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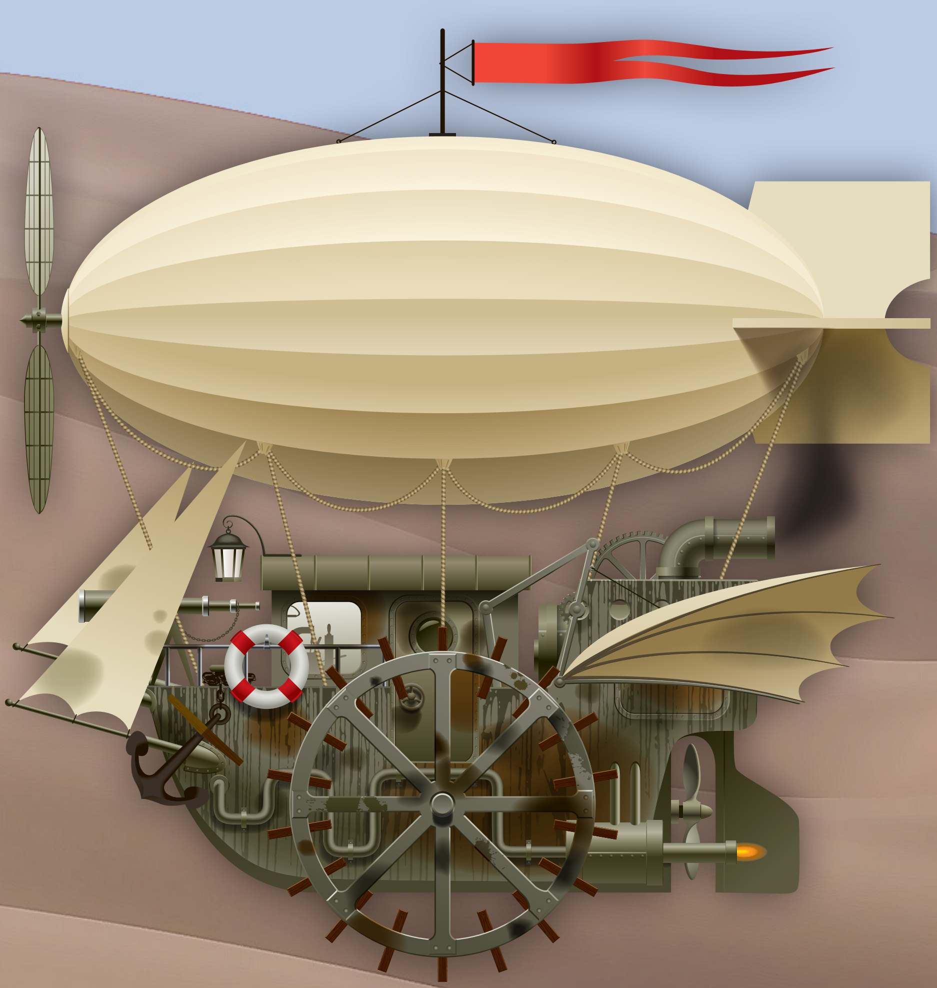
Environments



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PHP on Firefox OS

Matthew Setter

Introduction

Welcome to another edition of Education Station. In this month's edition I want to help make your PHP apps more mobile. We talk a lot about APIs, mobile websites, performance, security and so on; but what about creating near-native applications, with only a little bit of HTML or a basic PHP application?

Specifically, I'm talking about Firefox OS, released by the same folks who brought us the Firefox browser, Mozilla. While not completely new, it's likely new enough to most of us that we've not really played with it yet; especially as it's targeted at the developing, not the developed, world.

So in this month's Education Station, I'm going to show you how to make both a basic HTML site and a PHP application available as applications on Firefox OS.

