

# Configuring Cordova (and other things)

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# Get Cordova






APACHE  
**CORDOVA**<sup>TM</sup>

Mobile apps with HTML, CSS & JS

Target multiple platforms with one code base

Free and open source

[GET STARTED](#) [DOCUMENTATION](#)

<https://cordova.apache.org/>

# Installation: the Easy Part



```
npm install -g cordova
```

# Configuration: the Game Gets Tough

Install JAVA SDK

Install sdkman! or brew

Install Gradle

Install Android Studio

Install Emulator

Set Environment Variables

Set Bash Variables

Enable Developer Mode on Your Android Phone

<https://cordova.apache.org/docs/en/latest/guide/platforms/android/index.html>

# Install JAVA SDK

What does SDK means? **S**oftware **D**evelopment **K**it

It is a package that contains all the software tools to create new application in a given programming language.

JAVA SDK is required for the development of Android Apps

Go to:

<https://www.oracle.com/java/technologies/javase-downloads.html>

find latest version of JAVA, and click on JDK download (yes, J is for JAVA).

If may ask you to register to Oracle (it's free)

# Set JAVA Variables

## Mac/Linux (and Windows Git Bash)

Open a terminal and edit/create the file named `.bashrc` inside of your home directory (terminal commands below)

```
cd
vim .bashrc
```

Path for Mac could be:

`/Library/Java/JavaVirtualMachines/jdk1.8.0_221.jdk/`

Add the following lines:

Numbers must match the version on your machine

```
export PATH=$PATH:"c:/Program\ Files/Java/jdk1.8.0_221/bin/"
# Some guides on the Internet suggest to add this folder too,
# but it may cause Cordova builds to fail. If so just comment it out:
# export JAVA_HOME="c:/Program\ Files/Java/jdk1.8.0_221/"
```

## Windows

Open Add JAVA to the PATH environment variables and create the JAVA\_HOME directory as above. Follow this tutorial:

<https://javatutorial.net/set-java-home-windows-10>

# Testing JAVA

Close and reopen the terminal/Git Bash

Type

`java -version`

*java version "1.8.0\_221"*

*Java(TM) SE Runtime Environment (build 1.8.0\_221-b11)*

*Java HotSpot(TM) 64-Bit Server VM (build 25.221-b11, mixed mode)*

`javac -version`

*javac 1.8.0\_221*

# Android Studio



You need to download several GBs of data. Make sure you have a fast and reliable Internet connection, otherwise the installer may fail unreliably and some packages may be installed and others not.

## android studio

Android Studio provides the fastest tools for building apps on every type of Android device.

DOWNLOAD ANDROID STUDIO

3.6.1 for Windows 64-bit (749 MB)

DOWNLOAD OPTIONS

RELEASE NOTES

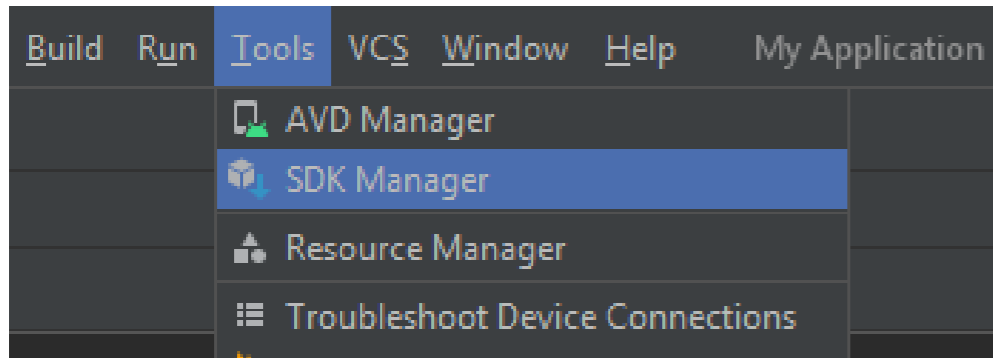
<https://developer.android.com/studio/>

Cross-Platform guide: <https://www.androidcentral.com/installing-android-sdk-windows-mac-and-linux-tutorial>



