Setting Up Your Android Development Environment

For Mac OS X (10.6.8) v1.0

By GoNorthWest

3 April 2012

Setting up the Android development environment can be a bit…well…challenging if you don't have all the pieces in place before you start. The aim of this guide is to visually walk you through the process of downloading what you need, installing it, and making the correct configurations. Once you do that, you're all set to actually work with the source code you download from Buzztouch! Hopefully these instructions will make things just a bit easier for you!

The basic process you are about to undertake is the following:

1. Download the required software
2. Unzip and move the Android SDK to the desired location
3. Unzip and move the Eclipse IDE to the desired location
4. Install the ADT Plugin for Eclipse
5. Configure the Android SDK for Development Tools and Google API
6. Configured the Android Virtual Device (AVD)
7. Celebrate because you're done and ready to work with your app!

Note: This tutorial assumes a **fresh install** of all software components. If you've got a previous install, consider deleting all the folders and starting fresh. But remember to copy over any extra files or keys you may have created!

Let's get started!

1. **Download required software**. In order to make this all work, there are several pieces of software you have to download and install:

    a. **Eclipse**: I chose to download Eclipse Classic 3.7.2, which was the most recent version available at the time of this writing. I downloaded the 32-bit version for Mac OS X, but there is also a 64-bit version if you are running 64-bit OS X. Here are the links I used to get this package.

    http://www.eclipse.org/downloads/?osType=macosx

    http://www.eclipse.org/downloads/download.php?file=/eclipse/downloads/drops/R-3.7.2-201202080800/eclipse-SDK-3.7.2-macosx-cocoa.tar.gz http://www.eclipse.org/downloads/download.php?file=/eclipse/downloads/drops/R-3.7.2-201202080800/eclipse-SDK-3.7.2-macosx-cocoa-x86_64.tar.gz

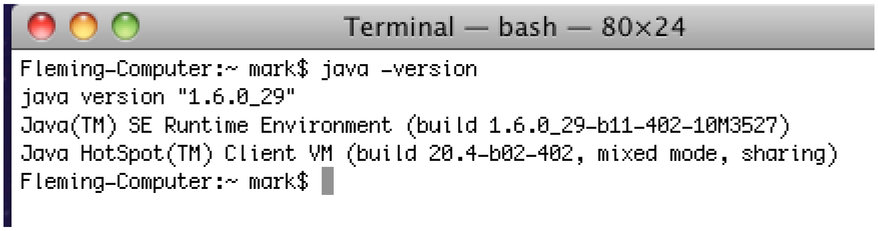
b. **Android Development SDK:** This is the software development kit (SDK), much like the iOS SDK for iPhones/iPads, that must be used within Eclipse for development. Here are the links I used for this portion.

http://developer.android.com/sdk/index.html#installingplugin

http://dl.google.com/android/android-sdk_r17-macosx.zip

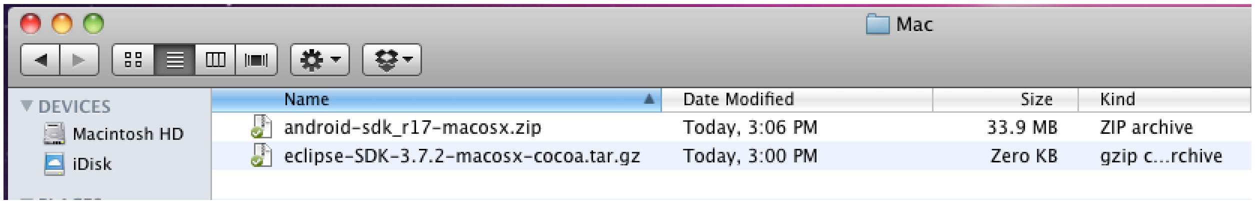
http://developer.android.com/sdk/eclipse-adt.html#installing

c. **Java JDK:** Windows has the requirement of a JDK, but it appears that the Java that comes with Mac OS X is enough for our needs here. So, there is nothing you need to download. If you want to check what version of Java is running on your computer, you can open a console window and type 'java –version' and you'll get something like the following:



```
Fleming-Computer:~ mark$ java -version
java version "1.6.0_29"
Java(TM) SE Runtime Environment (build 1.6.0_29-b11-402-10M3527)
Java HotSpot(TM) Client VM (build 20.4-b02-402, mixed mode, sharing)
Fleming-Computer:~ mark$
```

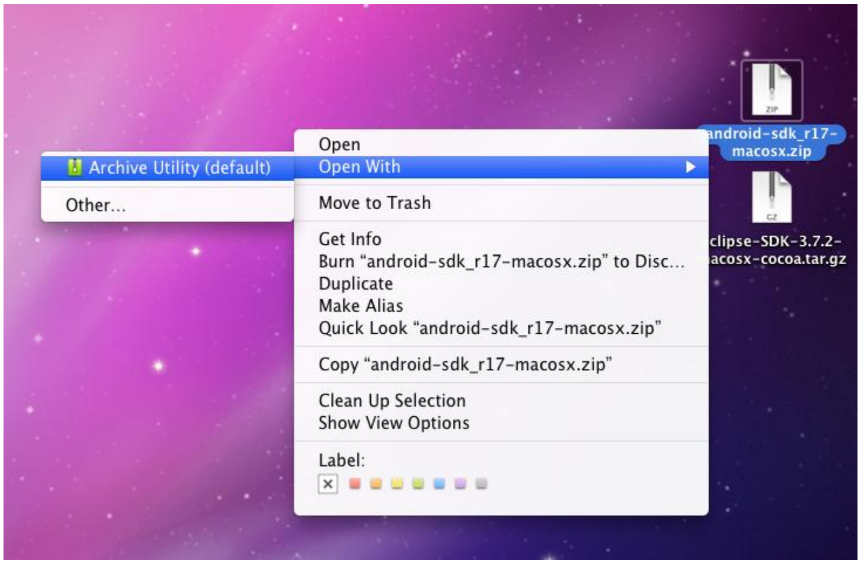
d. Once you get all the software downloaded, you should have a file listing that looks something like this :



Name	Date Modified	Size	Kind
android-sdk_r17-macosx.zip	Today, 3:06 PM	33.9 MB	ZIP archive
eclipse-SDK-3.7.2-macosx-cocoa.tar.gz	Today, 3:00 PM	Zero KB	gzip c...rchive

2. **Install the Android SDK (android-sdk_r17-macosx.zip).** To install the Android SDK in Mac OS X, all you need to do is unzip the package that you downloaded, and place it wherever you want to on your system. I chose to put the folder in the Applications folder, but I don't think it much matters. You may have to adjust a few things that come later depending on where you place the folder.

