Sending Push Notifications to Android with Firebase

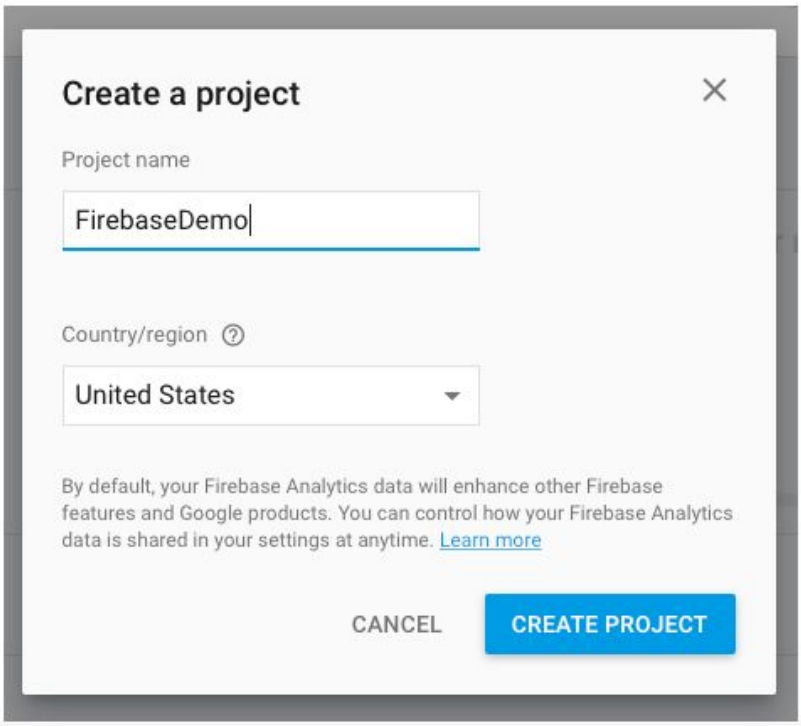
- You are going to have push notifications function in your new Android app

Before We Start

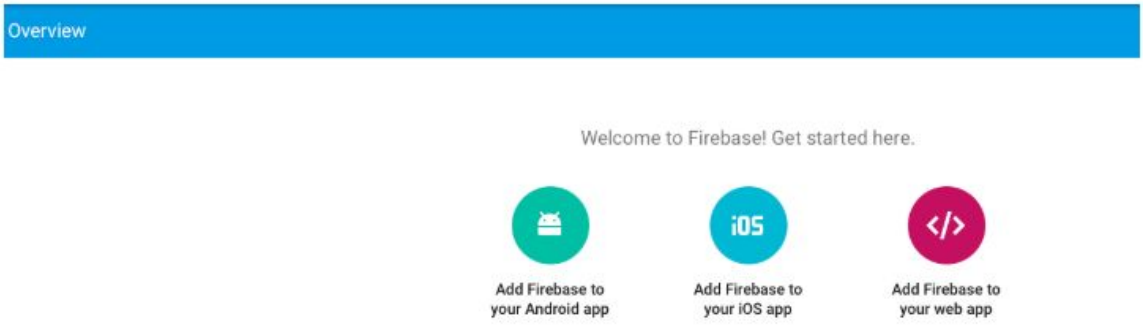
You'll need the following:

- The latest stable Android Studio
- A Firebase account

- If you choose to create a new project, you need to set the project name and country. For example, I will call my project FirebaseDemo.



- Then select "Add Firebase to your Android app".



