

**Lab Center – Hands-on Lab**

**Session 9605**

**Session Title OK Google! Book me a movie ticket with IBM Mobile and IBM Cloud**

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# **Pre-requisites**

To do this lab, you will need the following

1. An IBM Cloud account.

If you do not have one, create one at <http://bit.ly/bmregistration>

OR

Ask your lab proctor for one of the instructor IDs

1. A Google Developer account <https://console.developers.google.com/projectselector/apis/dashboard?pli=1>

# **Introduction**

In this lab, you will build a conversation model for a Google Home voice assistant which simulates booking a movie ticket by in. You will also build a companion mobile app which you will use to authenticate your transaction and receive the much awaited movie ticket.

In this lab, you will write a Node.js app and host in on the IBM Cloud. This Node app will perform the backend processing and return the user with a One Time Password (OTP) to the user’s mobile device using the IBM Push Notifications service on IBM Cloud. When the transaction is completed, the node app will deliver a ticket in the form of a QR code to the end user as a push notification.

# **Getting the code**

Open a Terminal window and type the following commands

**cd /work**

**mkdir lab9605**

**cd lab9605**

**git clone** [**https://github.com/Think18/Lab9605.git**](https://github.com/Think18/Lab9605.git)

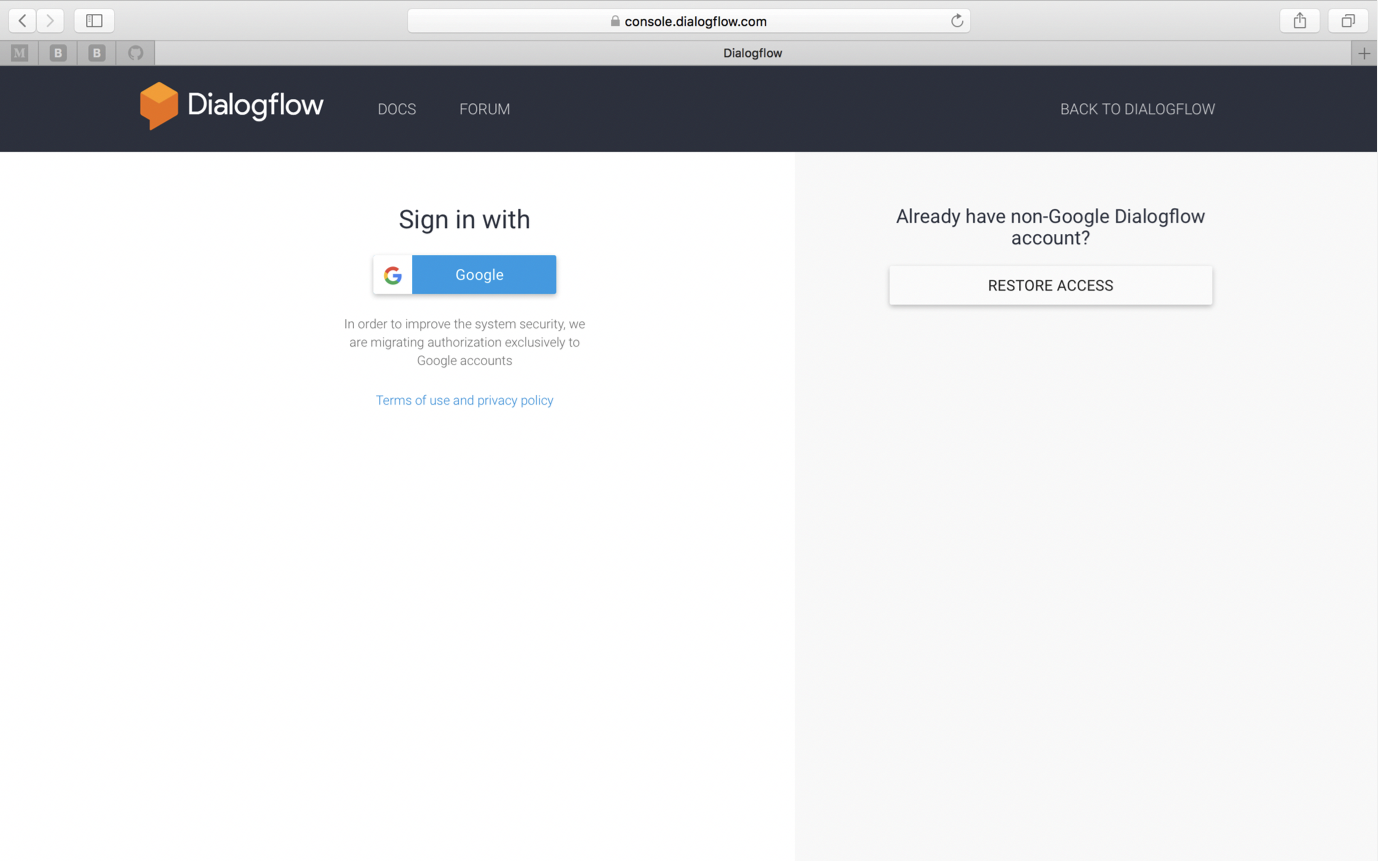
# **Define the dialog flow**

In this step, you will define the conversation pattern for your Google Home device on Dialogflow

