

Part 2 - Publishing an Application on Google Play

Although there are many app markets for distributing an application, Google Play is arguable the largest and most visited store in the world for Android apps. Google Play provides a single platform for distributing, advertising, selling, and analyzing the sales of an Android application.

This section will cover topics that are specific to Google Play, such as registering to become a publisher, gathering assets to help Google Play promote and advertise your application, guidelines for rating your application on Google Play, and using filters restrict the deployment of an application to certain devices.

Requirements

To distribute an application through Google Play, a developer account must be created. This only needs to be performed once, and does involve a one time fee of \$25USD.

All applications need to be signed with a cryptographic key that expires after October 22, 2033.

The maximum size for an APK published on Google Play is 50MB. If an application exceeds that size, Google Play will allow extra assets to be delivered through *APK Expansion Files*. Android Expansion files permit the APK to have 2 additional files, each of them up to 2GB in size. Google Play will host and distribute these files at no cost. Expansion files will be discussed in another section.

Google Play is not globally available. Some locations may not be supported for the distribution of applications.

Becoming a Publisher

In order to publish applications on Google play it is necessary to have a publisher account. To sign up for a publisher account follow these steps:

1. Visit the Google Play Android Developer console at <https://play.google.com/apps/publish>.
2. Enter basic information about your developer identity.
3. Read and accept the Developer Distribution Agreement for your locale.
4. Pay the \$25 USD registration fee.
5. Confirm verification by e-mail.
6. After the account has been created it is possible to publish applications using Google Play.

Google Play does not support all countries in the world. The most up to date lists of countries can be found

in the following links:

1. [Supported Locations for Free Publishers](#) – This is a list of all countries where developers may register as publishers.
2. [Supported Locations for Merchants](#) – This is a list of all countries where developers may register as merchants and sell paid applications.
3. [Supported Locations for Distributing Applications](#) – This is a list of all countries where applications may be distributed.

Preparing Promotional Assets

In order to effectively promote and advertise an application on Google Play, Google allows developers to submit promotional assets such as screenshots, graphics, and video to be submitted. Google Play will then use those assets to advertise and promote the application.

Launcher Icons

A *launcher icon* is a graphic that represents an application. They should be a 32-bit PNG with an alpha channel for transparency. An application should have icons for all of the generalized screen densities as outlined in the table below:

ldpi (120dpi) mdpi (160dpi) hdpi (240dpi) xhdpi (320dpi)

36 x 36 px 48 x 48 px 72 x 72 px 96 x 96 px

Launcher icons are of the first thing that a user will see of an application on Google Play, so care should be taken to make the launcher icon visually appealing and meaningful.

Tips for Launcher Icons:

1. **Simple and uncluttered** – Launcher icons should be kept simple and uncluttered. This means excluding the name of the application from the icon. Simpler icons will be more memorable, and will be easier to distinguish at the smaller sizes.
2. **Icons should not be thin** – Overly thin icons will not stand out well on all backgrounds.
3. **Use the alpha channel** – Icons should make use of the alpha channel, and should not be full-framed images.

High Resolution Application Icon

Applications on Google Play require a high fidelity version of the application icon. It is only used by Google Play, and does not replace the application launcher icon. The specifications for the high-resolution icon are:

1. 32-bit PNG with an alpha channel
2. 512 x 512 pixels
3. Maximum size of 1024KB

The [Android Asset Studio](#) is a helpful tool for creating suitable launcher icons and the high-resolution application icon.

Screen shots

Google play requires a minimum of two and a maximum of eight screen shots for an application. They will be displayed on an application's details page in Google Play.

The specs for screen shots are:

1. 24 bit PNG or JPG with no alpha channel
2. 320w x 480h OR 480w x 800h OR 480w x 854h. Landscaped images will be cropped.

Promotional Graphic

This is an optional image used by Google Play.

1. It is a 180w x 120h 24 bit PNG or JPG with no alpha channel
2. No border in art.

Feature Graphic

Used by the featured section of Google Play. This graphic may be displayed alone without an application icon.

