

OpenGTS Tutorial and Guide

Written by Mark Phillips, GeoTrac, Inc.
Edited by Martin D. Flynn for OpenGTS

Version 0.1.2 June 19, 2009

Copyright© 2009 GeoTrac, Inc.
Copyright© GeoTelematic Solutions, Inc.

Contents

- 1) Introduction
- 2) Login
- 3) Main Menu
- 4) Mapping
 - 4.1) Vehicle Map
 - 4.2) Group Map
- 5) Reporting
 - 5.1) Detail Reports
 - Event Detail Report
 - 5.2) Summary Reports
 - Last Known Location Summary
 - 5.3) Performance Reports
 - Speeds over 45 mph (72 kph)
 - Speeds over 70 mph (112.65 kph)
 - Driving/Stopped Time Summary
- 6) Administration
 - 6.1) Account Admin
 - 6.2) User Admin
 - 6.3) Vehicle Admin
 - 6.4) Group Admin
 - 6.5) Geozone Admin
 - 6.6) Change Password

1) Introduction

This Tutorial will walk you through initial login and the various capabilities of the OpenGTS system, including Mapping, Reporting and Administrative capabilities. The intention of this tutorial is to be a step-by-step guide, showing how each of the various features and capabilities of the software are accessed and exercised in order to learn how it can be of benefit to you and your business. You can follow along with either the OpenGTS Demo Site at <http://track.opengts.org/track/Track> or with your own installed OpenGTS system on your computer (your installed version may have a different look & feel depending on your customization).

2) Login

The OpenGTS demo login can be displayed by viewing the URL <http://track.opengts.org/track/Track>. You will be presented with a Login window as shown below:



Enter your Login ID and Password

Account:

User:

Password:

Login

(Cookies and JavaScript must be enabled)

[Forgot your password?](#)

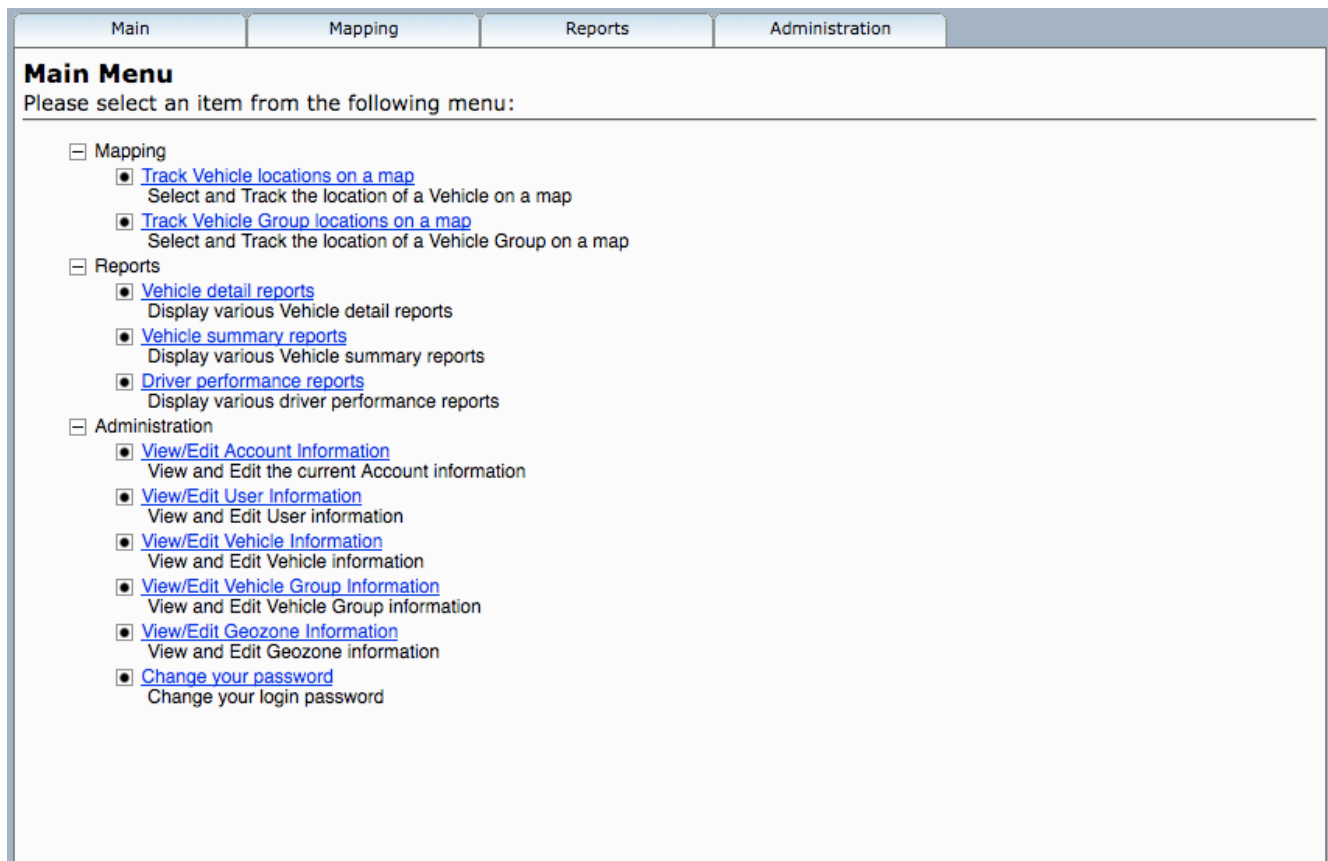
Or click here for a free demonstration

Demo

Please Login

For the purposes of this Tutorial, we will be using the “demo” account. If you’ve loaded the sample data on your own OpenGTS system, this same sample data will be available on your system as well. To go straight to the “demo” account, click the [Demo](#) button. This will display the main navigation menu, shown on the next page.

3) Main Menu



As you can see, the functions are broken down into 3 main categories, **Mapping**, **Reports** and **Administration**. Each of the tabs corresponds to the appropriately named category of functions.

Navigation may be accomplished in one of two ways:

From the Main tab, select [Main Menu](#) and the screen displayed above will be presented. From there, you may select whichever section of the application is of interest.

Alternatively, you may use the individual tabs (Mapping, Reports, Administration) to select functions within those specific categories. For instance, from the [Reports](#) tab, you may select [Vehicle Detail Reports](#), [Vehicle Summary Reports](#), or [Driver Performance Reports](#).

4) Mapping

4.1) Vehicle Map

Now that we know how to navigate, let's get started with the Mapping functionality. Click on the link for [Track Vehicle Locations on a Map](#) as highlighted above and the following screen will be displayed.

NOTE: Your map may be different depending on the date range selected.

The screenshot shows the 'Vehicle Map' interface. At the top, there are tabs for 'Main', 'Mapping', 'Reports', and 'Administration'. Below the tabs, the map title is 'Vehicle Map: demo' and the device is 'Demo Device'. The last GPS event is '2007/03/13 12:52:46 US/Pacific'. The map displays a red route starting from San Francisco and ending in Sacramento, with various green and yellow pins along the way. On the left side, there are map controls including a compass, a zoom slider, and a 'Show Location Details' button. On the right side, there are date range controls, a 'TimeZone' dropdown, 'Update' and 'Auto' buttons, a 'Replay' button, and a 'Cursor Location' display showing coordinates and distance. A 'Pushpin Legend' is also present, indicating different pin colors for speed and digital I/O.

