Centigon solutions

GMaps Plugin v3.0
User Guide

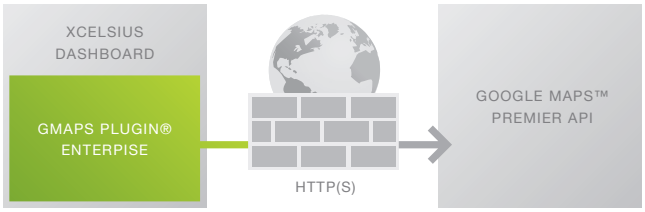
GMaps Plugin Introduction

Centigon Solutions GMaps Plugin™ component for Xcelsius® 2008 couples robust mapping with interactive data visualization. Drag and drop Google® Maps into your dashboard and then configure rich analytic and alerting capabilities with point and click ease. Surpassing traditional mapping solutions, GMaps Plugin transforms a Google Map control into interactive geo-analysis visualization for business intelligence dashboards.

GMaps Plugin for Crystal Dashboard Design and Xcelsius® is a highly configurable add-on component for visualizing and navigating geographic data within a Google Maps interface. Drag and drop GMaps Plugin onto your dashboard canvas to create the ultimate mapping interface tailored to your dashboard design needs. GMaps Plugin is fully integrated with SAP Crystal Dashboard Design / Xcelsius APIs for bi-directional communication with other components using common design practices.

GMaps Plugin

GMaps Plugin bridges the gap between Google Maps Premier and powerful reporting and dashboard platforms like Xcelsius and SAP Crystal Dashboard Designer. GMaps Plugin is embedded as an object within a dashboard/report and connects directly to Google Maps Premier APIs without any server-side middleware. Using Google Maps powerful web APIs, GMaps Plugin extends new capabilities to produce robust visualization designed for interactive dashboards and reports. With point and click configuration, designers can create rich content without writing a single line of code and then deploy to any secured portal or web site.



Install Requirements

Client Requirements

Xcelsius 2008 Service Pack 2 or greater
SAP BusinessObjects Dashboards 2011
Flash Player 9

Install Disk Space
2 MB

More Information

If you have any questions about this document please contact Centigon Solutions support at:
support@centigonsolutions.com

For more information on Google Maps Premier API go to:
http://gmapsplugin.com/technology.html

GMaps Plugin FAQ
http://gmapsplugin.com/faq.html

GMaps Plugin version enhancements
http://gmapsplugin/releasenotes.html

Installation

1. System Configuration- Ensure that you have disabled UAC (Vista and Windows 7).
http://gmapsplugin.com/learning/uac.html

2. Computer User Security Rights (Vista and Windows 7)- To install and use add-on components, you will be required to have administrative rights on your computer to install software. To review if your profile has these rights, right click on the Xcelsius program and “Run as Administrator.” If you are prompted for a login you will need to contact your IT department to obtain the necessary access rights to your PC.

3. Open Xcelsius 2008
*Make sure you have the latest service pack and hotfix installed.

4. Click File>Manage Add-Ons

5. Click on Install Add-On

6. Navigate and to the downloaded Gmaps Plugin XLX file.

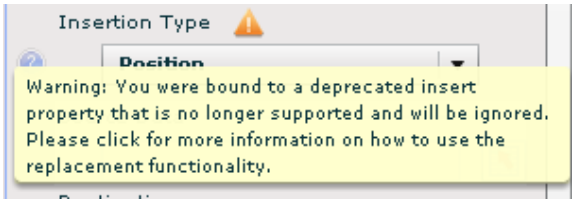
7. Close the Add-On Manager and click Save Settings.

8. Re-open Xcelsius 2008 to access GMaps Plugin, located at the bottom of the Maps folder within the components window.

Migration Notes

When migrating from version 2.0 or 2.1 to 3.0 there are architecture changes that you will need to be aware of, to ensure your dashboard applications will operate exactly the same as 2.1. These changes will ensure you can take full advantage of powerful new featuers implmented in GMaps Plugin.

Selector Configuration



New to GMaps Plugin 3.0 is a improved selector architecture allowing developers to define independant selector behavior per series (excludes multi-selection). When migrating an existing model, GMaps Plugin will automatically notify you that legacy selector funcitonality used in a dashboard

GMaps Plugin requires you to re-bind any selector capabilities to ensure forward compatability. The benifit of this migration step allows you to take full advantage of independant selector control per series, rather than global selector functionality with version 2.1 and prior.

Properties Sheet Overview

General Tab

Google Maps API Key- (GMaps Plugin Trial and GMaps Plugin Standard Only)
Enter a Google Maps API key obtained from the Google Maps API website. The ID designates the domain where the SWF will ultimately reside. Running a SWF from any computer or server that is not assigned results in an error message.

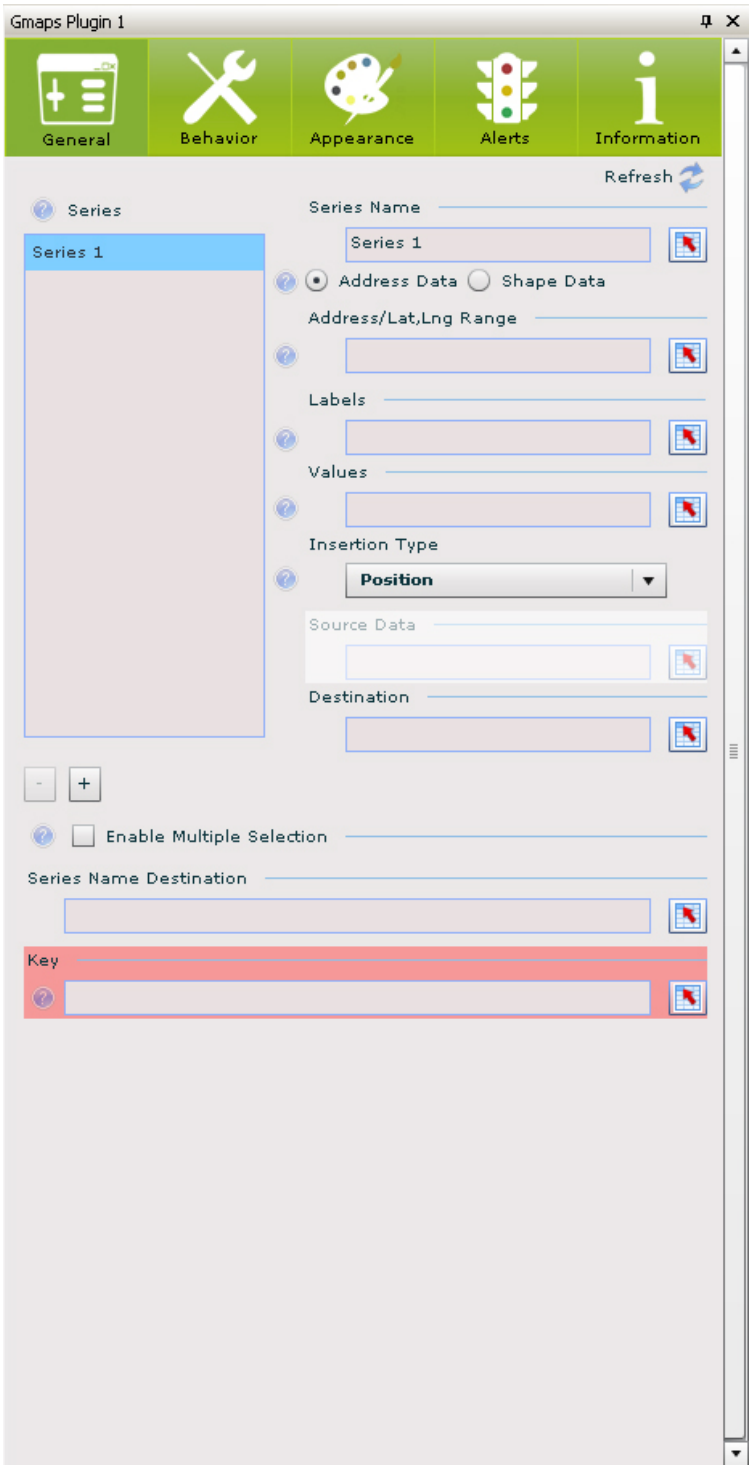
Google Maps ClientID- (GMaps Plugin Premier Only)- Enter a Google Premier ID provided by your IT administrator to display the Google Map. The ID designates the domain where the SWF will ultimately reside. Running a SWF from any computer or server that is not assigned results in an error message. Once you bind an API key, it can not be dynamically changed in the spreadsheet.

