they decide to install the full app.



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## Enhanced UX

Customers enjoy a rich immersive experience at a fast speed, with lightweight instant apps. The probability of customers abandoning the cart goes down drastically with superior user experience thereby improving conversion rates.



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## Customer Targeting

Instant apps are accessible from any location that supports URLs giving you countless opportunities to target new customer base. Moreover, instant app usage can be restricted to specific countries.

# A Few Restrictions

It is important to note that instant app can only be launched if the corresponding full app is available on Google Play. Apart from that, there are certain limitations currently to what instant apps can do. Incorporating rich multimedia and videos is still a challenge for instant apps. 3D video games and other apps with special requirements like unique tools, high performance, and large assets may not find instant apps suitable. Even so, Google is open to explore such use cases. 2D games with limited requirements may use instant apps.

Besides that, instant apps do not have the ability to change phone's wallpaper, send push notifications, and use background services. Due to its inability to access sensitive device or user information, instant apps may need to prompt users for gaining permissions during runtime. Apart from that, installed apps will be accessible to instant apps only if they are made discoverable to them.

## Statistics & Trivia

1. Google [recently launched Agones](#), which it describes on its website as "an open source, multiplayer, dedicated game-server hosting which is built on Kubernetes". Agones could be used alongside Instant Apps to make playing games easier for players, no matter how complex.
2. It takes only 4-6 weeks to build and develop Instant App.
3. Recently, Google updated its instant app programming kit. This update enables developers to target specific chips, languages, and displays. [Google claims](#) this saves almost 10% space, which makes Instant App even faster.

4. More than **500 million devices** were using Android Instant Apps back in August 2017.
5. More than 50% of people **cannot distinguish** between sponsored links and organic links in search results.
6. Almost 42% of people **do not download** new applications and simply continue to use what they have on their cellphones.
7. Average smartphone user **spends almost** 2.3 hours per day on applications.
8. Android has a global **mobile OS share** of 88%.
9. In China, Android has a **market share** of 77%.
10. An estimated 1 billion Android devices are outdated, and **will not be updated**. These may still be able to run Instant Apps.



# How to Get Started

For building an Android Instant App, you must incorporate standard principles of discoverability with Android App Links; privacy and security with runtime permissions API; and performance with small modular binaries. To get started with instant apps, you need a set of development tools, project structure, and publishing console. Android Studio 3.0 enabled with out-of-the-box instant app support is the first step to create instant app project.

The next step is to install Android Instant Apps SDK through SDK Manager. This allows you to build, run, test, and debug instant apps directly from Integrated Development Environment. Instant apps require you to load binaries on demand using feature module. Feature module allows you to extract specific features into their own modules. Set up the project by taking the common code from your existing application module and put it in a base feature module. So, for a given entry point, you only load the base module and the corresponding feature module.

Other entry points can easily be added using App Links Assistant built in Android Studio. Apart from on-device support, you can also use [emulator support](#) to ensure fast and easy local development. You can load more feature modules in the instant app based on user demand. Therefore, the same project structure allows you to build instant app as well as installable app. Once the instant app is ready, you can use Google Play Console to publish the app.



# References

<https://developer.android.com/topic/instant-apps/faqs.html>

<https://developer.android.com/topic/instant-apps/ux-best-practices.html>

<https://www.androidauthority.com/android-instant-apps-693316/>

<https://www.cleveroad.com/blog/android-instant-apps--introduction-to-cutting-edge-technology-from-google>

<https://www.concettolabs.com/blog/progressive-web-apps-vs-android-instant-apps-which-is-rated-higher-by-marketer/>

<https://www.spaceotechnologies.com/android-instant-apps-startups-benefits/>

<https://oneteam.us/6-benefits-of-android-instant-apps/>

[https://www.devbattles.com/en/sand/post-7582-Advantages\\_of\\_Instant\\_Apps\\_technology](https://www.devbattles.com/en/sand/post-7582-Advantages_of_Instant_Apps_technology)

<http://www.androidguys.com/2018/02/02/how-to-use-instant-apps-on-your-android-device/>

<https://www.mindinventory.com/blog/android-instant-apps-now-available-to-all-android-developers/>

<https://www.theverge.com/2017/10/19/16502198/google-android-instant-apps-play-store-try-it-now-button>

<https://code.tutsplus.com/tutorials/what-are-android-instant-apps--cms-29283>

<https://www.youtube.com/watch?v=X3-lgeHLFAY>

<https://developer.android.com/topic/instant-apps/faqs.html>

<https://www.upwork.com/hiring/mobile/should-you-update-your-android-app-to-android-instant-apps/>

<https://clevertap.com/blog/how-to-get-started-with-android-instant-apps/>

<https://www.articlecube.com/three-lucrative-benefits-android-instant-apps-smes>

<https://developer.android.com/topic/instant-apps/getting-started/structure.html>

<https://developer.android.com/topic/instant-apps/getting-started/index.html#app-links>