Select Date Range:						
From 2007/03/13 00:00						
Mar '07						
Su	Mo	Tu	We	Th	Fr	Sa
25	26	27	28	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
1	2	3	4	5	6	7

To 2007/03/13 | 23:59

TimeZone: US/Pacific

Update Auto

Replay InfoBox

Cursor Location: 38.6397 / -120.9798

Distance (ctrl-drag): 0.00 Miles

Pushpin Legend:

- More than 15 mph
- More than 5 mph
- Less than 5 mph
- Digital I/O

Google KML

Here we have the basic map view, with map **zoom** controls on the left.

On the right hand side, we have the date range controls allowing you to select the period of time for which you'd like to review activity for a particular vehicle/asset. Currently displayed is the starting date or "From" calendar (**yellow** arrow). The right and left arrows just above the calendar will change the month and then you can select the particular day of the month you want. To select a different end date, click on the 3 triangles below the calendar (**red** arrow) and the "To" calendar will roll up to replace the "From" calendar. Follow the same procedure here to select your end date and then click the **Update** button (**green** arrow) to redraw the vehicle/asset history on the map for the selected date range.

Moving a bit further down the right hand side, you'll notice the word **Replay** -- click on the arrow just to the right of it and it will begin a replay of the timeframe shown on the map, starting with the

first point and continuing through until the final point has been plotted. This is a useful mechanism for quickly seeing the path a vehicle has taken throughout a chosen period of time.

The **Pushpin Legend** in the lower right hand corner defines the color code of each of the points or "pushpins" on the map. These thresholds are fixed for this demo, but can be set at any level desired, or can be keyed off of other parameters in the database such as maintenance status or temperature for refrigeration trucks.

One final note about the basic map display -- if you look in the white space just above the calendar on the right hand side, you'll notice a line that denotes the Last GPS event, telling you the last time this vehicle reported its position to the database. On the left hand side of that white space is a box with the asset's name. Clicking in the box brings up a list of assets, any of which can be chosen just by clicking on that asset name.

Zooming in on the data in the left hand portion of the map, you can see greater detail of the map and the individual pushpins.

Main Mapping Reports Administration

Vehicle Map: demo Demo Device (Last GPS event: 2007/03/13 12:52:46 US/Pacific)

Select Date Range:
From 2007/03/13 00:00
Mar '07
To 2007/03/13 23:59
TimeZone: US/Pacific
Update Auto
Replay InfoBox
Cursor Location: 38.6569 / -121.0484
Distance (ctrl-drag): 0.00 Miles
Pushpin Legend:
More than 15 mph
More than 5 mph
Less than 5 mph
Digital I/O
Google KML

[#7] Demo Device : InMotion
Date: 2007/03/13 11:36:26 [PDT]
GPS: 38.38201 / -121.94253
Speed: 64.0 mph
Heading: 229° (SW)
Address: I-80, Vacaville, CA

Placing your cursor over any pushpin will bring up an InfoBox as shown above. The InfoBox includes by default the data point (#7), the device name (Demo), its status (*InMotion*), **Date**, **Time**, **GPS Latitude/Longitude**, **Speed**, **Heading**, and **Address** (if available).

As an interesting side note, if you check the **InfoBox** checkbox before clicking the **Replay** button, then each Pushpin will have an InfoBox attached to it as the trail of Pushpins is painted on the map.

Note that on lower-left of the screen, there appears to be a red pushpin in San Francisco. Let's zoom in on that area.

Main Mapping Reports Administration

Vehicle Map: demo Demo Device (Last GPS event: 2007/03/13 12:52:46 US/Pacific)

Select Date Range:

From 2007/03/13 | 00:00

Mar '07

Su	Mo	Tu	We	Th	Fr	Sa
25	26	27	28	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
1	2	3	4	5	6	7

To 2007/03/13 | 23:59

TimeZone: US/Pacific

Update Auto

Replay InfoBox

Cursor Location: 37.7832 / -122.3677

Distance (ctrl-drag): 0.00 Miles

Pushpin Legend:

- More than 15 mph
- More than 5 mph
- Less than 5 mph
- Digital I/O

[Google KML](#)

[#22] Demo Device : Stop
Date: 2007/03/13 12:52:46 [PDT]
GPS: 37.78472 / -122.39913
Speed: 0.0 mph
Address: Clementina St, San Francisco, CA

Placing the cursor on the red pushpin, we see that the status is reported as "Stopped" and Speed is reported as zero. Additionally, here the system reports a reverse-geocoded street address.

Another useful feature of the mapping function is the ability to determine the straight-line distance between any two points on the map. This can be useful for determining the distance between a vehicle's current location and any known location on the map -- ideally sticking to straight lines along known roads to maximize accuracy. This function is utilized by clicking on the starting point, holding down the CTRL button and dragging the cursor to the end point, as denoted by the **green** arrow. Note that the distance is displayed here as well.

We have two ways of diving deeper into the details. The first is obviously to continue to zoom tighter into that portion of the map. The second is to utilize the Location Details, by clicking the [Show Location Details](#) link at the bottom of the map.

Replay
InfoBox

Cursor Location:
37.7782 / -122.3695

Distance (ctrl-drag):
0.00 Miles

Pushpin Legend:

- More than 15 mph
- More than 5 mph
- Less than 5 mph
- Digital I/O

[Google KML](#)

Hide Location Details

9	2007/03/13 11:46:43	InMotion	38.2446/-122.0820	65.9	241° SW	Magellan Rd, Fairfield, CA 94533
10	2007/03/13 11:51:44	InMotion	38.1904/-122.1696	65.9	220° SW	I-80, Fairfield, CA
11	2007/03/13 11:56:52	InMotion	38.1189/-122.2303	64.6	177° S	I-80, Vallejo, CA
12	2007/03/13 12:01:59	InMotion	38.0387/-122.2473	65.2	226° SW	Eastshore Fwy, Rodeo, CA
13	2007/03/13 12:07:08	InMotion	37.9756/-122.3187	65.9	195° S	Richmond, CA
14	2007/03/13 12:12:14	InMotion	37.8973/-122.3091	64.0	162° S	431 Cleveland Ave, Albany, CA 94706
15	2007/03/13 12:17:20	InMotion	37.8263/-122.3012	60.9	254° W	Oakland, CA
16	2007/03/13 12:22:24	InMotion	37.8223/-122.3239	52.8	258° W	I-80, Oakland, CA
17	2007/03/13 12:27:32	InMotion	37.8077/-122.3677	19.3	220° SW	I-80, San Francisco, CA
18	2007/03/13 12:32:32	InMotion	37.7889/-122.3879	36.7	220° SW	491 Embarcadero South St, San Francisco, CA 94105
19	2007/03/13 12:37:34	InMotion	37.7916/-122.3994	9.9	143° SE	28 Battery St, San Francisco, CA 94111
20	2007/03/13 12:42:40	InMotion	37.7855/-122.4002	0.0	0° N	680 Howard St, San Francisco, CA 94105
21	2007/03/13 12:47:41	InMotion	37.7834/-122.4025	0.0	0° N	789 Howard St, San Francisco, CA 94103
22	2007/03/13 12:52:46	Stop	37.7847/-122.3991	0.0	0° N	Clementina St, San Francisco, CA

The values for each of the columns are as follows (reading from left to right): **Pin #**, **Date/Time**, **Event Status**, **GPS (lat/long)**, **Speed**, **Heading**, and **Address**. Reading down the Date/Time column, you can see that this vehicle/device is configured to report a fresh GPS reading to the server every 5 minutes.

