GPS Tracking Device on Linux based server

Benefits of TRACCAR and its possible usage …

– Any Vehicle Tracking / maintain history
– Can be used for personnel tracking
– Can be used as a commercial solution as well
– Can be used to track your lost mobile phone
– You can inquire about location by sending SMS to the device and it will return sms you the location with URL [this feature will be implemented later]
– Maintain History and Track of the device and speed of vehicles with addressess
– Many others …

1- Linux base System , I used Ubuntu 12.04 32 bit edition as an example (hardware specs can be anything, nothing fancy required) , The system should have static public ip or it can work port forwarding as wel (if you dont have one, it can be manipulate with some workarounds like ddns too)
2- TRACCAR application which will be used to store/update client data and web portal for management purposes.
3- For client side tracking, I used ANDROID base mobile phone with GPS and GPRS. (HTC DESIRE HD MODEL with Ufone base GPRS (for location update on server, so GPRS must be activated on the SIM in order to update data from client to server) and WiFi where its available (it can store data if no internet is available and will update when it will get access to internet)
First we will configure SERVER side.
[UBUNTU 12.04 32bit Edition]
Login to your linux server with root, and first update and install Java DK.

1. apt-get update
2. aptitude install openjdk-7-jre-headless

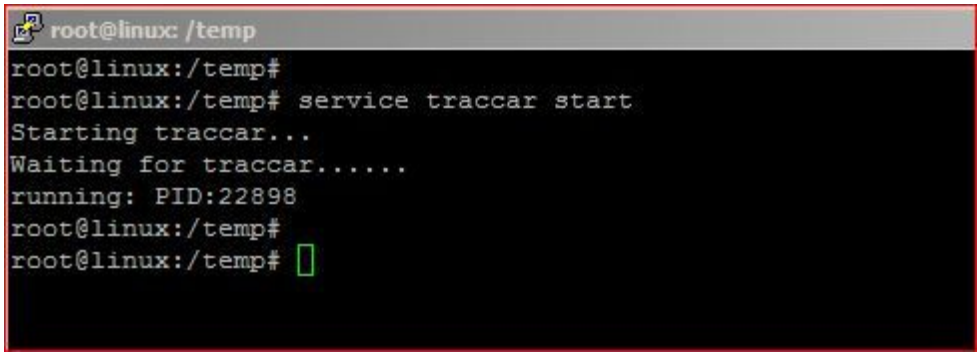
Use Putty
Now download TRACCAR server application in temp folder, unzip it and run its installer.

1. mkdir /temp
2. cd /temp
3. wget https://sourceforge.net/projects/traccar/files/traccar-linux-32-2.10.zip/download
4. unzip traccar-linux-32-2.10.zip
5. #=======
6. #INSTALL
7. #=======
8. /temp/traccar.run

Now Start TRACCAR service

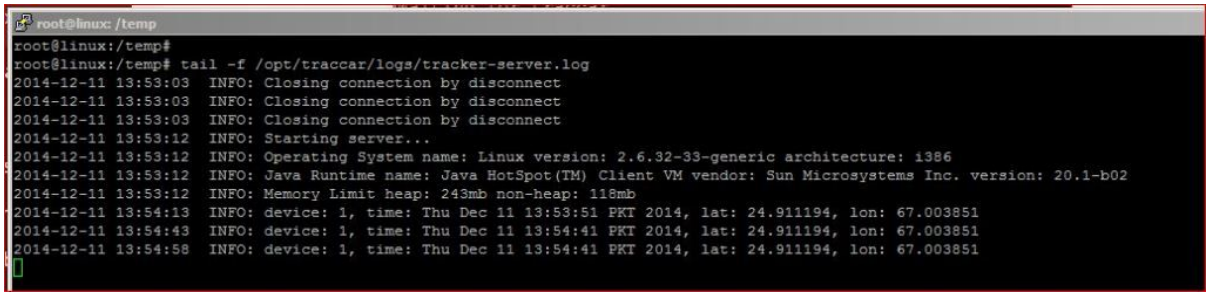
1. service traccar start
2. #OR

3. sudo /opt/traccar/bin/traccar start



You can see its logs as well for troubleshooting and information purposes.

