iOS - Implementing Cordova plug-ins

Overview

In some cases, developers of a MobileFirst application might have to use a specific third-party native library or a device function that is not yet available in Apache Cordova.

With Apache Cordova, developers can create an Apache Cordova plug-in, which means that they create custom native code blocks, and call these code blocks in their applications by using JavaScript.

This tutorial demonstrates a simple Apache Cordova plug-in creation and integration for iOS.

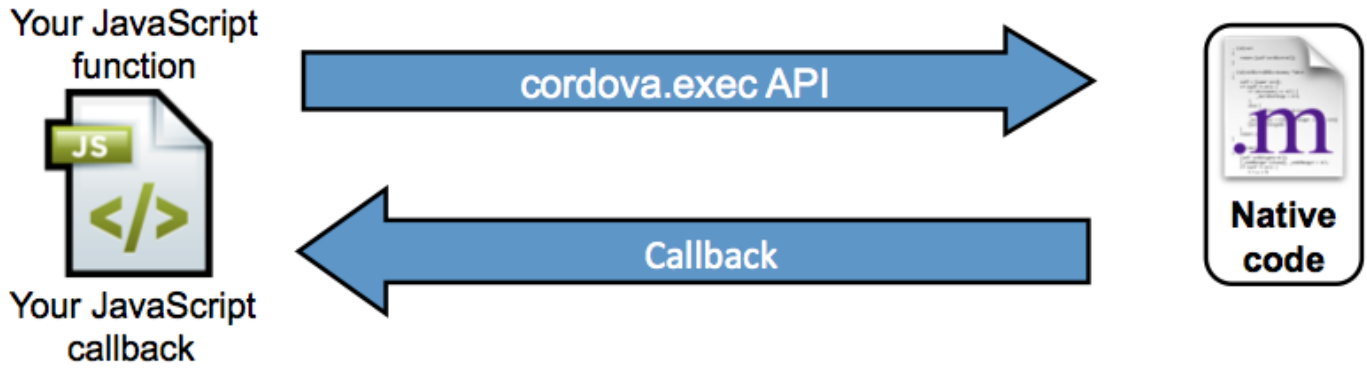
Note: In Cordova-based applications, developers must check for the `deviceready` event before they use the Cordova API set. In a MobileFirst application, however, this check is done internally.

Instead of implementing this check, you can place implementation code in the `wlCommonInit()` function in the `common\js\main.js` file.

The code extracts below are based on the sample application, which is provided at the bottom of this tutorial.

Plug-in creation overview:

1. Declare the plug-in in the `config.xml` file.
2. Use the `cordova.exec()` API in the JavaScript code.
3. Create the plug-in class that will run natively in iOS.
   The plug-in performs the required action and calls a JavaScript callback method that is specified during the call to `cordova.exec()`.



Declaring a plug-in

The plug-in needs to be declared in the project, so that Cordova can detect it.
To declare the plug-in, add a reference to the `config.xml` file, located in the native folder of the iOS environment.

```
<feature name="sayHelloPlugin">
 <param name="ios-package" value="sayHelloPlugin" />
</feature>
```

Implementing cordova.exec() in JavaScript

From the JavaScript code of the application, use the `cordova.exec()` method to call the Cordova plug-in:

```
function sayHello() {
    var name = $("#NameInput").val();
    cordova.exec(sayHelloSuccess, sayHelloFailure, "SayHelloPlugin", "sayHello", [name])
;
}
```

`sayHelloSuccess` - Success callback
`sayHelloFailure` - Failure callback
`SayHelloPlugin` - Plug-in name as declared in config.xml
`sayHello` - Action name
`[name]` - Parameters array

The plug-in calls the `success` and `failure` callbacks.

```
function sayHelloSuccess(data){
    WL.SimpleDialog.show(
        "Response from plug-in", data,
 [{text: "OK", handler: function() {WL.Logger.debug("Ok button pressed");}}]
    );
}
function sayHelloFailure(data){
    WL.SimpleDialog.show(
 "Response from plug-in", data,
 [{text: "OK", handler: function() {WL.Logger.debug("Ok button pressed");}}]
    );
}
```

Implementing the Objective-C code of a Cordova plug-in

After the plug-in is declared, and the JavaScript implementation is ready, the Cordova plug-in can be implemented. For this purpose, ensure that the project is built in Eclipse and opened in the Xcode IDE.

Step 1

1. Add a new Cocoa Touch Class file, make sure that it is a subclass of `UIViewController`, and save it in the `Classes` folder of the Xcode project.
2. Import the `Cordova/CDV.h` and inherit the `CDVPlugin` class.
3. Declare the `SayHelloPlugin` signature.

```
#import <Foundation/Foundation.h>
#import <Cordova/CDV.h>
<p>@interface SayHelloPlugin : CDVPlugin
- (void)sayHello:(CDVInvokedUrlCommand*)command;
@end
```

Step 2

- Implement the method. The `command` argument contains references to the parameters that are sent from JavaScript and callbacks:

```
#import “SayHelloPlugin.h"
@implementation SayHelloPlugin
- (void)sayHello:(CDVInvokedUrlCommand*)command {
```

- This statement retrieves the parameters that are sent from JavaScript.

```
NSString *responseString = [NSString stringWithFormat:@"Hello %@", [command.arguments objectAtIndex:0]];
```

- The `pluginResult` object is created with data retrieved from JavaScript. The `CDVCommandStatus` parameter defines whether the plug-in call was successful or not.

```
CDVPluginResult *pluginResult = [CDVPluginResult resultWithStatus:CDVCommandStatus_OK messageAsStri
ng:responseString];
```

- The `sendPluginResult` method is used to return a response back to JavaScript (invoke callback).

```
[self.commandDelegate sendPluginResult:pluginResult callbackId:command.callbackId];
}
@end
```

Important:
If you are working with existing `.m` and `.h` files, reference those files while you are working in Xcode. Placing the `.m` and `.h` files only in the `iphone\native\Classes` folder in Eclipse is not sufficient, because these files will not be referenced in the Xcode project unless you add them in Xcode.

Sample application

Click to download (http://public.dhe.ibm.com/software/products/en/MobileFirstPlatform/docs/v630/ApacheCordovaPluginsProject.zip) the Studio project.