

Datalink Systems Inc

Wireless Data Solutions

DataHost Manual (4.2)

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The screenshot displays the DataHost software interface. At the top, there is a menu bar with options: File, View, Map, Asset, Help. Below the menu is a toolbar with icons for Properties, Send Msg, Poll, Configure, Outputs, Reports, Go To, Follow, Geofence, Track, Zoom Out, Zoom In, Back, Fwd, Icons, and Stops.

The main window is titled "DataHost - 1 New Message". It features a yellow header bar with "1 New Message" and links for "Show First New Msg" and "Show All".

On the left side, there is an "Assets" panel listing several demo assets: Edmonton Demo, LA Demo, New Orleans Demo, Nova Scotia Demo, Toronto Demo, and Vancouver Demo (selected). Below this is a "Properties - Vancouver Demo" section showing details such as Last Transmission, Network, Last Position, GPS Time, GPS Signal, Speed, Heading, Latitude, Longitude, Location, Cell ID, Cell LAC, and Cell RSSI.

The central area displays a "Messages - Vancouver Demo" list:

Message	Time
Maintenance due (Oil change)	02/10/2012 11:29:21 PM
✓ Poll	02/10/2012 11:42:49 PM
Maintenance due (Oil change)	02/10/2012 11:43:22 PM
✓ Test Message	02/10/2012 11:43:25 PM
✓ Got it	02/10/2012 11:43:30 PM

On the right side, there is a map of the United States with various states labeled. A red dot is located in the Northeast region, and a green arrow points to a location in the West. The map is powered by Google and includes a "Map data ©2012 Google, INEGI" footer.

At the bottom of the interface, there is a log of messages:

```

2012/10/02 23:43:49 (server) <RX> Vancouver Demo Position
2012/10/02 23:43:59 (server) <RX> Vancouver Demo Position
2012/10/02 23:44:09 (server) <RX> Vancouver Demo Position
2012/10/02 23:44:19 (server) <RX> Vancouver Demo Position

```

The status bar at the bottom indicates "Using file directory c:\DataHost\Data\" and "Connected to 192.168.1.65".

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1.0 DataHost Overview

DataHost is the end-user software application for the DataNet network. It is designed to run on a user's PC, connecting to the DataGate server over a LAN or Internet connection. When connected to the server, DataHost can communicate with remote assets - decoding their positions, sending and receiving messages, and configuring asset settings. DataHost also has an interface to several mapping programs, providing real-time vehicle tracking and historical replays.

The DataGate server is normally configured to buffer all data from remote assets if a DataHost is offline for any reason. This means that you will not lose any data if you turn your PC off, or your Internet link drops. The next time you start your DataHost, the buffered information will be forwarded to you automatically.

2.0 Installation

2.1 System Requirements

- Microsoft Windows 98 or later operating system (with latest service packs)
- Supports Windows 7 (32 and 64 bit) and Windows Server 2008
- Pentium-class processor or better recommended
- 20 MB hard-disk space for program files
- Additional hard-disk space required for mapping programs and historical data
- 1024x768 16-bit colour display or higher recommended
- Sound card recommended

2.2 Software Installation

DataHost is available as a setup executable from the Datalink website:

<http://www.datalinksystemsinc.com/download.html>

This installation should be run under an Administrator account. Download and run the executable file to start the setup process. A User Account Control window may prompt you to allow the setup program to make changes to your computer. Select “Yes” to continue with the setup.

The DataHost installation wizard will then appear (see Figure 1) to guide you through the setup.



Figure 1 – Installation program

During the installation, a search is made for a previous DataHost installation. If one is found, the existing configuration file location will be used. If this is a new installation then you will be prompted to select a shared or individual setup. When using a shared setup, the configuration file location can be selected as part of the install process. In this case, choose a file location that will be accessible by all users. Selecting an individual setup will cause the configuration file to default to the %APPDATA%\DataHost folder, which will generate separate ini files for each user.

It is recommended that DataHost operators periodically check the Datalink downloads website for updated versions. Updates can be installed over the top of the current program. No data or history files will be overwritten when updating.

DataHost may be uninstalled using the Add/Remove Programs feature on the Windows Control Panel. Note that data and history files will not be erased during this process.

2.3 Initial Settings

When the set-up program completes, there will be a shortcut to DataHost in the Windows Start menu under "Start/All Programs/DataNet" (assuming the default program group was selected during the set-up process), and also on the Desktop and/or quick launch toolbar if selected.

The first time DataHost is loaded, it will prompt the user for initial set-up information. These settings are required for the DataHost to connect to the DataGate server, through which all data communications take place. Figure 2 shows the initial screen.

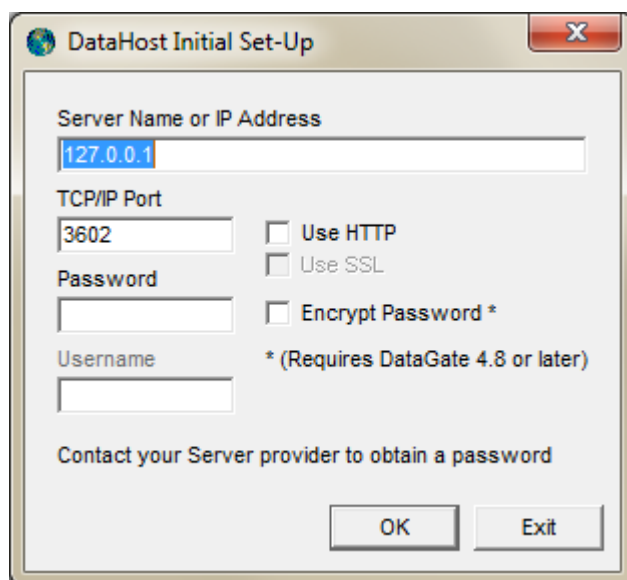


Figure 2 – Initial settings

Select the appropriate server address and login details to continue. These options will be supplied to you by the server operator. When DataHost loads, it will prompt the user to create configuration and data folders (see section 10.0 for a list of the data and log files used). The data storage directory can be changed under the Options menu.

2.4 Mapping

If mapping is required, the map program may need to be installed separately. DataHost currently supports Microsoft MapPoint, Bing Maps, Google Maps, Streets on a Disk, ArcView Tracking Analyst, and Google Earth. Maps are configured through the View/Options menu (see section 9.2).

3.0 Screen Layout

Figure 3 shows the main DataHost window. The title and icon of the application show the current DataHost status. At the top of the window is a toolbar, which provides access to the most frequently used DataHost functions. Directly underneath this is a message status bar, which provides a quick way to access new messages.

Three list boxes provide details about the assets being tracked. The Assets list shows the complete list of assets this DataHost has access to. The Properties and Messages lists contain details about the currently selected asset. At the bottom of the window is a log list box showing recent data communications.

If MapPoint, Bing or Google Maps are enabled, a map will be shown on the right side of the window. Each part of the window can be resized by dragging the list/map borders. Along the bottom edge of the window is a status bar showing the data storage location and current connection state.

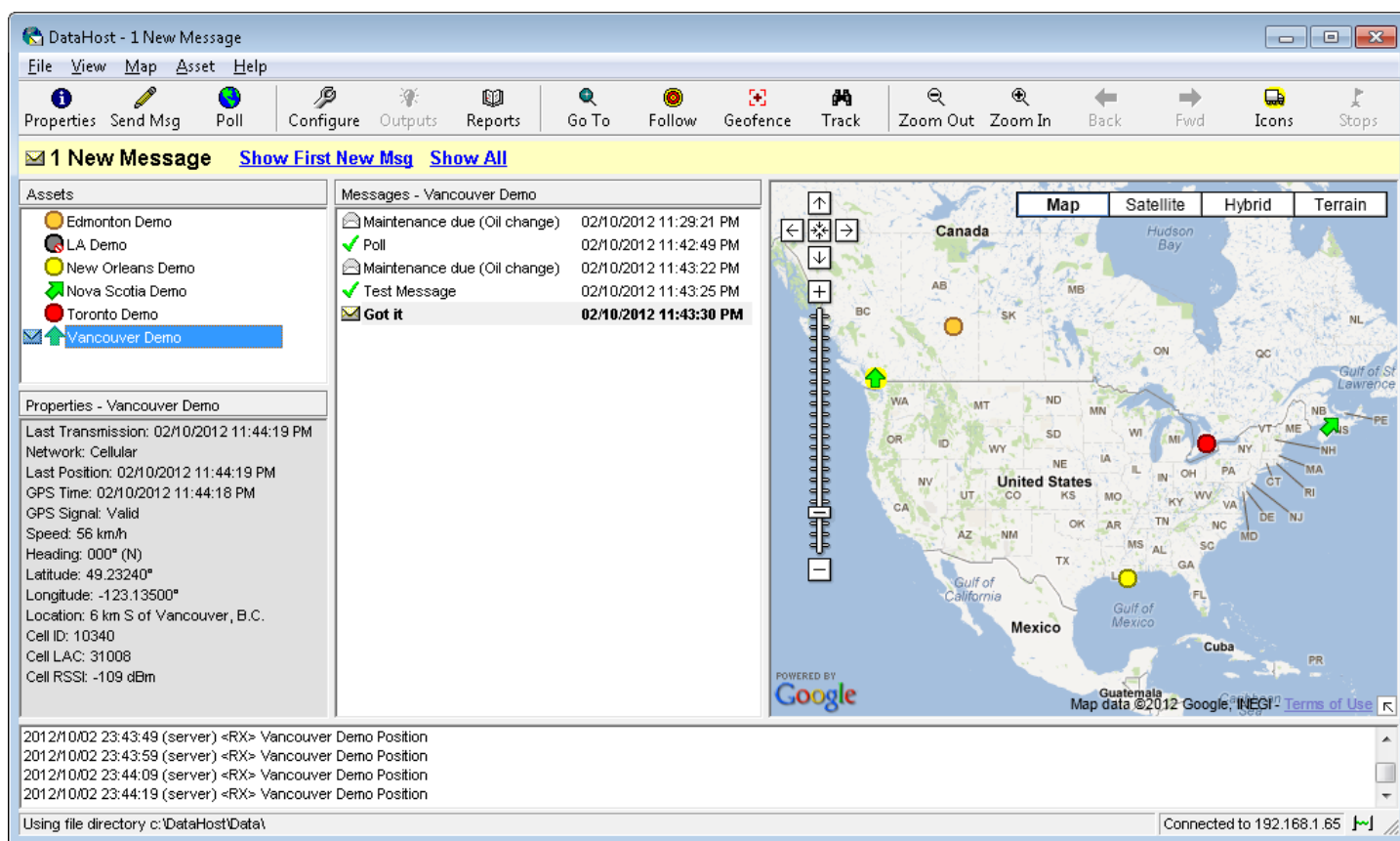






Figure 3 – Main DataHost window

3.1 Application Title/Icon











DataHost will change its application title and icon (shown at the top left of the window, and in the Windows taskbar) depending on its connection and message status. The title changes to indicate if there are any new messages, and the icon changes as follows:

	DataHost is online with no new messages
	DataHost is online with one or more new messages
	DataHost is online with one or more high priority messages
	DataHost is offline






When DataHost is offline, the log window will turn red to warn the user.

3.2 Toolbar

The toolbar provides quick access to several functions. These functions are also accessible through the Map and Asset menus, or by right-clicking on the asset list (or map). The following functions are available, depending on the currently selected asset and configuration:

	Properties	Open asset properties window (see section 5.3).
	Send Msg	Send a message to the asset (see section 5.13).
	Poll	Request the current position of the asset.
	Configure	Open the asset configuration window, for remotely sending and retrieving device settings (see section 5.5).
	Outputs	Control asset outputs (see section 5.5).
	Reports	Create reports about this asset from history data (see section 6.0).
	Geofence	Monitor the asset's position, and show an alert if it moves a certain distance (see section 5.7).
	Track	Show the asset's distance and heading to a preset location (see section 5.8).
	Icons	Show an icon legend.
	Stops	Send a stop location list to an asset (see section 5.10).

The following options will only be available when supported by the currently selected map:

	Go To	Centre the asset on the map. Note that the zoom level of the map will not be changed when this function is selected. To zoom in or out, use the zoom functions.
	Follow	When following, the map will move to keep the asset on screen. To stop following, simply click the "Follow" button a second time (see section 5.6).
	Zoom Out	Shows a larger area of the map.
	Zoom In	Shows a smaller area of the map.
	Back/Fwd	Go to the previous or next map location.

3.3 Message Status Bar

The message status bar is located directly under the toolbar. Normally this bar will be a dark grey colour, and will show “No New Messages”. If a new message is received, the bar will change to a yellow colour, and indicate the number of unread messages. If a high priority message is received, the bar will turn red (see section 5.18). This bar will remain coloured until all new messages have been read (opened). When new messages are available, the bar provides shortcuts to open the first new message, or to show all messages (also available from the View/Communications menu).

3.4 Assets List

Use the Assets list box to select an asset. When an asset is selected, both the Properties and Messages lists will be updated for that asset. See section 5.1 for more information.

3.5 Properties List

The Properties list shows the most recent information received from the selected asset. The fields displayed depend on device type and configuration. See section 5.2 for more information.

3.6 Messages List

The Messages list box shows any messages and/or packets sent or received for the selected asset. See section 5.11 for more information.

3.7 Map Display

If maps have been enabled, each asset is shown on the map unless it has been hidden (see section 5.1) or does not have a valid position. MapPoint, Bing and Google Maps are built-in to the DataHost window, while other maps run as separate applications. See section 6.0 for more details. Using the built-in maps provides a more interactive experience, as follows:

Selecting an asset on the map will automatically select it on the Assets list (and therefore the Properties and Messages lists). Right clicking on the map brings up the map menu (also accessible from the main menu). This menu provides shortcuts to common map functions and display adjustments. The maps use the same icons as shown in the assets list. To zoom in or out on the map, use the “Zoom In” and “Zoom Out” buttons on the toolbar.

3.8 Log List

The data communications log shows all data transmitted to and received from assets, as well as other information such as connection messages. When DataHost is started, it will attempt to connect to the DataGate server (as set-up in the Options window). If no connection can be made, it will retry periodically. In this case, check that the server is running, the IP address and ports are correct, and the correct password is being used. Once a connection is made, a “Connected” message will be given, and the host will be sent a list of all the assets it has access to, along with their descriptions and most recent data. If the DataHost has not been turned on for several days, there may be a lot of data buffered by the server. This data will appear in the log box, and may take several minutes to download.

If the connection to the server is lost for any reason, the log list will turn a red colour. If the connection is lost for more than a minute, or the server is shut down, a warning window will be displayed and the DataHost will beep until this window is closed or the connection is re-established (see Figure 4).

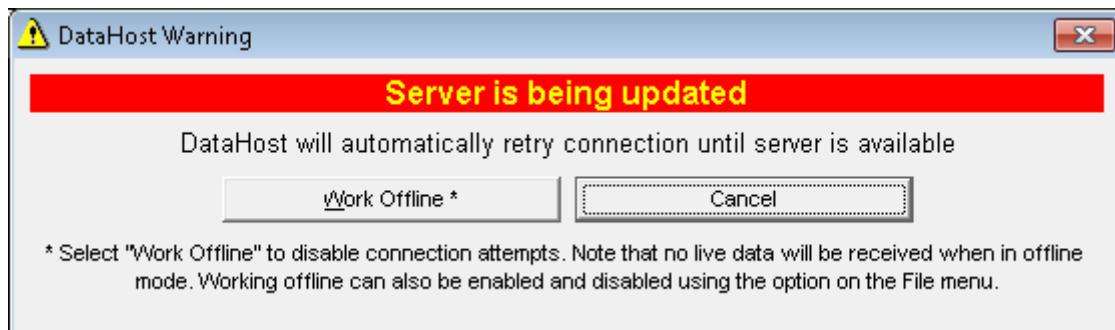





Figure 4 – Losing the DataGate connection

3.9 Status Bar

The status bar is located at the bottom of the DataHost window. The current data storage folder is listed on the left side of the bar. On the right side is an icon, which shows the current communication state as follows:

-  Not connected to the DataGate server.
-  Connected and idle.
-  Receiving data from the server.

4.0 Main Menu

4.1 File Menu

Add Group:	Adds a user definable group of assets. Groups make it easier to poll or send messages to several assets at once.
Delete Group:	Deletes the selected group.
Work Offline:	Select this option to disconnect DataHost from the server and disable connection attempts. Deselect option to restart connection attempts.
Exit:	Exit program.

4.2 View Menu

Reports:	Starts the Reports wizard (see section 6.0).
Communications:	Shows the Communications window (see section 5.17), which allows you to see all messages sent and received.
Locations:	Shows the Locations window (see section 8.0), where you can edit user defined locations.
Driver ID Lookup:	View/Edit a list of driver IDs. These IDs will be used to display full names for driver events.
Open Today's Log:	Opens the DataHost log file created today. The log keeps a copy of data shown in the DataHost log box.
Icons:	Show or hide the icon legend.
Options:	Access DataHost options.

4.3 Map Menu

The map menu is only visible when MapPoint, Bing or Google Maps are enabled. It may also be accessed by right clicking on the map itself. The following mapping functions are provided (not all will be shown, depending on the map type):

Zoom to All:	Zoom in or out to display all assets on the map.
Zoom In:	Zoom in at the current map location.
Zoom Out:	Zoom out at the current map location.
Full Screen:	Show the map in full screen mode. Select this option again to disable.
Save:	Saves current map, so it will appear next time DataHost starts.
Previous/Next View:	Moves map to the previous/next view (after moving or zooming).
Switch Map Style:	Changes map display style (data, road, terrain, etc).
View as Globe:	When zoomed out to a global level, the map can display as a globe or flat map.
Show Toolbar:	Show or hide the MapPoint toolbar.
Show Legend:	The legend shows user data sets, allowing the deletion of user reports.
Show Location Reading:	The latitude and longitude at mouse pointer is shown above map.
Clear Report Data:	Clears any history data from map.
Export:	Exports current map to a temporary file, for editing using MapPoint.
Print:	Prints current map to default printer.

Set Quadrant Area:	Sets overall view for automatic quadrant feature.
Automatic Quadrant View:	Map will automatically switch between an overall view, and four “close-ups” centred on each quadrant of the overall view.
Reload:	Reloads the map.
Clear Find Results:	Clears any search results from map.

