AMM Report Guide 2.16

AirLink® Mobility Manager

SIERRA WIRELESS®

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Rev 1

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Revision History

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1	July 26, 2017	Updates for AMM 2.16

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1: Introduction

This document provides instructions for accessing and using the using the AirLink® Mobility Manager (AMM) / AirLink Manager (AM) reports.

The AirLink Manager platform is available as two separate versions of the product. AirLink Manager (AM) and AirLink Mobility Manager (AMM). AM and AMM enables simplified, remote and real-time mass configuration, control and troubleshooting of AirLink routers and gateways, connected infrastructure, connected mobile assets and mission critical applications.

AM is an on-premises network management solution focused on fixed asset deployments and is ideal for applications where cloud-based management is not an option. AMM delivers on-premises or cloud-based network management targeted at customers with mobile assets. AMM displays a virtual dashboard with an up-to-date view of the entire fleet, and delivers a continuous stream of rich, real-time network data, allowing users to observe, track and examine the behavior of hundreds of devices, networks, and connected vehicle parameters as it occurs.

AM and AMM are configuration options on the same robust platform. For ease of documentation, “AMM” is used throughout to describe the features and capabilities of the product. As AM provides a subset of the capabilities in AMM, features that are specific to the AMM are identified. Most screenshots in this document that show a logo, show that of the AMM. Feature availability is dependent on the license purchased.

Note: the AMM was formerly known as the oMM in versions prior to 2.15.2; this document references those older versions as “oMM” where applicable

1.1 ALEOS and MG Support

Note: throughout this guide the term MG refers to both oMG and MG90 devices

As of Version 2.15, the AMM supports ALEOS devices in addition to MG devices. The main difference between MG and ALEOS devices with regards to how they work with the AMM is that MG devices have constant two-way communication with an AMM when an Internet connection is available, whereas ALEOS devices only check in with the AMM at schedule intervals (e.g. Heartbeat).

This means that MG devices can transmit data to the AMM in near real-time and commands can be sent from the AMM to the MG device immediately. Each MG device collects operational data in a log (e.g. connection status, data transmitted/ received, temperature of the unit, voltage of the vehicle, GPS location data, etc.). The data logs from the gateways are transmitted over a wireless data network to an AMM server. The AMM uses these data logs to present current and historical activity.

By default, ALEOS devices collect data when a device checks in with the AMM, and any commands issued to the ALEOS device (e.g. a schedule software upgrade) will not be initiated until the check in occurs. With the release of AMM 2.16, we have introduced an ALEOS Application Framework (AAF) application called AMMER that provides increased data collection independent of the device check in. This AAF application requires ALEOS 4.8.0 or later, and must be installed on your ALEOS-based AirLink gateways to enable this increased data collection. A number of the reports that have been enabled for ALEOS devices in AMM 2.16 require AMMER to function.

Note: AAF apps need to be packaged in a specific way to work with AMM which is different than those for ALMS. If you want to write AAF apps and deploy them from AMM, they will need to be prepared in a very specific way. Please contact swips@sierrawireless.com for assistance.

The AMM is highly configurable to enable great flexibility between customer situations. Business intelligence-style data presentation and reporting enable users to leverage the large amount of data available from the gateways.

The AMM is available both as a "Hosted" version which is operated by Sierra Wireless, and as a standalone appliance which can be purchased and administered by a customer as an on-premise solution.

In this document an MG Device and/or ALEOS gateway is often just referred to as a gateway. The gateway hardware is often installed in a vehicle but it can also be installed in a wide variety of locations to take further advantage of the system's capabilities. Note that since a gateway is often installed in a vehicle, the term is often also used in place of the word "vehicle".

Who Should Read This Guide?

AMM users typically include fleet dispatch operators, fleet managers, IT support staff and vehicle maintenance staff.

This document assumes that users are familiar with using the AMM and accessing available reports.

Product Support for Reports

ALEOS Devices

Not all AM/AMM reports are available for all AirLink devices. A subset of reports are supported on AirLink devices running the ALEOS operating system. For a list of reports that are supported on ALEOS devices see: Product Support for Reports.

AirLink Manager

AM provides a subset of the functionality and reports available on AMM as AM is designed for customers with fixed assets that are not generally mobile. For a list of reports supported see: Product Support for Reports.

Related Publications

Table 1-1: Related Publications

Title	Description
onBoard Tracker User Guide	Provides information for the Tracker application.
Four Port oMG Telemetry Configuration Guide	Provides information for the Telemetry application.
Asset Manager Configuration and User Guide	Provides information for asset tags and the Asset Manager.
AMM Operation and Configuration Guide	Provides information about operating the AMM.
oMG Operation and Configuration Guide	Provides information about operating the oMG.
MG90 Hardware User Guide	Provides information about setting up MG90 series gateways.
AMM Report Guide	Provides information about the reports that can be run from the AMM.

2: Core Reports

Reports provide the true power of the AM and AMM products. Core reports are included with the baseline installation of the AMM and include the following categories:

- Network Reports
- Diagnostic Reports
- Bandwidth Reports
- Tracker Reports
- Advanced Reports

For a list of specific core reports supported by AMM and AM see Product Support for Reports.

Additional reports are available for optional packages that may be purchased for the AMM. For more information see Reports for Optional Applications.

Network Reports

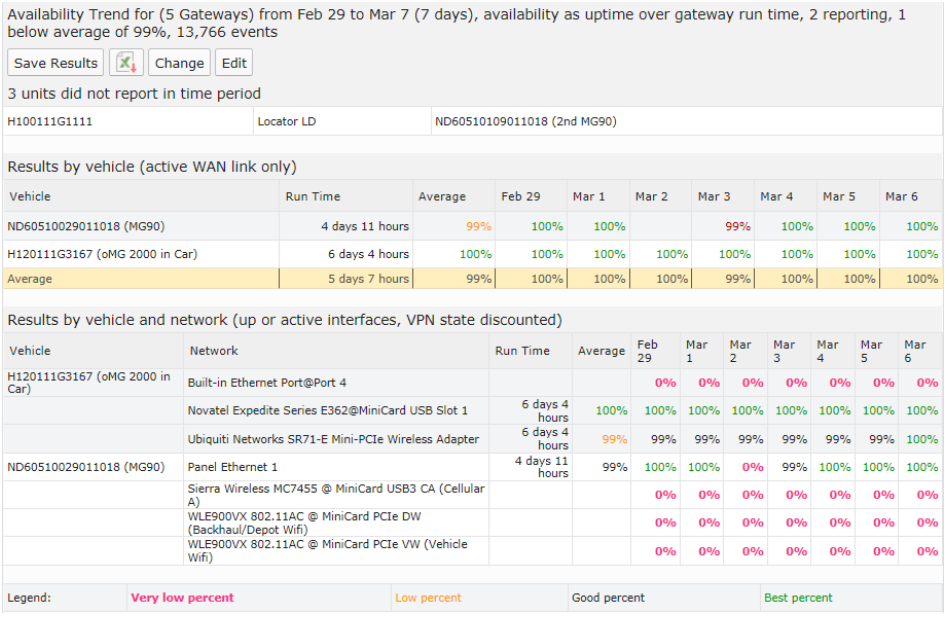
Network reports provide information about a gateway's network usage and are available under the *Reports->Network* menu. The following network reports are available:

- Network: Availability Trend Report
- Network: Availability Details Report
- Network: Coverage Map Report
- Network: Coverage Trails Report
- Network: Link Utilization Report
- Network: Cellular Network Inventory
- Network: Cellular Technology Map
- Network Cellular Technology Trail
- Network: VPN Utilization

Network: Availability Trend Report

The *Availability Trend* report shows the availability of each gateway as a percentage, over a selected period of time. The report also breaks down the availability by the WAN interfaces installed on each unit and can optionally show a separate table listing any units that did not report within the specified reporting period.

Note: the Availability Trend report is supported for ALEOS devices as of AMM 2.16.



Availability Trend for (5 Gateways) from Feb 29 to Mar 7 (7 days), availability as uptime over gateway run time, 2 reporting, 1 below average of 99%, 13,766 events

Save Results | Change | Edit

3 units did not report in time period

H100111G1111	Locator LD	ND60510109011018 (2nd MG90)

Results by vehicle (active WAN link only)

Vehicle	Run Time	Average	Feb 29	Mar 1	Mar 2	Mar 3	Mar 4	Mar 5	Mar 6
ND60510029011018 (MG90)	4 days 11 hours	99%	100%	100%		99%	100%	100%	100%
H120111G3167 (oMG 2000 in Car)	6 days 4 hours	100%	100%	100%	100%	100%	100%	100%	100%
Average	5 days 7 hours	99%	100%	100%	100%	99%	100%	100%	100%

Results by vehicle and network (up or active interfaces, VPN state discounted)

Vehicle	Network	Run Time	Average	Feb 29	Mar 1	Mar 2	Mar 3	Mar 4	Mar 5	Mar 6
H120111G3167 (oMG 2000 in Car)	Built-in Ethernet Port@Port 4			0%	0%	0%	0%	0%	0%	0%
	Novatel Expedite Series E362@MiniCard USB Slot 1	6 days 4 hours	100%	100%	100%	100%	100%	100%	100%	100%
	Ubiquiti Networks SR71-E Mini-PCIe Wireless Adapter	6 days 4 hours	99%	99%	99%	99%	99%	99%	99%	100%
ND60510029011018 (MG90)	Panel Ethernet 1	4 days 11 hours	99%	100%	100%	0%	99%	100%	100%	100%
	Sierra Wireless MC7455 @ MiniCard USB3 CA (Cellular A)			0%	0%	0%	0%	0%	0%	0%
	WLE900VX 802.11AC @ MiniCard PCIe DW (Backhaul/Depot Wifi)			0%	0%	0%	0%	0%	0%	0%
	WLE900VX 802.11AC @ MiniCard PCIe VW (Vehicle Wifi)			0%	0%	0%	0%	0%	0%	0%

Legend: Very low percent | Low percent | Good percent | Best percent

Figure 2-1: Availability Trend Report

The availability percentage is defined as the duration of time that a gateway had a WAN data connection (Cellular, Wi-Fi, Ethernet) as a percentage of the total time period selected. Note that it does not count times when the gateway was powered off.

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days or Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area*: select **Not Limited** to include data from any geographic location. Select **Manually defined area** to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select **One or more zones** to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Calculate availability as: select **Uptime over gateway run time** to calculate availability as the amount of time powered on divided by the time that the gateway was on, or **Update over report interval** to calculate availability as the total connection time divided by the report duration.

Limit to network types: runs the report for a certain type of network. Click in the field to select the network type.

Discard units that did not report in time period: when enabled, the report will not show any units that failed to report within the specified reporting period. When disabled, units that failed to report within the specified reporting period will be shown in separate table at the top of the report.

Show friendly names if available: when enabled, shows WAN link names in the report if they have been set in the gateway's configuration.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Output Format: select HTML to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. Note that the Excel option only works for reports which produce data in a table format.

Advanced Configuration Fields

Split table results by: use the drop-down menu to split the report results by *None, Auto, Second, Minute, 5 Minutes, 30 Minutes, Hour, 8 Hours, Day, Week or 30 Days*. The selection should best reflect the time range (e.g. if the range is one month, splitting the result by minutes or hours may not result in a satisfactory report). The default is *Auto*.

The report presents the results in a column/row format for both *Results by vehicle and results by vehicle and network*. Clicking on a gateway in the Node column will generate an *Availability Details* report for it (see next section). Use the legend at the bottom of the report to determine the results for the average percentages.

Network: Availability Details Report

The *Availability Details* report provides a graphical and detailed view of the availability (connected to a wide area data network) of gateways in your fleet. As with the *Availability Trend* report, the availability percentage is defined as the duration of operational time when a gateway had a WAN data connection (cellular, Wi-Fi or other) as a percentage of the total time period selected.

Note: The Availability Details report is supported for ALEOS devices as of AMM 2.16.

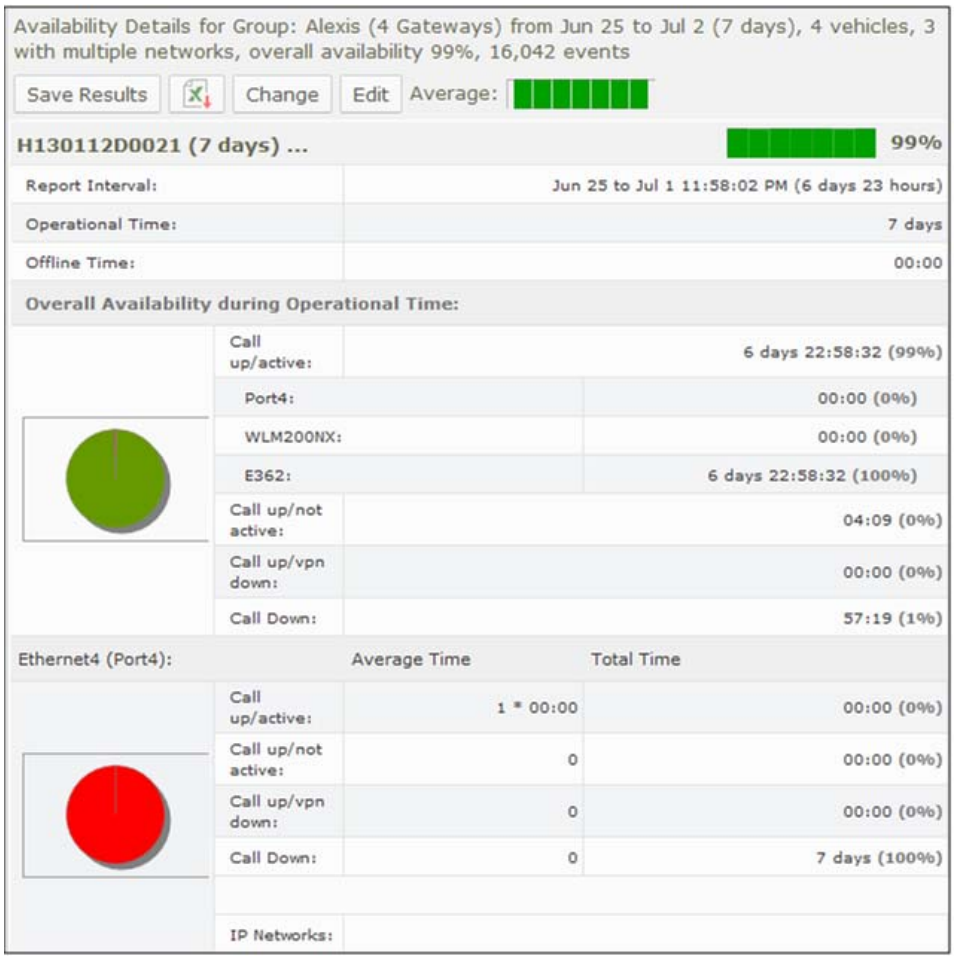


Figure 2-2: Availability Details Report

The availability average (for the period of time selected) is presented by a bar graph, in the top header of the report.

Below the top header, data for each gateway within the group is also represented. The information includes an overall average availability bar graph and numeric data, and pie charts that present data for the WAN access type (cellular, Wi-Fi, Ethernet) used by each gateway.

To open a *Coverage Trail Map* report, click on the percentage value link to the right of a gateway's bar graph:

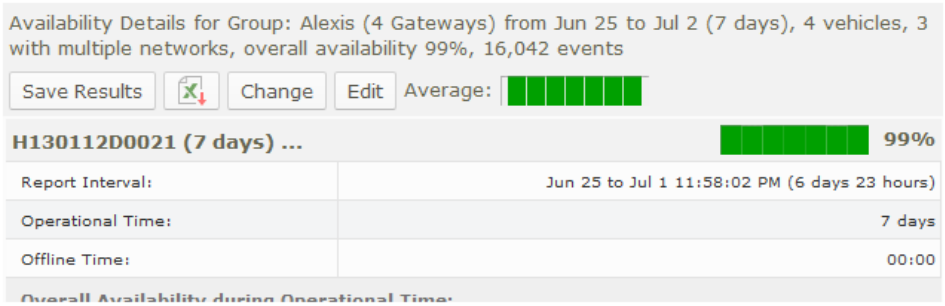


Figure 2-3: Clicking the percentage to access the Coverage Trail Map

Run the report to show the actual locations of good/poor coverage.

To collapse or expand a gateway's results, click on the ellipsis (…) after gateway's name:

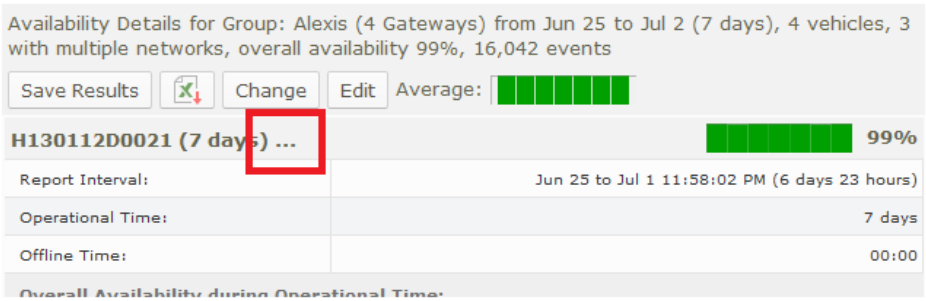


Figure 2-4: Clicking on the ellipsis to expand a gateway's results

The *All unit network summary* section of the report uses pie graphs to present a network summary for each type of WAN access method (cellular, Wi-Fi, etc) used by the group of gateways. The Network per *Vehicle Summary* section presents numeric data for the group's network availability per vehicle. These can be seen in Figure 2-5 below.

All unit network summary

Bell used by 1 vehicles:	Average Time	Total Time
Call up/active:	6 days 23:57:41	6 days 23:57:41 (99%)
Call up/not active:	00:22	00:22 (0%)
Call up/vpn down:	00:00	00:00 (0%)
Call Down:	01:57	01:57 (0%)

E362 used by 1 vehicles:	Average Time	Total Time
Call up/active:	6 days 22:58:32	6 days 22:58:32 (99%)
Call up/not active:	04:09	04:09 (0%)
Call up/vpn down:	00:00	00:00 (0%)
Call Down:	57:19	57:19 (1%)

Gateway Network used by 1 vehicles:	Average Time	Total Time
Call up/active:	00:00	00:00 (0%)
Call up/not active:	7 days	7 days (100%)
Call up/vpn down:	00:00	00:00 (0%)
Call Down:	00:00	00:00 (0%)

Networks Per Vehicle Summary

# Networks	# Vehicles	Network Down Time per Vehicle	Time Weight Availability %
0	1	00:00	100%
2	2	00:59	99%
3	1	57:19	99%

Figure 2-5: All unit network summary and Networks per Vehicle Summary

Note: green represents connected to the WAN link and active (passing data); orange represents time periods during which the gateway was connected to the WAN link but not active (not passing data), red represents time periods during which the gateway was attempting to connect to the WAN link but was unable able to, and light blue represents times when the gateway was connected to the WAN link but was unable to pass data due to the VPN being down.

Additional information contained in the report:

Report interval: time period covered by the report.

Operational time: total time excluding boot times.

Offline time: boot times.

Downtime saved by using multiple networks: time period where a WAN link was established but a non-primary WAN access method.

Overall availability during operation time: summary of all WAN links. This will be the same as the individual link if only one link is used.

Call up/active: the total time that the WAN link (cellular card, Wi-Fi WAN radio, Ethernet cable) maintained a data connection and was being used for traffic.

Call up/not active: the total time that the WAN link (cellular card, Wi-Fi WAN radio, Ethernet cable) maintained a data connection but was not being used for traffic. This occurs when a different WAN link carries data.

Call up/vpn down: the total time that the WAN link (cellular card, Wi-Fi WAN radio, Ethernet cable) maintained a data connection but was not carrying data due to the vpn being down.

Call Down: total time the WAN link (cellular card, Wi-Fi WAN radio, Ethernet cable) attempted to connect but was unable able to.

Network boot time: time taken for the gateway to boot up and make a WAN data connection. Average, minimum and maximum times are shown.

IP Networks: list of IP networks used by the link at some point during the time period.

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area*: select **Not Limited** to include data from any geographic location. Select Manually defined area to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select One or more zones to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Limit to network types: runs the report for a certain type of network. Click in the field to select the network type.

Show friendly names if available: when enabled, shows WAN link names in the report if they have been set in the gateway's configuration.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. Note that the Excel option only works for reports which produce data in a table format.

Save for later or schedule a run time: Enable to create reports that can be saved for future use. See Appendix A for more information.

Advanced Configuration Fields

Active link colors: click on each link to change the default color (use the color picker).

Server netmask: select the typical size of the ISP WAN network using the pull down list.

Max bootup time*: enter the amount of time (0 to 1800 seconds) to allow the gateway to boot before reporting CALLDOWN. The default is 180.

Max time between events*: enter the amount of time (0 to 86400 seconds) to allow between gateway events before considering the unit non-responsive. The default is 3600.

Network: Coverage Map Report

This *Coverage Map* report tallies all gateway network connectivity states within geographic areas and plots a coverage map (shaded map area squares), assigning a color between green (good) and red (bad).

