Introduction:

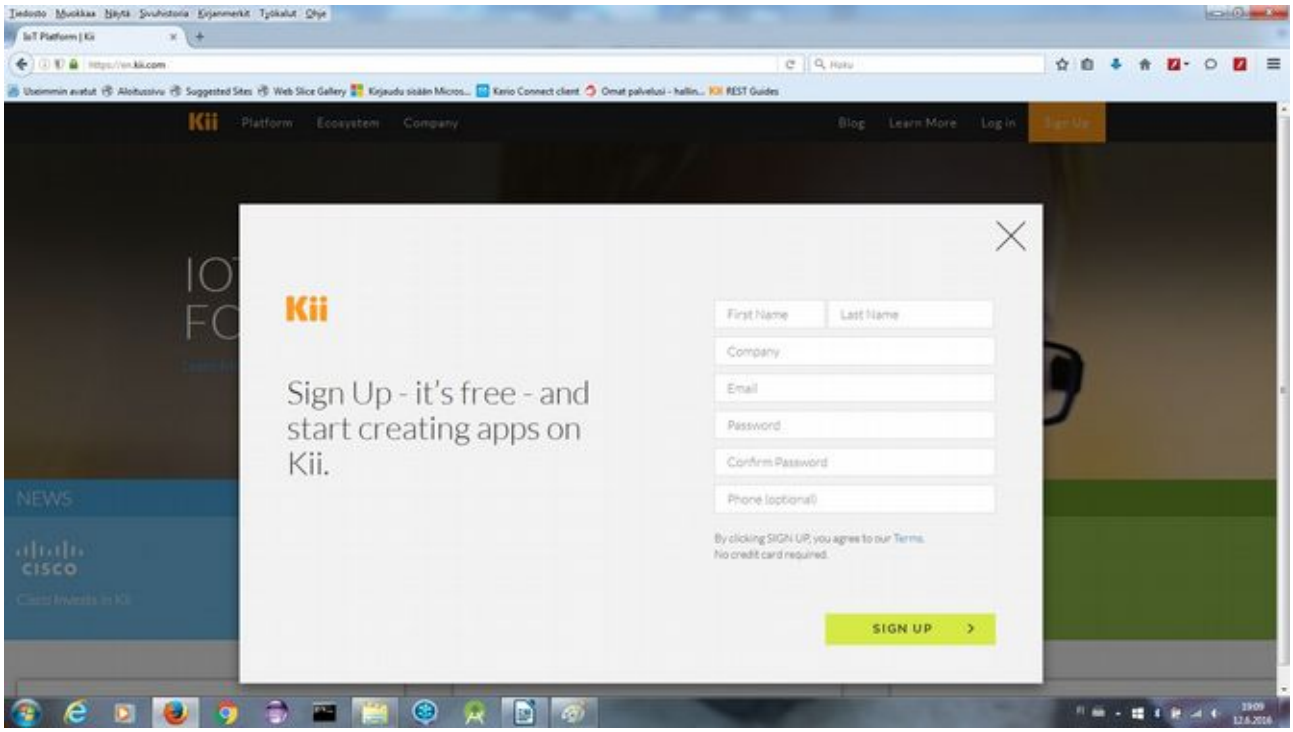
ThingseeTracker is a quick and dirty implementation for an Android application to utilize Thingsee devices and Kii Cloud to provide a tracking service. With this application Thingsee devices update their location information to the Kii Cloud and the Android application reads the location information from the Kii Cloud. Application polls for new data every 30 seconds.

User can register as many Thingsee's to to the system as he wants. The Android application utilizes detailed finnish maps as overlay tiles on top of the Google Maps.

One version of this application is in use for tracking offroad groups in Lapland Trophy, a yearly offroad happening in nothern part of Finland. (for more info please visit ww.laplandtrophy.com)

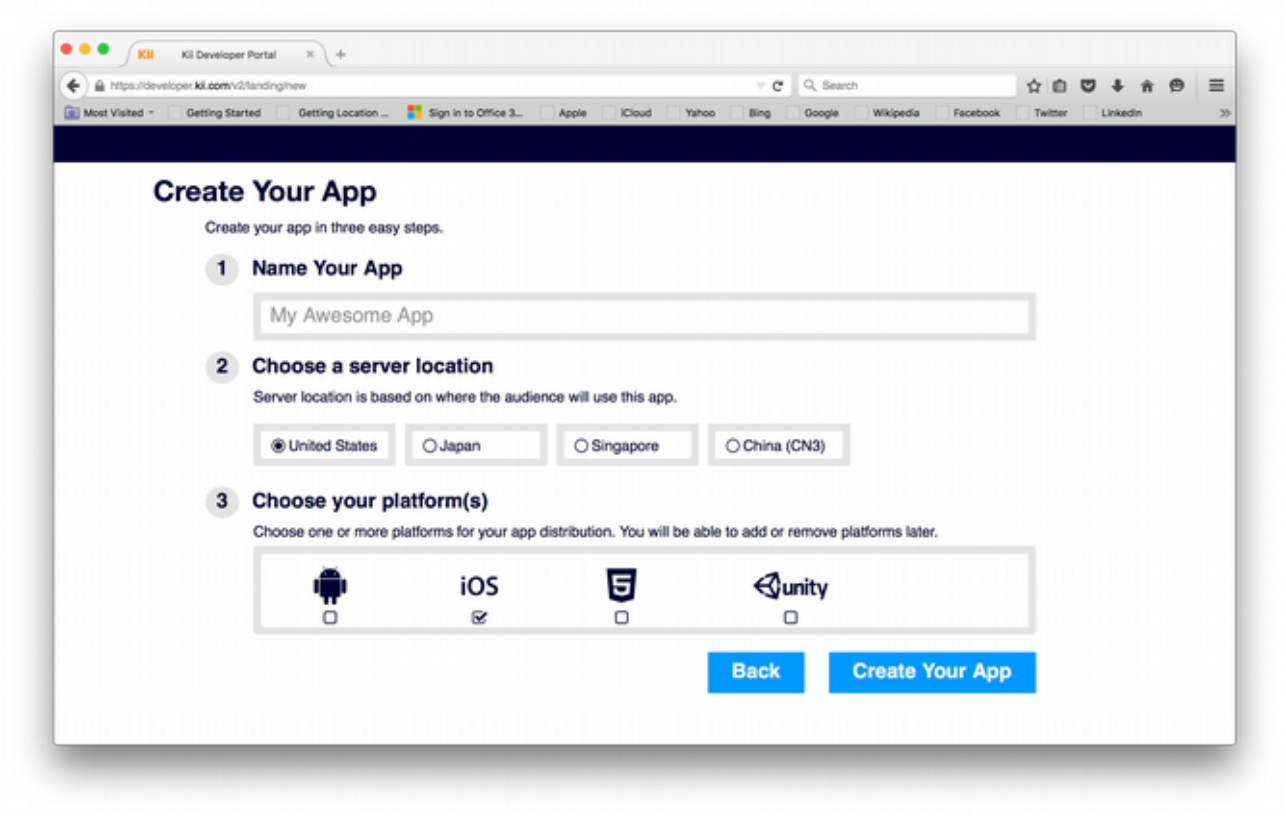
1. Create account and new app to Kii

Go to the address en.kii.com and click 'Sign Up'. This dialog appears:



Now fill in the information needed to create your account.