4.4 Asset Menu

This menu contains asset specific commands for the currently selected asset. It may also be accessed by right clicking on an asset in the asset list.

Add Location:	Adds asset’s current location to the Locations list.
Change Name:	If enabled at the server, a user can modify assets’ names.
Send Message:	Send a message to an asset (if available). Depending on asset type, different kinds of messages or trips can be sent (see section 5.13).
Poll:	Request the asset’s current location.
Cancel Alarm:	Cancel the asset’s alarm state.
Edit Stop List:	Send a stop location list to the asset (see section 5.10).
Configure:	Opens the Asset Configuration window to retrieve or modify asset settings (see section 5.5).
Set Outputs:	Control the asset’s outputs, if available (see section 5.5).
Reports:	Opens the Reports wizard for this asset (see section 6.0).
Go To:	Moves the map to this location.
Follow:	Map will follow this asset (see section 5.6).
Geofence:	Alerts user if asset moves from current location (see section 5.7).
Track:	Monitor asset’s distance from a preset location (see section 5.8).
Properties:	Opens the asset properties window (see section 5.1)

4.5 Help Menu

The Help menu provides a link to the DataHost About screen, which shows the software version number.



Figure 5 – DataHost About screen






5.0 Assets

5.1 Assets List






The assets list on the main screen shows all assets this DataHost has access to. This list is configured on the DataGate server, so contact your server operator if you need to make changes to the list. Each asset's name is also configured on the server, but may be configurable from the DataHost if the necessary server permissions have been enabled.

Double clicking on an asset will either centre the map on that asset (if mapping is enabled and the asset is shown), or show the asset properties window (see section 5.1). The Assets list uses icons to indicate the current status of each asset. Up to four icons can be shown, as follows (each in order of priority):



First Icon (message status):

-  A high priority message has been received from asset (text will be bold).
-  All messages are being hidden (see section 5.3).
-  A new message has been received from asset (text will be bold).
-  An outgoing packet could not be sent.
-  Trying to send a packet to asset.




Second Icon (general asset status):

-  Asset has not yet reported a GPS position.
-  Asset has old or invalid GPS position. Data is old after a certain period, as define in DataHost options (see section 9.6).
-  Asset is stopped, with recent position report. This icon may also be dark green, depending on icon settings.
-  Asset is moving, with recent position report. Arrow indicates compass direction of travel.
-  Asset Group

Third Icon (only used for assets with Alarm attachments):

-  Alarm is armed (locked).
-  Alarm is disarmed (unlocked).

Fourth Icon (special functions):

-  Following asset. Map will pan if asset moves off screen.
-  Asset is geo-fenced. Radius will be shown in the properties list.
-  Tracking option enabled. Distance to destination will be shown in properties list.

5.2 Properties List

The Properties list on the main screen shows the most recent information received from the selected device. It includes the following fields (actual fields displayed depend on device type and configuration):

Driver:	Currently logged-in driver, if available.
Duty Status:	Driver duty status, if available.
Current Trip:	Trip ID, if available.
Trip Status:	Status of current trip.
Last Transmission:	Time and date of last data from asset. Note that all times are converted to local time using the PC's time zone.
Network:	Network that last packet was received on.
Inputs/Outputs:	Status of asset's inputs and outputs (not all assets have inputs and outputs). Some assets also have battery and temperature fields.
Last Msg Sent:	If asset can receive canned messages, this field shows the last message sent to the asset.
ETA:	Shows estimated time of arrival if asset has an attached navigation device.

If asset has reported a position, the following properties are included:

Last Position:	Time and date when most recent position report was received.
GPS Time:	Time and date last GPS report was created.
GPS Signal:	Show if GPS signal is valid. If the GPS signal is weak, an estimated position based on the last known location will be used.
Speed:	Asset speed at last report.
Heading:	Heading at last report.
Latitude/Longitude:	GPS coordinates at last report.
Location:	Most recent distance and direction from nearest point of interest. See section 8.0 for details on the location property.
Destination:	If the Track feature is turned on for this asset, the distance and heading to the destination location is shown.
Geofence:	If Geofence is enabled, this shows the fence radius.

5.3 Asset Properties

Double click an asset on the map (MapPoint only), or right click an asset in the asset list and select properties, to open the Asset Properties window. Figure 6 shows the asset properties window, which includes the following information and settings:

Asset Status:	Indicates when last data was received from asset, and/or message state.
GPS Position:	Status of GPS data from asset.
Message Options:	Select what type of messages to show or hide from Messages list.
Show Asset Icon on Map:	If deselected, asset will not be shown on map, and the text "Hidden" will appear in the assets list box.
Highlight Icon:	In MapPoint, icons can be highlighted to improve visibility.

- Show Label:** In MapPoint, icons can have a label showing asset description.
- Only Show when Selected:** Select this option to hide the icon when another asset is selected.
- Set All Assets Like This:** Select to configure all assets with current asset's settings.
- Request Byte Counts:** Requests byte counts from server, which shows how much data this asset has sent and received during the current and previous months. The response to this request will be shown in the log box.
- Request Hours/Odo:** Request the asset's current odometer and hourmeter values from the server.
- Maintenance:** If maintenance permissions have been granted to this user, then alerts can be viewed or modified from the Maintenance tab. Alerts can be defined based on odometer, hourmeter, or time intervals.

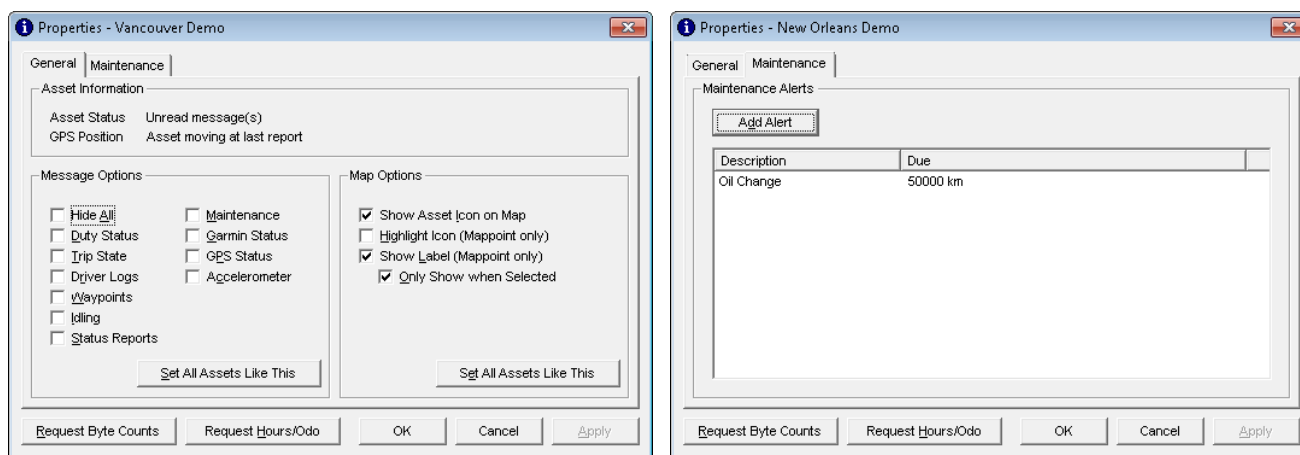


Figure 6 – Asset properties

5.4 Asset Configuration

Figure 7 shows the Asset Configuration window. This screen will show different options depending on the type of device. If no settings have previously been retrieved, the screen will display “No settings available”. Settings can be retrieved, then modified and sent back to the asset remotely. The following fields are shown for each asset:

- Type:** Device type. May be a black-box, data terminal, laptop, etc.
- Firmware Version:** Firmware version of this device (if available).
- Asset ID:** Unique ID, assigned at the server.

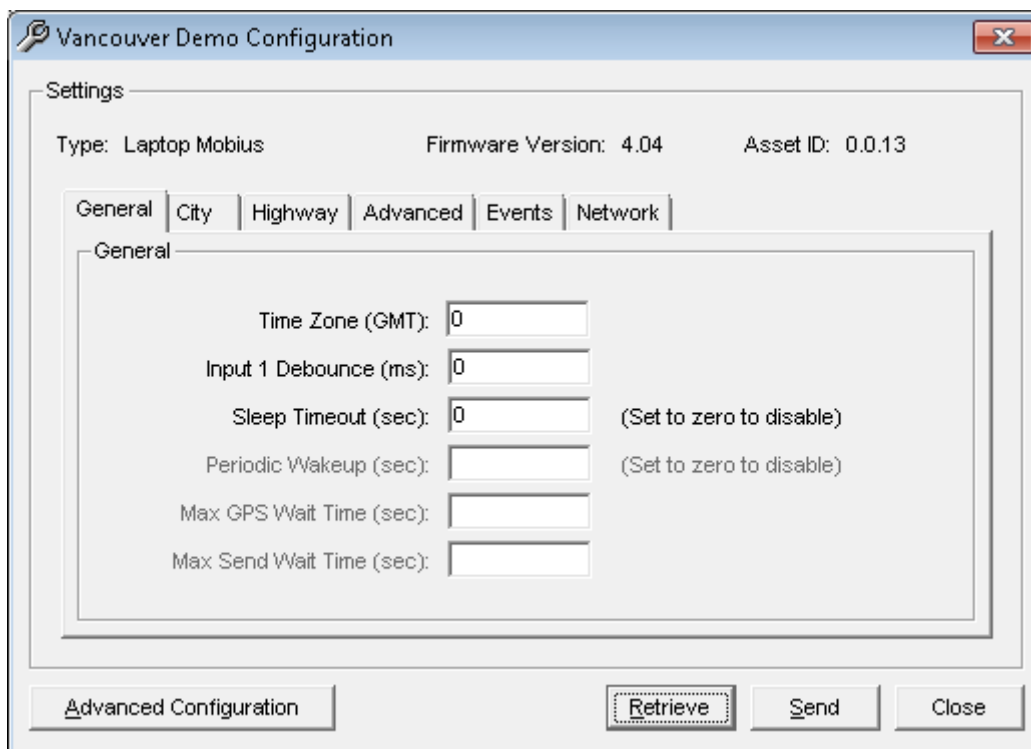


Figure 7 – Device configuration

5.4.1 Reporting Settings

Time Zone:	Some devices display time on their screens. This setting is used to convert from GPS to local time.
Sleep Timeout:	Asset will enter sleep mode after this delay when ignition is turned off.
Input Debounce:	Debounce period for inputs.
City/Highway:	Where available, assets can report using two sets of parameters, based on vehicle speed.
Use Time:	Report position based on a time interval.
Use Distance:	Report position based on distance travelled.
Thresholds:	Thresholds define the speed at which to move from one set of reporting options to another. If an asset's speed drops below the city threshold, city settings are used. Likewise, if the speed rises above the highway threshold, highway settings are used.
Report Time:	Time between reports.
Report Distance:	Distance between reports. Distance reporting prevents unnecessary reports when devices are stopped.
Min Report:	Minimum time between position reports. This places a limit on the maximum reporting rate.
Heading Change:	Asset will send a position when its heading changes by a certain amount.
Change Duration:	Heading change must occur for at least this period.
GPS Sats Required:	Number of GPS satellites used to treat position as valid. This can be used to improve accuracy, by treating GPS positions determined with a few satellites as invalid.

Enable Waypoints:	Asset will report when it enters a waypoint area.
Detect Overspeed:	An event can be sent when the asset exceeds a set speed.
Report Stops/Starts:	The asset can be set to report whenever it starts and/or stops. The times and speeds to trigger these events can be programmed to allow for GPS drift and traffic delays.
Report Input Changes:	Send events when inputs change.
Input Triggering:	Select what type of input change will trigger events.
Max Speed:	Speed at which asset is considered to be speeding.
Overspeed Limit:	Driver is allowed to exceed max speed for a certain duration.
Stopped Speed:	Speed under which asset is considered to be stopped.
Stop Time:	Asset must remain stopped for this period to trigger a stop event.
Restart Speed:	Speed over which asset is considered to be moving.
Restart Time:	Asset must remain moving for this period to trigger a start event.
Cell Keep-alive:	Asset can send a small packet periodically to ensure its cellular IP address is retained.
RF TX delay:	For RF modems, this is the time between triggering transmitter and sending data. This period allows the transmitter to come up to full power.
RF TX tail:	Time to leave transmitter on after data transmission has finished.
RF ACK Delay:	Time to wait before sending the reply to a request. This allows time for the transmitter to return to receive mode.
Trunked RF:	Modem will wait for a channel acquired signal from radio before sending data (RF modems).
GS Buffer Type:	Set type of packets to be buffered. Buffering improves efficiency by allowing multiple packets to be sent at once.
GS Timeout:	Globalstar data sessions will timeout if inactive for this period. Note that the server will also instruct the modem to go offline if it has no more data to send.
Buffer Time:	Period to buffer data. When this period expires, a data session will be established.

5.4.2 Advanced Configuration

Some assets have other settings that can be controlled remotely. Figure 8 shows the advanced configuration screen.

Engine Monitoring

Parameter	Value	Warn Driver	Transmit
Over Rev (rpm)	<input type="text"/>	<input type="checkbox"/> On	<input type="checkbox"/> On
Braking (mph/sec)	<input type="text"/>	<input type="checkbox"/> On	<input type="checkbox"/> On
Accel (mph/sec)	<input type="text"/>	<input type="checkbox"/> On	<input type="checkbox"/> On
Coolant (deg F)	<input type="text"/>	<input type="checkbox"/> On	<input type="checkbox"/> On
Transmission (deg F)	<input type="text"/>	<input type="checkbox"/> On	<input type="checkbox"/> On
Oil (deg F)	<input type="text"/>	<input type="checkbox"/> On	<input type="checkbox"/> On
Fuel Warning (%)	<input type="text"/>	<input type="checkbox"/> On	<input type="checkbox"/> On
Oil Pressure (PSI)	<input type="text"/>	<input type="checkbox"/> On	<input type="checkbox"/> On
Diagnostic Codes		<input type="checkbox"/> On	<input type="checkbox"/> On

Waypoints

Waypoint ID:

Latitude:

Longitude:

Inner Radius (metres):

Outer Radius (metres):

Stop reporting while inside waypoint

Retrieve Send Delete

Waypoint List

Get List

Internal Messages

Message ID Message Text

Retrieve Send

Close

Figure 8 – Advanced configuration

If an asset has the optional engine monitoring interface, it can monitor certain engine parameters and send an event when an exception occurs. Each parameter has a configurable threshold, and can be set to transmit an alert and/or warn the driver.

Waypoints are used to trigger reports based on position. Each waypoint has an ID in the range 0-8191, a latitude and longitude, and an inner and outer radius. If the asset travels within the inner radius, a report containing that waypoint ID is sent. Another report for that waypoint will not be sent until the device has moved outside the outer radius. Click on the “Get List” button to retrieve a list of waypoint IDs currently in use.

Many devices have built-in messages, which can be modified remotely. Each message has an ID in the range 0-15. The Internal Messages frame allows each message to be retrieved, modified, and sent back to the asset.

5.5 Asset Outputs

Figure 9 shows the Asset Outputs window. The actual display will vary depending on how many outputs are enabled, and what they are assigned for. To change the outputs, select the desired states and press the send button.

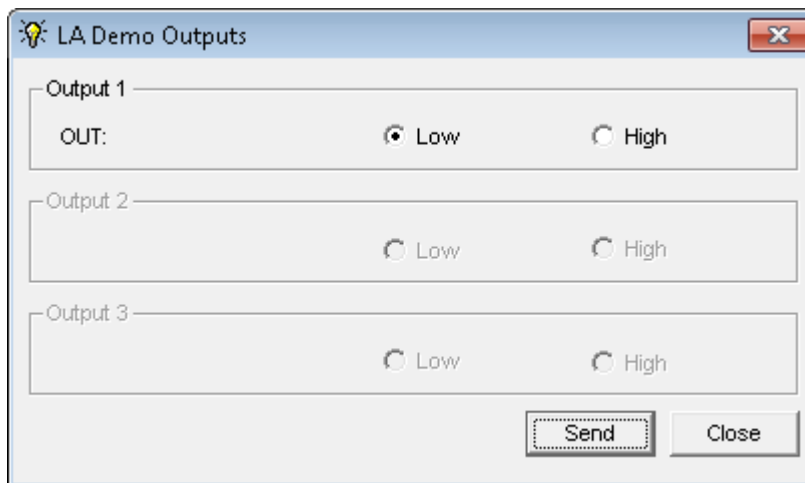


Figure 9 – Asset outputs

5.6 Following an Asset

To follow an asset (available when built-in maps are enabled), use the Follow button on the toolbar, or select the Asset/Follow menu option. When following is enabled, a bulls-eye icon will show in the asset list, and the map will automatically move to re-centre the device when it travels near or off the edge of the map. To turn off following, simply reselect the “Follow” option.

5.7 Geofencing/Tracking

To turn geofencing on or off, click the Geofence button on the toolbar, or select the Asset/Geofence menu option. When an asset is geofenced, a crosshair icon will show in the asset list, and a distance value will be shown in the Properties frame. If the asset moves more than this distance from its original position (when the geofence was enabled), a high priority alert will be sounded. To change the geofence distance, use the Asset Properties window (see section 5.1). Note that geofencing will only detect vehicle movement when the asset reports its position. If the asset moves outside of the geofence but does not send a position report, the alert will not be triggered.

5.8 Tracking

To turn Tracking on or off, click the Track button on the toolbar, or select the Asset/Track menu option. When an asset is tracked, a binoculars icon will be shown in the asset list, and a Destination field will be added to the Properties frame. Tracking is only available if a destination location has been selected in the Asset Properties window (see section 5.1).

5.9 Asset Groups

Groups of assets can be defined to more easily control multiple assets at once. Asset groups support polling, sending messages, and having reports run.

To add a new group, select the File/Add Group menu item. The group properties window will be shown, as in Figure 10. Give the group a name, and select which assets will be included. Selecting the “All Assets” check box will include all assets, as well as those added to the datahost in the future.