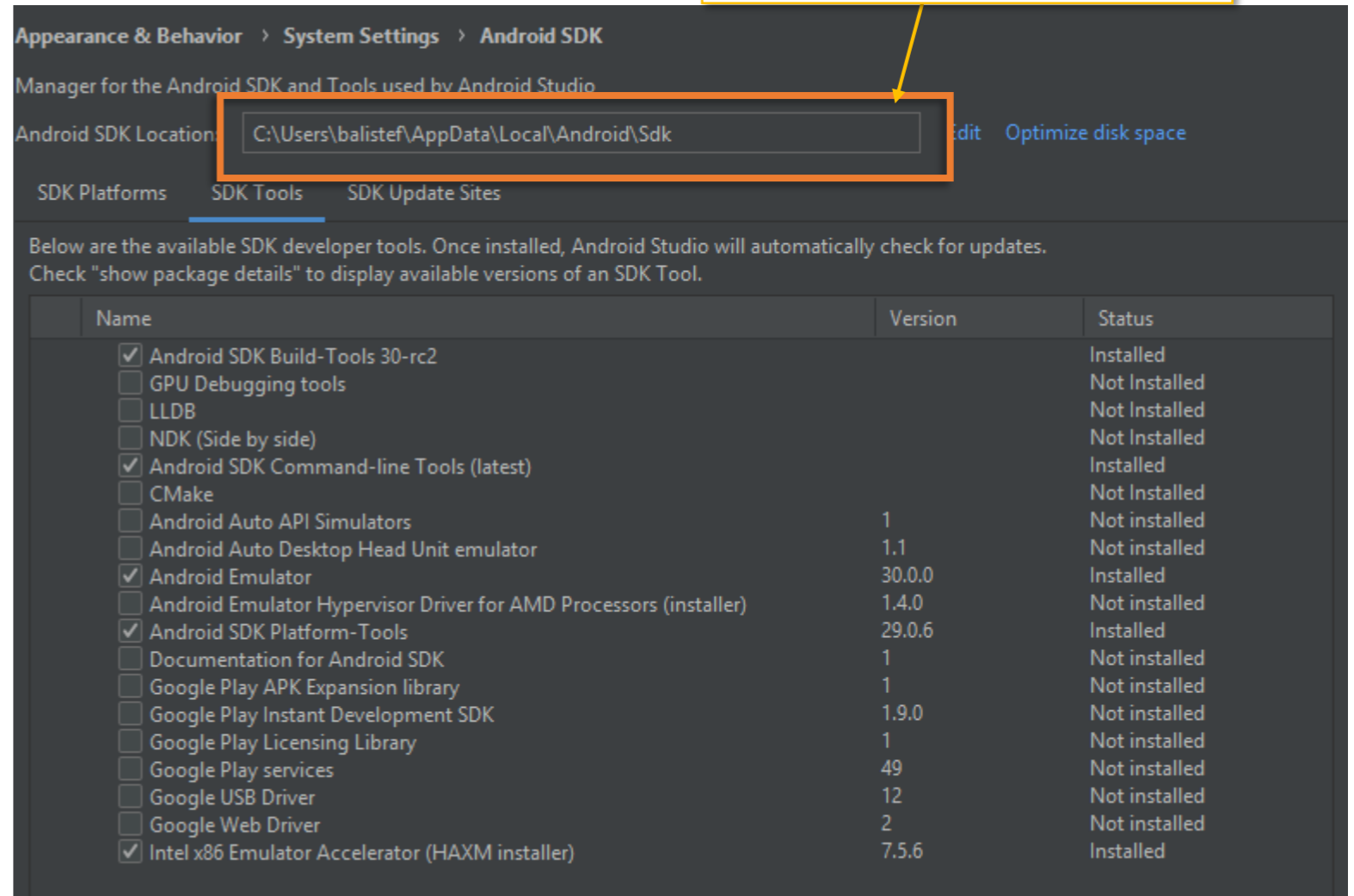
# SDK Manager (from Android Studio)

Install additional packages through the interface



Make sure you those packages installed  
Check the SDK location (highlighted)

Take note of this location



A screenshot of the 'Android SDK Manager' settings window. The 'Android SDK Location' field is highlighted with an orange box and contains the path: `C:\Users\balistef\AppData\Local\Android\Sdk`. Below this, there are tabs for 'SDK Platforms', 'SDK Tools', and 'SDK Update Sites'. The 'SDK Tools' tab is active, showing a list of developer tools with checkboxes for installation status.