tail -f /opt/traccar/logs/tracker-server.log



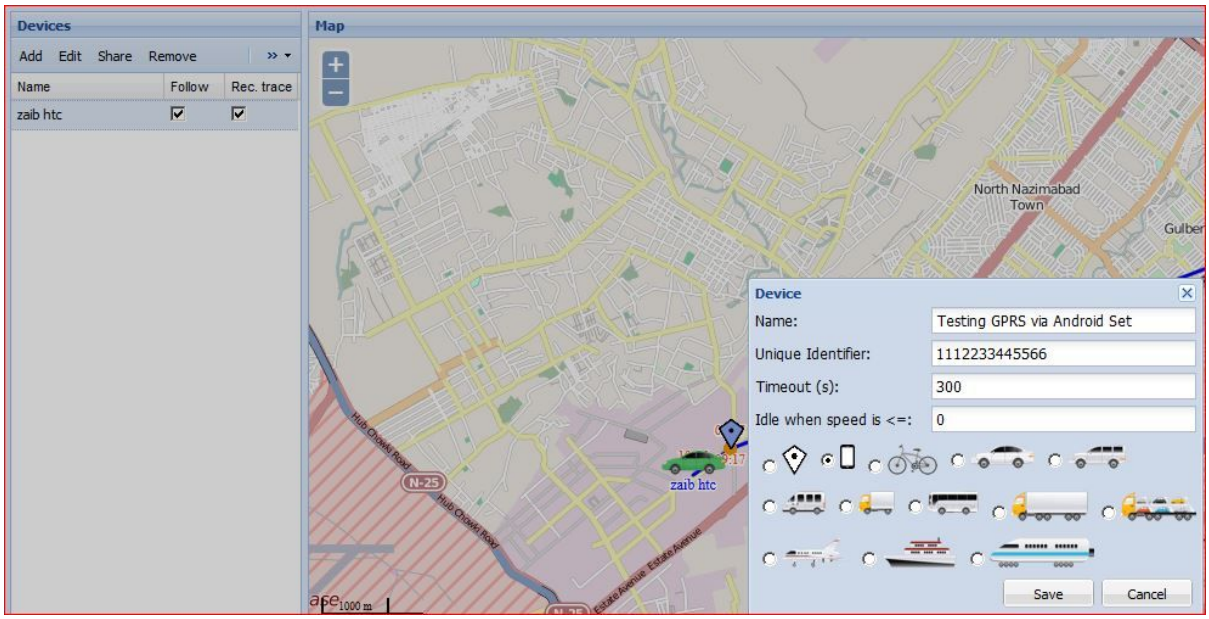
Now access it from the WEB by

http://yourlinuxip:8082

It may take some times to load the page / plugin.
Login With following default credentials

ID = admin
Pass = admin

After successful login, you will see TRACCAR web panel with default map.
On left side you will see DEVICES menu, Click on ADD button, and enter details
As showed in the image below …



NAME = Your Device or Person Name
UNIQUE IDENTIFIER = Enter your IMEI number, you can find it on your device properties.
Click on SAVE.
Now moving to CLIENT end configuration …

CLIENT SIDE CONFIGURATION:

For test purposes, I am showing you howto add android mobile device for tracking (as most of android phones nowa days have GPS module. So basically what you need is a GPS capable Device with Internet Access, (your SIM OR mobile must have Internet access in order to update data like coordinates and others to the server. in case your mobile/device have no internet access, it will store data locally and will update as soon it gets internet access.