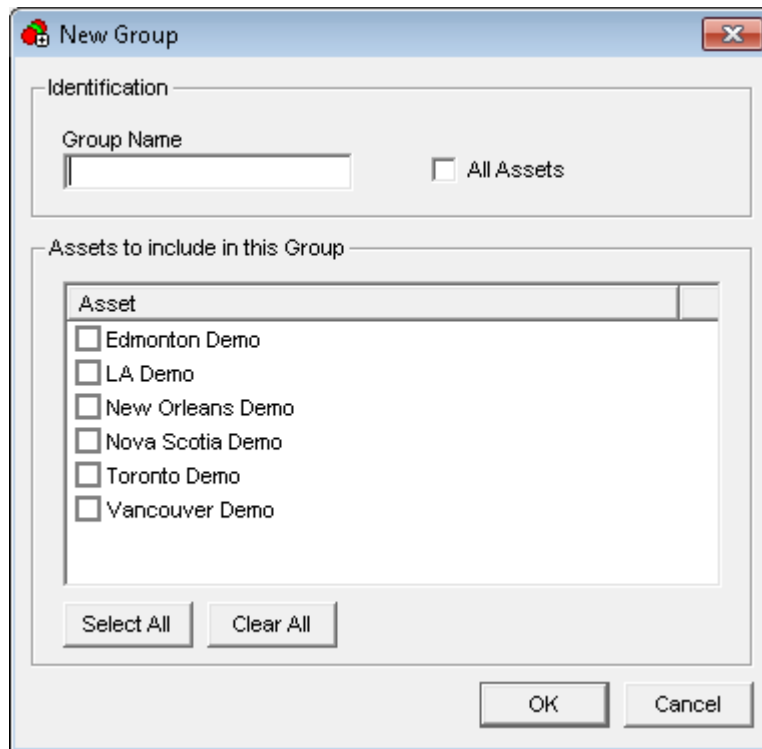


Figure 10 – Adding an asset group

Asset groups are shown in the asset list. Double click on the asset group to open the properties window, or press the delete key to delete the group.

When polling or sending messages to a group, individual polls/messages will automatically be sent to each asset. If any of them cannot be sent, the crossed TX icon will be shown for that asset (see section 3.4)

5.10 Stop Lists

Certain assets may have a navigation device attached, which are used to show route information to drivers. These devices can contain multiple stops (places the driver needs to go), and when a driver selects a stop, the navigation unit calculates and displays the best route to that location. DataHost has the ability to send single stops to such devices using messages (see section 5.13). It can also send a list of stops at one time, using the Stops button on the toolbar, or the Assets/Edit Stop List menu. Figure 11 shows the edit stop list window.

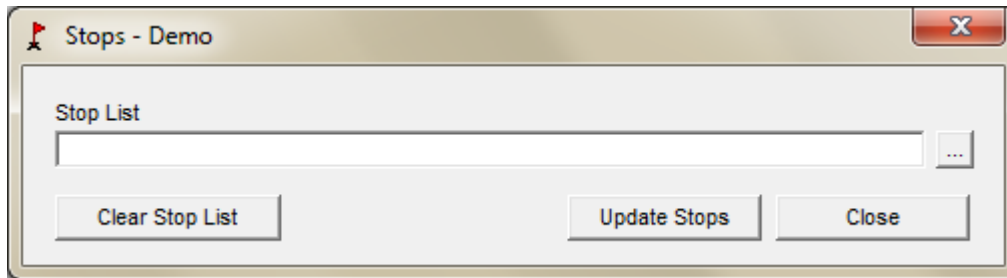


Figure 11 – Editing asset stop list

To edit the stop list, a location text file containing the desired stops must first be created. This file follows the same format as the DataHost user-defined locations file (see section 8.4). Each line in the text file contains name, location, type, and ID fields which are used as follows:

- Name/Name2:** The stop will be identified to the driver using these text fields. Name2 is optional, and will be shown after a comma separator, if included.
- Latitude/Longitude:** The stop location in decimal degrees.
- Type:** Not used.
- ID:** This is the stop ID, which will be returned when a stop becomes active on the navigation unit.

It is recommended to generate user-defined locations for the stops in DataHost, and then edit the locations file so that it contains the desired stops.

Enter the filename of the location text file in the stop list box, or use the “...” button to select the file on the disk. Click Update Stops to send the stops to the navigation unit. Note that this will first erase all stops, and then begin sending the stops to the device.

Use the Clear Stop List button to erase the navigation device’s stop list without sending new stops.

Messages










5.11 Messages List

The Messages list box shows any messages and events received from the selected asset. By default, the messages are sorted with the oldest message appearing at the top of the list. This can be changed in the DataHost Options menu. Double clicking on a message will open it in a new window. Messages can be deleted by pressing the delete key. This list also contains messages sent to the asset, including those from other DataHosts, allowing message threads to be followed in a more meaningful way.

Outgoing packets are also shown in this list. These include polls, settings and trips.

Certain kinds of messages and events can be hidden from this list. In extreme cases it is possible to hide all messages, in case a user only wants to see the location of an asset, and is not interested in message data. See section 5.3 for more information.

The Messages list uses icons to indicate the current status of each message, as follows:

-  Unopened high priority message (text will be bold).
-  Unopened message (text will be bold).
-  High priority message.
-  Standard message.
-  Outgoing message is waiting for response.
-  Outgoing message could not be sent.
-  Outgoing message was sent successfully (from this PC).
-  Unopened outgoing message sent from another PC.
-  Outgoing message sent from another PC.

Multiple messages may be selected at once by using the ctrl or shift keys during selection.

5.12 Incoming Messages

Messages can be opened by double clicking in the Messages list. Figure 12 shows an example message. Message details are provided at the top of the window, including the received and sent times. The sent time shows the actual time the message was created by the asset (if available). Buttons at the bottom of the form allow the user to delete the message, reply, go to the asset or message location, or add the location to the Locations list. Deleted messages are placed in a deleted messages folder (see section 8.0).

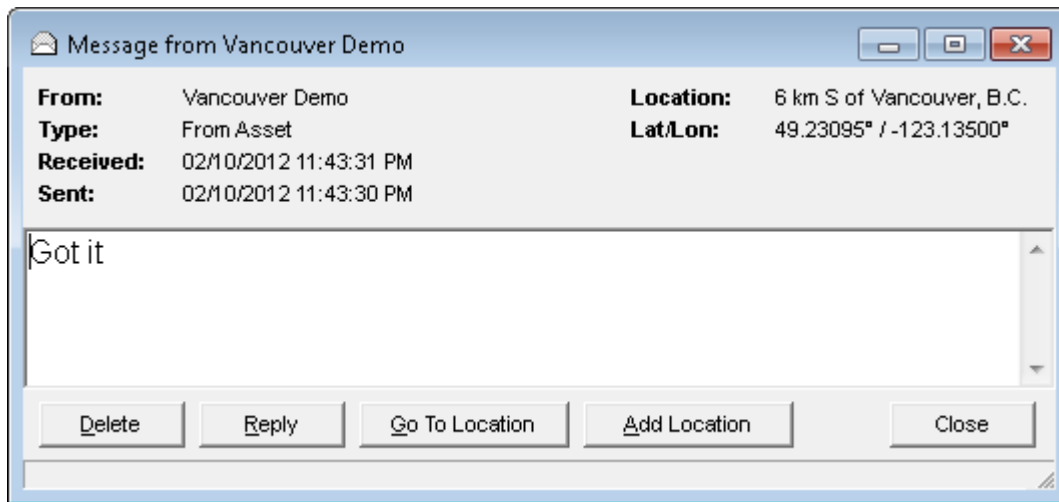


Figure 12 – Incoming message

When a message is received the DataHost will play a sound file (as set-up in Options). There are two sounds available, one for normal messages and another for high priority messages. See section 5.18 for information about high priority messages.

5.13 Sending Messages

Figure 13 shows the standard New Message window. This window will appear when creating a new message, or replying to a received message.

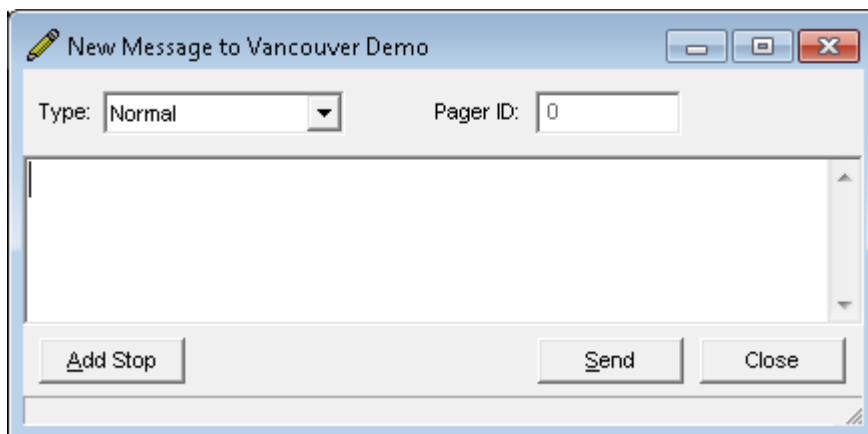


Figure 13 – New message

The message type field is used to select the message destination:

- Normal:** Messages are sent to a mobile data terminal or navigation device attached to the asset.
- Pager:** Some asset types allow messages to be sent to wireless pagers, in which case a Pager ID value can be entered. The asset will attempt to forward the message to the appropriate pager.
- External Data:** This allows messages to be sent directly to an asset's external data port.

The Add Stop option is available to certain devices with attached navigation devices. A stop location can be attached to the message, which is then sent to the navigation device to appear in its stop list. In this case, the message text becomes the stop description. When adding a stop, a Stop ID must be entered. This uniquely identifies the stop on the device, and will overwrite any existing stop with the same ID. If you modify an active stop, the navigation device will automatically update its route to reflect the new destination.

Other assets can only accept canned (or predefined messages). Figure 14 shows an example of a device with two canned options. Select the appropriate message from the available list, or click "Close" to cancel.

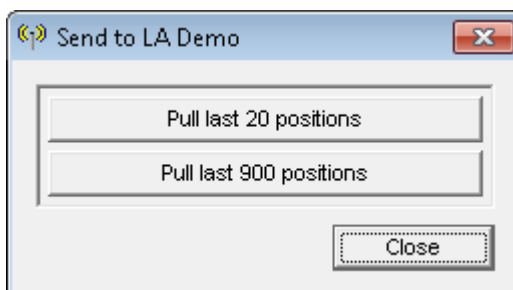


Figure 14 – Canned messages

5.14 Outgoing Messages

Outgoing messages are shown with a transmitter icon while they are being sent. If a message cannot be sent, it will show the crossed transmitter icon. If it is sent successfully, the icon changes to a check mark. Figure 15 shows a sent message. Note that the date and time of sending is included, as well as the time the message was read by the remote user (if available).

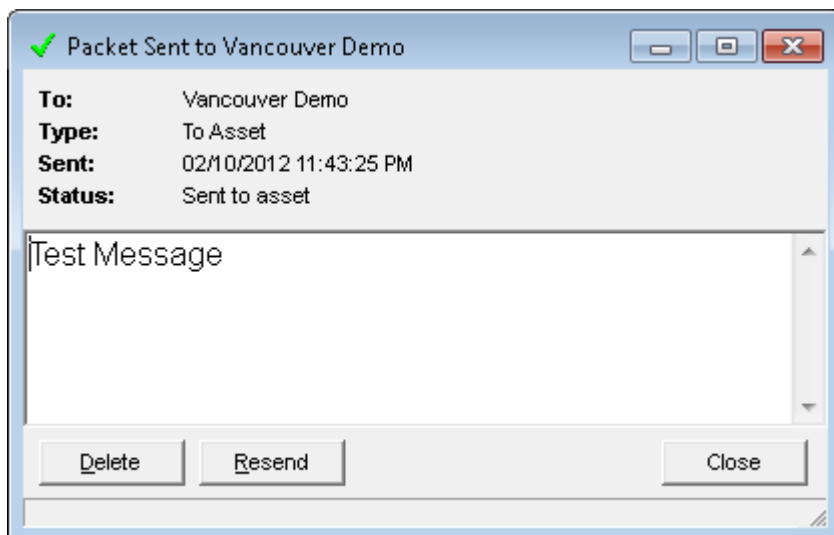


Figure 15 – Sent Message

Be aware that certain asset types have a two-step messaging process. The first step is sending the message from the server to the asset. Once this is successful, the message status changes to "Sent to asset". The second step involves forwarding the message to the data terminal. Terminals may be disconnected or out of coverage at the time the message is sent, and so the asset holds on to the message and retries it for an extended period. Once the message has been sent to the terminal, the message status changes to "Sent to terminal".

If the terminal does not respond, or responds with an error, the message status will be updated to reflect this, and the message icon will show a red crossed circle.

5.15 Dispatch Messages

Some assets also support dispatch applications. When sending messages to these devices, the send message window will include fields for dispatching jobs/trips (see Figure 16). This dispatch data will appear on the remote user's terminal screen, where they can accept or decline the job. Several dispatch applications are currently supported, so contact us for more details.

If a text message needs to be sent, instead of a job dispatch, click on the "Text Message" button.

When a driver commences a trip, the Asset Properties list will show the trip number and trip state for that asset.

The screenshot shows a software window titled "Dispatch" with a close button in the top right corner. Below the title bar, it says "Assigned Vehicle: Vancouver Demo". The window is divided into two main sections: "Trip Details" on the left and "Customer" on the right. In the "Trip Details" section, there are fields for "Job ID" (containing "1000"), "Dispatcher" (containing "John Smith"), "Location", "Event", "Problem", and "Start Date/Time (in driver's time zone)" (containing "13/04/2007" and "11:09"). The "Customer" section has fields for "Name", "Street", "City", "Phone", "Bill To", "Pay Type", and "Rate". At the bottom of the window is a "Notes" text area and four buttons: "Text Message", "Send Trip", "Send Cancel", and "Close".

Figure 16 – Dispatch Message

Outgoing trips can be opened by double clicking them in the Messages list. Figure 17 shows an example dispatch message. A "Cancel Trip" option is provided to cancel a trip (available before a trip has been started by a driver).

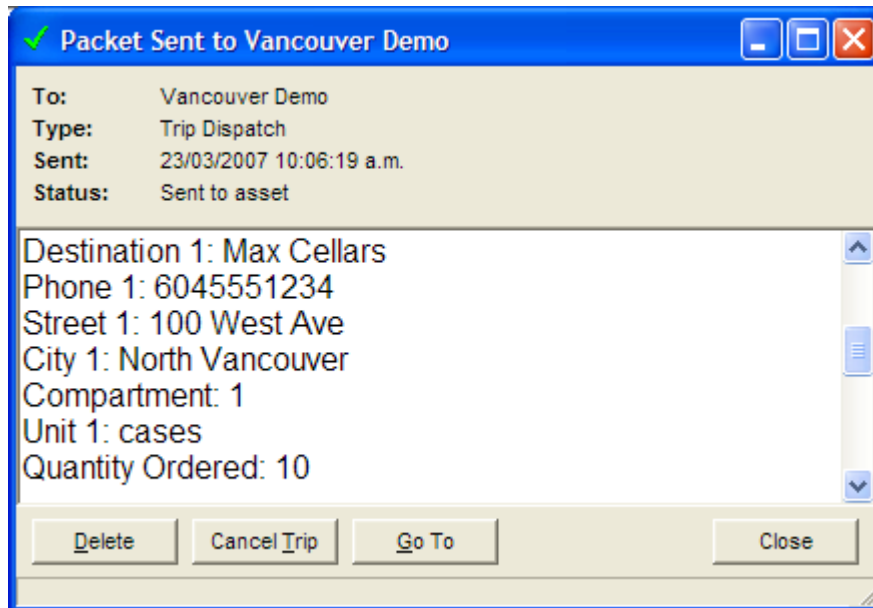


Figure 17 – Sent Dispatch Message

5.16 DataHost Alerts

The DataHost will show an Alert pop-up window when a new message is received. This window slides in from the edge of the taskbar. Figure 18 shows a sample alert. The number of new messages is displayed, as well as the number of new high priority messages. A description of the most recent message is shown in the centre of the window, along with a shortcut to open this message.

Two other shortcuts are provided: to show the first new message, or show all messages.

Under the DataHost Options, the alerts window can be set to automatically hide after a certain delay, and to stay visible if DataHost is not the active program on the PC. This can be used to make sure important messages are not missed when the PC is being used for other purposes.

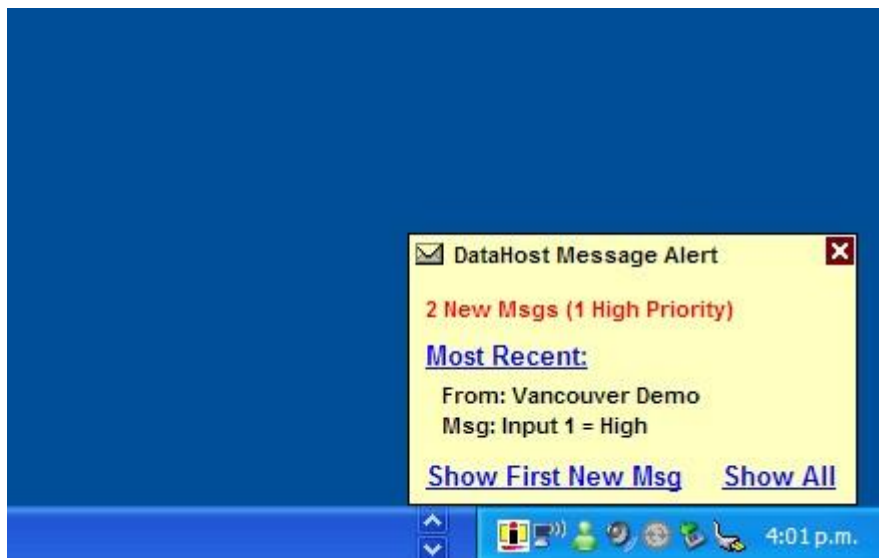


Figure 18 – DataHost Alert Pop-up

5.17 Communications

All incoming and outgoing messages are stored in a local file. Normally messages are viewed for each asset through the Messages list on the main screen. However, if you need to see the status of all messages at once, or want to view deleted messages, you should use the Communications Window. To show this window, either select the View/Communications menu option, or click the “Show Messages” shortcut on the message status bar and/or Alert window (if visible). Figure 19 shows the Communications Window.