This report is best used to show an aggregated result where one or (likely) more than one gateway visits each area more than once. It is intended as a means of identifying geographic regions where connectivity is a systemic issue.

For cases where there is only one gateway and where that gateway visits each area only once, use the Coverage Trail report instead.

There is a values-to-color legend at the bottom of the map.

By default, locations where the gateway spent less than 30 seconds are not shown.

Note: The Coverage Map report is supported for ALEOS devices in AMM 2.16 and above.

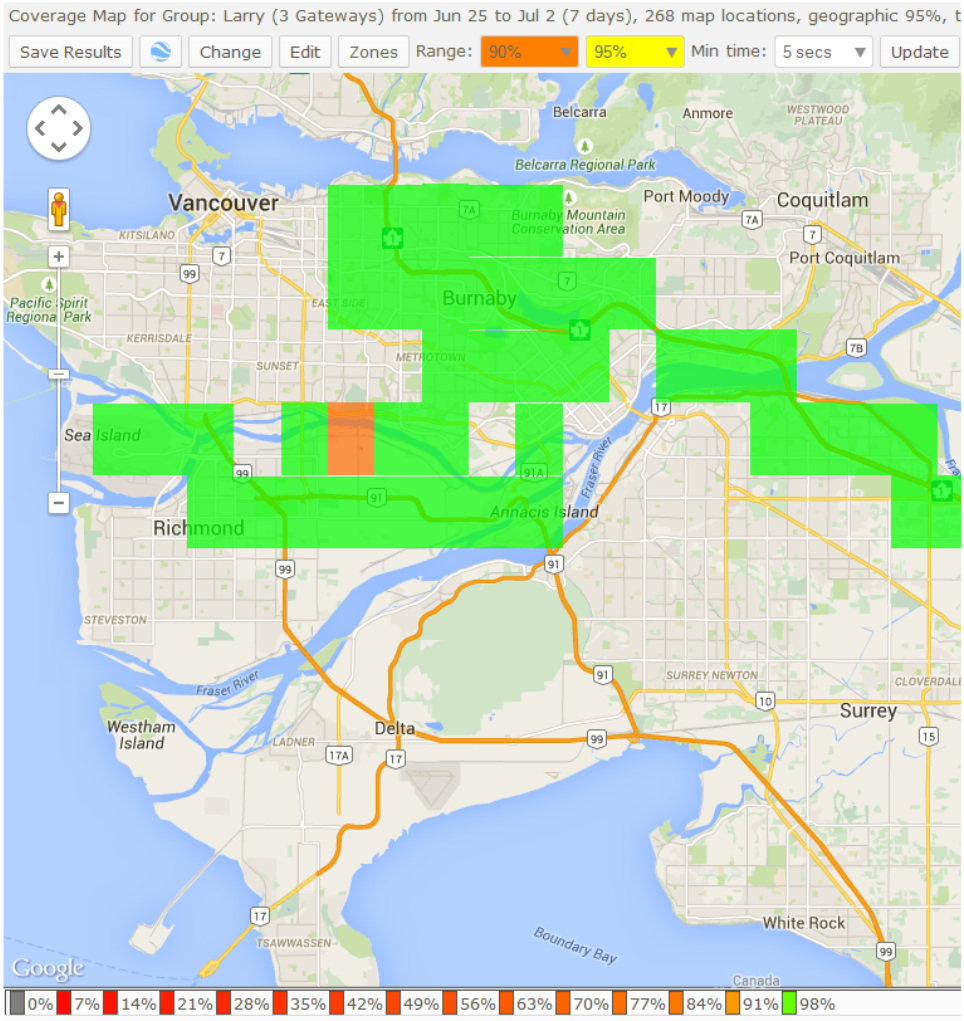


Figure 2-6: Map Showing Color Legend

Clicking on shaded regions displays information pop-ups about values in that area:

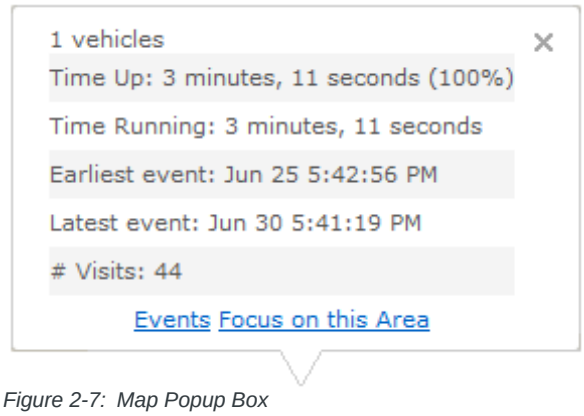


Figure 2-7: Map Popup Box

Pop-up details:

 # vehicles: shows the number of vehicles which contributed data to this area.

Time up: time a call up was maintained as a percentage of the total time a gateway was in this area.

Time running: total time a gateway was in this area.

Earliest event: first event that contributed data to this square.

Latest event: last event that contributed data to this square.

 # visits: number of separate data log transmissions in this area that contributed to this report.

Events: click on the link to generate a more detailed report (below) on the activity in the square. The map shows the specific area while beneath it, is a list of each data point which contributed to the square. The date/time stamp shows how frequently reports were received. In the *Text* column, the GPS location is shown except for those events where the call up or call down status changed.

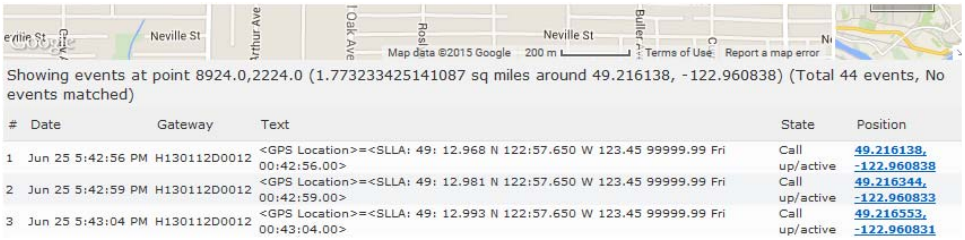


Figure 2-8: Events Region of the Report

Focus on this area: click on the link to produce a more detailed coverage map for the area covered by the original individual square. This feature is useful for highlighting exact locations of poor coverage.

However, be aware that when focusing on a small area, the time spent by a gateway in the area to generate the data may be small.

Basic Configuration fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area*: select **Not Limited** to include data from any geographic location. Select Manually defined area to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select **One or more zones** to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Limit to network types: runs the report for a certain type of network. Click in the field to select the network type.

Show the call as down when the VPN connection is down: shows all calls as down then a VPN connection is unavailable.

Show friendly names if available: when enabled, shows WAN link names in the report if they have been set in the gateway's configuration.

Average call up %*: this number determines the color shading scale used, with percentages above this number shown in green. The default is 95.0.

Bad call up %*: this number determines the color shading scale. The better the coverage in your area, the higher these numbers should be to highlight results less than 100%. The default is 90.0.

Output Format: select HTML to generate the report in the browser window. Select **KML** to display the generated report in Google Earth (requires that Google Earth is installed).

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Advanced Configuration Fields

Max bootup time*: enter the amount of time (0 to 1800 seconds) to allow the gateway to boot before reporting CALLDOWN. The default is 180.

Max time between events*: enter the amount of time (0 to 86400 seconds) to allow between gateway events before considering the unit non-responsive. The default is 3600.

Animate results by: animates the coverage over the specified report time range, in intervals defined by this dropdown. By default, *** None ***** is selected which turns animation off.

Map Resolution: defines the size of colored "blocks" presented in a map. The default resolution is auto.

Max call up % to show: filters to show only those coverage areas which are less than or equal to the specified value. The default is 100.

Min call up % to show: filters to show only those coverage areas which are greater than or equal to the specified value. The default is 0.

Min time in area: filters to show only those coverage areas which have been in an area greater than or equal to the specified time. The default is 5 seconds.

Map range colors: defines the different colors used on the map to represent strengths of coverage areas (used on some coverage related reports). Click on each color to access the color picker and to change the color.

Network: Coverage Trails Report

The *Coverage Trail* report graphs gateway positions as a continuous line (trail) on the map. The trail color indicates the WAN connectivity state of the gateways (a legend is shown below the map).

This report is best used for a single gateway over a smaller time period (e.g. one gateway trip) where the same location is not visited repeatedly. For cases involving additional gateways, larger time periods or repeat visits consider using the *Coverage Map* report instead.

The fields for the *Coverage Trail* report are identical to those in the *Availability Trend* and *Availability Details* reports.

The map displays various gateway events including the trip start and trip stop points, and WAN link events. Small, medium and large green circles indicate where gateways stopped (the larger circle indicates a longer stop time). Black circles indicate where GPS signal was lost (often due to underground parking). Blue triangle markers provide location information.

Note: The Coverage Trails report is supported for ALEOS devices in AMM 2.16 and above.

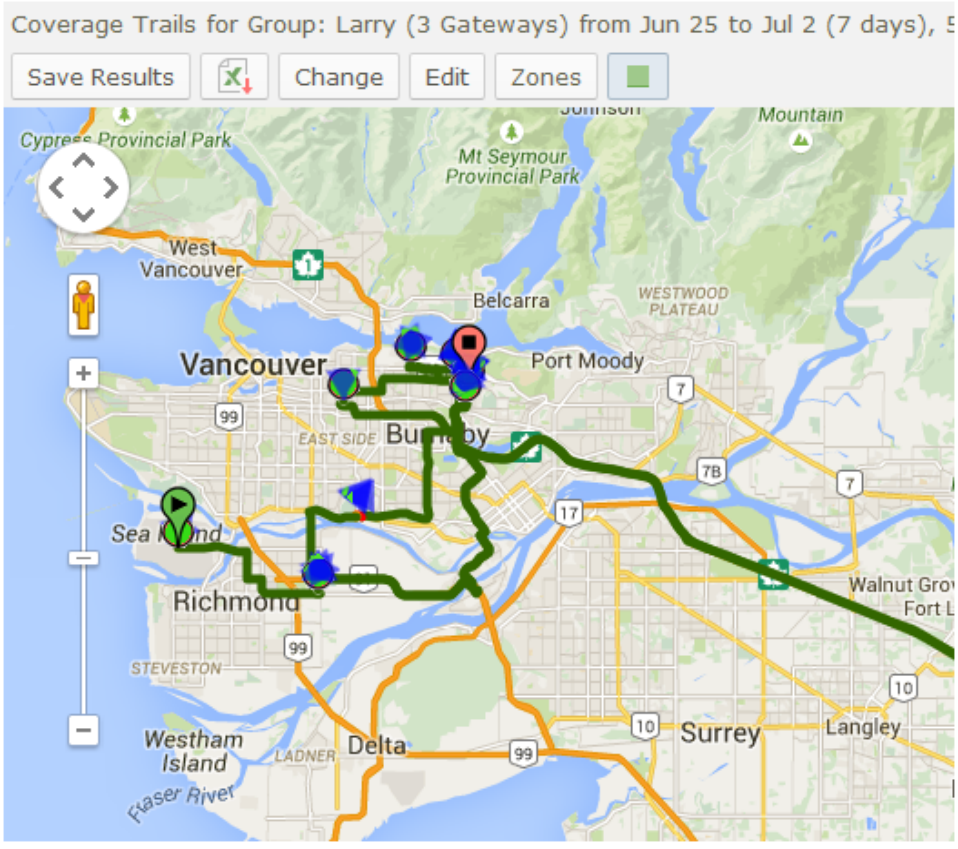


Figure 2-9: Coverage Trails Report

Click on any of the markers to open a pop-up that provides additional information.

If an attempt is made to run this report with more than 10 gateways, the following message will be displayed, at which point 10 or fewer gateways will need to be selected before attempting to run the report again:

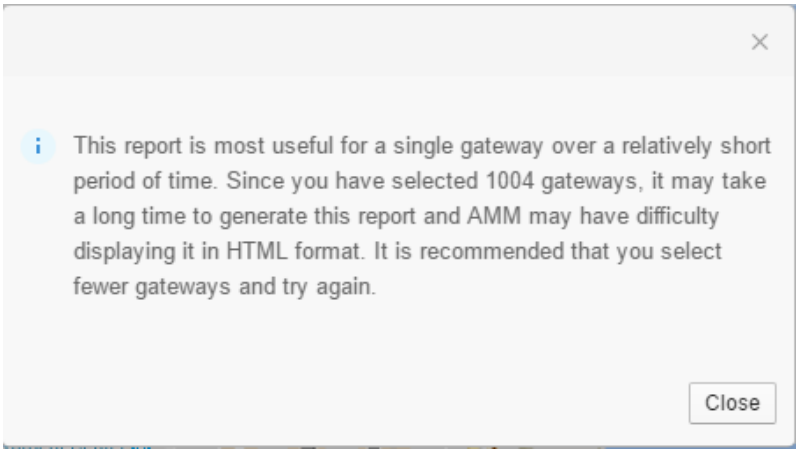


Figure 2-10: Message indicating that too many gateways are selected for the report. Close the popup and ensure that 10 or less are selected.

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area*: select **Not Limited** to include data from any geographic location. Select Manually defined area to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select **One or more zones** to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Limit to network types: runs the report for a certain type of network. Click in the field to select the network type.

Show friendly names if available: when enabled, shows WAN link names in the report if they have been set in the gateway's configuration.

Output Format: select HTML to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. Note that the Excel option only works for reports which produce data in a table format.

Save for later or schedule a run time: Enable to create reports that can be saved for future use. See Appendix A for more information.

Advanced Configuration Fields

Max bootup time*: enter the amount of time (0 to 1800 seconds) to allow the gateway to boot before reporting CALLDOWN. The default is 180.

Max time between events*: enter the amount of time (0 to 86400 seconds) to allow between gateway events before considering the unit non-responsive. The default is 3600.

Map Resolution: defines the size of colored “blocks” presented in a map, which are used to present the coverage trails. The default resolution is *auto*.

Active link colors: click on each link to change the default color (use the color picker)

Short stop*: vehicle stops are shown with small sized green circles if they have been stopped for at least this many minutes (up to the medium stop value). Default is 10.

Medium stop*: vehicle stops are shown with medium sized green circles if they have been stopped for at least this many minutes (up to the long stop value). Default is 30.

Long stop*: vehicle stops are shown with large sized green circles if they have been stopped for at least this many minutes. Default is 60.

Show direction every 5 positions: enable this checkbox to show vehicle direction every 5 GPS location reports. Default is *OFF*.

Show trails where gateways are booting: enable this checkbox to include times and locations where the gateway was booting up in the coverage trails. Default is *OFF*.

Network: Link Utilization Report

The *Link Utilization* report shows a high level of detail for WAN data link connectivity state over time. It is best used for a small number of gateways and is ideal for identifying connectivity issues that occur at specific times of day.

Note: in order to run this report on ALEOS devices, ALEOS 4.8.0+ and AMMER are required.

The fields for the Link Utilization report are identical to those in the *Availability Trend*, *Availability Details* and *Coverage Trail reports*.

A color-coded legend shows the various connectivity states. Hovering over any point on the graph displays the date, time, link name and its connectivity state and connection duration (this requires the *Show detailed info* checkbox to be enabled in the advanced configuration options for the report).

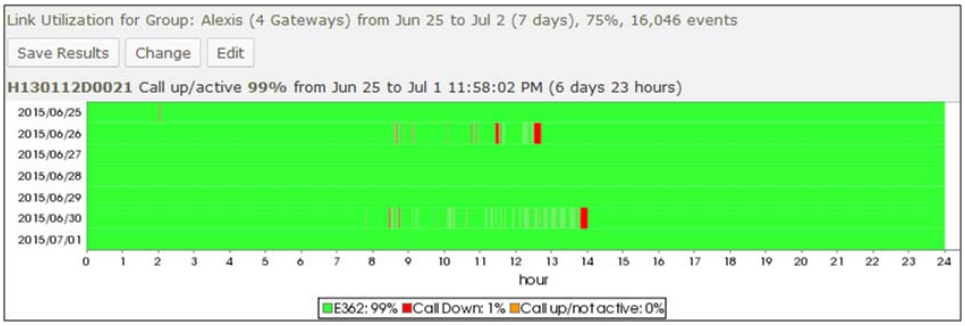


Figure 2-11: Link Utilization Report

For details, click on any point on the graph to open up a new tab showing each contributing event. This feature requires the *Show detailed info* checkbox to first be enabled in the advanced configuration options for the report and is recommended for advanced users

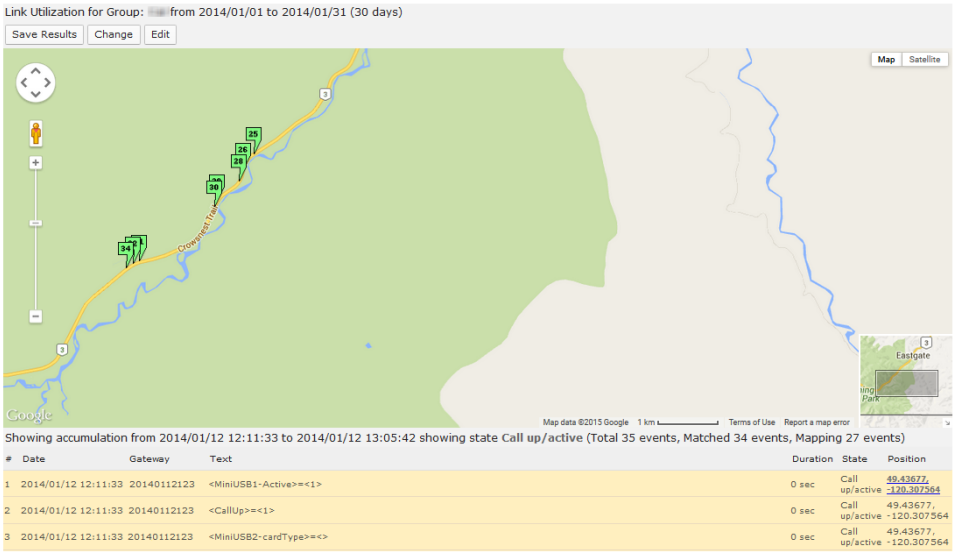


Figure 2-12: Link Utilization Report Events (requires that Show detail info option is selected in the report's configuration)

The data below the map provides individual event records, with a location link.

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area*: select **Not Limited** to include data from any geographic location. Select **Manually defined area** to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select **One or more zones** to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Limit to network types: runs the report for a certain type of network. Click in the field to select the network type.

Show the call as down when the VPN connection is down: provides an additional indication on the graph to show when the VPN connection was down during a call.

Show friendly names if available: when enabled, shows WAN link names in the report if they have been set in the gateway's configuration.

Output Format: HTML is the only format supported for this report.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Advanced Configuration Fields

Max bootup time*: enter the amount of time (0 to 1800 seconds) to allow the gateway to boot before reporting CALLDOWN. The default is 180.

Max time between events*: enter the amount of time (0 to 86400 seconds) to allow between gateway events before considering the unit non-responsive. The default is 3600.

Active link colors: click on each link to change the default color (use the color picker).

Hours per bar: defines how many hours are represented by each row in the graph, which effectively controls the "resolution" of the graph. To ensure performance when generating the report, the value must be set appropriately based on the *Report Type Range* as follows:

- Greater than 30 days: set from 24 through 1000
- Greater than 7 days: set from 12 through 1000
- Greater than 1 day: set from 1 through 1000
- One day or less: set from 0.5 to 1000. Note that values of less than 5 hours will set the graph units to be in minutes.

The default is *auto* which automatically selects the best value for the time range.

Show detailed Info: when enabled, mouse-over tooltips and hyperlinks will be available in the graph area of the generated report. Disabled by default.

Network: Cellular Network Inventory

The Cellular Network Inventory report shows the active cellular network equipment in use along with all associated serial and subscriber information.

Note: oMG version 3.7.3.4 or higher is required for this report and not all cellular modems are able to provide all data fields.

Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. Note that the Excel option only works for reports which produce data in a table format.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Network: Cellular Technology Map

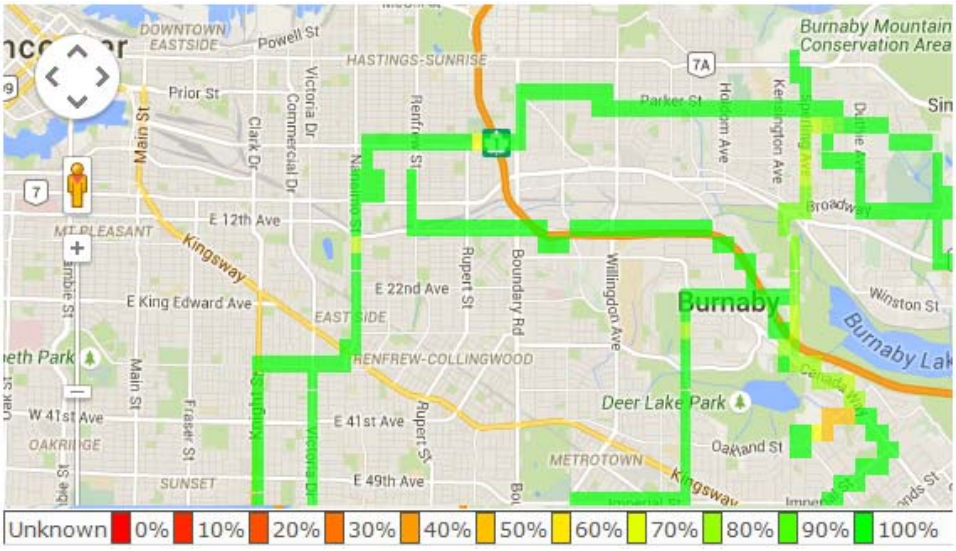


Figure 2-13: Cellular Technology Map

Note: this report requires oMGs running version 3.14 or higher with at least one MC7354 device installed.

