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2 years ago

The comprehensive step by step tutorial on receiving a push notification on Mobile App using Ionic 4 and Firebase Cloud Messaging (FCM). We will use Ionic 4 Cordova native [FCM plugin](#) for receiving a push notification and using Firebase API for sending push notification from the Postman.

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The following tools, frameworks, and modules are required for this tutorial:

- [Setup and Configure Google FCM](#)
- [Create a new Ionic 4 App](#)
- [Add Ionic 4 Cordova Native FCM Plugin](#)
- [Run and Test Sending and Receiving Push Notification](#)

Before going to the main steps, we assume that you have to install Node.js. Next, upgrade or install new Ionic 4 CLI by open the terminal or Node command line then type this command.

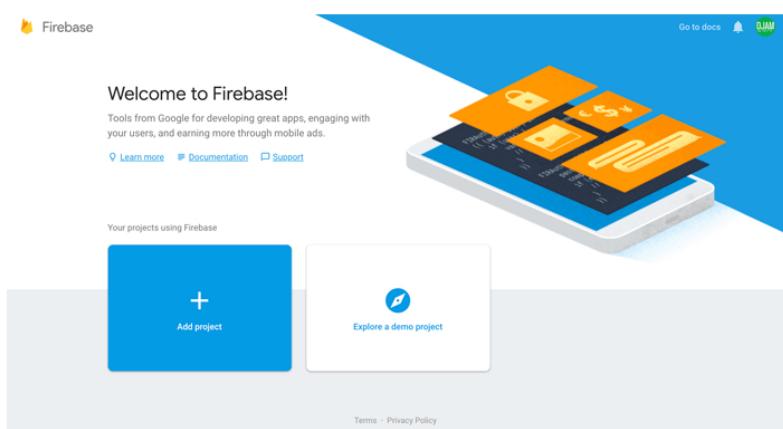
```
sudo npm install -g ionic
```

You will get the latest Ionic CLI in your terminal or command line. Check the version by type this command.

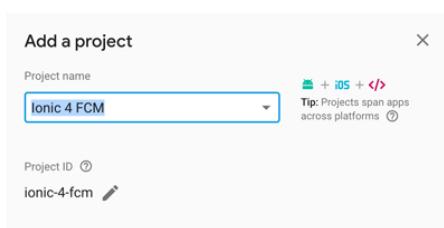
```
ionic --version
4.10.3
```

1. Setup and Configure Google Firebase Cloud Messaging

Open your browser then go to [Google Firebase Console](#) then login using your Google account.



Next, click on the Add Project button then fill the Project Name with `Ionic 4 FCM` and check the terms then click Create Project button.



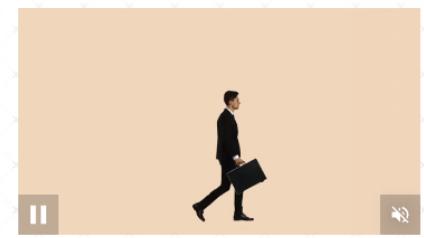
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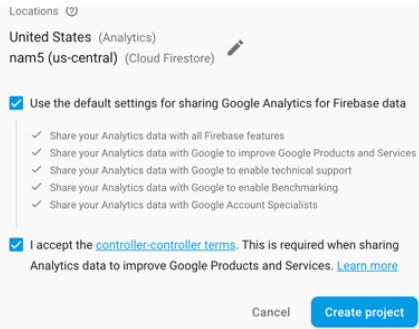
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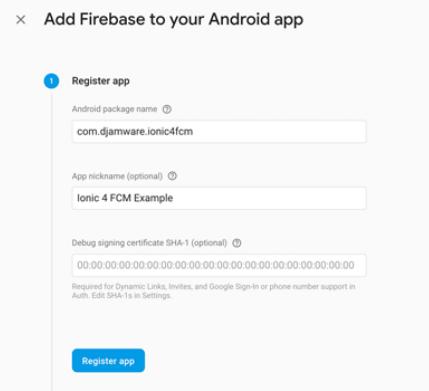


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After clicking the continue button you will redirect to the Project Dashboard page. Click the Gear Button on the right of Project Overview then click Project Settings. Click the Cloud Messaging tab the write down the Server Key and Sender ID for next usage in the API and Ionic 4 App. Next, back to the General tab then click the Android icon in your Apps to add Android App.