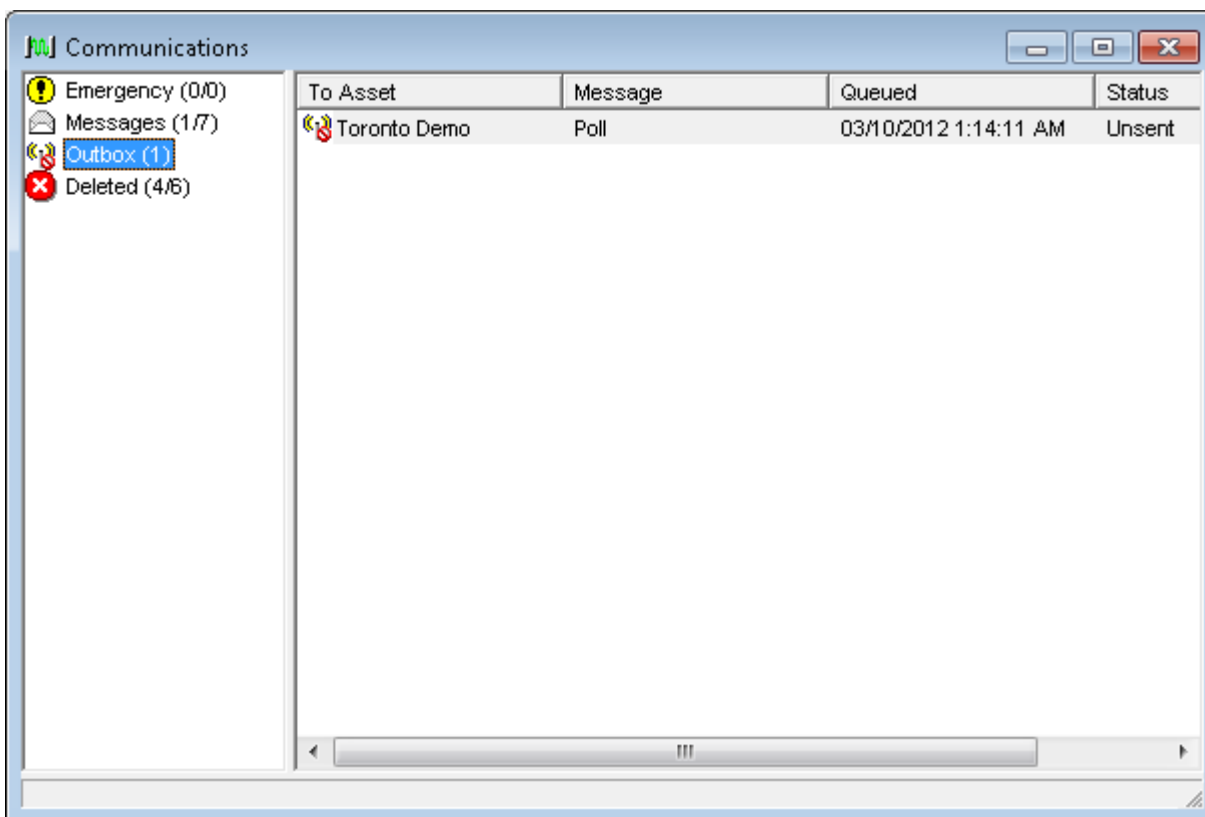






Figure 19 – Communications window

On the left side of the window is a list of four folders:

-  **Emergency** High Priority Messages.
-  **Messages** Normal priority messages from assets, as well as messages sent from DataHosts.
-  **Outbox** This folder contains messages and packets that are being sent to assets. If some messages have failed (such as when an asset is out of coverage), the icon will appear as shown, with a red crossed circle.
-  **Deleted** Deleted messages

The numbers next to each folder show how many messages are in the folder. The first number is the number of new messages, while the second number is the total.

On the right is a list of all messages in the currently selected folder. Any message can be opened by double-clicking, or deleted by pressing the delete key. Outgoing messages are discarded if deleted.

All others are moved to the Deleted folder. Deleted messages may be opened and undeleted, or deleted permanently.

By default, messages are sorted with the oldest message at the top of the list. This order can be changed under the DataHost Options window. Multiple messages may be selected at once by holding down the ctrl or shift keys during selection.

5.18 High Priority Messages

High priority messages are generated by many sources, including panic alarms, man-down pagers, and engine monitoring equipment. Whenever a high priority message is received, the DataHost will play a special emergency sound file and the message status bar will turn red. Figure 20 shows the program with one high priority message. The DataHost title bar will flash if it loses focus, to remind the user that a high priority message is waiting.

In high security setups, DataHost can be configured to loop the sound file until the messages are read. This ensures any nearby users will notice the alarm condition. If looping is disabled, DataHost will beep periodically to remind the user of the urgent message(s).

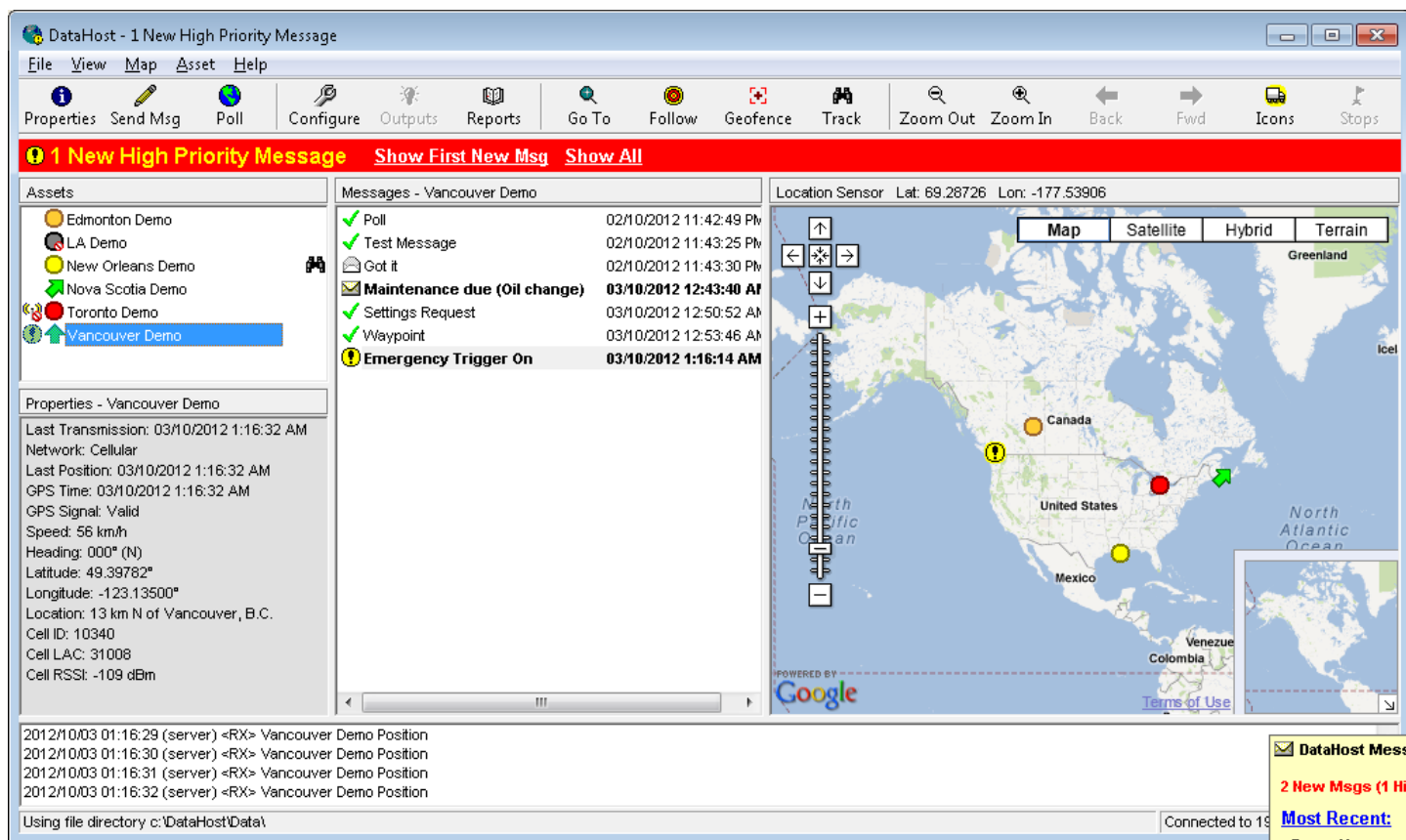


Figure 20 – High priority message(s) received

Any asset with unread high priority messages will be displayed with a yellow exclamation mark icon. The high priority message will also have this icon. When such a message is opened, it will be displayed with a red background. Figure 21 shows a sample high priority message.

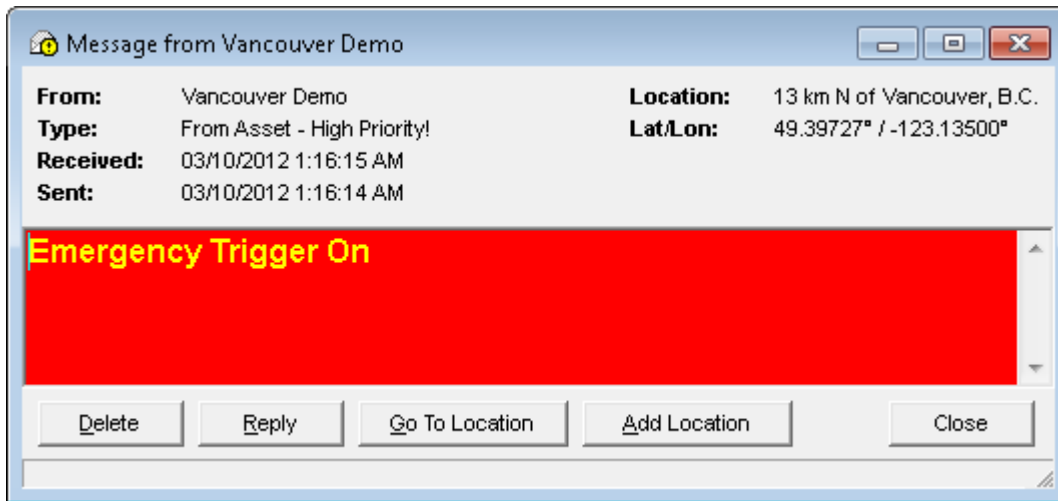


Figure 21 – High priority message

6.0 Mapping

DataHost supports several mapping programs. See section 9.2 for details on setting up the map interfaces.

6.1 Microsoft MapPoint

DataHost includes an embedded interface to Microsoft MapPoint (Figure 22). MapPoint must be installed separately, using the CDs provided. Because the maps are loaded directly onto the user's PC, they are extremely fast, and do not require Internet connectivity to operate. However, at present the maps only cover North America and Western Europe, with a separate version for each of these areas. Both maps may be installed on the same PC, but DataHost can only use one at a time.

If MapPoint is enabled, DataHost will attempt to load a map from the DataHost configuration directory, named 'datahost.ptm'. If this file does not exist, a new map will be created (first attempt will be a North American map, then a European map if this fails). This map file may be edited using MapPoint to change the default view, or add custom pushpins. The level of detail and types of places shown on the map can also be altered. Simply save the map as 'datahost.ptm', and DataHost will load it when it runs.



Figure 22 – MapPoint map

When using MapPoint, double clicking an asset will open the asset properties window, through which assets can be programmed to show or hide a label (see section 5.1). Asset icons can also be highlighted with a yellow circle to aid visibility. Each asset's speed will be shown in its label (assuming asset is moving, and its label is turned on). To zoom in on the map, simply select an area to zoom in to (by clicking and dragging a box on the map). Then click inside the box to zoom, or

outside the box to cancel. To scroll the map, move the mouse to the map edge, until it turns into an arrow icon. Now click the map to pan in that direction.

Note that due to licensing limitations, DataHost will delay displaying asset locations for 15 seconds when using MapPoint 2004. During this time, the asset's icon will appear as a clock.

6.2 Microsoft Bing and Google Maps



Figure 23 – Virtual Earth map

Bing and Google Maps are web-based mapping services providing road and satellite maps on a worldwide basis (Figure 23). Maps are downloaded in real-time, so a high-speed Internet connection is required. Note that although the maps will work without a map license, users should contact Microsoft or Google to obtain the necessary licenses for accessing the map data.

With Bing and Google Maps, hovering the mouse cursor over an asset will bring up a box showing the asset name and last report speed and time. To zoom in on the map, double click on the area you wish to enlarge. To scroll the map, click and drag the mouse in the direction you wish the map to move.

6.3 Streets on a Disk

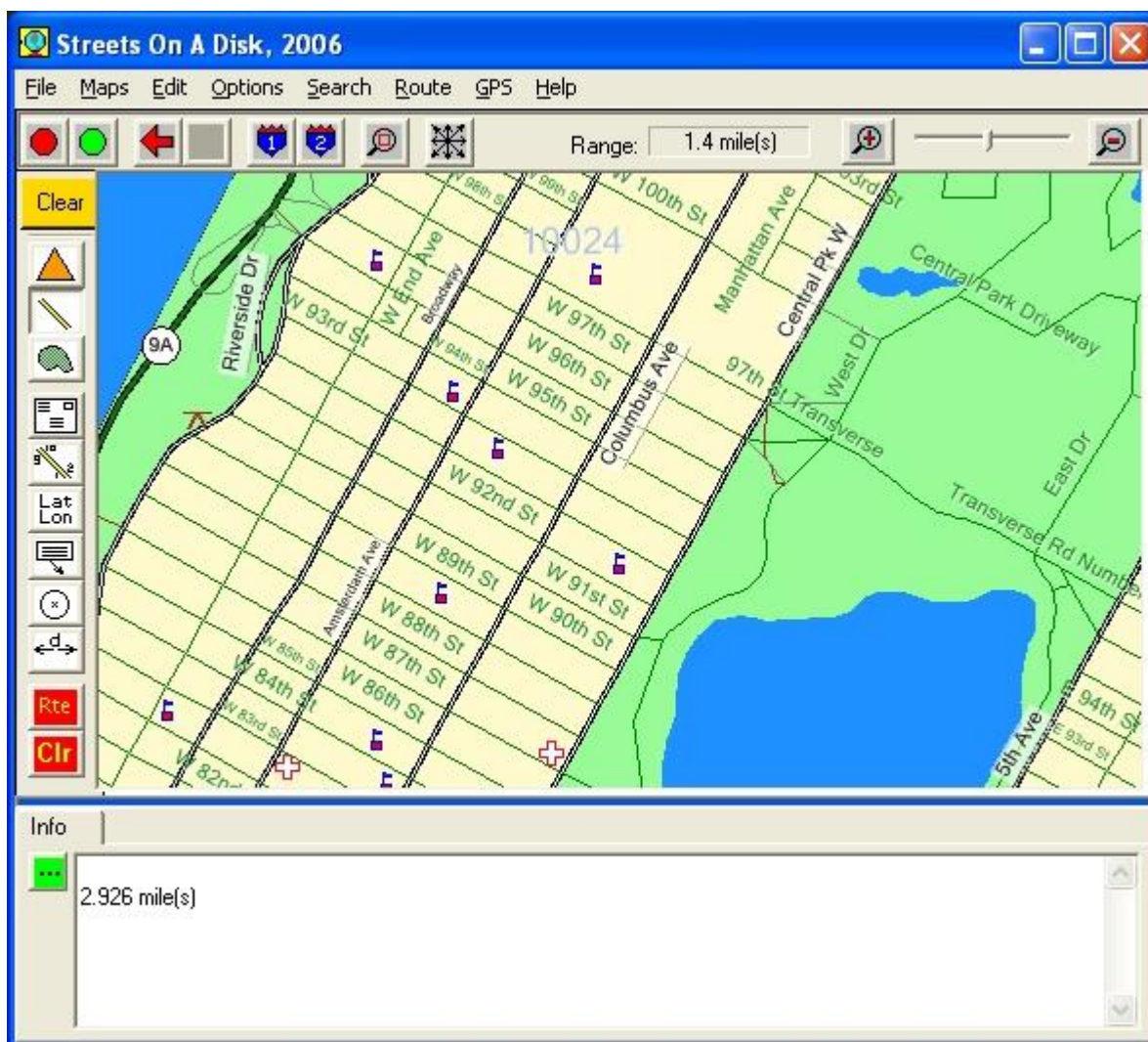


Figure 24 – Streets on a Disk map

Streets on a Disk (Figure 24) provides a low cost mapping solution, with support for the SHAPE file map format. Streets runs as a separate application, and picks up asset locations by using a text file or programmers interface.

6.4 Serial Output

DataHost can feed the GPS position of the currently selected asset out of the PC serial port in standard NMEA format. This data can be fed into another serial port and used by third party maps expecting a serial GPS feed.

6.5 ESRI ArcView

Older versions of ArcView are supported by using the ESRI Tracking Analyst component. DataHost sends the asset locations in a special format to the tracking analyst server. Contact us for more information.

