# Android - 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.

**Note:** In Cordova-based applications, developers must check for the device ready 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 common\js\main.js.

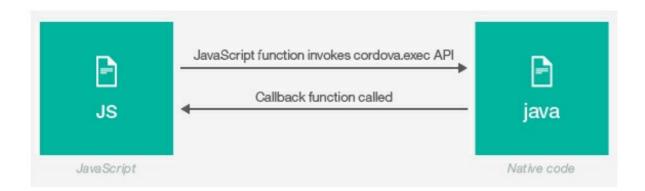
This tutorial demonstrates how to create and integrate a simple Apache Cordova plug-in for Android, in the following topics:

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

#### 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 Android.

  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\res\xml folder in the Android environment.

```
<feature name="sayHelloPlugin">
  <param name="android-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 Java 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.

- 1. Add a new Java class file.
- 2. Extend the org.apache.cordova.CordovaPlugin class and add the required import statements.

```
public class SayHelloPlugin extends CordovaPlugin {
```

- 3. Implement an execute method.
  - The arguments contain information that is required by a plug-in, such as action, arguments array, and callback context.

```
\begin{tabular}{ll} \textbf{public boolean execute} (String action, JSONArray args, CallbackContext callbackContext ) throws JSONException { } \\ \end{tabular}
```

4. If the supplied action is sayHello, retrieve the first argument from the args array, prepare a responseText string and, by using the callbackContext argument, call the success callback with this responseText string as the argument.

```
if (action.equals("sayHello")) {
    try {
        String responseText = "Hello " + args.getString(0);
        callbackContext.success(responseText);
    } catch (JSONException e){
        callbackContext.error("Failed to parse
        parameters");
    }
    return true;
}
```

5. Returning false means that the action that is supplied from JavaScript was not recognized.

```
return false;
}
```

#### Sample application

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