DisplayInfo()

Requirements

- Firefox OS - https://www.mozilla.org/en-US/firefox/os/
- PHP 5.3 or above
- Firefox 28 or above

Related URLs:

- Mozilla Developer Network documentation - https://developer.mozilla.org/en-US/Marketplace/Options/Packaged_apps
- Firefox OS background - http://en.wikipedia.org/wiki/Firefox_OS
- MDN App Manifest - https://developer.mozilla.org/en-US/Apps/Build/Manifest
- MDN App Manifest, icons - https://developer.mozilla.org/en-US/Apps/Build/Manifest#icons
- MDN App Manifest, permissions - https://developer.mozilla.org/en-US/Apps/Build/Manifest#permissions

What is Firefox OS

In case you've not yet heard of Firefox OS, formerly known as Boot to Gecko (B2G), it debuted in February 2012, with version 1.0 being released on December 22 of that year. It's an open-source operating system, based on the Linux kernel.

Using a number of core components, including Gecko (the Firefox browser engine), Firefox OS sports all the features you'd expect from a smartphone, including telephony, contacts, social media, photos, music, maps, messages, and an ever growing Firefox Marketplace.

It's already quite feature rich for such an early stage. But as I alluded to earlier, it's not designed for high-end handsets or the developed world. It's designed for the developing world and for less cash-rich customers, otherwise known as the "ultra low cost category."

So don't expect Firefox OS to compete with the iPhone 6 Plus or Samsung Galaxy S5. However, if you aren't elitist, are a true advocate of the open web, and believe the web should be for everyone, not just those with ready cash to burn, then this is a platform to get excited about.

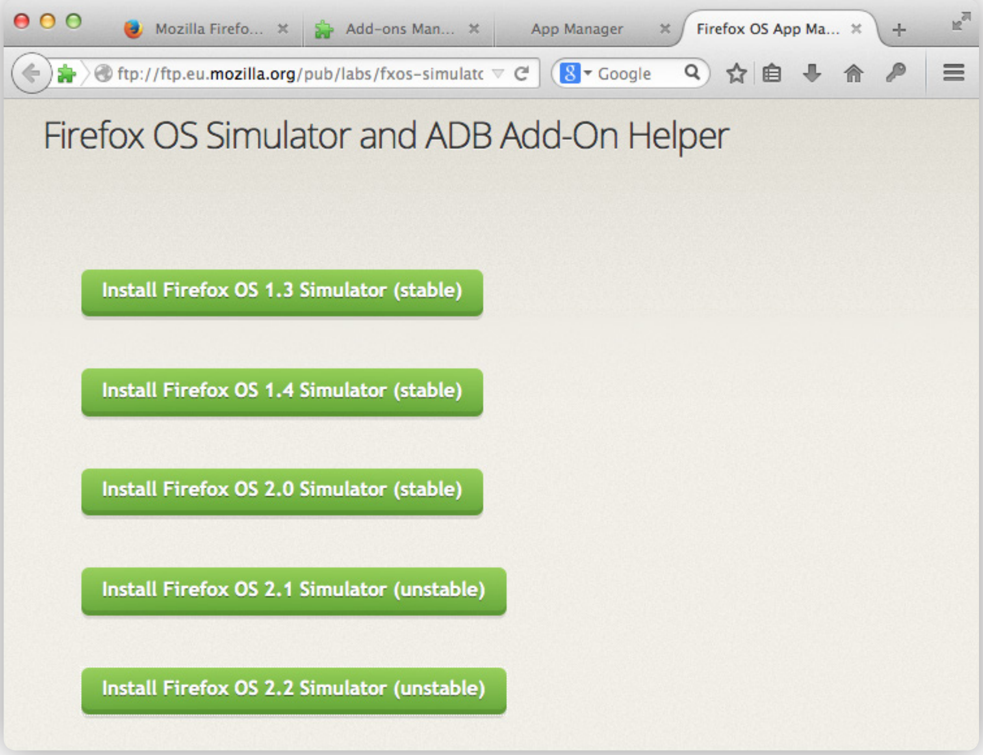
Getting Started

With all of that said, let's start making an app for it. As you might have guessed by now, getting your hands on a handset with Firefox OS pre-installed, or a phone which you can root and install it on, might not be quite so easy.

But don't be dissuaded. Just like developing for Android and iOS, you can develop Firefox OS apps locally, getting an almost life-like representation of what the app will look like when running on a physical device.

Available as an add-on for Firefox, the Firefox OS Simulator will let you load and test your applications as though you had a physical device.