6.6 Google Earth

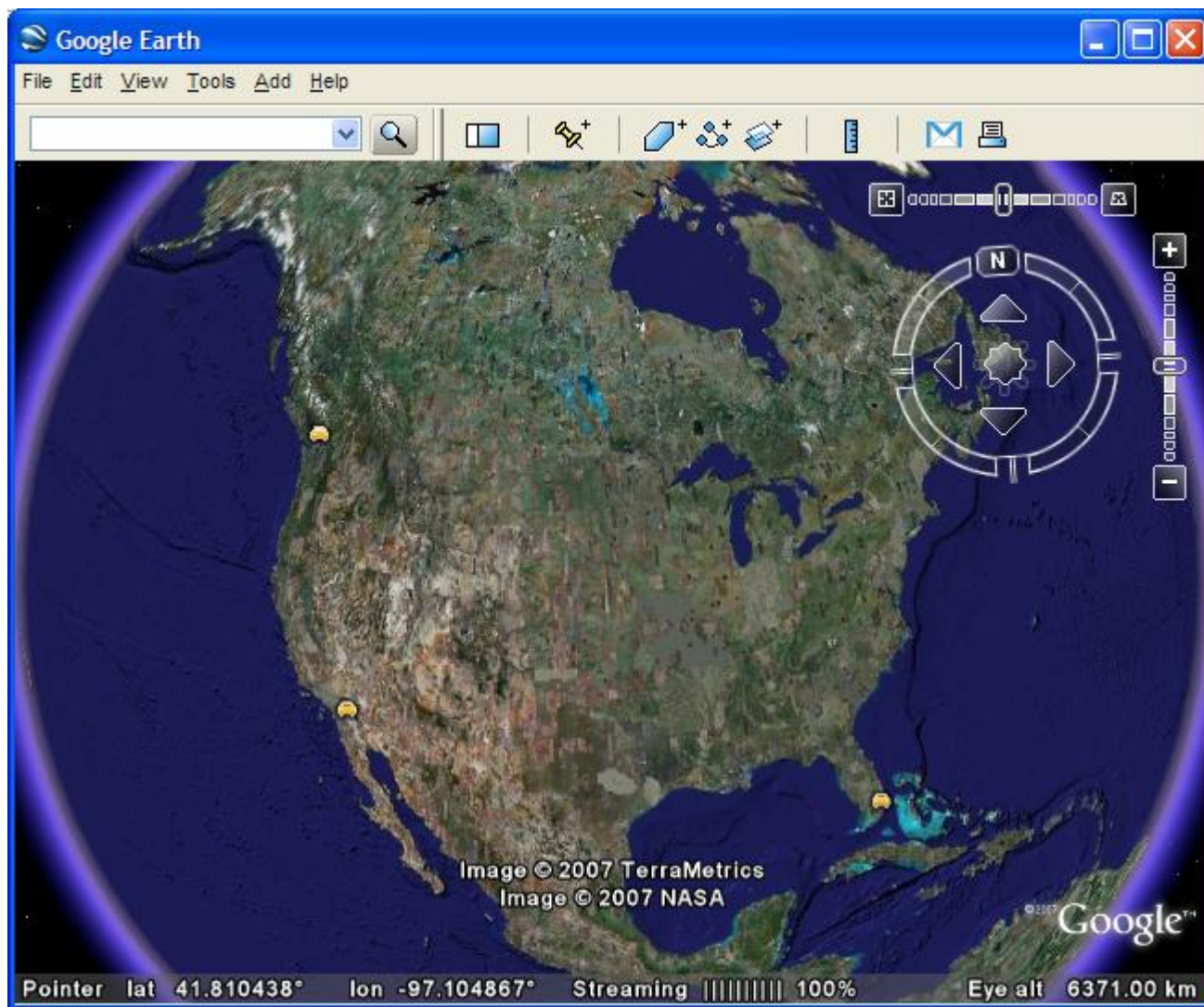


Figure 25 – Google Earth map

Google Earth (Figure 25) is a separate program available from Google. It downloads map data from the Google map servers in real-time, so requires a high speed Internet connection. You will need to contract the appropriate level of service from Google. This is free for many clients. Visit <http://earth.google.com> for more information.

Once you have installed Google Earth, you will need to set-up DataHost. This involves turning on the Google Earth option, and selecting a port number (see section 9.2.5 for details).

When DataHost has been configured, you will need to add a Network Link in Google Earth. This instructs the mapping program to request asset locations automatically from DataHost. This can be added manually (using the Add/Network Link menu in Google Earth), or you can use the preconfigured [DataNet.kml](#) file available on our website.

To use the kml file, download it and save it to disk. Double click on the file to open it, which will load Google Earth, and add a "DataNet Link" entry under the Google Earth Places list (initially under the

Temporary Places category). Click and drag the DataNet Link entry to the My Places category to save it for future use.

Figure 26 shows the Network Link properties window in Google Earth. This is displayed when you add a new network link, or right click on an existing one and select properties. The link field must be entered as shown to point to the DataHost program. If you are using a different port, you will need to modify this link address by adding a colon and the port number after the “127.0.0.1” address. For example, if you change the port number to 81, the link address should become <http://127.0.0.1:81/datanet.kml>.

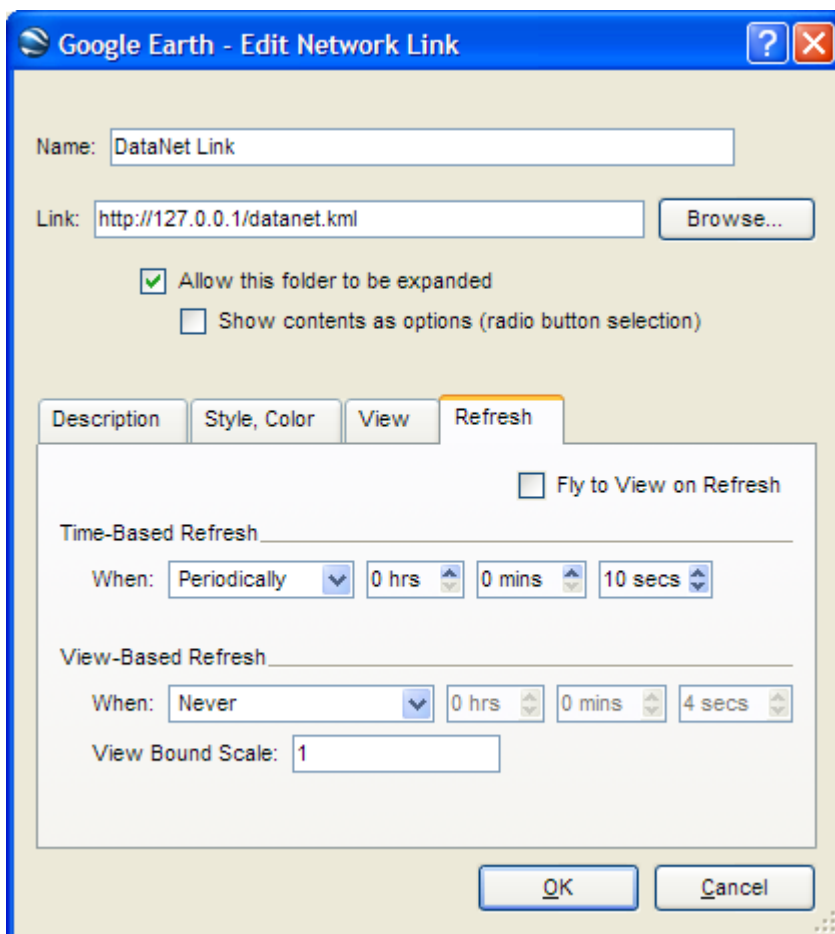


Figure 26 – Google Earth Network Link set-up

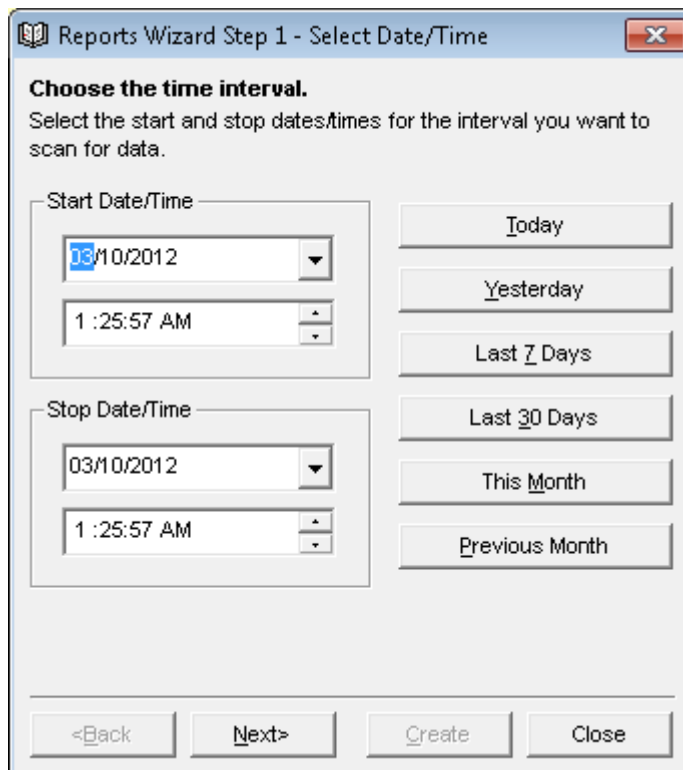
The Refresh options allow you to change how often the maps will be updated. The default is a time-based refresh of 10 seconds. Setting this value too low may increase screen flicker, while setting it too high will mean assets may not always be shown at their most recent locations.

7.0 Reports

Figure 28 shows the Reports wizard. This is loaded by selecting the “Reports” button on the toolbar, or the View/Reports menu option. It can also be accessed using the Asset/Reports menu.

7.1 Time Interval

The first step in the wizard is to select the time interval to search for data. Short-cut buttons are provided for commonly used intervals.



The screenshot shows a dialog box titled "Reports Wizard Step 1 - Select Date/Time". The dialog has a close button (X) in the top right corner. The main heading is "Choose the time interval." followed by the instruction "Select the start and stop dates/times for the interval you want to scan for data." There are two main sections for date and time selection. The "Start Date/Time" section has a date dropdown menu showing "03/10/2012" and a time spinner showing "1 :25:57 AM". The "Stop Date/Time" section has a date dropdown menu showing "03/10/2012" and a time spinner showing "1 :25:57 AM". To the right of these sections are several shortcut buttons: "Today", "Yesterday", "Last 7 Days", "Last 30 Days", "This Month", and "Previous Month". At the bottom of the dialog are four buttons: "<Back", "Next>", "Create", and "Close".

Figure 27 – Reports wizard

7.2 Data Source

The second step is to select the data source (see Figure 28). By default, the program will use the current history folder, and will search for data on the currently selected asset. Click the “Scan Selected Time for Assets” button to search through the currently selected data for assets. The list of available assets will be reduced to show only those found for the currently selected time and data source.

The group option allows reports to be run on a group of assets.

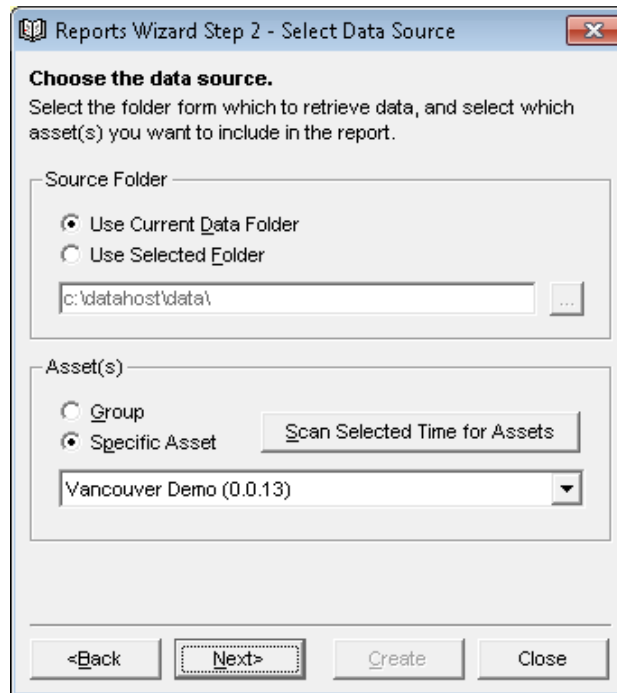


Figure 28 – Selecting the data source

7.3 Report Type

The third step is to select the report type (see Figure 29).

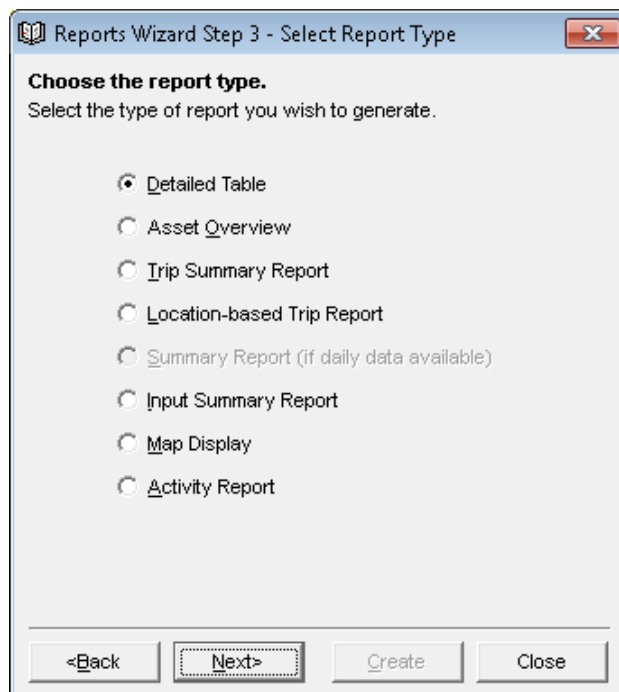


Figure 29 – Report type

All reports, except for the map display, will produce HTML or Excel output, depending on the report settings in the DataHost options window (see section 9.0). Depending on the type of report, different options will be shown.

7.3.1 Detailed Table

The Detailed Table report (Figure 30) shows all information received from an asset.

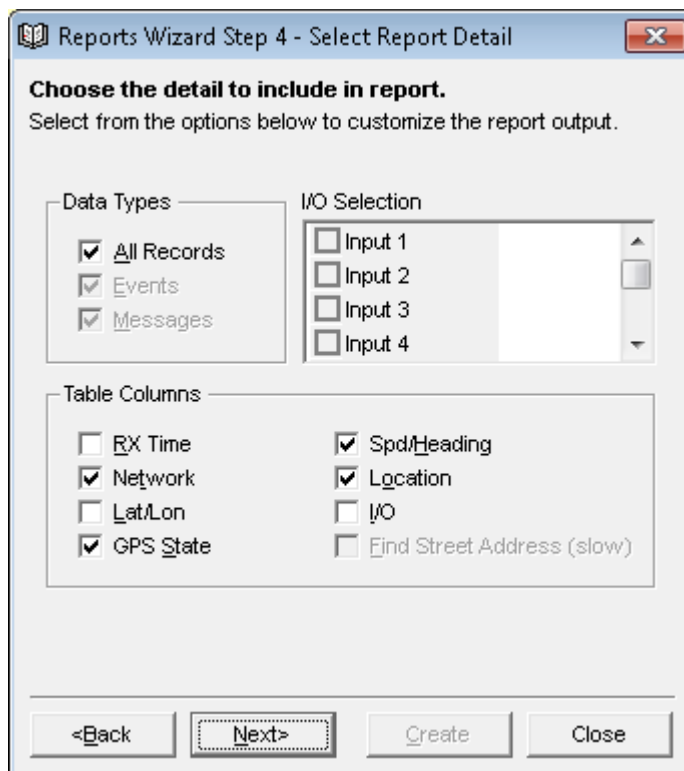


Figure 30 – Detailed Table Options

Select whether you want to see all records (including positions), or just events and/or messages. Choose which columns you want in the report. If you select the I/O check box, you can also select which inputs and outputs you want listed.

The Find Street Address option is only available when MapPoint is in use. It will cause DataHost to use MapPoint to find addresses at each asset location. This can be a slow process, so use with caution when running reports for long periods.

7.3.2 Asset Overview

The Asset Overview report (Figure 31) produces a one-line (per asset) report showing overview information.

Reports Wizard Step 4 - Select Report Detail

Choose the detail to include in report.
Select from the options below to customize the report output.

Display Options

<input type="checkbox"/> Warm-up Time	<input checked="" type="checkbox"/> Drive Time
<input checked="" type="checkbox"/> Distance Driven	<input checked="" type="checkbox"/> Average Speed
<input checked="" type="checkbox"/> Idle Time	<input checked="" type="checkbox"/> Max Speed
<input checked="" type="checkbox"/> % Idle	<input checked="" type="checkbox"/> Location
<input type="checkbox"/> Overspeed Status	<input checked="" type="checkbox"/> Show LSD
<input type="checkbox"/> Fuel Used	<input type="checkbox"/> Street Address (slow)

Use Vehicle Ignition Status (ignore Starts/Stops)
 Use Start and Stop Events (ignore Ignition)
 Use GPS Position (ignore Starts/Stops/Ignition)

Stop Period (min)	Fuel Use (l/100km)	Idle Fuel (l/h)
10	23.5	3.8

<Back Next> Create Close

Figure 31 – Asset Overview options

Select what kind of data you want to display. Idle time and fuel used values are only available if an engine interface is used.

7.3.3 Trip Summary Report

The Trip Summary report (Figure 32) looks in history for periods where the asset was moving.

Reports Wizard Step 4 - Select Report Detail

Choose the detail to include in report.
Select from the options below to customize the report output.

Display Options

<input type="checkbox"/> Warm-up Time	<input checked="" type="checkbox"/> Drive Time
<input checked="" type="checkbox"/> Distance Driven	<input checked="" type="checkbox"/> Average Speed
<input checked="" type="checkbox"/> Idle Time	<input checked="" type="checkbox"/> Max Speed
<input checked="" type="checkbox"/> % Idle	<input checked="" type="checkbox"/> Location
<input type="checkbox"/> Overspeed Status	<input checked="" type="checkbox"/> Show LSD
<input type="checkbox"/> Fuel Used	<input type="checkbox"/> Street Address (slow)

Use Vehicle Ignition Status (ignore Starts/Stops)
 Use Start and Stop Events (ignore Ignition)
 Use GPS Position (ignore Starts/Stops/Ignition)

Stop Period (min)	Fuel Use (l/100km)	Idle Fuel (l/h)
10	23.5	3.8

<Back Next> Create Close

Figure 32 – Trip Summary options

Each period or movement will show as a trip. Trips can be based on IGN state, start/stop events, or GPS position. If using GPS position, you can select the minimum time an asset must be stopped to end a trip. Note that when using position to determine trips, the results will depend on how often the hardware has reported. See the Detailed Report description for notes on “Find Street Address”.

7.3.4 Location-based Trip Report

Location-based reports (Figure 33) find trips that have occurred between a certain start and stop location.