Download TRACCAR-CLIENT application on your mobile and install it,

https://dl.dropboxusercontent.com/s/nwzqkt0dkif1bap/traccar-client-release.apk

or you can install it directly from Google play store like

https://play.google.com/store/apps/details?id=org.traccar.client

Once its installed open it (traccar client)
As showed in the image below …

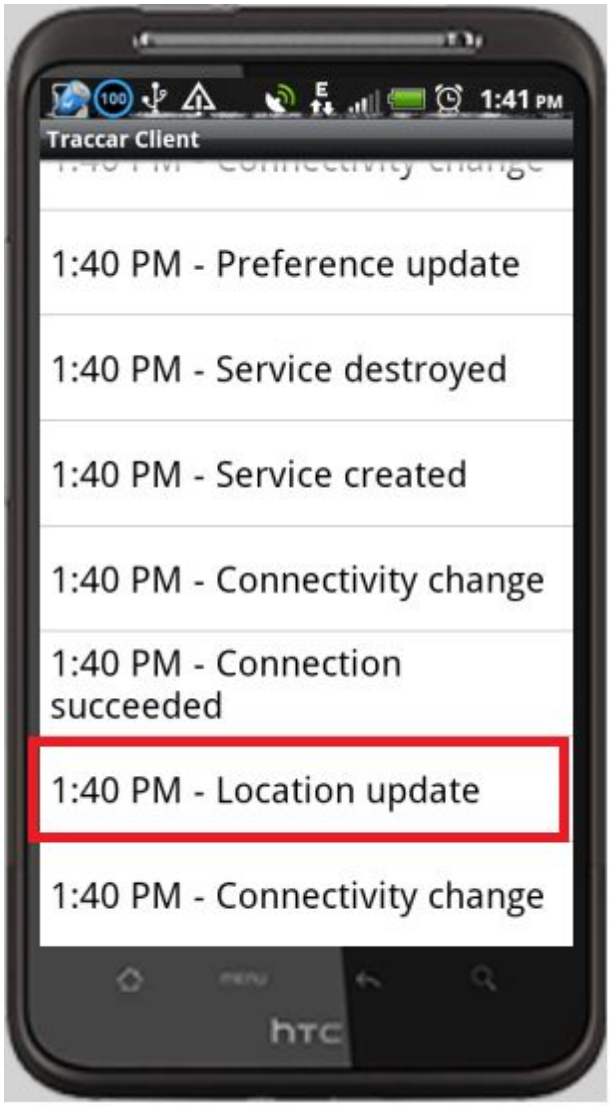
TRACCAR client on android

Now you must modify settings as shown, [pretty simple and common to understand :p]

traccar client settings

– DEVICE IDENTIFIER = In Device identifier, you will see you unique IMEI No. (International Mobile Equipment Identity number IMEI) you should add the same in your server section as well (In ADD device)
– SERVER ADDRESS = Enter your server IP address (traccar server) or if you dont have static ip, you can use DYNAMIC DNS on your dsl/router and do port forwarding of required ports like 8082 for web panel , and 5005 (it depend on device model)
– SERVER PORT = In general cases port may be same as for this model its 5002, (but it can vary from GPS device model)
– FREQUENCY = How often (in seconds) client should upload data to the server (For initial test purpose make this value less like 60 seconds)
– LOCATION PROVIDER = Select MIXED provider, so that if GPS is not working, it should update possible coordinates with the nearest mobile network tower. The exact location may not be accurate in network provider settings , but sometimes sufficient to get idea.GPS only settings provide more accurate position but it requires sky sight.
– SERVICE STATUS = select this option so that the client starts sending data. (this service be running all the time)

