

# Using PhoneGap Build to Create Apps

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## Introduction

So you want to develop apps, but you find cross-platform development daunting and you can't make use of your long experience in Web technology when developing in Java or Swift?

Look no further, PhoneGap is for you (there are other options, but for the sake of this tutorial, there aren't, m'kay?).

The tutorial is intentionally bare-bones, to highlight that starting and repeating PhoneGap-based projects is quite easy compared to developing native apps.

I hope what is described is independent of what OS you are using, but I can't promise as I only use Windows and Mac OS.

It assumes you already have an account at PhoneGap Build and that you will make the app for iOS and Android only. Developing for e.g. Windows Phone should work as well without any major differences.

As indicated, being experienced in HTML, Javascript and CSS helps a lot, and is a major reason for using PhoneGap in the first place. After the initial configuration of a project, almost every other aspect of the app development is Web-related.

See References for the external sites and services mentioned in the text.

PGB = PhoneGap Build below.

## Disclaimer

The documentation for Cordova, PhoneGap and PhoneGap Build is contradicting taken together. You might find the Cordova documentation more up to date, but there are no guarantees for that, and there are some things that relate to specifically PhoneGap Build.

Adobe provides a forum for PhoneGap (see References), so submit questions about PhoneGap and PhoneGap Build there. If you find errors in this tutorial, please let me know.

Publishing an app at any of the stores is very store-specific (and at times complex, especially when it comes to iOS). You need to look elsewhere for such information.

During development, you and your test users install directly from PhoneGap Build. Optionally use TestFlight for iOS to simplify distribution of prototypes to many, otherwise you need to register the devices' UDIDs in the provisioning profile. To be able to install Android versions from PhoneGap Build you need to enable "Unknown Sources" in your device.

## The project structure

As indicated before, PhoneGap is almost all about HTML, Javascript and CSS, but there are a few important distinctions, considering a PhoneGap app is also a native app.

Create a root folder for all your PhoneGap projects. Mine is called PhoneGap, simply enough.

## **/PhoneGap**

Create a sub folder there for each project you create, e.g.:

## **/PhoneGap/MyApp**

Copy the template included with this tutorial to your project's folder. The structure is:

**.cordova** (optional; see Quicker deployment below)

**www** (the root for your PhoneGap project proper)

**www/css** (where your stylesheet(s) go)

**www/js** (where your Javascript(s) go)

**www/res** (images that are used for app icons and splash screens)

The folders contain files that will get you started on your quest.

You don't have to follow this structure, but this tutorial assumes you do.

Always use the same file structure for your projects to make it easy to use previous projects as a starting point for new ones, and to simplify comparisons and migrations.

## Configuration

Edit config.xml in an XML and UTF-8 aware editor (preferably).

Replace the following with your information:

- **id** (your app's package name; use reverse domain syntax, a la com.company.project)
- **name** (the app's name that will show up on PGB; you can give it a different name in the stores)
- **description** (the app's description -"-)
- **author** (email and href; well, you get it)

Create a ZIP file of everything under www.

Upload this file via PGB's **+ new app**.

Build it in PGB.

If it fails you most likely haven't set up certificates. Android doesn't need any while developing (PGB will apply its own developer certificate). For iOS you always need one. If you don't know how that is created leave that for now, provided you at least have an Android phone. See References for more information.

You can also view the build **Log** per platform, if something went wrong in the building process.

Read the displayed QR code from an applicable device, and install and run the app.

After starting the app it should simply say "Wassup world?" and pop up a Javascript alert.

## Creating images

To create the icons and splash screens needed for your project you can use **PhoneGap Image Generator** (see References).

At least upload a high-resolution square logo (preferably 512 pixels or better) to be used as the app icon and in the center of splash screens. Possibly also upload a splash screen image.

Let the tool do its magic, and download the image pack.

Decompress the ZIP file and move all of it to www. Remove iconoriginal.png and the possible splashoriginal.png.

Please don't remove the (empty) .pgbomit file under res. If it wasn't there, all images would be duplicated for each platform.

## Creating an app

index.html, applogic.js and index.css should get you started with your project. Leave index.js be. It secures that applogic.js is not called until PhoneGap/Cordova has been initialized.

As this is all about your creativity and your own and your customers' requirements, here are a few pointers:

- Get the design aspects done early, and use the same styles throughout the app. If you develop this app for customers, this way the design can be signed off early on. Otherwise there's a big risk you will spend most of the project time adjusting the design. Remember, a customer usually has no clue about programming and app logic. They only comment on what they see and can work with.
- Reference the PhoneGap plugins that you need in config.xml. The template file lists a few important ones that I've found are needed in all projects. There are tons of plugins available (see References).
- PGB recommends locking what version of plugin to use. I go the other way and want the very latest version always. Pick your poison.

## HTML etc support in phones

Newer smartphone OSes and browsers tend to be more or less fully compliant with HTML5 and CSS3, but you may still find that some features are not supported. Not the least the plethora of new input field types, overflow options, animations etc, so don't just assume everything in HTML5 and CSS3 will work on all phones. After all, PhoneGap relies on the WebView in the platform.

Also note that in older versions of Android (4.3 and prior), WebView is not based on Chrome, even if installed, but the older Android browser, which is not altogether HTML5 compliant, and never will be.

Always have phones and possibly tablets on hand running the platforms (and a few of the platform versions) you intend to support. Don't just assume it will work as expected. Especially, if your app will support both Android and iOS, you need devices supporting both, as plugins usually have completely different code per platform, even though the API is the same.

## Options

### Syntax checking

Most IDEs and editors have syntax checking and coloring for HTML, Javascript, CSS and XML, like NetBeans and Eclipse, but if you want more elaborate checking (and recommendations) you can use the W3C Markup Validation Service, by uploading what's under www to a server.

### Quicker deployment

**phonegap remote build** makes it possible to deploy projects from the command line, which speeds up frequent test deployments a lot.

To prepare for using it, install Node.js and PhoneGap. See [phonegap.com](http://phonegap.com) for instructions and links.

To make phonegap remote build know what PGB project to address, enter the PGB App ID in `.cordova/config.json`. Don't forget: This ID is different for each project. PGB will get confused if you don't use the correct ID per project.

You build the app from the project root. You may use the included `br.bat` (for Windows only).

You always need to state a platform to build for (phonegap remote build ios/android). PGB will build for all platforms that are stated in `config.xml` anyway, yet not finish until the app has been built for the stated platform. As building for Android tends to be slower, I use that to know when all builds are completed.

## References

- Cordova: <https://cordova.apache.org/>
- PhoneGap: <http://phonegap.com/>
- PhoneGap Build: <https://build.phonegap.com/>
- PhoneGap Build community: <https://forums.adobe.com/community/phonegap/build>
- Plugins: <http://cordova.apache.org/plugins/>
- Plugins: <https://www.npmjs.com/>
- Apple Developer: <https://developer.apple.com/>
- Google Developers: <https://developers.google.com/>
- W3C Markup Validation Service: <http://validator.w3.org/>
- PhoneGap Image Generator: <http://pgicons.abiro.com/>