The *Cellular Technology Map* report shows the active cellular network type used by the gateway(s) for a selected cellular network type. Usage is color coded based on the percentage of the cellular network type used in a given area.

Clicking on shaded regions displays information pop-ups about values in that area:

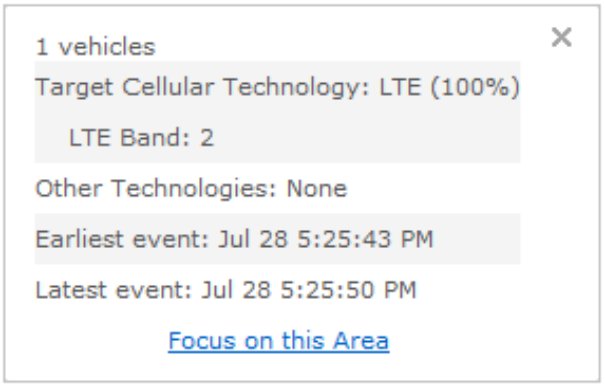


Figure 2-14: Map Popup Box

Pop-up details:

 # vehicles: shows the number of vehicles which contributed data to this area.

Target technology: shows the cellular type in use.

Other technologies: shows any additional cellular types in use.

Earliest event: first event that contributed data to this square.

Latest event: last event that contributed data to this square.

Click on **Focus on this Area** within a popup to drill deeper into gateway locations and time spent within the particular geographic location.

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area*: select **Not Limited** to include data from any geographic location. Select **Manually defined area** to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select **One or more zones** to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Limit to network types: runs the report for a certain type of network. Click in the field to select the network type.

Run report on: specifies the cellular network type to display results for.

Output Format: HTML is the only format supported for this report.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Advanced Configuration Fields

Map resolution: defines the size of colored “blocks” presented in a map. The default resolution is auto.

Map range colors: defines the different colors used on the map to represent network cellular type usage. Click on each color to access the color picker and to change the color.

Network Cellular Technology Trail

The *Cellular Technology Map* report plots the trails of all cellular network type(s) on a map used by an individual gateway. Each trail is color coded based on the cellular network type.

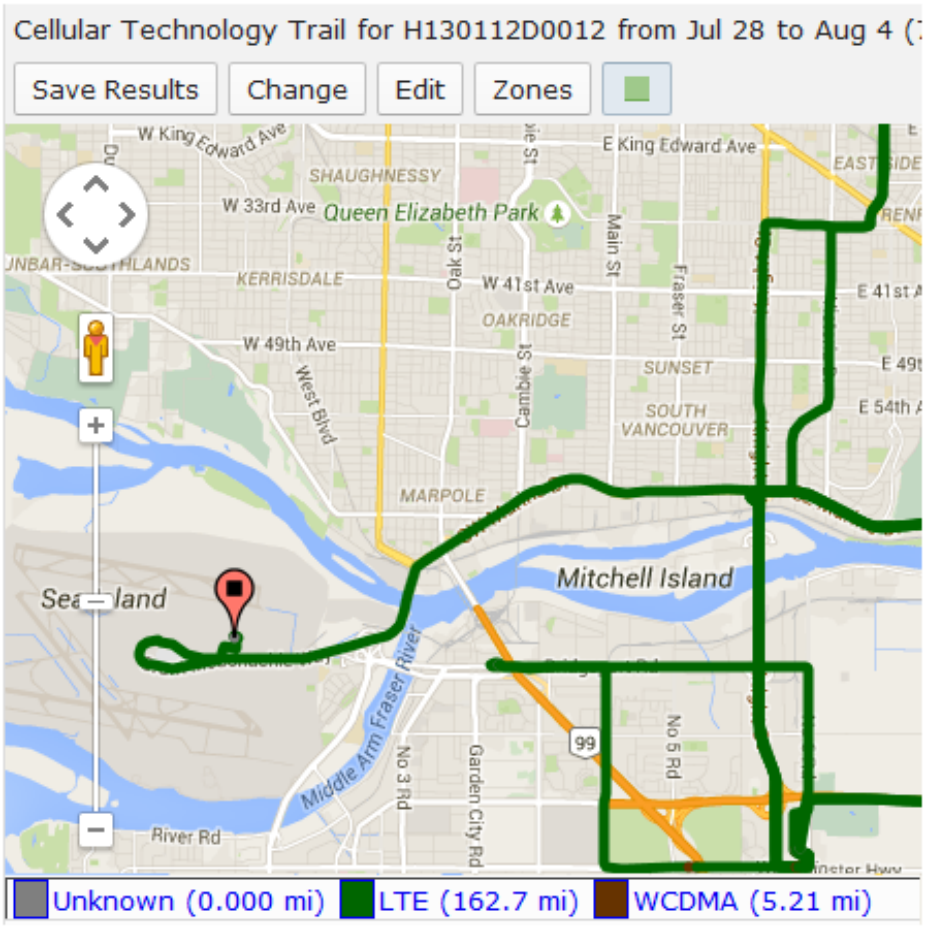


Figure 2-15: Cellular Technology Trail Report

Note: this report requires an oMG running version 3.14 or higher and at least one MC7354 device.

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area*: select **Not Limited** to include data from any geographic location. Select **Manually defined area** to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select **One or more** zones to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Limit to network types: runs the report for a certain type of network. Click in the field to select the network type.

Output Format: HTML is the only format supported for this report.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Advanced Configuration Fields

Map resolution: defines the precision of the plotted trail paths. Lower values increase the precision while higher values decrease the prevision. The default resolution is auto.

Cellular technology colors: defines the different colors used on the map to represent network cellular type usage. Click on each color to access the color picker and to change the color.

Network: VPN Utilization

The *VPN Utilization* report shows a summary of the VPN status(es) for the selected gateway(s). Each row in the bar graph represents a day in the specified time range with the VPN statuses for that day summarized by the following colors:

- **Blue**: gateway is booting.
- **White**: gateway is shutdown.
- **Grey**: gateway does not have any active WAN link.
- **Green**: no VPN(s) associated with the current active WAN link is down.
- **Yellow**: at least one expected VPN is down, and at least one expected VPN is up.
- **Red**: all VPN(s) associated with the current active WAN link are down.

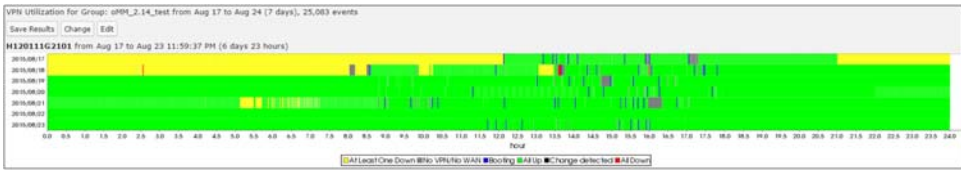


Figure 2-16: VPN Utilization Report

Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Output Format: select **HTML** to generate the report in the browser window. Currently *HTML* is the only available option.

Advanced Configuration Fields

Hours per bar: defines how many hours are represented by each row in the graph, which effectively controls the “resolution” of the graph. To ensure performance when generating the report, the value must be set appropriately based on the *Report Type Range* as follows:

- Greater than 30 days: set from 24 through 1000
- Greater than 7 days: set from 12 through 1000
- Greater than 1 day: set from 1 through 1000
- One day or less: set from 0.5 to 1000. Note that values of less than 5 hours will set the graph units to be in minutes.

The default is *auto* which automatically selects the best value for the time range.

Show detailed Info: when enabled, mouse-over tooltips and hyperlinks will be available in the graph area of the generated report. For the *VPN Utilization* report, a popup will display the gateway’s *Active Link* and the status of each VPN on the gateway. Disabled by default.

Diagnostic Reports

Diagnostic reports provide diagnostic information about gateways and are located under the *Reports->Diagnostics* menu. The following reports are included for Diagnostics:

- Diagnostics: Configuration Audit
- Diagnostics: Shutdown Reason

Diagnostics: Configuration Audit

The *Configuration Audit* report queries the configurations of the selected MG devices running Release 3.x and displays the uniformity and differences across the settings for those gateways. Settings are ordered and displayed based on organization of the gateway's configuration structure.

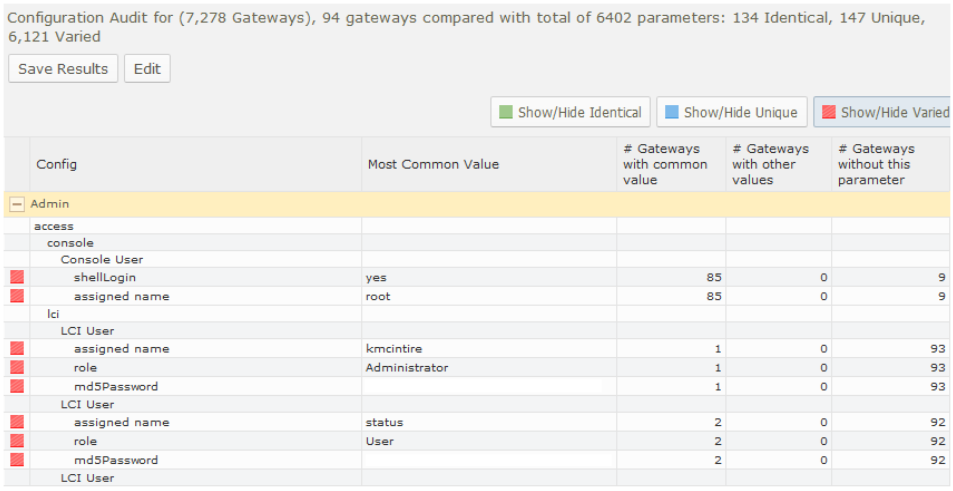
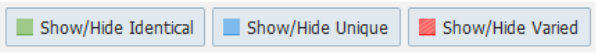


Figure 2-17: Configuration Audit Report

Note: the report requires MG devices to be running release 3.8 or greater.

The report provides the following options for filtering configuration properties:



Show/Hide Identical: toggles the visibility of properties that have the same value across all selected gateways. All items are marked with a green square for easy identification.

Show/Hide Unique: toggles the visibility of properties that have different values across all selected gateways. Clicking on a unique field in the list displays the values assigned for each gateway. All items are marked with a blue square for easy identification.

Show/Hide Varied (selected by default): toggles the visibility of configurations that are defined for specific gateways. Clicking on a field marked as Varied in the list will display the gateway where the value is defined, as well as the variation in values between the gateways. All items are marked with a red square for easy identification.

The report displays information organized under the following columns;

Config: lists the configuration properties.

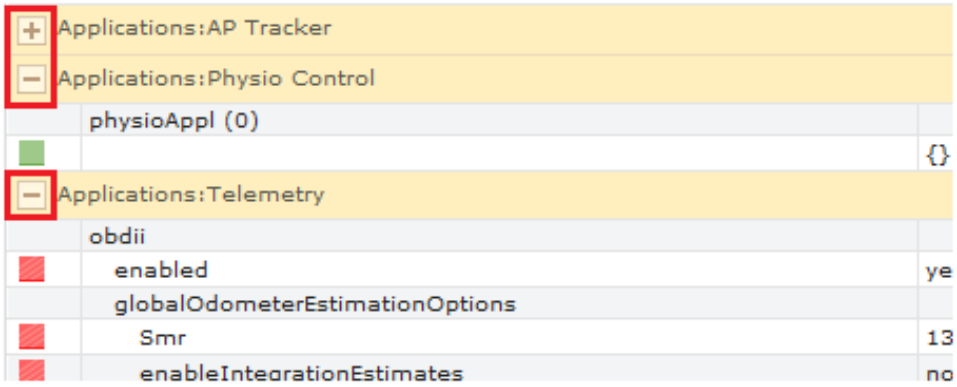
Most Common Value: displays the value of each setting.

 # Gateways with common value: lists the number of gateways with the specified value. For Unique and Varied settings, this column will always be set to 1.

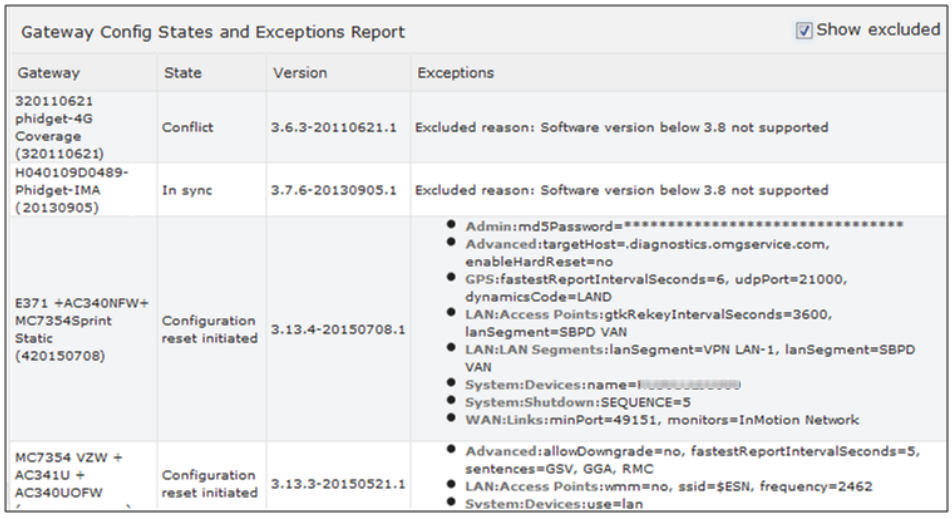
 # Gateways with other values: lists the number of gateways which have a value different from the *Most Common Value*.

 # Gateways without this parameter: lists the number of gateways for which the setting is not set or defined.

Categories of settings can be expanded and collapsed using the + and – icons on the far left:



The bottom of the report lists the configuration states of each gateway in the report. Selecting the *Show Excluded* check box includes any of the selected gateways which don't meet the requirements for the report (e.g. older oMG versions not supported by the report):



Gateway Config States and Exceptions Report — Show excluded

Gateway	State	Version	Exceptions
320110621 phidget-4G Coverage (320110621)	Conflict	3.6.3-20110621.1	Excluded reason: Software version below 3.8 not supported
H040109D0489-Phidget-IMA (20130905)	In sync	3.7.6-20130905.1	Excluded reason: Software version below 3.8 not supported
E371 +AC340NFW+ MC7354Sprint Static (420150708)	Configuration reset initiated	3.13.4-20150708.1	• Admin:md5Password=********** • Advanced:targetHost=.diagnostics.omgservice.com, enableHardReset=no • GPS:fastestReportIntervalSeconds=6, udpPort=21000, dynamicsCode=LAND • LAN:Access Points:gtkRekeyIntervalSeconds=3600, lanSegment=SBPD VAN • LAN:LAN Segments:lanSegment=VPN LAN-1, lanSegment=SBPD VAN • System:Devices:name=[redacted] • System:Shutdown:SEQUENCE=5 • WAN:Links:minPort=49151, monitors=InMotion Network
MC7354 VZW + AC341U + AC340UOFW	Configuration reset initiated	3.13.3-20150521.1	• Advanced:allowDowngrade=no, fastestReportIntervalSeconds=5, sentences=GSV, GGA, RMC • LAN:Access Points:wmm=no, ssid=$ESN, frequency=2462 • System:Devices:use=lan

Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Select gateway active time range*: selects the time range within which configuration values should be reported on. By default *All* is selected which will display all configuration parameters. If a more specific time range is specified, then only those parameters which have changed in that specified time range will be reported.

To specify a time range, use the drop-down menu to select from *Last 7 days*, *Last 14 days*, *Last 30 days*, *Last 60 days*, or *Last 90 days*.

Select audit categories*: specifies the audit categories to report on:

- **All**: when enabled, specifies that all categories are to be reported on. Uncheck this option to specify the categories to report on.

Select gateway version*: specifies the gateway sections and components to report on:

- **All**: when enabled, specifies that all versions are to be reported on. Uncheck this option to specify the versions to report on.
- **Skip disabled config entries**: when enabled, the report will not display the collection of configuration parameters related to an "enabled" parameter which has a negative value (e.g. "No", "False", "0").
- **Obfuscate passwords**: when enabled, the report will obfuscate user passwords for security purposes.

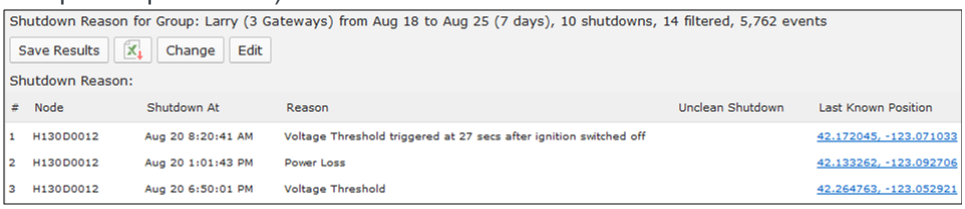
Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Diagnostics: Shutdown Reason

The *Shutdown Reason* report displays the shutdowns of gateways within a specified time period. This report can be used to detect both normal and abnormal shutdowns (e.g. due to a loss of power).

The report displays the gateway ESN/name that was shutdown, date/time, reason, an indication of whether the shutdown was unclean (e.g. due to an unexpected power loss) and GPS location for each shutdown.


Shutdown Reason for Group: Larry (3 Gateways) from Aug 18 to Aug 25 (7 days), 10 shutdowns, 14 filtered, 5,762 events

Save Results | Change | Edit

Shutdown Reason:

#	Node	Shutdown At	Reason	Unclean Shutdown	Last Known Position
1	H130D0012	Aug 20 8:20:41 AM	Voltage Threshold triggered at 27 secs after ignition switched off		42.172045, -123.071033
2	H130D0012	Aug 20 1:01:43 PM	Power Loss		42.133262, -123.092706
3	H130D0012	Aug 20 6:50:01 PM	Voltage Threshold		42.264763, -123.052921

Figure 2-18: Shutdown Reason Report

Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Shutdown reasons categories filter: when *None* is deselected, options for filtering the report based on shutdown reasons become available. Selecting items from the Available Items list and then clicking -> will add them to the Selected Items list. The report will then show events in which a shutdown occurred for one of the reasons in the Selected Items list. If None is selected, then the filtering items become unavailable and all shutdown events will be displayed in the report.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Bandwidth Reports

Bandwidth reports provide information about gateway bandwidth usage are located under the *Reports->Bandwidth* menu. The following reports are available for Bandwidth:

- Bandwidth: Bandwidth Consumption
- Bandwidth: Bandwidth Coverage Map
- Bandwidth: Top Client Activity
- Bandwidth: Client Usage Map
- Bandwidth: Client History
- Bandwidth: Client Services

Bandwidth: Bandwidth Consumption

The *Bandwidth Consumption* report shows graphs for the bandwidth consumed by each link for one or more gateways over the specified time period. The report includes the consumption in MBytes, the top consumers from the list of specified gateways, and the rate of consumption for each day of the time period. Additional information is provided below the graphs including a breakdown of the consumption based on the client devices connected to that gateway. This level of detail includes the amount of data uploaded/downloaded, the number of clients, duration of usage, and the link(s) used to send/receive the data.

Note: ALEOS devices only provide WAN Link Tx Bytes (520) and WAN Link Rx Bytes (521) DELS events for cellular links so the Bandwidth Consumption report will not be meaningful for ALEOS Ethernet links.