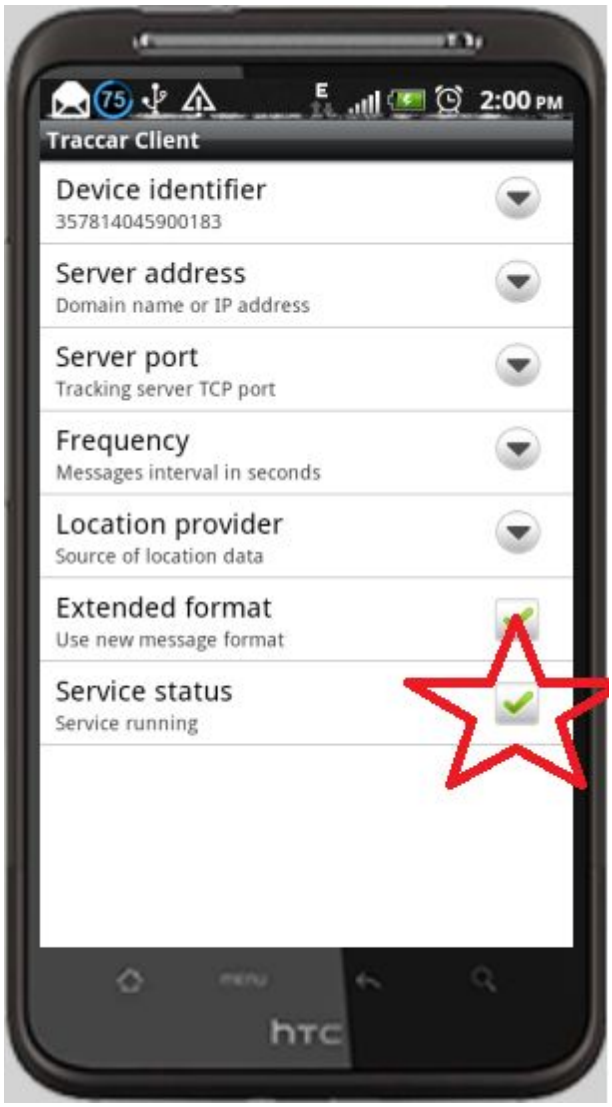
If you click on MENU and then on STATUS, you can see the LOGS
As showed in the image below …