Series- Leverage the familiar Xcelsius series paradigm found in charts to plot N number of series in the map and then control the following behavior for each series, independently.

Series Name- Distinguish a unique series on the map using the Series Name. This property can be manually entered or bound to a single cell per series. The series name is utilized as a key for the Series Name Destination.

Address and Shape Data
GMaps Plugin provides the flexibility for developers to plot individual points within a map using address data, or draw and connect locations and regions with shape data. Each series within your map can have unique definitions for address and shape data to create the optimal user experience.

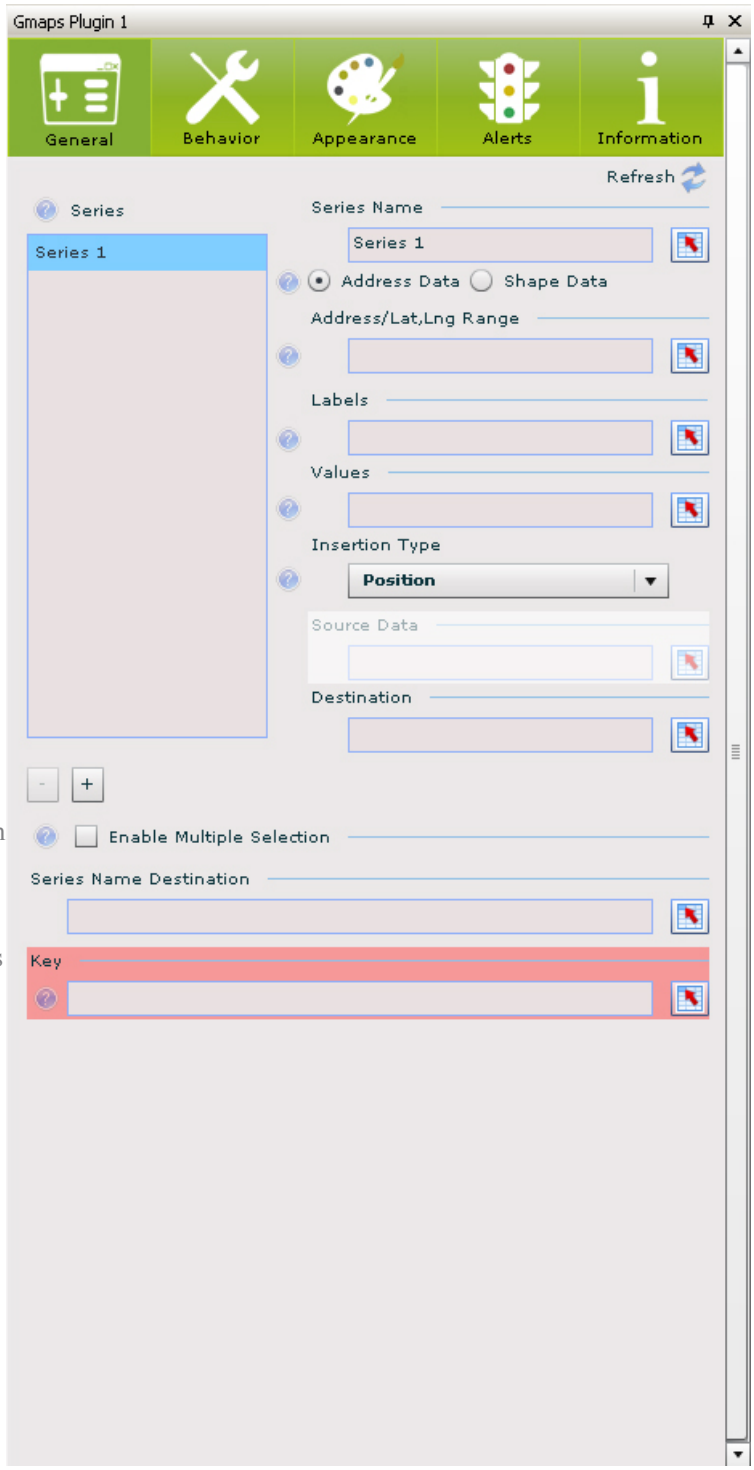
> **Address Data-** Associate multiple geographical data points for a single series within the Google Map interface. The information can be entered as a [Latitude, Longitude] value or as a standard city, state address value.
>
> **Shape Data-** GMaps Plugin shape data options enable additional methods for importing and displaying both polygons and line routes. Each option uses the Map Data Overlay property differently to reduce property sheet complexity while ensuring the most robust development methods.



Properties Sheet Overview

General Tab (continued)

	Type	Data Binding	Data Format
Address Data			
	Latitude, Longitude	Single column range	“Latitude, Longitude”
	Geocode Address	Single column range	Address/ Region
Shape Data			
	Shapefile (.SHP)	Single Cell	URL (HTTP)
	Spreadsheet Source Data	Single column range	Latitude”,” Longitude
	CSV File with Lat,Long	Single Cell	URL (HTTP)



Address Data- Associate multiple geographical data points for a single series within the Google Map interface. The information can be entered as a [Latitude, Longitude] value or as a standard city, state address value.

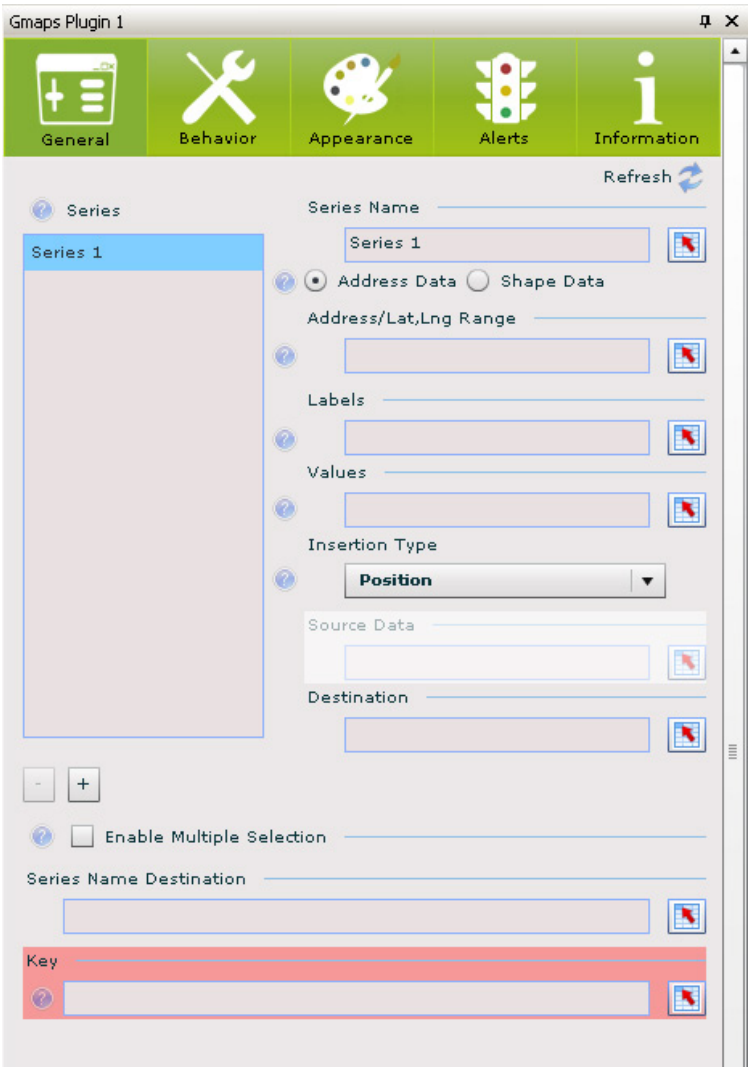
“Latitude”,”Longitude”- GMaps Plugin can interpret and render data using latitude/longitude data as comma separated strings. When using Lat,Long values as Map Overlay Data, GMaps Plugin will instantly render the data within the Google Map interface instantly. This format is preferred for larger data ranges over 100 to ensure maximum performance.

Geocoding Addresses- GMaps Plugin can leverage the powerful Google Maps geocode service to convert addresses you supply to latitude,longitude. In less than 100ms (250ms for GMaps Plugin trial which uses the free Google Maps API), Google Maps geocode service can transform each address data point. Address data can be formatted as the following while still retaining

“Address, city, state” Example: 6440 Lusk blvd., San Diego, CA
“Address, city, ZIP” Example 6440 Lusk blvd. 92121
“Country” Example: US
“State” Example: California
“Zip” Example: 92121

Properties Sheet Overview

General Tab (continued)



Shape Data- GMaps Plugin shape data options enable additional methods for importing and displaying both polygons and line routes. Each option uses the Map Data Overlay property differently to reduce property sheet complexity while ensuring the most robust development methods.