4.2) Vehicle Group Map

Now that we're done with the individual vehicle mapping capabilities, let's look at what can be done in terms of mapping group assets. From the [Mapping](#) tab, select [Vehicle Group Map](#) to display all the vehicles in a given group or the entire fleet. Depending on the manner in which assets are grouped within your fleet (covered later in Administration), it is possible to look at either an individual group of vehicles or your entire fleet on the map. For the purposes of this tutorial, the [Vehicle Group Map](#) will display the entire fleet of vehicles. This is equivalent to a Vehicle Group which is the same as the entire fleet.

The screenshot shows the 'Vehicle Group Map' interface. At the top, there are tabs for 'Main', 'Mapping', 'Reports', and 'Administration'. The 'Mapping' tab is active. Below the tabs, there is a dropdown menu for 'Vehicle Group Map' with 'all' selected. The main area is a map of California with various cities labeled. A blue pushpin is located over Manteca. On the right side, there is a 'Select To Date' calendar for June 2009, a 'TimeZone' dropdown set to 'US/Pacific', and 'Update' and 'Auto' buttons. Below the map, there is a 'Show Location Details' link.

All the navigation controls are the same as the individual [Vehicle Map](#), Fleet positions can be viewed in date-specific configurations by changing the calendar and detailed information on any asset can be accessed by placing the cursor over any "pushpin" to display. If multiple groups have been defined, then alternate groups of assets/vehicles can be accessed in a pull-down menu by clicking in the field next to "Vehicle Group Map" (**Blue** circle).

5) Reporting

5.1) Detail Reports

Detail reports are vehicle or device specific and are structured to pull information from the database in pre-defined formats that are relevant to the type of report requested. It is important to understand that while the fields (columns) presented in the following reports are what we have found to be most useful for the majority of users, they are not cast in stone. If it is necessary to add/remove data fields (columns) to any of these reports, it is simply a matter of reconfiguring the report generator for a specific client. Any data field that exists in the data table is capable of being added to a specific report.

The [GPS Tracking Reports – Device Detail Reports](#) Screen can be accessed from the [Reports](#) tab and appears as shown below.

GPS Tracking Reports
Please select a report from the following menu:

Vehicle:
demo

Select Date Range:
From 2007/03/13 00:00
Mar '07
To 2007/03/13 23:59
Mar '07
TimeZone: US/Pacific


Device Detail Reports:
 Event Detail

Format: HTML Get Report

Here we have the same nature of controls as on the [Vehicle Map](#) screen, allowing us to specify for which vehicle we want the report, the date range for the report and then which report we want to see. This particular report menu shows only the [Event Detail](#) report, but using the capabilities of the report generator, additional report selections may be added.

Event Detail Report

All received events are reported in the [Event Detail](#) report. In this application, location is reported every 5 minutes and events that are reported are Start, Stop, and InMotion. In a more complex application, other Status indications might include Digital I/O State (such as ignition on/off), Dormancy or Terminal Arrival/Departure. Each event reports **Time**, **Date**, **Status**, **Latitude**, **Longitude**, **Speed**, **Heading**, **Altitude**, **Odometer** (if available), and **Address**.

Event Detail										
Demo Device [demo]										
'2007/03/13' through '2007/03/13' [US/Pacific]										
Refresh										Map KML
#	Date	Time	Status	Lat	Lon	Speed mph	Altitude feet	Odometer Miles	Address	
1	2007/03/13	11:05:37	Start	38.6457	-121.3808	13.7 W	23		I-80, North Highlands, CA	
2	2007/03/13	11:10:44	InMotion	38.6384	-121.4916	64.6 SW	16		I-80, Sacramento, CA	
3	2007/03/13	11:15:50	InMotion	38.5755	-121.5702	63.4 W	16		I-80, West Sacramento, CA	
4	2007/03/13	11:20:58	InMotion	38.5568	-121.6781	64.6 W	16		45217 E Chiles Rd, University of California-Davis Campus, CA 95616	
5	2007/03/13	11:26:05	InMotion	38.5152	-121.7753	65.2 SW	33		Dixon, CA 95620	
6	2007/03/13	11:31:15	InMotion	38.4465	-121.8580	65.9 SW	62		Dixon, CA	
7	2007/03/13	11:36:26	InMotion	38.3820	-121.9425	64.0 SW	82		I-80, Vacaville, CA	
8	2007/03/13	11:41:34	InMotion	38.3225	-122.0259	65.2 SW	266		Vacaville, CA	
9	2007/03/13	11:46:43	InMotion	38.2446	-122.0820	65.9 SW	26		Magellan Rd, Fairfield, CA 94533	
10	2007/03/13	11:51:44	InMotion	38.1904	-122.1696	65.9 SW	312		I-80, Fairfield, CA	
11	2007/03/13	11:56:52	InMotion	38.1189	-122.2303	64.6 S	112		I-80, Vallejo, CA	
12	2007/03/13	12:01:59	InMotion	38.0387	-122.2473	65.2 SW	194		Eastshore Fwy, Rodeo, CA	
13	2007/03/13	12:07:08	InMotion	37.9756	-122.3187	65.9 S	233		Richmond, CA	
14	2007/03/13	12:12:14	InMotion	37.8973	-122.3091	64.0 S	16		431 Cleveland Ave, Albany, CA 94706	
15	2007/03/13	12:17:20	InMotion	37.8263	-122.3012	60.9 W	16		Oakland, CA	
16	2007/03/13	12:22:24	InMotion	37.8223	-122.3239	52.8 W	16		I-80, Oakland, CA	
17	2007/03/13	12:27:32	InMotion	37.8077	-122.3677	19.3 SW	190		I-80, San Francisco, CA	
18	2007/03/13	12:32:32	InMotion	37.7889	-122.3879	36.7 SW	171		491 Embarcadero South St, San Francisco, CA 94105	
19	2007/03/13	12:37:34	InMotion	37.7916	-122.3994	9.9 SE	289		28 Battery St, San Francisco, CA 94111	
20	2007/03/13	12:42:40	InMotion	37.7855	-122.4002	0	30		680 Howard St, San Francisco, CA 94105	
21	2007/03/13	12:47:41	InMotion	37.7834	-122.4025	0	16		789 Howard St, San Francisco, CA 94103	
22	2007/03/13	12:52:46	Stop	37.7847	-122.3991	0	52		Clementina St, San Francisco, CA	

You'll notice the small word [Map](#) (red arrow) just above the upper right corner of the report. Clicking on this link will launch a sub-window with a [Vehicle Map](#), displaying all of the points shown in the [Event Detail](#) report.