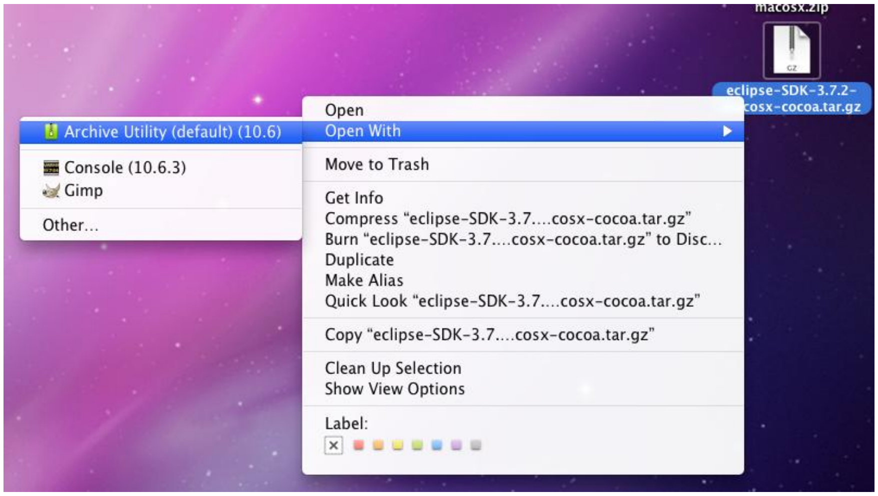
Begin by right-clicking on the package you downloaded (I put mine on the Desktop), and using the Archive Utility to extract the files.


android-sdk_r17-macosx.zip
eclipse-SDK-3.7.2-macosx-cocoa.tar.gz
Archive Utility (default)
Other…
Open
Open With
Move to Trash
Get Info
Burn "android-sdk_r17-macosx.zip" to Disc…
Duplicate
Make Alias
Quick Look "android-sdk_r17-macosx.zip"
Copy "android-sdk_r17-macosx.zip"
Clean Up Selection
Show View Options
Label:

After you have extracted the files, you'll see a newly created folder called **android-sdk-macosx**. Drag that folder to wherever you want. Like I mentioned, I put it in the Applications folder.

3. **Install Eclipse IDE (eclipse-SDK-3.7.2-macosx-cocoa.tar.gz).** To install the Eclipse IDE in Mac OS X, you again simply need to extract the files from the zipped tar package, and then move them to wherever you want Eclipse to reside. And, again, I chose that location to be the Applications folder.

   Begin by right-clicking on the package you downloaded and using the Archive Utility to extract the files.

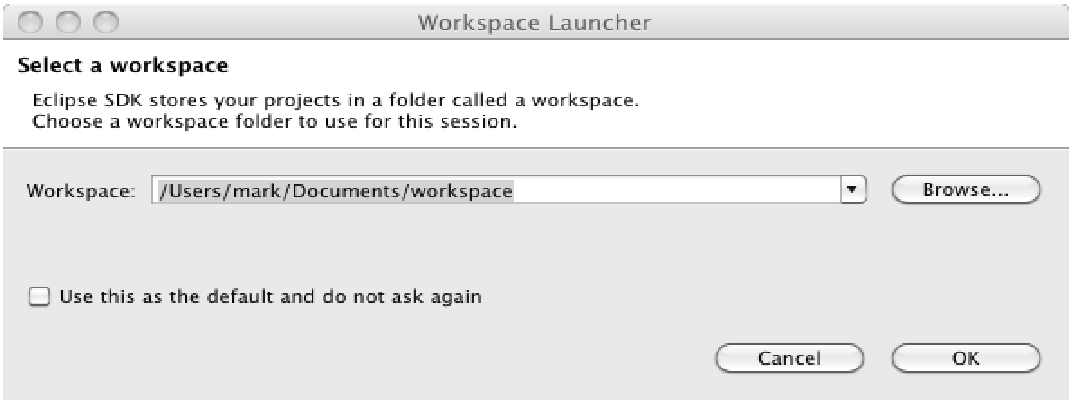

macosx.zip
eclipse-SDK-3.7.2-macosx-cocoa.tar.gz
Archive Utility (default) (10.6)
Console (10.6.3)
Gimp
Other…
Open
Open With
Move to Trash
Get Info
Compress "eclipse-SDK-3.7.…cosx-cocoa.tar.gz"
Burn "eclipse-SDK-3.7.…cosx-cocoa.tar.gz" to Disc…
Duplicate
Make Alias
Quick Look "eclipse-SDK-3.7.…cosx-cocoa.tar.gz"
Copy "eclipse-SDK-3.7.…cosx-cocoa.tar.gz"
Clean Up Selection
Show View Options
Label:

After you have extracted the files, you'll see a newly created folder called **eclipse**. Drag that folder to wherever you want. I put mine in the Applications folder.

You're done installing Eclipse and the Android SDK. Now it's time to install the **ADT Plugin for Eclipse.**

4. **Install the ADT Plugin for Eclipse.** This part of the procedure installs the Android Development Tools (ADT) plugin for Eclipse. It's what ties together Eclipse and the Android SDK. You install it via Eclipse, using the Help…Install New Software menu of Eclipse.

   First thing is to fire up Eclipse. Double-click on the Eclipse executable in the Applications/Eclipse folder (or wherever you put it), and you'll see the Eclipse splash screen. The first thing you'll have to decide is where to configure your workspace. Unless you have a reason to change from the default, go with what it suggests.