- Set a package name for your app. I only set my package name and omit the SHA-1 because I don't use Firebase for my app's authentication.
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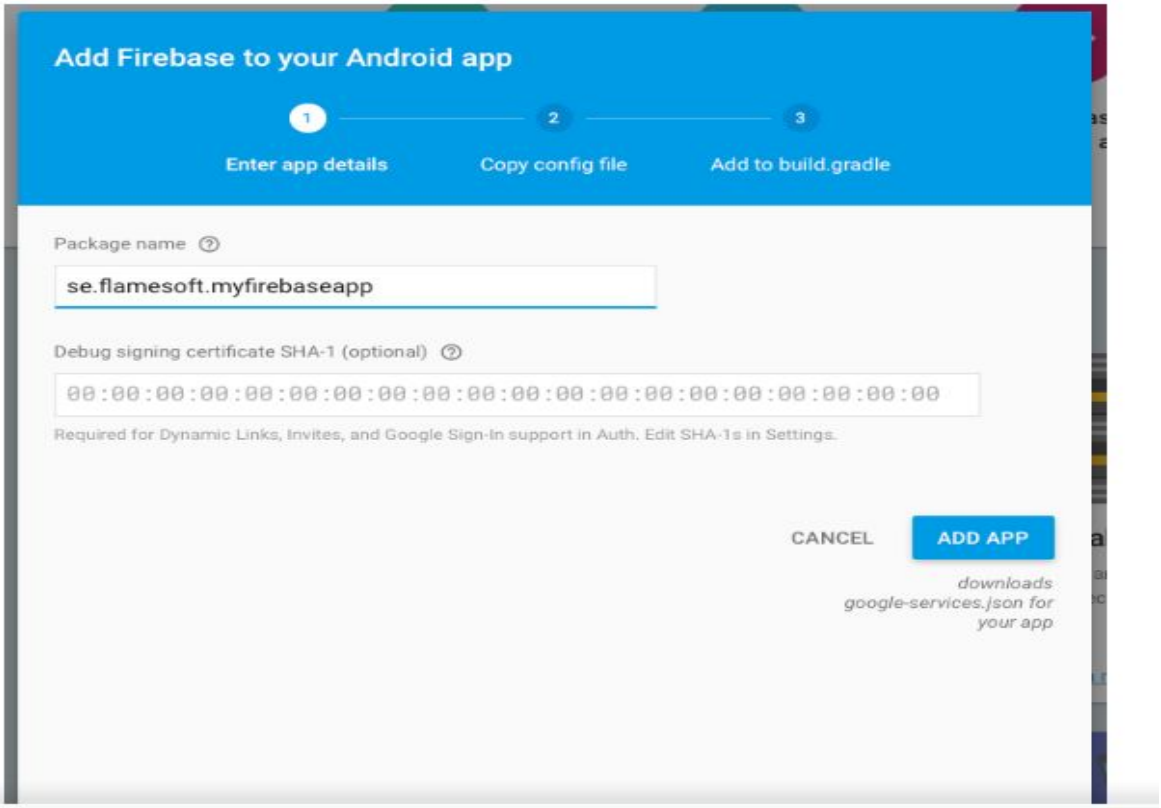
- 

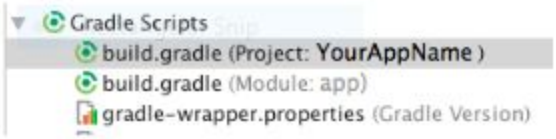
- Click the ADD APP button here to download google-services.json. This is an important file and you will need to put it into your app.

- **2. Add google-services.json to your app folder**

- Replace the google-services.json in your app folder. The Google services plugin for Gradle will load the google-services.json file you just downloaded.

- **3. Configure gradle files**

- Open Android Studio and modify your build.gradle files to use the Google services plugin.



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- **(3.1) Update the project-level build.gradle (the one in your project folder)**

- Add the following line to the build.gradle file:

- ```
  buildscript {

    dependencies {

      classpath 'com.google.gms:google-services:3.0.0' // Add this line

    }

  }
  ```

- **(3.2) Update the app-level build.gradle (the one in your project/your app-module)**

- (a) Add this line to the bottom of the build.gradle file

- ```
  apply plugin: 'com.google.gms.google-services'
  ```

- (b) Add Firebase related dependencies

- And Firebase related dependencies under dependencies in the same build.gradle file.
- ```
  dependencies {
      compile 'com.google.firebase:firebase-core:9.2.0'
  // this line must be included to integrate with Firebase
      compile 'com.google.firebase:firebase-messaging:9.2.0'
  // this line must be included to use FCM
  }
  ```

- (c) Update services using com.google.android.gms:play-services
- If you add Firebase into an existing project which uses any function of gms:play-services, such as gps location,
- you have to update their versions, too. Upon writing this tutorial, 9.2.0 works well. If you get compilation problems, you need to check find out the correct version number.
- ```
    compile 'com.google.android.gms:play-services-location:9.2.0'
     compile 'com.google.android.gms:play-services-places:9.2.0'
  ```

- (d) Add the applicationId to the defaultConfig section
- ```
  android {
  ```
  ```