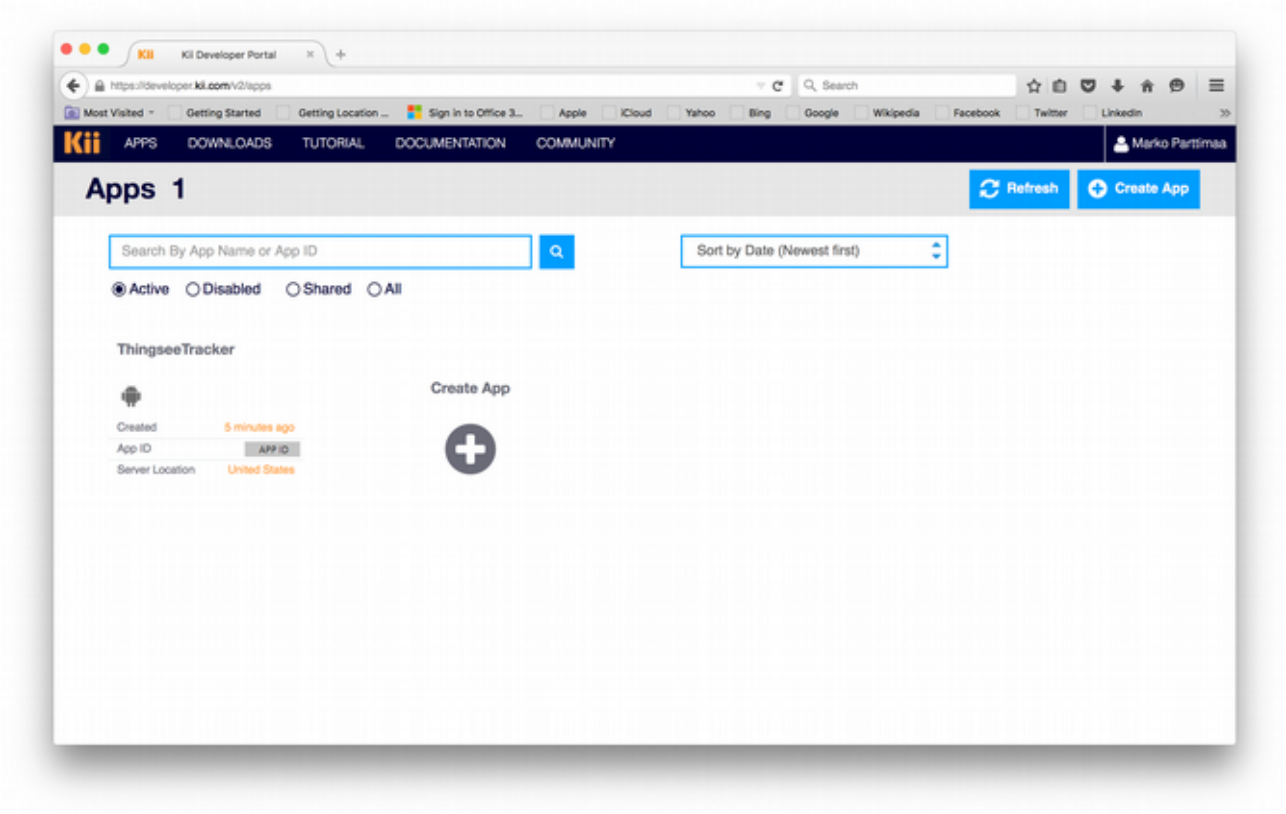
Next you are presented a dialog to create new application:



Fill in the name of the app, select United States as server location and tick Android as platform. Once done press 'Create Your App' and your new app is ready to be used.

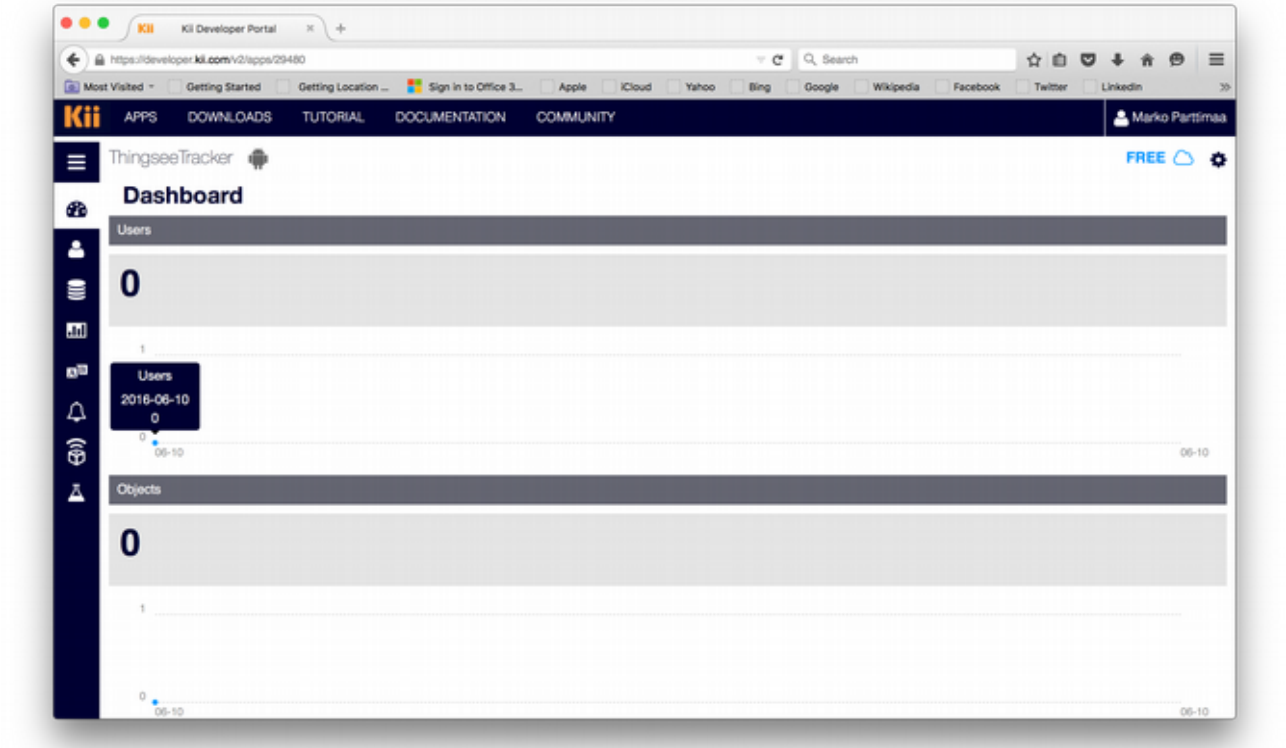
You will be presented a 'Download' dialog with possibility to download the KiiSDKs but it's not necessary with this app since this app utilized REST APIs to communicate with the Kii Cloud. So select 'Finish'.

Now the page with all your apps is displayed:

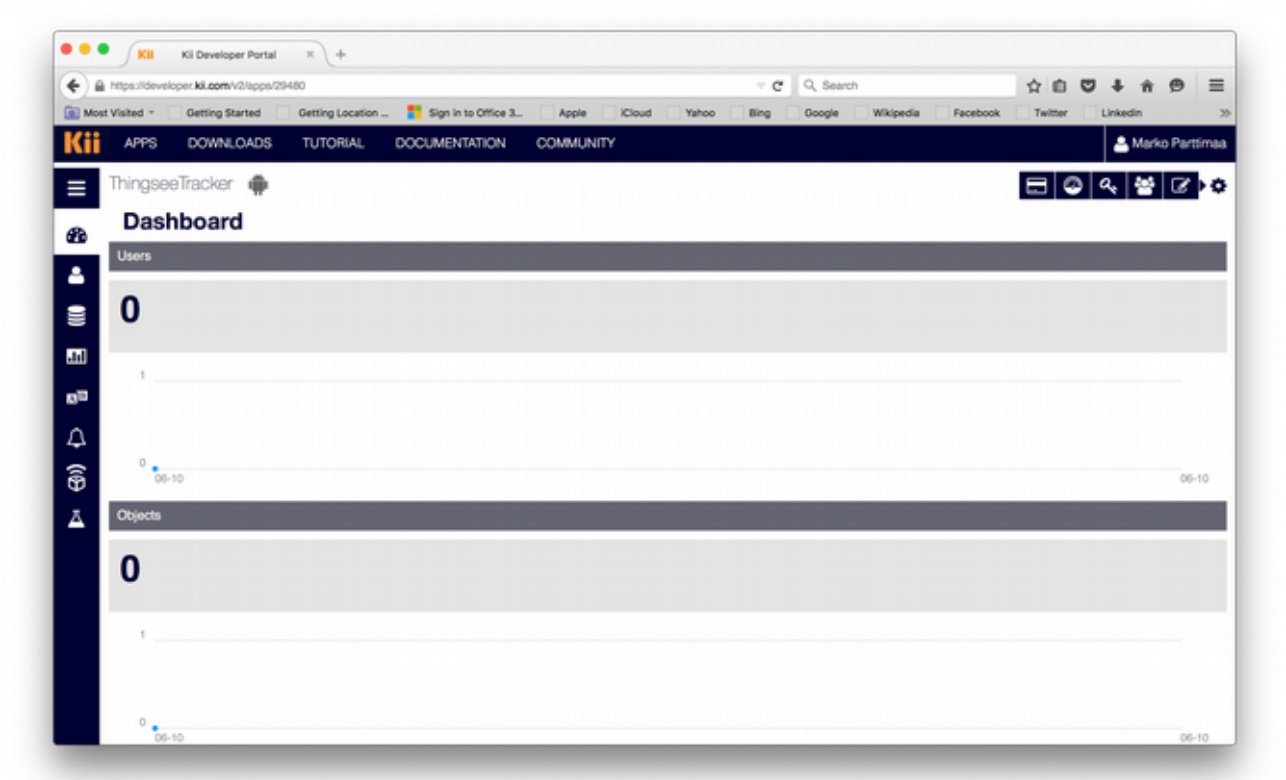


Here you can see my new app named ThingseeTracker with the app id painted over :)