CSV File with Lat,Long- When polygon data originates in a latitude/longitude format, you can store the data within a CSV file. The resulting performance gain enables GMaps Plugin to consume and display up to three times the data volume compared to storing data within the dashboard SWF file. The Map Data Overlay property will be bound to a single cell containing a URL. The URL will point directly to a CSV file containing Lat,Long data for each shape or route. *Example: http://yourserver/shapefile.csv Shape (.SHP) File*

Shape (.SHP) File - GMaps Plugin supports direct connectivity to shape files .SHP which provides significant performance increase for rendering detailed polygon shapes, thematic maps, or routes within GMaps Plugin. The Address Data property will be bound to a single cell containing a URL. The URL will point directly to a .SHP file containing data for the shape(s).
http://yourserver/shapefile.csv

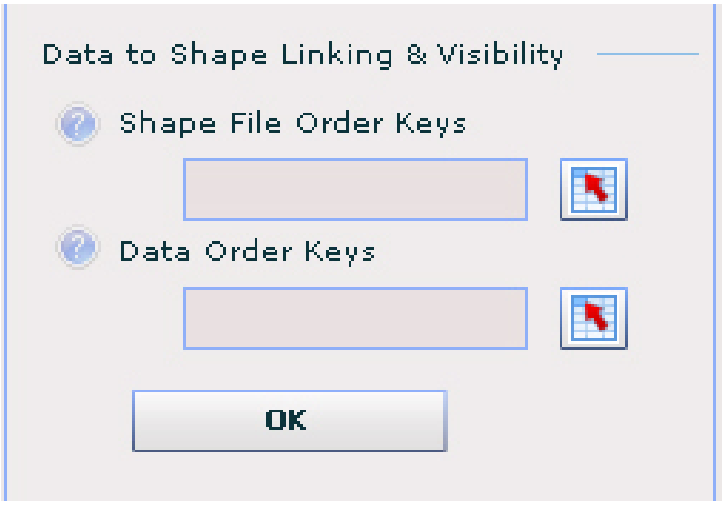
Latitude/Longitude Source Data- GMaps Plugin can utilize latitude,longitude or address data within within the Xcelsius model to draw shapes and lines on the Google Map during SWF runtime. When binding the Map Overlay Data property, select a single column containing the data required to draw shapes, where each cell in the column is a data point.To draw multiple shapes in a single series, insert a line break between all shape definitions.

34.7505862214983,-119.017839697884
34.9324989848208,-119.817915710899
34.6304137177443,-119.705416554002
START NEW SHAPE
34.9727143916037,-119.343994119259
34.6631894372594,-119.730167415281
34.8423115619678,-119.06216282788
34.88828841407[illegible]

Properties Sheet Overview

General Tab (continued)

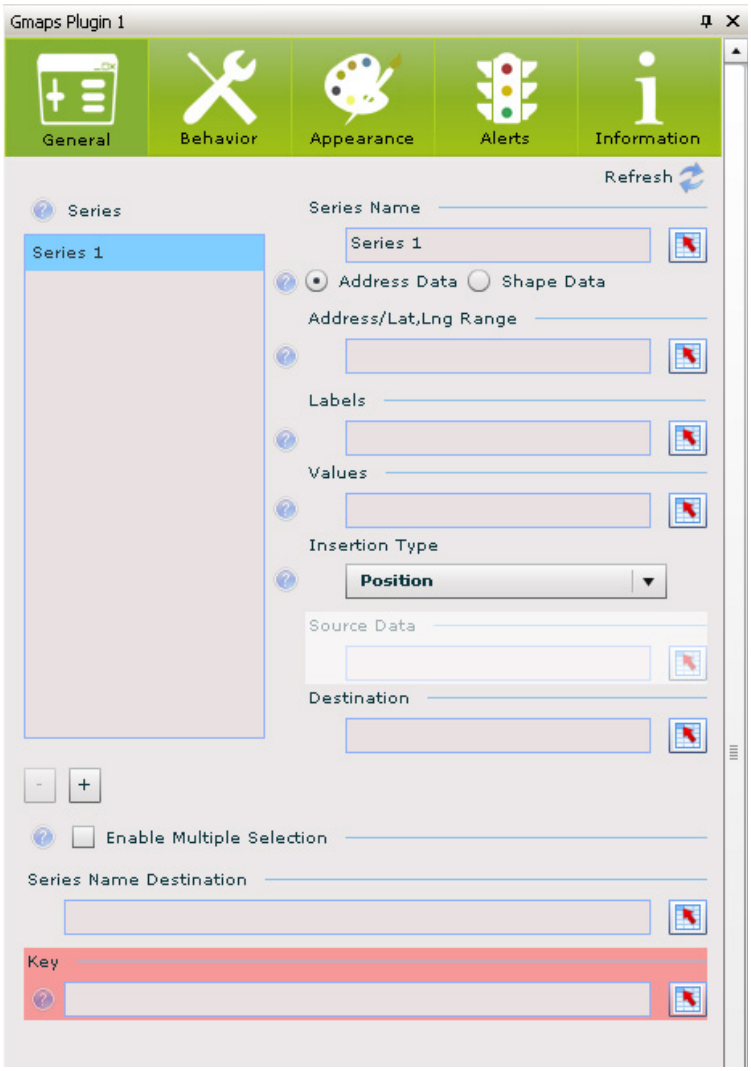
Data to Shapee Lining & Visibility- GMaps Plugin will allow developers to dynamically control the order and visibility of shapes. Defining the Shape File Order Keys and Data Order Keys allows you to align any workflow for navigating and filtering shapedata.



Shape File Order Keys- The Shape File Order Keys are obtained directly from the DBF file and contain a distinct range of values obtained directly from the DBF file. The DBF file contains the labels/ids for each shape within a shape file and can be opened. (learn how to extract DBF data). Upon extracting the DBF data from the shapefile and binding it to the DBF key property, you can change the values but NOT the sort order. If you need to change the data order, you will do so when binding the Shape Data Keys.

Data Order Keys- The Shape Data Key property will contain a distinct range of values used to match the DBF Keys. During dashboard runtime, GMaps Plugin will evaluate the Shape Data Key and search for a matching DBF key. When the Shape Data Key matches the DBF Key, the corresponding shapes will display in GMaps Plugin. Otherwise the shapes are NOT displayed. The Shape Data Keys will define the data order for other GMaps Plugin properties including:

- **Address/Long,Lat**
- **Labels**
- **Values**
- **Selector Source Data**
- **Selector Position**
- **Colors (alerts tab)**
- **Alerts Targets (when using % alerts)**



Properties Sheet Overview

General Tab (continued)

Labels- Define textual label values with each marker in a particular series. Label information is displayed in a pop-up window whenever an end user clicks on a marker in the map.

GMaps Plugin provides basic controls over text formatting via the Appearance tab. For complete control over labels, GMaps Plugin supports HTML text. Dynamically concatenating labels and values with HTML creates an opportunity for rich content like images, charts, and links to other content.

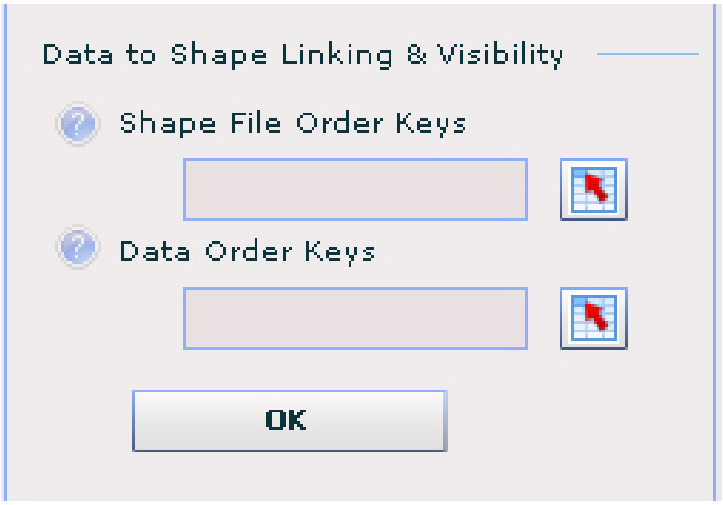
Using HTML- To use HTML code within a label, all label data must be enclosed in <HTML></HTML> tags. GMaps Plugin will support common HTML functionality like text formatting, line breaks, images, URLs, and bulleted lists. The labels property also provides dynamic control over the pop-up window size using the following format w:#;h:<HTML</HTML>.