```
    defaultConfig {
        applicationId "com.example.my.app"  // this is the id
that your app has
    }
}
```

- **4. Add services to your app**
- Two services should be added to use Firebase Cloud Messaging service: a basic code for testing if push notification works, and other codes to handle receiving message or sending message in your app according to your design.
- **(1) Add a service that extends FirebaseMessagingService**
- To be able to receive any notification in your app, you should add a service which extends FirebaseMessagingService like this:
- ```
  public class MyFirebaseMessagingService extends
  FirebaseMessagingService {
   private static final String TAG = "FCM Service";
   @Override
      public void onMessageReceived(RemoteMessage remoteMessage)
  {
          // TODO: Handle FCM messages here.
          // If the application is in the foreground handle both
  ```
  ```

```
        data and notification messages here.
        // Also if you intend on generating your own
notifications as a result of a received FCM
        // message, here is where that should be initiated.
        Log.d(TAG, "From: " + remoteMessage.getFrom());
        Log.d(TAG, "Notification Message Body: " +
remoteMessage.getNotification().getBody());
    }
}
```

- Then add it into the AndroidManifest.xml file.
- ```
        <service android:name=".MyFirebaseMessagingService">
            <intent-filter>
                <action
android:name="com.google.firebase.MESSAGING_EVENT"/>
            </intent-filter>
        </service>
```
```

- **(2) Add a service that extends FirebaseInstanceIdService**

- ```
  public class FirebaseIDService extends
  FirebaseInstanceIdService {
      private static final String TAG = "FirebaseIDService";

      @Override
      public void onTokenRefresh() {
          // Get updated InstanceID token.
          String refreshedToken =
  FirebaseInstanceId.getInstance().getToken();
          Log.d(TAG, "Refreshed token: " + refreshedToken);

          // TODO: Implement this method to send any
  registration to your app's servers.
          sendRegistrationToServer(refreshedToken);
      }

      /**
       * Persist token to third-party servers.
       *
       * Modify this method to associate the user's FCM
  ```
  ```

```
    InstanceID token with any server-side account
         * maintained by your application.
         *
         * @param token The new token.
         */
    private void sendRegistrationToServer(String token) {
            // Add custom implementation, as needed.
    }
}
```

