

# Windows Phone 8 - 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 how to create and integrate a simple Apache Cordova plug-in for Windows Phone 8, in the following topics:

- Creating a plug-in
- Declaring a plug-in
- Implementing `cordova.exec()` in JavaScript
- Implementing the C# code of a Cordova plug-in
- Sample application

**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.

## Creating a plug-in

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 Windows Phone 8.

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

You must declare the plug-in 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 Windows Phone 8 environment.

```
<feature name="sayHelloPlugin">
  <param name="wp-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.exe(sayHelloSuccess, sayHelloFailure, "SayHelloPlugin", "sayHello", [name])
;
}
```

`sayHelloSuccess` - Success callback

`sayHelloFailure` - Failure callback

`SayHelloPlugin` - Plug-in name as declared in the `config.xml` file

`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 C# code of a Cordova plug-in

After you have declared the plug-in and the JavaScript implementation is ready, you can implement the Cordova plug-in.

For this purpose, ensure that the project is built in Eclipse and opened in the Visual Studio IDE.

### Step 1

1. Create a new C# class.
2. Add the new class to your project namespace and add the required import statements.

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using WPCordovaClassLib.Cordova;
using WPCordovaClassLib.Cordova.Commands;
using WPCordovaClassLib.Cordova.JSON;

namespace Cordova.Extension.Commands {
    public class SayHelloPlugin : BaseCommand
    {
```

## Step 2

Implement the `SayHelloPlugin` class and the `sayHello` method.

1. The JavaScript wrapper calls the `sayHello` method and passes a single parameter. It returns a string back to JavaScript.

```
public void sayHello(string options) {
    string optVal = null;
    try {
        optVal = JsonHelper.Deserialize<string[]>(options)[0];
    }
    catch (Exception) {
        DispatchCommandResult(new PluginResult(PluginResult.Status.ERROR, "SayHelloPlugin signaled an error"));
    }
}
```

2. The `DispatchCommandResult` method returns the result to JavaScript, whether success or failure.

```
if (optVal == null) {
    DispatchCommandResult(new PluginResult(PluginResult.Status.ERROR, "Got null value as input"));
}
else {
    DispatchCommandResult(new PluginResult(PluginResult.Status.OK, "Hello " + optVal));
}
}
}
```

## Sample application

Click to download (<https://github.com/MobileFirst-Platform-Developer-Center/ApacheCordovaPlugins>) the MobileFirst project.

