



Tracker User Guide

oMM



SIERRA
WIRELESS®

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Document History

Version	Date	Updates
1.6	May 11, 2015	SWI image logo updates
1.5	January 22, 2014	Updated to SWI Template, minor edits.



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1. Overview

This document is designed as a user guide for Sierra Wireless' Tracker (Tracker), the online gateway tracking application available on the oMM.

1.1. Who Should Read This Guide?

This guide is intended for potential clients and current users.

This user guide assumes that the reader is familiar with the operation of both the oMG and the oMM.

1.2. What is Tracker?

Tracker is an optional application on the oMM. Utilizing the GPS and data transfer capability of the oMG, Tracker records the location of a gateway and transmits the information to the server. These locations, along with data such as speed, direction (North, South, etc.) and time are used to show current or historical gateway activity. Tracker is browser-accessed, via the the oMM, providing map and list views of the data, along with detailed reports. Flexibility is increased by the ability to export data for further analysis.

1.3. Who should use Tracker?

Tracker is currently targeted at the following markets:

- EMS
- Fire
- Law Enforcement
- Utilities / Large Commercial Fleets

Tracker is not designed as a full replacement for a Computer Aided Dispatch (CAD) system. It is a location tracking system designed for flexibility across verticals.

1.4. Related Publications

Title and Publication Number	Description
One Port oMG Installation Guide or Four Port oMG Installation Guide	Installing the oMG in a vehicle
One Port oMG Operation Guide or Four Port oMG Operation Guide	Configuring the oMG for regular operation
oMM-ED-140403 - oMM Report Guide	Provides detailed information about all of the reports available on the oMM



2. Configuration

Tracker is an optional application that is available by subscription on the hosted oMM service and for customers running their own *Appliance*. No installation is required.

2.1. oMG Configuration Procedures

For documentation about the oMG, please consult the online knowledgebase and search for *onBoard Tracker Setup*.

2.1.1. Configuring a Tracker User Account

Tracker user accounts are modified oMM user accounts, assigned by oMM administrators. Tracker users are typically only interested in a fraction of the oMM's functionality and the oMM administrator should customize the Tracker account for this purpose. A recommended set of features are:

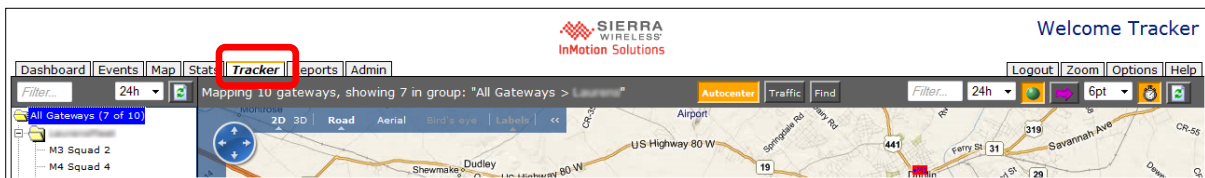
- **Dashboard tab:** Customize the visible thresholds to display only the *Zone* indications so that other threshold conditions do not conflict with the zone threshold.
- **Event tab:** Useful to display historical locations.
- **Tracker tab:** Required to use the Tracker feature.



3. Basic Viewing and Operation

Tracker must be activated for each oMM account to be a visible tab in the oMM. Additionally, each oMG to be tracked must be set up to report GPS and related data at the correct frequency. Contact Sierra Wireless Technical Support for InMotion Solutions (IMS) for further details or to confirm that this has been completed for a particular gateway.