- Add it into the AndroidManifest.xml file, this makes sure that the service is loaded
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```
        <service android:name=".FirebaseIDService">
            <intent-filter>
                <action
android:name="com.google.firebase.INSTANCE_ID_EVENT"/>
            </intent-filter>
        </service>
```

- **5. Test and send your first push notification!**
- To see if the setup works, run a test by sending a test message to your own mobile.

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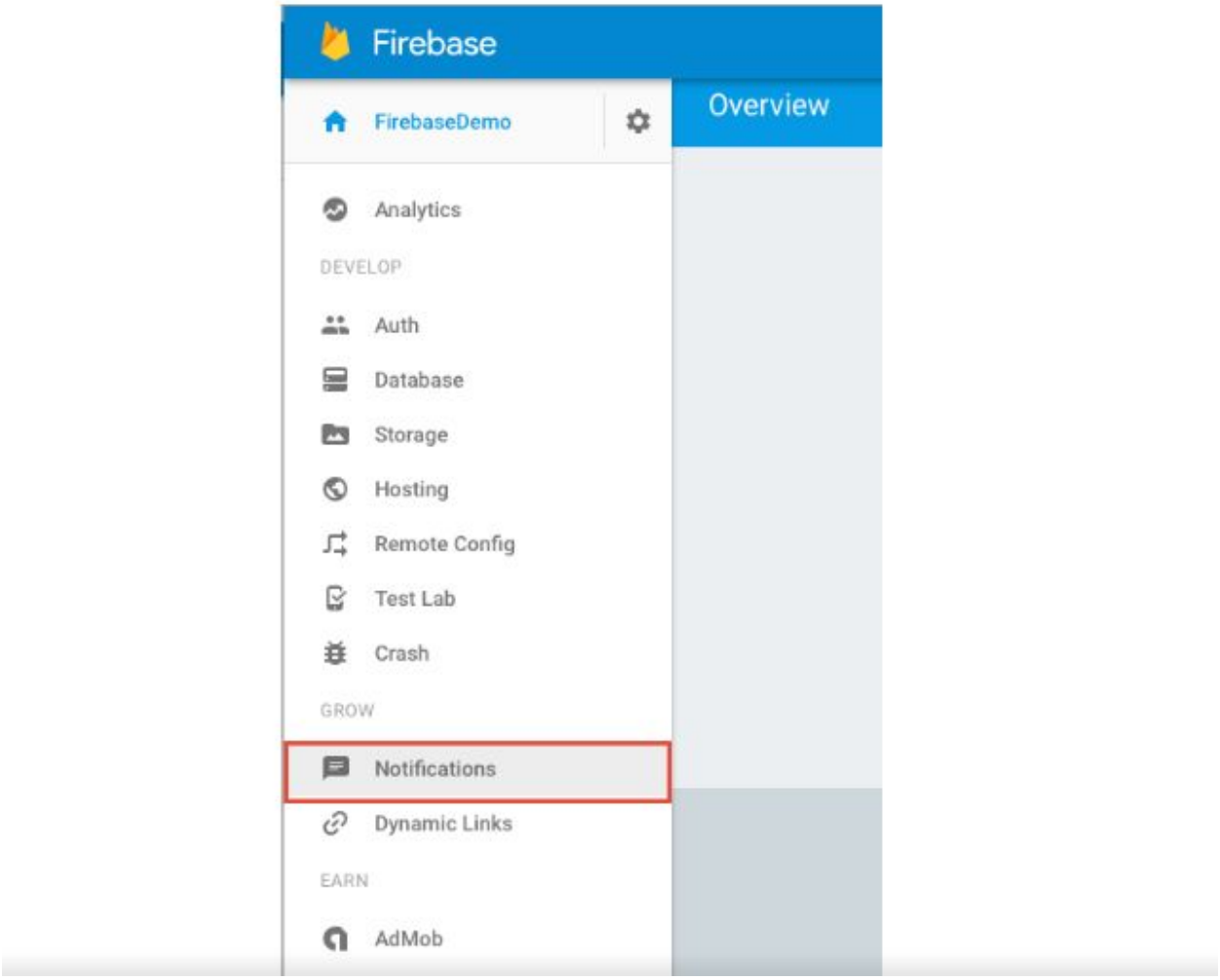
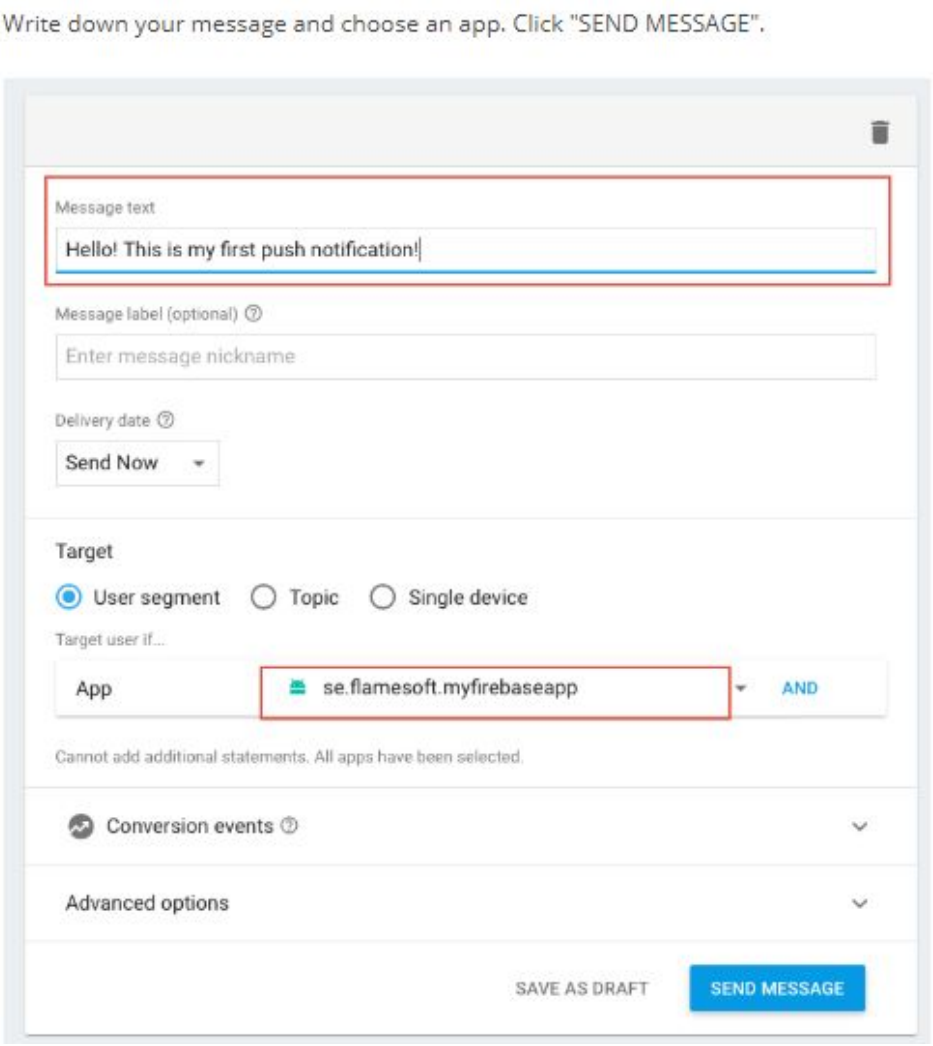
- 