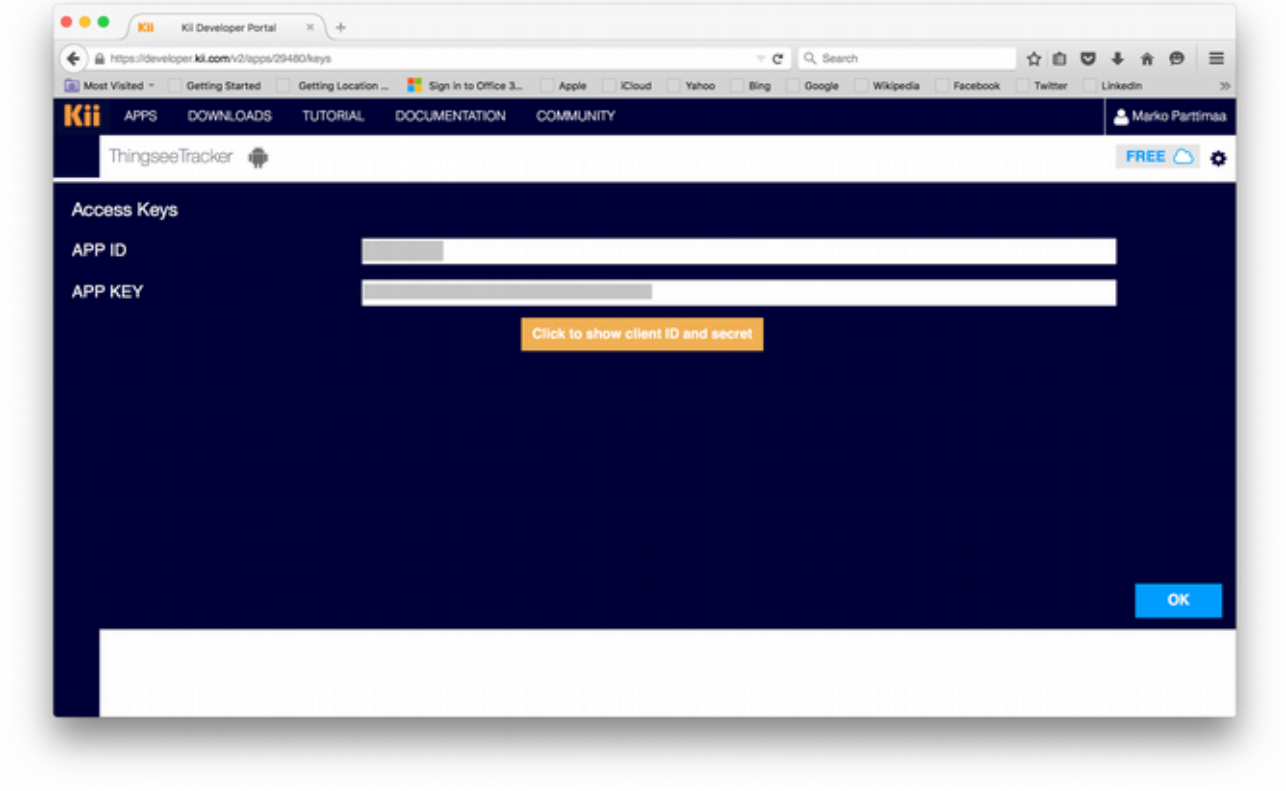
Double click your app to select it and you will the routed to the dashboard where you can see the current state of the app (data, things, etc.) .



Now select the settings icon on the up right corner to display the settings menu:



Now click the item with key icon in it to see your app id and app key. This information is used to identify your app in the Android application.



Write down your app id and app key. These will be used later when modifying the Android app and your Thingsee to connect to your Cloud app.

2. Update Thingsee software, cloud information and profile

Connect your Thingsee to your computer via USB as mass storage and copy the update.oci -file from latest Thingsee OS SDK release to the root of the Thingsee's memory card. You can find Thingsee OS SDK releases at https://github.com/thingsee/thingsee-sdk/releases

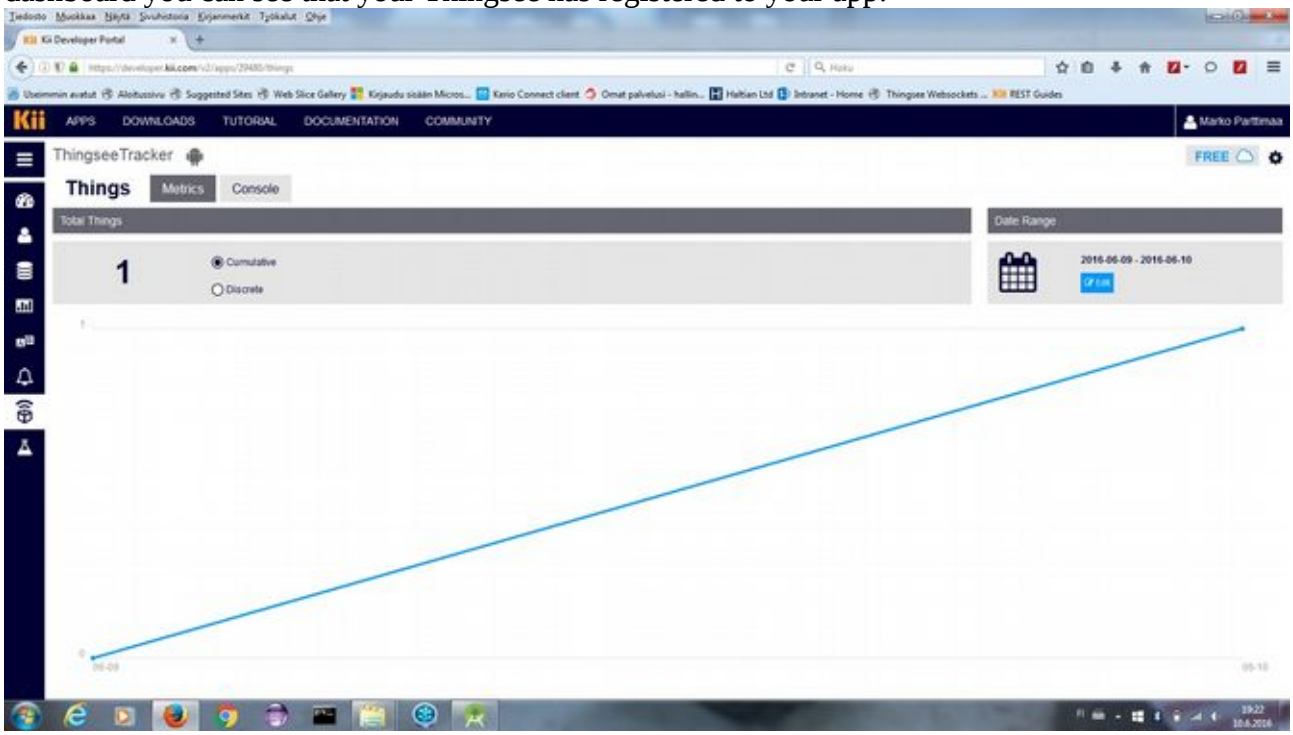
Now open the provided **cloud.jsn** -file. Change the *app id* and *app key* to the ones that your app has in the Kii cloud. Also change the *vendor_thing_id* -field to give your Thingsee an id that will be used in the cloud side. As a last change update the *password* to be your Thingsee's serial number. All other data can be left untouched in this file.