To view the Tracker dashboard, click on **Tracker** in the oMM menu:



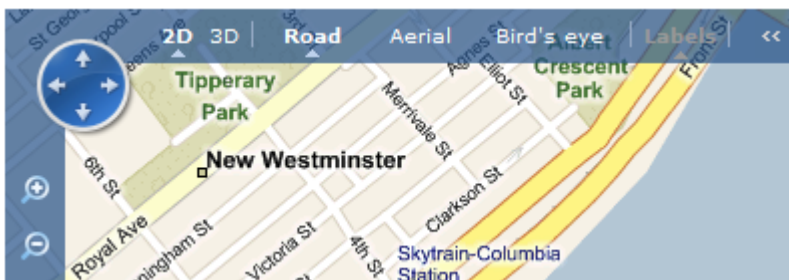
3.1. Maps

The default map is Microsoft® Bing Maps, which provides a 2D map view, satellite view and a “Bird’s Eye” view. Local traffic is available in many metro areas, with more becoming available regularly. Current traffic volumes for several corridors are displayed using green, yellow and red.

3.1.1. Microsoft® Bing Maps

Controls for Microsoft® Bing Maps are located in the top left section of the map. The default view is 2D (two dimensional) and Road. Additional options are:

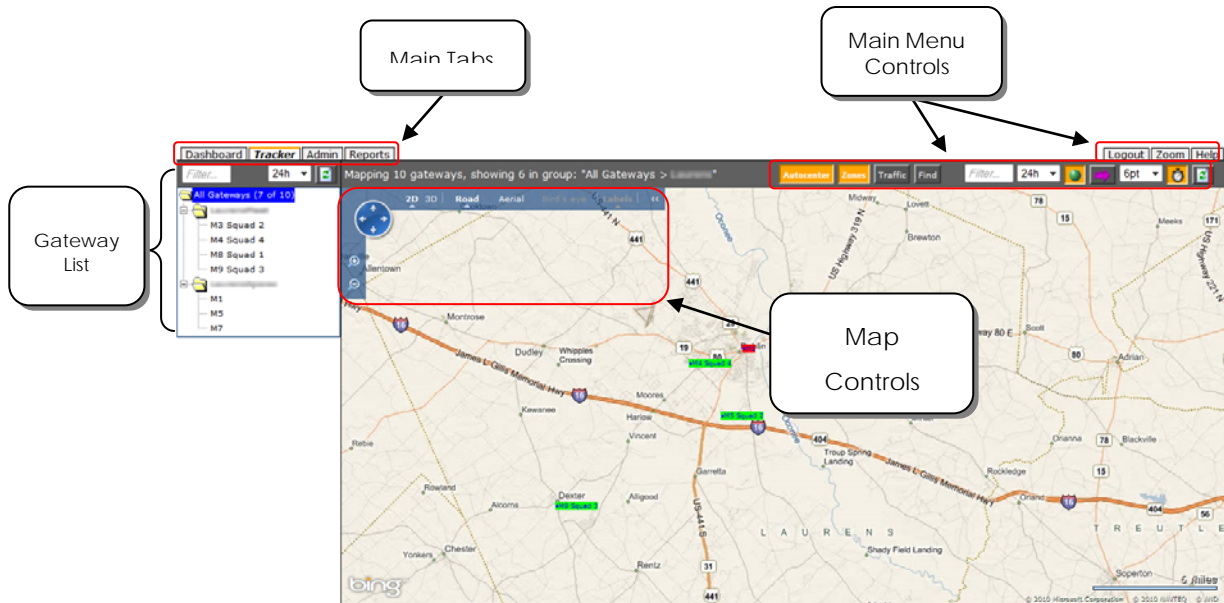
- **3D:** View buildings in 3D. The plug-in must be installed prior to using. 3D is available for most of the major cities in the United States and a few worldwide. When 3D is not available, the option is grayed out.
- **Aerial:** Satellite view
- **Bird’s Eye:** Bird’s Eye is an oblique aerial view from several hundred feet above ground and is available for the four cardinal views (North, South, East, West). Bird’s Eye is available for most major North American cities and many other cities worldwide. When Bird’s Eye is not available, the option is grayed out.
- **Labels:** Toggles labels such as street names on and off.
- **<<:** Hides the map controls.
- **Pan:** Click on the arrows to move the map. Alternatively, click and hold the left mouse button to drag the map.
- **Zoom:** Click on “+” or “-” to zoom in or out. Alternatively, use the scroll wheel on the mouse to zoom in/out on the location of the mouse pointer.