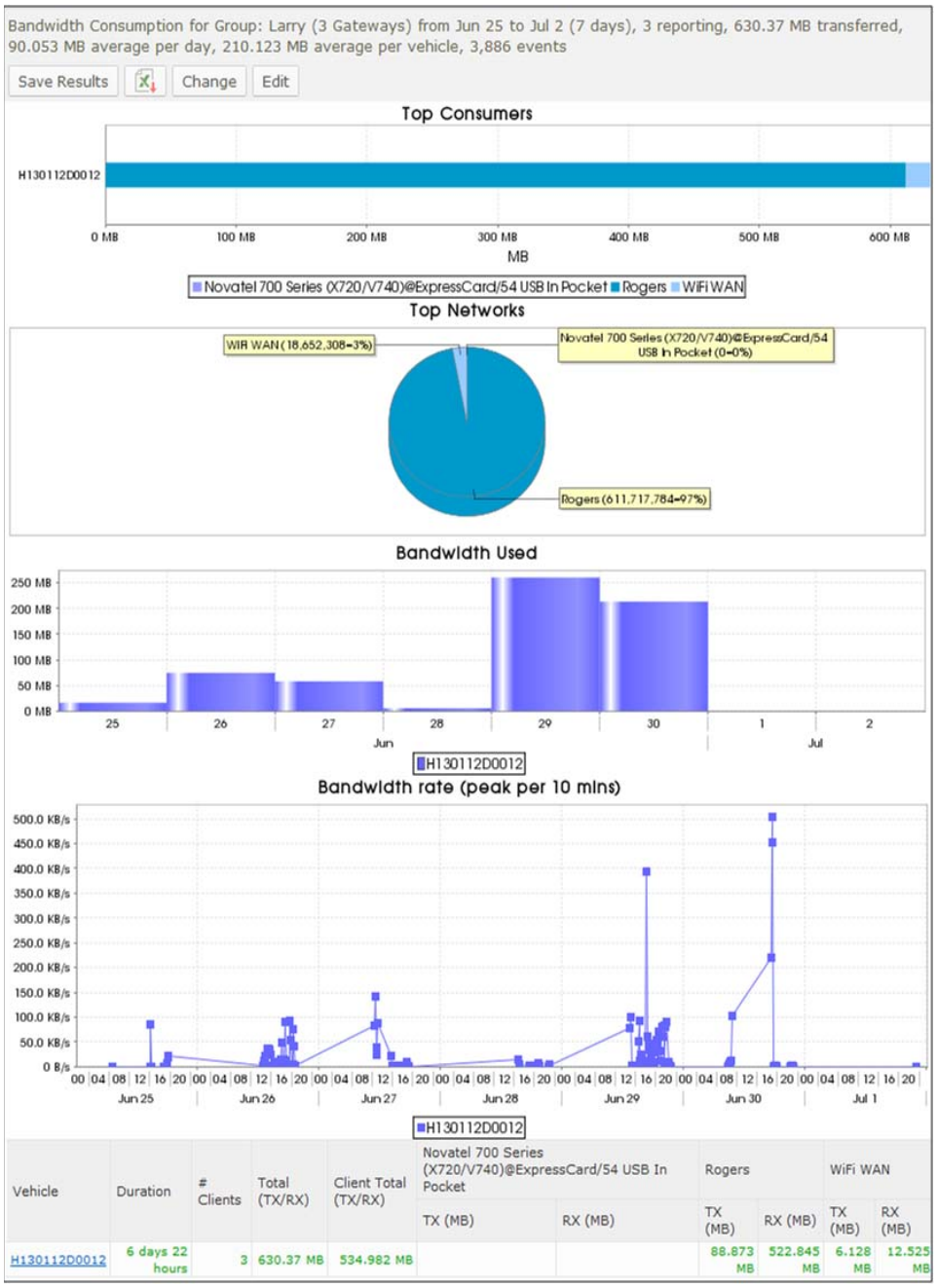


Figure 2-19: Bandwidth Consumption Report

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Show graph in report output: when enabled, shows the graphs for the report. When disabled, only the row data is shown.

Limit to Network types: filters the results to only show consumption from links which contain the specified text.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. Note that the Excel option only works for reports which produce data in a table format.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Advanced Configuration Fields

Discard units that did not report in time period: filters out all gateways from the report which did not report and therefore did not consume any bandwidth.

Maximum bandwidth: specifies the maximum bandwidth that is supposed to be consumed. Any consumption over this amount is highlighted in the report.

Bandwidth: Bandwidth Coverage Map

The *Bandwidth Coverage Map* report shows a map indicating where bandwidth was consumed for one or more gateways.

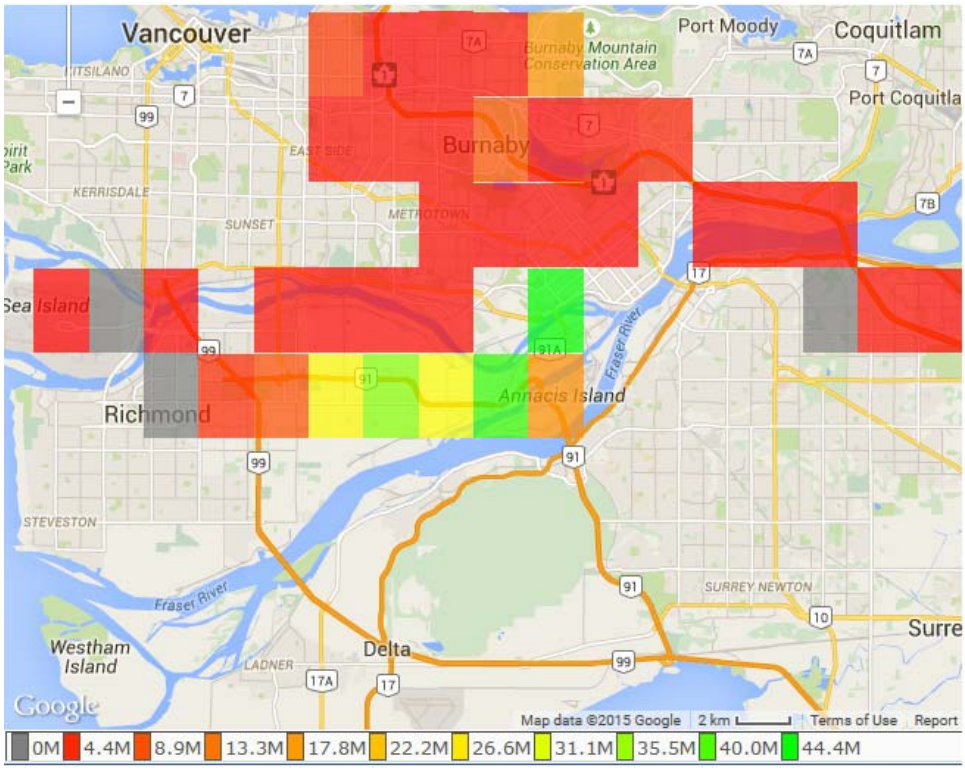


Figure 2-20: Bandwidth Coverage Map

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Perform statistics on: select **Rx (Received Data in MB)** to calculate bandwidth consumption only on data downloaded to the gateway, **Tx (Transmitted Data in MB)** to calculate bandwidth consumption only on data uploaded to the gateway or **Rx+Tx (in MB)** to calculate bandwidth consumption using both downloaded and uploaded data.

Limit to map area: select **Not Limited** to include data from any geographic location. Select **Manually defined area** to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select **One or more zones** to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Color Ranges: defines the percentage of total usage (MBytes/day) to associate with the colored blocks on the map. This information visually highlights on the map where the most bandwidth was consumed. Four values must be specified, corresponding to the four map colors: red, orange, yellow, and green respectively, or this field must be left blank to accept the defaults (0, 33%, 66%, 100%).

Limit to Network types: filters the results to only show consumption from links which contain the specified text.

Time Interval (CSV Only): specifies the number of intervals in hours or days to generate the CSV report results with.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. Note that the Excel option only works for reports which produce data in a table format.

Advanced Configuration Fields

Map resolution: defines the size of colored “blocks” presented in a map. The default resolution is auto.

Map range colors: defines the different colors used on the map to represent strengths of coverage areas (used on some coverage related reports). Click on each color to access the color picker and to change the color.

Bandwidth: Top Client Activity

The *Top Client Activity* report shows the top bandwidth consumers (i.e. devices connected to the gateway’s LAN to send traffic through its WAN) for the selected gateways, over the specified time period.

The report graphs the bandwidth consumed and also plots the corresponding consumption rate across each sub period (e.g. each day).

Additional details for each client shown on the report include its MAC address, name, the gateways through which the client consumed bandwidth, the quantity of times connected, amount of time connected, and the amount of data (in MB) sent and received.

Figure 2-21: Top Client Activity Report

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area: select Not Limited to include data from any geographic location. Select **Manually** defined area to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select **One or more zones** to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Top N clients to report: limits the number of clients to report on. Default is 25 clients.

Excessive Bandwidth: specifies the maximum bandwidth consumption (in Mbytes) for clients. The report will highlight all clients which have exceeded this value.

Limit to clients: filters the report to include only those client names which contain the specified text.

Show graph in report output: when enabled, shows the graphs for the report. When disabled, only the row data is shown.

Partially hide MAC addresses and fully hide hostnames: when enabled, hides part of the MAC address, and all of the client names.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. Note that the Excel option only works for reports which produce data in a table format.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Appendix A for more information.

Advanced Configuration Fields

Use gateway bandwidth when client data is not available: when enabled, gateway consumption will be reported instead of client consumption. Use for older versions (3.5.1 and older) of the gateway as those versions do not send client data.

Bandwidth: Client Usage Map

The *Client Usage Map* report shows the locations with the highest amount of Internet access through the specified gateways over the specified time period.

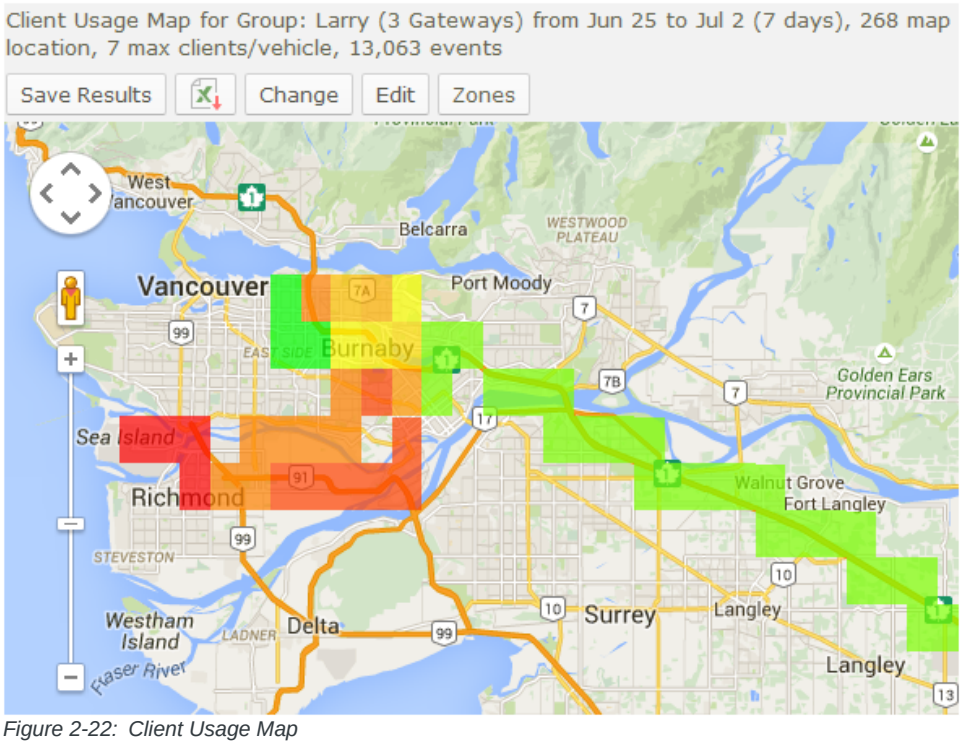


Figure 2-22: Client Usage Map

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Partially hide MAC addresses and fully hide hostnames: when enabled, hides part of the MAC address, and all of the client names.

Value to graph: when set to Total, the blocks on the report represent the total number of clients who accessed the LAN in the area. When set to Average, the blocks on the report represent the average number of clients who accessed the LAN in the area, where "average" is calculated as the total number of clients/the number of trips in the area.

Limit to map area: select **Not Limited** to include data from any geographic location. Select **Manually defined area** to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select **One or more zones** to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. Note that the Excel option only works for reports which produce data in a table format.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Advanced Configuration Fields

Animate results by: animates the coverage over the specified report time range, in intervals defined by this dropdown. By default, *** None ***** is selected which turns animation off.

Map resolution: defines the size of colored “blocks” presented in a map. The default resolution is auto.

Color ranges: defines the percentage of total usage to associate with the colored blocks on the map. This provides a visual perspective on the concentration of client connections. Four values must be specified, corresponding to the four map colors: red, orange, yellow, and green respectively, or this field must be left blank to accept the defaults (0, 12%, 50%, 100%).

Map range colors: defines the different colors used on the map to represent strengths of coverage areas (used on some coverage related reports). Click on each color to access the color picker and to change the color.

Bandwidth: Client History

The *Client History* report shows the locations for gateway bandwidth consumption as well as the date/time that the unit(s) connected, the duration for the connection(s), the amount of data (in MB) that was sent/received, and the distance travelled, if greater than 0 miles.

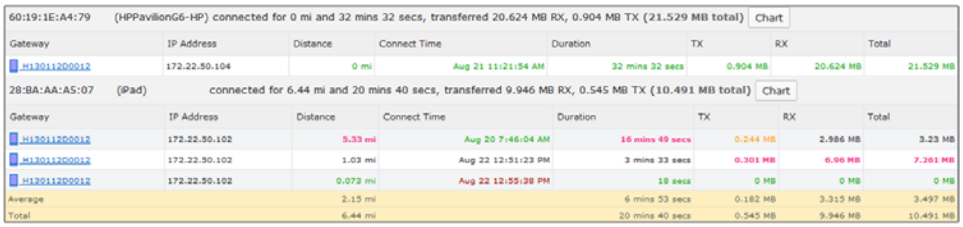


Figure 2-23: Client History Report

Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area: select **Not Limited** to include data from any geographic location. Select **Manually defined area** to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select **One or more zones** to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Limit to clients: filters the report to include only those client names which contain the specified text.

Partially hide MAC addresses and fully hide hostnames: when enabled, hides part of the MAC address, and all of the client names.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. Note that the Excel option only works for reports which produce data in a table format.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Appendix A for more information.

Bandwidth: Client Services

The *Client Service* report shows bandwidth consumption for the selected gateways over the specified time period. The average distribution of consumption over the course of a day is also calculated to highlight daily average peak usage times. The report can be configured to filter usage for one or more ports on a gateway.

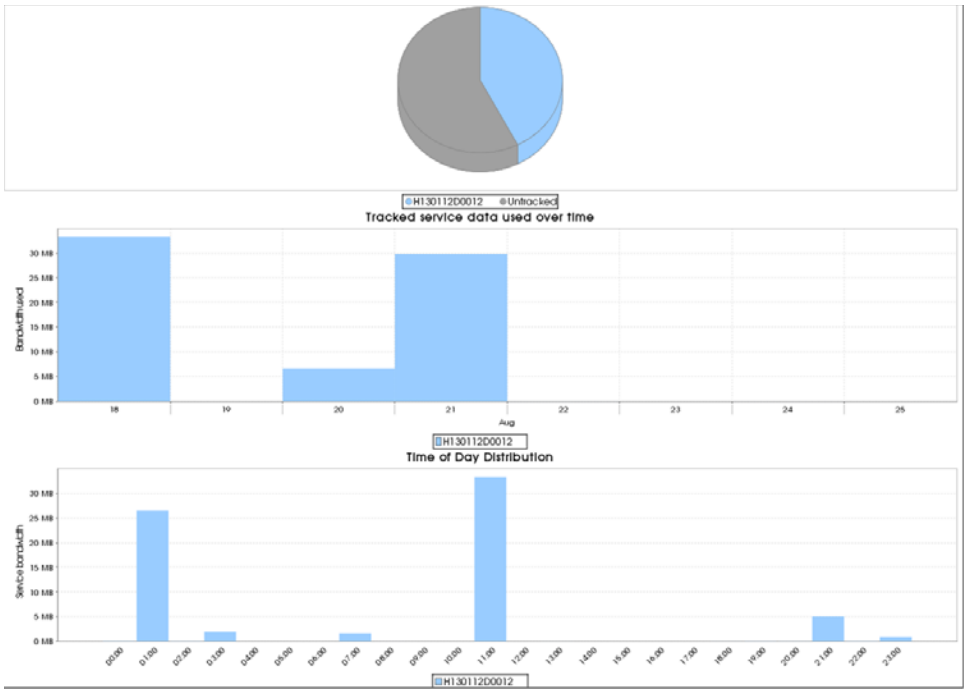


Figure 2-24: Client Services Report

Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Port Names: use for filtering the usage based on one or more ports for the selected gateways. Ports must be specified using a comma separated list of name/port value pairs (e.g. WEB=80, FTP=21, etc.). If this field is left blank or the port/value format entered is incorrect, then all bandwidth consumption for the selected gateways is shown.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area: select **Not Limited** to include data from any geographic location. Select **Manually defined area** to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select **One or more zones** to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. Note that the Excel option only works for reports which produce data in a table format.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Tracker Reports

Tracker is an application that analyzes GPS information and provides information about gateway locations. The reports are located under the *Reports->Tracker* and include the following:

- Tracker: Gateway Trip Coverage
- Tracker: Gateway Trips
- Tracker: Gateway Trip Trend
- Tracker: Trip Replay
- Tracker: Zone Summary
- Tracker: Zone Times
- Tracker: Zone Map
- Tracker: Zone Crossing Summary

Note: prior to AMM 2.16, the Tracker reports were located under the Reports->Geographic menu. In AMM 2.16, the Reports->Geographic menu was renamed to Reports->Tracker.

Tracker: Gateway Trip Coverage

The *Gateway Trip Coverage* report plots a coverage map of locations visited by vehicles and uses color to represent the time spent in the area (short to long).

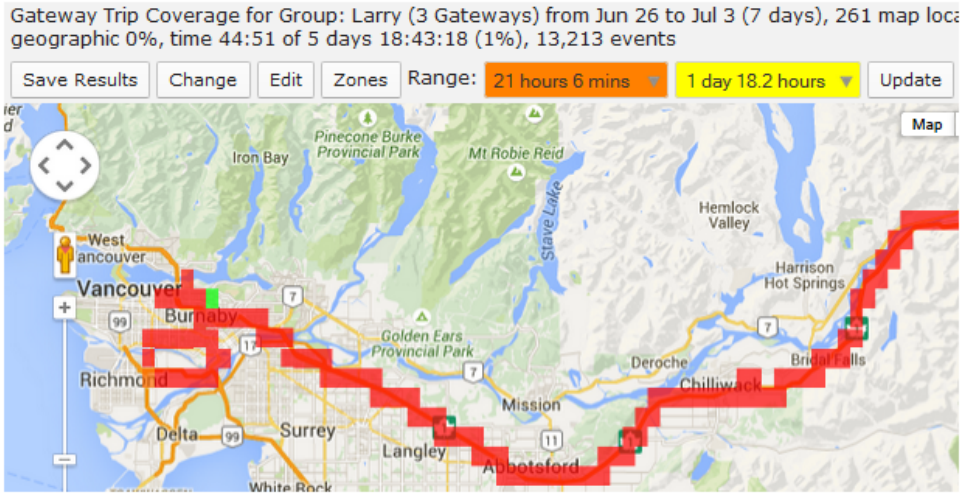


Figure 2-25: Gateway Trip Coverage Report

Click on a colored square for a pop-up with details about the gateway in that geographic area.

Click on **Events** within a popup to present the gateway data for that particular area. The report shows the gateways that were in the area and when. Click on a position link for a pop-up displaying date, time and location for the event.

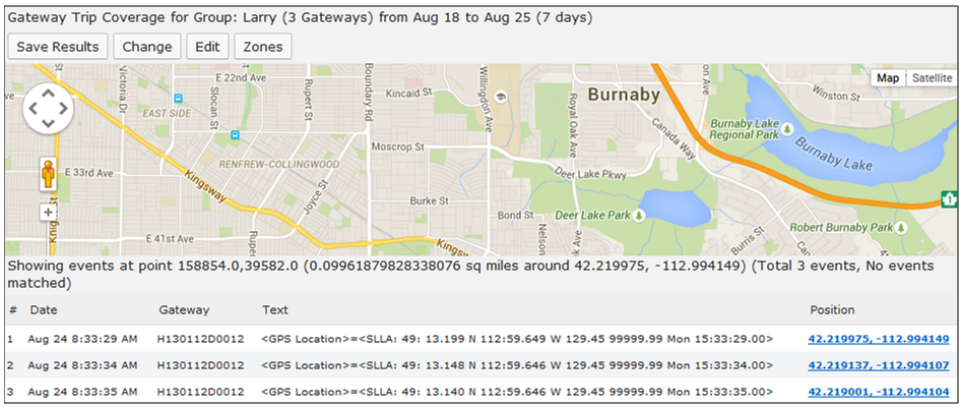


Figure 2-26: Gateway Trip Events

Click on **Focus on this Area** within a popup to drill deeper into gateway locations and time spent within the particular geographic location.