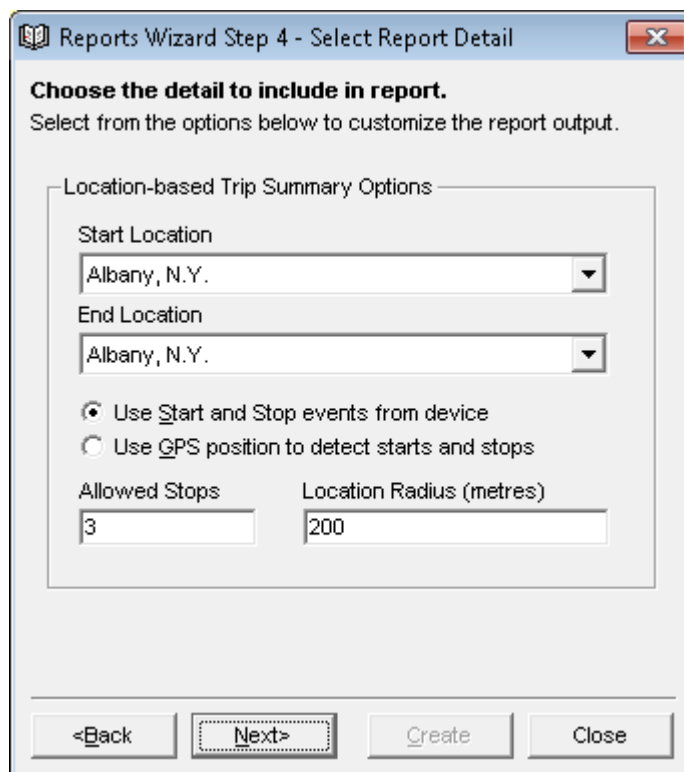


Figure 33 – Location-based Trip options

The locations are selected from the DataHost's user defined location list (see section 8.0). Like the Trip Summary report, trips can be detected using start/stop events, or GPS locations. The location radius figure defines how close the asset must get the start or stop location to be included in the report. The Allowed Stops figure places a limit on how many stops can occur in any trip. If more stops are detected, the trip will be ignored.

7.3.5 Summary Report

Available for SiteStar and CheckerOne devices only. This report lists hardware specific parameters not available on standard units.

7.3.6 Input Summary Report

The Input Summary report (Figure 34) shows changes to asset inputs.

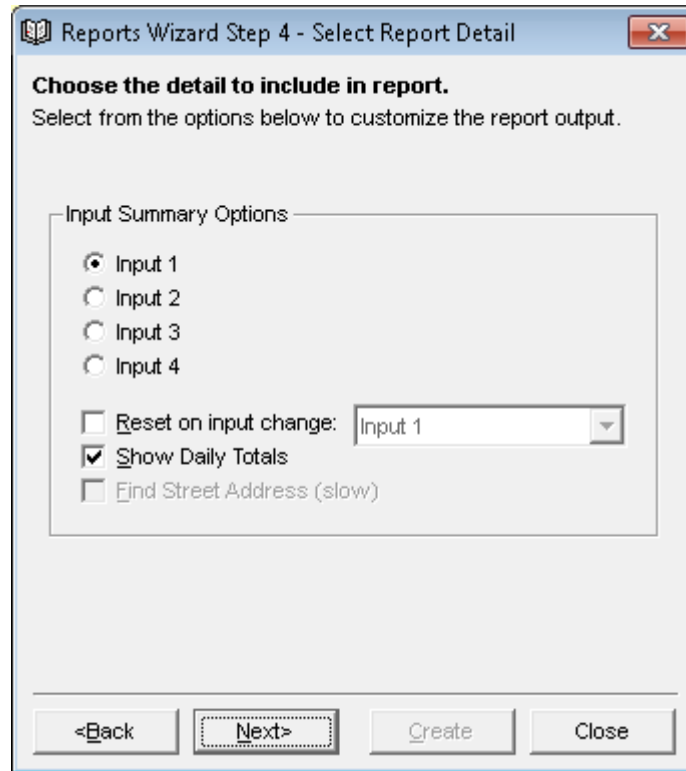


Figure 34 – Input Summary options

Select which input you want to monitor, and whether you want daily totals. See the Detailed Report description for notes on “Find Street Address”.

7.3.7 Map Display

The Map Display report (Figure 35) shows asset locations on the map, and supports MapPoint, Bing, Google Maps, Google Earth, and Streets on a Disk maps.

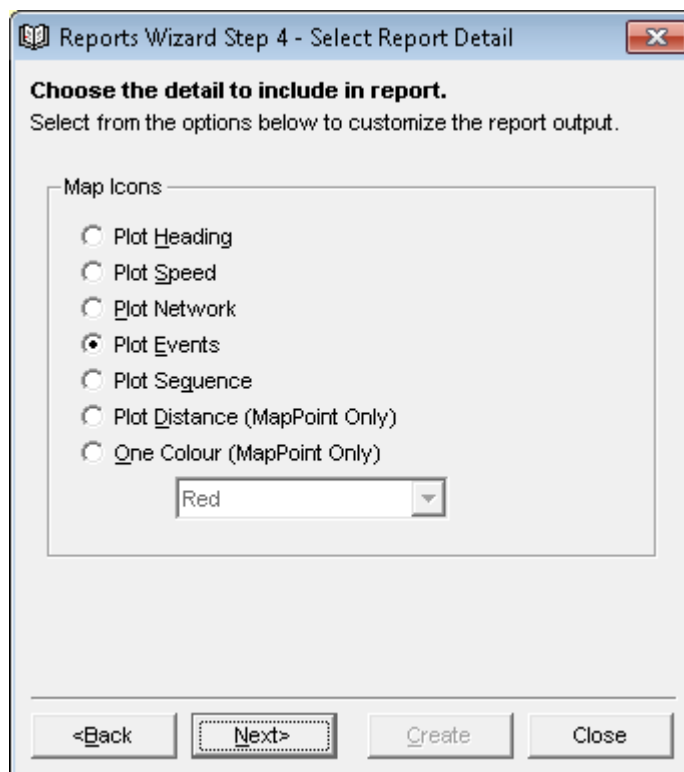


Figure 35 – Map Summary options

Only MapPoint supports the various options on this screen (all others will simply show asset location).

- Plot Heading:** Asset will be shown as an arrow, indicating direction of travel.
- Plot Speed:** Asset icon will change colour depending on speed. Green is slow, orange is fast.
- Plot Network:** Icon colour indicates whether asset was reporting
- Plot Events:** Only events and messages will be shown. Event icons are assigned one by one, and may take a long time to complete.
- Plot Sequence:** Asset positions are ordered in time, with icon colour changing as time progresses. This allows the start and end points of asset movement to be determined.
- Plot Distance:** The distance an asset travels is calculated on a per state/province basis, and the colour of the state/province indicates total distance travelled in that area.
- One Colour:** Plot icons in one colour.

7.3.8 Activity Report

Scans history to find first activity for each selected asset.

7.4 Report Creation

Figure 36 shows the history-scanning window. Reports may take some time to create, depending on the time interval and report type. You may cancel the report at any stage by clicking the “Cancel” button.

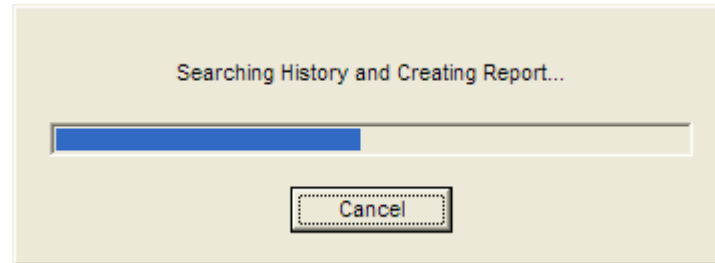


Figure 36 – Scanning data

7.4.1 Table Reports

Figure 37 shows a sample table report. The columns displayed will depend on the selection made in step 4 of the Reports wizard.

Note that all times are converted into local time. The Packet Time field is the time the packet was created, and is based on the GPS time inside the asset. It will not exactly match the Received Time field, as there will be some delay due transmission times. Also, packets may be buffered by the asset if buffering is configured, or asset goes out of coverage. In that case, the delay between packet creation and received time could be several hours or even days.

For example, the first packet in the sample table was created on April 13, 2007, at 10:41:04 am, but was received two seconds later.

History Report

Start: *Friday, 13 April 2007 12:00:00 a.m. (local)*
 Stop: *Friday, 13 April 2007 11:59:59 p.m. (local)*

Asset: *Vancouver Demo (255.255.250)*

Friday, 13 April 2007

Received Time (local)	Packet Time	Speed (km/h)	Heading	Event	Message
13/04/2007 10:41:06 a.m.	13/04/2007 10:41:04 a.m.			Reboot	
13/04/2007 10:41:16 a.m.				SENT: Poll	
13/04/2007 10:41:16 a.m.	13/04/2007 10:41:14 a.m.	0	E		
13/04/2007 10:41:17 a.m.				ACK	
13/04/2007 10:41:33 a.m.	13/04/2007 10:41:31 a.m.	11	SW		
13/04/2007 10:41:41 a.m.	13/04/2007 10:41:39 a.m.	31	SW	Event=Started Distance=0.0 miles DriveTime=0h 0m 6s OverspeedTime=0h 0m 0s MaxSpeed=19mph	
13/04/2007 10:41:48 a.m.					SENT: Message - Test message
13/04/2007 10:41:49 a.m.				ACK	
13/04/2007 10:41:55 a.m.				Msg Read	
13/04/2007 10:42:12 a.m.	13/04/2007 10:42:10 a.m.	31	S		Got message ok
13/04/2007 10:43:12 a.m.	13/04/2007 10:43:10 a.m.	0	SE	Event=Stopped Distance=0.8 miles DriveTime=0h 2m 26s OverspeedTime=0h 0m 0s MaxSpeed=62mph	

Figure 37 – Table report

7.4.2 Map Reports

When a MapPoint map replay is complete, the “Legend and Overview” window will be displayed on the map. This may also be toggled on and off using the Map menu. Each history report is displayed in the legend, with the key explaining the icons used. To delete any map replay, simply select the appropriate data in the legend, and then press the delete key. Figure 38 shows several MapPoint replays, including speed-based, heading-based, and event-based reports.

For Virtual Earth, a separate web page will be opened to show the history data. This prevents the main map from slowing down, which could occur if the report has many icons.

Google Earth replays are loaded automatically as a new group under the Places list.

Streets on a Disk replays will also appear automatically in the Streets application.

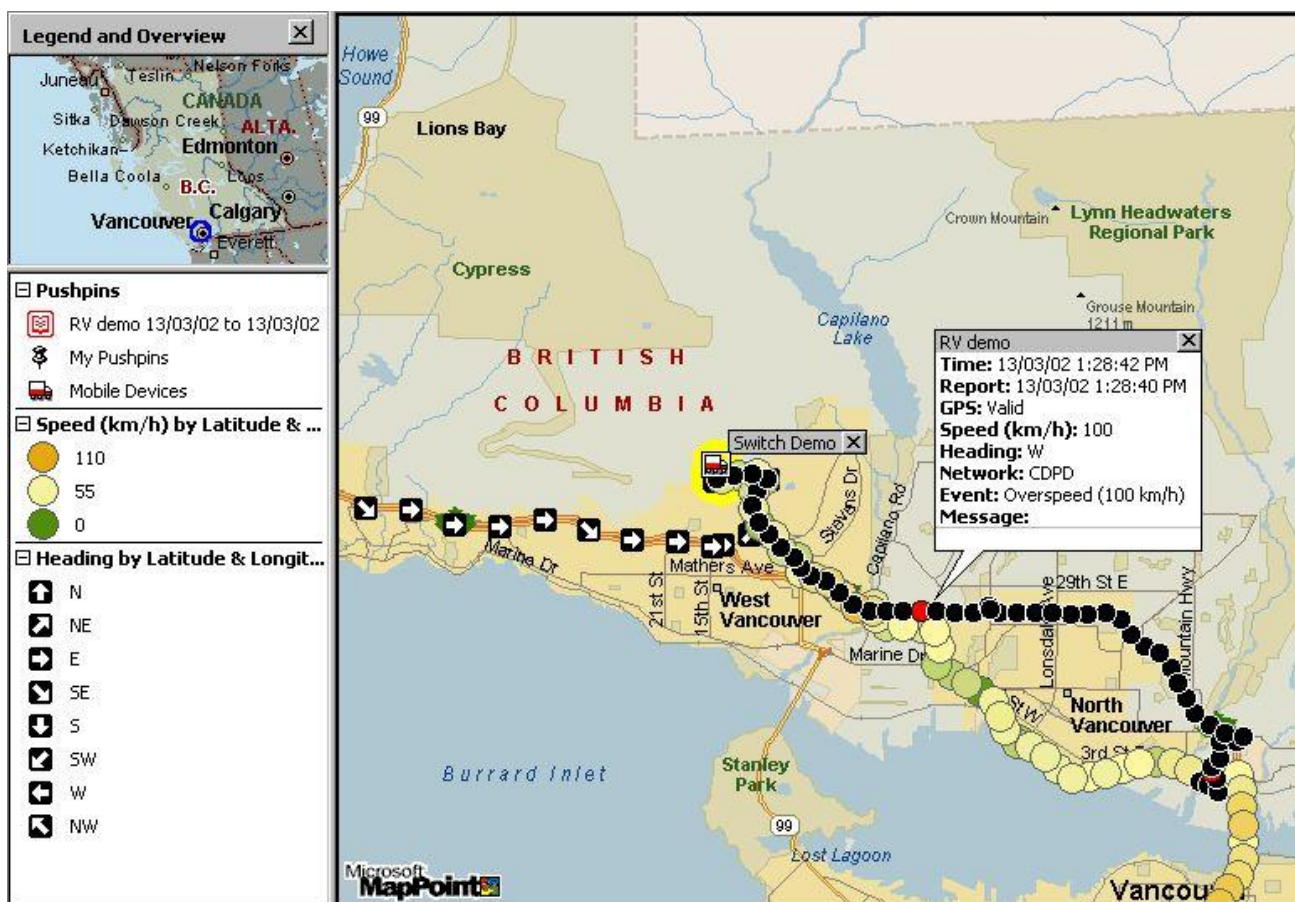


Figure 38 – Map reports

8.0 User-Defined Locations

Whenever a position report is received from an asset, DataHost will attempt to find the nearest point of interest to that position. If the asset's position is not known, the location will be shown as "Unknown". This location is displayed in the Asset Properties list on the main screen, and can also be included in Table Reports by selecting the "Show Location" option (see section 6.0). The location is given with the asset's distance and compass direction from the named reference point.

These locations are also used for the Track feature (see section 5.8), and Location-based Trip reports (see section 7.3.4).

8.1 Locations Window

Select the View/Locations menu to open the Locations window, as shown in Figure 39. A list of the current locations will be shown. Use the toolbar (or the insert and delete keys) to add and delete locations, and double click (or press Enter) to edit a location.

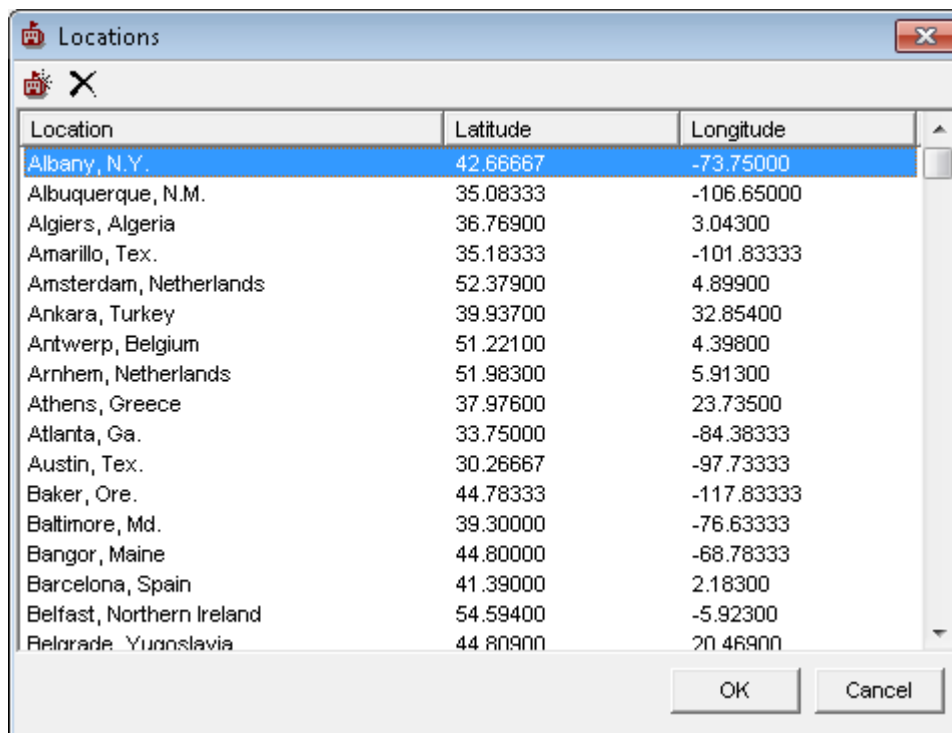


Figure 39 – List of locations

When editing a location, the Location Properties window is displayed (see Figure 40). Each location can be assigned a description, and have its latitude and longitude modified. Press OK to save changes to the location, or Cancel to retain the existing values.

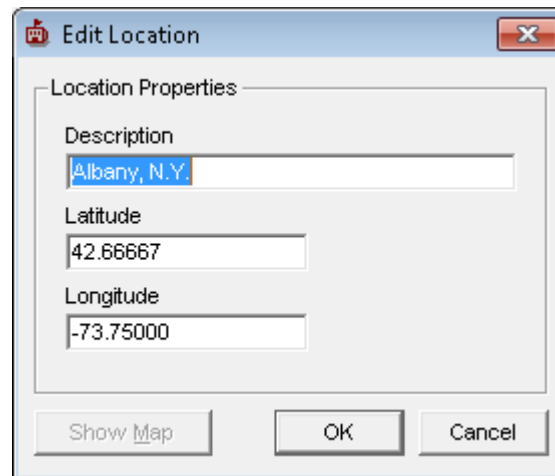


Figure 40 – Editing a location

If MapPoint is being used, the “Show Map” command will be enabled. This brings up a separate map showing the location (see Figure 41). The location icon can be repositioned as required, and the new latitude/longitude values will appear in the location window when the OK button is pressed.