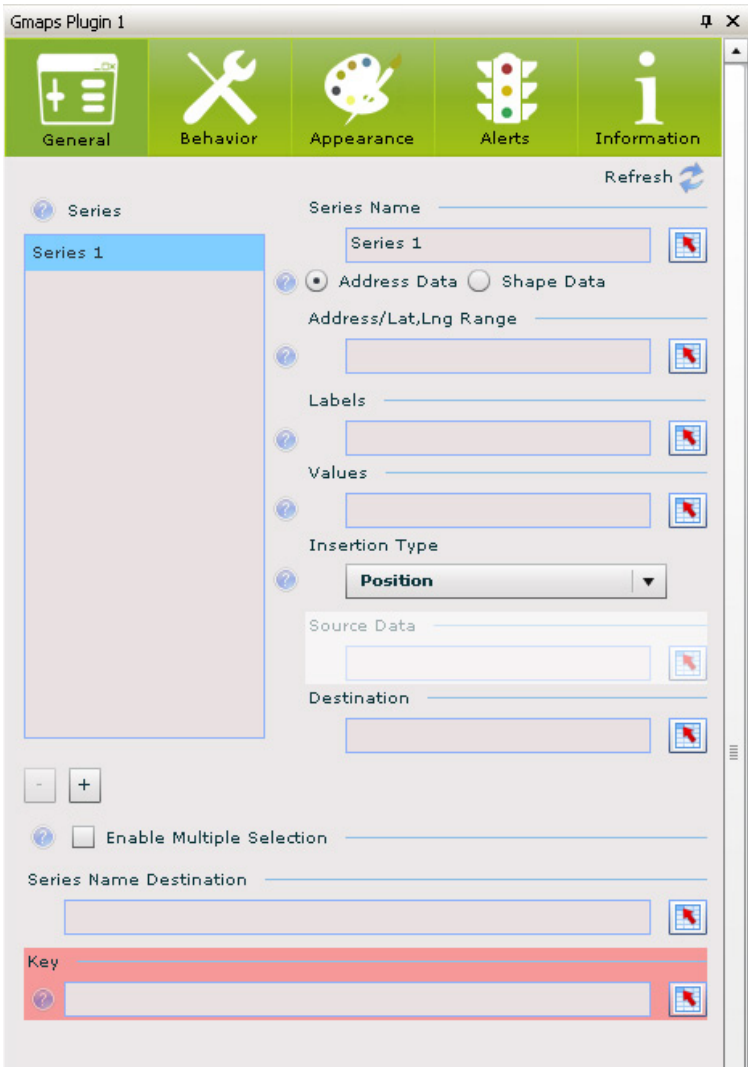
Example: w:300;h:400<HTML>CONTENT</HTML>

Values- Identify a numerical value with each marker in a particular series. Value information dictates relative marker icon sizing (if Dynamic Icon Sizing is enabled) and is displayed below the label whenever an end user clicks on or mouses over a marker in the map.

Values are also used to define alerts. (See Alerts)

Selector Fetuares (Data Insertion)- GMaps Plugin functions as a selector, allowing an end user to click on any data point, or polygon shape to navigate, drill, or trigger dashboard functionality. GMaps Plugin allows for independant selector control for each searies.





Properties Sheet Overview

General Tab (continued)

Source Data- Source Data property is used for Row and Column data insertion. This feature enables GMaps Plugin to move a single row or column into a destination range.

Insertion Type- GMaps Plugin currently supports two data insertion methods (position and label).

Label Insertion- When a data point or polygon shape is selected, GMaps Plugin will insert the assigned label into the destination property.

Position Insertion- When a data point or polygon shape is selected, GMaps Plugin will insert the position relative to the data range selected in the map data overlay property

Row Insertion- When a data point or polygon shape is selected, GMaps Plugin will insert the corresponding row from the Source Data Property into the destination row.

Column Insertion- When a data point or polygon shape is selected, GMaps Plugin will insert the corresponding column from the Source Data Property into the destination column.

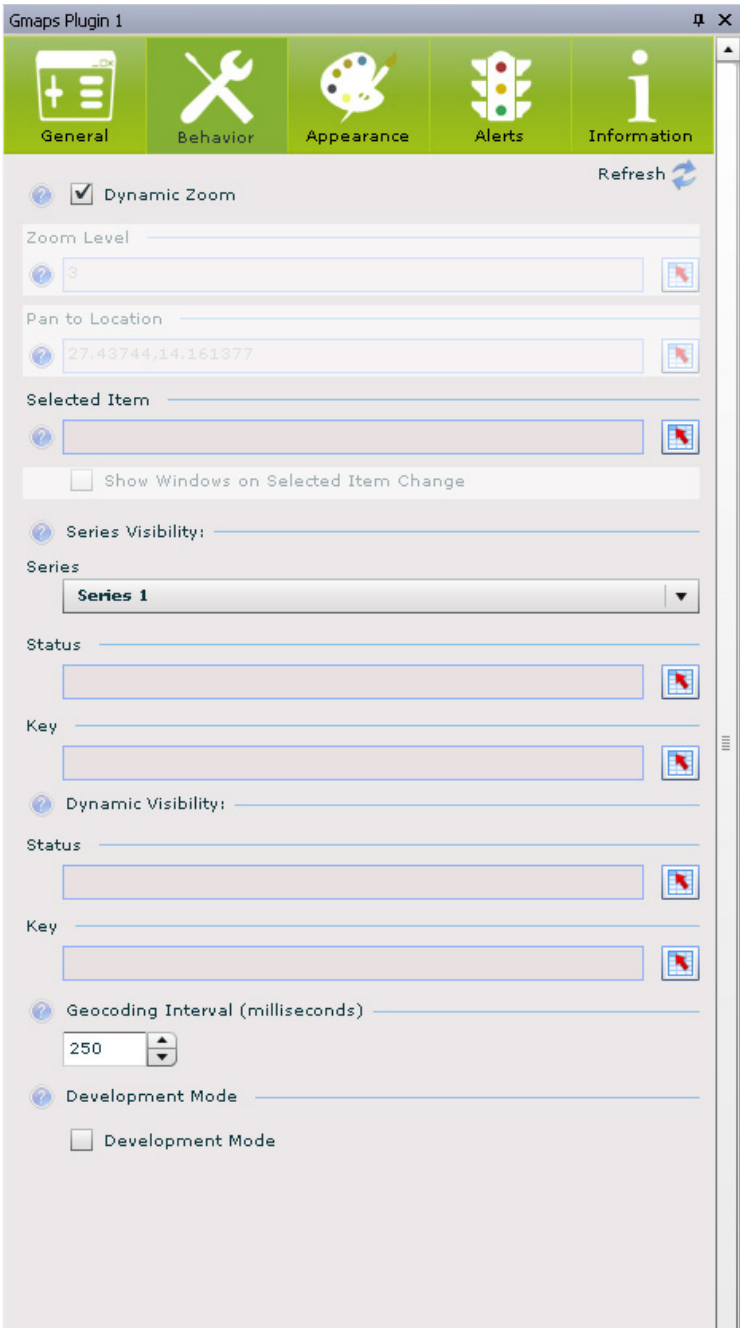
Multi-Selection- GMaps Plugin provides multi-select capabilities, allowing end users to select multiple data points, and then capture the selected data using Rows Insertion. *NOTE: Multi-selection is only available with the Rows Insertion option.

Changes to the Destination Property for Multi select- When multi select is enabled, the destination range will be set to a data range rather than a single row. This will enable GMaps Plugin to populate the range as each data point or polygon is selected.

Destination- GMaps Plugin will only trigger data insertion when a data point is clicked. How data is inserted and the data binding is dependant on which insertion type is selected.

Label Insertion- Bind to a single cell
Position Insertion- Bind to a single cell
Row Insertion- Bind to a single row
Column Insertion- Bind to a single column

Series Name Destination- Bind the series name to a single cell. As a data point is selected on a map, the Series Name Destination Property inserts the selected Series Name value into a single cell.



Properties Sheet Overview

Behavior Tab

Dynamic Zoom- Automatically pan and zoom as to fit all series markers into the map viewing space. If this option is set, the Pan to Location and Zoom properties are ignored.

Zoom (1-15)- Bind a single cell or manually enter a numerical value from 1-15 to dynamically control the map's zoom level. If the Dynamic Zoom property (see Dynamic Zoom above) is selected, this property will be ignored.

Pan to Location- Bind a single cell that contains an address or [Latitude, Longitude] value to control the map's default pan location. As the Pan to Location value changes, the map will automatically center itself. If the Dynamic Zoom (see Dynamic Zoom above) option is selected, this property will be ignored.