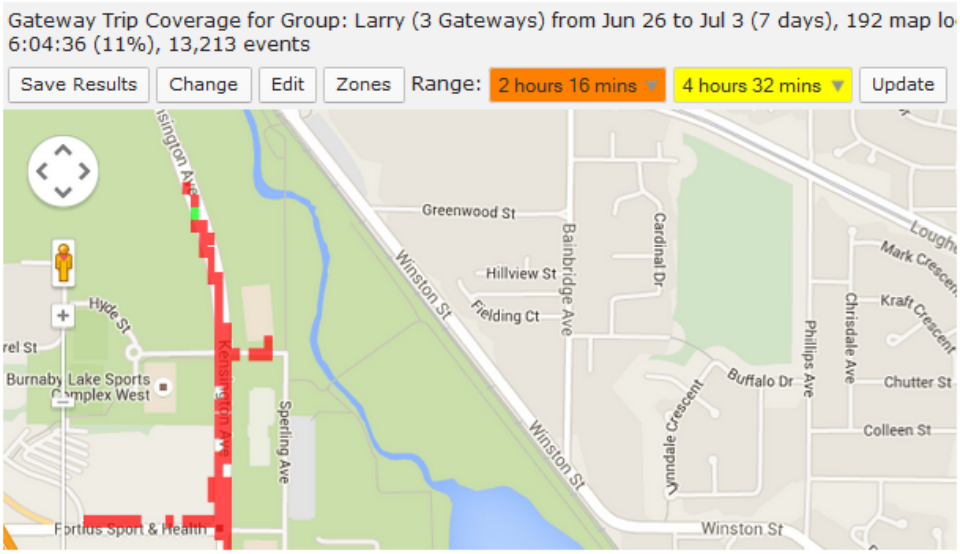


Figure 2-27: Gateway Trip Drilldown

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area*: select **Not Limited** to include data from any geographic location. Select Manually defined area to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select **One or more zones** to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. **Show locations where GPS tracking was lost:** Based on the gateway's GPS logs, it shows the locations where no GPS data was received and is represented by a black circle.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Advanced Configuration Fields

Animate results by: animates the coverage over the specified report time range, in intervals defined by this dropdown. By default, ** None ** is selected which turns animation off.

Map Resolution: defines the size of colored “blocks” presented in a map. The default resolution is auto.

Map range colors: defines the different colors used on the map to represent strengths of coverage areas (used on some coverage related reports). Click on each color to access the color picker and to change the color.

Tracker: Gateway Trips

The *Gateway Trips* report 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.

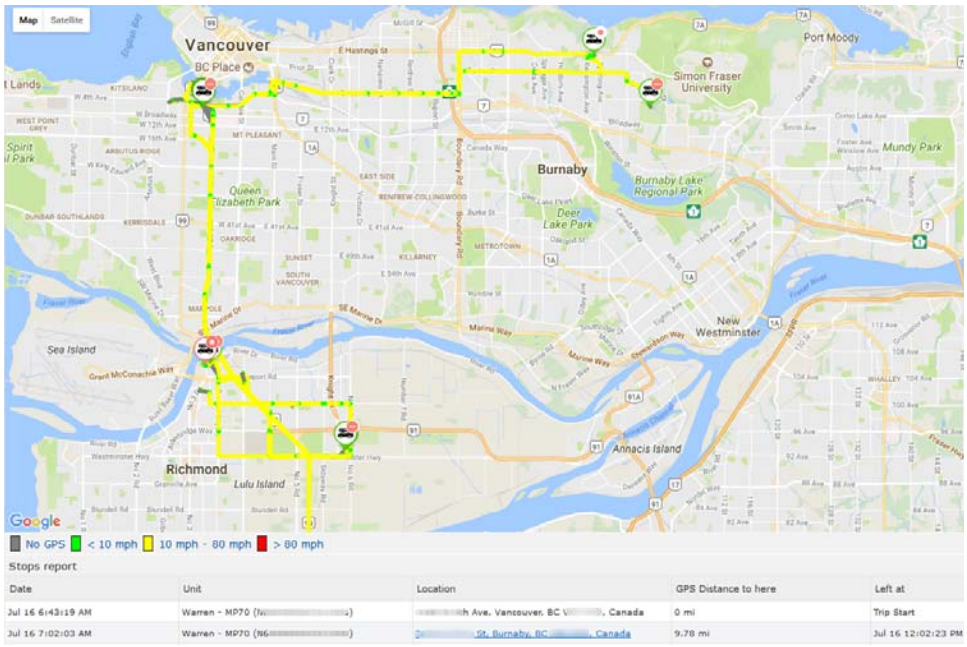


Figure 2-28: Gateway Trips Report

The report’s map shows the gateway trips, represented by a colored trail. The legend shows that green lines identify speeds under 10 mph (*Slow Speed value*), yellow lines identify speeds between 10 and 80 mph and red lines identify speeds greater than 80 mph (Speed Error value) (10 and 80 are default values). Markers identify start and end points as well as locations where the gateway stopped for an extended period of time.

The *Stops Report* data shows the extended gateway stops, their locations, the distance to the stop and the duration of the stop. The GPS Speed Report provides data where gateways in a Speed Error state. It shows the location of the error state, the top speed and the time spent in the error state.

Note: the GPS Speed Report is only shown if a gateway has exceeded the speed defined for the Speed error configuration field (see configuration fields below).

Small, medium and large icons are used to indicate locations where the gateway stops. Angled triangles are used to identify gateway direction. Red trails are used to indicate locations where a speed threshold was exceeded. Start and stop markers indicate the extent of the trip. Clicking on these map items shows an information window about that location with options to obtain additional information. 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.

Enabling *Pins* displays markers where the gateway was at every hour (on the hour). Click on a pin for a pop-up with the date/time information. Enabling *Directions* displays triangles to identify gateway direction.

If an attempt is made to run this report with more than 10 gateways, the following message will be displayed, at which point 10 or fewer gateways will need to be selected before attempting to run the report again:

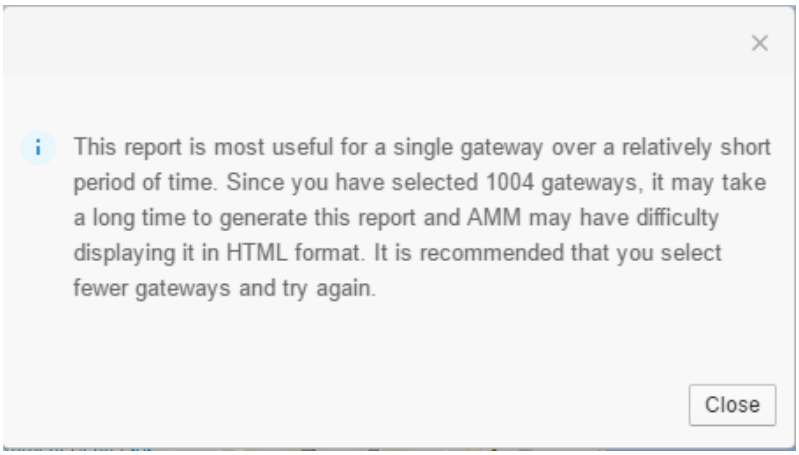


Figure 2-29: Message indicating that too many gateways are selected for the report. Close the popup and ensure that 10 or less are selected.

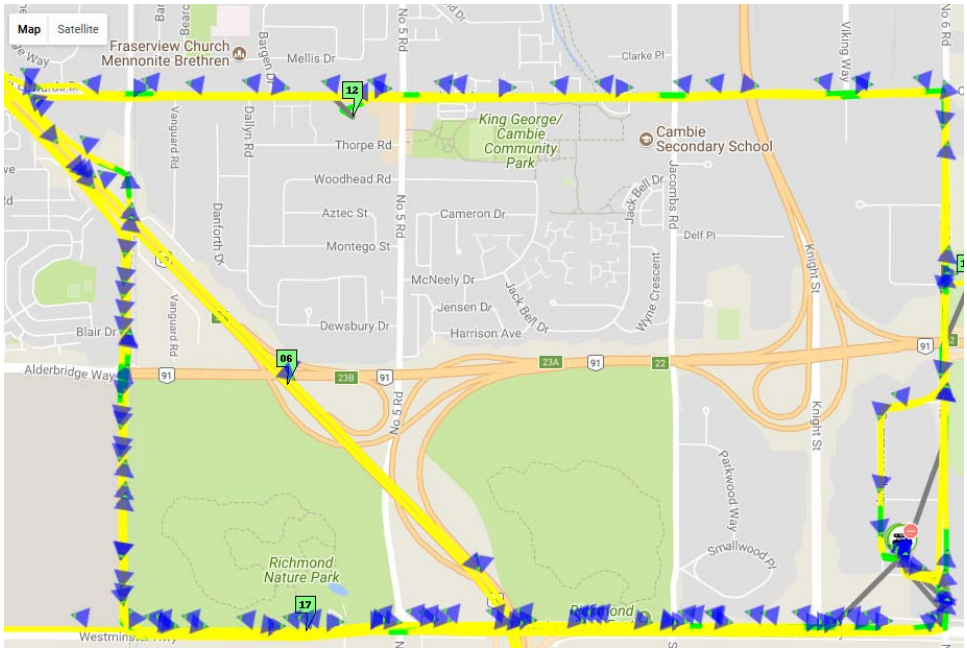


Figure 2-30: Gateway Trip Report map with Pins and Directions enabled

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Vehicle Type: specifies the type of vehicles to include in the report. Clicking this field displays the *Select a vehicle type* popup allowing for *All vehicle types* or a specific vehicle type to be selected.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area*: select **Not Limited** to include data from any geographic location. Select Manually defined area to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select **One or more zones** to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Draw each unit in a different trail color: select to use a different color for each trail. This is useful when multiple gateways are selected.

Slow Speed*: enter the value that will be considered as the slow speed. This value is represented as green.

Speed Error*: enter the value that will be considered as a speed error (i.e. speeding). This value is represented as red. The GPS Speed report will only be shown if a gateway has exceeded the value specified for this field.

Show locations where GPS tracking was lost: based on the gateway's GPS logs, it shows the locations where no GPS data was received and is represented by a black circle.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Advanced Configuration Fields

Map Resolution: defines the size of colored "blocks" presented in a map. The default resolution is auto.

Short stop*: vehicle stops are shown with small sized red icons if they have been stopped for at least this many minutes (up to the medium stop value). Default is 10.

Medium stop*: vehicle stops are shown with medium sized red icons if they have been stopped for at least this many minutes (up to the long stop value). Default is 30.

Long stop*: vehicle stops are shown with large sized red icons if they have been stopped for at least this many minutes. Default is 60.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. Select **KML** to display the generated report in Google Earth (requires that Google Earth is installed).

Tracker: Gateway Trip Trend

The *Trip Trend* report shows the distance that one or more gateways travelled for each trip taken over the specified time period. The report also shows the average speed, maximum speed, total distance travelled, total travel time, and total distance travelled for each specified time period (e.g. per day, per hour etc.). Distances are calculated from GPS data (as opposed to odometer data).

Note: The Trip Trend report is supported for ALEOS devices in AMM 2.16 and above.

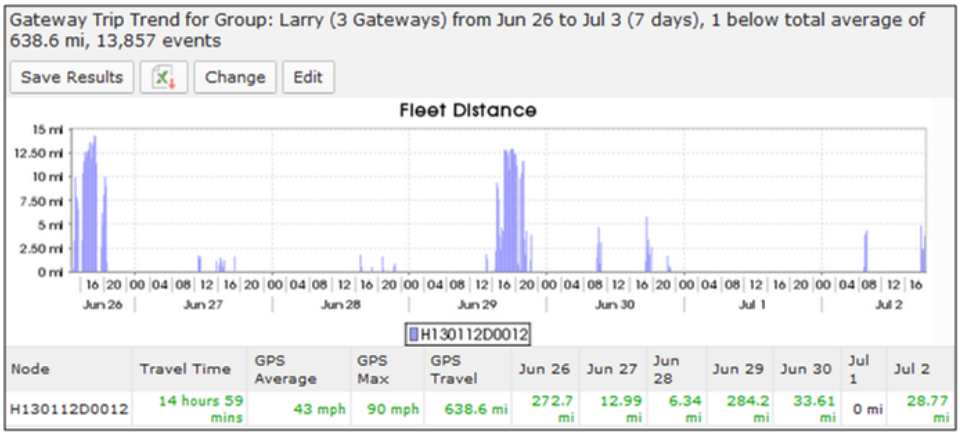


Figure 2-31: Gateway Trip Trend Report

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Vehicle Type: specifies the type of vehicles to include in the report. Clicking this field displays the *Select a vehicle type* popup allowing for *All vehicle types* or a specific vehicle type to be selected.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area*: select **Not Limited** to include data from any geographic location. Select Manually defined area to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select **One or more zones** to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel.

Save for later or schedule a run time: Enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Advanced Configuration Fields

Split graph results by: specifies the time period for which the distances travelled should be calculated and shown below the graph. By default, distance is calculated for each day of the report's time range.

Tracker: Trip Replay

The *Trip Relay* report 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.

Note: The Trip Replay report is supported for ALEOS devices in AMM 2.16 and above.

Figure 2-32: Trip Replay Report

The speed at which the report animates can be controlled by selecting a rate from the speed drop down (e.g. this is set to 10x in Figure 2-32). The animation can also be paused by clicking the *Pause* button.

When an attempt is made to run the report is run for 11 or more gateways, the following message is displayed warning that it may take a long time to generate the report. Clicking the *No* button can be used to cancel the generation of the report and reconfigure the report. Clicking *Yes* will generate the report using the current report configuration.

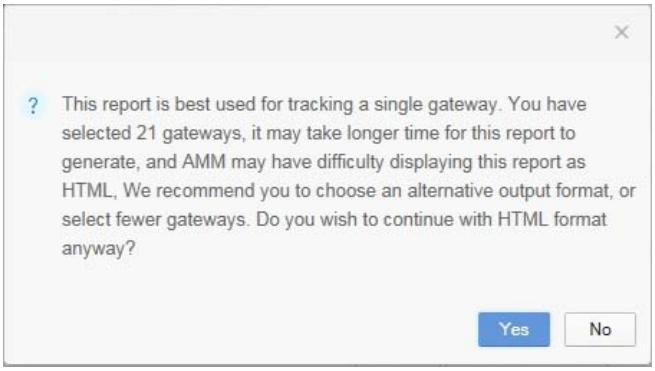


Figure 2-33: Confirmation popup that appears when 11 or more gateways are selected for the Trip Replay report.

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Vehicle Type: specifies the type of vehicles to include in the report. Clicking this field displays the *Select a vehicle type* popup allowing for *All vehicle types* or a specific vehicle type to be selected.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area*: select **Not Limited** to include data from any geographic location. Select **Manually defined area** to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select **One or more zones** to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Speed up factor*: the value for the speed used to animate the trip (e.g. if a trip took one hour, enter 60 to view the trip's animation across one minute).

Skip past times when gateway is stationary: when checked, the report will not display when the gateway is stopped (i.e. it will only show gateway movement). When checked, the replay time will be decreased.

Slow Speed*: enter the value that will be considered as the slow speed. This value is represented as green.

Speed Error*: enter the value that will be considered as a speed error (i.e. speeding). This value is represented as red.

Output Format: *HTML* is the only format supported for this report.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Appendix A for more information.

Advanced Configuration Fields

Map Resolution: defines the size of colored "blocks" presented in a map. The default resolution is auto.

Speed is represented by green, pink or red colored lines. Users may set the threshold for each speed when building the report. Slow Speed uses green lines for speeds below the value entered. Pink is used for speeds above this number but less than the *Speed Error* value. Speeds above the *Speed Error* value are shown with red lines. Where no GPS signal is available, the path between lost and regained signal will be shown as black.

Note: this report is intended to report data for small number of gateways. Selecting a large number of gateways uses a great deal of resources and will make it difficult to interpret the data.

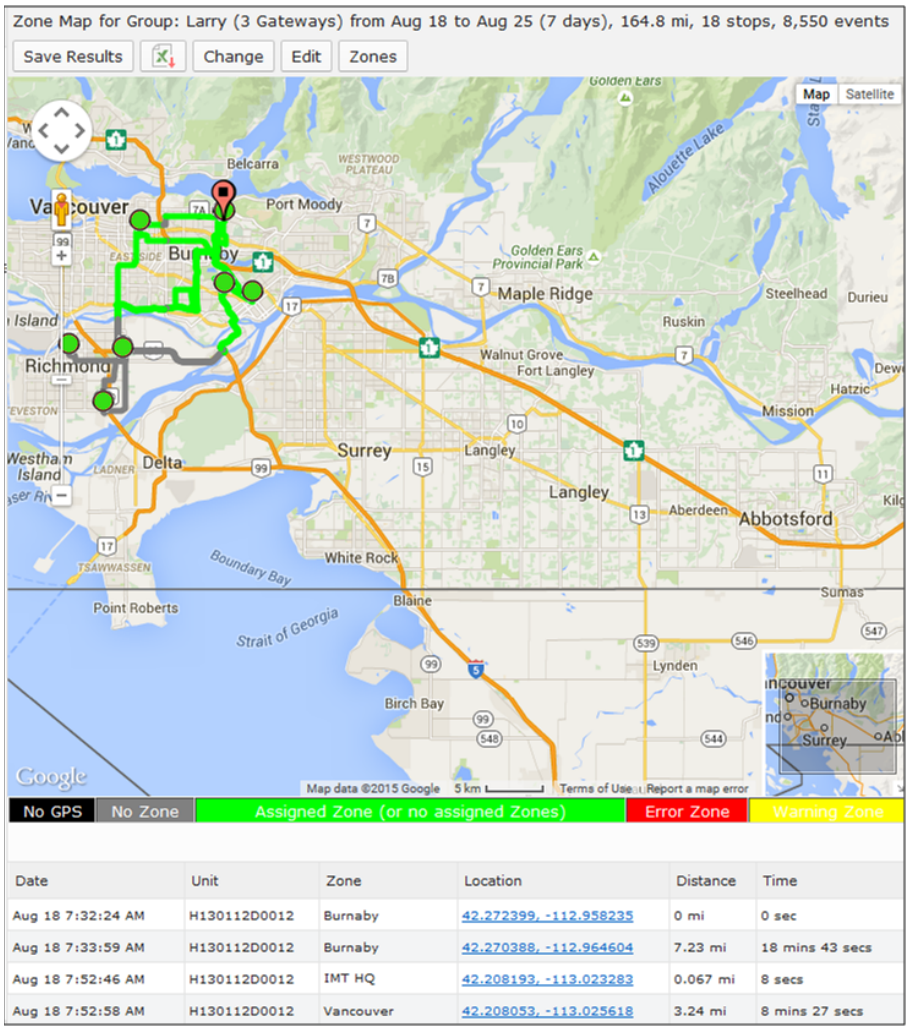
Tracker: Zone Summary

The *Zone Summary* report provides a summary of time spent, as a percentage, in different zones across one or more units.

The report provides the gateway ID, its run time and the percentage of time it spends in a zone (see the AMM Operation and Configuration guide for more information about zones). If no zone is assigned to the gateway, the report shows the run time under the *No Zone* heading.

Figure 2-34: Zone Summary Report

Click on a **Unit name** to display the data on the map. The legend shows the status colors for the gateway's trail line. Click on a marker for more information. This is the same information presented in the *Zone Map* report.



Date	Unit	Zone	Location	Distance	Time
Aug 18 7:32:24 AM	H130112D0012	Burnaby	42.272399, -112.958235	0 mi	0 sec
Aug 18 7:33:59 AM	H130112D0012	Burnaby	42.270388, -112.964604	7.23 mi	18 mins 43 secs
Aug 18 7:52:46 AM	H130112D0012	IMT HQ	42.208193, -113.023283	0.067 mi	8 secs
Aug 18 7:52:58 AM	H130112D0012	Vancouver	42.208053, -113.025618	3.24 mi	8 mins 27 secs

Figure 2-35: Zone Summary Report Map

Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Vehicle Type: specifies the type of vehicles to include in the report. Clicking this field displays the *Select a vehicle type* popup allowing for *All vehicle types* or a specific vehicle type to be selected.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range.* Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel.

Save for later or schedule a run time: Enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Tracker: Zone Times

The *Zone Times* report 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.