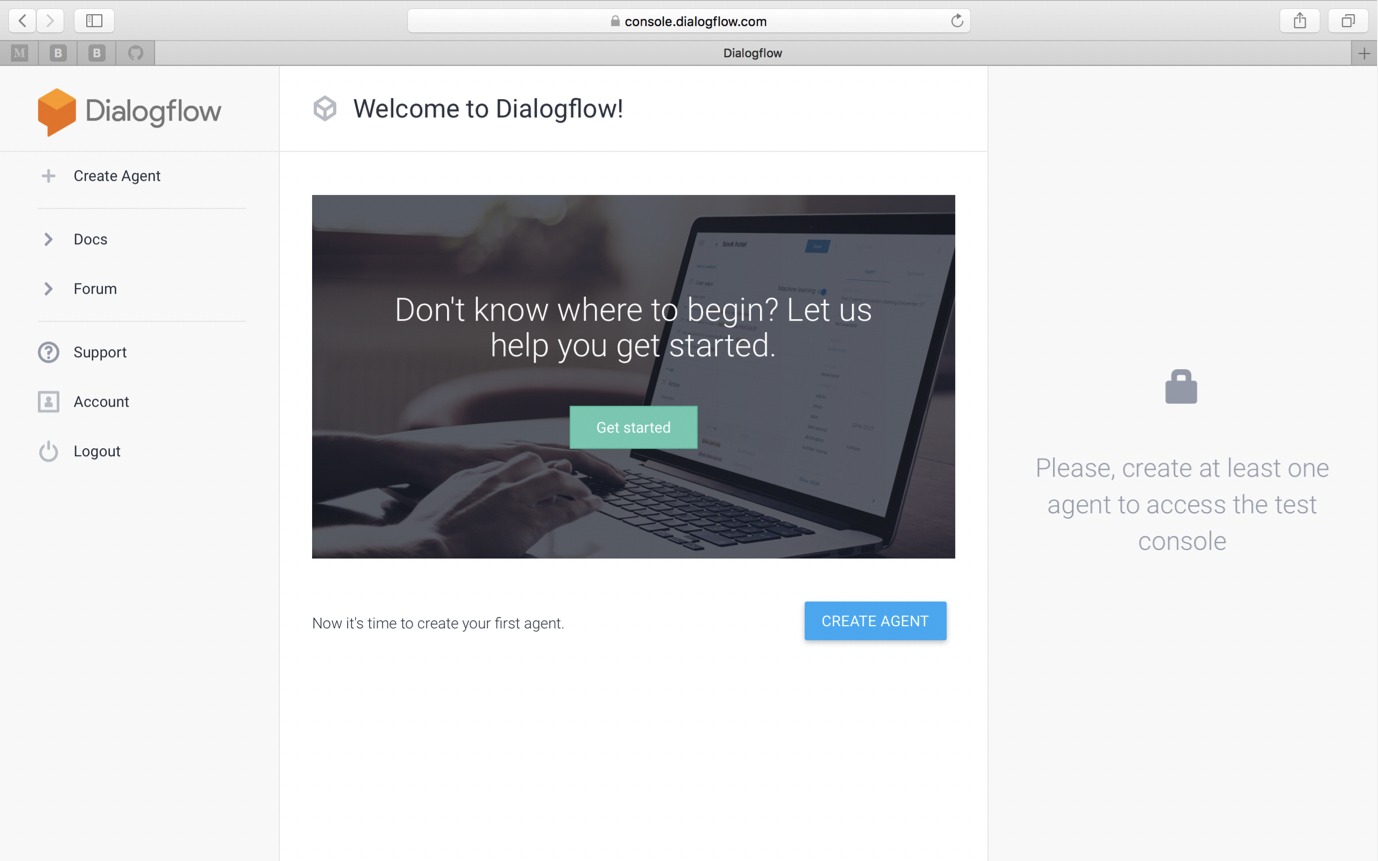
This flow will be configured to call a webhook for backend integration which is running on IBM Cloud.