5.2) Summary Reports

Unlike *Device Detail Reports*, *Fleet Summary Reports* are focused on either a group of vehicles or an entire fleet. They are not relevant only to a specific vehicle, as they present information that is only useful when viewed across a group of vehicles or assets.

The *GPS Tracking Reports – Fleet Summary Reports* Screen can be accessed from the *Reports* tab and appears as shown below.

Main Mapping Reports Administration

GPS Tracking Reports

Please select a report from the following menu:

Vehicle Group:
all

Select Date Range:

From 2007/03/13 | 00:00
<<<< Mar '07 >>>>

Su	Mo	Tu	We	Th	Fr	Sa
25	26	27	28	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
1	2	3	4	5	6	7

To 2007/03/13 | 23:59
<<<< Mar '07 >>>>

Su	Mo	Tu	We	Th	Fr	Sa
25	26	27	28	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
1	2	3	4	5	6	7

TimeZone:
US/Pacific

Fleet Summary Reports:

Last Known Device Location Summary

Format: HTML

The structure of the report selection mechanism here is identical to that found on the top level *Device Detail Report* screen. The date selector is the same as what we've seen throughout all of these screen shots and then there's the list of available reports off to the right. Note just above the calendars is the Group Selector field, where either the All group can be selected (which corresponds to the entire fleet), or if there are sub-groups defined, these can be selected as well.

As with the *Device Detail Reports*, additional reports based on Vehicle Groups can be added to the *Fleet Summary Report* list.

Last Known Device Location Summary

The [Last Known Device Summary](#) is designed to present the user with the simple report with current status on each of the vehicles in the selected group. Here the important information contained in the report is **Device Description**, **Device-ID**, **Date**, **Time**, **Odometer Miles** (if available), **Latitude**, **Longitude**, **Address** and time **Since Last Check-In**.

Last Known Device Location Summary								
Refresh		Devices: All As of '2007/03/13' [US/Pacific]					Map KML	
#	Device Description	Device-ID	Date	Time	Odometer Miles	Lat/Lon	Address	Since Last Check-In
1	Demo 2	demo2	2007/03/13	09:35:18	10189	37.782/-121.232	State Highway 120, Manteca, CA	827d 15h 17m
2	Demo Device	demo	2007/03/13	12:52:46		37.785/-122.399	Clementina St, San Francisco, CA	786d 08h 14m

The **Since Last Check In** field is the amount of time that has passed since the device has last checked in with the server. This may not necessarily mean that this is the time the device last sent an event, only the last time the device communicated with the server (at which time it may, or may not have sent an actual event). You'll notice that this sample data was collected some time ago.

As was the case with the [Device Detail Reports](#), we can click on the Map link and get a pop-up sub-window that will display each of these vehicles on a [Vehicle Group Map](#).

5.3) Performance Reports

The primary focus of *Driver Performance Reports* is to provide the fleet manager with meaningful information that pertains to the utilization of his/her fleet assets. Are the vehicles being driven in a safe manner (i.e. adhering to relevant speed limits)? Are vehicles being used effectively or is excessive time being taken at stops? These are the types of questions that can be answered by reviewing the information available in the *Driver Performance Reports*.

The *GPS Tracking Reports – Driver Performance Reports* Screen can be accessed from the *Reports* tab and appears as shown below.

The screenshot shows a web application interface with a navigation bar at the top containing 'Main', 'Mapping', 'Reports', and 'Administration'. The main content area is titled 'GPS Tracking Reports' and contains the following elements:

- A prompt: 'Please select a report from the following menu:'
- A 'Vehicle:' dropdown menu with 'demo' selected, indicated by a yellow arrow.
- A 'Select Date Range:' section with two calendar pickers. The 'From' date is 2007/03/13 00:00 and the 'To' date is 2007/03/13 23:59. Both calendars show the month of March 2007.
- A 'TimeZone:' dropdown menu set to 'US/Pacific'.
- A 'Driver Performance Reports:' section with three radio button options:
 - Speeds over 45mph (72kph)
 - Speeds over 70mph (112.65kph)
 - Driving/Stopped Time Summary
- A 'Format:' dropdown menu set to 'HTML'.
- A 'Get Report' button.

The date selector is the same as what we've seen throughout all of these screen shots and then there's the list of available reports off to the right. Note just above the calendars is the Vehicle selector field (yellow arrow), where the individual vehicle or asset can be selected.

As before, we'll start at the top of the list on *Speeds over 45mph (72kph)* and step through the list.

Speeds over 45mph (72kph)

The [Speeds over 45mph \(72kph\)](#) report is designed to give the fleet manager information on a vehicle basis, showing if, when and where that specific vehicle exceeded the defined speed threshold. It should be noted that the speed threshold is modifiable to whatever level is deemed relevant to the end user's needs. The report presents **Date**, **Time**, **Status**, **Latitude**, **Longitude**, **Speed**, **Heading** and **Address** in the tabular format.

Speeds over 45mph (72kph)							
Refresh		Demo Device [demo] '2007/03/13' through '2007/03/13' [US/Pacific]				Map KML	
#	Date	Time	Status	Lat	Lon	Speed mph	Address
1	2007/03/13	11:10:44	InMotion	38.638	-121.492	65 SW	I-80, Sacramento, CA
2	2007/03/13	11:15:50	InMotion	38.575	-121.570	63 W	I-80, West Sacramento, CA
3	2007/03/13	11:20:58	InMotion	38.557	-121.678	65 W	45217 E Chiles Rd, University of California-Davis Campus, CA 95616
4	2007/03/13	11:26:05	InMotion	38.515	-121.775	65 SW	Dixon, CA 95620
5	2007/03/13	11:31:15	InMotion	38.447	-121.858	66 SW	Dixon, CA
6	2007/03/13	11:36:26	InMotion	38.382	-121.943	64 SW	I-80, Vacaville, CA
7	2007/03/13	11:41:34	InMotion	38.323	-122.026	65 SW	Vacaville, CA
8	2007/03/13	11:46:43	InMotion	38.245	-122.082	66 SW	Magellan Rd, Fairfield, CA 94533
9	2007/03/13	11:51:44	InMotion	38.190	-122.170	66 SW	I-80, Fairfield, CA
10	2007/03/13	11:56:52	InMotion	38.119	-122.230	65 S	I-80, Vallejo, CA
11	2007/03/13	12:01:59	InMotion	38.039	-122.247	65 SW	Eastshore Fwy, Rodeo, CA
12	2007/03/13	12:07:08	InMotion	37.976	-122.319	66 S	Richmond, CA
13	2007/03/13	12:12:14	InMotion	37.897	-122.309	64 S	431 Cleveland Ave, Albany, CA 94706
14	2007/03/13	12:17:20	InMotion	37.826	-122.301	61 W	Oakland, CA
15	2007/03/13	12:22:24	InMotion	37.822	-122.324	53 W	I-80, Oakland, CA

Here we can see each instance when the selected vehicle exceeded the 45mph threshold. The next report is similar in nature, with the same structure and fields reported. The only difference is that the speed threshold.

Speeds over 70mph (112.65kph)

As you can tell from the above report, there are no speeds in excess of 70mph, so this report contains no events.

Both of these speed violation reports are useful for determining if a specific vehicle is being regularly operated in excess of safe speeds or speeds deemed appropriate according to company policy. With concrete data substantiating the behavior, it is then possible to effect corrective action with the driver BEFORE an incident occurs on the road.