Note: Sierra Wireless has no control over changes to Microsoft® Bing Maps. If there is a discrepancy, please refer to Microsoft® Bing Maps for more information.

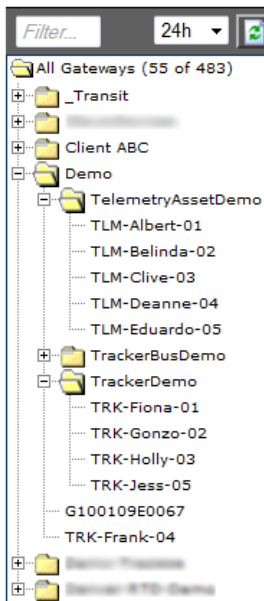
3.2. Navigating Within Tracker

The following navigation options are available in the *Tracker* application:



- **Main Tabs:** Select the various oMM features and applications.
- **Gateway List:** A list of gateways, with filtering options.
- **Main Menu Controls:** The main menu controls for Tracker.

3.2.1. Gateway List

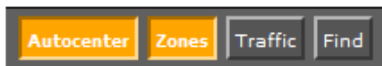


Use the gateway list to select single vehicles or defined groups of vehicles in Tracker. The *Filter* field for the gateway tree allows users to enter part or the entire name of a gateway, or any other data label the gateway may have.

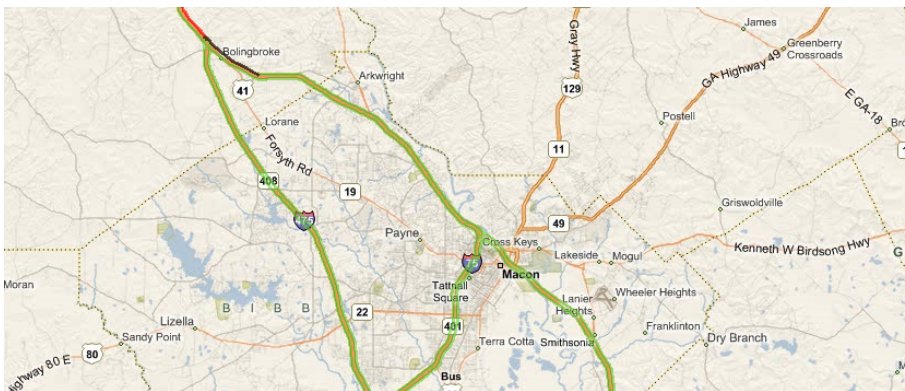
Text in the Filter field can be edited or deleted by clicking on the X icon, to the right of the field.

To hide the gateway list (and enlarge the map), click on **Zoom** in the *Main Menu Controls*.

3.2.2. Main Menu Controls



- **Autocenter:** Centers the gateway(s) on the map. If the map is set to refresh automatically, or is refreshed manually, the map re-center itself if a gateway reaches the edge of it.
- **Zones:** Toggles predefined zones on and off. Zones are virtual geofences which track when gateways leave or enter a defined area. See Section 3.3 - Zones for more information.
- **Traffic:** Some mapping providers supply local traffic information. Check with your preferred mapping provider for more details about traffic information availability in your area.



- **Find:** Used to locate a street address or a general area on the map.