## Login to Dialogflow

1. Visit <https://dialogflow.com> in a browser
2. Click on Go to Console
3. Sign in with your Google ID into Dialogflow.



You should now see the following screen



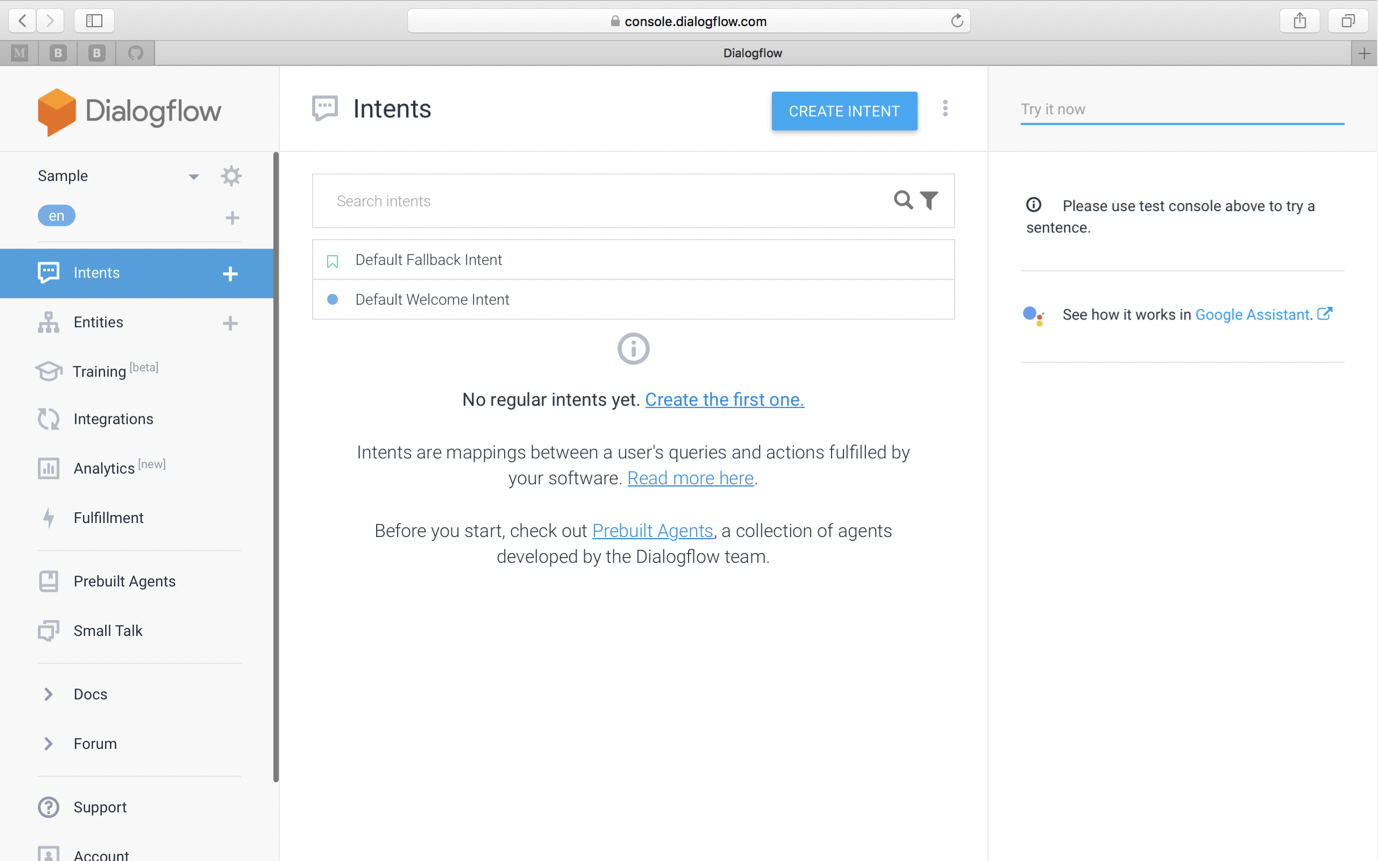
## Create an Agent

1. Click on Create Agent in the left panel.
2. In the following screen type “MyBoxOffice” as the name of the agent and click “Create”

The next step is to define an Intent. Intents define the action to be performed on each query posted by the end user.

## Create the intents

1. Click on “Intents” in the left panel. In the following screen, click on the overflow icon and then choose “Upload Intent”



1. Navigate to /work/lab9605/Lab9605/Intents folder and choose OTP\_Intent.json

Similarly, repeat the upload for Ticket.json

## Create Entities

1. Click on Entities on the left panel.
2. Similar to Intents, click on the overflow icon.
3. Choose Upload Entity.
4. Navigate to the /work/lab9605/Lab9605/Entities folder and upload movie\_name.json

You have now successfully setup the dialog flow for your Google Home app.