Workspace Launcher

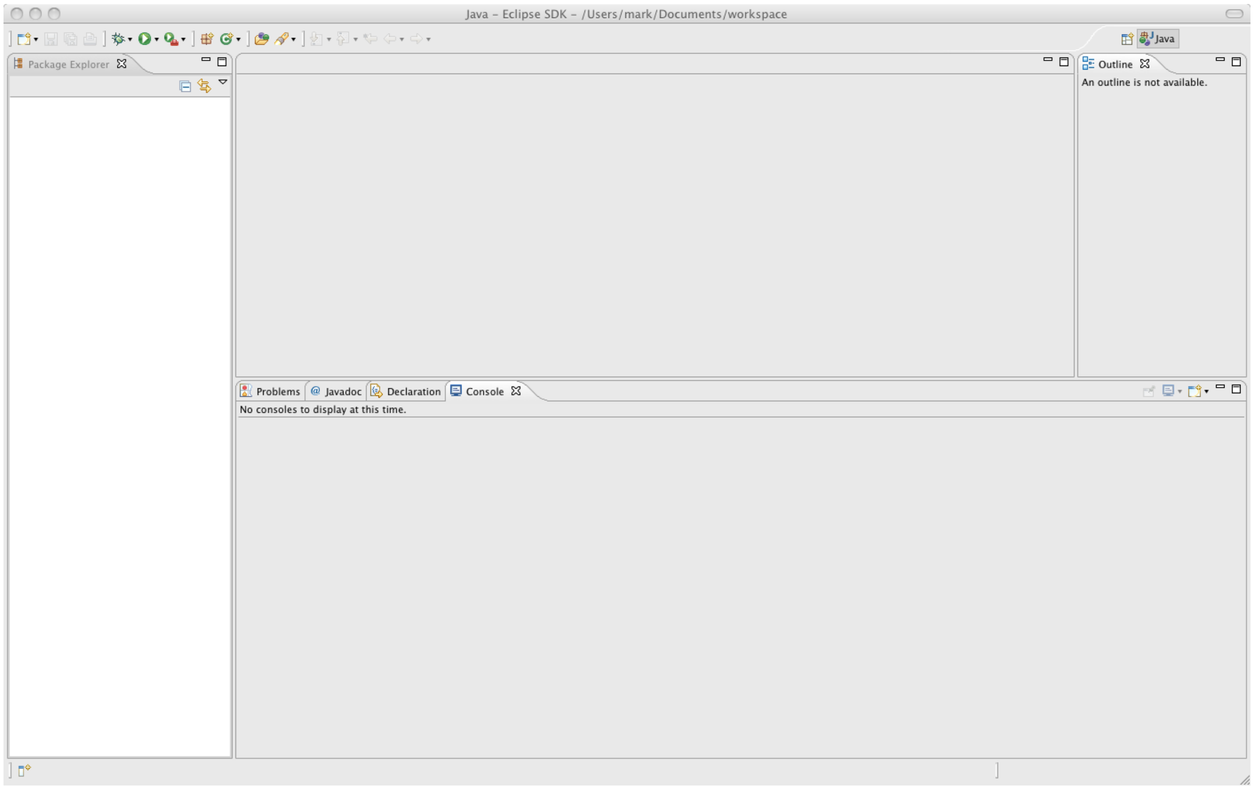
Select a workspace

Eclipse SDK stores your projects in a folder called a workspace.
Choose a workspace folder to use for this session.

Workspace: /Users/mark/Documents/workspace

□ Use this as the default and do not ask again

   One you have that set, and hit OK, the main Eclipse screen should come up. Do a happy dance now, because this is proof positive that Eclipse is installed on your system!

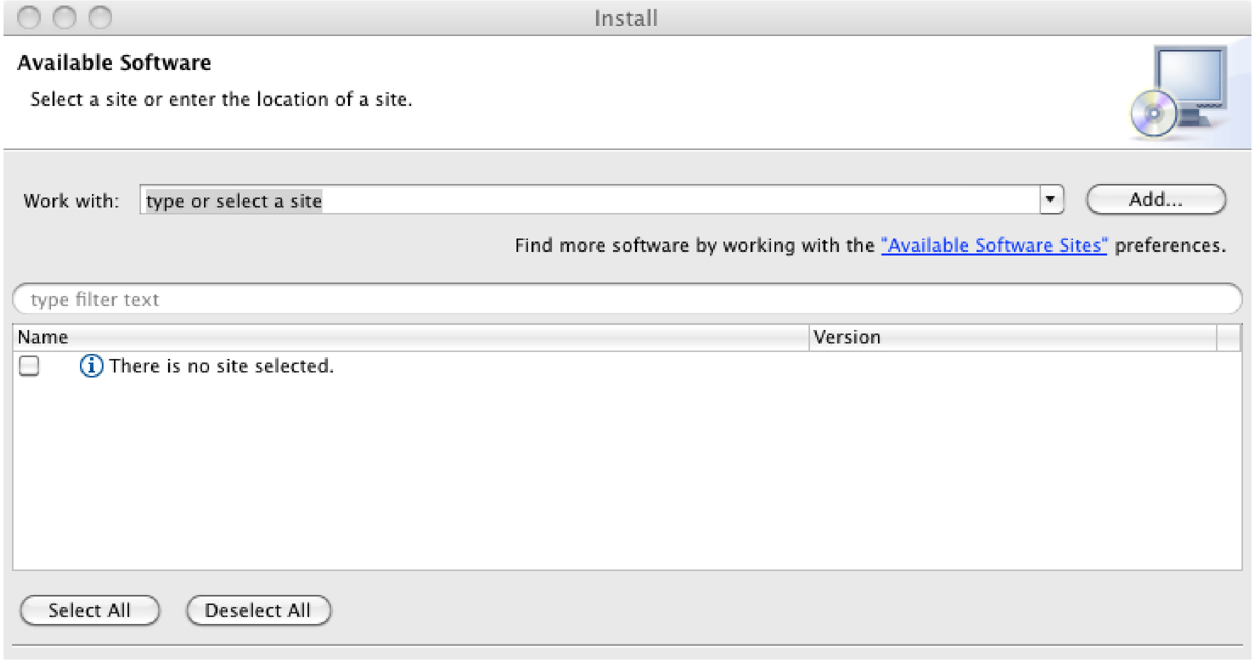


Java – Eclipse SDK – /Users/mark/Documents/workspace

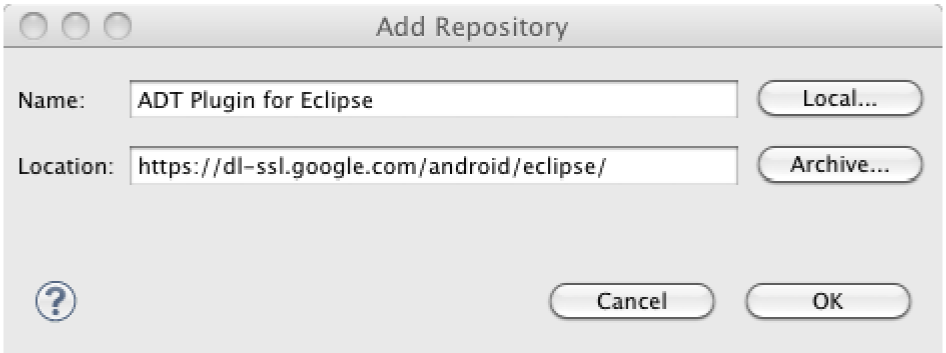
An outline is not available.

No consoles to display at this time.

Now you want to go to Help…Install New Software, and configure the screen to hit the correct software repository. Here is the initial screen you'll get.


Install
Available Software
Select a site or enter the location of a site.
Work with:
type or select a site
Add...
Find more software by working with the "Available Software Sites" preferences.
type filter text
Name
Version
There is no site selected.
Select All
Deselect All