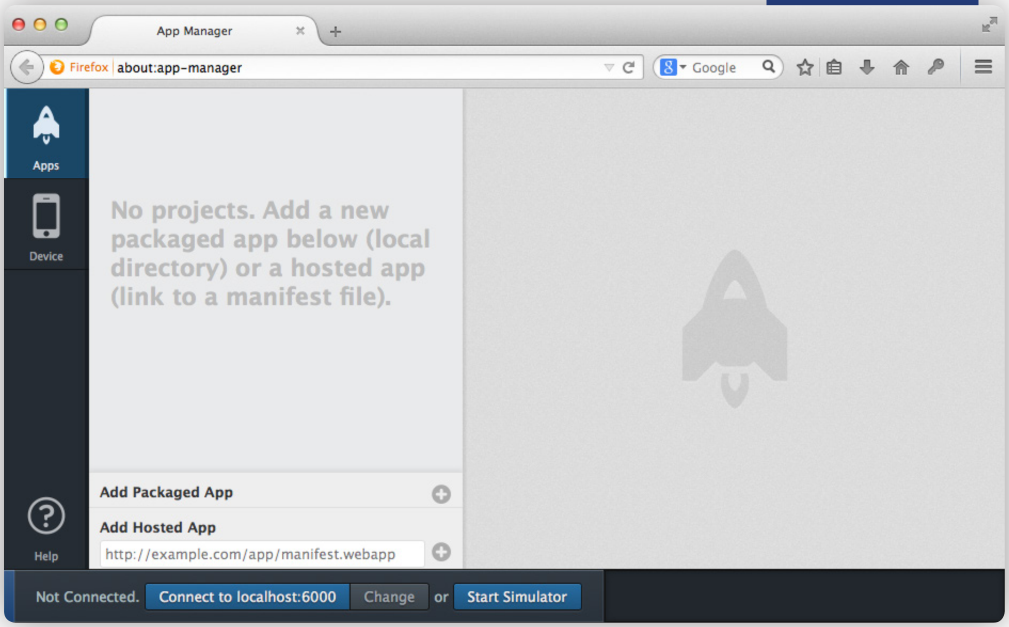
FIGURE 1


Mozilla Firefo...
Add-ons Man...
App Manager
Firefox OS App Ma...
ftp://ftp.eu.mozilla.org/pub/labs/fxos-simulatc
Google
Firefox OS Simulator and ADB Add-On Helper
Install Firefox OS 1.3 Simulator (stable)
Install Firefox OS 1.4 Simulator (stable)
Install Firefox OS 2.0 Simulator (stable)
Install Firefox OS 2.1 Simulator (unstable)
Install Firefox OS 2.2 Simulator (unstable)

To install it, navigate to http://ftp.mozilla.org/pub/mozilla.org/labs/fxos-simulator/index.html and click on **Install Firefox OS 2.0 Simulator (stable)**, the latest version available at the time of writing, which you can see in Figure 1. You may get a popup in Firefox to allow installation of the extension.

Once the simulator is installed, start it by clicking **App Manager**, which you can find under `Tools -> Developer`. When it's loaded (as a tab in Firefox), it will look like Figure 2.

FIGURE 2



No projects. Add a new packaged app below (local directory) or a hosted app (link to a manifest file).

To start the simulator, click **Start Simulator** at the bottom of the window; then click **Firefox OS 2.0**. The simulator will launch and appear as in Figure 3. You'll find that it works almost as though it was a real device, able to access your music, search the web and more.

A Basic Application

With the simulator ready, let's have a quick look at the specifics of an app. There are two types of apps which can be deployed to a Firefox OS device: hosted and packaged. I'll keep it simple and quote MDN, the Mozilla Developer Network documentation, which you can find in the Related URLs.

