# Push notifications in native Android applications

#### **Overview**

IBM MobileFirst Platform Foundation provides a unified set of API methods to send, or push, notifications to devices where the MobileFirst application is installed. It is possible to send a notification in 3 distinct types: event source notifications, broadcast notifications and tag notifications.

In this tutorial, the concept, API, and usage of push notifications are explained in the context of Native Android applications.

To create and configure an Android native project, first follow these tutorials:

- Creating your first Native Android MobileFirst application (../../hello-world/creating-first-native-android-mobilefirst-application/)
- Invoking adapter procedures from native Android applications (../../server-side-development/invoking-adapter-procedures-native-android-applications/)

The following topics are covered:

- Notification types
- Setting up the project

# **Notification types**

#### **Event source notifications**

Event source notifications are notification messages that are targeted to devices with a user subscription.

#### **Broadcast notifications**

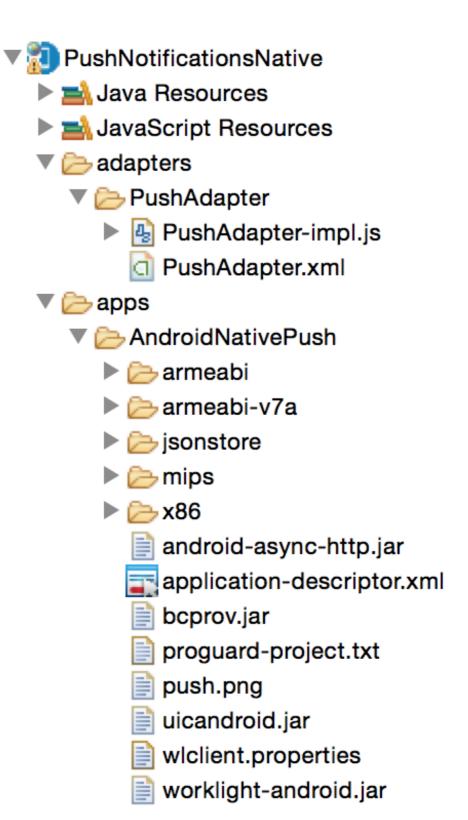
Broadcast notifications are notification messages that are targeted to all subscribed devices.

## Tag notifications

Tag notifications are notification messages that are targeted to all subscribed devices to a particular tag.

For more information, select a notification type.

## Setting up the project



## Create a MobileFirst project and add a MobileFirst Android Native API.

In this tutorial and the accompanying sample, the application is called "androidnative push". Be sure to replace this value with your own application name.

The native API includes the following push-related file:

• The push.png file is an icon file that is displayed when a push notification arrives. Copy this file from your native API project and put it in your project res/drawable folders.

#### 2. Edit the application-descriptor.xml file.

- Replace the key and senderId values with your API key and project number respectively in the pushSender tag. In case you do not have these, you can get them from the Google Developer Console (https://console.developers.google.com).
  - Your project number is the senderId.
  - Your Android key is the GCM key. You can generate it in API & Auth > Credentials.

```
<pushSender key="GCM-KEY" senderId="GCM-ID"/>
```

#### 3. Edit the wlclient.properties file.

Edit the wlclient.properties file in your native Android project and enter appropriate values for the following fields:

- wlServerHost The hostname or IP address of MobileFirst Server.
- wlServerPort The port on which MobileFirst Server is listening.
- wlServerContext The context root of your MobileFirst Server instance.
- GcmSenderld The project number that you obtained through the Google API console.

```
wlServerProtocol = http
wlServerHost =
wlServerPort = 10080
wlServerContext = /PushNotificationsNative/
wlAppId = AndroidNativePush
wlAppVersion = 1.0
wlEnvironment = Androidnative
wlUid = wY/mbnwKTDDYQUvuQCdSgg==
wlPlatformVersion = 6.3.0.00.20141012-0730
#languagePreferences = Add locales in order of preference (e.g. en, fr, fr-CA)
#For Push Notifications, uncomment below line and assign value to it
GcmSenderId =
```

## 4. Add Google Play Services (optional)

- From Android SDK Manager > Extras, add the Google Play Services option.
- Import Google Play Services as a library to the Eclipse workspace:
  - browse to the
    google-play-services\_lib project @
    android\_sdk\_location\extras\google\google\_play\_services\libproject\goo
    gle-play-services lib

1. Select File > Import, select Android > Existing Android Code into workspace, and

- After successfully importing google-play-services\_lib into the workspace, mark it as an Android library project: Right-click imported-project > properties > Android and select the IsLibrary checkbox.
- Right-click the **Android project > properties > Android >** and click **Add**.
  - 1. In the Project Selection dialog, select the **google-play-services\_lib project** and click **OK**.

- 2. Click Apply and OK in the Properties window.
- Add a reference to the google-play-services version in yourapp\android\native\AndroidManifest.xml as the first child of the application element:

```
<meta-data
android:name="com.google.android.gms.version"
android:value="@integer/google_play_services_version" /
>
```

## 5. Modify the native Android project.

Verify that the following permissions exist in the AndroidManifest.xml file of your Android project.

Add the launchMode attribute to the main AndroidNativePush activity. Set its value to singleTask.

```
<activity
    android:name="com.worklight.androidnativepush.AndroidNativePush"

android:label="@string/app_name"
    android:theme="@android:style/Theme.Black.NoTitleBar"
    android:launchMode="singleTask">
```

Add an intent-filter to the main AndroidNativePush activity for notifications.

```
<intent-filter>
    <action android:name="com.worklight.androidnativepush.AndroidNativePush.NOTIFICATION" />
    <category android:name="android.intent.category.DEFAULT" />
    </intent-filter>
```

# Add the GCMIntentService and add an intent-filter for RECEIVE and REGISTRATION of notifications.