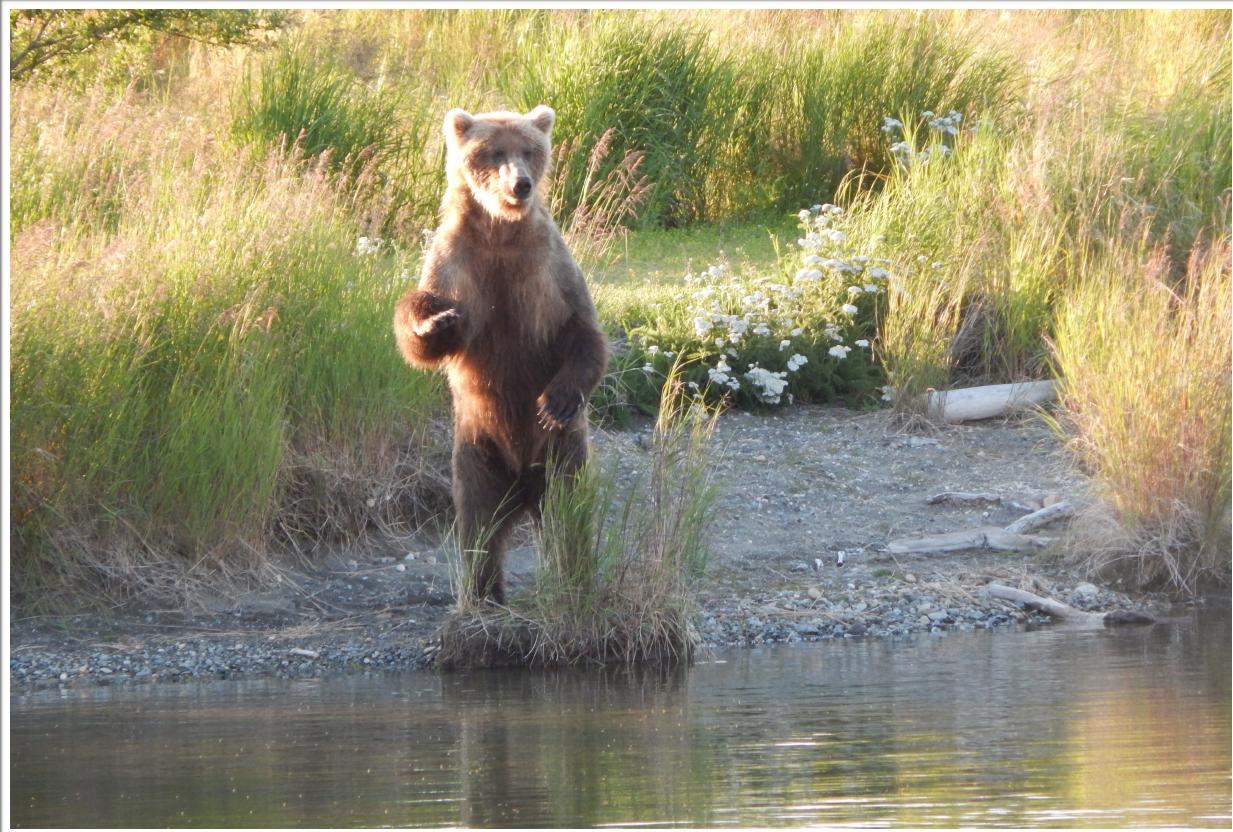


Setting up Mobile Apps with Twilio and PhoneGap

*A tutorial for installing the Twilio Client
PhoneGap plugin for iOS and Android mobile apps*



Jeff Linwood

Version 1.0

Table of Contents

Getting Started.....	1
Getting Started	2
Installing the Plugin.....	3
Creating your PhoneGap Application.....	3
Adding the Twilio Client Plugin.....	4
Setting up the Native Twilio Client SDK Libraries	4

Getting Started

Before you start this tutorial, there are a couple of things that you need to have set up:

- A Twilio developer account
- A server application with your Twilio credentials to supply capability tokens
- The latest version of Cordova/PhoneGap, with either the iOS or the Android development tools (or both).

The first thing you will need is a developer account on Twilio - which you can sign up for at <http://www.twilio.com/>. To test your mobile application as you go along, you will also need a small amount of money funded into your Twilio account, so that you can use voice minutes to place or receive phone calls using the app.