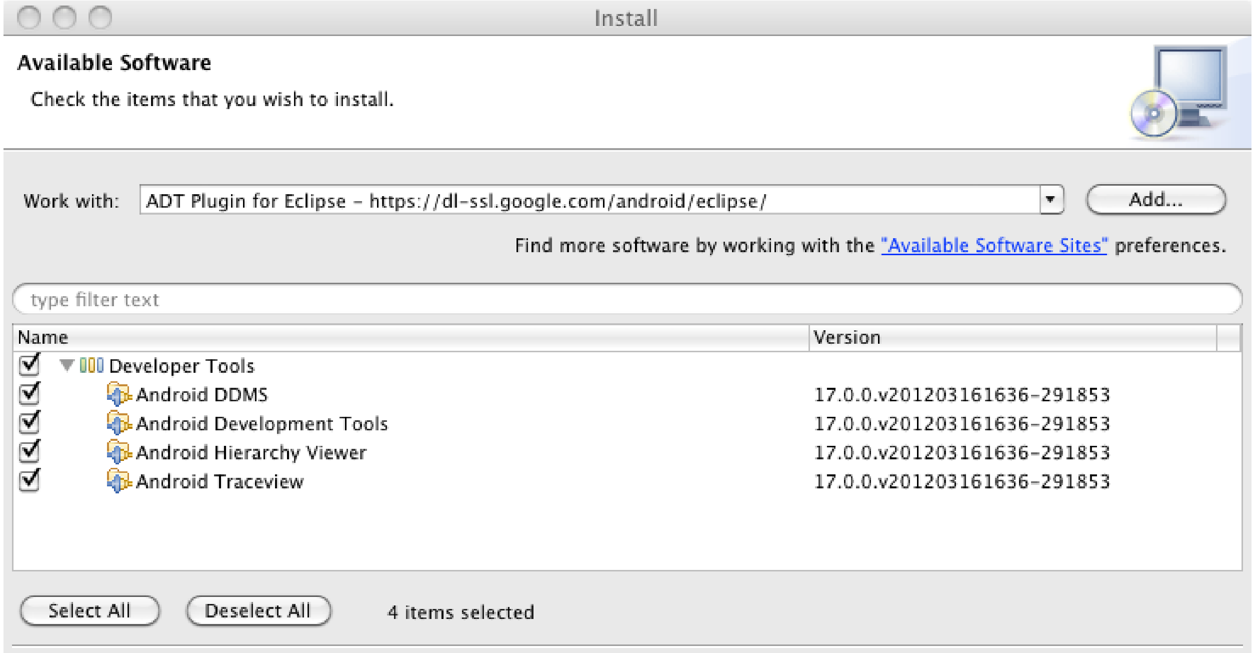
I cut off the bottom part of the actual screen you'll get to save space. The important stuff is at the top of the screen anyway. See the **Add** button on the right-hand side near the top? Click that puppy, and here's what you'll get.



Name: ADT Plugin for Eclipse

Location: https://dl-ssl.google.com/android/eclipse/

OK, that's not totally what you'll get. You'll need to type in both the Name (**ADT Plugin for Eclipse**) and the Location (**https://dl-ssl.google.com/android/eclipse/**). Now you can hit OK. After a few seconds it'll connect to the Google site, and then you'll see this screen (again, cropped for space).



Available Software

Check the items that you wish to install.

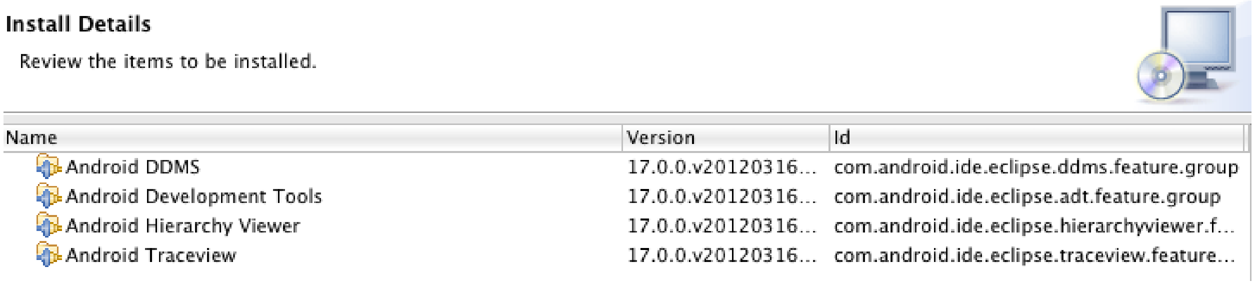
Work with: ADT Plugin for Eclipse - https://dl-ssl.google.com/android/eclipse/

Find more software by working with the "Available Software Sites" preferences.

	Name	Version
☑	Developer Tools	
☑	Android DDMS	17.0.0.v201203161636-291853
☑	Android Development Tools	17.0.0.v201203161636-291853
☑	Android Hierarchy Viewer	17.0.0.v201203161636-291853
☑	Android Traceview	17.0.0.v201203161636-291853

4 items selected

Go ahead and hit **Select All** as I've done in this example. To be honest, I don't know if you absolutely need everything here, but I figured better safe than sorry! Hit Next to review the **Install Details**.

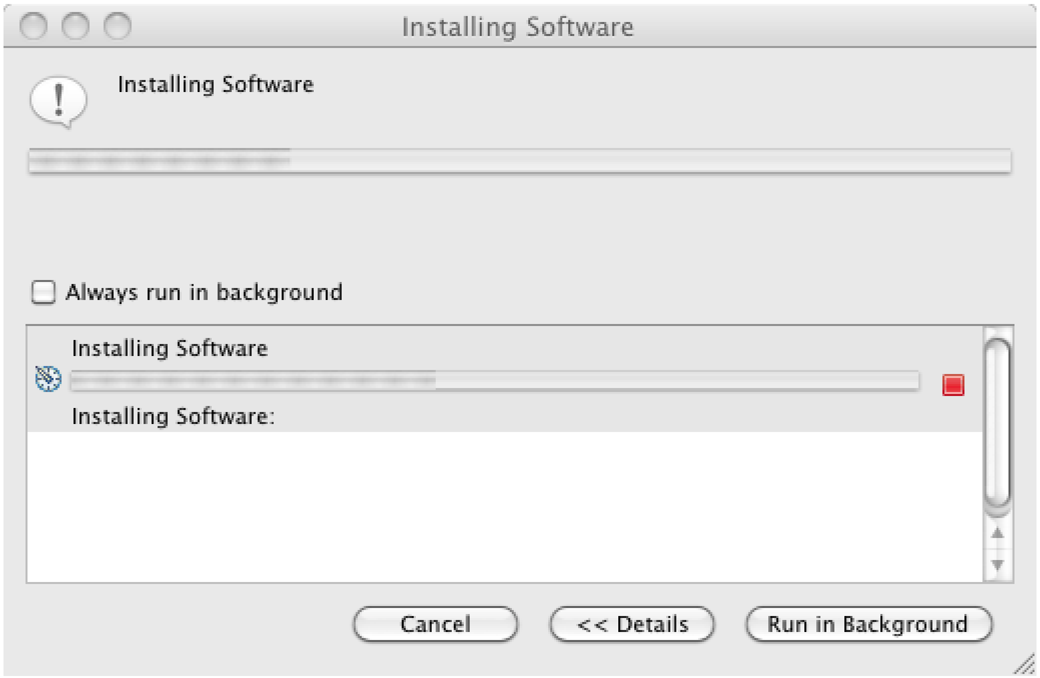


Install Details

Review the items to be installed.

Name	Version	Id
Android DDMS	17.0.0.v20120316...	com.android.ide.eclipse.ddms.feature.group
Android Development Tools	17.0.0.v20120316...	com.android.ide.eclipse.adt.feature.group
Android Hierarchy Viewer	17.0.0.v20120316...	com.android.ide.eclipse.hierarchyviewer.f...
Android Traceview	17.0.0.v20120316...	com.android.ide.eclipse.traceview.feature...