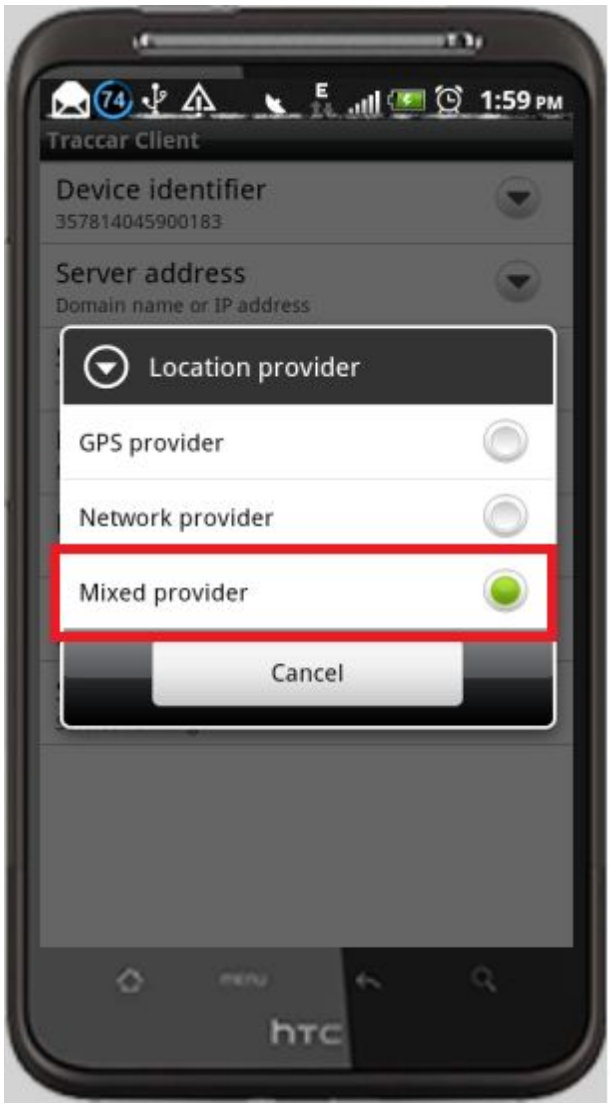


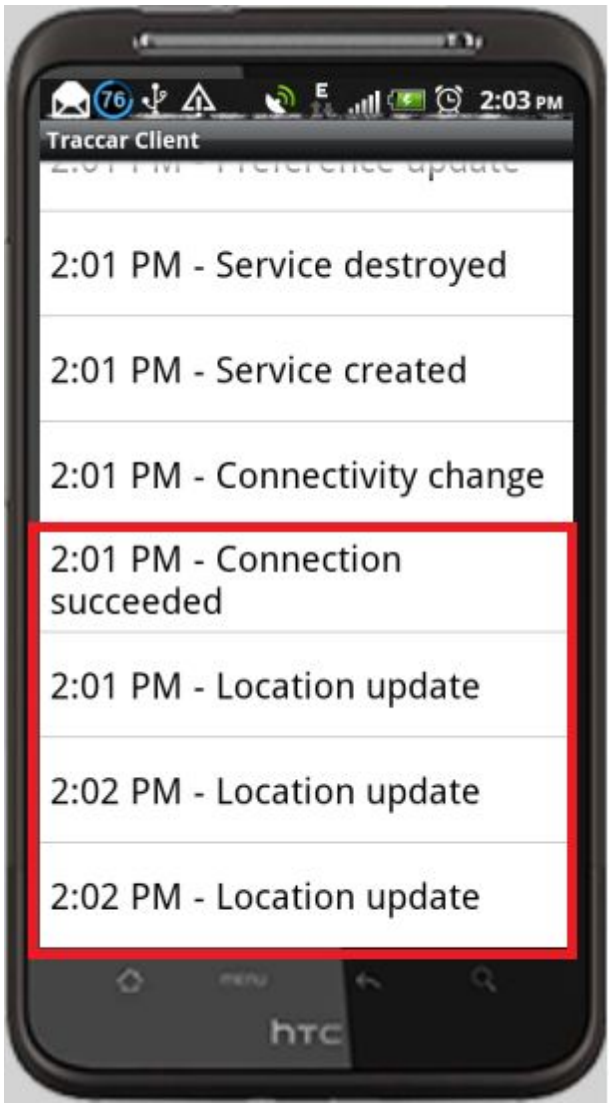
CLIENT DEVICE LOGS

Some more snaps of settings for android client, just for reference purposes

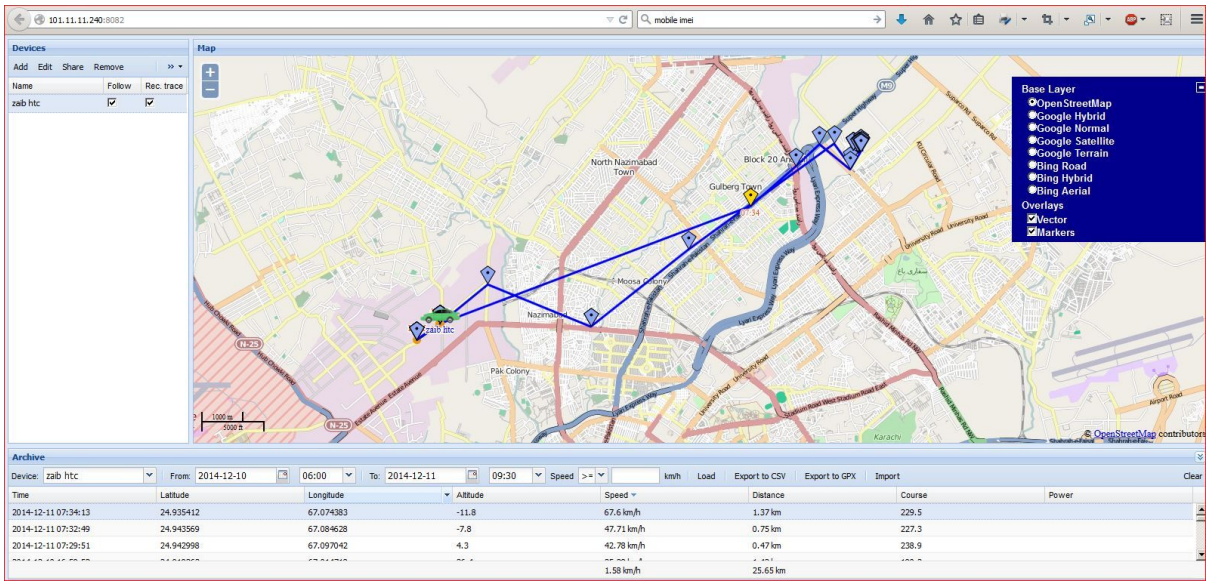

74
1:58 PM
Location
My Location
Use wireless networks
Location determined by Wi-Fi and/or mobile networks
Use GPS satellites
When locating, accurate to street level
Location service
Phone finder
Allows you to find your phone when it is lost or stolen
menu
htc