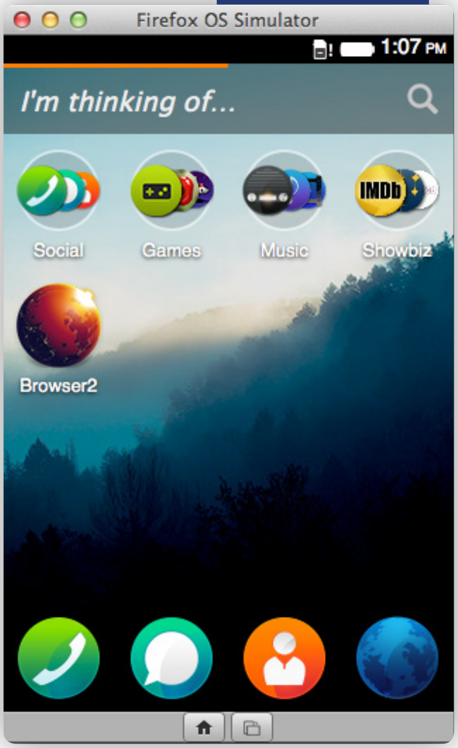
Hosted Apps

> *A hosted app is an Open Web App that has all of its resources (HTML, CSS, JavaScript, app manifest and so on) stored on a Web server.*

Packaged Apps

> *A packaged app is an Open Web App that has all of its resources (HTML, CSS, JavaScript, app manifest, and so on) contained in a zip file, instead of having its resources on a Web server.*

FIGURE 3



The Manifest File

Now irrespective of whether you're developing a package or a hosted app, it needs to have a manifest file, located in the project root directory, called `manifest.webapp`.

You can find a sample manifest in Listing 1. The manifest provides all the required configuration details to Firefox OS on how to load and run your application, along with other details, such as permissions, localizations, icon locations, rotation ability, and so on.

There's not much you absolutely need to do, when creating the manifest file. But here are the essentials:

The file must be valid JSON

The name, description, and icons properties must be filled out

The icons configuration needs to have both a 128x128 and 512x512 icon specified

Other than that, unless you're submitting an application to the Firefox Marketplace, that's all you technically need to do. However, if you don't also fill out launch_path, then your app's not going to look all that interesting. Actually, it won't do anything.

Stepping through listing one:

`name`, `description`, **and** `version` are self-explanatory.

`launch_path` specifies the bootstrap file of the application.

`icons` indicates where the application icons are. There are quite a number that can be specified, which you can find at the MDN App Manifest page (see Related URLs).

`developer` lets you provide details of the developers behind the app.

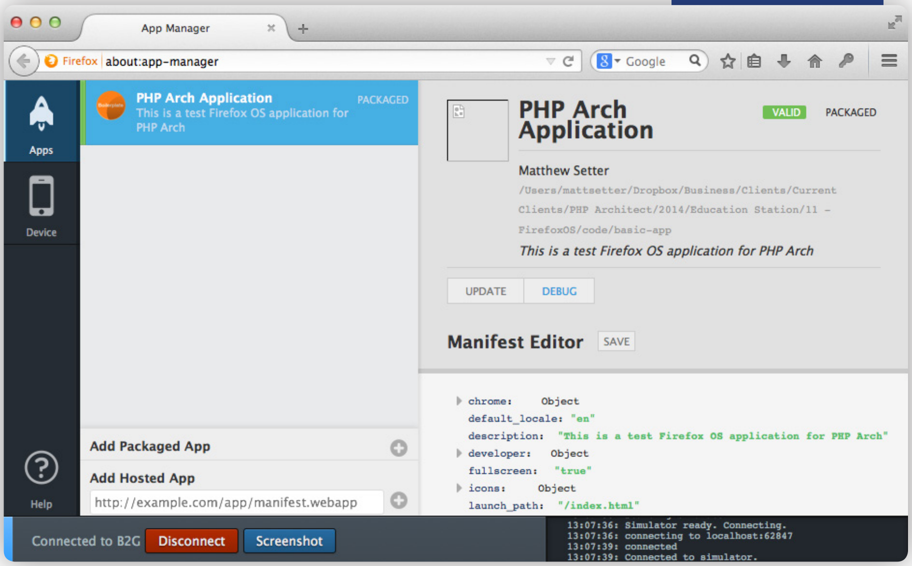
`locales` allows you to translate the UI across a number of languages, while default_locale sets the default to use.

`permissions` lets you specify the device permissions the app needs, which the user will see when it's installed. There are quite a number, so check them out at the MDN App Manifest page (see Related URLs).