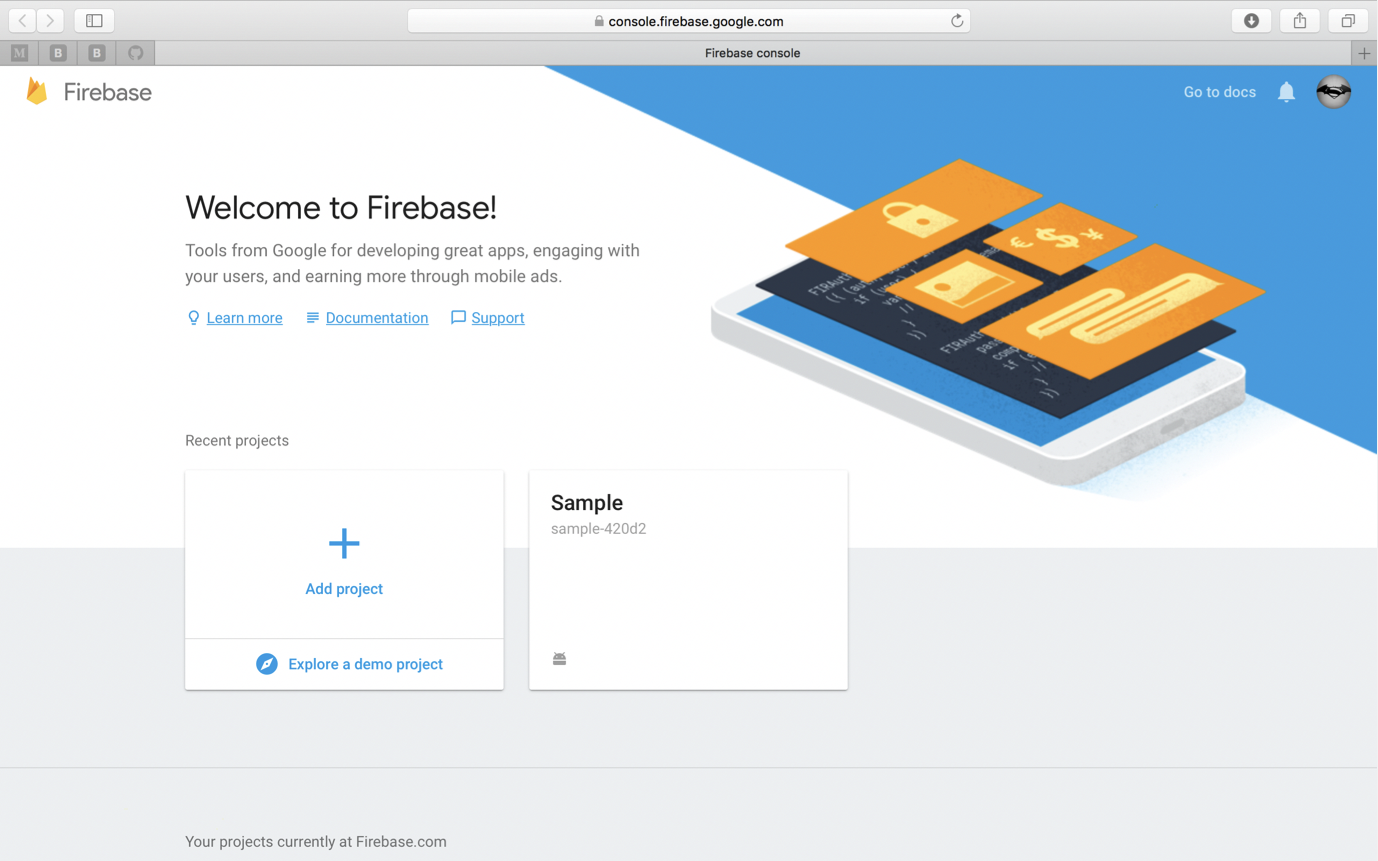
# **Configure Firebase for enabling push notifications**

You will have to configure Firebase to deliver push notifications to your mobile app. Firebase is necessary to deliver push notifications to Android devices.