Name	Version	Status
<input checked="" type="checkbox"/> Android SDK Build-Tools 30-rc2		Installed
<input type="checkbox"/> GPU Debugging tools		Not Installed
<input type="checkbox"/> LLDB		Not Installed
<input type="checkbox"/> NDK (Side by side)		Not Installed
<input checked="" type="checkbox"/> Android SDK Command-line Tools (latest)		Installed
<input type="checkbox"/> CMake		Not Installed
<input type="checkbox"/> Android Auto API Simulators	1	Not installed
<input type="checkbox"/> Android Auto Desktop Head Unit emulator	1.1	Not installed
<input checked="" type="checkbox"/> Android Emulator	30.0.0	Installed
<input type="checkbox"/> Android Emulator Hypervisor Driver for AMD Processors (installer)	1.4.0	Not installed
<input checked="" type="checkbox"/> Android SDK Platform-Tools	29.0.6	Installed
<input type="checkbox"/> Documentation for Android SDK	1	Not installed
<input type="checkbox"/> Google Play APK Expansion library	1	Not installed
<input type="checkbox"/> Google Play Instant Development SDK	1.9.0	Not installed
<input type="checkbox"/> Google Play Licensing Library	1	Not installed
<input type="checkbox"/> Google Play services	49	Not installed
<input type="checkbox"/> Google USB Driver	12	Not installed
<input type="checkbox"/> Google Web Driver	2	Not installed
<input checked="" type="checkbox"/> Intel x86 Emulator Accelerator (HAXM installer)	7.5.6	Installed

# Set Android SDK Variables

## Mac/Linux (and Windows Git Bash)

```
export PATH=$PATH:"~/AppData/Local/Android/Sdk/cmdline-tools/latest/bin/"
```

```
export PATH=$PATH:"~/AppData/Local/Android/Sdk/build-tools/30.0.3/"
```

## Emulator must be before tools:

```
export PATH=$PATH:"~/AppData/Local/Android/Sdk/emulator/"
```

```
export PATH=$PATH:"~/AppData/Local/Android/Sdk/platform-tools/"
```

```
export ANDROID_HOME=~/AppData/Local/Android/Sdk/
```

```
export ANDROID_SDK_ROOT=~/AppData/Local/Android/Sdk/
```

Numbers must match the version on your machine

## Windows

Replicate above setup setting environment variables. Follow this tutorial:

<https://javatutorial.net/set-java-home-windows-10>

# Gradle



## Accelerate developer productivity

From mobile apps to microservices, from small startups to big enterprises, Gradle helps teams build, automate and deliver better software, faster.

<https://gradle.org/>

It is recommended to install Gradle using SDKMAN or HomeBrew: <https://gradle.org/install/>

# SDKMAN! (Win)




## The Software Development Kit Manager

SDKMAN! is a tool for managing parallel versions of multiple Software Development Kits on most Unix based systems. It provides a convenient Command Line Interface (CLI) and API for installing, switching, removing and listing Candidates. Formerly known as **GVM** the Groovy enVironment Manager, it was inspired by the very useful [RVM](#) and [rbenv](#) tools, used at large by the Ruby community.

<https://sdkman.io/>

# Homebrew (Mac)



## Homebrew

The Missing Package Manager for macOS (or Linux)

English ▾

## Install Homebrew

```
/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install.sh)"
```

Paste that in a macOS Terminal or Linux shell prompt.

The script explains what it will do and then pauses before it does it. Read about other [installation options](#).