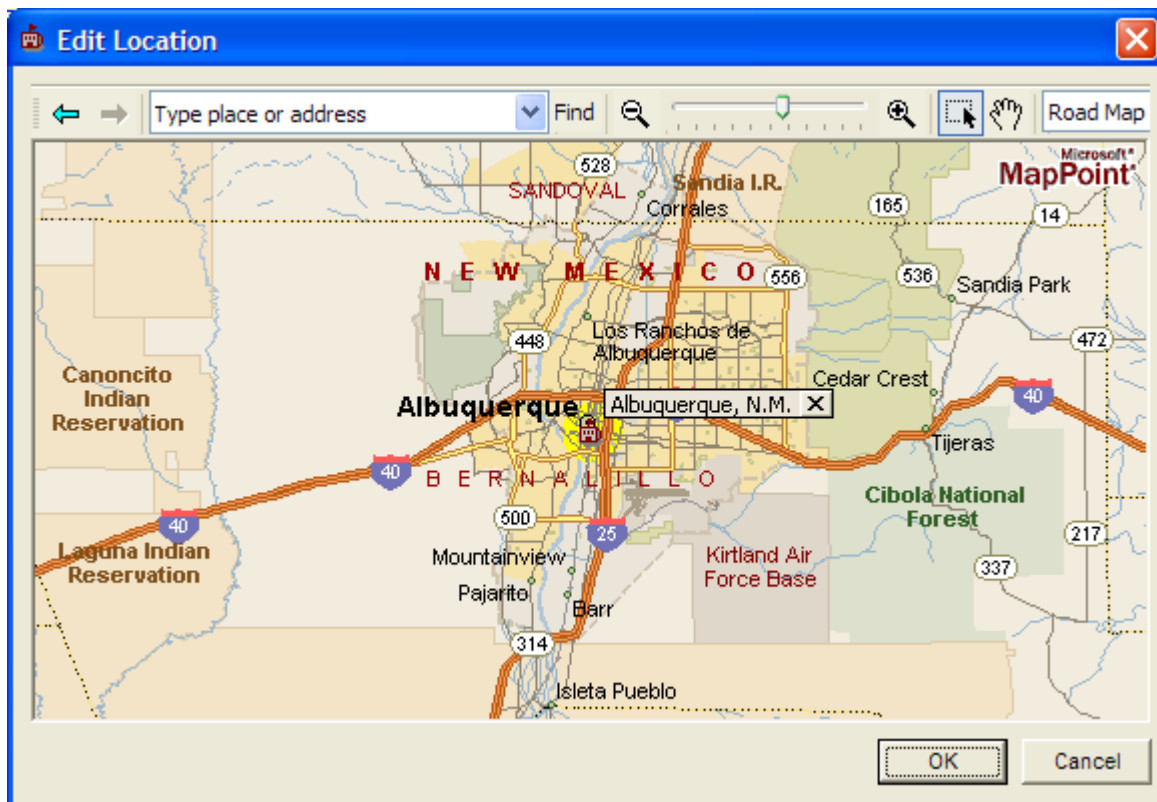


Figure 41 – Showing a location on the map

8.2 Adding Locations using the Map

When built-in maps are enabled, a new location may be added by right clicking on the map at the desired location, and selecting "Add Location". This will load the Location window, with the latitude and longitude fields automatically set to the location of the mouse click.

8.3 Importing Locations using MapPoint

When DataHost starts, it looks in the map for a dataset named "LOCATIONS". If it finds such a dataset, it will import all the pushpins as locations, and then delete the dataset. This allows a user to load a standalone version of MapPoint, place pushpins at locations of interest, and then have them imported easily into DataHost. Note that the user would have to edit the DataHost map, which is called "datahost.ptm", located in the DataHost file directory.

8.4 Editing Locations File

The DataHost executable file contains a predefined list of locations, consisting of many major cities around the world. Users can add their own custom points to this list, using the file "geocode.txt" located in the same folder as the DataHost.ini file. This file is written as a series of comma separated variables (csv), and can be edited with any text editor. If this file is not found, DataHost will automatically create it with the column headers defined. A sample file is listed here:

```
Name, Name2, Latitude, Longitude, Type, ID
"Vancouver Office", , 49.331, -123.134, ,1
"Central Park", , 40.78, -73.97, ,2
```

The following fields are defined:

- Name:** Description of location. This will appear in the location field.
- Name2:** Optional second part of description. If defined, Name and Name2 will be separated by a comma when a location is displayed.
- Latitude:** Latitude of location in decimal degrees. Latitudes south of the equator should be negative.
- Longitude:** Longitude of location in decimal degrees. Longitudes west of Greenwich should be negative.
- Type:** Optional description of point type. Not currently used by DataHost.
- ID:** Used to identify destination when sending it as a stop location to a navigation device.

It is recommended to use this file when generating stop lists to send to navigation devices. Copy the desired destinations and save as a new file. Then select this file when updating the stop list. See section 5.10 for more information on asset stop lists.

9.0 Options

The View/Options menu item brings up the main options screen for the DataHost software. Many options are available, separated into seven tabs.

Note: Clicking the Default button will load the default options for the currently selected tab.

9.1 Connection

The Connection Options (Figure 42) tell DataHost how to connect to the DataGate server.

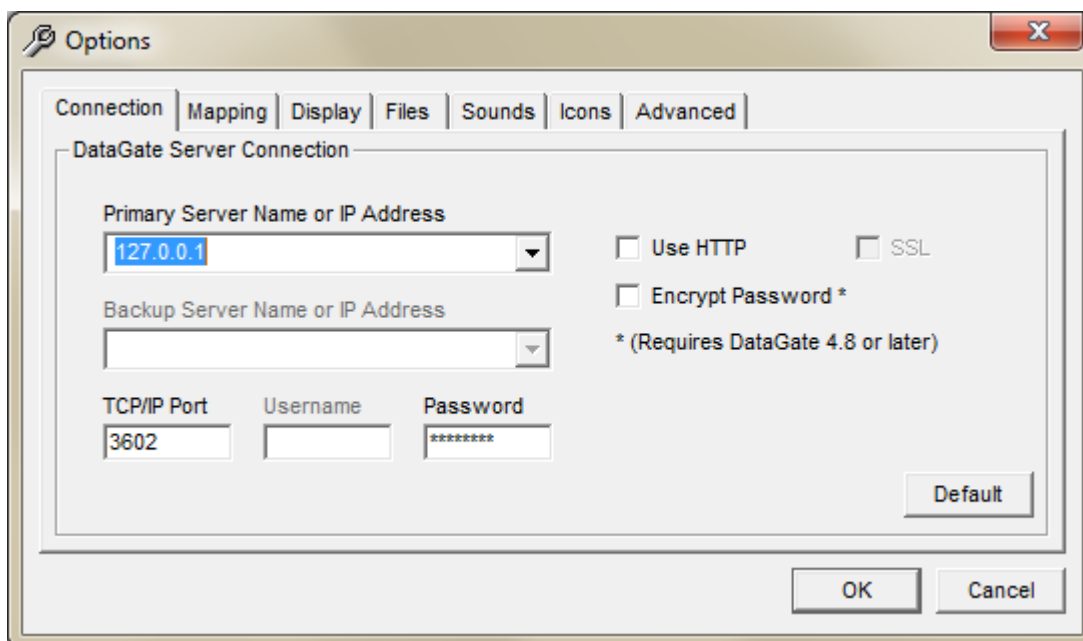


Figure 42 – Connection Options

- Server Name or IP Address:** Address of server. This can be a host name or IP address.
- Backup Server:** Not used.
- TCP/IP Port:** TCP port to connect to. Default port is 3602.
- Username:** Required when HTTP or encrypted password options enabled.
- Password:** Password for this DataHost. Each DataHost must have a unique password, which is assigned by the DataGate operator.
- Use HTTP:** When enabled, DataHost will use the HTTP protocol to access the server. This may allow it to pass through firewalls more easily, but the connection will be slower.
- SSL:** Enables SSL when using HTTP connections.
- Encrypt Password:** When connecting to DataGate version 4.8 or later, the password can be encrypted. By default the password is sent in plain text.

9.2 Mapping

9.2.1 Internal Maps

MapPoint and Bing/Google Maps Options (Figure 43) control embedded map set-up:

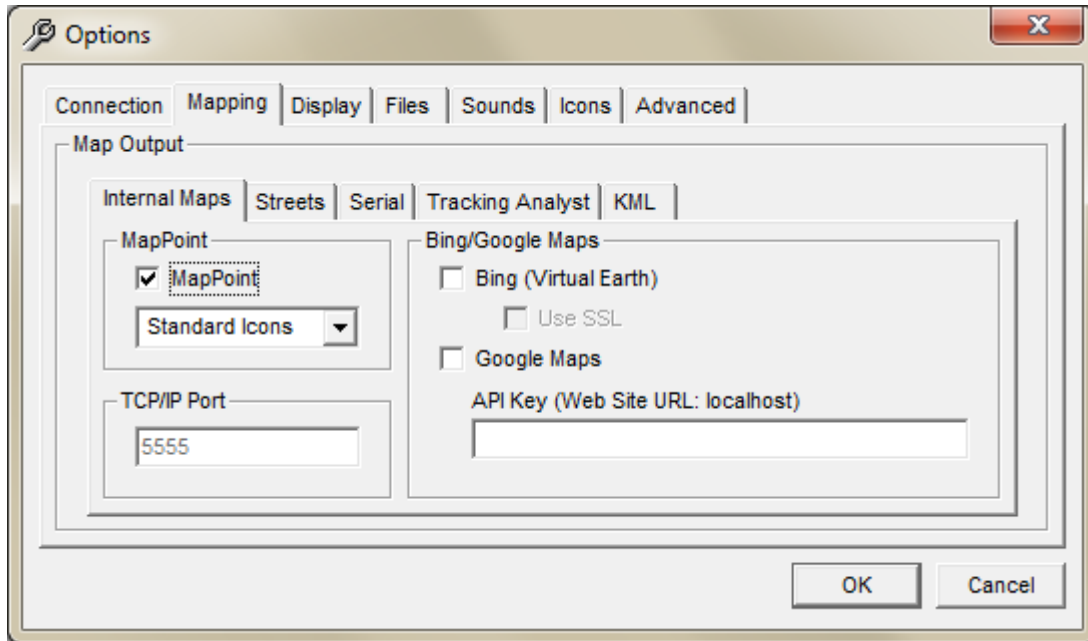


Figure 43 – MapPoint/Virtual Earth Options

- Use MapPoint/Bing/Google:** Only one of these may be selected at once.
- Icon Size:** Select what sized icons to display in MapPoint.
- TCP/IP Port:** DataHost runs a built-in web server to produce the Bing/Google maps. This is the port used to access this server. Note that connections from outside the user's PC will be rejected.
- Use SSL:** The connection to Bing map servers can be made over a secure link if desired.
- API Key:** API key for Google maps.

9.2.2 Streets

Streets Options (Figure 44) define how the interface to Streets is set up.

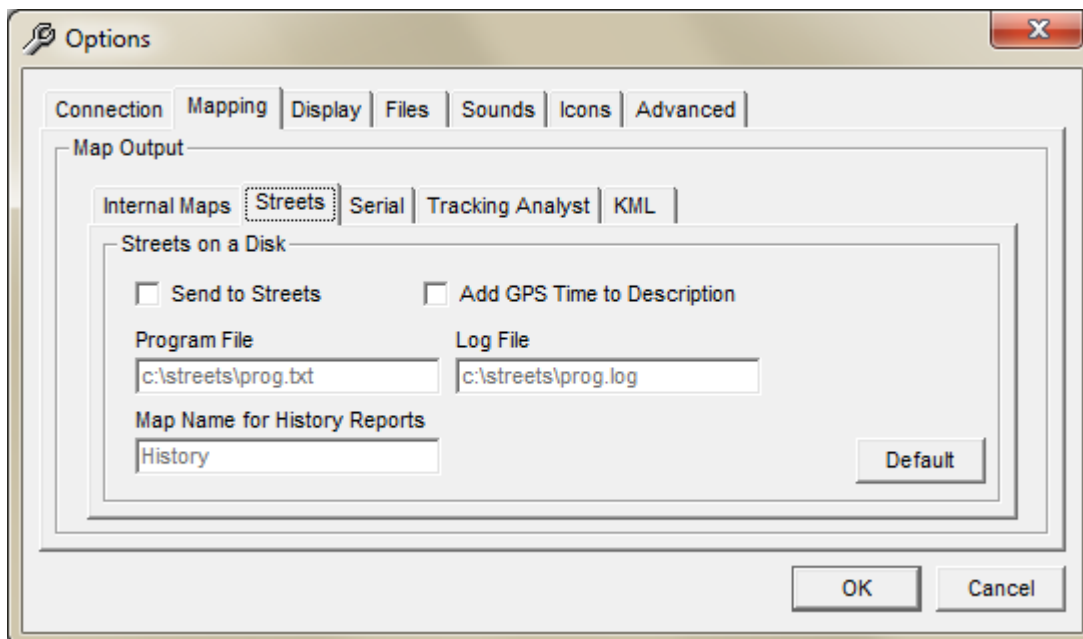


Figure 44 – Streets on a Disk Options

Send to Streets:	Check this option to enable the Streets interface.
Add GPS Time:	GPS time will be added to the device description. This is useful, as there is no other way to transfer this information.
Program/Log Files:	DataHost will read and write asset data using these filenames. Streets must be configured with the same names.
Map Name for History:	This is the name of the layer that will receive history data.

When data is passed to Streets, DataHost includes an icon description. Custom icons should be programmed into Streets with the following labels:

EMGC:	A high priority message has been received from asset.
MSG:	A new message has been received from asset.
NOGPS:	Asset does not have a valid GPS position.
OLD:	Old data. Most recent position report is older than time defined in options (see section 9.6).
STOPPED:	Asset is stationary, with recent position report.
N, NE, E, SE, S, SW, W, NW:	Asset is moving, with recent position report. Use arrow icons.

9.2.3 Serial

Serial Output Options (Figure 45) select whether DataHost should send NMEA GPS data to the selected COM port. The GPS position will be set to the currently selected asset's location. Note that the serial output will be set to 4800,8,n,1 format, which is the standard NMEA setting.

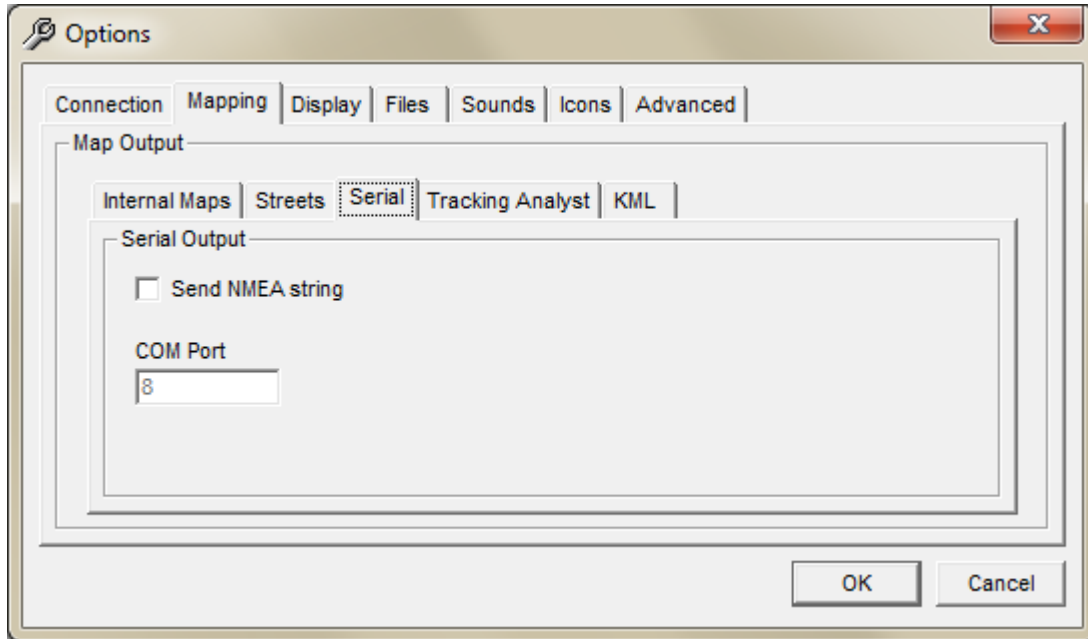


Figure 45 – Serial Output Options

9.2.4 Tracking Analyst

Tracking Analyst Options (Figure 46) control whether to send data to ArcView Tracking Analyst. Select the server and port number to send data to. Tracking Analyst should be running on that machine, and have the correct data feed definitions installed.

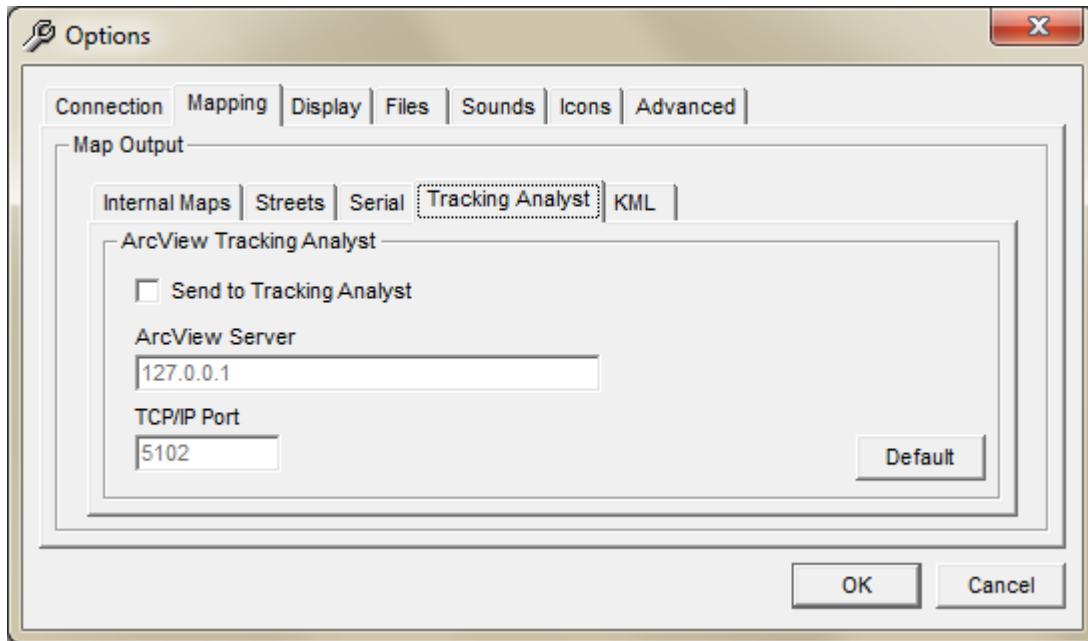


Figure 46 – ArcView Tracking Analyst Options

9.2.5 KML

KML Options (Figure 47) control whether to enable the Google Earth map server, and which port to use. The default port is 80. If this is changed, the Network Link settings must also be changed in Google Earth (see section 6.6).