Driving/Stopped Time Summary

For the purposes of this report, we have selected Device “demo2” as it has made several stops during its deliveries. There is a lot of information to absorb in the [Driving/Stopped Time Summary](#) report. It is designed to give the fleet manager detailed information (on a vehicle basis), showing how much time was spent driving, how long the transit time was between stops and how much distance was covered. Additionally, the report shows how much time the vehicle spent stopped, what the duration of the stops were and how many stops there were and what the locations were. The fields presented in the report are **Start Date**, **Start Time**, **Driving Elapsed**, **Miles Driven**, **Stop Date**, **Stop Time**, **Fuel Economy** (if equipped), **Latitude**, **Longitude**, **Address**, **Idle Elapsed time**, and **Stopped Elapsed time**.

Driving/Stopped Time Summary										
Demo 2 [demo2]										
'2007/03/13' through '2007/03/13' [US/Pacific]										
Refresh										Map
#	Start Date/Time	Driving Elapsed	Driven Miles	Stop Date/Time	Fuel Econ mpg	Lat/Lon	Address	Idle Elapsed	Stopped Elapsed	
1	2007/03/13 02:45:37	1:29:43	72.0	2007/03/13 04:15:20	---	37.8992/-122.3243	2411 Isabel St, Richmond, CA 94804	0:19:12	0:19:12	
2	2007/03/13 04:34:32	0:29:04	13.2	2007/03/13 05:03:36	---	37.7703/-122.4121	422 11th St, San Francisco, CA 94103	0:27:36	0:27:36	
3	2007/03/13 05:31:12	0:30:25	10.9	2007/03/13 06:01:37	---	37.6659/-122.4519	Hickey Blvd, South San Francisco, CA	0:44:17	0:44:17	
4	2007/03/13 06:45:54	0:31:52	13.7	2007/03/13 07:17:46	---	37.5565/-122.2744	Portal Ln, Foster City, CA	0:22:00	0:22:00	
5	2007/03/13 07:39:46	0:07:04	0.0	2007/03/13 07:46:50	---	37.5561/-122.2818	1842 Gateway Dr, San Mateo, CA 94404	0:15:05	0:15:05	
6	2007/03/13 08:01:55	1:33:23	64.4	2007/03/13 09:35:18	---	37.7824/-121.2321	State Highway 120, Manteca, CA	n/a	n/a	
0	n/a	4:41:31	174.1	n/a	---			2:08:10	2:08:10	

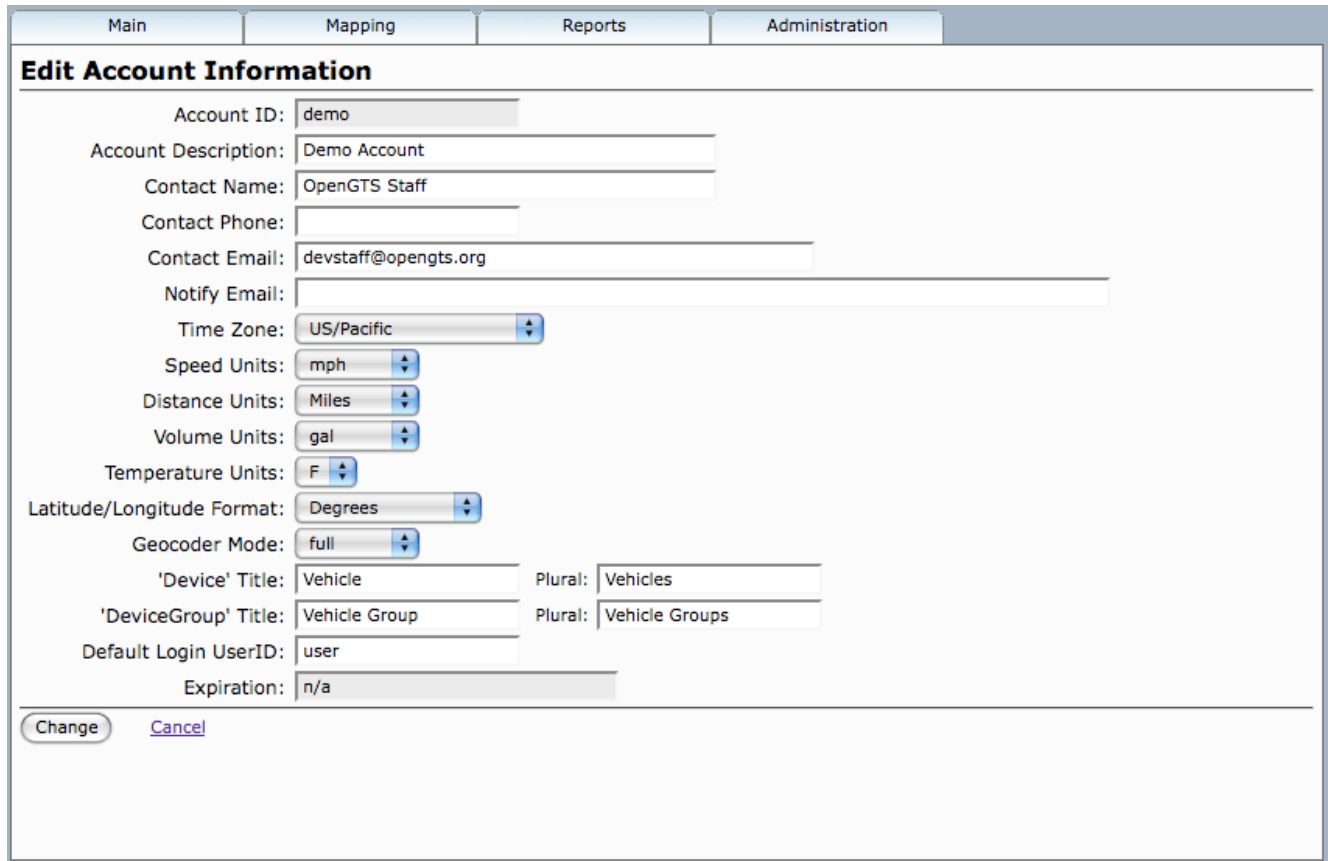
This report can provide full detail on time spent driving, and time spent at stops. This allows the fleet manager to pinpoint where stops are taking longer than necessary or unnecessary stops are being made. Additionally, by reviewing drive time and distance between known destinations, it can be determined whether vehicles are being used in the most efficient manner.

The last 2 columns in the report are **Idle Elapsed time** and **Stopped Elapsed time**. Unless the in-vehicle device is equipped with ignition sense, the values in these two columns will always be the same. But with the ability to determine that the ignition is on while speed is zero, this report can also provide the fleet manager with valuable data on excessive idling. Excessive idling can be a large cost center, frequently unknown but easy to correct with the appropriate data available. This is just one more piece of information the [Driving/Stopped Time Summary](#) provides.

6) Administration

6.1) Account Admin

By selecting [Account Admin](#) from the [Administration](#) tab, the [Edit Account Information](#) screen will be displayed, as shown below. This is where account-wide contact information, and units-of-measurement information and format.