Open the provided **profile.jsn** -file and update the *name* -field after ***stId*** to match the *vendor_thing_id* you gave to your Thingsee on the cloud -file. (Provided profile -file activates your Thingsee to send location data to your app in the Kii Cloud every 60 second if available. If you later want to get sensor data also from the other Thingsee's sensors you can modify this file but you also need to change the Android app to parse and display this additional sensor data).

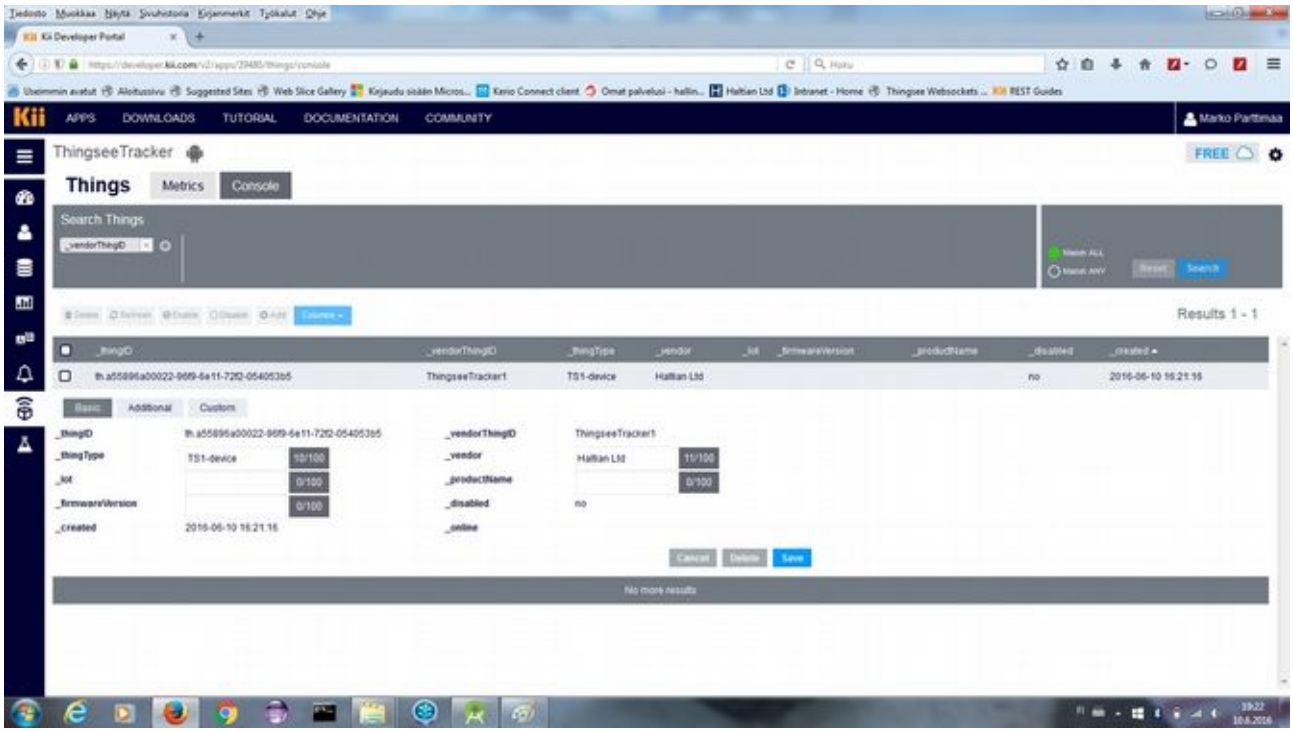
Now copy both the cloud -file and profile -file to the root of your Thingsee's memory card. Eject your Thingsee from the computer and detach it. Now once you boot the Thingsee it will update the sw and start using the cloud -file and profile -file you edited.

Once the Thingsee has updated it's software take the Thingsee to a place where it can get location fix and has data connection for sending the data.

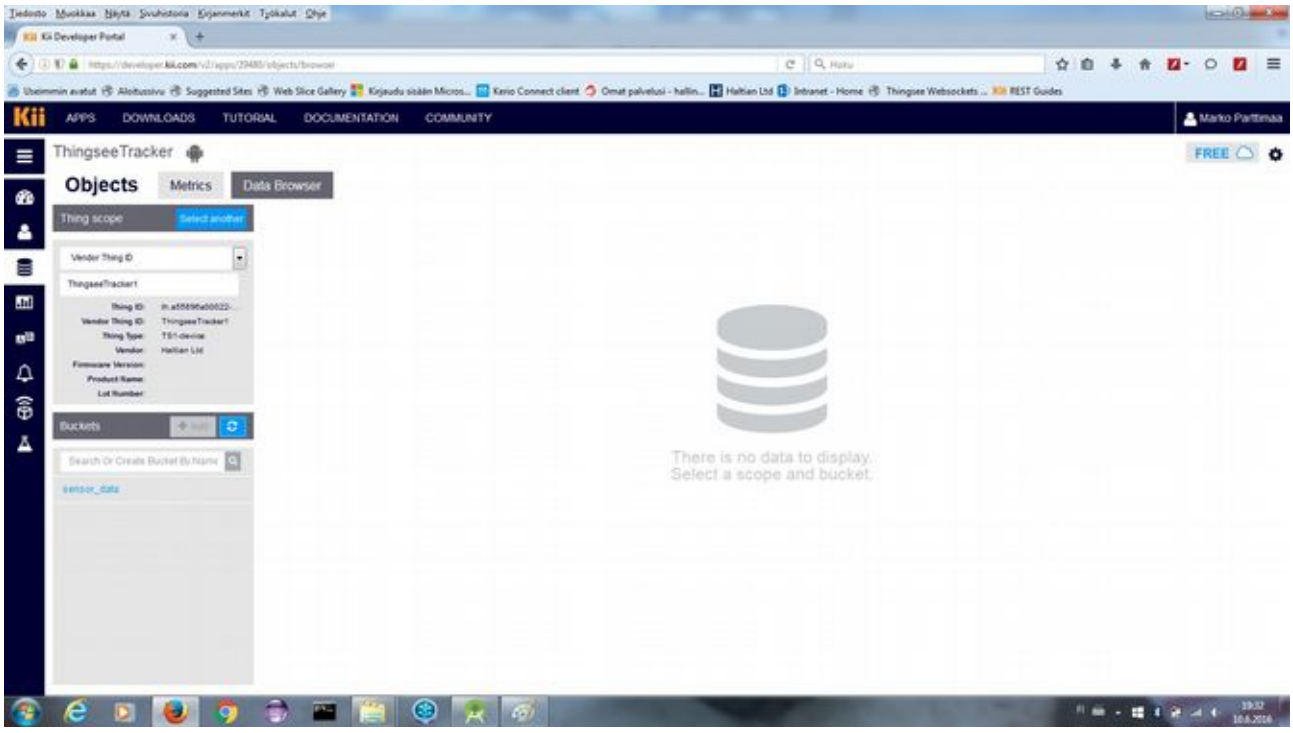
Now if you go and take a look at your application in the Cloud, select tab for 'Things' in the dashboard you can see that your Thingsee has registered to your app:



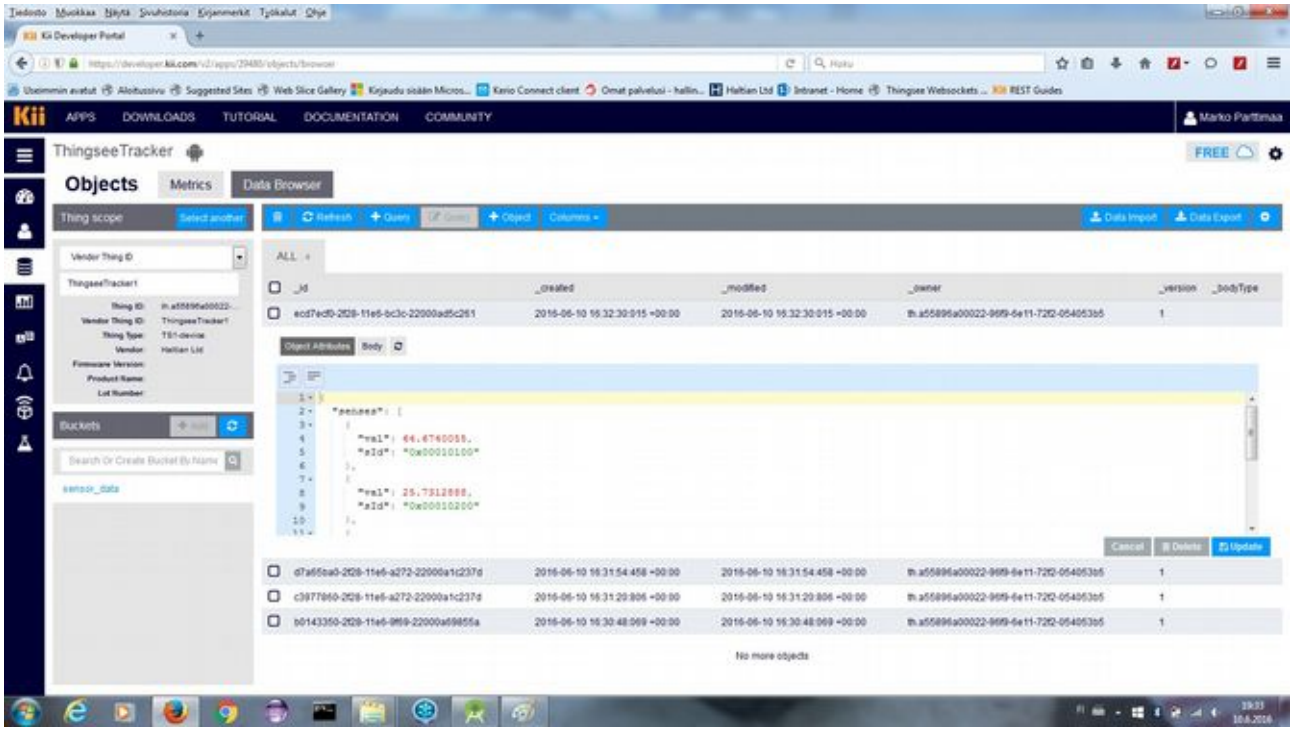
Click the Console -button and select your Thingsee to see the details:



Now if your Thingsee has location fix ready you can go to the Data -tab of the dashboard, select Thing scope, select VendorThingId from the pull down menu and write your Thingsee's vendorThindId you gave it on the cloud -file to the search field your Thingsee should popup → select and you can see the bucket (= folder) sensor_data. This is the place where your Thingsee writes the sensor_data it gets.

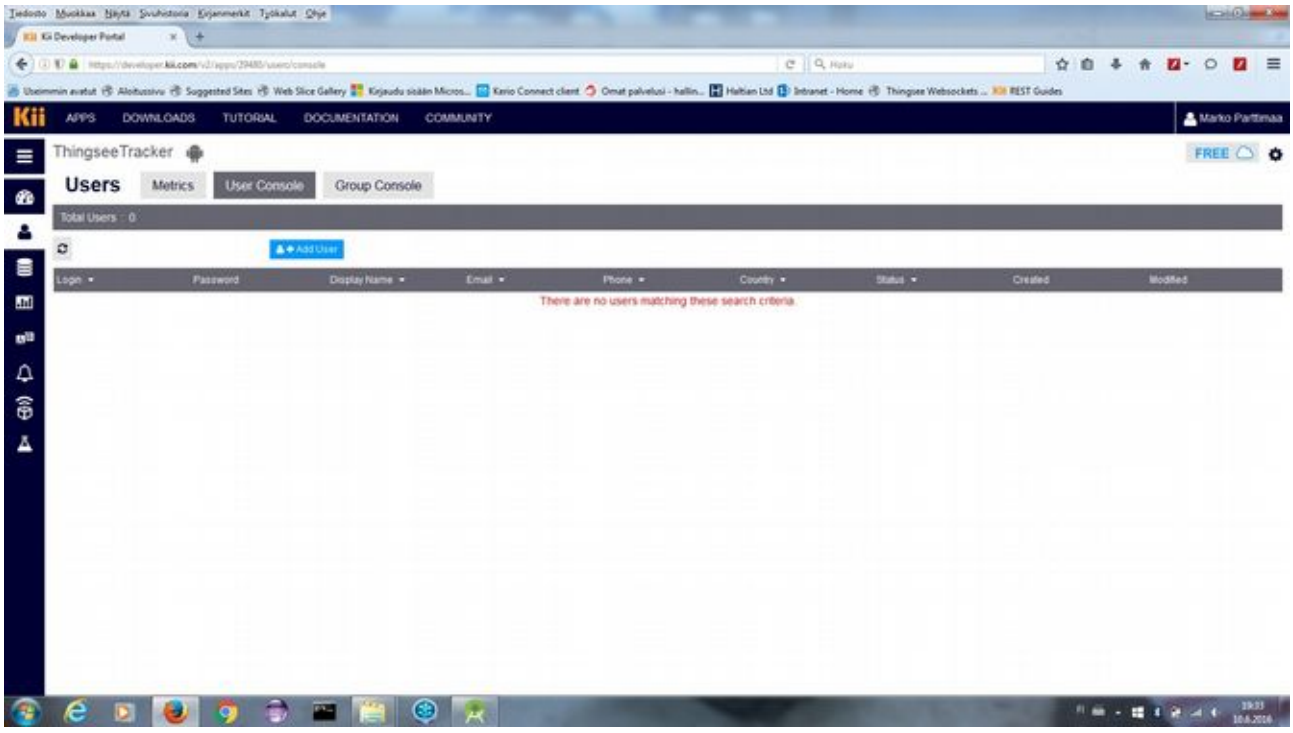


Select the sensor_data → you will see the object your Thingsee has sent to the cloud. Click one of the objects to see the JSON format your Thingsee uses:



If you got this far it means your Thingsee works and sends data to the cloud :)

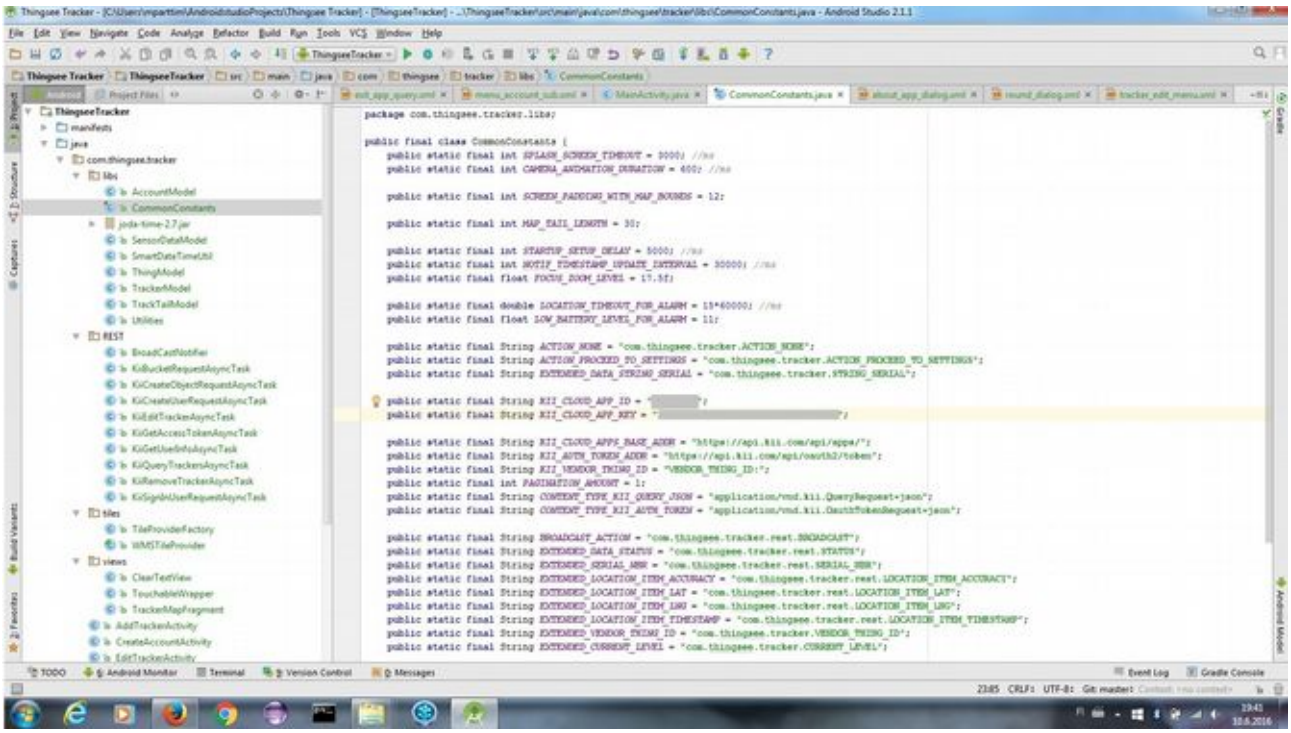
If you select the Users -tab on the dashboard you can see there's not yet any user's in your app so now it's time to modify the Android app provided.