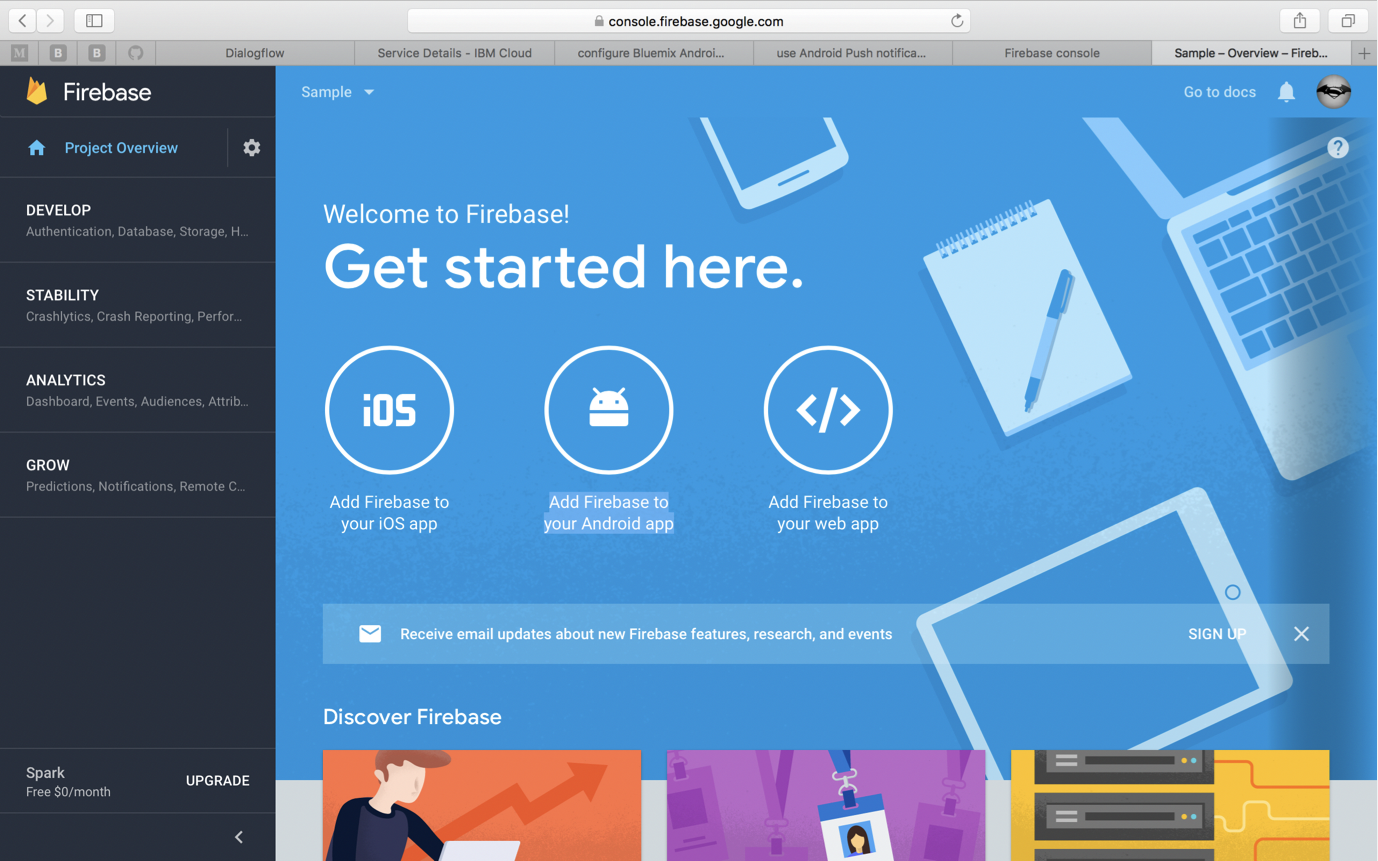
## Add firebase to your app

1. Open <https://console.firebase.google.com/> in a browser

You will find the Dialog flow app that you created earlier here.



1. Click on your app’s name
2. In the following screen, choose “Add Firebase to your Android app”



## Get your push credentials

1. In the following screen, register your app by providing com.ibm.hellopush as the package name
2. Download the google-services.json file and complete the wizard.
3. Copy the google-services.json file to the following path /work/lab9605/Lab9605/ myboxoffice-android-master/myboxofficeapp/app
4. If the file already exists, replace it.
5. In the Firebase console, click on the Settings icon in the left panel.
6. Navigate to the “Cloud Messaging” tab.
7. Here, you will find the credentials for your app to be able to access Google Firebase notifications.

You will need the server key and the sender ID among these.

Copy these into a text file for future use.