Fill the required fields in the form as above then click Register App button. Next, download the `google-services.json` that will use in the Ionic 4 app later. Click next after download, you can skip Add Firebase SDK by click again Next button. You can skip step 4 if there's no App creating on running yet.

2. Create a new Ionic 4 App

To create a new Ionic 4 App, type this command in your terminal.

```
ionic start ionic4-push blank --type=angular
```

If you see this question, just type `N` for because we will installing or adding Cordova later.

```
Install the free Ionic Appflow SDK and connect your app? (Y/n) N
```

Next, go to the newly created app folder.

```
cd ./ionic4-push
```

As usual, run the Ionic 4 App for the first time, but before run as `lab` mode, type this command to install `@ionic/lab`.

```
npm install --save-dev @ionic/lab
ionic serve -l
```

Now, open the browser and you will see the Ionic 4 App with the iOS, Android, or Windows view. If you see a normal Ionic 4 blank application, that's mean you ready to go to the next steps.



If you get lost, the [docs](#) will be your guide.

3. Add Ionic 4 Cordova Native FCM Plugin

To install Ionic 4 Cordova Native Firebase Message Plugin, type this command.

```
ionic cordova plugin add cordova-plugin-fcm-with-dependency-updated  
npm install @ionic-native/fcm
```

Next, open and edit `src/app/app.module.ts` then add this import.

```
import { FCM } from '@ionic-native/fcm/ngx';
```

Add to `@NgModule` providers.

```
providers: [  
  StatusBar,  
  SplashScreen,  
  FCM,  
  { provide: RouteReuseStrategy, useClass: IonicRouteStrategy }  
,
```

Next, open and edit `src/app/app.component.ts` then add this import.

```
import { FCM } from '@ionic-native/fcm/ngx';  
import { Router } from '@angular/router';
```

Inject FCM and Router module to the constructor.

```
constructor(  
  private platform: Platform,  
  private splashScreen: SplashScreen,  
  private statusBar: StatusBar,  
  private fcm: FCM,  
  private router: Router  
) {  
  this.initializeApp();  
}
```

Inside platform ready of `initializeApp` function, add a function to get FCM token then print out to the browser console.

```
this.fcm.getToken().then(token => {  
  console.log(token);  
});
```

Add this function to refresh the FCM token.

```
this.fcm.onTokenRefresh().subscribe(token => {  
  console.log(token);
```

```
});
```

Add this function to receive push notification from Firebase Cloud Messaging.

```
this.fcm.onNotification().subscribe(data => {
  console.log(data);
  if (data.wasTapped) {
    console.log('Received in background');
    this.router.navigate([data.landing_page, data.price]);
  } else {
    console.log('Received in foreground');
    this.router.navigate([data.landing_page, data.price]);
  }
});
```

Above example of receiving a push notification from FCM will redirect to the other page with params of data.

For that, next, we have to add a new page by type this command.

```
ionic g page second
```

Next, modify `src/app/app-routing.module.ts` then change the new page route.

```
const routes: Routes = [
  { path: '', redirectTo: 'home', pathMatch: 'full' },
  { path: 'home', loadChildren: './home/home.module#HomePageModule' },
  { path: 'second/:price', loadChildren: './second/second.module#SecondPageModule' },
];
```

Next, open and edit `src/app/second/second.page.ts` then add this import.

```
import { ActivatedRoute } from '@angular/router';
```

Inject that module to the constructor.

```
constructor(private route: ActivatedRoute) { }
```

Add a variable for hold data from router parameters.

```
price: any = '';
```

Add this line to get data from the router parameters.

```
constructor(private route: ActivatedRoute) {
  this.price = this.route.snapshot.params['price'];
}
```

Next, open and edit `src/app/second/second.page.html` then replace all HTML tags with this.

```
<ion-header>
<ion-toolbar>
<ion-title>Second</ion-title>
</ion-toolbar>
</ion-header>

<ion-content padding>
<ion-card>
<ion-card-header>
```

```
&nbsp; &nbsp; &nbsp; <ion-card-title>Congratulation!</ion-card-title>
&nbsp; &nbsp; &lt;/ion-card-header>

&nbsp; &nbsp; <ion-card-content>
&nbsp; &nbsp; &nbsp; You get price from our sponsor:
&nbsp; &nbsp; &nbsp; <h2>{{price}}</h2>
&nbsp; &nbsp; </ion-card-content>
&nbsp; &lt;/ion-card>
</ion-content>
```

If you plan to send push notification to the group of topic, add this lines inside the platform ready.

```
this.fcm.subscribeToTopic('people');
```