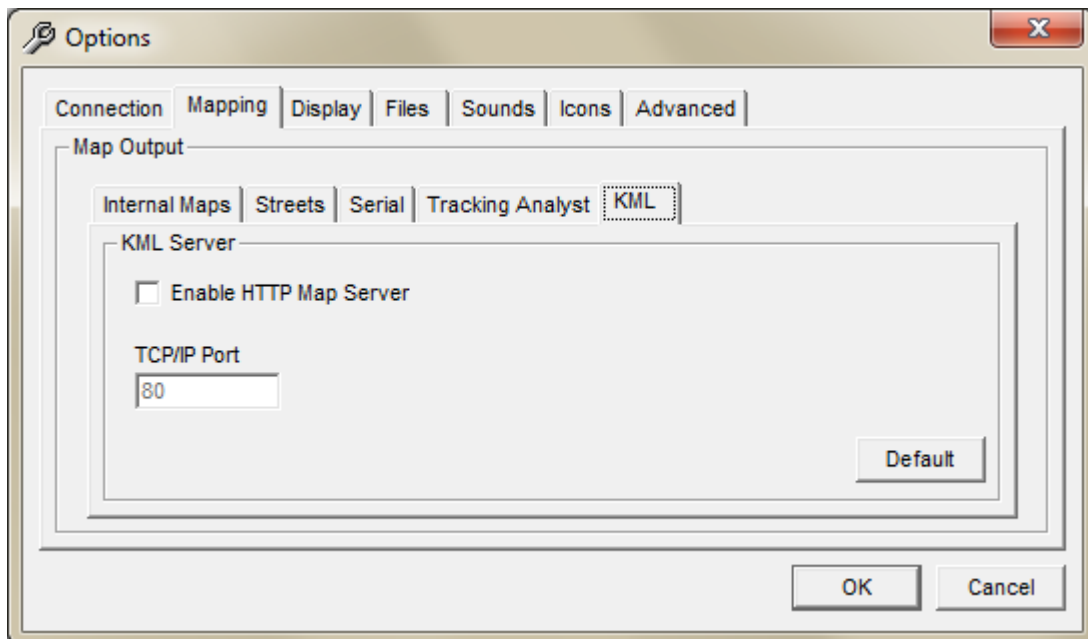


Figure 47 – Google Earth Options

9.3 Display

The Display Options (Figure 48) control how DataHost displays various values and messages.

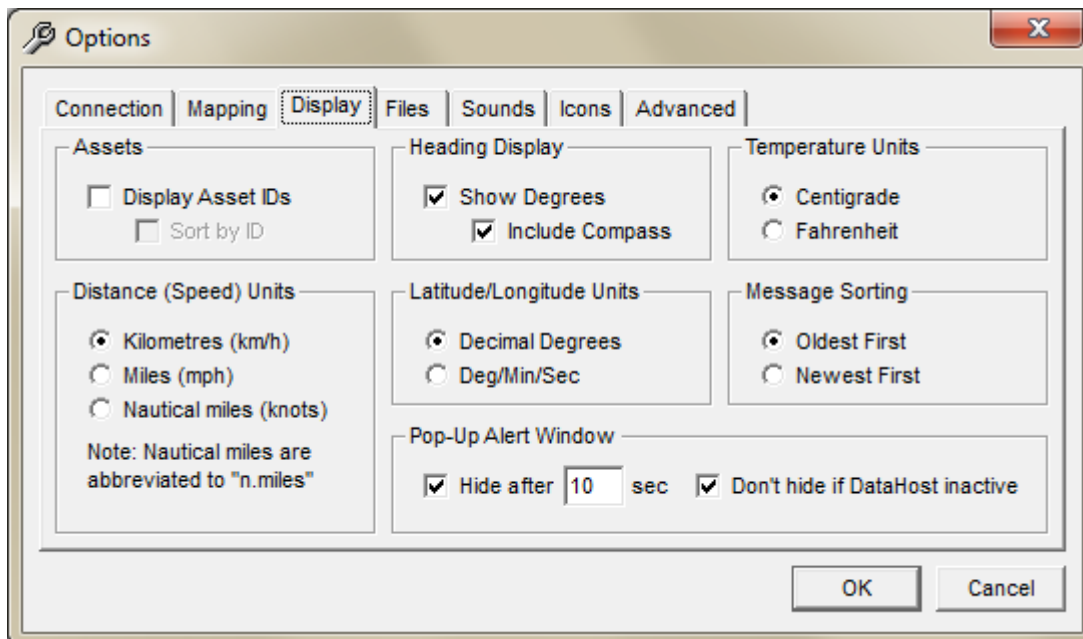


Figure 48 – Display Options

- Display Asset IDs:** Every asset has a three digit ID (such as 200.20.100), which identifies it on the DataGate server. Choose whether to display this ID in the Assets list.
- Sort by IDs:** If IDs are being displayed, you can choose to sort them based on ID, rather than their descriptions.
- Distance/Speed Units:** Select the desired units for distance and speed values.
- Heading Display:** Select whether to show degrees and/or compass point.
- Temperature Units:** Some assets transmit temperature. Select desired display units.
- Decimal Degrees:** Latitude/Longitude values will be displayed as decimal numbers (such as 49.18327°)
- Deg/Min/Sec:** Latitude/Longitude values will be displayed in degrees, minutes, and seconds (such as 49° 10' 59.77")
- Message Sorting:** Messages can be sorted oldest or newest first.
- Pop-Up Alert Window:** Set how long to show the pop-up alert window.

9.4 Files

File Options (Figure 49) control how DataHost stores asset and message data.

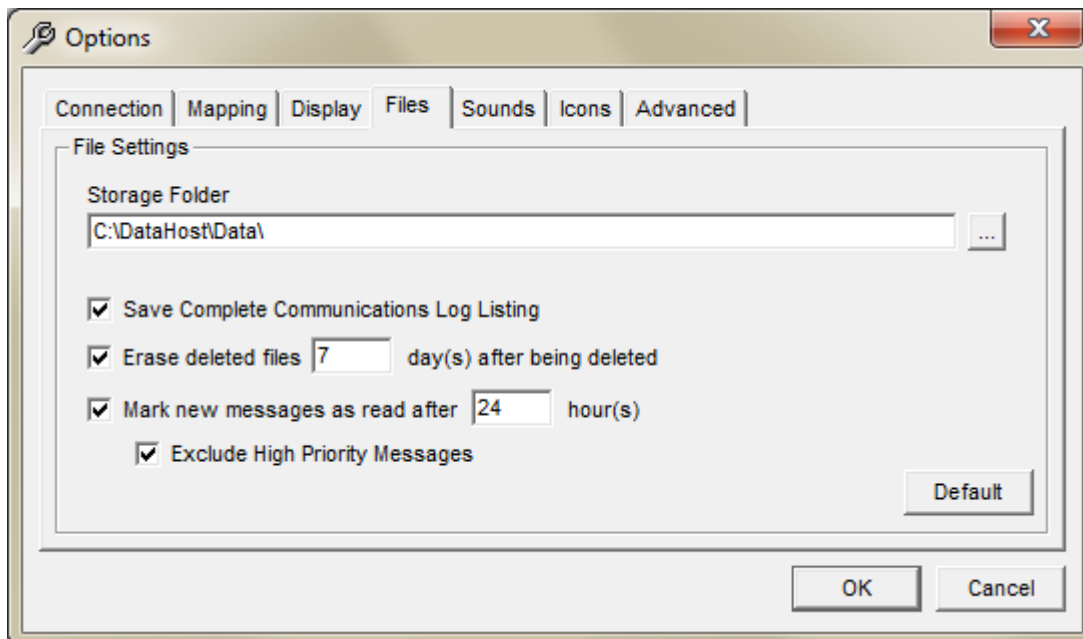


Figure 49 – File Settings

- Storage Folder:** This is the location where DataHost will store its data and log files. If a new directory is chosen, all existing data files (excluding history) will be copied to the new directory. Note that if the new directory already has DataHost files in it, you will be prompted to either keep or overwrite the files.
- Save Complete Log:** All data listed in the DataHost log list will be saved to file. This is the default setting. Deselect if you want to minimize the size of the log listing.
- Erase Deleted Files:** Choose whether to automatically erase deleted files, and the amount of time to wait before erasing.
- Mark New Messages as Read:** Use this option to automatically mark new messages as read after a certain period. High priority messages can be excluded from this process, to ensure they are not missed.

9.5 Sounds

The Sounds Options (Figure 50) control how the DataHost warns a user when new messages are received.

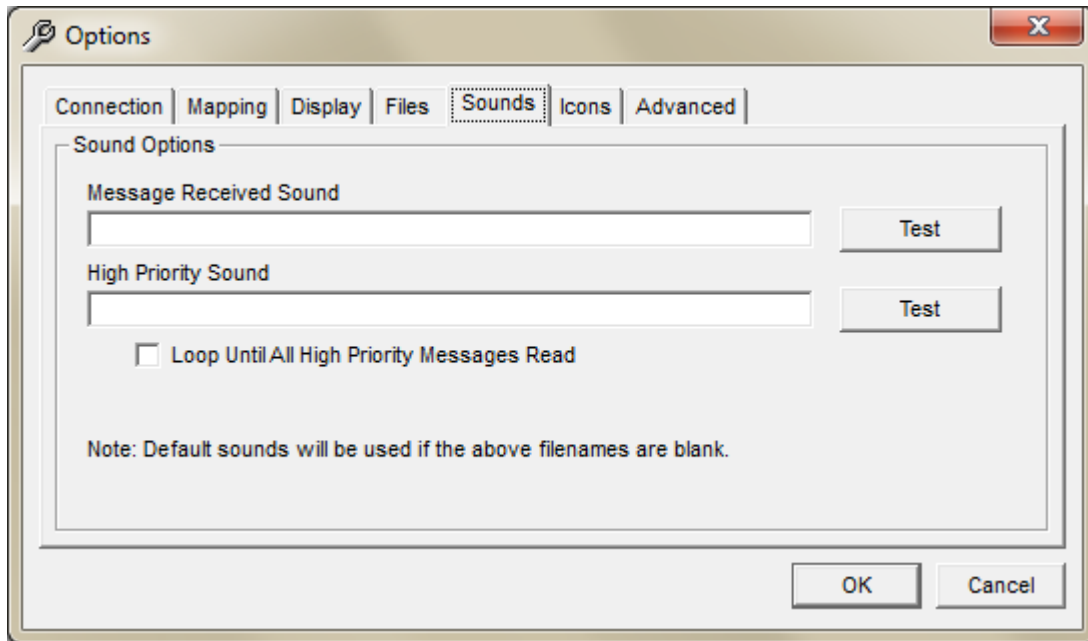


Figure 50 – Sound Options

Two sounds are available: one for normal messages, and another for high priority messages. High priority alerts can be set to loop continuously until all high priority messages have been read, which is useful for high security applications. The “Test” buttons provide a quick method of testing sounds.

If the filenames are left blank, DataHost will use its built-in sounds.

9.6 Icons

Icon Options (Figure 51) control how assets are displayed in the asset list and on the built-in map.

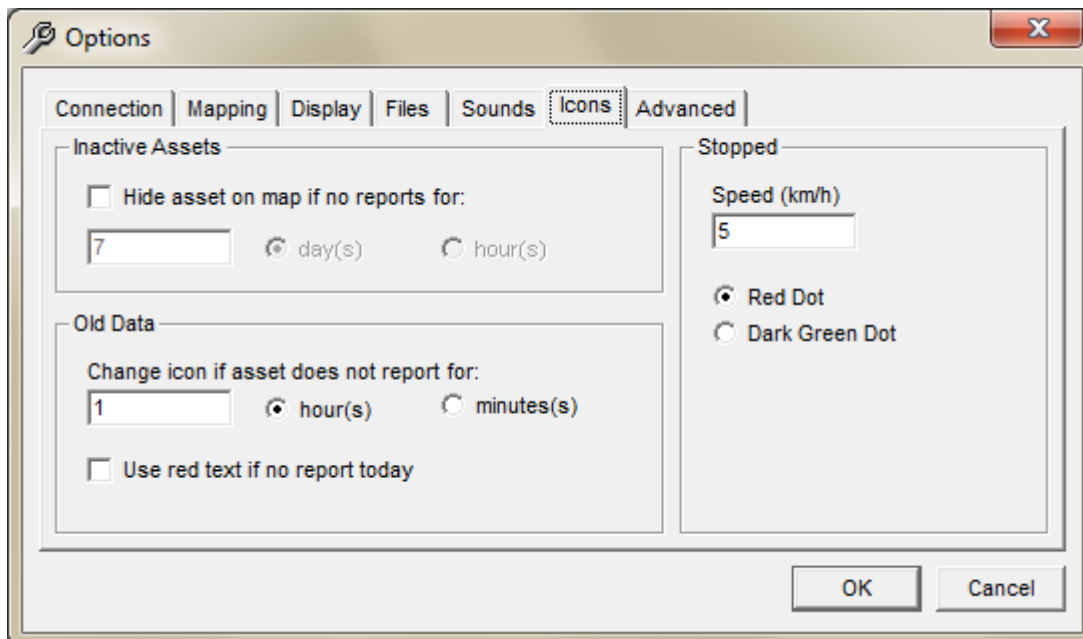


Figure 51 – Icon Options

- Hide Asset:** If an asset does not report for an extended period, you can choose to hide it from the map.
- Change Icon:** After a certain period, an asset's icon will change to an orange circle. This indicates that the position data is old, and may no longer be accurate (asset may have gone out of coverage, or been turned off).
- Use Red Text:** Asset list will show red text for assets that have not reported today.
- Stopped:** Choose the speed under which an asset's icon will change to the stopped state. Select between red or dark green for this state.

9.7 Advanced

The Advanced Options (Figure 52) define whether DataHost will send SNMP alerts and/or write to the Windows event log when high priority events occur.

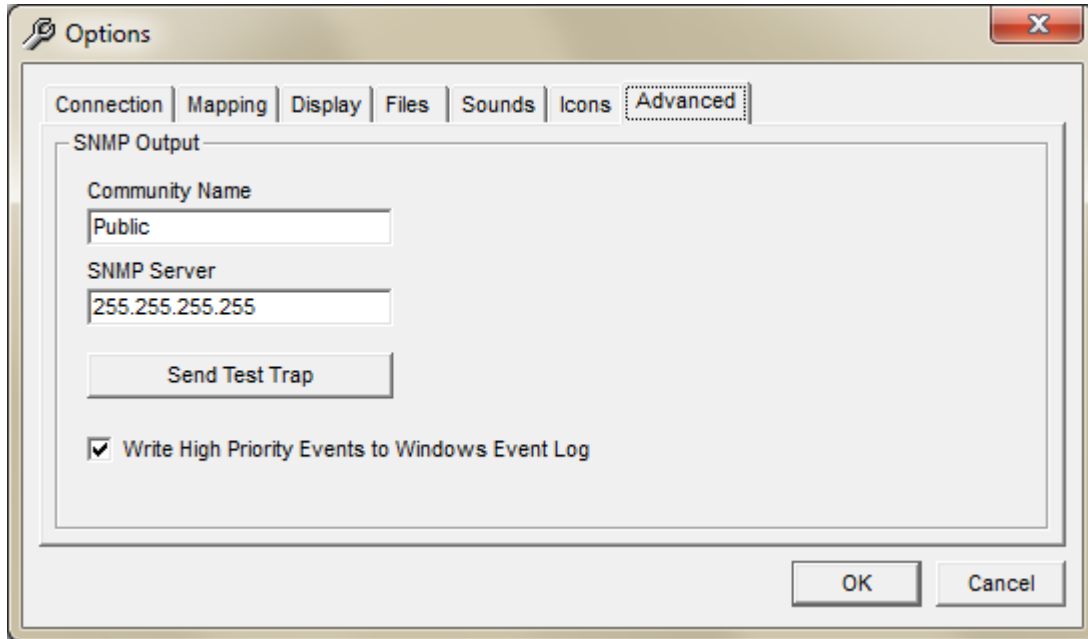


Figure 52 – General Options

- SNMP Output:** Simple Network Management Protocol (SNMP) trap data can be sent when high priority events are received. This data can be picked up by network monitoring software.
- Event Log:** High priority events will be written to the Windows event log.

10.0 Data Files

DataHost uses a settings file called “main.ini” in the program directory to set where the DataHost configuration files are kept. This file is created during installation, but can be modified if the configuration folder needs to be moved (requires administrator access).

The configuration folder holds all DataHost settings in a file named “datahost.ini”. If this file cannot be found, default settings will be used.

DataHost also makes use of a file named “geocode.txt” (used to store user-defined locations) and “drivers.txt” (stores driver names). These files are stored in the configuration directory.

All other data files are stored in a user-defined directory, which can be modified from the Options menu. When changing directories, all existing data files (excluding logs and history) will be copied to the new directory (leaving the old files as a backup). However, if the new directory already contains database files, a prompt will be displayed to either keep or overwrite the existing files.

The following files are written to the storage directory:

- Log Files:** These files mirror the information displayed in the DataHost log box. Their filename is created using the current date in the format “yyyymmdd.log” (year, month, and day). The amount of data written to these logs can be modified from the Options window.
- History Files:** All data received from and sent to mobile devices is stored in history files. These files also use the current date as a filename, in the format “yyyymmdd.his”. These files are used when creating reports.
- Database Files:** Several files are used to store information about DataHost objects (assets, events, etc). These files use a “.dat” extension.

11.0 Contact Information

For further support, email: support@datalinksystemsinc.com