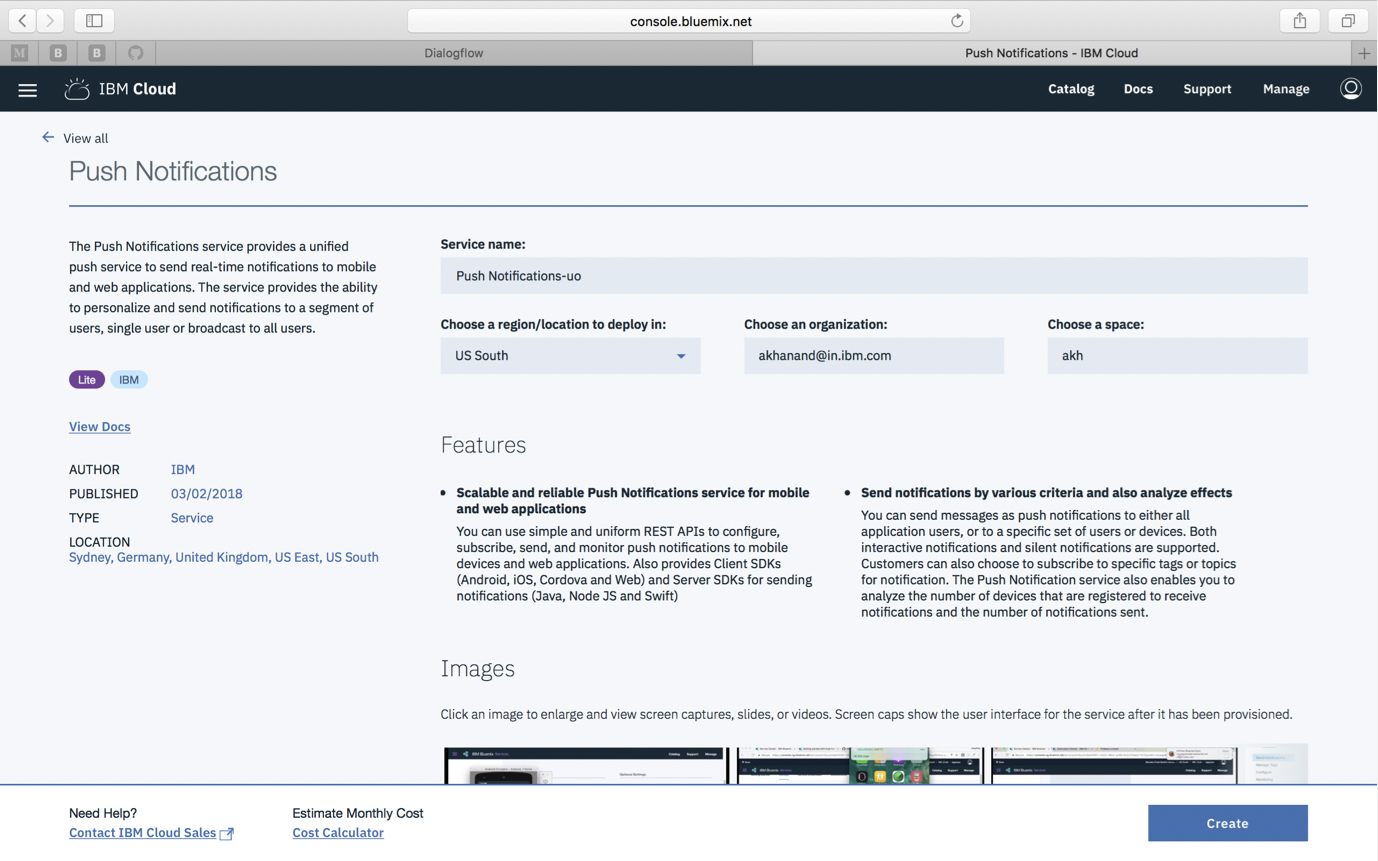
This completes the setup required on Firebase for your Android app to receive push notifications.

Similary, for an iOS app, you will have to follow the instructions provided on the [Apple Developer page](https://developer.apple.com/notifications/)

# **Setup Push Notifications on IBM Cloud**

## Create a Push notifications instance on IBM Cloud

1. Go to the Mobile Developer Dashboard on IBM Cloud (<https://console.bluemix.net/developer/mobile/dashboard> ) an login with your IBM Cloud credentials (Bluemix credentials). If you do not have one, ask the instructions for a set of credentials you can use
2. Go to the Catalog and search for Push Notifications in the catalog.
3. Create an instance of the Push Notifications service



## Configure your instance

1. Click on Manage > Configure
2. Copy & paste the server key and project ID under GCM/FCM credentials section and click Save.
3. Click on Mobile Options (in the top right corner) to get the application credentials for your mobile app
4. Copy the App GUID and Client secret (not App secret) into a text file for later use.

**Setup the backend Node.js service on IBM Cloud**

## Customize the code for your Node.js app

1. Navigate to the folder /work/lab9605/Lab9605/movie-ticket-node

This folder contains the source for the Node.js app that will deliver a One Time Password and the ticket to the mobile app.

1. Open the file server.js in an editor.

Look for the text “AppGuid” and “App secret” and replace these string with actual values previously copied.