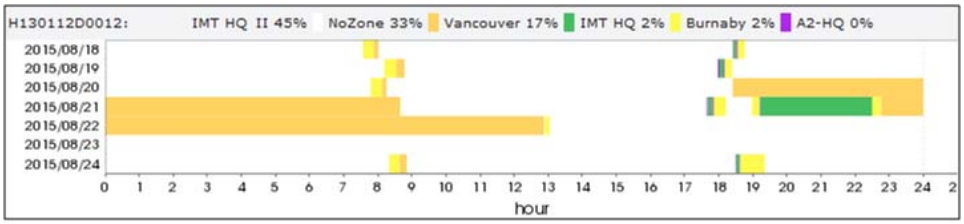


Figure 2-36: Zone Times Report

Clicking on the graph provides more detail:

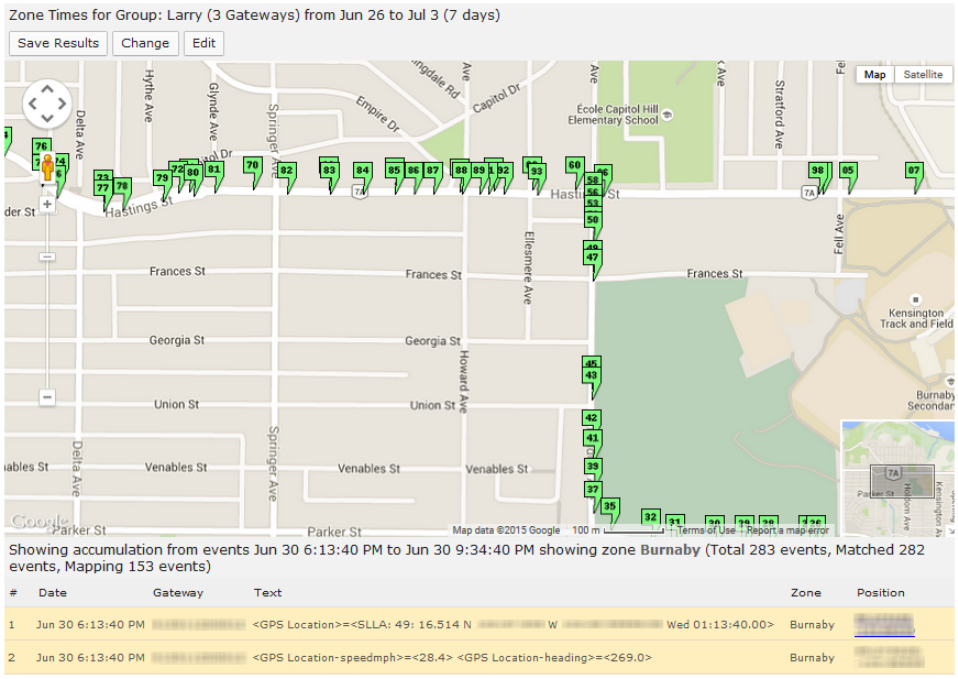


Figure 2-37: Zone Times Report Map

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Output Format: specifies **HTML** to generate the report in the browser window.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Advanced Configuration Fields

Hours per bar: defines how many hours are represented by each row in the graph, which effectively controls the “resolution” of the graph. To ensure performance when generating the report, the value must be set appropriately based on the *Report Type Range* as follows:

- Greater than 30 days: set from 24 through 1000
- Greater than 7 days: set from 12 through 1000
- Greater than 1 day: set from 1 through 1000
- One day or less: set from 0.5 to 1000. Note that values of less than 5 hours will set the graph units to be in minutes.

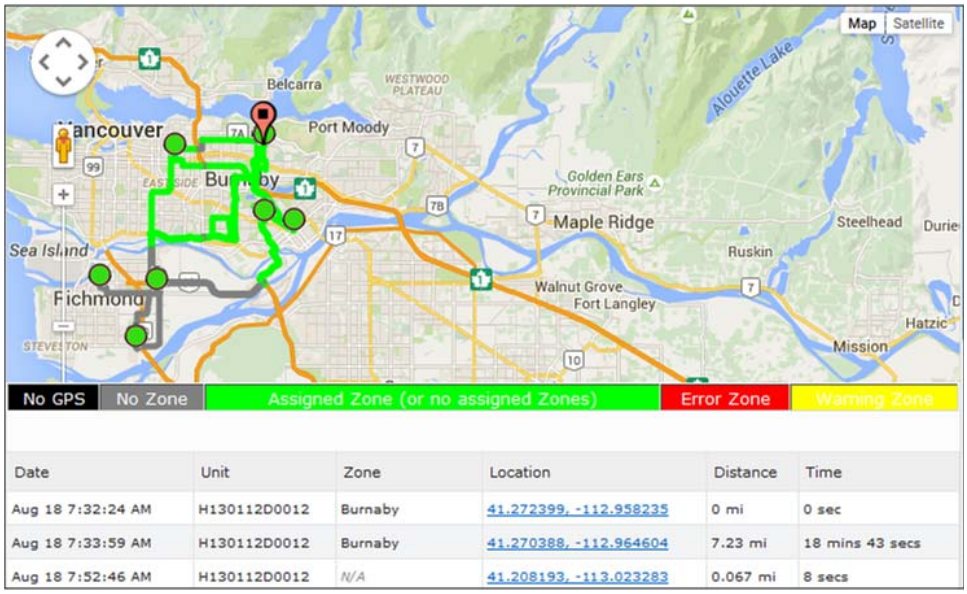
The default is *auto* which automatically selects the best value for the time range.

Show detailed Info: when enabled, mouse-over tooltips and hyperlinks will be available in the graph area of the generated report. Disabled by default.

Group all same event times: combines similar bars together into one bigger bar when **Hours per bar** is enabled.

Tracker: Zone Map

The Zone Map reports the locations of a single gateway over a specific time period. The gateway's activity is also reported as indicated by the details provided in the legend.



Date	Unit	Zone	Location	Distance	Time
Aug 18 7:32:24 AM	H130112D0012	Burnaby	41.272399, -112.958235	0 mi	0 sec
Aug 18 7:33:59 AM	H130112D0012	Burnaby	41.270388, -112.964604	7.23 mi	18 mins 43 secs
Aug 18 7:52:46 AM	H130112D0012	N/A	41.208193, -113.023283	0.067 mi	8 secs

Figure 2-38: Zone Map

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Vehicle Type: specifies the type of vehicles to include in the report. Clicking this field displays the *Select a vehicle type* popup allowing for *All vehicle types* or a specific vehicle type to be selected.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area*: select **Not Limited** to include data from any geographic location. Select **Manually defined area** to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select **One or more zones** to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Draw hourly pins (# is hour number 0-23): check to enable the use of pins to identify where the gateway was on the hour, based on a 24-hour clock.

Show locations where GPS tracking was lost: based on the gateway's GPS logs, it shows the locations where no GPS data was received and is represented by a black circle.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Advanced Configuration Fields

Map Resolution: defines the size of colored "blocks" presented in a map. The default resolution is auto.

Short stop*: vehicle stops are shown with small sized green circles if they have been stopped for at least this many minutes (up to the medium stop value). Default is 10.

Medium stop*: vehicle stops are shown with medium sized green circles if they have been stopped for at least this many minutes (up to the long stop value). Default is 30.

Long stop*: vehicle stops are shown with large sized green circles if they have been stopped for at least this many minutes. Default is 60.

Show direction every 5 positions: enable this checkbox to show vehicle direction every 5 GPS location reports. Default is *OFF*.

Tracker: Zone Crossing Summary

The *Zone Crossing Summary* report shows when a gateway left and returned to one or more pre-defined zones over the specified time period:

Zone Crossing Summary for Group: Larry (3 Gateways) from Jun 26 to Jul 3 (7 days), 13,857 events

Save Results | Change | Edit

Zone	Gateway	Zone Exit Date	Time	Zone Return Date	Time
Fleet Yard	H130112D0012	Jun 26	2:05:38 PM	Jun 29	7:36:00 PM
Highland - BBY	H130112D0012	Jun 26	1:35:18 PM	Jun 29	9:11:19 PM
Highland - BBY	H130112D0012	Jun 30	9:06:25 AM	Jun 30	5:54:14 PM
Highland - BBY	H130112D0012	Jul 2	7:45:57 AM	Jul 2	6:09:16 PM
JT Zone	H130112D0012	Jun 26	2:04:25 PM	Jun 29	7:40:29 PM
JT Zone	H130112D0012	Jun 29	9:10:52 PM	Jun 30	9:06:25 AM
JT Zone	H130112D0012	Jun 30	5:54:14 PM	Jul 2	7:45:57 AM
Average			1:57:32 PM		4:11:57 PM

Figure 2-39: Zone Cross Summary Report

Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Vehicle Type: specifies the type of vehicles to include in the report. Clicking this field displays the *Select a vehicle type* popup allowing for *All vehicle types* or a specific vehicle type to be selected.

Report time range*: use the drop-down menu to select from *Previous Months*, *Previous Weeks*, *Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area*: select **Not Limited** to include data from any geographic location. Select **Manually defined area** to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select **One or more zones** to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Drive zone(s): when set to *None*, the report will display zone crossings from all zones not specified in Exclusion Zones. When disabled, one or more inclusion zones can be specified which will filter the report to only those zones specified.

Show locations where GPS tracking was lost: based on the gateway's GPS logs, it shows the locations where no GPS data was received and is represented by a black circle.

Show trips longer than: filters the report to only show results where the vehicle was outside of the zone for more than the specified number of minutes.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel.

Advanced Reports

Advanced reports are for users of the system who have advanced knowledge in working with device log files and are located under the *Reports->Advanced* menu. There are currently two Advanced reports:

- Advanced: Event Viewer
- Advanced: Statistics Graph

Note: these reports require an advanced level of knowledge. For more information on using these reports, please contact Support.

Advanced: Event Viewer

The Event Viewer displays information contained in the log files of the selected gateway(s). This report is available for both MG and ALEOS devices.

Note: The Event Viewer report is supported for ALEOS devices in AMM 2.15 and above.

Note: this is an advanced report that is only made available to users who have a deep understanding of the information contained within gateway log files.

Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Log files to look at: allows one or more log files to be selected, from which data will be extracted and displayed in the report.

Limit to lines with text: allows for the entry of one or more text filters to be specified. These will filter the results to include only those lines from the log files that contain the specified string(s).

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. Note that the Excel option only works for reports which produce data in a table format.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Advanced: Statistics Graph

The Statistics Graph displays stat values from vehicle log files and graphs the results over time. This report is available for both oMGs and ALEOS devices.

Note: The Statistic Graph report is supported for ALEOS devices in AMM 2.15 and above.

Note: this is an advanced report that is only made available to users who have a deep understanding of the information contained within gateway log files.

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Stats for gateway type: specifies the type(s) of devices for which to generate the report. Can be set to *oMG*, *ALEOS*, or *oMG+ALEOS* to display results for the respective device types.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Stats: allows one or more stats to be selected and included in the report.

Charting: can be set to *Show all on a single chart* or *Show multiple charts for multiple stats* to show all stat values combined on a single chart or split into multiple charts respectively. Set to *No Charting* if no chart is to be shown.

Value summary Ranges: specifies the number of summary ranges that will be calculated.

Condition: a stat's subkey to use as a condition to query for results.

Convert to unit/second: when selected, the report will perform a rate calculation.

Remove vehicles with no data during report period: when selected, the report will not display any vehicles for which no data could be found in the log files for the specified reporting period.

Remove dates where no vehicles have reported: when selected, the report will leave out dates for which no vehicle data exists in the log files.

Ignore zero values: when selected, the report will leave out stats which have a value of 0 in the log files.

Access stats DB if report files come up empty: when selected, the report will use information from the internal stats database instead of event files.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. Note that the Excel option only works for reports which produce data in a table format.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Advanced Configuration Fields

Split graph results by: specifies the interval by which to separate results on the graph. Set to *Auto* to have the AMM automatically select the most appropriate interval.

3: Reports for Optional Applications

The following optional applications can be purchased for the AMM, each of which provide additional reports:

- Telemetry
- Asset Manager
- Nav[1]

For more information about these optional packages, see the respective documents listed in Related Publications or contact Support. Note that the Wi-Fi reports are only available for the Four Port Gateway, versions 3.5.1 and higher.

Telemetry

Telemetry is an optional application that collects and analyzes vehicle telemetry data to provide information about vehicle usage. The Telemetry reports are available when the optional Telemetry application has been purchased for the AMM and are located under the *Reports->Telemetry* menu. The following reports are included with Telemetry:

- Telemetry: Driving Behavior
- Telemetry: Vehicle Hours
- Telemetry: Fuel Fillup
- Telemetry: Fuel Consumption
- Telemetry: Fuel Consumption Trend
- Telemetry: Vehicle Diagnostics Report
- Telemetry: Odometer
- Telemetry: Odometer Check
- Telemetry: Unauthorized Usage

Note: Select Telemetry reports are supported for ALEOS devices in AMM 2.16 and above.

Telemetry: Driving Behavior

The *Driving Behavior* report categorizes various telemetry-based, driving behavior safety parameters (e.g. long idles, hard accelerations, excessive speeding, etc.) and summarizes them across a range of vehicles over a period of time. This report is best used with multiple vehicles.

1. Nav is no longer actively available for sale.

This report displays the warnings and errors for driving behavior. A vehicle's average and maximum speeds are also displayed, which makes it easy to identify good and poor driving behaviors. The amount of time a vehicle spent above the limits is also available. RPM, quick acceleration and hard braking data is provided in the number of occurrences.

Note: This report is supported on MG and ALEOS devices.

Note: Accelerator information will only be available with ALEOS 4.9.0 running on MP70. This information is only be used when AMM is possession of this information. If AMM does not see this information available within the requested report interval, it will default to use vehicle speed data.

Driving Behavior for Group: Larry (3 Gateways) from Jun 25 to Jul 2 (7 days), 8,543 events

Save Results | Change | Edit

Unit	VIN	Drive Time	Distance Travelled	Max Speed	Avg Speed	Speeds > 70 mph	Speeds > 80 mph	Idles > 30 mins	Idles > 1 hour	RPM > 3,500	RPM > 6,000	Hard Accels	Extreme Accels	Hard Decels
H010109D0010	N/A													
H090111E0004	N/A													
H130112D0012	FMHK	13 hours 33 mins	635 mi	88 mph	53 mph	3 hours 43 mins	58 mins 43 secs			24 mins 29 secs	0 sec	4		13
Average		13 hours 33 mins	635 mi	88 mph	53 mph	3 hours 43 mins	58 mins 43 secs			24 mins 29 secs	0 sec	4		13

Figure 3-1: Driving Behavior Report

Notes:

- **Black text**: normal
- **Orange text**: below average
- **Red text**: considerably below average
- **Green text**: best result
- **Grey text**: very low run time
- **Drive Time**: the cumulative time that the vehicle was moving

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Speed warning*: the speed to be considered the limit over which a warning state will be displayed. The default is 70 (mph).

Speed error*: the speed to be considered the limit above which an error state will be displayed. The default is 80 (mph).

Acceleration warning*: the acceleration speed (mph/second) for which a warning state will be displayed. The default is 5.

Deceleration warning*: the deceleration speed (mph/second) for which a warning state will be displayed. The default is -5. This value implies hard braking.

Acceleration / Deceleration (only supported on MP70 and MP70E running ALEOS 4.9.0+): when selected, the accelerator data from the gateway is used as the basis for acceleration and deceleration events in the report (e.g. hard acceleration and braking).

RPM warning*: the RPM value for which a warning state will be displayed. The default is 3500. This value implies high engine revolutions and can contribute to issues such as poor fuel economy.

RPM error*: the RPM value for which a warning state will be displayed. The default is 6000.

Allowed Idle Time: the time (in seconds) within which idling is not counted as part of the idling time. The default is 120 seconds.

Output Format: select HTML to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. Note that the Excel option only works for reports which produce data in a table format.

Advanced Configuration Fields

Medium Stop: the time (in minutes) after which a “medium stop” should be reported for a stopped vehicle.

Long Stop: the time (in minutes) after which a “long stop” should be reported for a stopped vehicle.

Telemetry: Vehicle Hours

The *Vehicle Hours* report shows how long a vehicle has been running including both driving time and idle time.

Note: Telemetry reports are supported for ALEOS devices in AMM 2.16 and above.

Vehicle Hours for Group: Larry (3 Gateways) from Jun 25 to Jul 2 (7 days), 1 reporting, idling for 46 mins 45 secs of 14 hours 20 mins engine run time (5%) over 635 mi, 996 events

Save Results | Change | Edit

Gateway	Totals		Jun 25		Jun 26		Jun 27		Jun 28		Jun 29		Jun 30	
	Engine On Time	Idling Time	Engine On Time	Idling Time	Engine On Time	Idling Time	Engine On Time	Idling Time	Engine On Time	Idling Time	Engine On Time	Idling Time	Engine On Time	Idling Time
H13011	14 hours 20 mins	46 mins 45 secs	56 mins 58 secs		4 hours 43 mins	11 mins 27 secs	58 mins 2 secs	12 mins 21 secs	18 mins 13 secs		5 hours 52 mins	18 mins 58 secs	1 hour 31 mins	3 mins 59 secs

Legend: Very low consumed | Least consumed | Average consumed | Most consumed

Figure 3-2: Vehicle Hours Report

Specific details about the usage for each time period are shown below the graph which includes totals for:

- **Engine On Time**: the time that engine RPM > 0
- **Idle Time**: the time that the engine RPM is greater than 0 and the vehicle speed is less than 2 mph for more than 2 minutes (to exclude normal idling at traffic lights, etc.)

Each property is also presented for each time period in the report. The report can show data for multiple gateways and will present each on a separate row of the report.

The default time period is dependent on the span of the report and is configurable using the *Split table results by* field, accessible from the report's advanced configuration screen.

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area*: select **Not Limited** to include data from any geographic location. Select Manually defined area to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select **One or more zones** to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Allowed Idle Time: the time period (in seconds) within which idling is not counted as part of the idling time. The default is 120 seconds.

GPIO devices (not applicable to ALEOS devices): specifies which GPIO pins to monitor for signals while idling. Any idle time which occurs while any of the pins have a signal will not be counted as idle time in the report. Instead, an additional *GPIO Time* column will be displayed showing the time spent idling while GPIO is in use. The default is an empty field which means that no GPIO pins (i.e. no devices) will be monitored while idling. There are eight possible pins numbered 0 through 7. To specify the GPIO pins, enter a comma delimited list. For example, to monitor idling while pins 0, 1 and 7 are active, enter 0,1,7 in this field.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. Note that the Excel option only works for reports which produce data in a table format.

Save for later or schedule a run time: Enable to create reports that can be saved for future use. See Appendix A for more information.

Advanced Configuration Fields

Split table results by: use the drop-down menu to split the report results by *None*, *Auto*, *Second*, *Minute*, *5 Minutes*, *30 Minutes*, *Hour*, *8 Hours*, *Day*, *Week* or *30 Days*. The selection should best reflect the time range (i.e. if the range is one month, splitting the result by minutes or hours may not result in a satisfactory report). The default is *Auto*.

Telemetry: Fuel Fillup

The *Fuel Fillup* report displays data on the date/time, location and fuel fill-up amounts. This report is good for correlating actual vehicle fuel fill-ups with fuel bills and for identifying areas of potential fuel savings as well as for comparing driving behavior across a fleet of the same vehicles performing the same duties. Limitation: Some vehicles may have faulty fuel sensors impacting the quality of the results. The movement of the car (braking or driving) will cause invalid fuel data as the fuel increases and decreases while the vehicle is moving.

The report displays the fuel fill-up locations on the map as numeric markers. Clicking on a marker opens a pop-up with the address of the fueling station and a list of vehicles that visited it for refueling. Additionally, the dates and fill-up amounts are provided.

Below the map, the same information is provided in text form, along with the percent filled.

This portion of the report also contains a per-vehicle summary listing each vehicle's gateway name and VIN, as well as the following parameters for the specified report period: total amount filled, count of fills, and average fill amount.

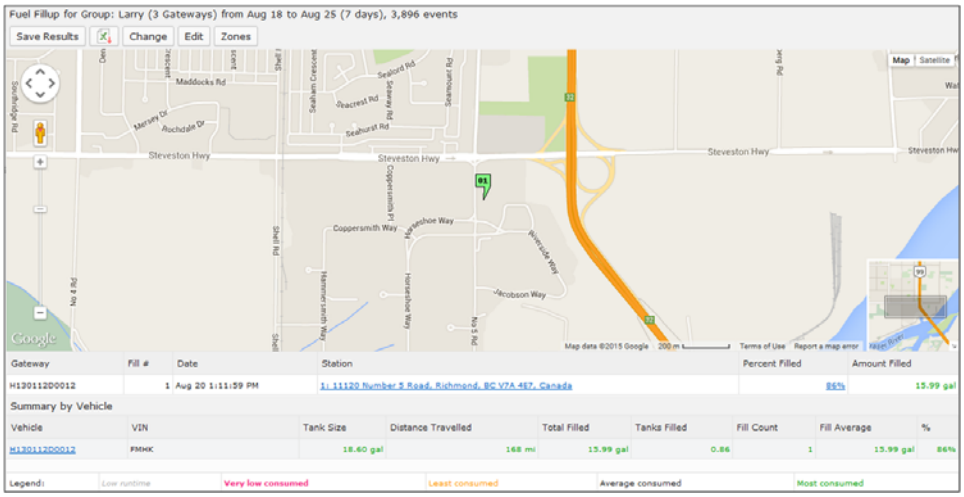


Figure 3-3: Fuel Fillup Report

In order for the report to calculate accurate fuel up amounts, the tank size of a gateway must be set on the gateway before running the report. See Configuring the Fuel Tank Size for Fuel Related Reports for more information.

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range.* Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Default Tank size*: enter the size of the fuel tank (gallons).

Minimum fill size*: enter the minimum amount of fuel to be considered as a fill-up (gallons).

Show output by: select *Vehicle* to show the fillups made by the vehicle. Select Station to show the fillups made at each station.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. Note that the Excel option only works for reports which produce data in a table format.

Save for later or schedule a run time: Enable to create reports that can be saved for future use. See Appendix A for more information.

Advanced Configuration Fields

Fuel cost*: Enter the cost of fuel (per gallon).