To unsubscribe from topic, add this line.

```
this.fcm.unsubscribeFromTopic('marketing');
```

4. Run and Test Sending and Receiving Push Notification

Before running this Ionic 4 app, we have to copy the downloaded `google-services.json` file to the root of the project. Type this command to add the Android platform.

```
ionic cordova platform add android
```

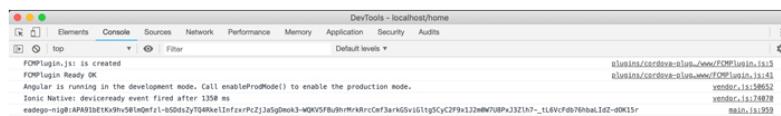
Next, copy the `google-services.json` to the `platform/android/` directory.

```
cp google-services.json platform/android/
```

Next, run the Ionic 4 App to the Android device by type this command.

```
ionic cordova run android
```

After the app running on the device, check the console from the Google Chrome by type this address `chrome://inspect` then choose the inspect link. You should take to the browser inspector, just change to the console tab.



As you can see above, you can take and write down the FCM token for use by Postman. Next, open the Postman application from your computer. Change the method to POST and add this address

`[https://fcm.googleapis.com/fcm/send]`
`"https://fcm.googleapis.com/fcm/send"`. On the headers, add this key `Content-Type` with value `application/json` and `Authorization` with value `key=YOUR_FIREBASE_KEY...`.

The screenshot shows the Postman interface with a POST request to 'https://fcm.googleapis.com/fcm/send'. The 'Headers' tab is selected, showing the following configuration:

KEY	VALUE	DESCRIPTION
Content-Type	application/json	
Authorization	key=AAAAHnnQjWEAPA91bEFyAD61-PimACeWeu...	
key	Value	Description

Next, add this JSON data to the RAW body.

```
{
```

```

    &nbsp; "notification":{  

    &nbsp;   &nbsp; "title":"Ionic 4 Notification",  

    &nbsp;   &nbsp; "body":"This notification sent from POSTMAN using Firebase HTTP protocol",  

    &nbsp;   &nbsp; "sound":"default",  

    &nbsp;   &nbsp; "click_action":"FCM_PLUGIN_ACTIVITY",  

    &nbsp;   &nbsp; "icon":"fcm_push_icon"  

    &nbsp; },  

    &nbsp; "data":{  

    &nbsp;   &nbsp; "landing_page":"second",  

    &nbsp;   &nbsp; "price":"$3,000.00"  

    &nbsp; },  

    &nbsp;   &nbsp; "to":"eadeogo-nig0:APA91bEtKx9hv50lmQmfzl-bSDdsZyTQ4Rke1InfzxrPcZjJaSgDmok3-WQKV5FBu9hrM  

    &nbsp;   &nbsp; "priority":"high",  

    &nbsp;   &nbsp; "restricted_package_name":""  

}

```

If you want to send by topics recipients, change the value of `to` to `topics/people`. Next, click the send button and you should see this response.

```
{
  &nbsp; &nbsp; "multicast_id": 7712395953543412819,  

  &nbsp; &nbsp; "success": 1,  

  &nbsp; &nbsp; "failure": 0,  

  &nbsp; &nbsp; "canonical_ids": 0,  

  &nbsp; &nbsp; "results": [  

  &nbsp;   &nbsp; &nbsp; &nbsp; {  

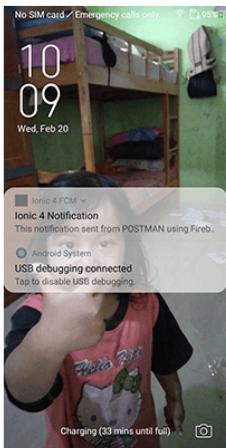
  &nbsp;     &nbsp; &nbsp; &nbsp; "message_id": "0:1550632139317442%b73443ccb73443cc"  

  &nbsp;   &nbsp; &nbsp; &nbsp; }  

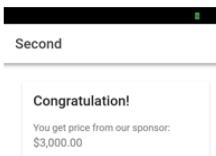
  &nbsp;   &nbsp; ]  

}
```

And you will see the notification in your Android device background screen.



If you tap on it, it will open the App and redirect to the second page with this view.



That it's, the example of receiving push notification using Ionic 4 and Firebase Cloud Messaging. You can grab the full source code from our [GitHub](#).

#ionic #firebase #angular



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