Hit Next again, and select "**I accept the terms of the license agreements.**" That should enable the Finish button, which you should now hit. The following screen will pop up, which indicates you are now installing the software!



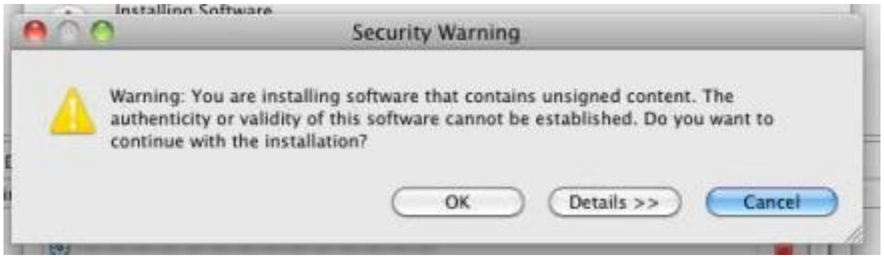
Installing Software

□ Always run in background

Installing Software

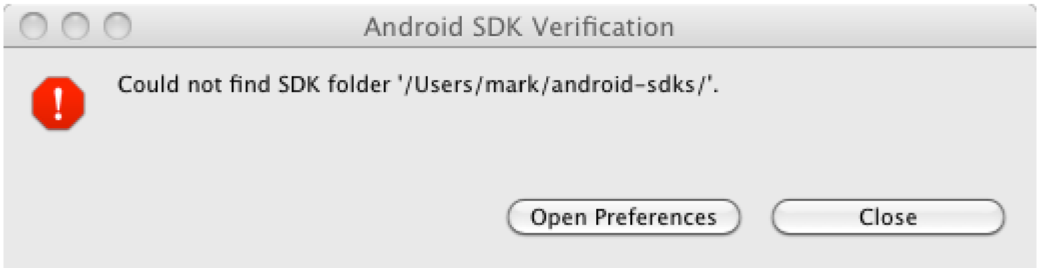
Installing Software:

In the course of the install, you may see the following security warning. Just go ahead and hit **OK** and things will proceed.



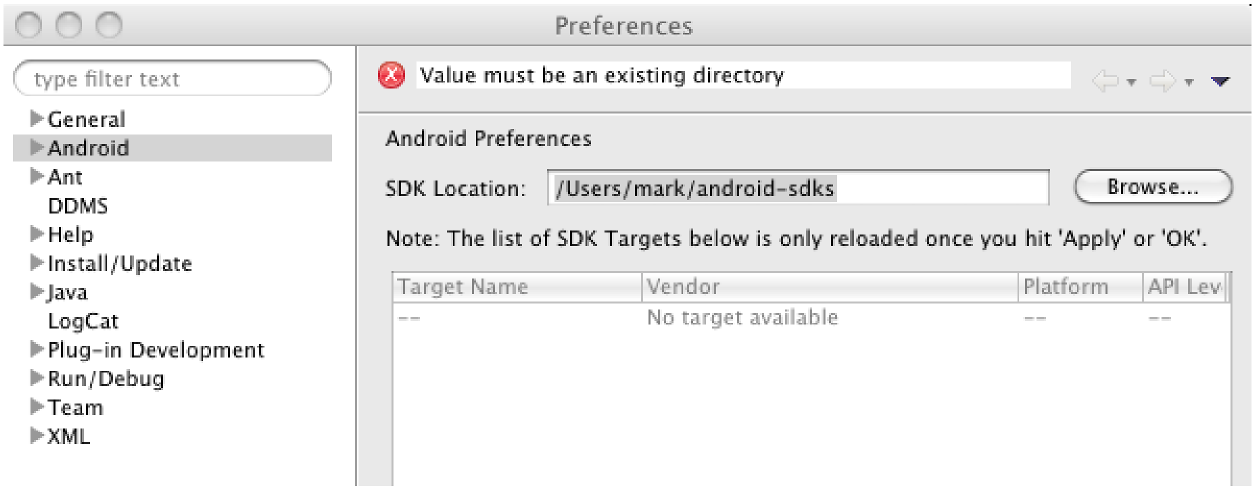
Warning: You are installing software that contains unsigned content. The authenticity or validity of this software cannot be established. Do you want to continue with the installation?

At this point, you may get a series of errors, and one of them may look like this.



Could not find SDK folder '/Users/mark/android-sdks/'.

Click on **Open Preferences**, and see this screen (cropped for space).



Value must be an existing directory

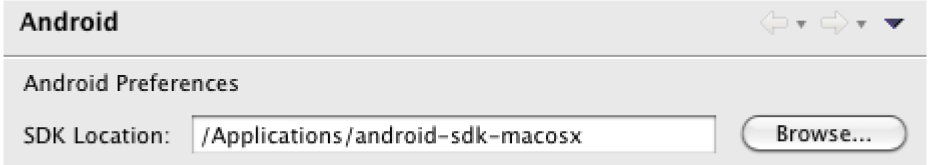
Android Preferences

SDK Location: /Users/mark/android-sdks

Note: The list of SDK Targets below is only reloaded once you hit 'Apply' or 'OK'.

Target Name	Vendor	Platform	API Lev
--	No target available	--	--

Click on **Browse** and navigate to where you put the Android SDK folder. In my example, it'll look like this (cropped!).



