

Stegano  
User Manual

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April 2021

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## Introduction

The document will highlight how to run and use “Stegano”. Since the app was designed and produced in android studio, the app needs Android studio to be installed for it to be able to run.

## Downloading Android Studio

Once Android studio is installed, stegano can be opened by navigating to “File -> Open” and finding the folder related to stegano. This will import all the required files into your workspace. Note that emulator software will also be required. This can be found by accessing the SDK Tools tab on the SDK Manager. Once a device is setup and connected, one can use this device to run the application, alternatively one can connect their own personal android phone via usb to their computer and use it instead of the emulator. To use a mobile phone one must enable developer options on the phone and enable usb debugging, only then will android studio pick it up on the “available devices” list.

\*Note: The app is not guaranteed to work on every version of android yet, it was tested on a Huawei p30pro using android version 10. It successfully ran on the phone. If you have a different phone with a different android version it may not work at all or it may crash when using it.

## Using a personal mobile device to run the app.

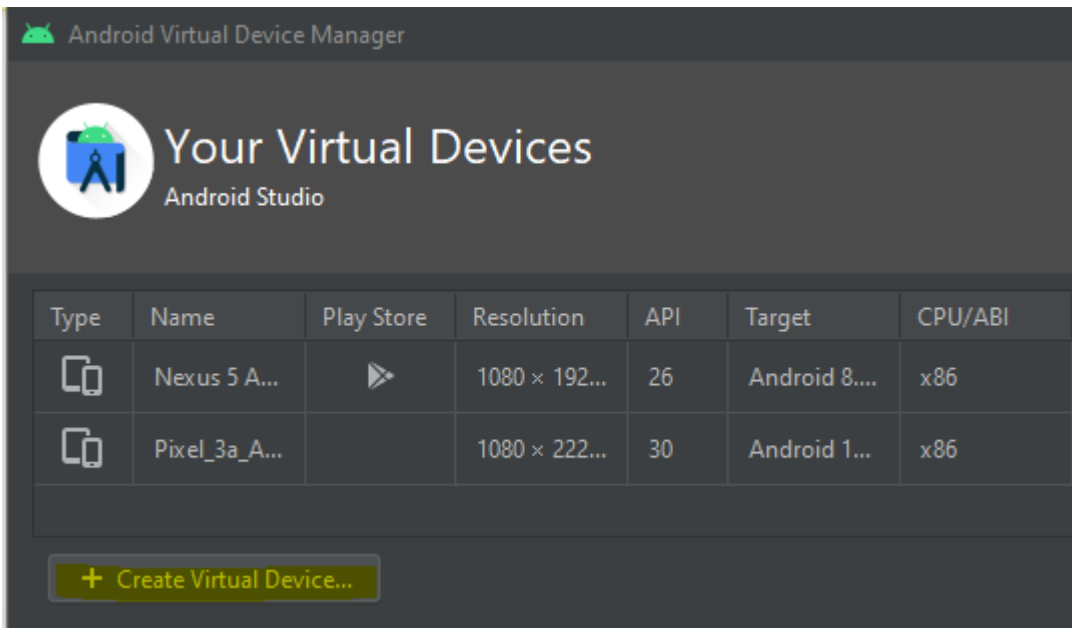
To enable developer options on the tested Huawei p30pro, one had to tap the build number 7 times, then a pop-up confirmed that the user was in developer mode. This may differ on another device. However, a simple google search will be able to tell you how to enable developer mode on your device.

## Installing a virtual device

If you are using Android Studio for the first time, you may not have any virtual devices installed yet. AVD's can be installed using the AVD manager.



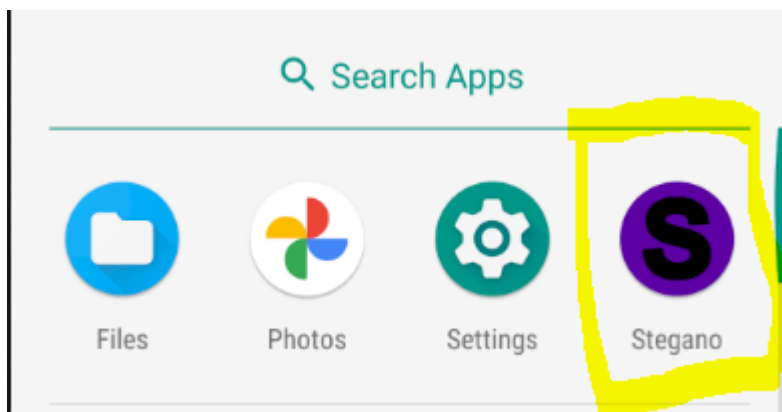
The AVD manger can be found when selecting the dropdown highlighted. Once open you can click on the “Create Virtual Device”.



\*NOTE: the app was made using the following virtual device: Nexus 5 API 26.

A wizard will help you through the correct steps in creating the virtual device.

Once you have a virtual device setup, simply run the build and it will open the app on the phone, if it doesn't open it automatically, you can click on the app icon which should be installed too.



## Steps to use the app's various functions.

### Embed

To embed a secret message into an image, follow the below steps:

- Step 1: Choose an image from your gallery.
- Step 2: Enter a secret message and secret key.
- Step 3: Click the embed button and save to gallery.

### Extract

To extract a message from an image, follow the below steps:

- Step 1: Choose the stego image.
- Step 2: Enter the secret password.
- Step 3: Click on the Extract Button.

### Encrypt

To Encrypt a message, follow the below steps:

- Step 1: Enter secret message you wish to encrypt using AES Base64 encoded.
- Step 2: Enter a secret password.
- Step 3: Click the Encrypt button and copy the result for later use.

### Decrypt

To Decrypt a message, follow the below steps:

- Step 1: Copy and paste the Encrypted message into the text area for it.
- Step 2: Enter your password.
- Step 3: Hit Decrypt and it will display the decrypted string below.

### Scan

To Scan 2 images for their MD5 Hashes, follow the below steps:

- Step 1: Choose the first image and upload it.
- Step 2: The MD5 hash should automatically be displayed.
- Step 3: Choose the second image and upload it.
- Step 4: Again, the Md5 hash should automatically displayed to you. Compare the hash values on screen to see if there is a difference which will suggest that an image was altered when compared to its original.