Selected Item- Select any icon or polygon using other components or excel logic outside of the map. The purpose is to enable dashboard developers to control what icon(s) are selected at all times. The following comma separated sytax is required to succesfully select a data point within a given series. Selected item is automatically triggered any time either value changes
[Series #],[Position #]
Example: "1,2" will select the "first series", and the "second data point" in the series.
Example: "2,4" will select the "second series" and the "fourth data point" in the series.
Example: "2" will select "all data points" in the "second series"

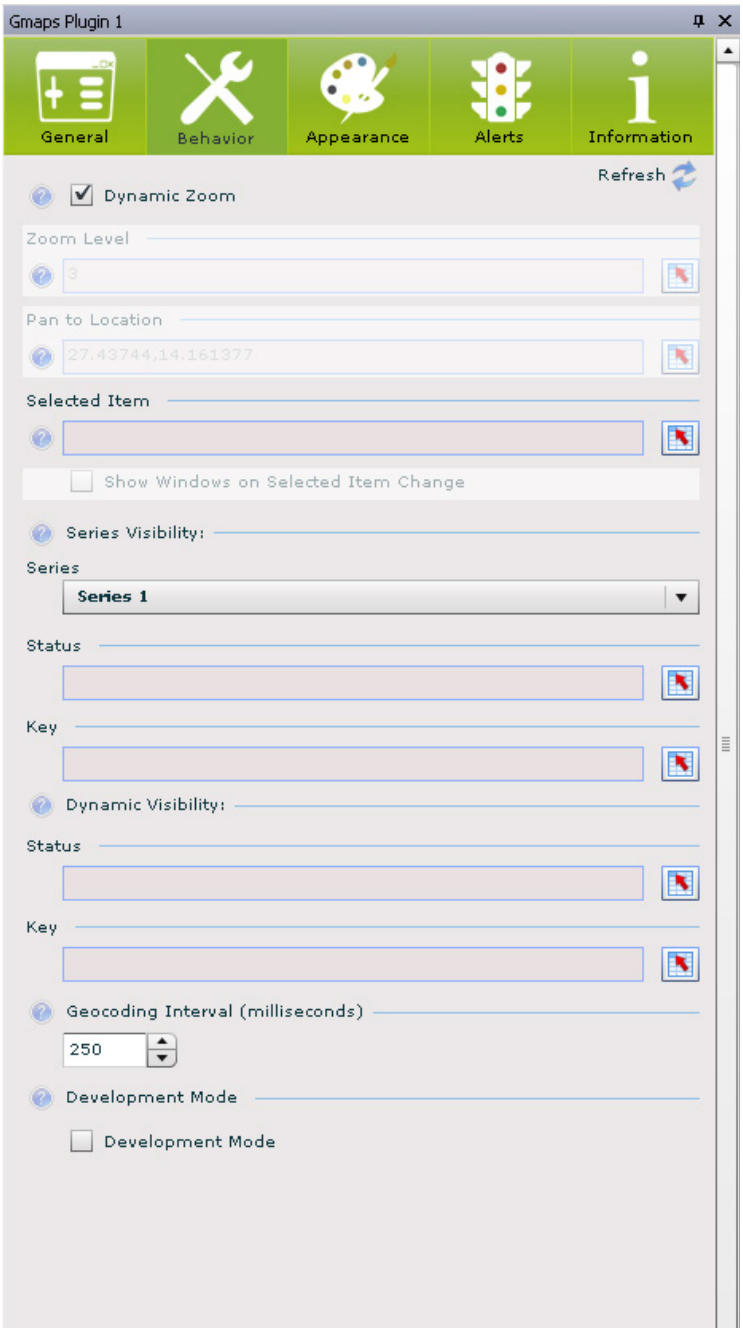
Deselection- To de-select GMaps Plugin, set the Selected Item property to "-1".

Show Windows on Selected Item Change- When using Selected Item property, you can enable or disable weather the infowindow(s) are displayed. When this property is un-checked it will only display info windows using the default map behavior.

Series Visibility- Establish dynamic key/status value pairs to independently control each series' visibility on the map. If the key and status match each other, the series is visible, and if they do not match, the series is hidden.

Status- Bind the status to a single cell that serves as a listener for a Key (see Key below) value.

Key- Bind the key value that the Status cell listens for. The Status cell must match the Key cell if the series is to be visible.



Properties Sheet Overview

Behavior Tab (continued)

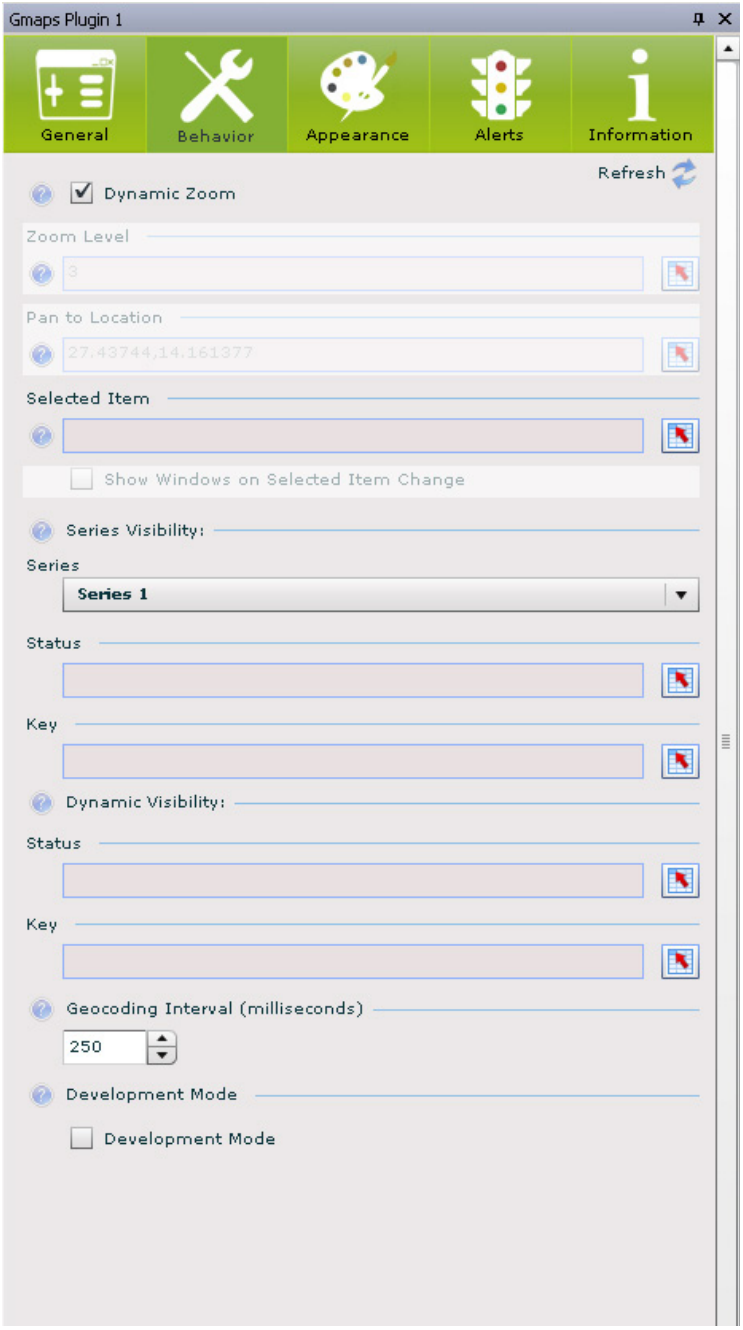
Dynamic Visibility- Dynamic Visibility will enable Background Builder to show or hide with the dashboard**.**

Status- Status lets you select a cell in the embedded spreadsheet to control the visibility of the component. If the value in the Status cell equals the value of the Key, the component will be displayed.

Key- Key lets you specify the value that the Status must match for the component to become visible. Enter the value in the box or use the cell selector to bind the value to a cell in the embedded spreadsheet.

Geo-Code interval- When using addresses GMaps Plugin will automatically geocode the values using the Google Maps Geocode service. Use the Geocode Interval property to adjust the rate that GMaps Plugin will geocode values.

Developer Mode- Available in GMaps Plugin Premier and GMaps Plugin Bundle Developer, this mode provides a designer with an ability to create dashboard content without using Google Maps page views. Development mode will NOT work outside of a developer's local desktop.



Properties Sheet Overview

Appearance Tab: General

Labels- Control the appearance of the label values, as they are displayed in a popup window, when each series marker is selected. Labels can be formatted using a comprehensive list of system fonts, standard colors, alignment options and bold, italic and underline font decorations.

Show Values- Toggle the display of values within the map popup window.