The screenshot shows a web application interface with a navigation bar at the top containing tabs for 'Main', 'Mapping', 'Reports', and 'Administration'. The 'Administration' tab is selected. Below the navigation bar is a form titled 'Edit Account Information'. The form contains the following fields and controls:

- Account ID: demo
- Account Description: Demo Account
- Contact Name: OpenGTS Staff
- Contact Phone: (empty text box)
- Contact Email: devstaff@opengts.org
- Notify Email: (empty text box)
- Time Zone: US/Pacific (dropdown menu)
- Speed Units: mph (dropdown menu)
- Distance Units: Miles (dropdown menu)
- Volume Units: gal (dropdown menu)
- Temperature Units: F (dropdown menu)
- Latitude/Longitude Format: Degrees (dropdown menu)
- Geocoder Mode: full (dropdown menu)
- 'Device' Title: Vehicle (text box) | Plural: Vehicles (text box)
- 'DeviceGroup' Title: Vehicle Group (text box) | Plural: Vehicle Groups (text box)
- Default Login UserID: user (text box)
- Expiration: n/a (text box)

At the bottom of the form, there are two buttons: 'Change' and 'Cancel'.

After making any edits on this screen, it is important to press the [Change](#) button at the bottom of the screen to save those edits (a message should then be displayed at the bottom of the frame to indicate that the information was saved). To cancel changes, press the [Cancel](#) link.

6.2) User Admin

By selecting [User Admin](#) from the [Administration](#) tab, the [View/Edit User Information](#) screen will be displayed, as shown below. On this screen, you can review all of the defined users in the system. There are a number of fields that are available in this summary view -- **User ID**, **User Name**, **Contact Name**, **Contact Email**, **Time Zone** and whether the user is **Active** (ie. allowed to log-in). As you can see from the list below, it isn't necessary to populate all of these fields when setting up new users. If all of the fields are not defined, the table in the User Information Summary will just have some gaps.

Select	User ID	User Name	Contact Name	Contact Email	Time Zone	Active
<input checked="" type="radio"/>	admin	Administrator			US/Pacific	Yes
<input type="radio"/>	maint	Maintenance			US/Pacific	Yes
<input type="radio"/>	user	OpenGTS User			US/Pacific	Yes

View Edit Delete

Create a new user:

User ID:

New

It is possible to access the details that have been defined for any user in either [View](#) or [Edit](#) mode. All of the details are the same in these two modes, with the primary difference being unable to edit in the [View](#) mode. There's also the ability to add new users using the [Create a new user](#), in the field at the bottom of the screen (**green** arrow). The new user ID must be all one word and can't have any upper-case letters or special characters.

To edit user information, click the [Edit](#) button (**yellow** arrow) to open the Edit window.

User Admin - continued

Within the [View/Edit User Information](#) screen, users are defined as active or inactive, their password is defined, all contact information is entered (if desired) and group authorization assignment is made.

The screenshot displays the 'View/Edit User Information' interface. At the top, there are navigation tabs: Main, Mapping, Reports, and Administration. The main content area is titled 'View/Edit User Information' and contains the following fields:

- User ID: user
- Active: Yes (dropdown)
- User Name: OpenGTS User
- Password: *****
- Contact Name: (empty)
- Contact Phone: (empty)
- Contact Email: (empty)
- Time Zone: US/Pacific (dropdown)
- Authorized Vehicle Group: all (dropdown)
- First Login Page: Main Menu (dropdown)

Below these fields is the 'User Access Control' section, which lists various permissions with their current settings and default values:

Permission	Current Setting	Default Value
Account Administration:	Default	[Default is 'Read/View']
User Administration (Current user):	Default	[Default is 'Read/View']
User Administration (All users):	Default	[Default is 'None']
User Administration (ACL access):	Default	[Default is 'None']
User Administration (Group):	Default	[Default is 'Read/View']
User Administration (Role):	Default	[Default is 'Read/View']
Device Administration:	Default	[Default is 'Read/View']
Devices Administration (Notification Rules):	Default	[Default is 'Read/View']

At the bottom of the form, there are two buttons: 'Change' and 'Cancel'.

The user's access to specific functions while logged-in is controlled by the selections in the [User Access Control](#) section. The levels of permission that are possible are **None**, **Read/View**, **Write/Edit**, **New/Delete** and **Default**.


For any function listed (i.e. **Account Administration**, **User Administration**, etc.), the access for the current user is controlled by the definition of the [Default ACL Role](#), unless configured otherwise. Note: ACL refers to Access Control List. As can be seen in the list above, Default is selected for all visible functions and to the right of the drop-down list, that default access control right is specified. As an example, for [Device Administration](#), the default access control right is "Read/View". (The default access control permissions are set at system installation/configuration time by the system administrator).

6.3) Vehicle Admin

The next step is to tackle the [Vehicle Admin](#) function, where the vehicle-specific configuration is defined. By selecting [Vehicle Admin](#) from the [Administration](#) tab, the [View/Edit Vehicle Information](#) screen will be displayed, as shown below.

In the table, the following pieces of information are displayed -- **Vehicle ID**, **Unique ID**, **Vehicle Name**, **Equipment Type**, **SIM Phone#**, and whether the device is currently **Active**. If new vehicles need to be created, that is done with the field in the middle of the page (**yellow arrow**) under [Create a new device](#). Just make sure to keep the ID confined to a single word with no capital letters or special characters.

Select	Vehicle ID	Unique ID	Vehicle Name	Equipment Type	SIM Phone#	Active
<input checked="" type="radio"/>	demo	imei_012345678912345	Demo Device	Personal Vehicle		Yes
<input type="radio"/>	demo2	imei_123450123456789	Demo 2	Truck/Trailer		Yes

Vehicle ID: 

Selecting the [Edit](#) button opens the [View/Edit Vehicle Information](#) screen where the vehicle-specific information is defined.

Main	Mapping	Reports	Administration
------	---------	---------	----------------

View/Edit Vehicle Information

Vehicle ID:
 Unique ID:
 Active:
 Vehicle Description:
 Equipment Type:
 IMEI Number:
 SIM Phone#:
 Vehicle Group Pushpin ID:
 Ignition Input: (ignition input line, if applicable)

Vehicle Group Membership:

All [all]:	<input checked="" type="checkbox"/>
Demo Group [demogroup]:	<input type="checkbox"/>

Here there's a significant amount of key information that must be entered in order for the in-vehicle devices to communicate with the server.

- **Vehicle ID** will be passed from the prior screen.
- **Unique ID** has a particular syntax that is specific to the particular device being used. Typically it will consist of a short prefix, followed by the IMEI number, separated by the 'underscore' symbol.
- **Active** should be selected to 'Yes' if the vehicle is in active status, otherwise set to 'no'. Events from an inactive device will be ignored, and not inserted into the database.
- **Vehicle Description** is the text description for this vehicle.
- **Equipment Type** specifies the type of device in the vehicle.
- **IMEI Number** is only applicable for hardware that utilizes a GSM/GPRS modem. This field is used for informational purposes only.
- **SIM Phone#** is the phone# assigned to the SIM supplied by the wireless service provider. This field is used for informational purposes only.
- **Ignition Input** should be set to the digital input line of the ignition sense. If the device does not have an ignition sense, or the ignition sense is not connected, then leave it set to "n/a". The value of this field is used to determine idle time on the Driving/Stopped time report.
- **Vehicle Group Pushpin ID** should be set to the desired pushpin icon to use when representing this device on the Fleet/Group map.