3. Modify the Android app and compile it

Download Android SDK and import the project provided. Update Google API project and app to enable Google Maps.

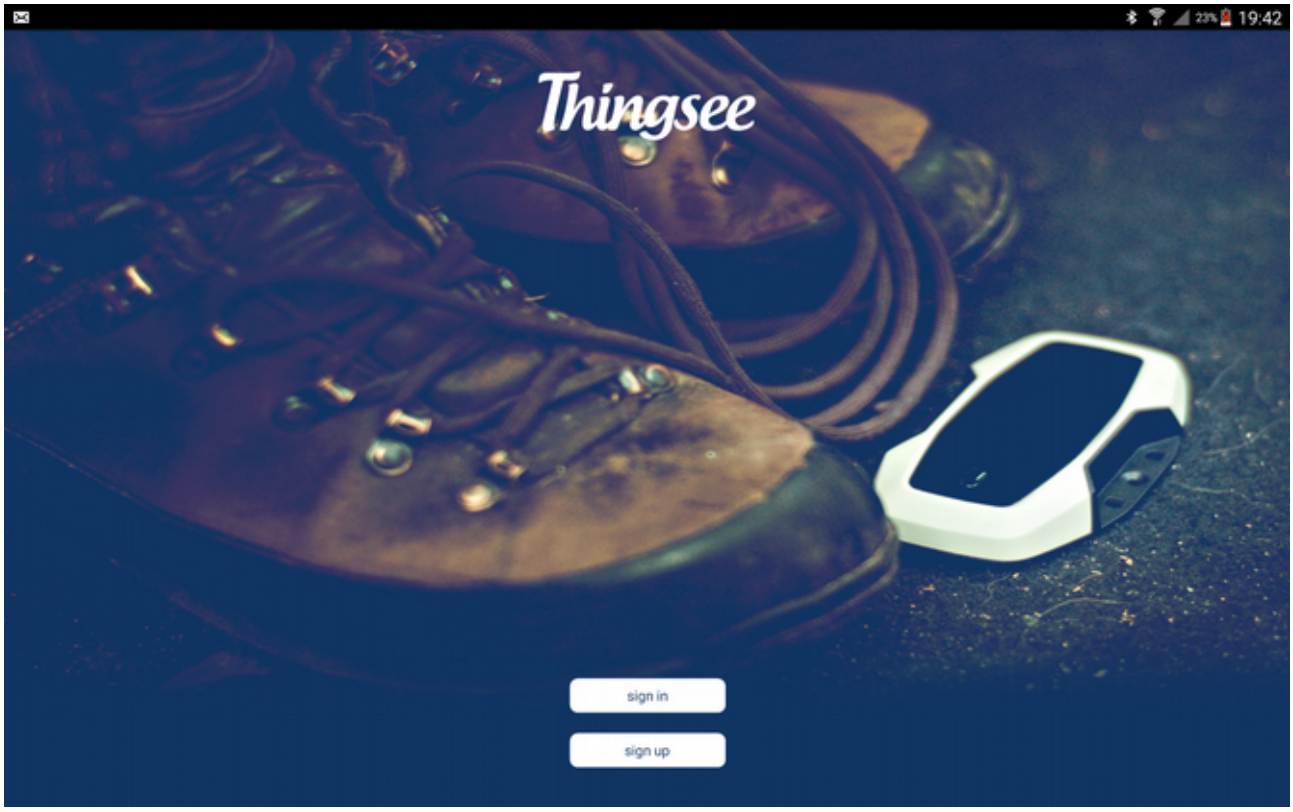
Open the file CommonConstants.java under ThingseeTracker → java → com.thingsee.tracker → libs and modify the KII_CLOUD_APP_ID and KII_CLOUD_APP_KEY to match your application in the Kii Cloud.



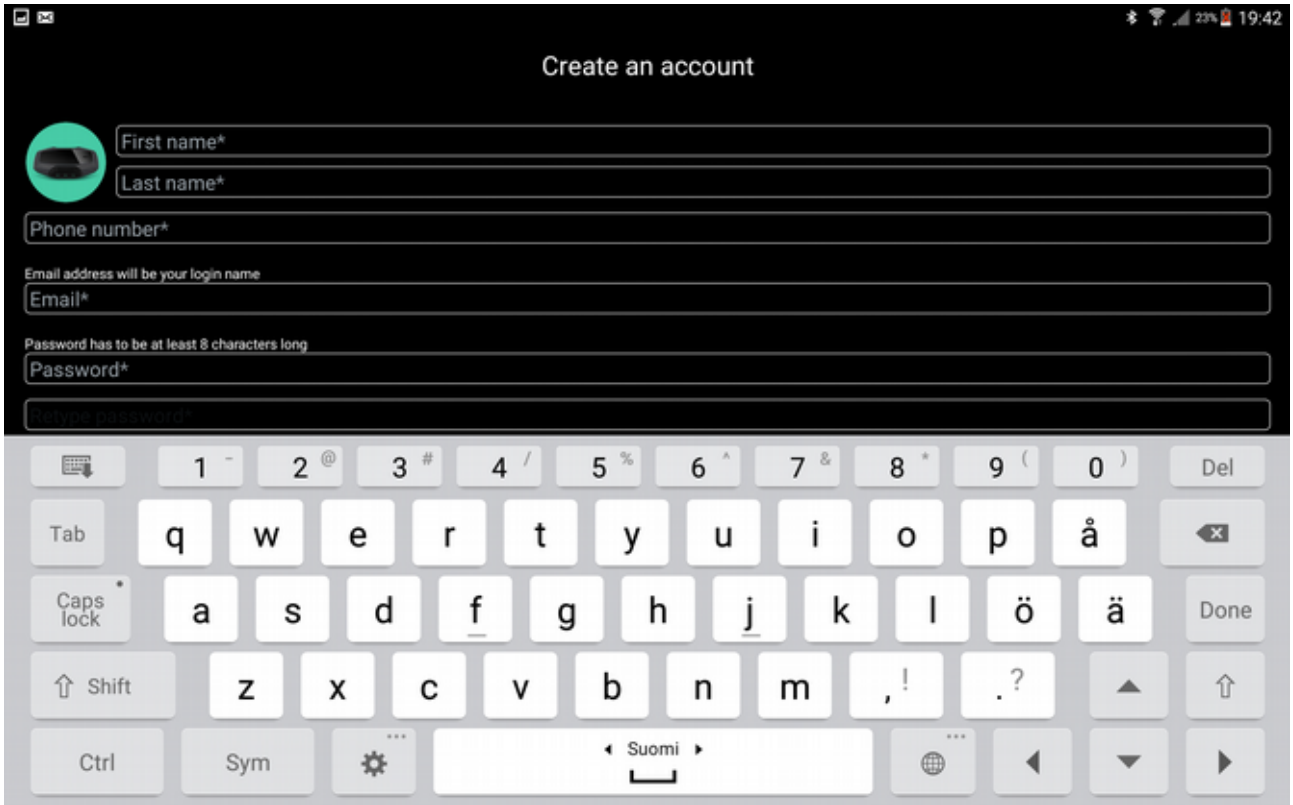
Now create the apk file for installation and install the application to your Android device.