The next thing you will need is a server application to provide capability tokens for your mobile app. We'll discuss exactly what capability tokens are and how they are used in more detail, but your mobile app doesn't use your Twilio credentials - instead you supply limited use tokens for the mobile app to use so that those mobile app users can make voice calls on your account. For more, see the <https://www.twilio.com/docs/client/capability-tokens> web page.

The easiest way to get this set up is to use Twilio's mobile quick start application with Heroku (a platform-as-a-service for hosting web applications) - Heroku accounts are free, and you can simply click the "Deploy to Heroku" button to get started. You'll find the GitHub repository here:

<https://github.com/twilio/mobile-quickstart>

What you will need is a URL which returns a capability token when it is called - we'll put that into the PhoneGap application so that your mobile app can connect to your Twilio account.

You'll also need a PhoneGap/Cordova development environment set up. If you're running on Mac OS X, you'll be able to set up the iOS development tools on your computer, as well as the Android development tools. If you have Windows or Linux, you'll be able to get set up with the Android development tools.

After you install the platform-specific development tools, you will need to install NodeJS from <http://nodejs.org/>, so that you can get the Node Package Manager (NPM). After installing NodeJS, you'll have the npm command line tool.

You can follow the directions at <http://phonegap.com/install/> to get setup with PhoneGap by installing the latest version of the PhoneGap tools.,

To get PhoneGap setup with the development tools for each platform (Android and iOS), you'll need to follow the Android Platform Guide and the iOS Platform Guide on <http://docs.phonegap.com/> in the Platform Guides section.

For the purposes of this tutorial, we're only going to consider Android and iOS development on PhoneGap, even though there are many more platforms supported with the PhoneGap and Cordova tools - Twilio only has native client SDK's for Android and iOS.

Getting Started

Simply delete these instructions and add your own content to the next page. Replace the existing styled paragraphs by typing or pasting in your own text. Choose styles from the Text pane of the Format inspector (on the right) as needed, or modify them to create your own.

Chapter 1

Installing the Plugin

Creating your PhoneGap Application

If you've already got an existing PhoneGap application, you can skip this step. If you're starting with a new application, follow these steps so that we have a PhoneGap application to work with.

The first step will be to create the PhoneGap application, which we will call **PhoneApp**:

```
cordova create PhoneApp com.jefflinwood.phoneapp.PhoneApp PhoneApp
```

This creates the new PhoneGap application, but doesn't add any platform support to the application. If you've just installed PhoneGap, be sure that you have at least the Android or iOS development platforms set up properly, according to the Platform Guides.

In this tutorial, I'll be showing you how to setup the app on both Android and iOS - if you only have one of these platforms installed, simply skip the command to add that platform.

Now change directories to the PhoneApp project's directory:

```
cd PhoneApp
```

To add iOS platform support to the application, we can use the **cordova** command line application:

```
cordova platform add ios
```

Similarly, we can add platform support for Android:

```
cordova platform add android
```

We won't be working with any other platforms in this tutorial, as Twilio's Client SDK is only supported on iOS and Android.

Adding the Twilio Client Plugin

Once you are in the directory for your project, it's a one line command to add the Twilio Client plugin for both platforms:

```
cordova plugin add https://github.com/jefflinwood/twilio_client_phonegap.git
```

This is the platform independent way of installing plugins with Cordova.

If you'd prefer to install the plugin to each platform individually, you can do that with **plugman**, which is a command-line tool for managing PhoneGap/Cordova plugins. If you haven't installed plugman on your computer, you can add it through the Node package manager (**npm**).

For iOS, you would use (on one line):

```
plugman install --platform ios --project platforms/ios --plugin  
https://github.com/jefflinwood/twilio\_client\_phonegap.git
```

The corresponding Android command (also on one line) would be:

```
plugman install --platform android --project platforms/android --plugin  
https://github.com/jefflinwood/twilio\_client\_phonegap.git
```

Usually, you won't need the platform-specific plugin installation, and can use the **cordova** command line utility to add the plugin.

Setting up the Native Twilio Client SDK Libraries

Installing the Twilio Client plugin just installs the open source code used to wrap the native Twilio Client SDK for each platform in a Cordova plugin. You'll also need to download and install the appropriate Twilio Client SDK for your platform from Twilio.