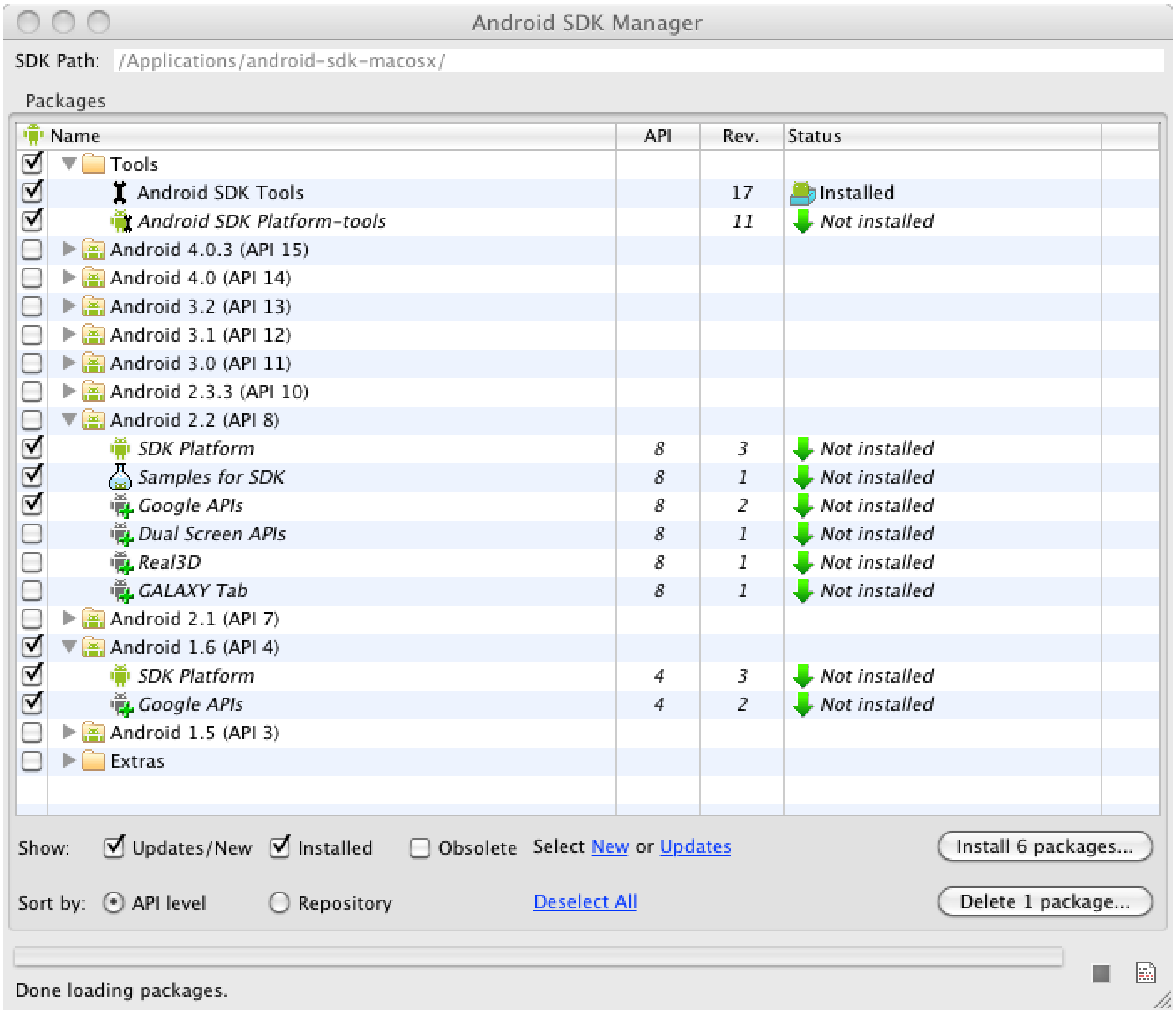
Android Preferences

SDK Location: /Applications/android-sdk-macosx

Click **Apply**, then **OK**, and you're all done! Now it's time to configure the Android SDK for Development Tools and the Google APIs. You're almost done!

5. **Configure the Android SDK for Development Tools and Google API.** This is where you configure the Android SDK Manager to download the tools you will need to create Buzztouch apps. This is essentially downloading the Google API's Platform 2.2 and API level 8. Keep in mind a common mistake, as pointed out in the Readme file provided by Buzztouch with your Android source code : "A common mistake is to assume Android 2.2 API's and Google 2.2 API's are the same, they are not." This is important to keep in mind…if you grab the wrong ones, you won't be able to get your program to work.

   Start by bringing up the **Android SDK Manager** in Eclipse. Do this by starting Eclipse, then going to **Window…Android SDK Manager**. The following screen will appear, and your goal is to make it look like the image you see here. Select what I selected, and you'll be good for both Buzztouch v1.4, v1.5 and v2.0 apps.



Android SDK Manager

SDK Path: /Applications/android-sdk-macosx/

Packages

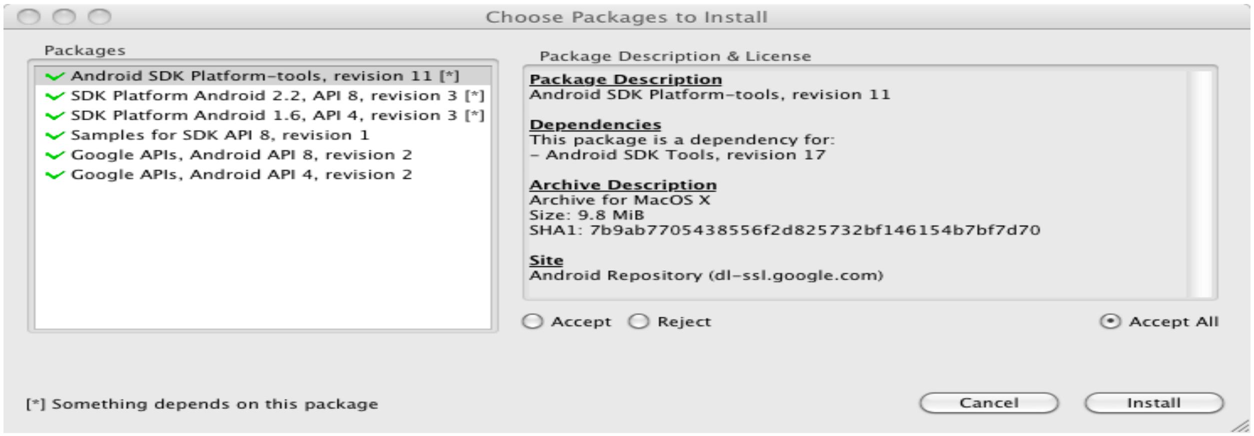
	Name	API	Rev.	Status
☑	▼ Tools			
☑	Android SDK Tools		17	Installed
☑	*Android SDK Platform-tools*		*11*	*Not installed*
□	▶ Android 4.0.3 (API 15)			
□	▶ Android 4.0 (API 14)			
□	▶ Android 3.2 (API 13)			
□	▶ Android 3.1 (API 12)			
□	▶ Android 3.0 (API 11)			
□	▶ Android 2.3.3 (API 10)			
□	▼ Android 2.2 (API 8)			
☑	*SDK Platform*	*8*	*3*	*Not installed*
☑	*Samples for SDK*	*8*	*1*	*Not installed*
☑	*Google APIs*	*8*	*2*	*Not installed*
□	*Dual Screen APIs*	*8*	*1*	*Not installed*
□	*Real3D*	*8*	*1*	*Not installed*
□	*GALAXY Tab*	*8*	*1*	*Not installed*
□	▶ Android 2.1 (API 7)			
☑	▼ Android 1.6 (API 4)			
☑	*SDK Platform*	*4*	*3*	*Not installed*
☑	*Google APIs*	*4*	*2*	*Not installed*
□	▶ Android 1.5 (API 3)			
□	▶ Extras			

Show: ☑ Updates/New ☑ Installed □ Obsolete

Sort by: ● API level ○ Repository

Done loading packages.

Now click **Install 6 packages** (or whatever number you end up having), and you'll get this screen.