4. Sign Up, sign in and add Thingsee to the app

Start your ThignseeTracker -application in the Android device and you will get to this view:



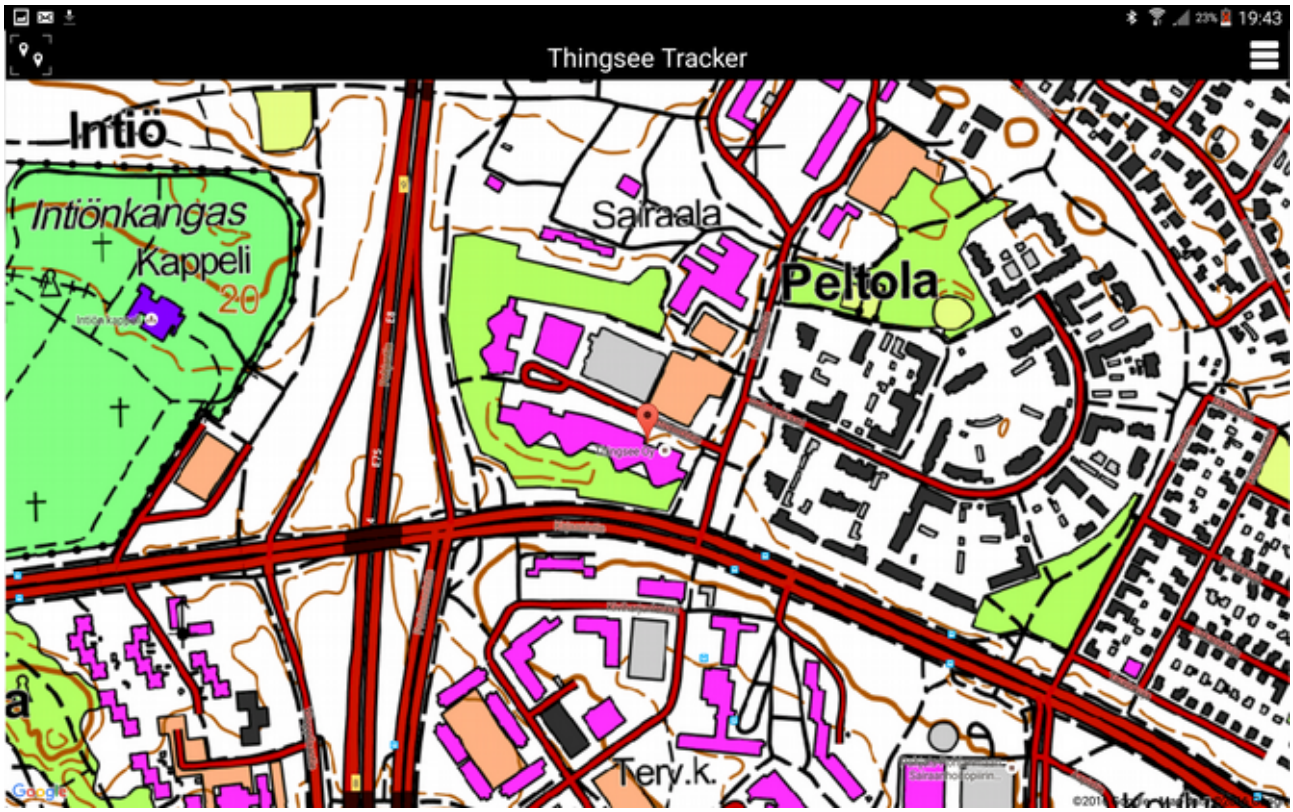
Tap sign up -button to create your user account to the application in the cloud:



Fill in the information and your user account is created after tapping sign up -button ath the bottom.

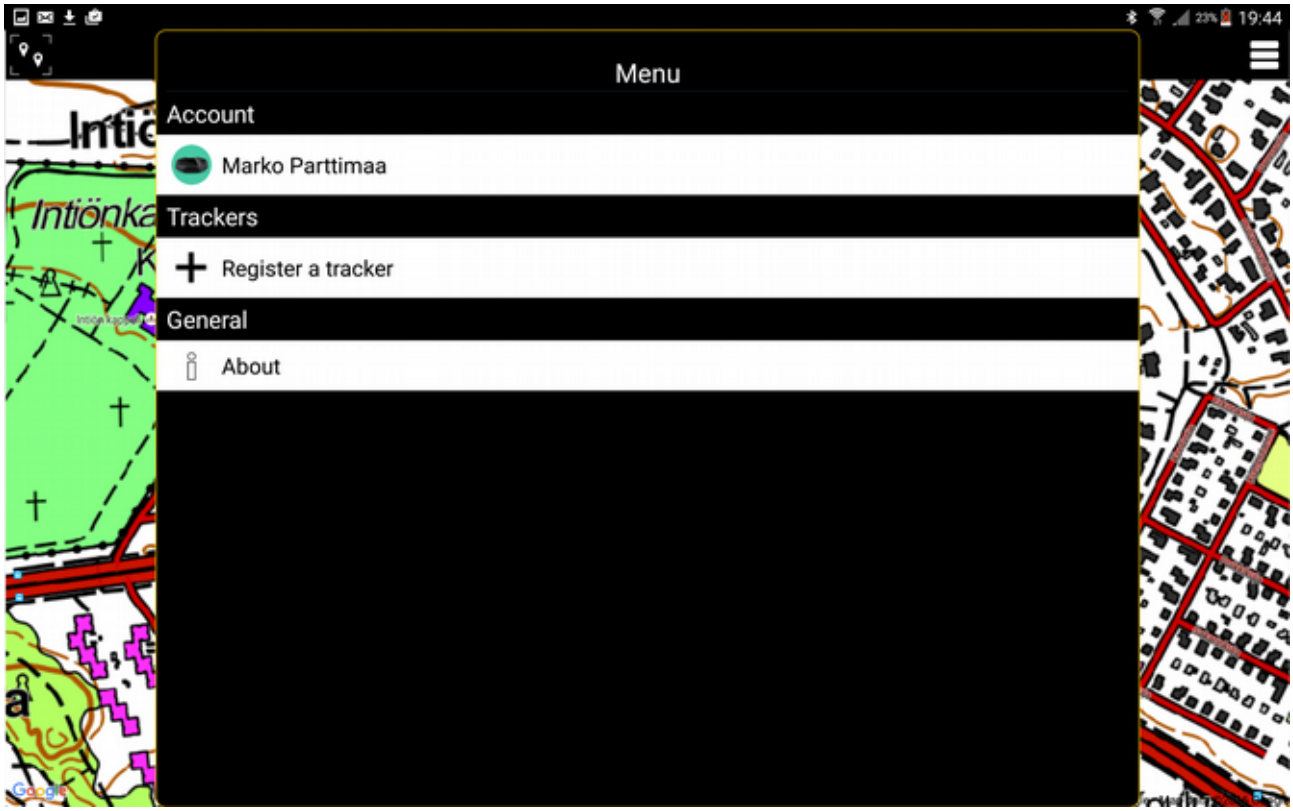
After this if you go to your application's dashboard on the Kii Cloud and select the Users -tab you can see that the account was created.

Now you need to register your Thingsee to the Android application. Sign in to the Android application using your user account you created in the Android app. Once logged in you will be taken to the map view with Thingsee Oy office location zoomed in :) If you don't get the map displayed please check your data connection and Google Maps configuration in both the Android app and Google API Console.