After adding the plugin to your project, the installation instructions will prompt you to install the Twilio Client SDK, and give you directions on how to do it. These are kept up to date with the latest releases of the Twilio Client SDK (1.2 on iOS, and 1.2 on Android, as of the time of this writing).

For both Android and iOS, you will have to go to Twilio's download page and download the Client SDK from them - it is not bundled into the plugin.

Setting up the App on Android

After running one of the commands above to install the Twilio Client plugin, you'll see the directions for setting up the additional libraries needed on Android:

Installing "com.phonegap.plugins.twilioclient" for android

This plugin also uses the Android Support Library V4. You only need one copy of this library (a JAR file) in your libs directory. See <http://developer.android.com/tools/support-library/index.html> for information about how to download this library to your computer. Then copy android-support-v4.jar to your libs folder.

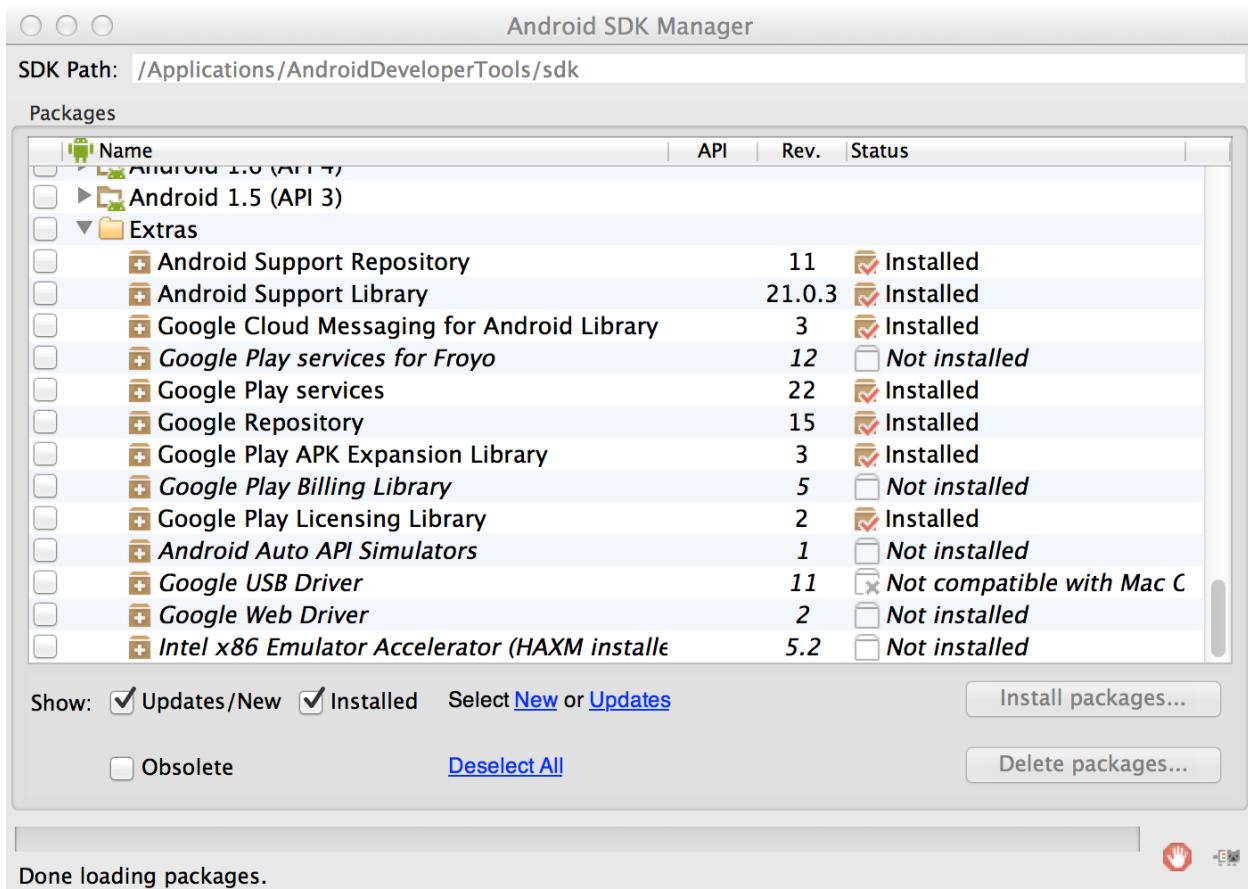
You need to download Twilio Client for Android from <https://www.twilio.com/docs/client/android>. Uncompress the download - you will need to follow one step that plugman can not do yet:

* Add the Twilio Client Java libraries (everything in the libs folder) to your project's libs folder - (platforms/android/libs)

There are two different libraries you will need to set up for Android development - the Twilio Client SDK, and the Android Support Library v4.