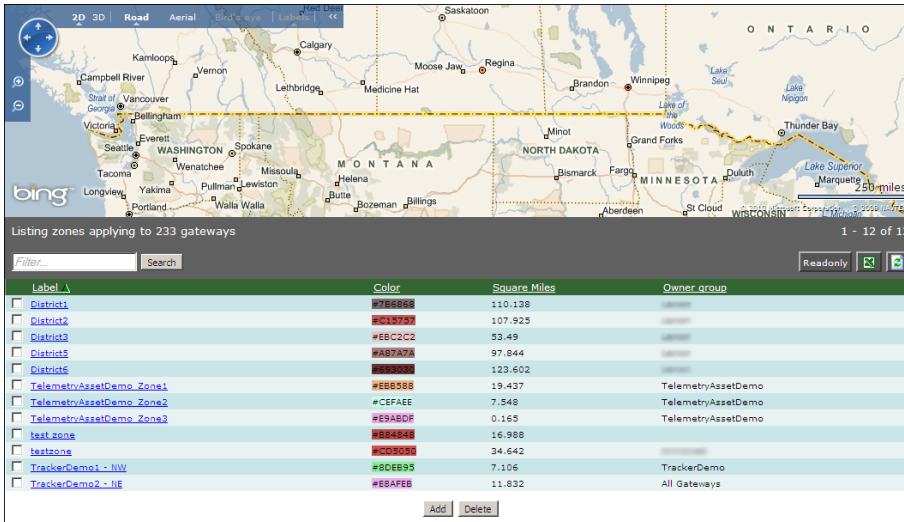


- **Filter:** Filter gateways by name or group name. In addition to selecting a group of gateways from the gateway list, this option allows for further filtering by entering part or all of the gateway or gateway group name.
- **24h:** Select a time period from the drop-down menu. Only gateways which have reported (sent location data) within the chosen time period will be displayed on the map. This allows for focus on active gateways only.
- **Nominal Events:** The green circle icon. When selected, all gateways are displayed, whether they have registered an event/error/alert (based on thresholds) or not.
- **Active Gateways:** Purple arrow icon. When selected, only the gateways that have moved in the previous five minutes are displayed.
- **Font Size:** Select the font size for the gateway labels on the map.
- **Auto-refresh:** Clock icon. When enabled, the browser page is automatically updated (default is 30 seconds).
- **Refresh:** Manually refresh the map with the latest gateway location.
- **Zoom:** Click on Zoom to enlarge the map and hide the gateway list.

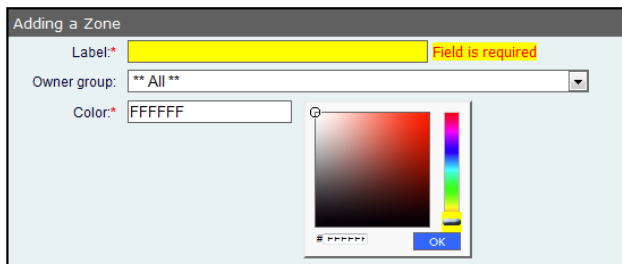
3.3. Zones

From the *Zones* panel, users can identify, add and delete zones (i.e. virtual boundaries or geofences). Zones allow administrators to monitor vehicles traveling out of designated zones. If a vehicle is expected to travel only within a certain area, a threshold can be set up that triggers an alert when the vehicle leaves that zone.

Navigate to **Admin > Zones**.



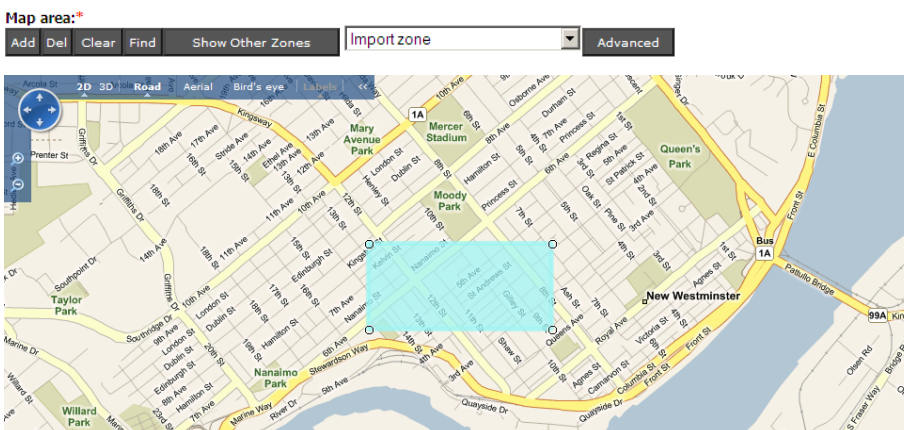
3.3.1. Creating a New Zone



- Click on **Add** to open the *Adding a Zone* panel
- **Label***: Enter the name for the new label
- **Owner group**: Use the drop-down menu to select the preferred group
- **Color***: Click on the field to open the color picker or enter the six-digit RGB hexadecimal code (if known)

The default map is a view of the world. Zoom in on the map to the area in which to create the new zone.