Choose Packages to Install

Packages

- ✓ Android SDK Platform-tools, revision 11 [*]
- ✓ SDK Platform Android 2.2, API 8, revision 3 [*]
- ✓ SDK Platform Android 1.6, API 4, revision 3 [*]
- ✓ Samples for SDK API 8, revision 1
- ✓ Google APIs, Android API 8, revision 2
- ✓ Google APIs, Android API 4, revision 2

Package Description & License

Package Description
Android SDK Platform-tools, revision 11

Dependencies
This package is a dependency for:
– Android SDK Tools, revision 17

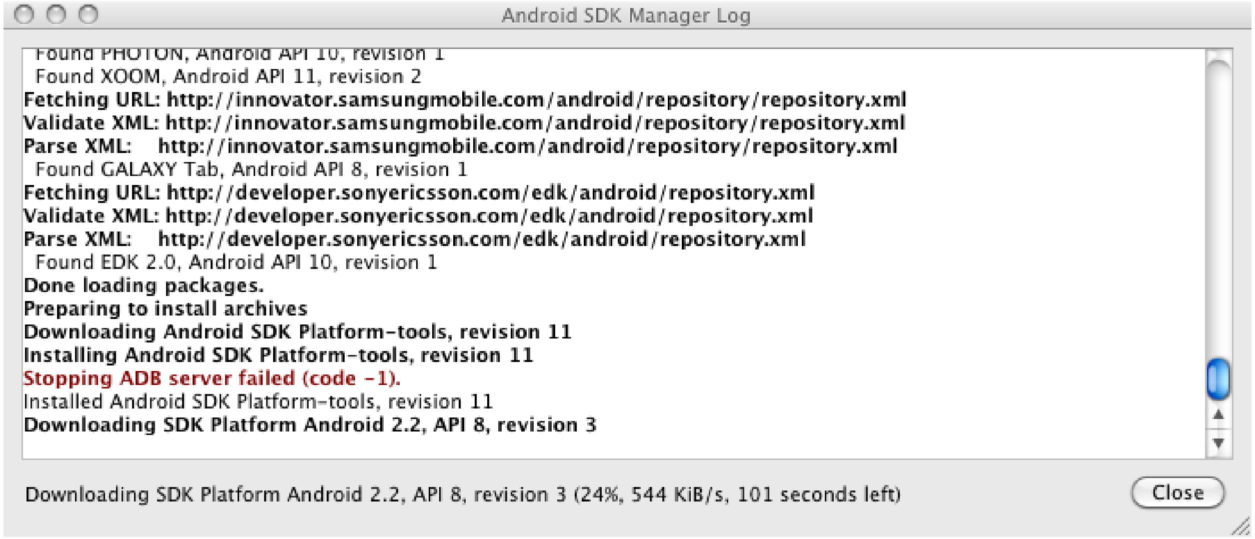
Archive Description
Archive for MacOS X
Size: 9.8 MiB
SHA1: 7b9ab7705438556f2d825732bf146154b7bf7d70

Site
Android Repository (dl-ssl.google.com)

○ Accept ○ Reject ● Accept All

[*] Something depends on this package

Click on the **Accept All** radio button, which should turn all the checkmarks in the packages list to green. Now hit **Install.**



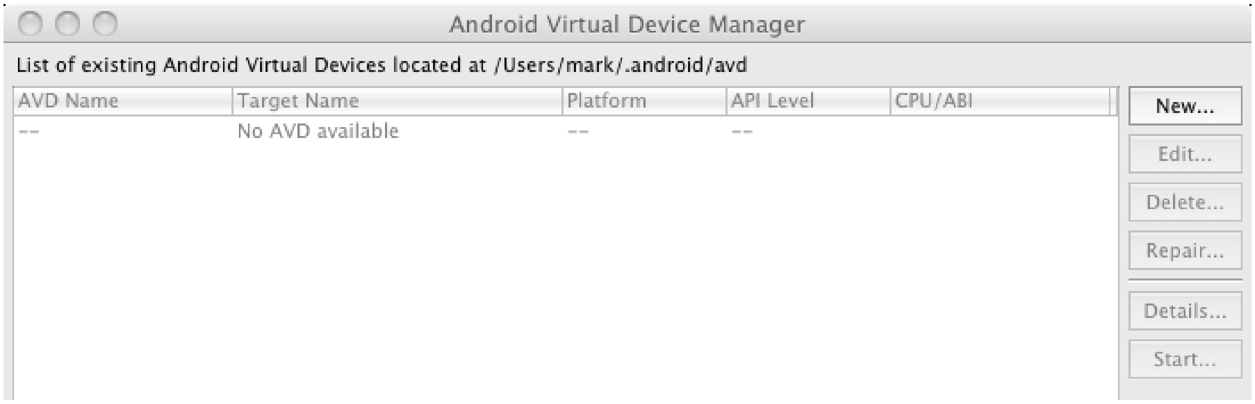
```
 Found PHOTON, Android API 10, revision 1
 Found XOOM, Android API 11, revision 2
Fetching URL: http://innovator.samsungmobile.com/android/repository/repository.xml
Validate XML: http://innovator.samsungmobile.com/android/repository/repository.xml
Parse XML:    http://innovator.samsungmobile.com/android/repository/repository.xml
 Found GALAXY Tab, Android API 8, revision 1
Fetching URL: http://developer.sonyericsson.com/edk/android/repository.xml
Validate XML: http://developer.sonyericsson.com/edk/android/repository.xml
Parse XML:    http://developer.sonyericsson.com/edk/android/repository.xml
 Found EDK 2.0, Android API 10, revision 1
Done loading packages.
Preparing to install archives
Downloading Android SDK Platform-tools, revision 11
Installing Android SDK Platform-tools, revision 11
Stopping ADB server failed (code -1).
Installed Android SDK Platform-tools, revision 11
Downloading SDK Platform Android 2.2, API 8, revision 3

Downloading SDK Platform Android 2.2, API 8, revision 3 (24%, 544 KiB/s, 101 seconds left)
```

Watch the log until it says you are done and you can close. Then hit **Close.** This part of the process may take some time depending on the speed of your Internet connection, so feel free to grab a coffee or something to pass the time with.

Once the install is done, and it says you can hit Close, you've successfully installed the Android SDK, Eclipse, and the ADT Plugin for Eclipse! You are basically done, unless you want to create an Android Virtual Device (AVD), or emulator, as it's often called. Let's do that real quick.

6. **Configure Android Virtual Device (AVD.)** Configuring your Android Virtual Device (emulator) is super simple, assuming you have the correct Google API's installed.

   To begin, go to **Window…AVD Manager.** The following screen (cropped) will magically appear. Notice that there are currently no AVDs configured, and it should be obvious why (because you haven't configured any!).