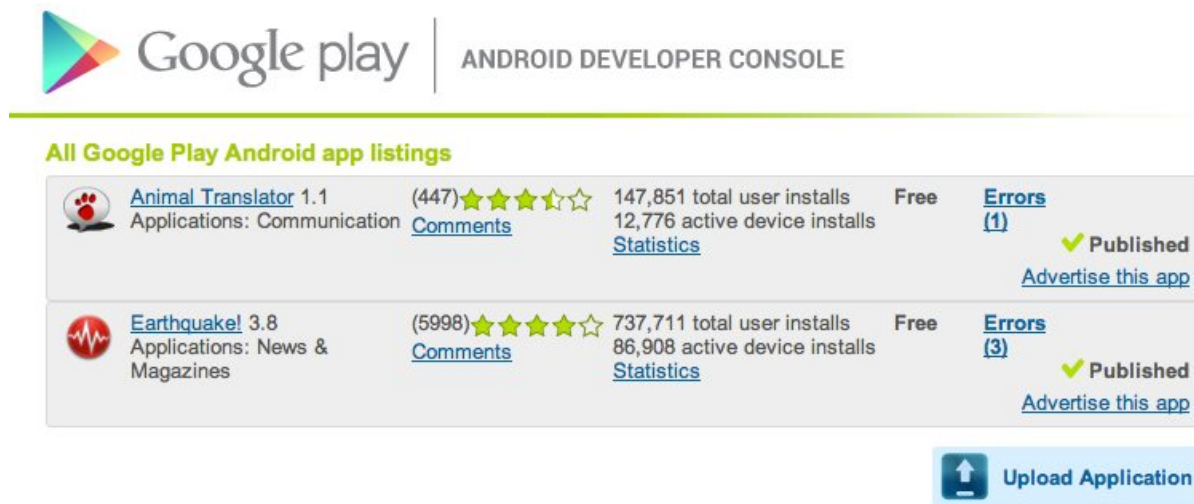
1. 1024w x 500h PNG or JPG with no alpha channel and no transparency.
2. All of the important content should be within a frame of 924x500. Pixels outside of this frame may be cropped for stylistic purposes.
3. This graphic may be scaled down: use large text and keep graphics simple.

Video Link

This is a URL to a YouTube video showcasing the application. The video should be 30 seconds to 2 minutes in length and showcase the best parts of your application.

Uploading the APK

Once the APK has been compiled and the promotional assets prepared the application must be uploaded to Google Play. This is done by logging in to the Google Play Android Developer Console, pictured below:

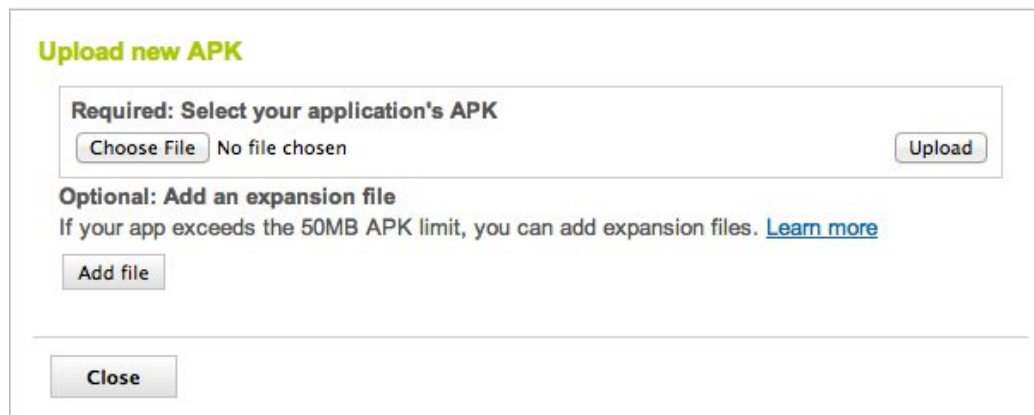


The screenshot shows the Google Play Android Developer Console interface. At the top, the Google Play logo and 'ANDROID DEVELOPER CONSOLE' are visible. Below this, a section titled 'All Google Play Android app listings' displays two app entries:

App Name	Version	Category	Reviews	Installs	Price	Status	Actions
Animal Translator	1.1	Communication	(447) 4 stars	147,851 total user installs, 12,776 active device installs	Free	Published	Errors (1) , Advertise this app
Earthquake!	3.8	News & Magazines	(5998) 4 stars	737,711 total user installs, 86,908 active device installs	Free	Published	Errors (3) , Advertise this app

At the bottom right, there is a blue button labeled 'Upload Application' with an upward arrow icon.