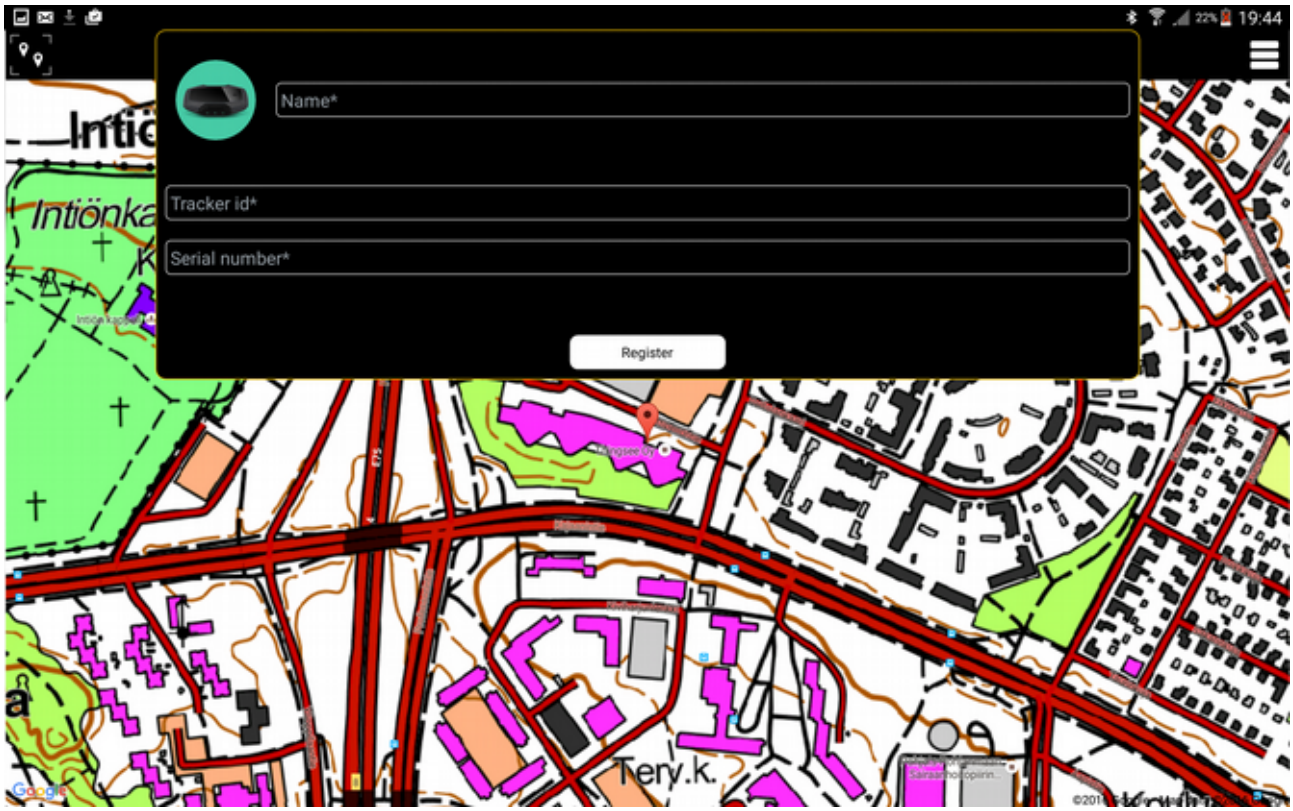


To register your Thingsee to the app, select Settings on top of the right corner. The Android app will display the popup to type in the password. (Settings is password protected because the idea is that you can share this app by sharing your user account to be used by the others BUT only those who know the password can make changes to the Thingsees that gets tracked). The default password is 'password' :) You can change the password by changing the Android application and re-compiling it.

After successfully inserting the password and tapping OK you will get access to the main menu:



Select Register a tracker -item:



Now type in your Thingsee's information. Tracker id equals the vendor_thing_id you set to your Thingsee when editing the cloud -file.

Once done select Register. Now the Android application matches your Thingsee to the Things registered to your application in Kii Cloud.

If everything goes fine you will get back to the main view your Thingsee displayed at the bottom.

Now exit the app and re-start it to start viewing the data your Thingsee sends (currently the application needs to be re-started to get the data polling running, this will be fixed in the future...).

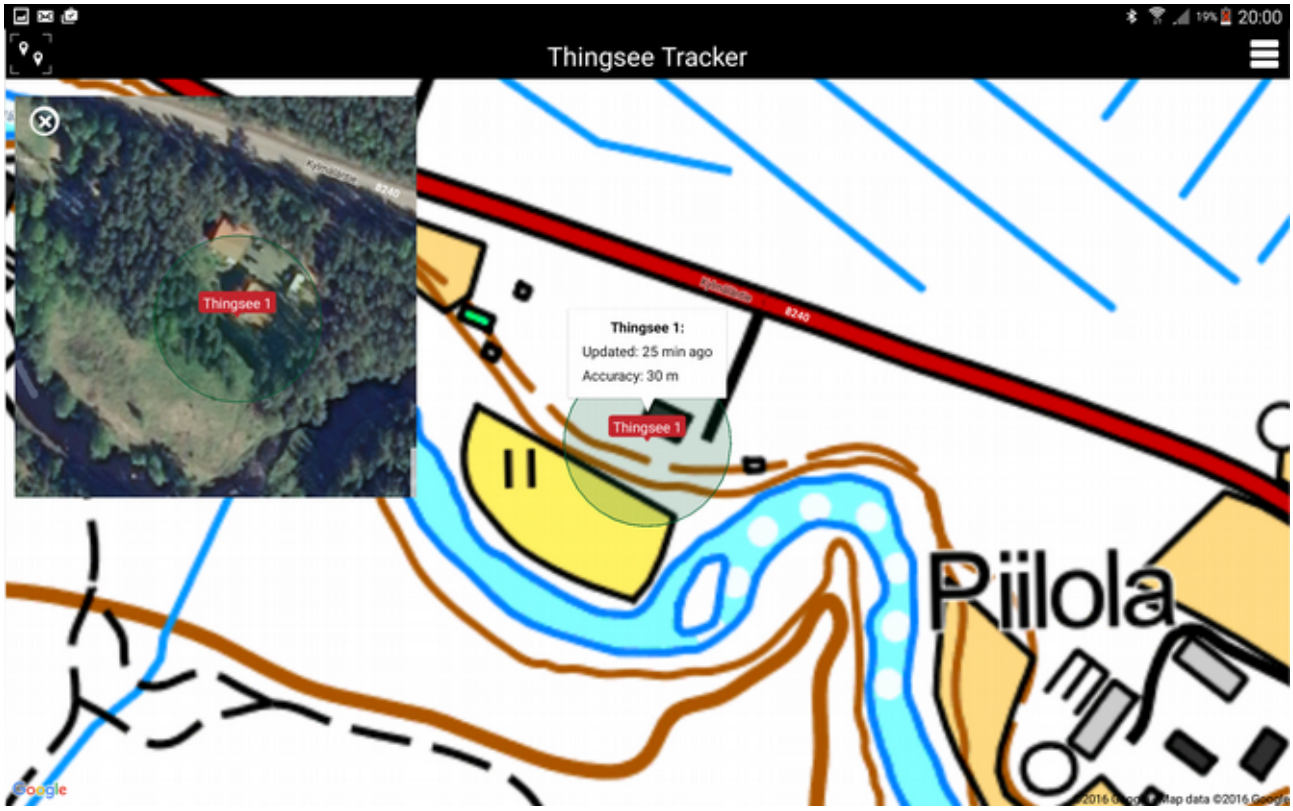
Note: old image, current version do not use avatars anymore to minimize data traffic. Battery status is displayed on it’s place instead.

After maybe a couple tens of seconds your Thingsee status will update at the bottom to something like this:

On the right lower corner you can see the battery status of your Thingsee. The circle around the Thingsee is green if your Thingsee has sent data less than 15min ago and red if it's over 15min from last data update.

Note: old image, current version do not use avatars anymore to minimize data traffic. Battery status is displayed on it’s place instead.

Tap the icon of your Thingsee to zoom into it's last known location:



This view has the aerial image displayed in the left top corner and latest information available show above the map marker on the map. Map can be zoomed and panned. To return to the main view tap either the Collect trackers -button on the header in top left or just press Back.

Note: old image, current version do not display aerial map in top left corner anymore to minimize data traffic.

Enjoy :)