Show Series Names- Toggle the display of series within the map popup window.

Info Window Display Options- GMaps Plugin provides the flexibility to display Info Windows when an icon or heatmap is hovered over with a mouse and/or clicked. Replacing tool tip features, the Info Window provides full control over appearance and content. In addition, you can de-select Info Windows so they are not visible at all.

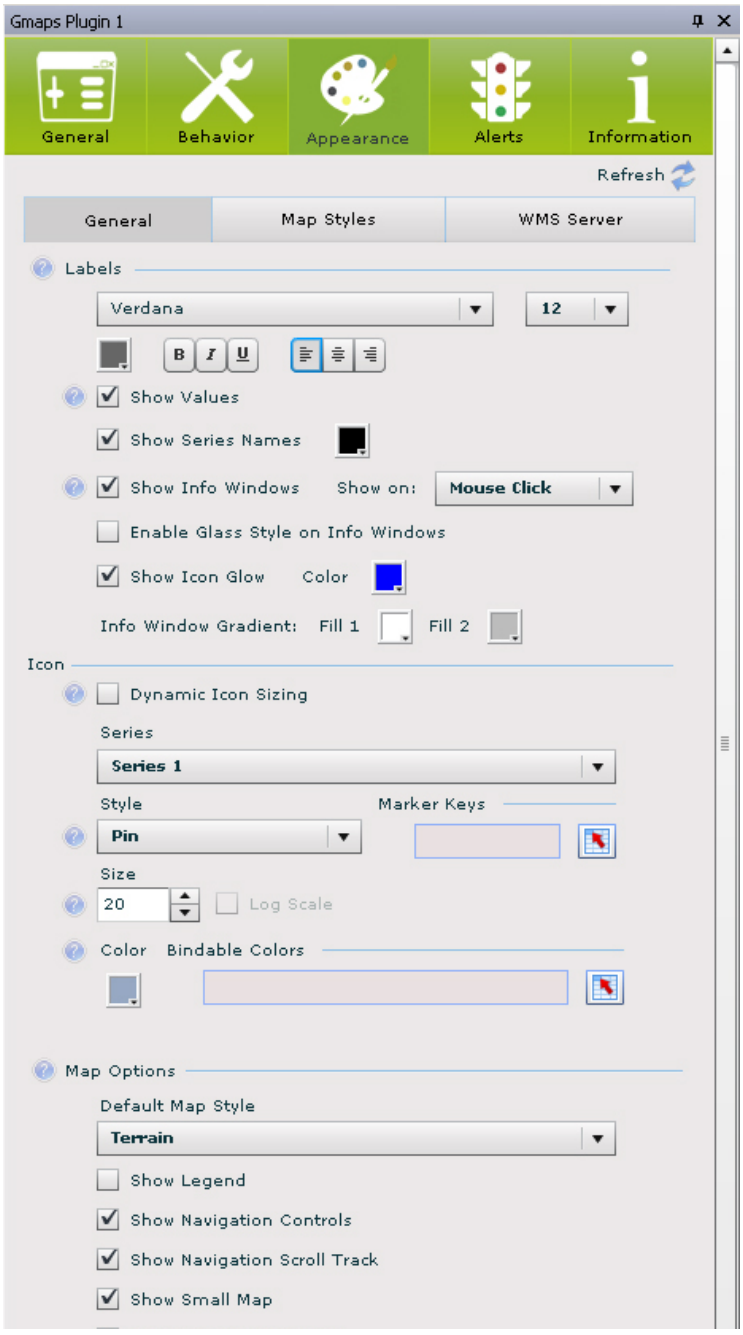
Enable Glass Style on Info Windows- Ad extra, stylized glass effect to Info Windows to give additional depth.

Icon Glow- Icon glow will indicate what icons, heatmaps, or polygons are selected in the map. Configure the glow freature by modifying the icon glow and transparency within the property sheet.

Info Window Gradient- Choose custom color gradient for the Info Window. The gradient is drawn from top (white) to bottom (gray).

Dynamic Icon Sizing- Control the icon sizing relative to the associated value (see Value above). The resulting analytical capabilities can be scaled using the series size in the appearance(see Series Size below) Appearance tab. Each icon's size is calculated based on all Values for all series.

Series Selector- Select any series that has been generated on the General tab, using a drop down. Once a particular series has been selected, icon type, color and size can be associated with the series.



Properties Sheet Overview

Appearance Tab: General

Series Style- Choose between several popular marker icons styles for each individual series. Styles can be defined using the style dropdown, or dynamcially changed using the Marker Keys property.

Marker Keys- Marker Key Property allows you to define 1 key per data point within a series. A key can contain a specific marker key to display a standard GMaps Plugin icon, or a URL to display a custom icon. View the Standard Key table for a complete list of available icons.

Another way to dynamically change icons is through the Alerts Tab. If you enable alerts for a series, icon keys are over-written. View Alerts Tab for more information.

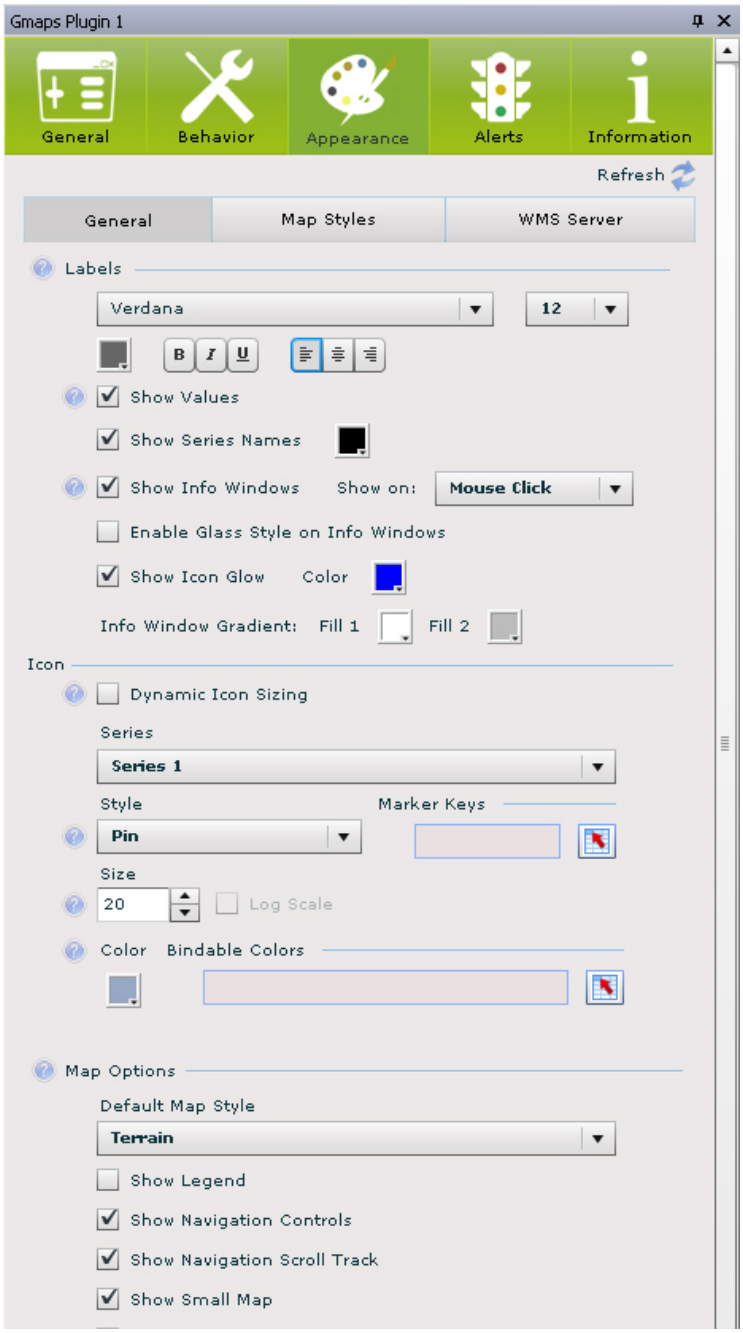
> **Custom Icons-** Custom icons are defined using the Icon Key property. For each data point you will define a URL to a SWF, JPG, PNG (supports transparency), or GIF. GMaps Plugin will NOT embed any custom images in the SWF when compiled. Custom URLs can be mixed with standard GMaps Plugin icon keys.
>
> **Heatmaps**- Heat map icon styles enable the visualization of density of latitude and longitude points on a map. As the number of data points increase in a specific area, the color intensity will increase. The heatmap icon style currently includes pre-defined fill types that can be layered across multiple series. Like icons, heatmaps can use dynamic icon sizing.