## Publish your app to IBM Cloud

1. Open a terminal window and type the following commands

These will install all required dependencies

cd /work/lab9605/Lab9605/movie-ticket-node

npm install

npm install ibm-push-notifications –save

1. Login to IBM Cloud from the command line

bx login

# Provide your IBM cloud credentials

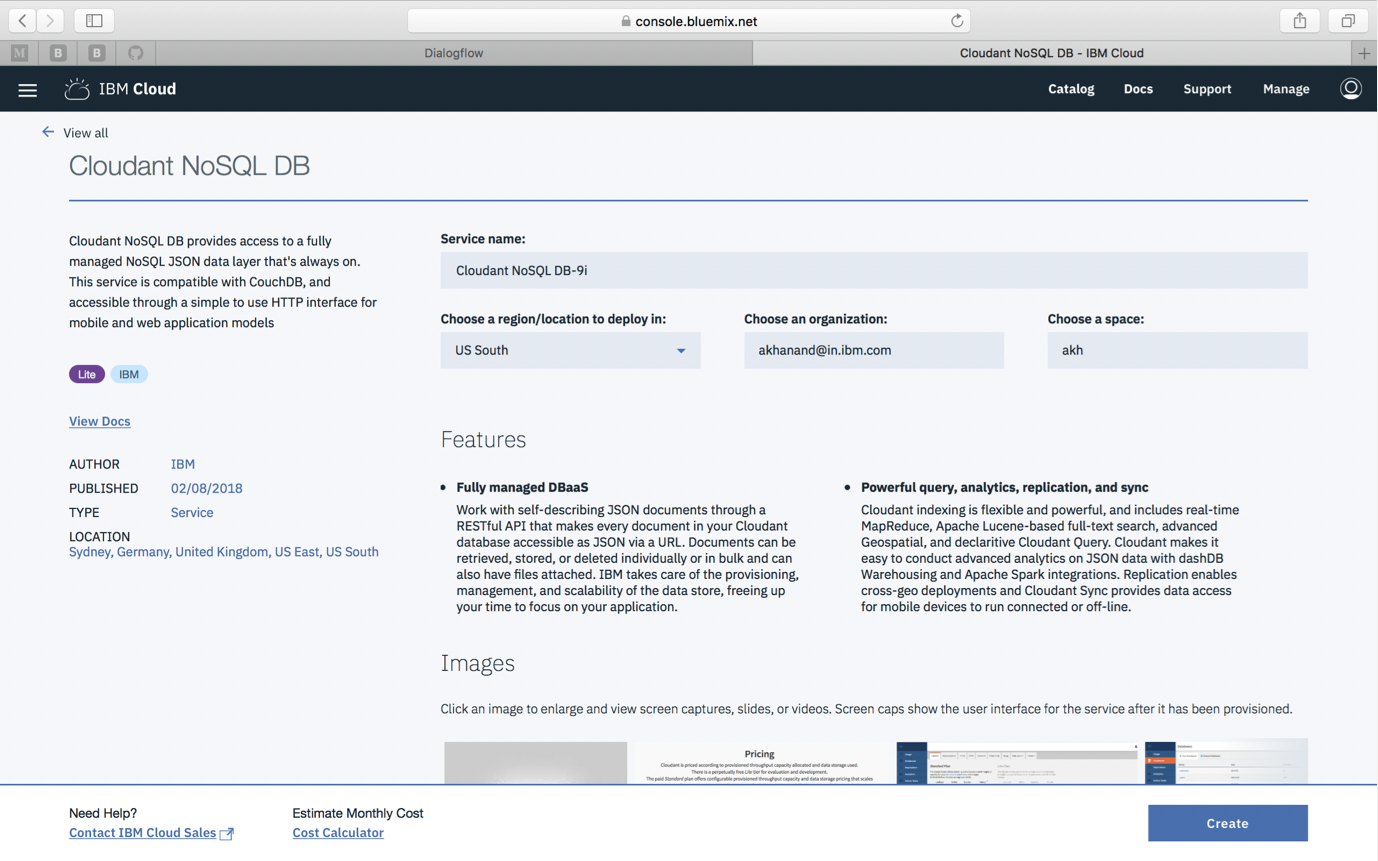
bx api api.ng.bluemix.net

bx cf push

This step will push your node app to your account on IBM Cloud.

1. Go back to the IBM Cloud Catalog (<https://console.bluemix.net/catalog/> )

Search for Cloudant and click on Create to create an instance of Cloudant NoSQL DB



1. Click on Dashboard from the hamburger menu on the left.

Click on getstartednode or the node app you have deployed

Click Connections

Click Create Connection

Click Connect next to the Cloudant service you just created.

1. Click on the “Routes” dropdown at the top of your screen. This will provide you with the external route your node app is configured with. Copy this route URL.
2. Go back to the Dialogflow configuration and go to the Fulfillment section

Turn on the Webhook fulfillment option

Enter the route (from step 7) here and append with /api/visitors

For example: <https://yoururl.mybluemix.net/api/visitors>

Click Save

**Get your movie ticket mobile app running**

1. In a terminal window type the following commands to fire up Android Studio.

This will be your IDE for building and running your app.