Under **Map area***, click on **Add** to add a four-point rectangle on the map (the color will be the one chosen above)



Each point is labeled. The top-left point is point1. Click and drag it to the first boundary for the zone.



- Click and drag the remaining points to define the boundary.
 - To refine the boundary, click on Add (in the Map area toolbar) to add additional points. The new points will be labeled in numeric order.
 - Adding more points results in a better-defined boundary, especially if there is a curve in the boundary.
 - Use Zoom In/Out and drag the map to achieve the best views of the boundary areas.



- To remove a point, click on **Del**.
- To clear the zone from the map, click on **Clear** (note that once cleared, there is no way to retrieve the zone).
- Click on **Find** to locate a location on the map.
- To display other zones on the map, click on **Show Other Zones**.
- To import a zone into the new zone, use the drop-down menu to select it. Importing is a way to create a zone based on an existing one and eliminates the need to start from naught.
- Click on **Advanced** to define the zone using raw point text in latitude/longitude position pairs. Click on **Update** when complete.

```

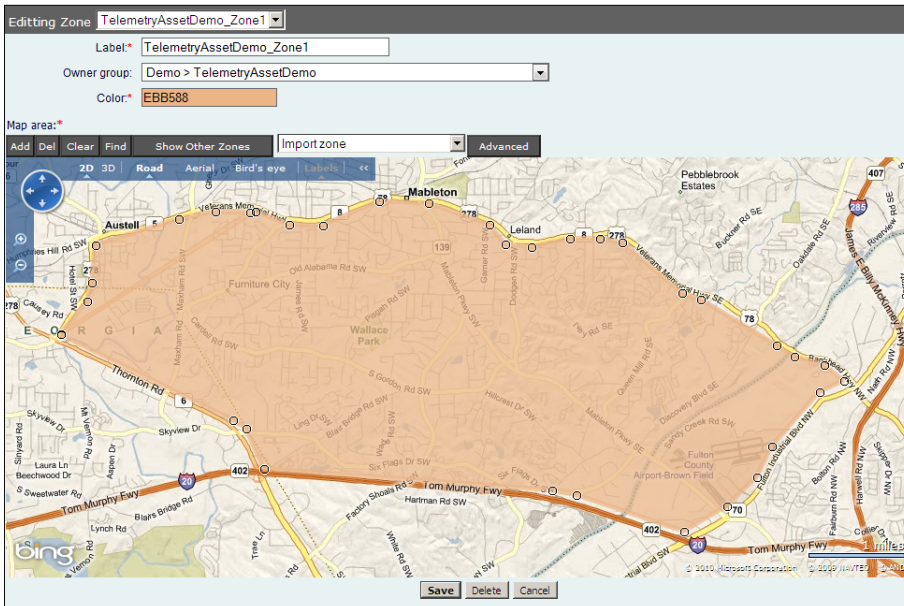
49.20601861948011,-122.9523754119873; 49.21700843405369,-122.93134689331055; 49.21403699947223,-122.92765617370605;
49.21745694602088,-122.92147636413574; 49.214653679452866,-122.9180431365967; 49.21745694602088,-122.91220664978029;
49.21140169105767,-122.9048252105713; 49.205289616812706,-122.91658401489258; 49.203551182463386,-122.9190731048584;
49.20214917476017,-122.91735649108888; 49.20097145757163,-122.9198455810547; 49.20226133683917,-122.92173395620119;
49.20387363861269,-122.9236650466919; 49.203172644300736,-122.92499542236328; 49.20463070130824,-122.92684078216553;
49.20376148019056,-122.92829990386966; 49.20684574410649,-122.9320764541626; 49.202275357081156,-122.94057369232179;
49.20353716258311,-122.94207572937013; 49.20135001258377,-122.94641017913818
    
```

- Click on **Save** to save the new zone.