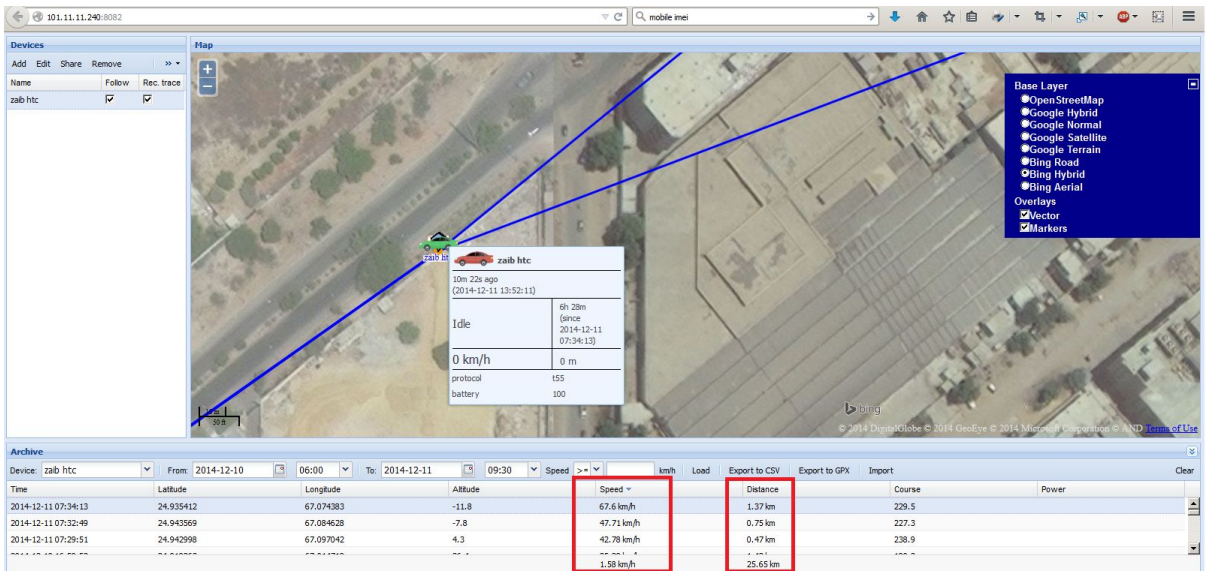

2:00 PM
Traccar Client
Device identifier
357814045900183
Server address
Domain name or IP address
Server port
Tracking server TCP port
Frequency
Messages interval in seconds
Location provider
Source of location data
Extended format
Use new message format
Service status
Service running
htc


74
1:59 PM
Traccar Client
Device identifier
357814045900183
Server address
Domain name or IP address
Location provider
GPS provider
Network provider
Mixed provider
Cancel
htc