- Now you should get a push notification on your Android mobile. If your app is running on the background, you will get it on the mobile's notification center; otherwise you can see it in your Android Monitor log (we have to put a code to log incoming messages) like this.
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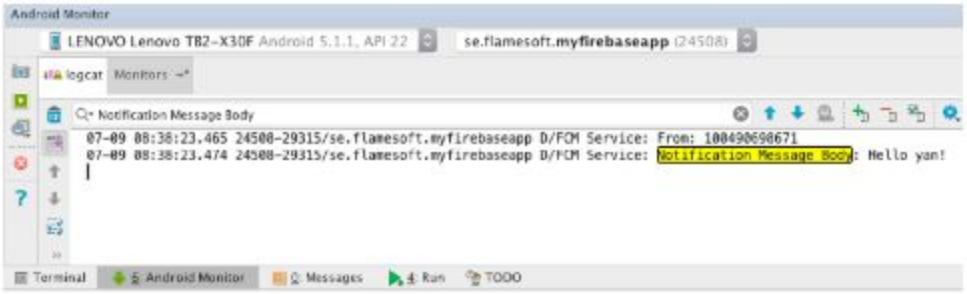

If the setup is successful, you should get a notification on your mobile. Sometimes, it can take a couple of minutes for the message to send and arrive, so just be patient for a little while.

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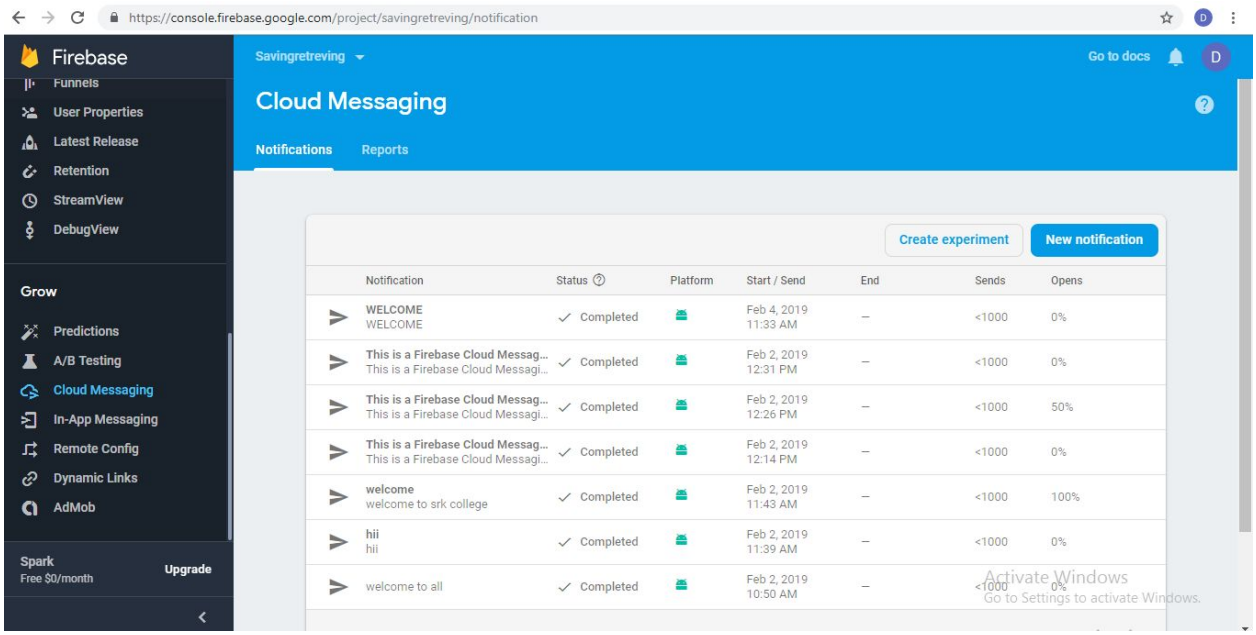

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