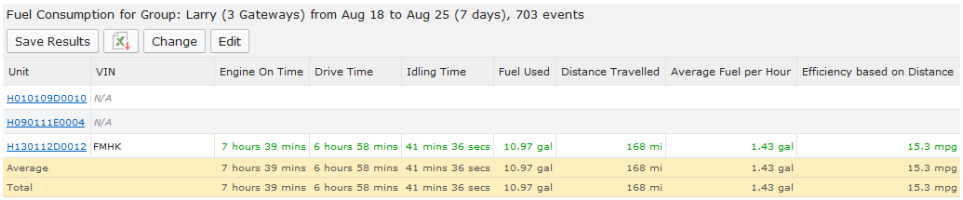
Average readings over: uses the average fuel levels over the specified period (in seconds) instead of the last known fuel level.

Telemetry: Fuel Consumption

The *Fuel Consumption* report calculates and reports the fuel consumption of a range of vehicles over a period of time. Users must provide fuel capacities and costs and this report is best used over a range of vehicles with similar fuel capacity.

Fuel consumed and the cost shown is calculated using a value returned for the percentage of fuel remaining in the tank. Several factors can affect the accuracy of this including terrain, ambient temperature and pressure. For fleets with a variety of vehicle models (i.e. different fuel tank sizes and typical fuel economy), it is recommended that similar vehicles be grouped before using this report for multiple vehicle comparisons.

Limitation: Some vehicles may have faulty Fuel Sensors impacting the quality of the results. The movement of the vehicle (braking or driving) will show invalid fuel data as the fuel increases and decreases while the vehicle is moving.



Fuel Consumption for Group: Larry (3 Gateways) from Aug 18 to Aug 25 (7 days), 703 events

Save Results | Change | Edit

Unit	VIN	Engine On Time	Drive Time	Idling Time	Fuel Used	Distance Travelled	Average Fuel per Hour	Efficiency based on Distance
H010109D0010	N/A							
H090111E0004	N/A							
H130112D0012	FMHK	7 hours 39 mins	6 hours 58 mins	41 mins 36 secs	10.97 gal	168 mi	1.43 gal	15.3 mpg
Average		7 hours 39 mins	6 hours 58 mins	41 mins 36 secs	10.97 gal	168 mi	1.43 gal	15.3 mpg
Total		7 hours 39 mins	6 hours 58 mins	41 mins 36 secs	10.97 gal	168 mi	1.43 gal	15.3 mpg

Figure 3-4: Fuel Consumption Report

In order for the report to calculate accurate fuel up amounts, the tank size of a gateway must be set on the gateway before running the report. See Configuring the Fuel Tank Size for Fuel Related Reports for more information.

Notes:

- **Black text**: normal
- **Orange text**: below average
- **Red text**: considerably below average
- **Green text**: best result
- **Grey text**: very low run time

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Default Tank size*: enter the size of the fuel tank (gallons).

Minimum fill size*: enter the minimum percentage of the tank size that qualifies as a fillup. Default is 15 (%).

Allowed Idle Time: the time (in seconds) within which idling is not counted as part of the idling time. The default is 120 seconds.

Output Format: select **HTML** to generate the report in the browser window. Select Excel to display the generated report in Microsoft Excel. Note that the **Excel** option only works for reports which produce data in a table format.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

This report displays the cumulative time each vehicle was in use including time spent idling and fuel used. The report also shows the distance travelled, fuel usage (including a per hour average) and the calculated fuel efficiency across the distance traveled.

Advanced Configuration Fields

Fuel cost*: enter the cost of fuel (per gallon).

Average readings over: uses the average fuel levels over the specified period (in seconds) instead of the last known fuel level.

Telemetry: Fuel Consumption Trend

The *Fuel Consumption* Trend report calculates and reports fuel efficiency (mpg) per time period over vehicles and date range. Trends may be the result of factors such as shift changes or peak hour driving versus off-peak driving. This report provides more details and greater information than the Fuel Consumption report.

Limitation: Some vehicles may have faulty fuel sensors impacting the quality of the results. The movement of the vehicle (braking or driving) will show invalid fuel data as the fuel increases and decreases while the vehicle is moving.

This report displays the run time for each vehicle along with the total fuel consumed and average fuel efficiency. It also provides the fuel consumption per day.

Figure 3-5: Fuel Consumption Trend Report

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Default Tank size*: enter the size of the fuel tank (gallons)

Minimum fill size*: enter the minimum percentage of the tank size that qualifies as a fillup. Default is 15 (%).

Limit to map area*: select Not Limited to include data from any geographic location. Select Manually defined area to create a temporary zone for the analysis – only data from inside this zone will be included in the report. Select One or more zones to limit the analysis to one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones).

Exclusion Zones: allows the report to exclude data from one or more predefined zones (see the AMM Operation and Configuration guide for more information about zones). Leave this option checked (default setting) to include data from any geographic location. Uncheck this option to specify zones to exclude data from.

Output Format: select HTML to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. Note that the Excel option only works for reports which produce data in a table format.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Advanced Configuration Fields

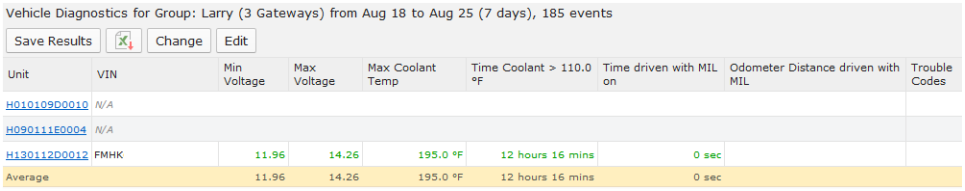
Split table results by: use the drop-down menu to split the report results by *None, Auto, Second, Minute, 5 Minutes, 30 Minutes, Hour, 8 Hours, Day, Week* or *30 Days*. The selection should best reflect the time range (e.g. if the range is one month, splitting the result by minutes or hours may not result in a satisfactory report). The default is *Auto*.

Average readings over: uses the average fuel levels over the specified period (in seconds) instead of the last known fuel level.

Telemetry: Vehicle Diagnostics Report

The *Vehicle Diagnostics* report determines diagnostic information from telemetry-sourced vehicles (i.e. MIL, voltage, and temperature) and reports on ranges of values across a fleet of vehicles and a period of time. The report is best used for many vehicles to provide a status overview for the fleet.

This report provides the minimum and maximum voltage levels to help diagnose battery and electrical issues; the maximum coolant temperature to diagnosis engine problems such as over-heating; the occurrences of MILs (malfunction indicator lamps) and the odometer distance driven with an MIL. Additionally, if there are any troubles codes (i.e. On-Board Diagnostics Parameter IDs or OBD-II PIDs) for the vehicles, they will appear in the report. Note that voltage readings are subject to cable length and will always be slightly lower than the voltage measured at the source.


Vehicle Diagnostics for Group: Larry (3 Gateways) from Aug 18 to Aug 25 (7 days), 185 events

Save Results | Change | Edit

Unit	VIN	Min Voltage	Max Voltage	Max Coolant Temp	Time Coolant > 110.0 °F	Time driven with MIL on	Odometer Distance driven with MIL	Trouble Codes
H010109D0010	N/A							
H090111E0004	N/A							
H130112D0012	FMHK	11.96	14.26	195.0 °F	12 hours 16 mins	0 sec		
Average		11.96	14.26	195.0 °F	12 hours 16 mins	0 sec		

Figure 3-6: Vehicle Diagnostics Report

Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Low voltage level*: the voltage level at which to be notified (volts). Note that voltage readings are subject to cable length and will always be slightly lower than the voltage measured at the source.

Coolant temp threshold*: the coolant level at which to be notified (Fahrenheit).

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel. Note that the Excel option only works for reports which produce data in a table format.

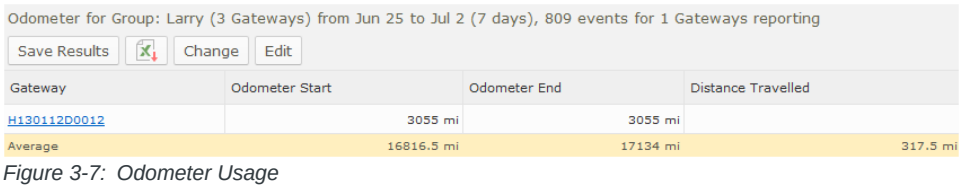
Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Telemetry: Odometer

Reports the distance traveled over a specified time range.

This report shows the initial and ending odometer readings for the specified time period for each gateway, and calculates the total distance travelled. Note that unlike the Odometer Check report (described below), this report does not compare against GPS readings to check for accuracy.

Note: Telemetry reports are supported for ALEOS devices in AMM 2.16 and above.


Odometer for Group: Larry (3 Gateways) from Jun 25 to Jul 2 (7 days), 809 events for 1 Gateways reporting

Save Results | Change | Edit

Gateway	Odometer Start	Odometer End	Distance Travelled
H130112D0012	3055 mi	3055 mi	
Average	16816.5 mi	17134 mi	317.5 mi

Figure 3-7: Odometer Usage

Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months*, *Previous Weeks*, *Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Output Format: select HTML to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel.

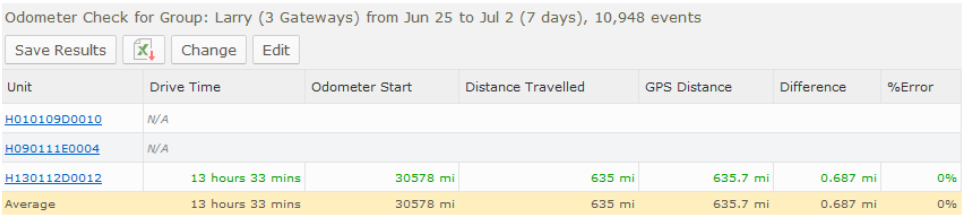
Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Telemetry: Odometer Check

The *Odometer Check Accuracy Check* report compares a vehicle's odometer and speedometer readings against similar values as reported by GPS. The differences are reported which are intended to identify potential calibration issues across a fleet of vehicles.

Note that the odometer parameter is not a standard parameter and, as such, may not be available on all vehicles. Also, if a vehicle travels in a built-up, mountainous or forested area, acquiring a GPS fix may be intermittent and cause differences between the GPS and odometer.

This report displays the run time of the vehicles, the cumulative time each vehicle was in use, the odometer reading at the start of reporting and the distance travelled. It also provides an average for the fleet.


Odometer Check for Group: Larry (3 Gateways) from Jun 25 to Jul 2 (7 days), 10,948 events

Save Results | Change | Edit

Unit	Drive Time	Odometer Start	Distance Travelled	GPS Distance	Difference	%Error
H010109D0010	N/A					
H090111E0004	N/A					
H130112D0012	13 hours 33 mins	30578 mi	635 mi	635.7 mi	0.687 mi	0%
Average	13 hours 33 mins	30578 mi	635 mi	635.7 mi	0.687 mi	0%

Figure 3-8: Odometer Check

Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

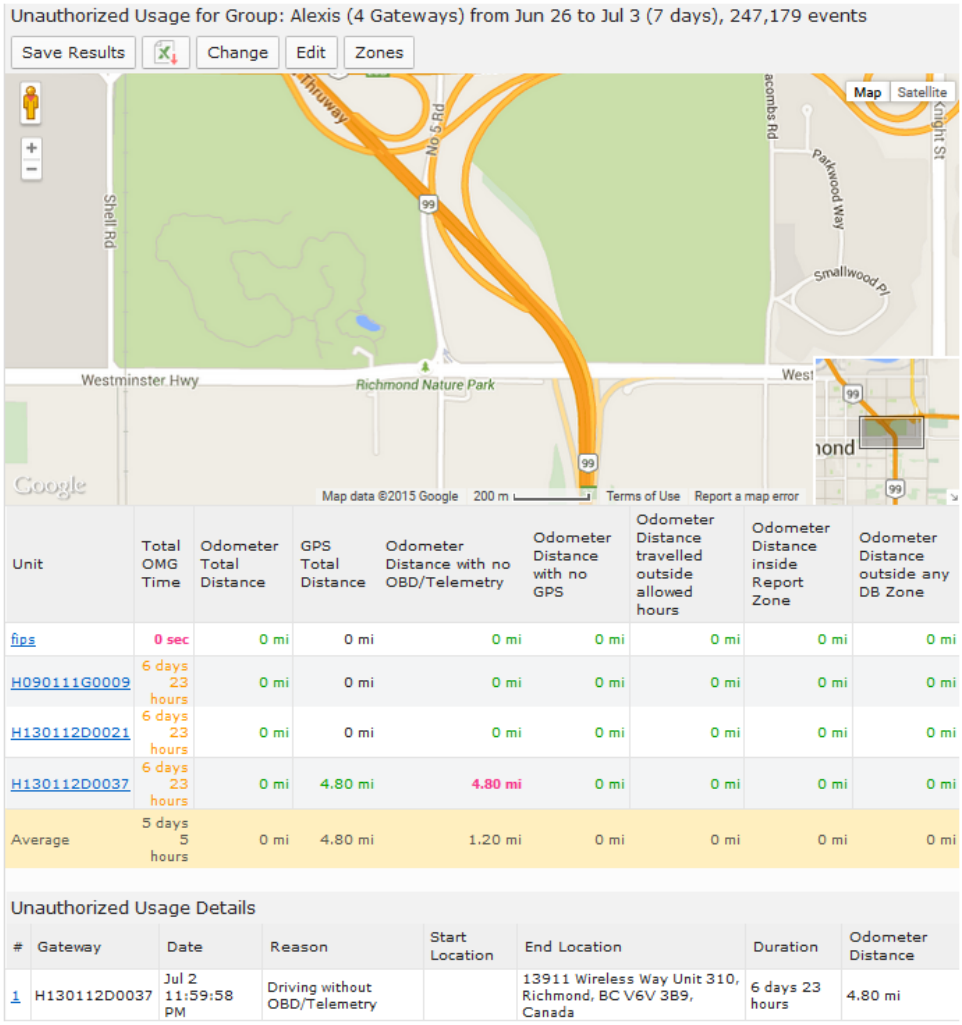
Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Telemetry: Unauthorized Usage

The *Unauthorized Usage* report details the time spent driving the vehicle while it is disconnected from the gateway (i.e. off), has no GPS (disconnected GPS antenna), outside of the defined hours, or outside of the designated zones. The intent is to detect when vehicles are being used outside of their expected use conditions.

The report example shows that, in addition to the odometer details for the vehicles, two of them have engaged in unauthorized usage, as defined by the AMM. Note the *Odometer Distance with no OBD/Telemetry and Odometer Distance with No GPS* columns. If either of these readings represent a significant portion of the total distance traveled, users should investigate them further. They could, for example, identify an employee who disconnected the GPS antenna for unauthorized vehicle use.



Unit	Total OMG Time	Odometer Total Distance	GPS Total Distance	Odometer Distance with no OBD/Telemetry	Odometer Distance with no GPS	Odometer Distance travelled outside allowed hours	Odometer Distance inside Report Zone	Odometer Distance outside any DB Zone
fips	0 sec	0 mi	0 mi	0 mi	0 mi	0 mi	0 mi	0 mi
H090111G0009	6 days 23 hours	0 mi	0 mi	0 mi	0 mi	0 mi	0 mi	0 mi
H130112D0021	6 days 23 hours	0 mi	0 mi	0 mi	0 mi	0 mi	0 mi	0 mi
H130112D0037	6 days 23 hours	0 mi	4.80 mi	4.80 mi	0 mi	0 mi	0 mi	0 mi
Average	5 days 5 hours	0 mi	4.80 mi	1.20 mi	0 mi	0 mi	0 mi	0 mi

Unauthorized Usage Details

#	Gateway	Date	Reason	Start Location	End Location	Duration	Odometer Distance
1	H130112D0037	Jul 2 11:59:58 PM	Driving without OBD/Telemetry		13911 Wireless Way Unit 310, Richmond, BC V6V 3B9, Canada	6 days 23 hours	4.80 mi

Figure 3-9: Unauthorized Usage

Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Allowed drive times: enter the times during which vehicle use is permitted (e.g. a driver's work hours). Blank implies all times are permitted.

Drive zones: select the zones (e.g. a driver's territory) within which the vehicles are expected to drive.

Output Format: Select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel.

Save for later or schedule a run time: Enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

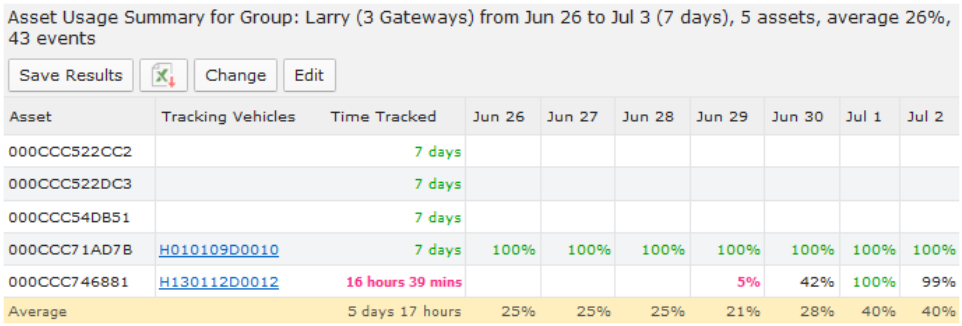
Asset Manager

The Asset Manager is an optional application for MG devices that tracks assets attached to asset tracking devices. The Asset Manager reports are available when the optional Asset Manager application has been purchased for the AMM and are located under the *Reports->Assets* menu. The following reports are included with Asset Manager:

- Assets: Asset Usage Summary
- Assets: Asset Usage Graph
- Assets: Asset History
- Assets: Vehicle Assets

Assets: Asset Usage Summary

The *Asset Usage Summary* report provides a summary view of assets managed by the fleet of vehicles. Output shows a summary of the percentage of time the Asset was in range of the gateway to which it was assigned.



Asset Usage Summary for Group: Larry (3 Gateways) from Jun 26 to Jul 3 (7 days), 5 assets, average 26%, 43 events

Save Results | Change | Edit

Asset	Tracking Vehicles	Time Tracked	Jun 26	Jun 27	Jun 28	Jun 29	Jun 30	Jul 1	Jul 2
000CCC522CC2		7 days							
000CCC522DC3		7 days							
000CCC54DB51		7 days							
000CCC71AD7B	H010109D0010	7 days	100%	100%	100%	100%	100%	100%	100%
000CCC746881	H130112D0012	16 hours 39 mins				5%	42%	100%	99%
Average		5 days 17 hours	25%	25%	25%	21%	28%	40%	40%

Figure 3-10: Asset Summary Report

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Asset: the name of the asset to report on. Clicking on this field will provide a drop down from which to select the asset.

Report time range*: use the drop-down menu to select from *Previous Months*, *Previous Weeks*, *Previous Days* or *Range*. Enter the numeric value in the field. When Range is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Advanced Configuration Fields

Split table results by: Use the drop-down menu to split the report results by *None*, *Auto*, *Second*, *Minute*, *5 Minutes*, *30 Minutes*, *Hour*, *8 Hours*, *Day*, *Week* or *30 Days*. The selection should best reflect the time range (i.e. if the range is one month, splitting the result by minutes or hours may not result in a satisfactory report). The default is *Auto*.

Assets: Asset Usage Graph

The *Asset Usage Graph* displays a time based block chart (similar to the Link Utilization report) showing asset usage over a time period.

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Asset: the name of the asset to report on. Clicking on this field will provide a drop down from which to select the asset.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Time an asset needs to be lost before marked MISSING: enter the value after which the asset is considered missing (in minutes). The default is 10.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Appendix A for more information.

Advanced Configuration Fields

Show detailed Info: when enabled, mouse-over tooltips and hyperlinks will be available in the graph area of the generated report. Disabled by default.

Hours per bar: defines how many hours are represented by each row in the graph, which effectively controls the “resolution” of the graph. To ensure performance when generating the report, the value must be set appropriately based on the *Report Type Range* as follows:

- Greater than 30 days: set from 24 through 1000
- Greater than 7 days: set from 12 through 1000
- Greater than 1 day: set from 1 through 1000
- One day or less: set from 0.5 to 1000. Note that values of less than 5 hours will set the graph units to be in minutes.

The default is *auto* which automatically selects the best value for the time range.

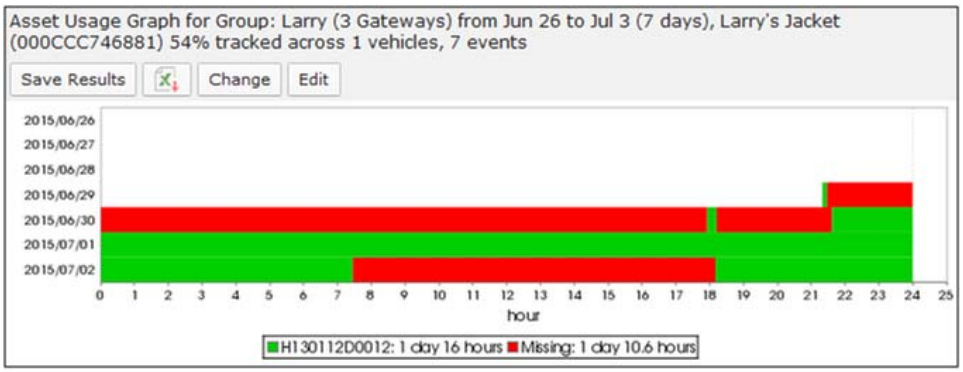


Figure 3-11: Asset Usage Graph

Assets: Asset History

The *Asset History* report provides the known history of a selected asset over a specific time range. Assets are plotted on a map and move over time. Assets can be transferred from one gateway to another and this is reflected on the map. This report is best used to track the performance of a single asset over a period of time and across one or more vehicles.