cd /work/android-studio/bin

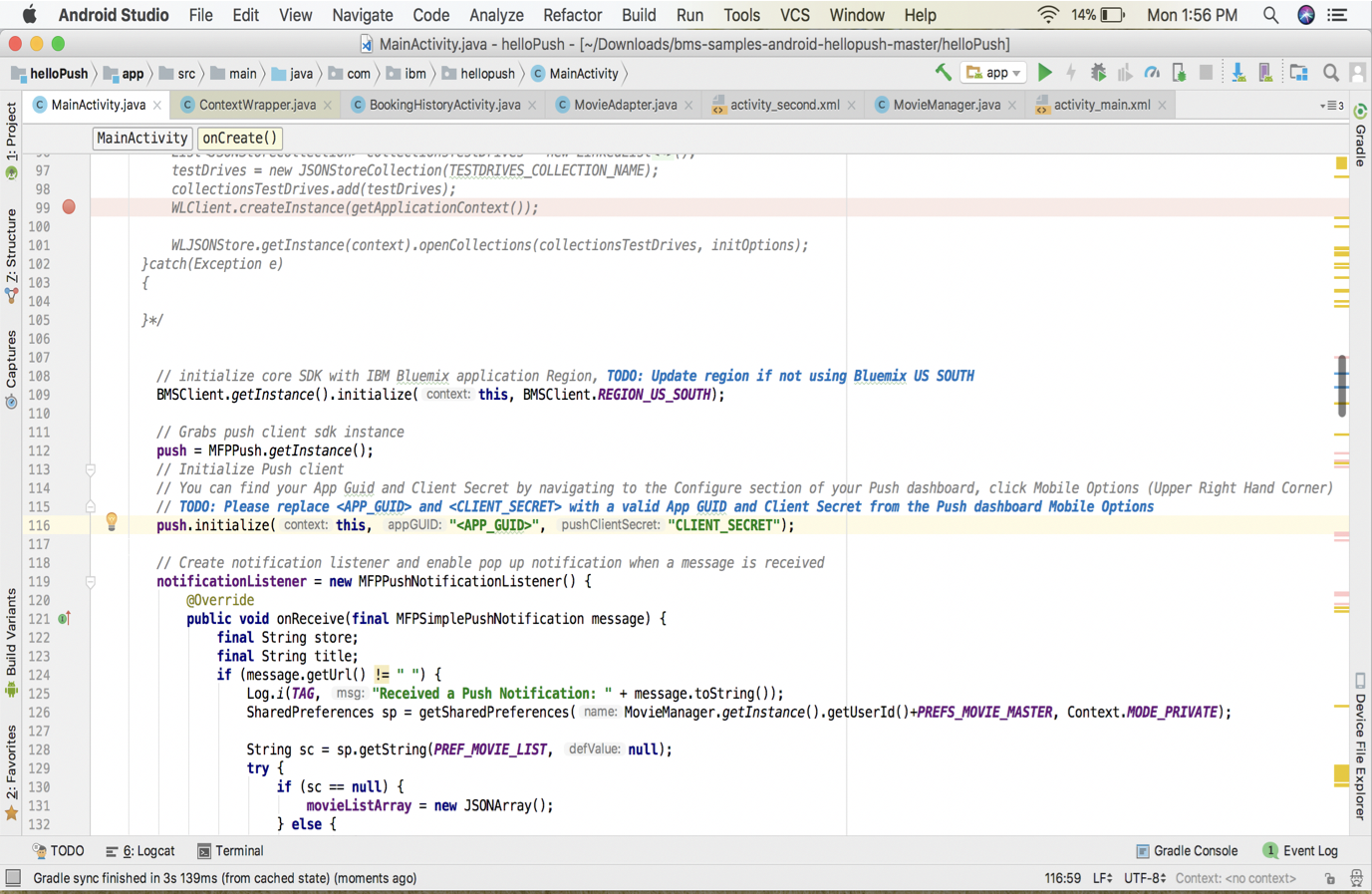
./studio.sh

1. Click on “Open an existing Android Studio project”

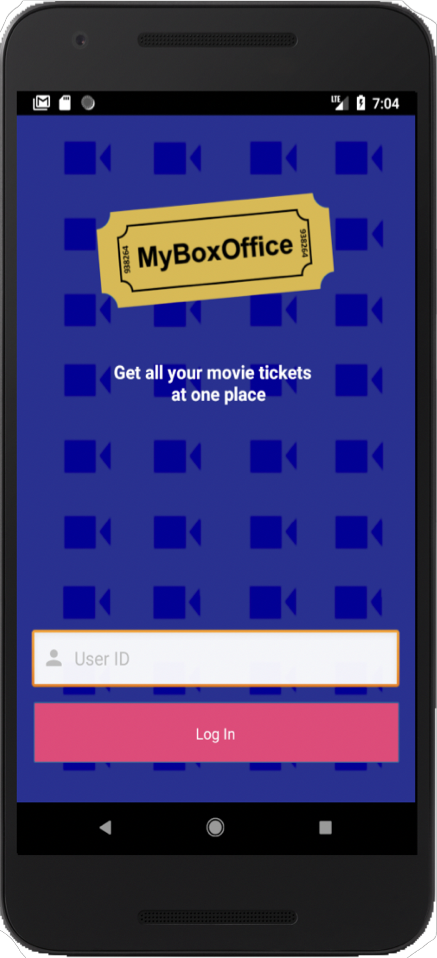
Navigate to the folder /work/lab9605/Lab9605/myboxoffice-android-master/myboxofficeapp

1. In the Android Studio IDE, locate the file called MainActivity,java

In this file, locate the push.Initialize() call and replace the strings “<APP\_GUID> and “CLIENT\_SECRET” with the App GUID and Client secret from the previous step.



1. Build and run your mobile app from Android Studio
2. Provide any user id of your choice and login



1. Dialogflow provides a simulator for Google Home. Click on Google Assistant in the right panel in Dialogflow console
2. Start by talking to your Google assistant

“Talk to MyBoxOffice”

Enter the name of the movie

Then enter the number of tickets you need and the date

The OTP will be delivered to your moble app via a push notification.

Provide the OTP in the conversation

After your ticket is successfully booked, you will receive a ticket with a QR code in your app.

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