Android Support Library V4

The Twilio Client plugin uses the Android Support Library v4, which you can learn more about from Google's documentation (<http://developer.android.com/tools/support-library/index.html>). You can't download the android-support-v4.jar file directly from Google, instead, you'll need to download it through the Android SDK Manager (which you can open from Android Studio, Eclipse, or from the command line):



The Android Support Library needs to be installed - the version as of this writing is 21.0.3, but you should use the latest version that Google has released. You can find the Android Support v4 JAR file in your Android SDK installation, under the **extras/android/support/v4** folder. The Android SDK's path is at the top of the Android SDK Manager window.

Copy the **android-support-v4.jar** file into your PhoneApp project's Android libs folder, which you will find in **platforms/android/libs**. When you first create your project with Cordova and add the Android platform, that directory will be empty, so the Android Support V4 library will be the only file in it.

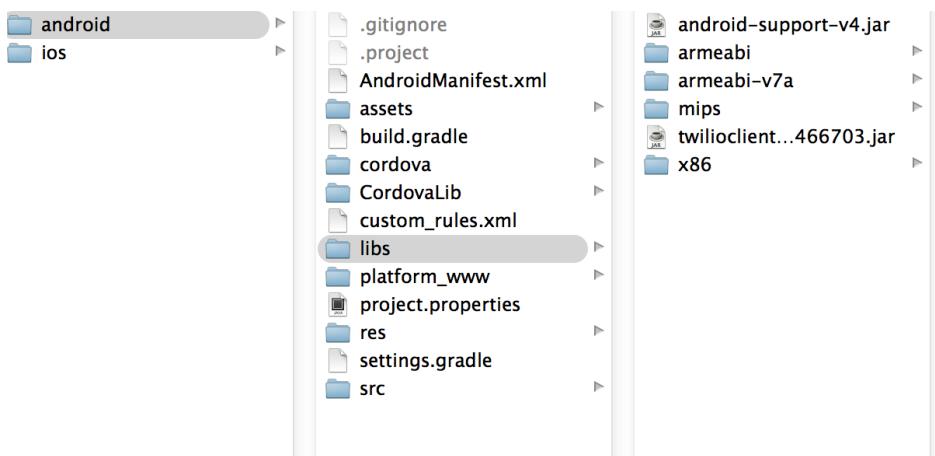
Twilio Client for Android SDK

You can download the Twilio Client Android SDK from Twilio's web page (<https://www.twilio.com/docs/client/android>). Decompress the file you download, and then open the containing folder. You'll see something like this:

Name	Date Modified	Size
.DS_Store	Today, 12:00 PM	6 KB
acknowledgments.txt	Dec 18, 2014, 1:17 AM	12 KB
assets	Dec 18, 2014, 12:00 PM	--
BasicPhone	Dec 18, 2014, 12:00 PM	--
changelog.html	Dec 18, 2014, 12:00 PM	2 KB
faq.html	Dec 18, 2014, 12:00 PM	23 KB
helper-libs	Dec 18, 2014, 12:00 PM	--
javadoc	Dec 18, 2014, 12:00 PM	--
libs	Jan 10, 2015, 10:09 AM	--
Quickstart	Dec 18, 2014, 12:00 PM	--
quickstart.html	Dec 18, 2014, 12:00 PM	33 KB
readme.html	Dec 18, 2014, 12:00 PM	3 KB
Resources	Dec 18, 2014, 12:00 PM	--
Server	Dec 18, 2014, 12:00 PM	--

We need to copy the contents of the Twilio Client SDK's **libs** directory into our project's Android **libs** directory (the same one we just put the Android Support V4 library in). You'll see one jar file in the libs directory, and several folders with the names of different Android architectures (x86, armeabi, armeabi-v7, mips) - copy the jar file and the folders to your project's Android **libs** directory.