<https://brew.sh/>

# Set Gradle Variables

## Mac/Linux (and Windows Git Bash)

SDKMan/Homebrew usually automatically edits .bashrc to look like this:

```
#THIS MUST BE AT THE END OF THE FILE FOR SDKMAN TO WORK!!!
export SDKMAN_DIR="/c/Users/username/.sdkman"
[[ -s "/c/Users/username/.sdkman/bin/sdkman-init.sh" ]] && source
"/c/Users/username/.sdkman/bin/sdkman-init.sh"
```

## Windows

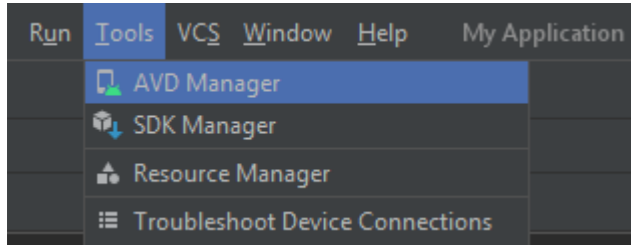
Add Gradle to the PATH environment variable. Follow this tutorial:

<https://javatutorial.net/set-java-home-windows-10>

Withs SDKMAN, Gradle is generally installed under:

```
~/ .sdkman/candidates/gradle/current/bin
```

# Add an Emulated Device on Android Studio



Install...

## Select Hardware

Choose a device definition

Category	Name	Play Store	Size	Resolution	Density
TV	Pixel XL		5.5"	1440x2560	560dpi
<b>Phone</b>	Pixel 3a XL		6.0"	1080x2160	400dpi
Wear OS	Pixel 3a	▶	5.6"	1080x2220	440dpi
Tablet	Pixel 3 XL		6.3"	1440x2960	560dpi
Automotive	Pixel 3	▶	5.46"	1080x2160	440dpi
	Pixel 2 XL		5.99"	1440x2880	560dpi
	<b>Pixel 2</b>	▶	5.0"	1080x1920	420dpi
	Pixel	▶	5.0"	1080x1920	420dpi


**Pixel 2**






1080px  
5.0"  
1920px

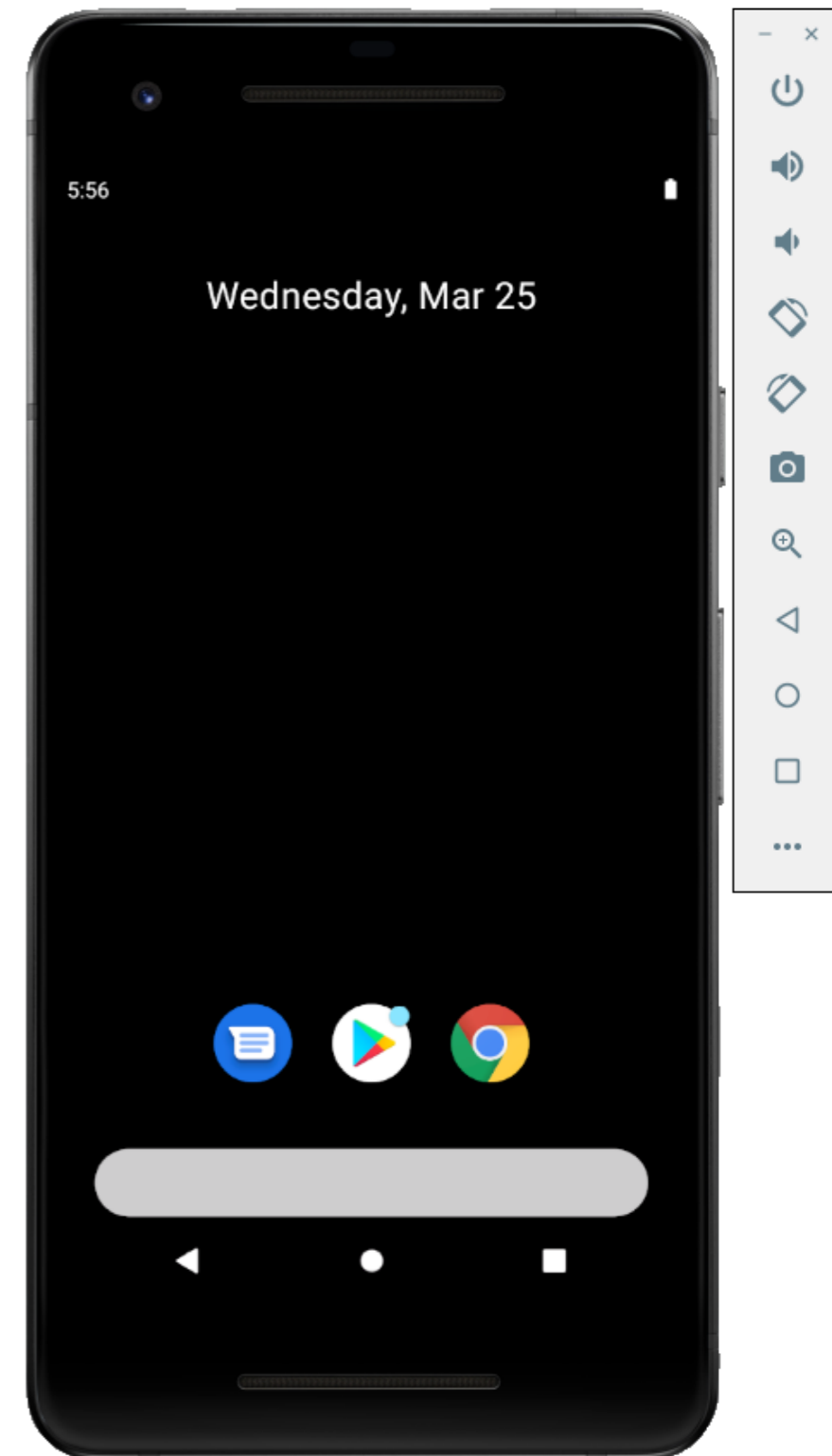
Size: large  
Ratio: long  
Density: 420dpi