Now at server end… select the device you added earlier and you will start seeing its status. For a better tracking view, Go outside with your device and have a 4-5 kilometers walk or running (its good for health too you know but I myself is so lazy that even with over weight, I dont walk much
Now see the view IN DIFFERENT STYLE





To add some features and enhancements to your previous traccar web portal by Anton Tananaev, update it with Mr.Vitaly Litvak version.
Here are instructions: https://github.com/vitalidze/traccar-web/tree/dev#installation
Or find an Folder : traccar-web-dev.zip

> Download the updated .war file

1. wget http://myultrashare.appspot.com/s/traccar-web/dev/latest/traccar-web.war

Now stop traccar service and replace the war file in installed folder.

1. service traccar stop
2. cp traccar-web.war /opt/traccar/
3. service traccar start

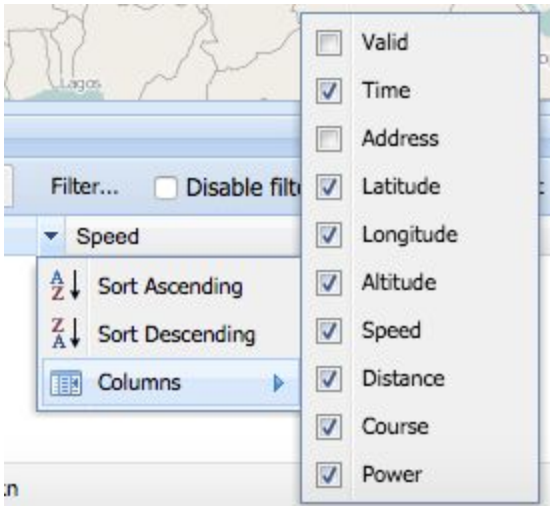
Now you will see new enhanced featured like which don't exist in original traccar-web project:
See following FEATURES list at

http://traccar.litvak.su/features/

TIPS:

Howto show Address field:

This column displays address value from archived positions. It is hidden by default, to make it visible use controls of archive grid (available by clicking down arrow button in any column header):



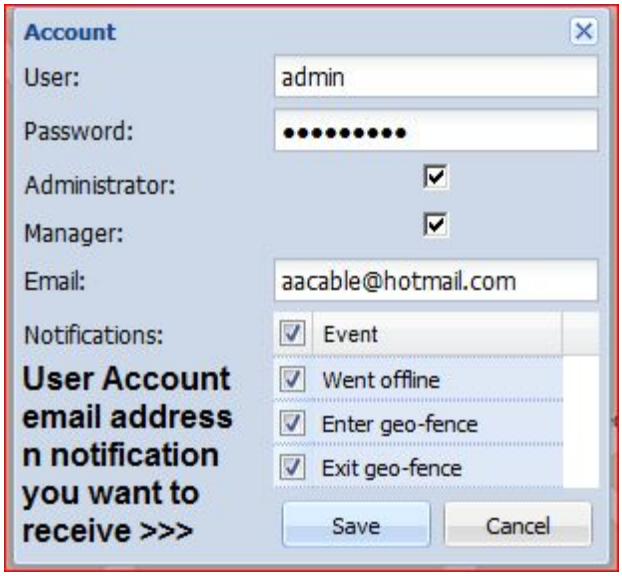
Please note that by default traccar does not fill that column. To make it work the 'reverse geocoding' must be enabled in traccar configuration file:

<!-- Geocoder options -->
<entry key='geocoder.enable'>true</entry>
<entry key='geocoder.type'>nominatim</entry>
<entry key='geocoder.url'>http://nominatim.openstreetmap.org/reverse</entry>