The length of time an asset is in a stationery position (stopped) is represented visually using small, medium and large circles, corresponding to the small, medium and long idle times entered. To prevent *false alarms*, it is recommended that the time an asset is away from a vehicle before being marked missing is set to at least 10 minutes. However, this will delay email alerts for assets that are left behind.

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Asset: the name of the asset to report on. Clicking on this field will provide a drop down from which to select the asset.

Report time range*: Use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area: from the drop-down menu, select the zone for which to limit the area. The default is none.

Time an asset needs to be lost before marked MISSING: enter the value after which the asset is considered missing (in minutes). The default is 10.

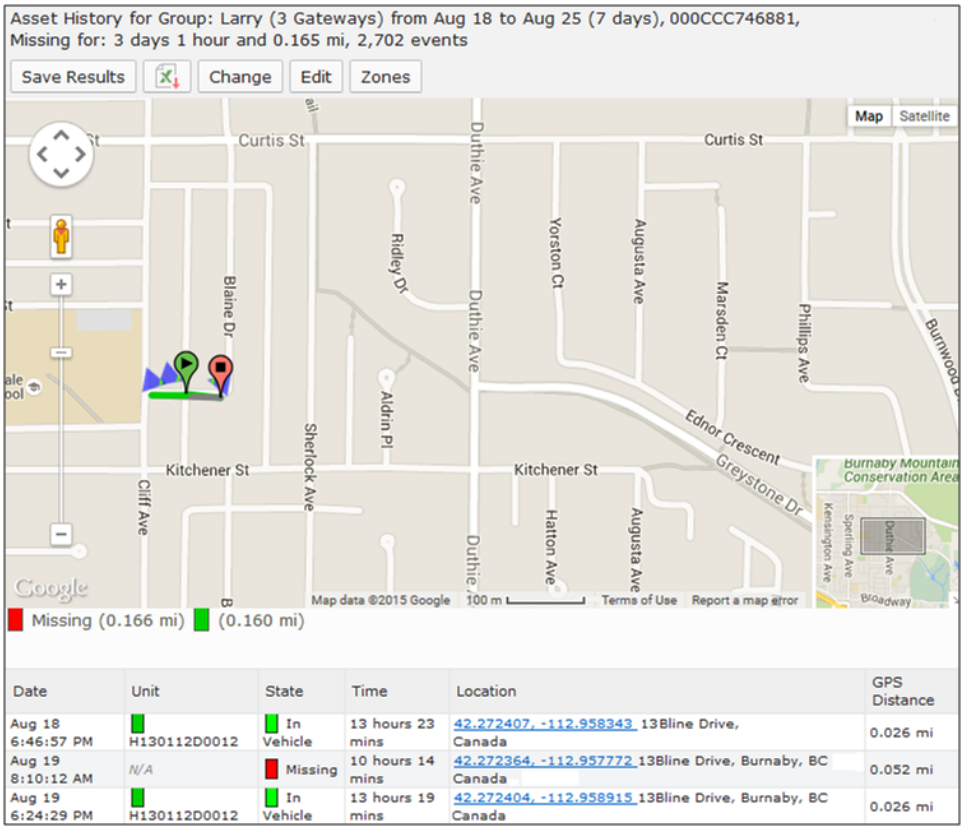
Output Format: Select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

Advanced Configuration Fields

Short, Medium, and Long stop: defines the amount of time in minutes to classify a stop as “short”, “medium” and “long”.

Map Resolution: defines the size of colored “blocks” presented in a map. The default resolution is *auto*.



Date	Unit	State	Time	Location	GPS Distance
Aug 18 6:46:57 PM	H130112D0012	In Vehicle	13 hours 23 mins	42.272407, -112.958343 13Bline Drive, Canada	0.026 mi
Aug 19 8:10:12 AM	N/A	Missing	10 hours 14 mins	42.272364, -112.957772 13Bline Drive, Burnaby, BC Canada	0.052 mi
Aug 19 6:24:29 PM	H130112D0012	In Vehicle	13 hours 19 mins	42.272404, -112.958915 13Bline Drive, Burnaby, BC Canada	0.026 mi

Figure 3-12: Asset History

Assets: Vehicle Assets

The *Vehicle Assets* report is similar to the *Asset History* except that this focuses on all assets in a vehicle over a period of time. It graphs the locations of vehicles and assets whether they are in or out of the vehicle. The report does not search for other vehicles recognizing the selected assets within this time frame. It is best used to obtain a summary of asset performance (or usage) for assets assigned to specific vehicles.

Basic Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When Range is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to map area: from the drop-down menu, select the zone for which to limit the area. The default is none.

Time an asset needs to be lost before marked MISSING: enter the value after which the asset is considered missing (in minutes). The default is 10.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Appendix A for more information.

Advanced Configuration Fields

Short, Medium & Long stop: defines the amount of time in minutes to classify a stop as “short”, “medium” and “long”.

Map Resolution: defines the size of colored “blocks” presented in a map. The default resolution is auto.

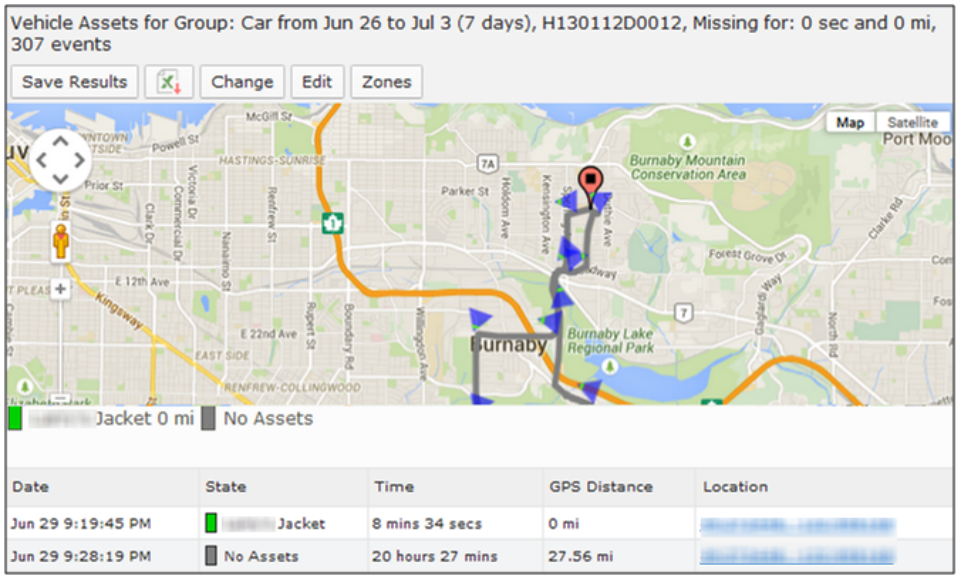


Figure 3-13: Vehicle Assets

Nav

Nav is an optional application that allows messages to be sent to and from a Garmin GPS device attached to an oMG gateway. Nav reports are available when the optional Nav application has been purchased for the AMM and are available under the *Reports->Nav*[1] menu. The following reports are included with Nav:

- Nav: Nav Events

- Nav: Nav Stops
- Nav: Nav Stop History

Nav: Nav Events

The *Nav Events Report* provides the raw events that were uploaded by the gateways for Nav activities. The output provides convenient access to Nav log files and is intended as an easy way to query Nav log files. However the information contained within them is complex in nature and not easily understood, and therefore generally used by Sierra Wireless staff for troubleshooting activities.

Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Nav events to look at: select the events to include in the report. Default is *All*.

Limit to lines with text: used to limit the report based on the text entry selected.

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.

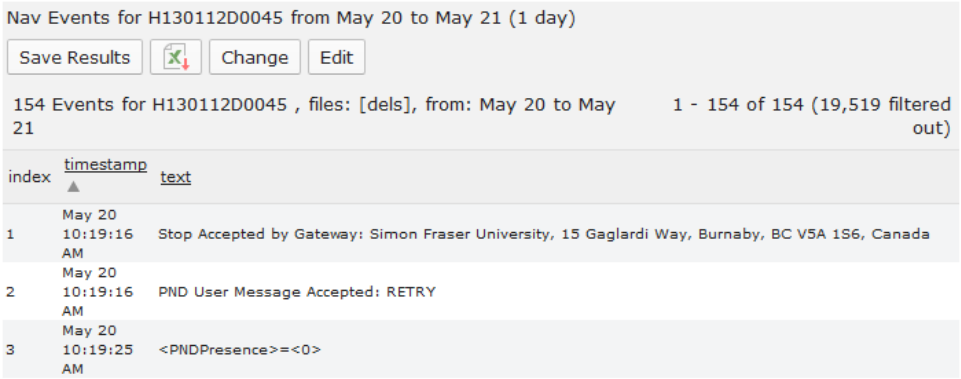


Figure 3-14: Nav Events

1. Nav is no longer offered for sale. It remains supported for existing customers on oMG devices, but is not available for new deployments, or supported on the MG90.

Nav: Nav Stops

The *Nav Stops* report lists all of the stops (addresses) that have been sent to the Garmin PND in the time range specified. Included in the report is the time that the stop was sent to the PND and the time the stop information was last updated. The response of the driver changes the state; once read by the driver the state changes to *Received*. If a driver rejects the site the state changes to *Rejected*. The following is a list of all possible states for a stop:

- **No Route** – this is the initial state for the PND
- **Timed Out** – the AMM did not receive the acknowledgment from the gateway (not the driver) within the timeout interval (30 sec)
- **Deleted** – the stop was deleted on the AMM
- **Pending** – the AMM is waiting for the gateway to acknowledge receiving the stop
- **Rejected by Gateway** – the gateway has rejected the stop; this could be due to ID collisions, a malformed stop, or invalid data
- **Received by Gateway** – the stop has been received at the gateway (and it has sent an acknowledgement of the reception to the AMM)
- **Acknowledged** – the driver has read the stop but has not yet responded
- **Completed** – the driver arrived at the stop
- **Driver Deleted** – the driver deleted the stop
- **En Route** – the driver is en route to the stop

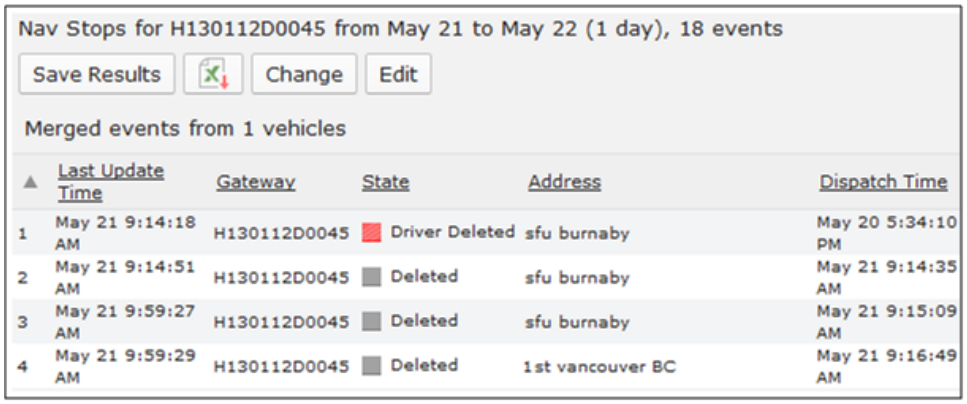
Configuration Fields

Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Output Format: select **HTML** to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.



Nav Stops for H130112D0045 from May 21 to May 22 (1 day), 18 events

Save Results | Change | Edit

Merged events from 1 vehicles

	Last Update Time	Gateway	State	Address	Dispatch Time
1	May 21 9:14:18 AM	H130112D0045	Driver Deleted	sfu burnaby	May 20 5:34:10 PM
2	May 21 9:14:51 AM	H130112D0045	Deleted	sfu burnaby	May 21 9:14:35 AM
3	May 21 9:59:27 AM	H130112D0045	Deleted	sfu burnaby	May 21 9:15:09 AM
4	May 21 9:59:29 AM	H130112D0045	Deleted	1st vancouver BC	May 21 9:16:49 AM

Figure 3-15: Nav Stops

Nav: Nav Stop History

Provides convenient access to Nav log file. Information contained within is complex in nature and not easily understood. Best used only by those prepared to decode it. Intended as an easy way to query Nav History log file.

Configuration Fields

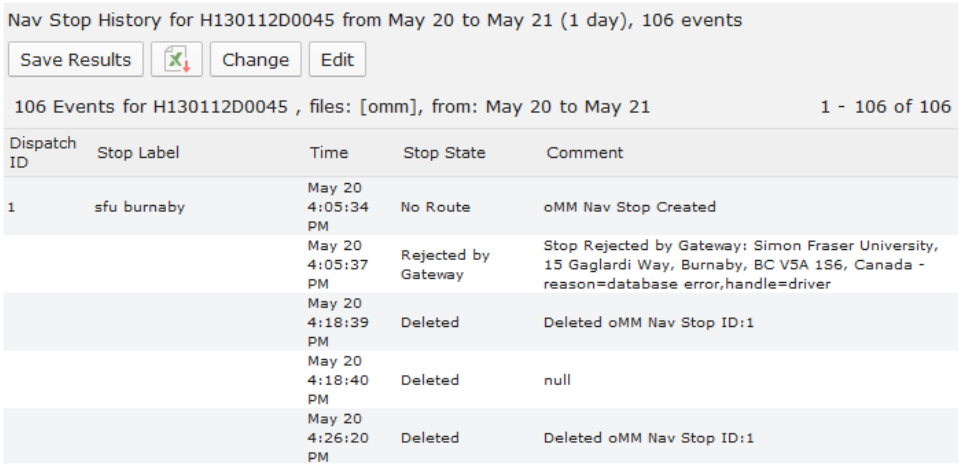
Gateway(s)*: by default this is set to the gateway(s) selected in the gateway tree. Enter the name(s) manually to modify this field. Click on **Filter** to open the sub-filter options.

Report time range*: Use the drop-down menu to select from *Previous Months, Previous Weeks, Previous Days* or *Range*. Enter the numeric value in the field. When *Range* is selected, use the calendar pop-up to select the dates. Alternatively, enter the date and time manually (yyyy/mm/dd hh:mm).

Limit to lines with text: used to limit the report based on the text entry selected.

Output Format: select HTML to generate the report in the browser window. Select **Excel** to display the generated report in Microsoft Excel.

Save for later or schedule a run time: enable to create reports that can be saved for future use. See Saving and Scheduling a Report for a Later Run Time for more information.



Nav Stop History for H130112D0045 from May 20 to May 21 (1 day), 106 events

Save Results | Change | Edit

106 Events for H130112D0045 , files: [omm], from: May 20 to May 21 — 1 - 106 of 106

Dispatch ID	Stop Label	Time	Stop State	Comment
1	sfu burnaby	May 20 4:05:34 PM	No Route	oMM Nav Stop Created
		May 20 4:05:37 PM	Rejected by Gateway	Stop Rejected by Gateway: Simon Fraser University, 15 Gaglardi Way, Burnaby, BC V5A 1S6, Canada - reason=database error,handle=driver
		May 20 4:18:39 PM	Deleted	Deleted oMM Nav Stop ID:1
		May 20 4:18:40 PM	Deleted	null
		May 20 4:26:20 PM	Deleted	Deleted oMM Nav Stop ID:1

Figure 3-16: Nav Stop History

A: Saving and Scheduling a Report for a Later Run Time

All report configurations contain the setting Save for later or schedule a run time which can be enabled to create and save reports for future use.

Note: reports scheduled for future generation can be viewed from the Reports->Saved Templates menu. Generated reports can be accessed from the Reports->Generated Reports menu. For more information see the AMM Operation and Configuration Guide.

Enabling this setting provides the following sub options:

Report Name: the name to assign to the saved report.

Generate every: the frequency at which to generate the report. Selecting Do not generate disables generation. Selecting Once only generates the report one time.

Start Reporting: specifies when to start generating the report.

Stop Reporting (optional): specifies when to stop generating the report. Available only when Generate every is set to a frequency (i.e. day, week, etc.).

Report Owner: specifies the name of the user to assign as the person who owns the report.

Send generated reports to Report Owner: when enabled, the report will be sent to the email address of the specified owner.

Also email results to: a comma delimited list of additional email addresses to send the report to.

Retain results for: the number of days to retain the report results.

B: Product Support for Reports

The following table lists the reports available on the AM and AMM.

Table 2-1: AM vs AMM Reports

Feature	AM	AMM	ALEOS Support
Reports			
Network->Availability Trend*	☑	☑	
Network-> Availability Details*	☑	☑	
Network->Coverage Map*	☑	☑	☑ AMM 2.16+
Network->Coverage Trails*	☑	☑	☑ AMM 2.16+
Network->Link Utilization* (for ALEOS, requires 4.8.0+)	☑	☑	☑ AMM 2.16+
Network-> Cellular Network Inventory	☒	☑	
Network-> Cellular Technology Map	☒	☑	
Network-> Cellular Technology Trail	☒	☑	
Network-> VPN Utilization	☒	☑	
Bandwidth-> Bandwidth Consumption*	☑	☑	☑ AMM 2.16+
Bandwidth-> Bandwidth Coverage Map	☒	☑	
Bandwidth->Top Client Activity	☒	☑	
Bandwidth-> Client Usage Map	☒	☑	
Bandwidth->Client History	☒	☑	
Bandwidth-> Client Services	☒	☑	
Telemetry-> Driving Behavior*	☒	☑	☑ AMM 2.16+
Telemetry->Vehicle Hours*	☒	☑	☑ AMM 2.16+
Telemetry-> Fuel Fillup	☒	☑	

Table 2-1: AM vs AMM Reports

Feature	AM	AMM	ALEOS Support
Telemetry-> Fuel Consumption	☒	☑	
Telemetry-> Fuel Consumption Trend	☒	☑	
Telemetry-> Vehicle Diagnostics	☒	☑	
Telemetry-> Odometer*	☒	☑	☑ AMM 2.16+
Telemetry-> Odometer Check	☒	☑	
Telemetry-> Unauthorized Usage	☒	☑	
Tracker-> Gateway Trip Trend*	☒	☑	
Tracker-> Gateway Trips*	☒	☑	☑ AMM 2.16+
Tracker-> Gateway Trip Coverage	☒	☑	
Tracker-> Trip Replay*	☒	☑	☑ AMM 2.16+
Tracker-> Zone Summary	☒	☑	☑ AMM 2.16+
Tracker-> Zone Times	☒	☑	
Tracker-> Zone Map	☒	☑	
Tracker-> Zone Crossing Summary	☒	☑	
Assets-> Asset Usage Summary[a]	☒	☑	
Assets-> Asset Usage Graph[a]	☒	☑	
Assets->Asset History[a]	☒	☑	
Assets-> Vehicle Assets[a]	☒	☑	
Nav-> Nav[b]	☒	☑	
Nav-> Send Message[b]	☒	☑	
Nav-> Message List[b]	☒	☑	

Table 2-1: AM vs AMM Reports

Feature	AM	AMM	ALEOS Support
Diagnostics->Shutdown Reason	☒	☑	
Diagnostics->Configuration Audit	☒	☑	
Advanced->Event Viewer*	☑	☑	☑ AMM 2.15+
Advanced->Statistics Graph*	☑	☑	☑ AMM 2.15+

a. Asset Manager is only supported on MG devices.

b. Nav is no longer offered for sale. It remains supported for existing customers on oMG devices, but is not available for new deployments, or supported on the MG90.

* Report supported on both MG and ALEOS devices.

C: Miscellaneous Report Procedures

Configuring the Fuel Tank Size for Fuel Related Reports

The Telemetry: Fuel Fillup and Telemetry: Fuel Consumption Trend reports require that the tank size be specified for a gateway before those reports are run on that gateway. To set the tank size:

1. Right click on the gateway in the gateway tree and select details:

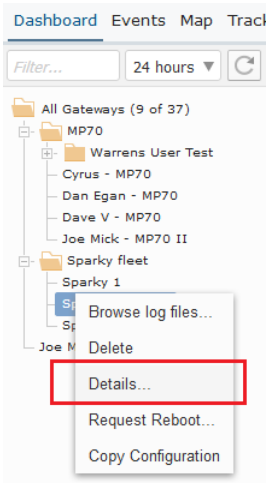


Figure 3-1: Accessing the Details Screen

2. Navigate to the *Notes* field and enter the tank size in the form of *tanksize=<size>* (e.g. tanksize=18.8):

Figure 3-2: Specifying the tank size for use with the fuel reports.

3. Click **Save**.
4. Repeat the previous steps for any other gateways on which the report will be run.
5. Proceed to run the report.