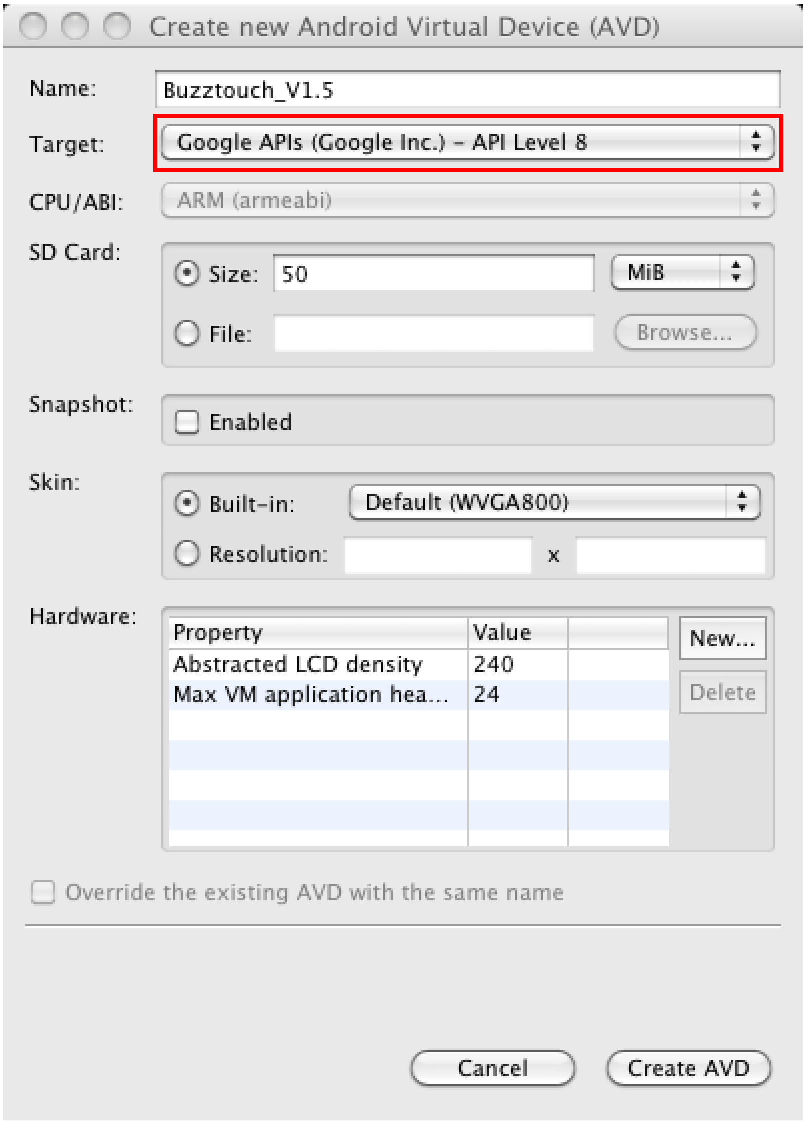


List of existing Android Virtual Devices located at /Users/mark/.android/avd

AVD Name	Target Name	Platform	API Level	CPU/ABI
--	No AVD available	--	--	

There are two different AVDs that you could create…one for Buzztouch v1.4, and one for Buzztouch v1.5/v2 Since they both use different Google APIs, You'll have to create one for each if you develop for both. If you are only doing one or the other, then you only need to create an AVD for that particular version of Buzztouch.

In order to create an AVD for Buzztouch v1.5, click **New…** and fill in the information like you see below:



Create new Android Virtual Device (AVD)

Name: Buzztouch_V1.5

Target: Google APIs (Google Inc.) – API Level 8

CPU/ABI: ARM (armeabi)

SD Card: ● Size: 50 MiB

○ File:

Snapshot: □ Enabled

Skin: ● Built-in: Default (WVGA800)

○ Resolution: x

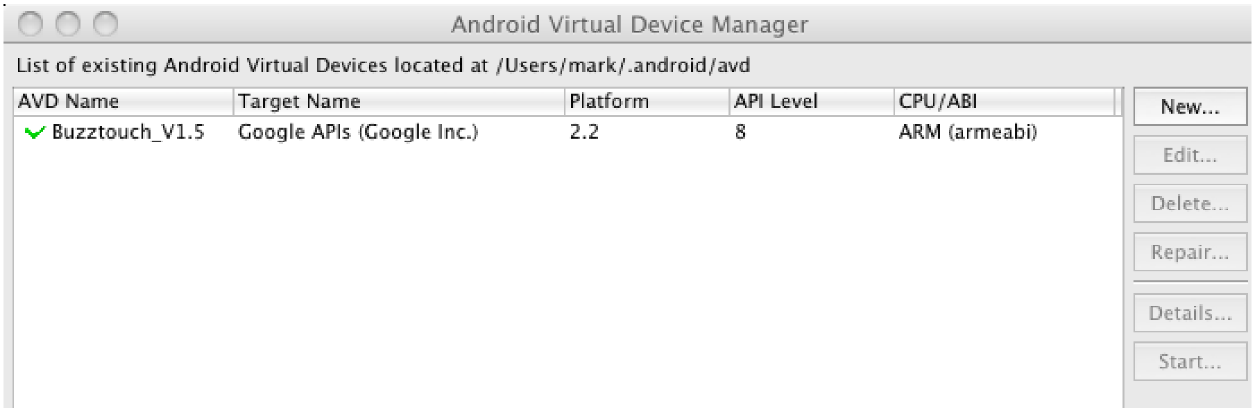
Hardware:

Property	Value
Abstracted LCD density	240
Max VM application hea…	24

□ Override the existing AVD with the same name

You can adjust the size of the SD Card to your liking, but I choose to keep it near the minimum 9MB, simply because I'm not using the SD Card feature, and because it seems load faster with a smaller SD Card configured. I have an SD Card of 50MB configured here so you have room to install your app on external storage. I also leave the default Built-in skin of WVGA800, but you can change the resolution to a device size of your liking.

Now that you are done creating your virtual devices, your Android Virtual Device manager should look something like what you see below (cropped). The important thing is that the correct Google APIs are selected for the version of Buzztouch that you are using, and that there is a green checkmark next to each virtual device, indicating that it is good.



Android Virtual Device Manager

List of existing Android Virtual Devices located at /Users/mark/.android/avd

AVD Name	Target Name	Platform	API Level	CPU/ABI
✓ Buzztouch_V1.5	Google APIs (Google Inc.)	2.2	8	ARM (armeabi)

At this point, you are done setting up your environment to develop Android applications using the source code you downloaded from Buzztouch! I'd love to be able to tell you that things get super easy from here, but Android development seems to have as many pitfalls as iOS development. So, I've written a few more documents that should help:

http://www.buzztouch.com/resources/Compiling_Your_Android_Application_v1.0.pdf

http://www.buzztouch.com/resources/Adding_Files_To_A_Project_v1.0.pdf

http://www.buzztouch.com/resources/Obtaining_a_Google_Maps_API_Key_v1.0.pdf

http://www.buzztouch.com/resources/Signing_Android_Apps_v1.0.pdf

http://www.buzztouch.com/resources/Problem_Reporting_and_Basic_Debug_v1.0.pdf

Hopefully between these documents, the Buzztouch forums, and Google, you should be able to get all your questions answered! And feel free to contact me directly with any questions you might have!

Comments? Post them in the forum or email me at MrkFleming@gmail.com.

Revision Log			
v1.0	04/03/2012	Initial release of document.	GoNorthWest