3.3.2. Editing an Existing Zone

From the main *Zones* panel, click on an existing zone name to open the editing panel.

From this panel, users can change the name and color of the zone, add and delete points to redefine the boundary, change the owner group and import an existing zone.

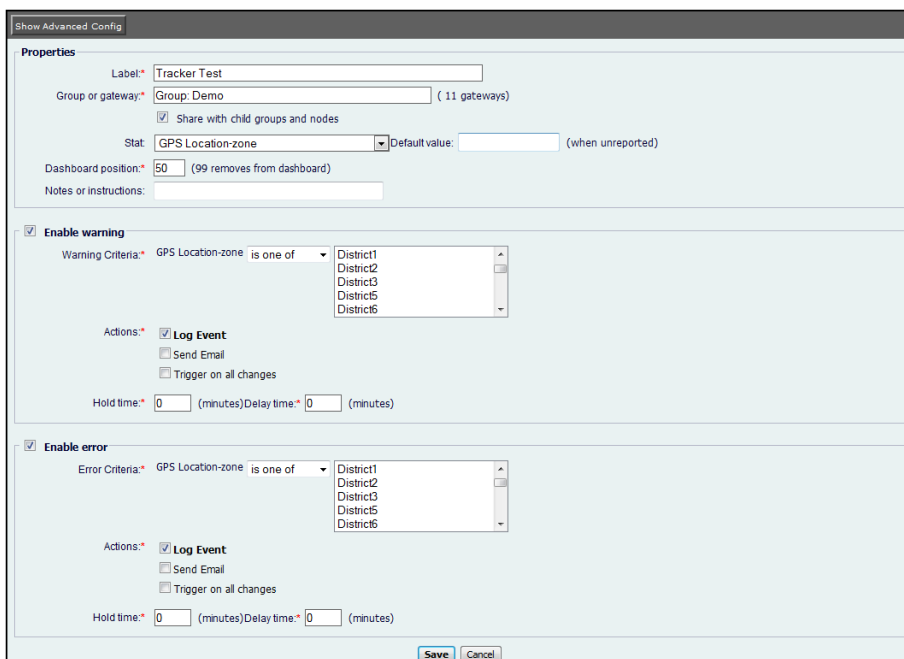


Click on **Save** to save the changes.

To delete a zone, select it from the main *Zones* panel and click on **Delete**. Alternatively, click on **Delete** from the editing panel.

3.3.3. Creating Zone Alerts

Zone alerts are created through Thresholds. Navigate to **Admin > Thresholds**. Note that zones must exist before creating zone alerts.



1. Click on **Add** to open the *Adding a Threshold* panel.
2. Configure the *Properties*.
 - **Label***: enter the name of the threshold
 - **Group or Gateway***: the group/gateway listed will be the one selected in the gateway tree
 - **Share with child groups and nodes**: By default, this option is selected to set the threshold to all of its members/children
 - **Stat**: Use the drop-down to select GPS Location-zone
 - **Default value**: Specifies a value for which reporting is not expected. Leave blank.
 - **Dashboard position***: Enter a value between 1 and 99, where 1 is farthest left, 98 is farthest right and 99 is off of the dashboard. Items with the same position value are sorted alphabetically.
 - **Notes or instructions**: Enter the instructions that will be included in alerts and email messages.
3. Set the Warning Conditions (the first alert level)
 - **Warning Criteria***: This field propagates its value from the Stat field. Select is one of or is not one of and then use the drop-down menu to select a zone.
 - **Actions***: Select the actions to be taken to report a warning
 - **Log Event**: Default action. It is recommended that this stay enabled so that all warning are written to a log file.
 - **Send Email**: Select to enter the email address(es) to which an email will be sent, advising of the warning condition.
 - **Hold time***: Enter a value between 0 and 600. This holds this state even if the value clears for that number of minutes.
4. Set the Error Conditions (i.e. the most serious alert)
 - **Warning Criteria***: This field propagates its value from the Stat field. Select is one of or is not one of and then use the drop-down menu to select a zone.
 - **Actions***: Select the actions to be taken to report a warning
 - **Log Event**: Default action. It is recommended that this stay enabled so that all warning are written to a log file.
 - **Send Email**: Select to enter the email address(es) to which an email will be sent, advising of the warning condition.
 - **Hold Time***: Enter a value between 0 and 600. This holds this state even if the value clears for that number of minutes.
5. Click on **Save** to create the new threshold