Your Android project's **libs** directory should look similar to this:



Setting up the App on iOS

Similar to Android, after running the command to install the Twilio Client plugin for iOS, you'll see instructions for finishing the installation:

Installing "com.phonegap.plugins.twilioclient" for ios

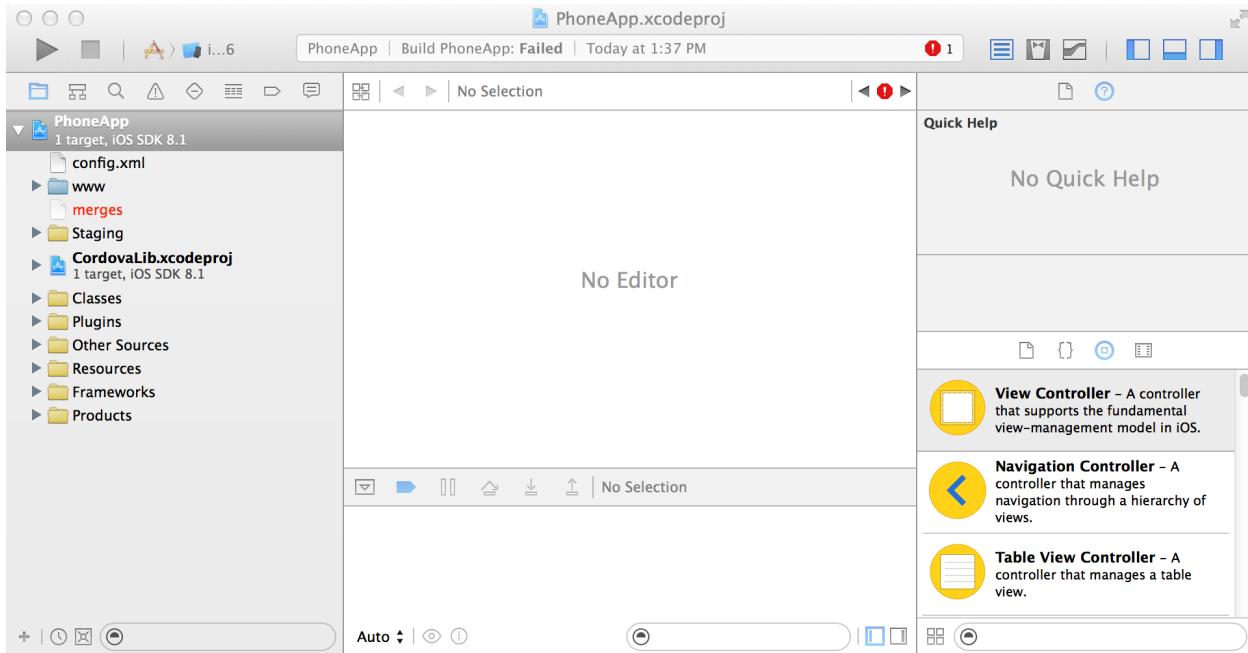
You need to download Twilio Client for iOS from <https://www.twilio.com/docs/client/ios>. Uncompress the download - you will need to follow a few steps that plugman can not do yet:

- * Add the Twilio Client static libraries (the .a files in the Libraries folder) to your Xcode project
- * Add the Twilio Client headers files (the .h files in the Headers folder) to your Xcode project