New Hardware Profile Import Hardware Profiles Clone Device...

# Add an Emulated Device on Android Studio

 Your Virtual Devices  
Android Studio

Type	Name	Play Store	Resolution	API	Target	CPU/ABI	Size on Disk	Actions
	Pixel 2 API 29		1080 × 1920: 420dpi	29	Android 10.0 (Googl...	x86	9.2 GB	  





# Creating HelloWorld App for Android

<https://cordova.apache.org/docs/en/latest/guide/cli/index.html>

Name of local folder

Unique internal id

Name of App on phone

`cordova create hello com.example.hello HelloWorld`

# Creating HelloWorld App for Android

<https://cordova.apache.org/docs/en/latest/guide/cli/index.html>

Name of local folder

Unique internal id

Name of App on phone

`cordova create hello com.example.hello HelloWorld`

`cd hello`

`cordova platform add android`

`cordova requirements`

# Creating HelloWorld App for Android

\* What went wrong:

A problem occurred evaluating project ':app'.

> No installed build tools found. Install the Android build tools version 19.1.0 or higher.  
when emulate build\_tools must match the platform!

# Enable Developer Mode on Phone



<https://www.digitaltrends.com/mobile/how-to-get-developer-options-on-android/>

# Build the App (APK)

APK: Android Package

cordova build android

cordova build android --device (with device connected will install on device)

cordova build android --release (will create a signed release if steps below are followed)

<https://haensel.pro/apache-cordova/cordova-create-a-signed-release-apk-easy-howto>

Also this video is useful (but uses a different file instead of *release-signing.properties*)

<https://www.youtube.com/watch?v=Vfcy1xHR83c>

# PowerShell Enable Scripts

```
PS C:\Users\balistef\www\ionic\ionic-angular-course> ionic serve
ionic : File C:\Users\balistef\AppData\Roaming\npm\ionic.ps1 cannot be loaded because running scripts is disabled
on this system. For more information, see about_Execution_Policies at
https://go.microsoft.com/fwlink/?LinkID=135170.
At line:1 char:1
+ ionic serve
+ ~~~~~
+ CategoryInfo          : SecurityError: (:) [], PSSecurityException
+ FullyQualifiedErrorId : UnauthorizedAccess
```

Solution:

<https://www.itexperience.net/fix-file-cannot-be-loaded-because-running-scripts-is-disabled-on-this-system/>

PowerShell -ExecutionPolicy Bypass