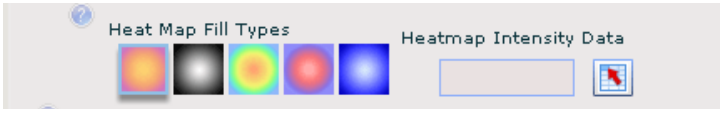
Heatmap Intensity- Heatmap data points, can contain an additional measure, heatmap intensity data, to control the color intensity of each data point. Like labels and values, binding heatmap intensity data will require one cell per data point.

Icon Colors- There are 3 methods in GMaps Plugin for defining icons, shapes, and polylines color.

> ***Color Picker***- Use the color picker to change all icons or shapes per series.
>
> ***Bindable Colors***- Bind colors to a range containing hexidecimal color codes. You will bind to 1 cell per data point or shape.
>
> ***Alerts***- Use the alerts tab to define unique colors based on alert thresholds compared to the Value property. (see Alerts)

0xFFFFFF = White
0xff0000 = Red
0xffff00= Yellow
0x00ff00F = Green





Properties Sheet Overview

Appearance (Continued)

Series Size- Set the icon size for each individual series. If Dynamic Icon Sizing is selected, Series Size will dictate the relative marker scale that all associated marker values are calculated against for a particular series. If Dynamic Icon Sizing is not selected, the Series Size property will dictate the exact size of each marker icon in a particular series.

Map Options- Show or hide various map controls within the GMaps Plugin user interface.

Show Legend- The legend will display all series created within the map along with the icon type and color. If dynamic icon colors are enabled, the legend icon color will reflect the fist marker's color within the range.

Show Navigation Controls- Toggle the standard Google Map Zoom and Pan controls, allowing users to zoom in and out on a given location.

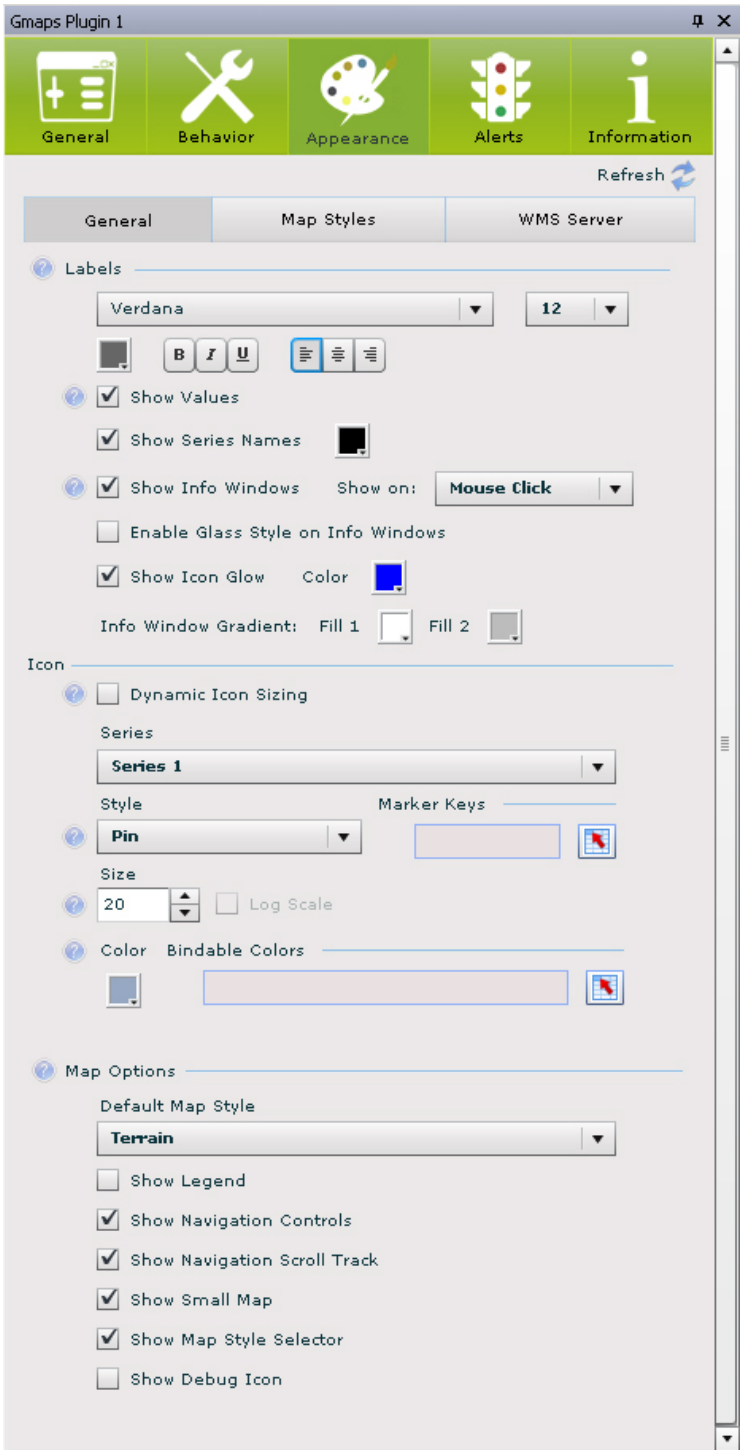
Show Navigation Scroll Track- Remove the standard Google Maps scroll track when you want to create smaller maps where only zoom in and zoom out buttons are required.

Show Position Control- Toggle the Google Map Pan/ Position Control, allowing end users to pan left, right, up or down and alternatively re-center the map during runtime.

Show Small Map- Toggle the Small Google Map Control, allowing end users to pan across large geographical areas at runtime. The series icons are not be visible in the small map.

Show Map Style Selector- Toggle the Google Map Style Control, allowing users to toggle between map styles (satellite, hybrid, terrain and regular) at runtime.

Show Debug Icon- The help icon is intended for debugging purposes only. If one of your data points does not show up during SWF runtime, you can enable help to trace if the geocode service is failing to recognize your address. By default, this property should remain off.



Properties Sheet Overview

Alerts

GMaps Plugin 3.0 features an Alerts tab, which provides point and click control over color and icon types (when using icons) based on set thresholds. Designers can set dynamic colors, limits, and icon styles providing complete control without using any Excel logic. Alerts Properties

Series Selector- Each series can contain independent alert definitions. When Alerts are NOT used for a series, GMaps Plugin will default to the icon and color configurations on the Appearance tab.

Alert Value- The alerts tab uses GMaps Plugin Value property located on the general tab. Each data point or polygon can have a value assigned to it. The alert Target Type will dictate how the Value property is compared to target, leading to the appropriate alert level.

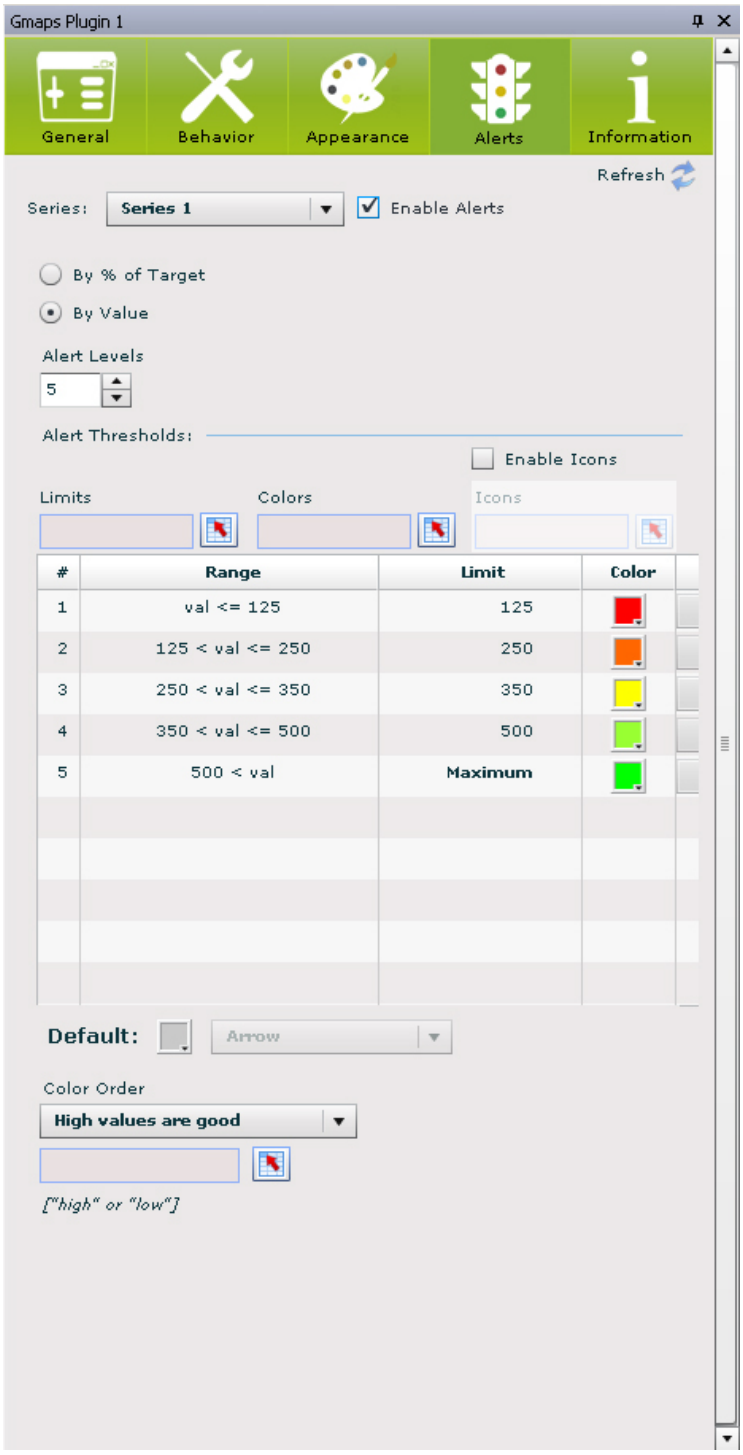
Alert Target Type GMaps Plugin Target Type controls how values are compared to target. Typically dashboard designers use "By % of Target" because values are usually associated with unique targets per data point. Based on the alert target type, GMaps Plugin logic will dynamically assess how the value property measures against the target and then apply the appropriate formatting based on Alert Thresholds (see below).