Clicking on the Upload Application button will initial the process of distributing an application by displaying a dialog to upload an APK:



The 'Upload new APK' dialog box contains the following elements:


- Required: Select your application's APK**
 - A 'Choose File' button and the text 'No file chosen'.
 - An 'Upload' button.
- Optional: Add an expansion file**
 - Text: 'If your app exceeds the 50MB APK limit, you can add expansion files. [Learn more](#)'
 - An 'Add file' button.
- A 'Close' button at the bottom left.

Upload the release-ready APK that is to be distributed and any APK expansion files that may be required by the application. Once the APK is uploaded, it is saved as a draft. It cannot be published until more details are provided to Google Play. The product details page is broken up into several sections to capture this information; each described in more detail below.

Upload Assets

All of the promotional assets that were prepared are uploaded in this section. This section does contain mandatory fields. The page does provide guidance as to what promotional assets must be provided and

what format they should be provided in. A screen shot of the Upload Assets section appears below:

 **Google play** | **ANDROID DEVELOPER CONSOLE**

Edit Application

Publish






Save

Product details

APK files


Upload assets

Screenshots
at least 2
[add another](#)




[Replace this image](#) | [delete](#)

High Resolution Application Icon
[\[Learn More\]](#)




[Replace this image](#) | [delete](#)

Promotional Graphic
optional



[Replace this image](#) | [delete](#)

Feature Graphic
optional
[\[Learn More\]](#)



[Replace this image](#) | [delete](#)

Screenshots:
320 x 480, 480 x 800, 480 x 854,
1280 x 720, 1280 x 800
24 bit PNG or JPEG (no alpha)
Full bleed, no border in art
You may upload screenshots in landscape orientation. The thumbnails will appear to be rotated, but the actual images and their orientations will be preserved.

High Resolution Application Icon:
512 x 512
32 bit PNG or JPEG
Maximum: 1024 KB

Promo Graphic:
180w x 120h
24 bit PNG or JPEG (no alpha)
No border in art

Feature Graphic:
1024 x 500
24 bit PNG or JPEG (no alpha)
Will be downsized to mini or micro

Listing Details

The section is used to enter the information that Google Play will display to potential users of the application. It is also where supported languages may be specified, and the application can be categorized.

Listing details

Language	add language	*English (en) Star sign (*) indicates the default language.
Title (English)	<input type="text" value="Hello Mono for Android"/> 28 characters (30 max)	
Description (English)	<div><input type="text" value="This is a Hello World type application developed using Mono For Android"/></div> 71 characters (4000 max)	
Recent Changes (English)	<div><input type="text"/></div> 0 characters (500 max)	
Promo Text (English)	<div><input type="text"/></div> 0 characters (80 max)	
Application Type	<input type="text" value="Applications"/>	
Category	<input type="text" value="Education"/>	

Publishing Options

This section is used to specify options that can affect what devices will be able to download the application, such as:

1. **Copy Protection** – This is deprecated. If an application needs to enforce licensing policies then the *Google Licensing Services* should be used instead. The Google Licensing Services will be discussed in more detail later on in this document.
2. **Content Rating** – Google Play requires that all applications specify a content rating. Guidelines for content rating will be discussed later on in this document.
3. **Countries Distribution** – This allows control over what countries an application may be distributed to.
4. **Pricing** – This option allows a price to be set for paid applications, or the application can be distributed free of charge to all users. Once an application is specified as free, it must remain free. Google Play will not allow an application that is free to change to a priced app. It is possible to sell content with in-app billing with a free app. Google Play will allow a paid app to change at any time to a free app.

The following screenshot shows a sample of the Publishing Options for an application:

Publishing options

Copy Protection

- ☒ Off (Application can be copied from the device)
☐ On (Helps prevent copying of this application from the device. Increases the amount of memory on the phone required to install the application.)

The copy protection feature will be deprecated soon, please use [licensing service](#) instead.