LISTING 1

```
{
  "name": "PHP Arch Application",
  "description":
    "A test Firefox OS application for PHP Arch",
  "version": "1.0",
  "launch_path": "/index.html",
  "icons": {
      "128": "/images/icon128.png",
      "64": "/images/icon64.png"
  },
  "developer": {
      "name": "Matthew Setter",
      "url": "http://www.matthewsetter.com"
  },
  "default_locale": "en",
  "type": "web",
  "chrome": { "navigation": true },
  "fullscreen": "true",
  "locales": {
    "en": {
      "name": "PHP Arch Application",
      "description":
        "A test Firefox OS application for PHP Arch"
    },
    "de": {
      "name": "PHP Arch Applikation",
      "description":
        "Ein test Firefox OS Applikation für PHP Arch"
    }
  },
  "permissions": {
    "contacts": {
      "description":
        "Required for autocompletion in the share screen",
      "access": "readcreate"
      },
    "alarms": {
      "description": "Required to schedule notifications"
    }
  }
}
```

FIGURE 4



PHP Arch Application
This is a test Firefox OS application for PHP Arch

PHP Arch Application

Matthew Setter

/Users/mattsetter/Dropbox/Business/Clients/Current Clients/PHP Architect/2014/Education Station/11 - FirefoxOS/code/basic-app

This is a test Firefox OS application for PHP Arch

Manifest Editor

```
chrome:     Object
default_locale: "en"
description:  "This is a test Firefox OS application for PHP Arch"
developer:   Object
fullscreen:   "true"
icons:      Object
launch_path:  "/index.html"
```

http://example.com/app/manifest.webapp

```
13:07:36: Simulator ready. Connecting.
13:07:36: connecting to localhost:62847
13:07:39: connected
13:07:39: Connected to simulator.
```

type specifies the application's type, which is relevant if you want to access different and more sensitive WebAPIs.

chrome sets whether to show or hide the back, forward, reload UI chrome.

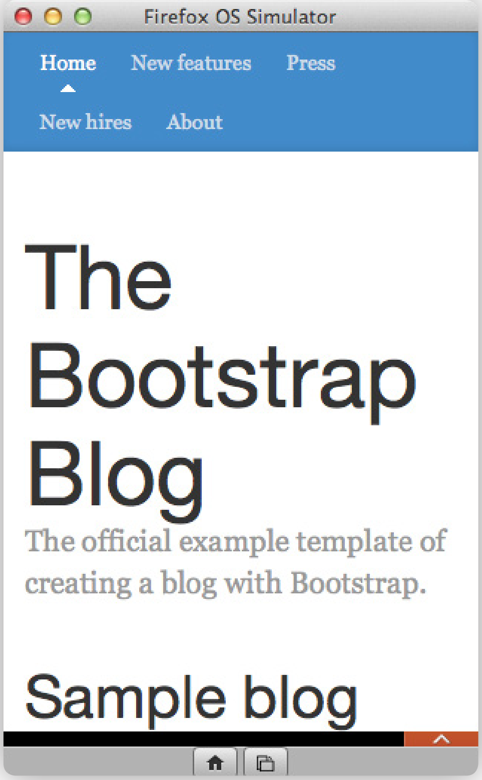
fullscreen sets whether to launch the application in full screen mode or not. I wanted the app to appear almost like a native application, so I set this to true.

For the full run down on what can be included, check out the App manifest description on MDN (see Related URLs). Now let's deploy the application in both packaged and hosted formats.

A Packaged Application

The application I've created really isn't an application per se, but an implementation of one of the example templates from the Twitter Bootstrap project, which you can find at http://getbootstrap.com/examples/blog/.

FIGURE 5



The Bootstrap Blog

The official example template of creating a blog with Bootstrap.