Alert Target "By % of Target" -If the values bound to the Values property (located on General Tab) are measured against unique targets per data point, "By % of Target" is the appropriate alert option. When choosing this option, the "Targets" property is required to provide target values to measure against.

> ***Targets-*** Bind Targets property to a single column data range the same number of rows as the "Value" property. The values contained within Targets will be measured against the Value property.
>
> *Note* for Shape File Alerts: When defining targets for Shapefiles the alert targets must be defined in a sort order according to the shape file key and NOT the DBF key.

Alert Target "By Value"- If the values bound to the Values property (located on General Tab) are measured against the same targets, "By Value" is the appropriate alert option. Choosing By Value forces GMaps Plugin to measure all values directly against the Alert Thresholds. If each value requires a unique target, choose By% of Target.

Alert Levels- Alert levels are manually defined per series using a numeric ticker. Because alert levels do not typically change, it is NOT a bindable property.



Properties Sheet Overview

Alerts (continued)

Alert Thresholds- Alert Thresholds control multiple thresholds where the color, and icon style (only when address/lat,long are used). Alert thresholds can be controlled through manual data input into the table or through a bindable "Threshold" property.

Range- Range provides a plain english explanation of the how each alert threshold is evaluated by GMaps Plugin.

Limits- Thresholds use upper limits to restrict when color or icon styles change.

Color- Color definitions are established for each alert threshold

Defining Alert Limits- Alert limits are entered directly into the threshold table as upper limits. The limits bind option provides control to dynamically change the alert limits. The number of limits must match the number defined in the Alert Levels property.

Choosing Color- Color pickers are available for each alert level. Alert colors are used to visually contrast data points or indicate how dashboard end users perceive the status of the point or region.

BEST PRACTICE- It is recommended to ensure the gradations between colors (intensity and brightness) to ensure dashboard end users can interpret how data points differentiate information.

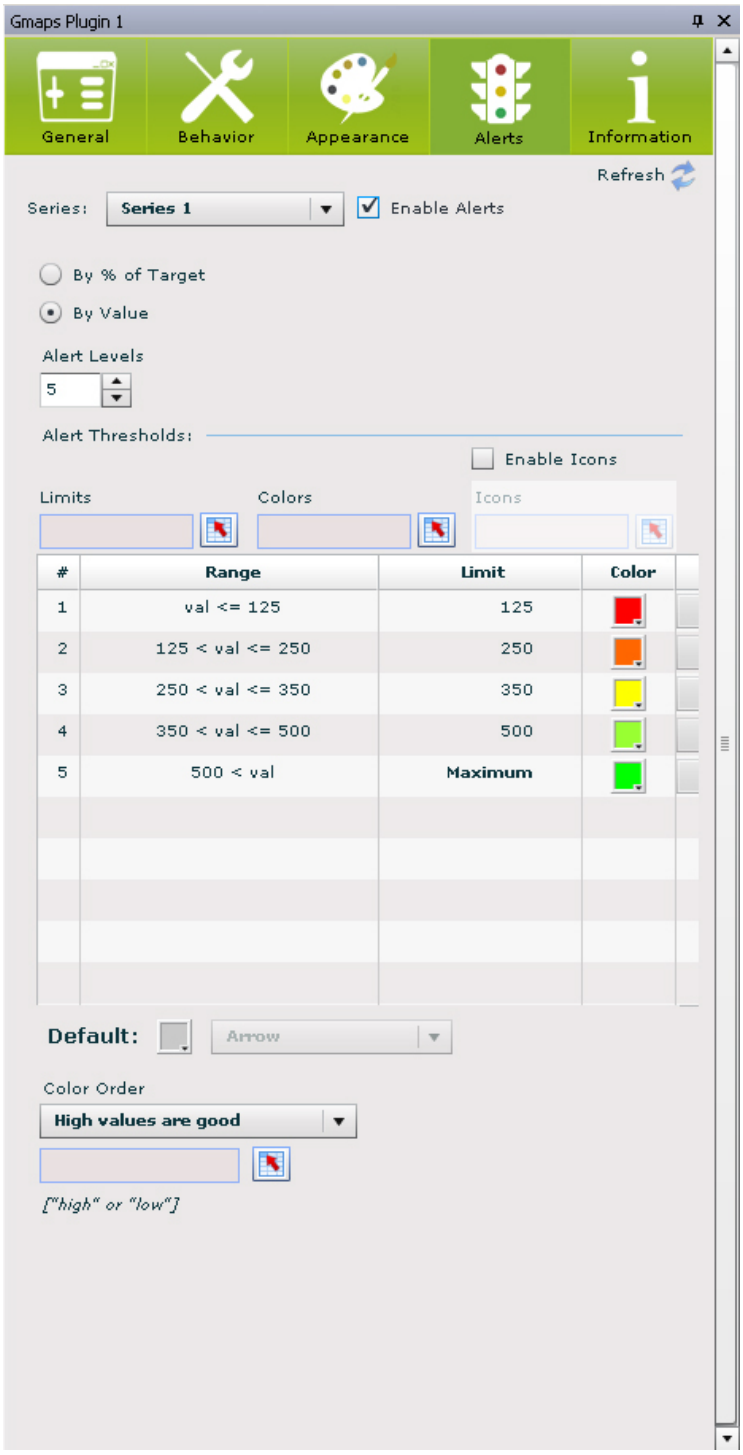
Choosing Icons- Available for address/lat,long feature only, icon selection is available for each alert level. If dynamic icons are required, the Icon bind property will globally control icons for all alert levels. Bind the icon property to a data range with the same number of cells as alert levels. For a list of icon keys, view Icon Styles.

Color Order- Color order indicates how alert colors / icons are rendered. A developer can choose if high values are "Good" or "Bad".

Example: Revenue is evaluated as "Good = Green" while costs are evaluated as "Bad = Red".

To alleviate re-binding alert colors, Color Order property provides a single property to flip the color definitions. Color order will NOT affect the alert threshold values or targets. GMaps Plugin enables color order as a bindable property allowing runtime toggling of color order. Bind color order property to a single cell and use the following values to define the property:

0 = High Values are good | 1 = Low Values are good



Properties Sheet Overview

Information Tab

*All elements on the Information tab require an internet connection.

Jumpstart Video- Jumpstart your usage of this component using a quick demonstration video.

Documentation- Download and view PDF product documentation.

Technical Support- Contact support or login to Centigon Solutions customer portal: http://support.centigonsolutions.com

Tutorials: Online tutorials, articles, and white papers for all Centigon Solutions products: http://centigonsolutions.com/tutorials.html

Templates- Download free templates using Centigon Solutions components.

Purchase- Purchase copies of this component directly from Centigon Solutions web store.

Available Components- A real time list of all available components from Centigon Solutions. Selecting any component from the list box will launch a browser that navigates to component specific information.