In the Group Membership window, all vehicles will automatically belong to the 'All' group. This is where you can select whether you want this vehicle to belong to any other groups, simply by checking the appropriate boxes. Note, vehicles can belong to multiple groups, if desired. The details of [Group Administration](#) will be covered in the next section.

When all changes have been made to your satisfaction, click the [Change](#) button to save your changes.

6.4) Group Admin

The goal of the [Group Admin](#) function is to simply define what groups exist. As we just covered in the [Vehicle Admin](#) section, this is where all of the vehicles are assigned to their groups. So all that is left to do in the [Group Admin](#) function is to define the actual Groups. By selecting [Group Admin](#) from the [Administration](#) menu, the [View/Edit Group Information](#) screen will be displayed, as shown below.

In the table, the following pieces of information are displayed -- **Group ID**, **Group Name** and **Vehicle Count**. If new groups need to be created, that is done with the field in the middle of the page ([yellow](#) arrow) under **Create a new Group**. Just make sure to keep the ID confined to a single word with no capital letters or special characters.

Select	Vehicle Group ID	Vehicle Group Name	Vehicle Count
--	all	All	2
<input checked="" type="radio"/>	demogroup	Demo Group	1

Vehicle Group ID:

Selecting the [Edit](#) button opens the [View/Edit Group Information](#) screen where the Group-specific information is defined.

Main Mapping Reports Administration

View/Edit Vehicle Group Information

Vehicle Group ID: demogroup

Vehicle Group Name: Demo Group

Current Vehicle Member List:

#	Name	ID
1	Demo 2	demo2

Change Cancel

This screen shot will drive home the point of just how straight forward it is to set up and administer groups. When you've drilled down to the edit function on a specific Group, just give the group a text description in **Group Name** and you're done. The **Current Vehicle Member List** shows all vehicles which are currently a member of this group. When satisfied with your modifications, click the **Change** button to save changes.

6.5) Geozone Admin

One of the more powerful administrative tools is the [Geozone Admin](#) function. A Geozone can be defined around any reference location. Definition is simple and once complete, movement of vehicles in and out of that Geozone will populate the [Event Detail](#) report with the specific description of the Geozone used a custom reverse geocoded address. By selecting [Geozone Admin](#) from the [Administration](#) menu, the [View/Edit Geozone Information](#) screen will be displayed, as shown below.

In the table below, the following pieces of information are displayed -- **Geozone ID, Description (Address), Reverse Geocode, Arrival Zone, Departure Zone, Radius (meters)** and **Center in Latitude/Longitude**.

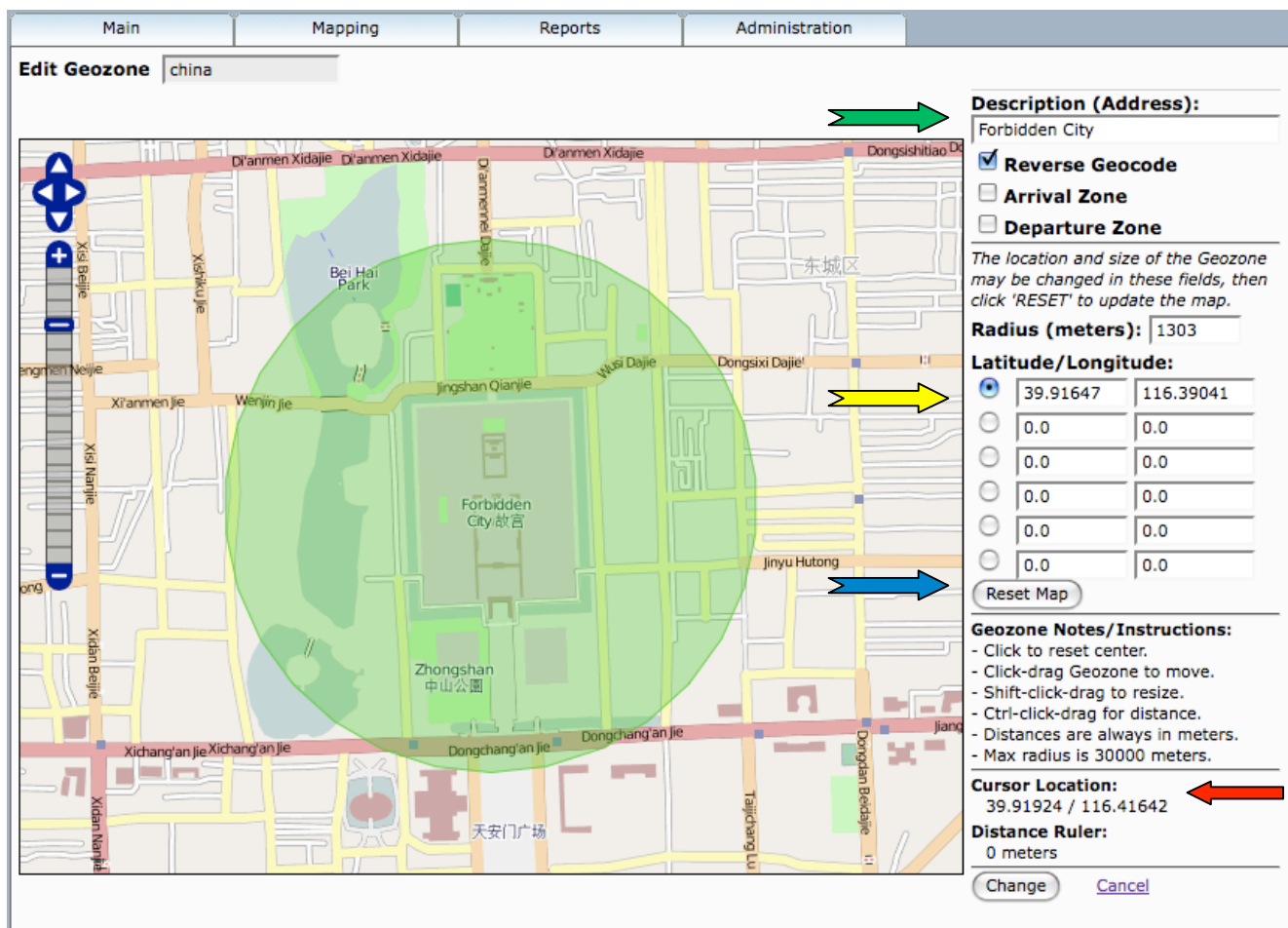
The information in this table contains the following fields:

- **Reverse Geocode** indicates that reverse geocoding is turned on if set to 'Yes'. Reverse geocoding is used to map a GPS coordinate to a known street address.
- **Arrival Zone** set to 'Yes' indicates that an Arrival Event will be created when a vehicle enters that Geozone (requires additional configuration and support).
- **Departure Zone** set to 'Yes' indicates that a Departure Event will be created when vehicle exits that Geozone (requires additional configuration and support).
- **Radius** and **Center** define the position and size of each of the Geozones that are currently defined.