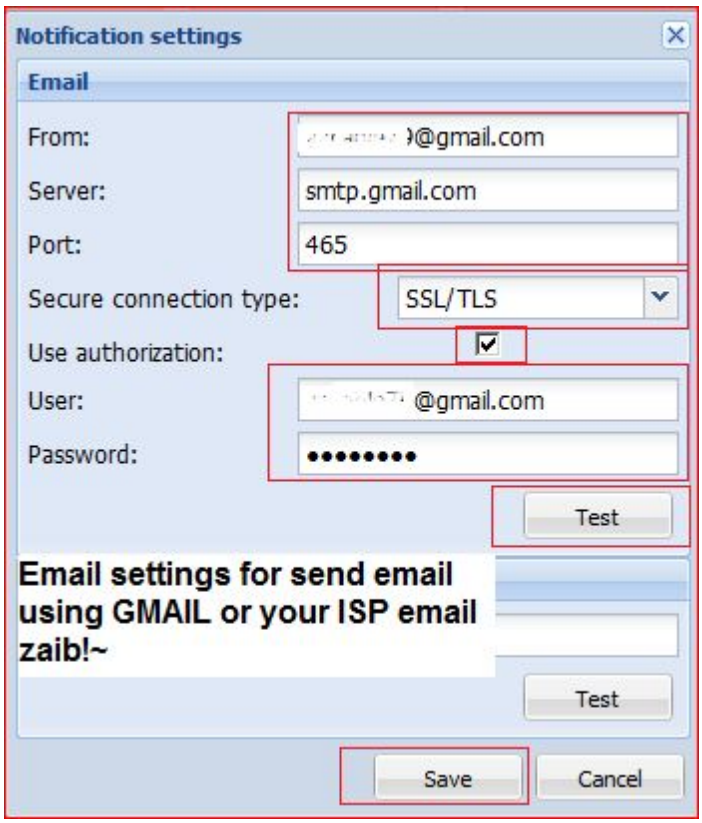
Thanks to Mr. Vitaly Litvak for pointing me in the right direction

TRACCAR EMAIL NOTIFICATION FOR VARIOUS EVENTS

In User account, you can set his email address and notifications type that user will receive on given email address.



In SETTINGS > NOTIFICAITON, you can configure your GMAIL account to send out emails using your gmail account. You must enable LESS SECURITY in gmail before using this app or gmail will block any attempt of using there smtp using 3rd party app.



Use ‘Test’ button to check settings validity. It will just test the connection. and you will see TEST PASSED popup.
More information on notification can be seen here.
http://traccar.litvak.su/features/notifications.html

If time will allow , I will add some more snaps and customizations that can be made. Its a open source application, you can make your contribution as well.

You can get more details on this project from following link

http://www.traccar.org/

Find more On

https://www.traccar.org/

We should thanks for their help

Download it here :

https://www.traccar.org/download/

Supported Device

https://www.traccar.org/devices/

Find more About Documentation :

https://www.traccar.org/documentation/

Mysql Storage

By default Traccar Server uses embedded H2 database. If you want to use MySQL database engine you need to replace following lines in configuration file:

```
<entry key='database.driver'>org.h2.Driver</entry>
<entry
key='database.url'>jdbc:h2:/home/user/Documents/traccar/target/database</entry>
<entry key='database.user'>sa</entry>
<entry key='database.password'></entry>
```

Configuration parameters for MySQL (replace [HOST], [DATABASE], [USER], [PASSWORD] with appropriate values; for local database use “localhost” as HOST):

```
<entry key='database.driver'>com.mysql.jdbc.Driver</entry>
<entry
key='database.url'>jdbc:mysql://[HOST]:3306/[DATABASE]?allowMultiQueries=true&amp;au
toReconnect=true&amp;useUnicode=yes&amp;characterEncoding=UTF-8&amp;sessionVariables
=sql_mode=ANSI_QUOTES</entry>
<entry key='database.user'>[USER]</entry>
<entry key='database.password'>[PASSWORD]</entry>
```

NOTE: Traccar will create tables for you, but you need to create database with selected name by yourself.