Content Rating

[\[Learn More\]](#)

- ☐ High Maturity
☐ Medium Maturity
☐ Low Maturity
☐ Everyone

Pricing

Free

☒ All Countries

☒ [Argentina](#)

☒ [Australia](#)

☒ [Austria](#)

☒ [Belgium](#)

☒ [Brazil](#)

☒ [Bulgaria](#)

☒ [Cameroon](#)

☒ [Canada](#)

☒ [Côte d'Ivoire](#)

☒ [Cyprus](#)

☒ [Czech Republic](#)

☒ [Denmark](#)

☒ [Estonia](#)

☒ [Finland](#)

☒ [France](#)

☒ [Germany](#)

☒ [Ghana](#)

☒ [Greece](#)

☒ [Hong Kong](#)

☒ [Hungary](#)

☒ [Iceland](#)

☒ [India](#)

☒ [Ireland](#)

☒ [Israel](#)

☒ [Italy](#)

☒ [Japan](#)

☒ [Kenya](#)

☒ [Latvia](#)

☒ [Lithuania](#)

☒ [Luxembourg](#)

☒ [Malta](#)

☒ [Mexico](#)

☒ [Netherlands](#)

☒ [New Zealand](#)

☒ [Nicaragua](#)

☒ [Norway](#)

☒ [Philippines](#)

☒ [Poland](#)

☒ [Portugal](#)

☒ [Romania](#)

☒ [Russia](#)

☒ [Senegal](#)

☒ [Singapore](#)

☒ [Slovakia](#)

☒ [Slovenia](#)

☒ [South Africa](#)

☒ [South Korea](#)

☒ [Spain](#)

☒ [Sweden](#)

☒ [Switzerland](#)

☒ [Taiwan](#)

☒ [Thailand](#)

☒ [Turkey](#)

☒ [Ukraine](#)

☒ [United Kingdom](#)

☒ [United States](#)

☒ Rest of the world, except for:

☐ Albania

☐ Algeria

☐ Angola

☐ Antigua and Barbuda

☐ Armenia

☐ Aruba

☐ Azerbaijan

☐ Bahamas

☐ Bahrain

☐ Bangladesh

☐ Belarus

☐ Belize

☐ Benin

☐ Bosnia and Herzegovina

☐ Botswana

☐ El Salvador

☐ Fiji

☐ Gabon

☐ Guatemala

☐ Guinea-Bissau

☐ Haiti

☐ Honduras

☐ Indonesia

☐ Jamaica

☐ Jordan

☐ Kazakhstan

☐ Kuwait

☐ Kyrgyzstan

☐ Lebanon

☐ Macedonia (FYROM)

☐ Oman

☐ Pakistan

☐ Panama

☐ Papua New Guinea

☐ Paraguay

☐ Peru

☐ Qatar

☐ Rwanda

☐ Saudi Arabia

☐ Serbia

☐ Sri Lanka

☐ Tajikistan

☐ Tanzania

☐ Timor-Leste

☐ Tunisia

<input type="checkbox"/> Burkina Faso <input type="checkbox"/> Cambodia <input type="checkbox"/> Cape Verde <input type="checkbox"/> Chile <input type="checkbox"/> China <input type="checkbox"/> Colombia <input type="checkbox"/> Costa Rica <input type="checkbox"/> Croatia <input type="checkbox"/> Dominican Republic <input type="checkbox"/> Ecuador <input type="checkbox"/> Egypt	<input type="checkbox"/> Malaysia <input type="checkbox"/> Mali <input type="checkbox"/> Mauritius <input type="checkbox"/> Moldova <input type="checkbox"/> Morocco <input type="checkbox"/> Mozambique <input type="checkbox"/> Namibia <input type="checkbox"/> Nepal <input type="checkbox"/> Netherlands Antilles <input type="checkbox"/> Niger <input type="checkbox"/> Nigeria	<input type="checkbox"/> Turkmenistan <input type="checkbox"/> Uganda <input type="checkbox"/> United Arab Emirates <input type="checkbox"/> Uruguay <input type="checkbox"/> Uzbekistan <input type="checkbox"/> Venezuela <input type="checkbox"/> Vietnam <input type="checkbox"/> Yemen <input type="checkbox"/> Zambia <input type="checkbox"/> Zimbabwe
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Supported Devices [\[Learn More\]](#)

This application is only available to devices with these features, as defined in your application manifest.

This application is available to over 0 devices.

Contact Information

This section is used to collect contact information about the developer of the application.

Contact information

Website

Email

Phone

Enable Google Cloud Messaging Stats

This is an optional section. If the application makes use of Google Cloud Messaging or the now deprecated Cloud 2 Device Messaging, the ID's or tokens would be entered here.

Enable Google Cloud Messaging Stats

Google Cloud Messaging (GCM) is a service that helps you to send data from your servers to your applications. Link your GCM sender ID with the app to enable stats. [\[Learn more\]](#)

You can add up to three GCM sender IDs by providing a GCM API Key or C2DM Client Login Token.