Thresholds can be deleted from the gateway by clicking in the checkbox next to the threshold label and then on **Delete**.

* denotes a required field

3.3.4. Assigning Gateways to Zones

Assigning gateways to zones is performed using the *Threshold* feature of the oMM.

A Threshold should be defined for each zone and should specify the color (yellow or red) to be displayed on the map when an gateway is outside of the zone.

This also identifies the gateways that have this Threshold. The best practice is to create Groups (using the tree-view navigator) corresponding to the zones. Once the group is created, move the gateways into it. This practice allows for easy vehicle reassignment to other zones, should the need arise.

3.4. Reports

Reports provide the true power of the oMM. Tracker related reports are designed to be broad, with data export capability to allow for further analysis.

To generate Tracker reports, navigate to **Reports > Geographic**.

Reports that are related to Tracker include:

- **Geographic: Gateway Trip Trend** - shows the distance traveled per gateway per time unit including time spent moving and (related) average speed. This report is useful in identifying trends in vehicle usage across a fleet of vehicles.
- **Geographic: Gateway Trips** - plots the gateway location as a trail (continuous line) on the map (i.e. the route the vehicle traveled). This report is most useful for a single gateway over a relatively short period of time (e.g. one gateway trip) where the same location is not visited repeatedly.
- **Geographic: Gateway Trip Coverage** - plots a coverage map of locations visited by vehicles and uses color to represent the time spent in the area.
- **Geographic: Trip Replay** - animates a gateway trip over the time period selected. As the gateway (represented by a marker) moves over the map, it is followed by a colored trail which indicates speed and distance covered. The report is a spatial representation of gateway location history that is not available on the Gateway Trip report. It is useful for analyzing how often gateways cross paths with each other.
- **Geographic: Zone Summary** - provides a summary of time spent, as a percentage, in different zones across one or more units.
- **Geographic: Zone Times** - provides a time-based, visual representation of the zones visited by a gateway. The report is best used for a single gateway over a short period of time (one day is optimum) or as an in depth view to the *Zone Summary* report. It is useful for fleet managers who assign gateways to zones to monitor utilization.
- **Geographic: Zone Map** - reports the locations of a single gateway over a specific time period.

For detailed information on using and configuring reports, see the oMM Report Guide listed in 1.4 - Related Publications.