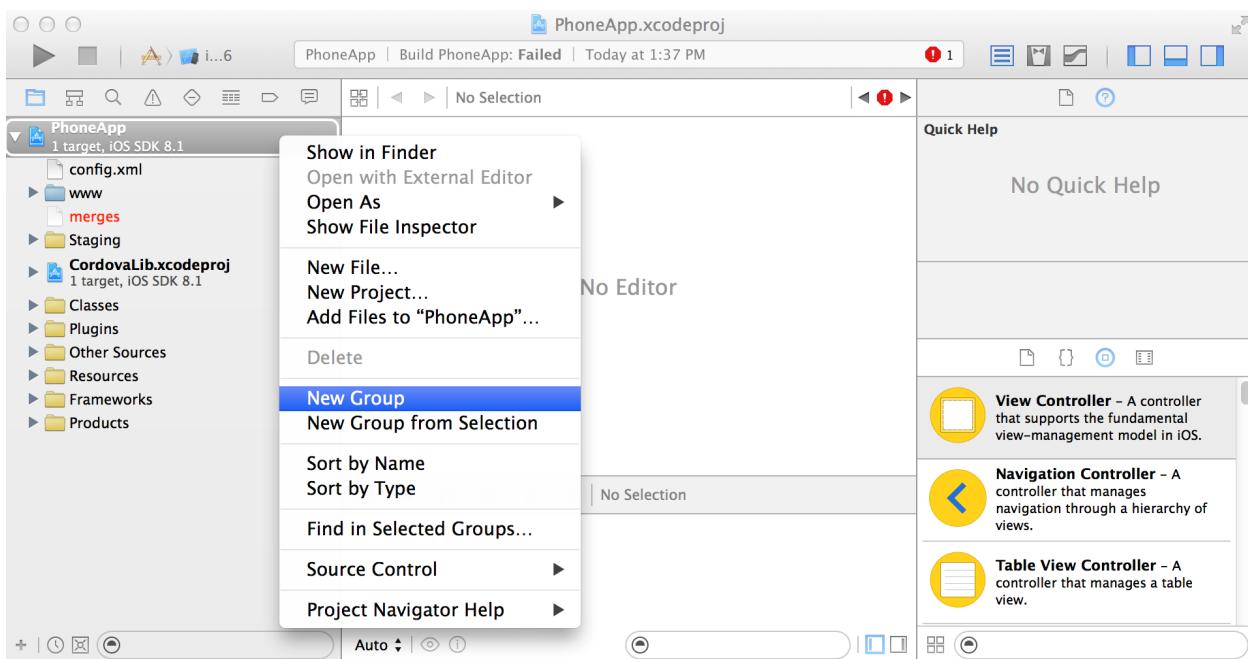
You'll need to download and unzip the Twilio Client SDK for iOS (<https://www.twilio.com/docs/client/ios>). When you open the folder with the contents of the SDK, the directory layout will look like this:

Name	▲	Date Modified	Size
.DS_Store		Today, 1:16 PM	15 KB
Acknowledgements.txt		Dec 16, 2014, 4:17 PM	13 KB
► assets		Jan 10, 2015, 9:11 AM	--
► BasicPhone		Jan 10, 2015, 9:11 AM	--
► changelog.html		Dec 16, 2014, 4:17 PM	4 KB
► faq.html		Dec 16, 2014, 4:17 PM	9 KB
► Headers		Dec 16, 2014, 4:17 PM	--
► Helper Libs		Jan 10, 2015, 9:11 AM	--
► Libraries		Dec 16, 2014, 4:17 PM	--
► Quickstart		Jan 10, 2015, 9:11 AM	--
► quickstart.html		Dec 16, 2014, 4:17 PM	29 KB
► readme.html		Dec 16, 2014, 4:17 PM	4 KB
► Resources		Dec 16, 2014, 4:17 PM	--
► Server		Jan 10, 2015, 9:11 AM	--
► Twilio Client iOS Docs.pkg		Dec 16, 2014, 4:17 PM	83 KB
► TwilioSDK.podspec		Dec 16, 2014, 4:17 PM	1 KB