GCM Sender ID 1

GCM Sender ID 2

GCM Sender ID 3

Consent

This is a mandatory section and is used to declare that the application meets the [Android Content Guidelines](#) and acknowledgement that the application is subject to U.S. export laws

Consent

☐ This application meets [Android Content Guidelines](#)

☐ I acknowledge that my software application may be subject to United States export laws, regardless of my location or nationality. I agree that I have complied with all such laws, including any requirements for software with encryption functions. I hereby certify that my application is authorized for export from the United States under these laws. [\[Learn More\]](#)

Guidelines for Content Rating

All applications on Google Play must be rated according to the Google Play ratings system. In addition to the content rating, all applications must adhere to Google's [Developer Content Policy](#).

The following table shows the four levels in the Google Play rating system and provides some guidelines as features or content that would require or force the rating level.

Content Guidelines

Rating

Everyone May not access, publish, or share location data.

May not host any user-generated content.

May not enable communication between users.

Low maturity Applications that access, but do not share, location data
Depictions of mild or cartoon violence

Medium maturity References to drugs, alcohol or tobacco.

Gambling themes or simulated gambling

Inflammatory content

Profanity or crude humor.

Suggestive or sexual references.

Intense fantasy violence

Realistic violence

Allowing users to find each other

Allowing users to communicate with each other.

Sharing of a user's location data

High maturity A focus on the consumption or sale of alcohol, tobacco, or drugs

A focus on suggestive or sexual references

Graphic violence.

The items in Medium maturity list are subjective. As such it is possible a guideline that may seem to dictate a Medium maturity rating may be intense enough to warrant a High maturity rating.

Google Play Filters

When users browse the Google Play website for applications, they are able to search all published applications. When users browse Google Play from an Android device, the results are slightly different. The results will be filtered according to compatibility with the device that is being used. For example, if an application must send SMS messages, then Google Play will not show that application to any device which cannot send SMS messages.

The filters that are applied to a search are created from the following:

1. The hardware configuration of the device.
2. Declarations in the applications manifest file.
3. The carrier that is used (if any).
4. The location of the device.

The following table shows the manifest elements and attributes that can be used to filter applications:

Manifest Element	Description
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<u><supports-screen></u>	Google Play will use the attributes to determine if an application can be deployed to a device based on the screen size. Google Play will assume that Android can adapt smaller layout to larger screens, but not vis-versa. So an application that declares support for normal screens will appear in searches for large screens, but not small screens.
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If a Xamarin.Android application does not provide a <supports-screen> element in the manifest file, then Google Play will assume all attributes have a value of true and that the application supports all screen sizes.

This element must be added to AndroidManifest.xml manually.

[<uses-configuration>](#) This manifest element is used to request certain hardware features such as the type of keyboard, navigation devices, a touch screen, etc.

This element must be added to AndroidManifest.xml manually.

[<uses-feature>](#) This manifest element declares hardware or software features that a device must have in order for the application to function.

This attribute is informational only. Google Play will not display the application to devices that do not meet this filter. It is still possible to install the application by other means (manually or downloading).

This element must be added to AndroidManifest.xml manually.

[<uses-library>](#) This element specifies that certain shared libraries must be present on the device, for example Google Maps.

This element may also be specified with the `Android.App.UsesLibraryAttribute`. For example:

```
[assembly: UsesLibrary("com.google.android.maps", true)]
```

[<uses-permission>](#) This element is used to infer certain hardware features that are required for the application to run that may not have been properly declared with a `<uses-feature>` element.

For example, if an application requests permission to use the camera, then Google Play assumes that devices must have a camera, even if there is no `<uses-feature>` element declaring the camera.

This element may be set with the `Android.App.UsesPermissionsAttribute`. For example:

```
[assembly: UsesPermission(Manifest.Permission.Camera)]
```

[<uses-sdk>](#) The element is used to declare the minimum Android API Level required for the application.

This element may be set in the `Xamarin.Android` options of a `Xamarin.Android` project.

[<compatible-screens>](#) This element is used to filter applications that do not match the screen size and density specified by this element.

Most applications should not use this filter. It is intended for specific high performance games or applications that required strict controls on application distribution. The <support-screen> attribute mentioned above is preferred.

[<supports-gl-texture>](#) This element is used to declare GL texture compression formations that the application requires.

Most applications should not use this filter. It is intended for specific high performance games or applications that required strict controls on application distribution.

[Part 3 - Google Licensing Services](#)