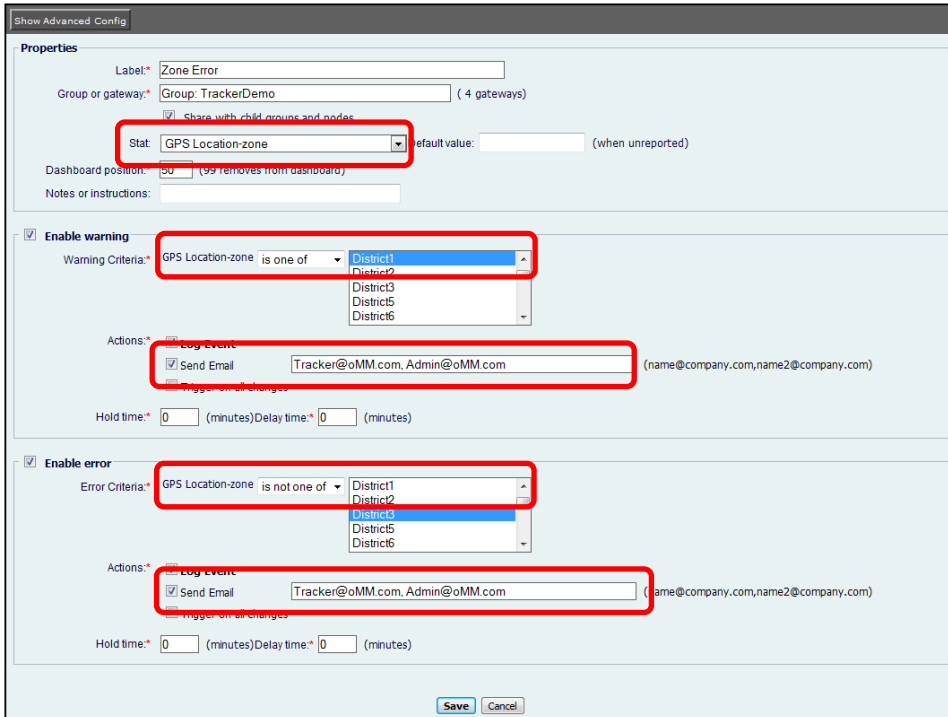
3.5. Email Alerts

Email alerts can be set up for thresholds. Warning and error alerts can be sent to one or several recipients.

To create email alerts, navigate to **Admin > Thresholds** and click on **Add**.

3.5.1. Zone Alerts

Email alerts can be generated for instances when gateways cross zone boundaries.



1. Enter a *Label* name and select the *Group or gateway*.
2. For the *Stat* field, use the drop-down menu to select **GPS Location-zone**.
3. For the *Warning Criteria*, select is one of and the zone for which a warning should be generated (i.e. when the gateway travels into this zone). Use Ctrl+click to select multiple zones.
4. Enable **Send Email** and, in the field, enter the email address(es) to which the warning should be sent. Use a comma (,) to separate addresses.
5. For *Error Criteria*, select is not one of (i.e. the gateway should not be in this zone) and the zone for which an error should be generated. Use Ctrl+click to select multiple zones.
6. Click on **Save**.

3.5.2. Speed Alerts

Email alerts can be created when gateways travel at or above certain speeds. This is useful to determine if excessive speeds are encountered.

The screenshot shows the 'Show Advanced Config' window for a 'Speed Error' label. The form is divided into three sections: Properties, Enable warning, and Enable error. Red boxes highlight the 'Stat' field, the 'Warning Criteria' dropdown and values, the 'Send Email' action field, and the 'Error Criteria' dropdown and value.

Properties

Label: Speed Error

Group or gateway: Group: TrackerDemo (4 gateways)

Share with child groups and nodes

Stat: GPS Location-speedmph (Default value: (when unreported))

Dashboard position: 50 (99 removes from dashboard)

Notes or instructions:

Enable warning

Warning Criteria: GPS Location-speedmph between 65 and 75

Actions:

Log Event

Send Email Tracker@oMM.com, Admin@oMM.com (name@company.com,name2@company.com)

Trigger on all changes

Hold time: 0 (minutes) Delay time: 0 (minutes)

Enable error

Error Criteria: GPS Location-speedmph greater than 75

Actions:

Log Event

Send Email Tracker@oMM.com, Admin@oMM.com (name@company.com,name2@company.com)

Trigger on all changes

Hold time: 0 (minutes) Delay time: 0 (minutes)

Buttons: Save Cancel

1. Enter a *Label* name and select the *Group or gateway*.
2. For the *Stat* field, use the drop-down menu to select **GPS Location-speedmph**.
3. For the *Warning Criteria*, select between and enter the low and high values that will trigger a warning. In the above example, a warning will be generated when a gateway travels between 65 and 75 mph.
4. Enable *Send Email* and, in the field, enter the email address(es) to which the warning should be sent. Use a comma (,) to separate addresses.
5. For *Error Criteria*, select greater than and enter a value. In the above example, gateways traveling more than 75 mph would generate an error warning.
6. Click on **Save**.