Sample blog

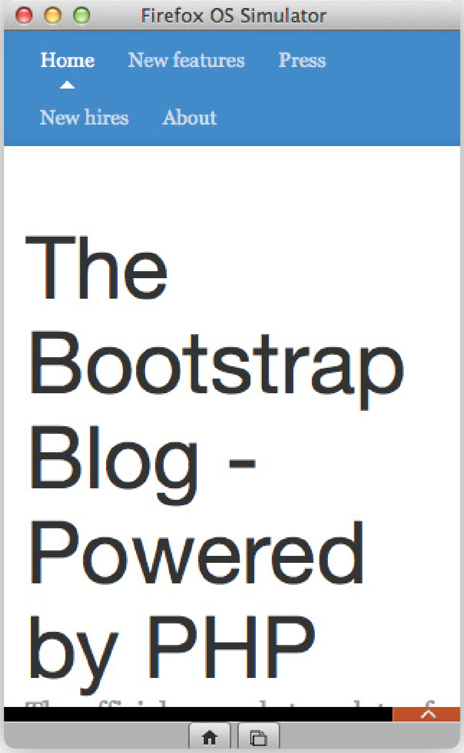
It's nothing more than a simple blog template. It could have been a complete PHP application. You can clone the code from http://github.com/settermjd/phparch-firefoxos-basic-app to a directory on your development machine. Then, down the bottom of the App Manager, click the plus icon, located next to **Add Packaged App**. This will prompt you for the directory of the app. Point it to the cloned source directory. All being well, you'll see the app loaded, as in Figure 4. On the left, you'll see the app in the list, already selected. On the right, you'll see the details of the application, which the App Manager read from the manifest file.

What's more, you'll see a new icon appear in the simulator. Double-clicking on the icon will load it, so you can see that it renders nicely for a mobile device, as in Figure 5. It's not too special, but it works.

A Hosted Application

Now let's look at a hosted application. As I mentioned before, the only difference between a hosted and a packaged application is that the hosted app source files are located on a server. But the same rules apply with respect to the manifest file.

FIGURE 6



The Bootstrap Blog - Powered by PHP

To make the app more PHP-specific, I changed manifest.webapp by setting launch_path to index.php, instead of index.html; renamed index.html to index.php; and changed the contents of the H1 tag to **The Bootstrap Blog - Powered by PHP**, rendered by the print function.

Following that, I used PHP's built in web server to "deploy" the application where php–app is the name of the project directory. The complete command is:

```
php -S localhost:8080 -t php-app
```

Since the built-in web server will serve the application at http://localhost:8080, under **Add Hosted App**, I added in http://localhost:8080/manifest.webapp and clicked enter. This loaded the configuration in the App Manager.

However, it didn't deploy the app to the phone. To do that, you need to click **UPDATE** in the app details. If you have the simulator still running, you'll see a new icon for the app appear. As before, double click the icon to launch the application, which will appear as in Figure 6.

Wrapping Up

And that's how simple it is to create an app for Firefox OS, whether it's a packaged app or a hosted one, perhaps one which uses JavaScript to interact with a remote PHP-based API, or to reference a hosted PHP application.

Now this has just scratched the surface. I'm sure that if you were paying attention, you noticed that I didn't cover anything with respect to being offline and caching, etc. I also only briefly mentioned the Firefox Marketplace, which you can find at https://marketplace.firefox.com and the more sensitive WebAPIs.

But, I encourage you to have a good look over the documentation and play with it; see what you can come up with. For something so young, it's got a hell of a lot to offer.

Until next month, happy coding

MATTHEW SETTER is a freelance technical writer (http://www.matthewsetter.com/services/) and editor of Master Zend Framework, dedicated to helping you become a Zend Framework master. Want to be a master? Come find out more (http://www.masterzendframework.com/welcome-from-phparch).

Twitter: @settermjd

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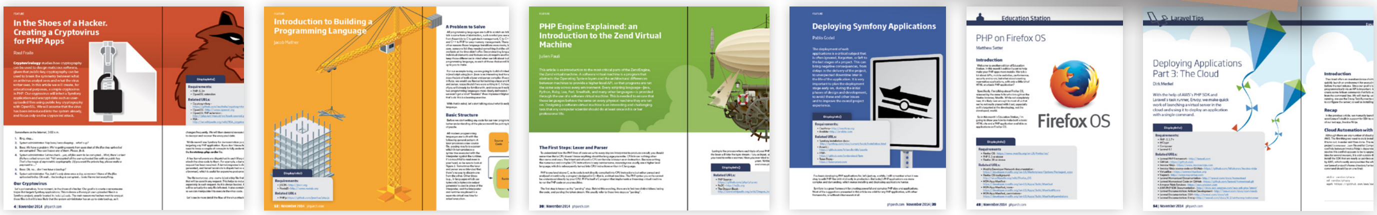

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