Select	Geozone ID	Description (Address)	Reverse Geocode	Arrival Zone	Departure Zone	Radius (meters)	Center Latitude/Longitude
<input checked="" type="radio"/>	china	Forbidden City	Yes	No	No	1303	39.91647 / 116.39041
<input type="radio"/>	holmfirth	Custom Zone	Yes	Yes	Yes	1000	53.56455 / -1.80457
<input type="radio"/>	myzone	Custom Zone	Yes	Yes	Yes	20000	25.36901 / 49.58212
<input type="radio"/>	newzone	Custom Zone	Yes	Yes	Yes	20000	46.98798 / -104.04434
<input type="radio"/>	nozone	Mexicali	Yes	Yes	Yes	20000	32.67185 / -115.46737
<input type="radio"/>	pawtrax	Home	Yes	Yes	Yes	100	51.37007 / -0.16670
<input type="radio"/>	sfo	SFO	Yes	Yes	Yes	2057	37.61670 / -122.38653
<input type="radio"/>	test	Custom Zone	Yes	Yes	Yes	0	0.00000 / 0.00000
<input type="radio"/>	testzone	South Bend	Yes	Yes	Yes	30000	41.68611 / -86.24650

If new Geozones need to be created, that is done with the field in the middle of the page (**yellow** arrow) under [Create a new Geozone](#). Just make sure to keep the ID confined to a single word with no capital letters or special characters.

Select a Geozone and then click the [Edit](#) button to display the edit screen.



This shows the Geozone edit window showing a sample location with a point-radius Geozone. Using the map zoom controls, you can pinpoint the location of interest where you would like to center your Geozone. When the cursor is centered over the ideal location, there will be a Latitude/Longitude reading of that location right under the Cursor Location label (red arrow). The center of the Geozone will be indicated in the selected Latitude/Longitude row (yellow arrow). You can move the center of the Geozone by clicking and dragging the green area of the Geozone with your mouse.

Next we need to define the radius for the Geozone, and in this case we've chosen 1303 meters. The radius can be changed by "Shift-Clicking" the mouse inside the Geozone, then dragging to the desired size. If any field values are manually changed, we need to click the [Reset Map](#) button (blue arrow) to update the Geozone and map on the screen. At this point, you'll see the Geozone display as a green circle (as shown above), centered on the Latitude/Longitude coordinate you specified and with your defined radius. Before finishing the edit function, make sure to give your Geozone a text description in the field at the upper right hand corner of the edit window (green arrow). This description will be used as the custom reverse-geocoded address when vehicle are inside this Geozone.

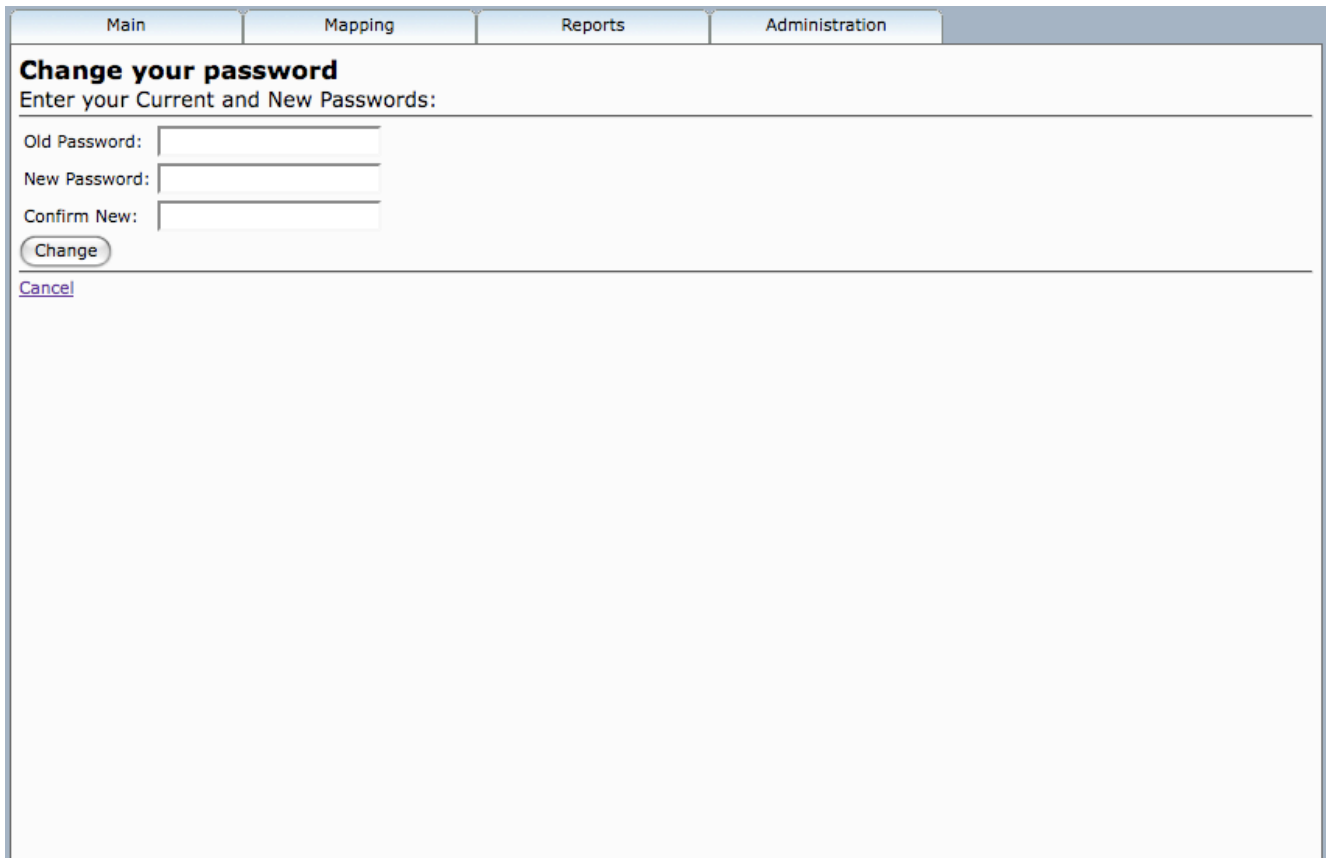
NOTE: Just below the [Reset Map](#) button, there is a set of instructions to make positioning and sizing of your Geozone just a little bit easier.

When all edits are complete, click the [Change](#) button to save your changes. As before, the [Cancel](#) link will cancel any edits you have made.

6.6) Password Admin

The simplest and most familiar of all administrative functions is setting and changing of passwords. Password Admin is where that is performed and is very straightforward. By selecting [Password Admin](#) from the [Administration](#) menu, the [Change your password](#) screen will be displayed, as shown below.

Enter your old password in the first field and then your new password in each of the next two fields. When done, click [Change](#) to save your changes and you're done.



The screenshot shows a web application interface with a navigation menu at the top containing 'Main', 'Mapping', 'Reports', and 'Administration'. The 'Administration' menu item is selected. Below the menu is a form titled 'Change your password' with the instruction 'Enter your Current and New Passwords:'. The form contains three input fields: 'Old Password:', 'New Password:', and 'Confirm New:'. Below these fields is a 'Change' button and a 'Cancel' link.