

# Event source-based notifications in native Windows 8 applications

## Overview

Event source notifications are notification messages that are targeted to devices with a user subscription. To learn more about the architecture and terminology of push notifications in IBM MobileFirst™ Platform Foundation, see the “Event source-based notifications in hybrid applications (../push-notifications-hybrid-applications/event-source-based-notifications/)” tutorial. For more information about setting up push notifications in native Windows 8 applications, see the “Push notifications in native Windows 8 applications (../)” tutorial. Go to:

- Notification API - Server-side
- Notification API - Client-side
- Sample application

## Notification API: Server-side

### Creating an event source

Create a notification event source in the adapter JavaScript™ code at a global level (outside any JavaScript function).

```
1 |  
2 | WL.Server.createEventSource({  
3 |   name: 'PushEventSource',  
4 |   onDeviceSubscribe: 'deviceSubscribeFunc',  
5 |   onDeviceUnsubscribe: 'deviceUnsubscribeFunc',  
6 |   securityTest: 'PushApplication-strong-mobile-securityTest'  
7 | });
```

- name – A name by which the event source is referenced.
- onDeviceSubscribe – An adapter function that is called when the request for user subscription is received.
- onDeviceUnsubscribe – An adapter function that is called when the request for user unsubscription is received.
- securityTest – A security test from the authenticationConfig.xml file, which is used to protect the event source.

### Sending a notification

Notifications can be either polled from, or pushed by, the back-end system. In this example, a submitNotifications() adapter function is invoked by a back-end system as an external API to send notifications.

```

1  function submitNotification(userId, notificationText) {
2      var userSubscription = WL.Server.getUserNotificationSubscription('PushAdapter.PushEventSource', userId);
3
4      if (userSubscription === null) {
5          return { result: "No subscription found for user :: " + userId };
6      }
7
8      var badgeDigit = 1;
9      var notification = WL.Server.createDefaultNotification(notificationText, badgeDigit, {custom:"data"});
10
11      WL.Server.notifyAllDevices(userSubscription, notification);
12
13      return {
14          result: "Notification sent to user :: " + userId
15      };
16  }

```

## Notification API - Client-side

The first step is to create an instance of the `WLClient` class:

```

1  WLClient client = WLClient.getInstance();

```

You derive all push notification operations from the `WLPush` class.

`getPush` – Use this method to retrieve an instance of the `WLPush` class from the `WLClient` instance.

```

1  WLPush push = client.getPush();

```

`WLOnReadyToSubscribeListener` – When connecting to MobileFirst Server, the application attempts to register itself with the Google Cloud Messaging (GCM) server to receive push notifications.

```

1
2  OnReadyToSubscribeListener myOnReadyListener = new OnReadyToSubscribeListener();
3  push.onReadyToSubscribeListener = myOnReadyListener;

```

The `onReadyToSubscribe` method of `WLOnReadyToSubscribeListener` is called when the registration is complete.

```

1
2  public void onReadyToSubscribe()
3  {...}

```

## WLPush.registerEventSourceCallback

To register an alias on a particular event source, use the `WLPush.registerEventSourceCallback` method.


The API takes the following arguments:

`alias` - An alias name. `Adaptername` - Adapter in which the event source is defined.

`EventSourceName` - The event source on which the alias is called.


Example:

```
1
2 WLCClient.getInstance().getPush().registerEventSourceCallback("myPush", "PushAdapter", "PushEventSou
```



Typically, this method is called in the `onReadyToSubscribe` callback function.

```
1
2 public void onReadyToSubscribe()
3 {
4     WLCClient.getInstance().getPush().registerEventSourceCallback("myPush", "PushAdapter", "PushEventSou
5 }
```



## Subscribing to push notification

To set up subscription to push notification, use the `WLPush.subscribe(alias, pushOptions, responseListener)` API. The API takes the following arguments:

`alias` – The alias to which the device must subscribe. `pushOptions` – An object of type `WLPushOptions`. `responseListener` – An object of type `WLResponseListener`, which is called when subscription completes.

Example:

```
1
2 WLPush push = WLCClient.getInstance().getPush();
3 MySubscribeListener mySubListener = new MySubscribeListener();
4 push.subscribe("myPush", null, mySubListener);
5
```

`MySubscribeListener` implements `WLResponseListener` and provides the following callback functions:

`onSuccess` – Called when subscription succeeds. `onFailure` – Called when subscription fails.

## Unsubscribing from push notifications

To set up unsubscription from push notification, use the `WLPush.unsubscribe(alias, responseListener)` API. The API takes the following arguments:

`alias` – The alias to which the device has subscribed. `responseListener` – An object of type `WLResponseListener`, which is called when unsubscription completes.

Example:

```
1
2 WLPush push = WLCClient.getInstance().getPush();
3 MyUnsubscribeListener myUnsubListener = new MyUnsubscribeListener();
4 push.unsubscribe("myPush", myUnsubListener);
```

`MyUnsubscribeListener` implements `WLResponseListener` and provides the following callback functions:

`onSuccess` – Called when unsubscription succeeds. `onFailure` – Called when unsubscription fails.

## Additional client-side API methods

`isSubscribed()` - Indicates whether the device is subscribed to push notifications.

```
1
2 WLCient.getInstance().getPush().isSubscribed("myPush");
```

## Receiving a push notification

When a push notification is received, the `onReceive` method is called on an `WLEventSourceListener` instance.

```
1
2 class OnReadyToSubscribeListener : WLOnReadyToSubscribeListener, WLEventSourceListener{...}
```

The `WLEventSourceListener` instance is registered during the `registerEventSourceCallback` callback.

```
1
2 WLCient.getInstance().getPush().registerEventSourceCallback("myPush", "PushAdapter", "PushEventSour
```



The `onReceive` method displays the received notification on the screen.

```
1
2 public void onReceive(String props, String payload)
3 {
4     Debug.WriteLine("Props: " + props);
5     Debug.WriteLine("Payload: " + payload);
6 }
```

## Sample application

Click to download

(<http://public.dhe.ibm.com/software/products/en/MobileFirstPlatform/docs/v700/PushNotificationsNativeProject.zip>)

the Studio project. Click to download

(<http://public.dhe.ibm.com/software/products/en/MobileFirstPlatform/docs/v700/Windows8NativePushProject.zip>)

the Native project. The sample contains two projects:

- The `PushNotificationsNativeProject.zip` file contains a **MobileFirst native API** that you can deploy to your MobileFirst Server instance.
- The `Windows8NativePushProject.zip` file contains a **native Windows 8 application** that uses a MobileFirst native API library to subscribe to push notifications and receive notifications from Windows Notification Services (WNS). Make sure to update the `wlclient.properties` file in `Windows8NativePushProject` with the relevant server settings.