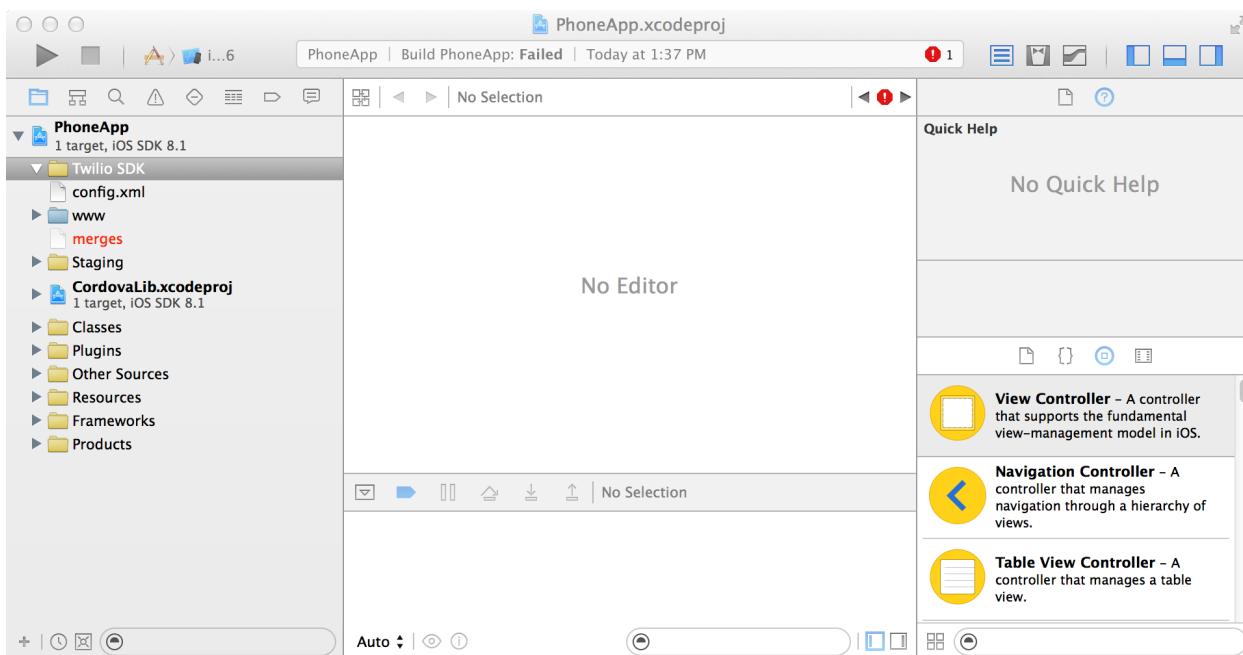
You will need to add the Headers and the Libraries folders to your iOS XCode project. When you add iOS as a platform to your PhoneGap/Cordova app, you get an .xcodeproj file in your **platforms/ios** directory - for instance, **PhoneApp.xcodeproj**. Open this file with XCode 6.



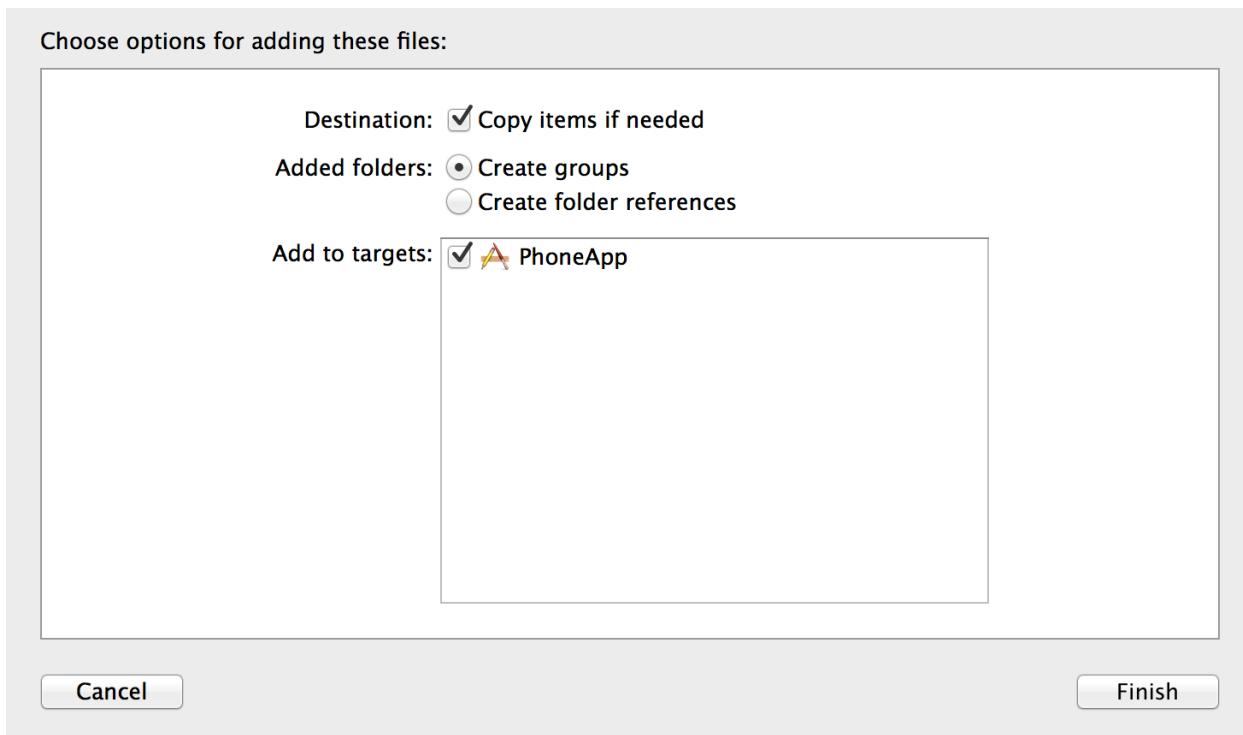
After you install the Twilio Client plugin, your app won't compile until you add the headers and libraries from the Twilio Client iOS SDK. The easiest way to do this is to create a new group underneath PhoneApp. Right click on PhoneApp on the left hand side, in the project navigator (it's highlighted in the above screen shot), and choose **New Group** from the pop-up menu:



A new folder will appear in the Project Navigator, which you can name "Twilio SDK", or anything else you want.

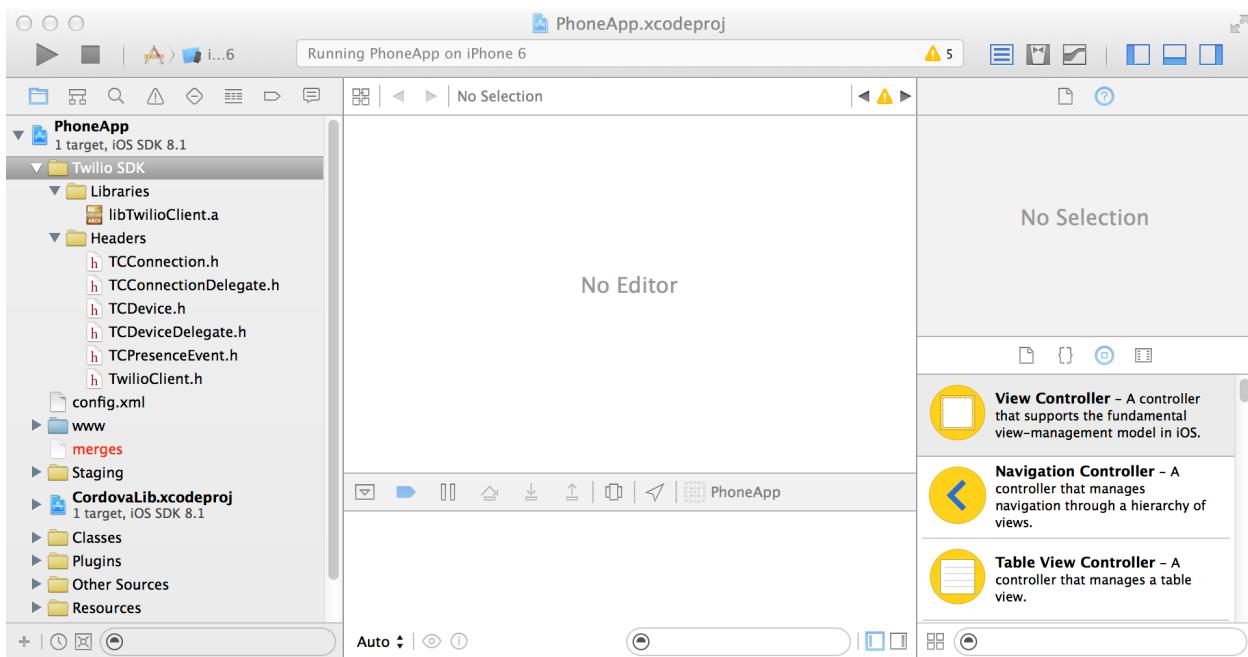


Go back to the Finder window with the Twilio Client SDK for iOS. Drag the **Headers** folder onto the Twilio SDK group you just added, and you'll see this window pop up:



Make sure that **Create groups** is selected, and that **Copy items if needed** is checked - by default, they may not be. Click Finish, and then repeat with the **Libraries** folder from the Twilio Client SDK for iOS.

If you expand the folders in your project navigator, you'll see a structure similar to this in XCode:



Now, if you press the Play button (in the upper left), your app will compile and run. You'll also be able to run the app from the command line using **cordova run ios**.